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Ard Fóras
Forbartha
Teoranta

The National Institute for Physical Planning and Construction Research

CONSERVATION AND ADVISORY
AMENITY SERVICE PLANNING DIVISION

A Preliminary Report on Areas of Scientific Interest in County Wexford

Roger Goodwillie

August 1979.

Teach Bhaile Átha
Cliath
Baile Átha Cliath

**St. Martins House
Waterloo Road
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PREFACE

An Foras Forbartha has been engaged in preparing a comprehensive National Heritage Inventory for a number of years. The inventory includes both man-made structures and the natural environment. One purpose of the inventory is to make available to local authorities specialist information for incorporation in County Development Plans. These plans are prepared every five years under the Local Government (Planning and Development) Act, 1963 and must make provision for the protection and development of amenities as defined in Part IV of the Third Schedule of the Act. The other purpose of the inventory is to provide an authoritative and systematic record of the heritage as it exists. In fulfilling this second objective, An Foras Forbartha has discharged one of the main recommendations contained in its report The Protection of the National Heritage, published in 1969.

Following the publication of this report, a National Heritage Inventory Working Party, consisting of representatives of government departments and agencies concerned with the National Heritage, was established in December 1969 to ensure co-operation and to prevent duplication of effort in the preparation of the inventory. The departments and agencies represented on the Working Party are:

Bord Failte, Bord na Mona, Department of Fisheries and Forestry (Fisheries Division and Forest & Wildlife Service) Department of the Environment, An Foras Forbartha, An Foras Taluntais Geological Survey, National Gallery Office of Public Works and the Ordnance Survey.

The establishment of the Conservation and Amenity Service by An Foras Forbartha in 1971 made it possible for additional specialist staff to be engaged by the Institute allowing work on the National Heritage Inventory to be speeded up.

This inventory has now been completed for the twenty seven administrative counties. The inventory has been finished within eight years, a remarkable achievement for which credit must go to those directly involved in undertaking the county surveys and to the members of the National Heritage Working Party for their considerable help and assistance. This report has been assembled from literature sources, from the files of An Foras Forbartha and from contacts with several official agencies and private individuals. In particular we would like to acknowledge the help of:

Department of Fisheries & Forestry (Miss O'Shaughnessy, Dr. Moriarty, Mr. Mooney), Geological Survey (Dr. A. Flegg), An Taisce, Irish Wildbird Conservancy, Seabird Group, Dr. A. O'Sullivan, Dr. E. Fahy.

Botanical names follow those in An Irish Flora, by D. A. Webb, Dundalk, 1977.

1. INTRODUCTION

Basis of the Survey

The survey was carried out in order to list a representative range of natural and semi-natural habitats in the county as well as to discover the sites of special significance. These latter may be important for having unusual environmental conditions, for example, or for showing exposures of rock that are valuable in elucidating geological history. In approach, the survey is basically a botanical one with inputs from geology and earth sciences, ornithology and other branches of zoology. There is good reason for this apparent bias. A biological site is of interest because of its diversity (number of species) or the density of one or a group or organisms. Both these things are a reflection of habitat conditions and where they are very high or low they show that unusual site factors are present. The problem is how to find these extremes and identify the real from the apparent ones.

Work on invertebrate animals (insects, snails, spiders etc.) is difficult and more time consuming than that on the larger plants. Consequently, the state of knowledge about this part of the Irish fauna is incomplete, and in many parts of the country practically non-existent. Repeated visits are required to measure either diversity or density and, therefore, many interesting communities must remain unknown at the present time. If they have been sampled they may be impossible to put into perspective - nobody knows whether they are unusual or not. The groups of animals which one can evaluate more conveniently are the larger, better-known organisms such as birds and to a more limited extent fish and butterflies. Where it is meaningful, information from these groups and from others, has been incorporated into the site analysis.

Since all animal life depends on plants for food, whether directly or indirectly through intermediate plant eating forms, diversity and density in the plant cover indicates diversity and density in all other forms of life. It therefore seems reasonable to give the greatest weight to the botanical features of the environment.

An indication that unusual factors are present at any site is often given by the presence of a rare species of plant or animal : one which is intolerant of most environments and therefore restricted in its distribution. Such a species may be important in its own right as part of the Irish flora or fauna. As such it can be removed from the countryside and grown in a garden or a cage. However, the intricate community from which it comes is impossible to recreate, once it has been destroyed. For this reason, the community is a more valuable entity. It may conceal other unusual things, some of greater value to mankind.

The survey has concentrated on natural and semi-natural communities since these cannot be developed artificially, at least within a reasonable period. It does not of course exclude man-made ecosystems and where natural processes have led to the colonisation of these by secondary organisms, there is often considerable interest; for example, in man-made lakes and sloblands and sometimes in planted woods.

Although the attempt has been made to cover all the relevant literature and to obtain advice from those with specialised knowledge of the county, this survey is not at a sufficiently advanced stage to allow definitive statements about importance or rarity to be made, outside certain very limited groups. It is hoped that the appearance of such a report will stimulate those with local information to make it known. Contributions which will be treated confidentially, if desired, are invited. They will assist both central and local government in the better planning and management of the environment.

Conservation

The conservation of the full variety of natural communities and geological exposures in the country is desirable on many grounds. For example, their continued existence or their development on a rational basis may add to visual amenity or improve the quality and level of recreation that an area can satisfy. They may be useful

and stimulating places for education and many may provide valuable insights in scientific research.

There can be no question that such areas add to the quality of the landscape. They introduce contrast into the countryside and increase the variety of shape and form. Grossly unkempt to the eye of a parks superintendent they nevertheless sustain a wild atmosphere even in the midst of intensive agriculture or urban development. They are often enjoyable places to be in and while many people find an untouched landscape relaxing, it can also be stimulating. Nature is seen to reassert itself in forms that do not penetrate our everyday environment.

Natural areas often provide facilities for education. They are an open-air laboratory for field studies in many of the life sciences, not simply biology. For instance, they show clear examples of the ecological principles on which farming, waste disposal and even civilisation depend. They may indicate the effect of different forms of land use (historical or current) on the natural resource. Fieldwork attracts all children at some stage of their lives. There is the challenge of naming the many forms of life and of discovering about the creatures' lives and interactions. Such a stimulus to learning has been little exploited as yet in this country but there is no doubt as to its effectiveness. Fieldwork of any sort leads to a better appreciation of the countryside and may also lay the foundation of constructive recreation in later life.

Scientific research often overlaps with the educational use of the natural environment. Here one may study the basis of ecology - productivity, breakdown and recycling - without artificial influences to obscure them. One can examine the productive base (plants), the factors that control its growth, the many alternative pathways of consumption and energy flow, and the various levels on which a plant or animal crop can be harvested. Organisms that at present are little appreciated or even unknown may be found suitable for pest control, for soil improvement, for pollution treatment or for growing as a new

crop. It is important to protect these resources to be able to take full advantage of the options they offer for future development.

In addition to this role as an insurance policy, the natural environment is needed for a control area. As a self-sustaining and non-polluting system it clearly has a lot to offer as a model for improving man's attempts at land management. Its comparative function with the field and greenhouse is considerable.

In the field of geology good exposures of rock or sediment types with evidence about their formative processes are rare. They are nevertheless the textbook of the geologist. All our existing knowledge is built on the foundations of described exposures, type locations where a rock or fossil is first described being particularly valuable. Such exposures must be retained in order to reassess accepted knowledge and also to educate future geologists.

Vulnerability of Natural Areas

In the course of normal development many natural areas are being and will continue to be subjected to different conditions than those to which they have become adjusted. All will be reflected by changes in the ecological balance and in some cases these will be to the detriment of the area. Slow modifications may be caused by the addition, or removal, of nutrients and by other selective pressures such as grazing, trampling and fire. They are not so noticeable as rapid changes due to drainage or physical destruction, but they may be just as damaging.

Woodland is one of the most vulnerable communities for it can be swiftly destroyed if a concerted effort is made. Clearance may be carried out to increase the agricultural area of a farm, to replant with other more productive tree species or, more locally, for road widening and housing development. When a deciduous wood is replaced by a coniferous one, either by felling and replanting or

by underplanting, the associated community of animals and plants is totally altered. Although the actual number of birds and insects may build up again to their former levels, the species content is much more restricted and usually is of little interest. The belts and lines of mature trees that may be left, in no way maintain the intact community and contribute only to amenity. On the other hand, quite small blocks of trees can preserve a good deal of their former interest.

In woodland, a low density of grazing animals may have only a slight effect on the community, preventing some species from flowering or spreading naturally. As it builds up, however, it gradually removes the undergrowth, changing the internal climate and affecting the insect (and bird) life. Tree seedlings are gradually killed or suppressed and no saplings are recruited. These are necessary for the survival of the wood itself. The trees become old and susceptible to rot and windthrow and the canopy is opened out. The evergreen shrub, Rhododendron ponticum, has a similar effect by shading, and constitutes a worse threat, or at least a more intractable one, to the future of many woods.

By contrast, grazing unmanaged grassland seldom does significant damage since this community is adapted to it. In places, grassland depends on a certain level of grazing to prevent scrub invasion but where the plant cover is thin, physical damage can be caused by trampling on such sites as eskers and blanket bog. In places affected by human trampling, the pressure is often aggravated by vehicles or fires and in sand dunes or on lakeshores the vegetation can break down and expose the soil to erosion.

Generally more serious to 'natural' grassland is the application of fertilisers. This is a different selective pressure and it favours coarse fast-growing grasses at the expense of the flowering plants that usually abound in such pastures. Certain species can disappear and with them

their dependent butterfies and other insects. Local extinctions like this are seldom induced by grazing although it does often restrict flowering. Herbicides can obviously have a great effect wherever they are used. Generally, this is in greatly modified communities such as fields and gardens but where roadside verges are also treated, the depletion of the local flora and fauna can be significant.

Aquatic communities are affected by greater changes of water level than the normal seasonal fluctuations. The water table may be lowered by field or arterial drainage or a formerly moveable waterline may be stabilised. Alternatively, a lakeshore may be subjected to much greater changes in level if it is used as a reservoir. The junction between land and water is the main zone to be affected by drainage and the communities involved are marshes, fens and reedswamps. This complex of vegetation may simply re-establish itself at a lower level but some species may be unable to migrate so quickly, especially those that do not readily reproduce by seeds. Complete drying out or the disappearance of winter flooding is naturally more serious as the whole marsh community with its dependent wildfowl and other animals may be destroyed. This happens in successful arterial drainage. If such drainage is not so effective a debased semi-aquatic community lingers on of little interest or agricultural use.

Water pollution is a problem of growing importance due to the aggregation and increase of population and the growing size of agricultural and industrial units. Incoming matter cannot be localised in a waterbody, neither can it be absorbed. Thus pollutants may be recirculated by the bottom deposits long after their initial appearance. Aquatic communities generally require less nutrients than land-based ones and enrichment by sewage or other organic matter leads rapidly to changes. The community of microscopic organisms is altered. Bacteria and the algae that can multiply most rapidly (forming 'blooms' in early summer) are favoured and the whole assemblage of animals dependent on this food base changes. The oxygen supply in the water is reduced and this also leads to the

disappearance of some animal forms. The result is the replacement of a complex community by a simplified one characteristic of stagnant water, with a few very common species. This can happen in both fresh and marine waters and is often noticed in estuaries.

Pollution with other industrial wastes takes many forms but the effluent generally reduces the variety of animal and plant life in the vicinity. It causes the organisms finely balanced with environmental factors (the rare ones) to die out. It may have a strong selective effect against certain groups which accumulate toxic substances to a level much higher than that in their surroundings (e.g. shellfish, birds of prey). Alternatively, it may act through a physiological quirk, as oil does on the feathers of water birds.

Methods of Protection

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

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

The legal framework necessary for the adequate protection of our heritage is only just coming into existence because of limited public interest in conservation up to a few years ago. However, even those statutes that have been available up to this have not been fully utilised.

The main laws concerned are the Local Government (Planning and Development) Acts of 1963 and 1976, Wildlife Act 1976 and Water Pollution Act, 1977. There are also laws by which conservation can be secured as an incidental benefit of their main purpose. These include the Foreshore Act, 1933, the Land Acts of 1936 and 1939, the Forestry Act, 1946, the Fisheries (Consolidation) Act, 1959, and the Protection of Animals (Amendment) Act, 1965.

The Local Government Acts allow a planning authority to develop or secure the development of land for conservation under the general area of preserving or improving amenities. This includes both ecological and geological sites. If conservation objectives are written into a Development Plan it is the duty of the Local Authority to carry them out.

The actual means of carrying them out lies in three positive instruments and in the more general obligation for a developer to obtain planning permission before development starts. Residential and industrial works can be prevented in any area in this way, but agricultural buildings and those connected with forestry are

practically exempt. In fact, only animal houses over 400 square metres in area require permission. The local authority is given no control over large scale agricultural changes such as drainage and afforestation by these acts but has some limited powers with regard to hedgerows.

The Special Amenity Area Order under this Act reinforces the process of development control and gives a stronger hand to the planning authority seeking to prevent development, as it has the backing of the full Council and later the Minister and Oireachtas. With such an Order, development can be prevented or controlled at a certain level in the interest of amenity and/or nature conservation. Where this latter aspect is important the authority can go further by making a Conservation Order to protect the flora or fauna in a particular area. The purpose of the Tree Preservation Order is to impose a management plan on trees and woodlands of special amenity value - protecting the more important trees, but allowing felling and replanting when necessary. Both these Orders can be made without compensating the owner, and the planning authority may be reluctant to use them for this reason. Provision is made for compensation, but this usually has to come from local rather than central funds. Once such an order has been made, the planning authority has the power to acquire the site. In some cases it can also be obliged to purchase land where development has been refused.

The most important recent development has been the passing of the Wildlife Act, 1976, which gives the Minister of Fisheries and Forestry, in consultation with a Wildlife Advisory Council, wide powers for the conservation of all wildlife and their habitat. He is able to establish nature reserves on State land, including the seabed of territorial waters, and also to designate refuges for fauna on private land after compensating the owner. Where drainage schemes will affect nature reserves he can modify them to minimise or avoid damage.

In addition, protection may be given to any species of flora or fauna in any part of the State. Hunting regulations for game can be specified and wildlife dealing is also regulated by licence. The import and export of both living and dead organisms may be controlled.

The Water Pollution Act, 1977, gives power to the local authority to licence and monitor all discharges to rivers or lakes and to enforce standards of purity on them. Trade wastes to sewers are also licensed and regulations can be made for preventing discharges from boats.

The Foreshore Act, 1933, allows public access to be prohibited on any part of the foreshore and also authorises the Minister for Tourism and Transport to prevent the removal of mineral matter, seaweed or bent grass from the somewhat wider zone of the seashore.

Among the provisions of the Forestry Act, 1946, is one requiring that anyone felling a tree outside an urban area must obtain a licence to do so. This can be refused by the Minister for Fisheries & Forestry and, if it is allowed, conditions may be included for the planting of trees to compensate for the felling. Where a licence is refused on the grounds of amenity, the planning authority can be obliged to acquire the site.

The Fisheries (Consolidation) Act, 1959, is a complex instrument which, among other things, allows the Minister to set close seasons for some freshwater fish and marine shellfish. Certain fishing methods for freshwater and sea fish can be prohibited and there is also a provision to totally protect shellfish for a period of up to three years. It is an offence for anyone to allow deleterious matter to enter a watercourse. Sea fish regulations mainly deal with undersized fish whose capture is illegal.

Successful conservation must in many cases include the acquisition of a site and before the Wildlife Act, 1976, was passed this was only open to a private person or company, a planning authority or the Office of Public Works. Under the State Property Act, 1954, and the earlier Land Acts this last body has

acquired sizeable tracts of land, some of which is manged as National Parks or Monuments.

Form of the Report

When an area is chosen for inclusion its broadest features are described, together with any particular aspect of interest. It is evaluated against similar sites within the county and outside it and is also given a rating. This scale has four points: international, national, regional and local importance. Since the majority of examples of a certain type of habitat are not listed at all, the 'local' rating should not be thought of as the actual bottom of the scale.

The ratings are derived quantitatively but they may be conveniently interpreted as the distance a specialist in a particular field would be prepared to travel to see the feature involved. Thus 'international' implies a change of country, 'national' a journey across the country, 'regional' a trip within a province and 'local' a visit if the researcher happened to be in the same regional area.

The current use of each area may be mentioned in the body of the report and where a site seems specially suited for educational studies by reason of its character or accessibility, this has been indicated.

Priority of areas is a measure of the relative urgency necessary for protection. Sites given A priority require immediate action to safeguard their quality. These generally include woodlands and areas subject to current development.

2. Description of the County

Wexford is a hilly county dominated by NE-SW trending ridges of slates and shales. These have been invaded by granite in the west which creates the upstanding peaks of the Blackstairs Mts. As one moves south-eastwards the Ordovician rocks are replaced by the underlying Cambrian which covers more ground in Wexford than anywhere else in the country. The Saltee Islands are formed of the even older Precambrian. Except for Forth Mt. where quartite forms a resistant ridge, the profile of the south-east is low. The coastline is predominantly one of soft sediments, either glacial drift or recently deposited sand and shingle. The long sandy beaches are exemplified by Raven Point and Ballyteigue and the coast is remarkable for the number of sea inlets enclosed behind such features. Sometimes they have been completely closed by the action of the sea, as at Lady's Island Lake, but more often they have remained as muddy bays, covered with water for only a short time at each tide and providing abundant food for shorebirds. Bannow Bay, the Cull and Wexford Harbour are three examples, though the latter area has been partly modified by land reclamation. A few rocky headlands do exist on the coast. In the west the long isolated Hook peninusla presents a clear example of Carboniferous stratigraphy while the Saltee Islands have prominent sea cliffs with many nesting seabirds.

The scientific interest of the county is largely associated with the coastline though the Ordovician rocks inland contain some important fossil sites. The Wexford coast forms the centre of distribution of strand and light soil communities in Ireland. Many species are favoured by the relatively low rainfall, the

high sunshine levels and the abundance of sand. In addition the coast lies at the closest point to Britain from which many species immigrated in post glacial time. These factors seem particularly important for insects and other invertebrates and for plants such as clovers. Lady's Island Lake is an important area for these organisms as are the Raven and Ballyteigue. The Barrow estuary up to New Ross seems also a centre of their distribution.

The entire county was covered by ice at some stage of the glacial period but the extent of the last glaciation was limited to the eastern fringe. Much of interest remains from this time: the Doo Lough area provides an excellent kettlehole topography while the intense cold in the adjacent Camaross area, which was not ice-covered, caused palsa mounds or pingos to develop in the permafrost of the time. Traces of these structures persist to-day.

Woodland is relatively frequent in Wexford because of the incidence of rocky outcrops which are non-agricultural. While there are fewer woods than in the adjacent counties of Wicklow or Waterford a substantial area of planted conifers exists on the east side of the Blackstairs mountains and of semi-natural deciduous woods around Enniscorthy. Killoughrim Forest is a valuable site in this locality.

AREAS OF SCIENTIFIC INTEREST

Name of Area	Grid Ref.	Rating	Priority	Scientific Interest	Page No.
Hook Head	X 72 97	International	C	Geological, ornithological, botanical, zoological stratigraphy and fossils are important as are shallow water marine communities.	18
Moyne Middle	S 971 423	International	C	Geological. Type and only location for a fossil trilobite in Europe.	21
Greenville	S 963 414	International	A	Geological. Fossil faunas in these rocks of particular interest.	23
Camaross crossroads	S 87 24	International	A	Geomorphological. Fossil pingos remain from the glacial period.	25
Newtownwood village	S 80 06	International	C	Geological. Exposure of glacial till of importance in dating raised beach.	28
Wexford Slobs	T 08 24 T 07 16	International	B	Ornithological. Wintering area for white-fronted geese and other wildfowl and waders.	30
Lady's Island Lake	T 10 06	International	B	Botanical, zoological, ornithological. Unusual plant communities include cottonweed (Otanthus) stand. Many wintering wildfowl.	35
St. Helen's Harbour	T 15 10	National	C	Geological. Best exposure of Rosslare Complex; pre-caledonian rocks.	40
Saltee Islands	X 95 79	National	B	Ornithological, botanical, zoological. Varied population of breeding seabirds; interesting terrestrial ecology.	42
Doo Lough Kettleholes	T 10 29	National	B	Botanical, zoological, geomorphological. Fresh glacial topography with water-bodies of great variety.	46
The Raven	T 11 23	National	C	Botanical, zoological, ornithological. Undisturbed dunes with many unusual communities. Important for passage migrant birds.	50
Ballyteigue dunes	S 93 06	National	B	Botanical, zoological. Good dune development with many interesting communities and rare species.	54
Macmine marshes	S 98 32	National	C	Botanical, zoological. One of the largest reedswamps (Phragmites) in the country, with unusual species.	58

Name of Area	Grid Ref.	Rating	Priority	Scientific Interest	Page No.
Killoughrim Forest	S 89 41	National	A	Botanical, ecological. Large regenerating deciduous wood of great ecological value.	61
Kilmore Quay shore	S 95 03	Regional	C	Geological. Foreshore exposure of Rosslare Complex.	65
Ballymoney strand	T 22 60	Regional	C	Geological, botanical. Good examples of the major local rock types.	67
Curracloe Coastal area	T 1127	Regional	B	Geological, botanical, zoological. Fine exposure of a glacial till. Calcareous marshes and dunes of ecological interest.	69
The Cull	S 93 06	Regional	B	Ornithological, botanical. Varied wintering bird population. Plant communities with southern species.	73
Tacumshin Lake	T 05 06	Regional	A	Ornithological, botanical. Wintering bird populations include large numbers of brent geese. Ecology of lake bed of interest.	76
Riverbank at New Ross	S 72 28	Regional	C	Botanical. Community on inundated banks of ecological interest.	80
Ballyhack	S 70 10	Regional	A	Botanical. Well-developed annual communities on thin soils - Trifolium spp. abundant.	83
Barrow salt-meadows	S 71 14 S 69 18	Regional	C	Botanical. Unusual saltmarsh communities restricted to this part of Ireland.	86
Bannow Bay	S 83 10	Local	C	Ornithological, botanical. Large wintering bird populations and interesting dune and saltmarsh floras.	89
Mt. Leinster & Blackstairs	S 83 52	Local	C	Botanical, zoological. High-level species occur in variety.	93
Urrin head-waters	S 86 48	Local	B	Botanical, zoological. Good development of acidic communities.	96
Forth Mountain	S 97 18	Local	A	Botanical, zoological. Fragments of heathland of ecological interest.	99
Castlebridge marsh	T 04 25	Local	C	Botanical, zoological. Rich brackish marsh communities, including reedswamp.	102

Name of Area	Grid Ref.	Rating	Priority	Scientific Interest	Page No.
Ballynabarny Wood	S 99 41	Local	C	Botanical, zoological. Natural secondary woodland with good range of species.	105
Oaklands wood	S 71 26	Local	A	Botanical, zoological. Oakwood of ecological importance.	108
Keeragh Is.	S 86 05	Local	C	Ornithological. Nesting colonies of seabirds include cormorant and arctic tern.	111
Bunclody slate quarry	S 89 54	Local	B	Botanical, zoological. Heath vegetation with considerable range of species.	114
Courtown dunes	T 20 57	Local	B	Botanical, zoological. Ecological interest of wooded sand dunes.	117
Courtown glen	T 19 56	Local	C	Botanical. Rich ground flora amongst planted trees.	120
St. Margaret's Coast	T 13 06	Local	B	Botanical. Well developed coastal communities.	123

HOOK HEAD

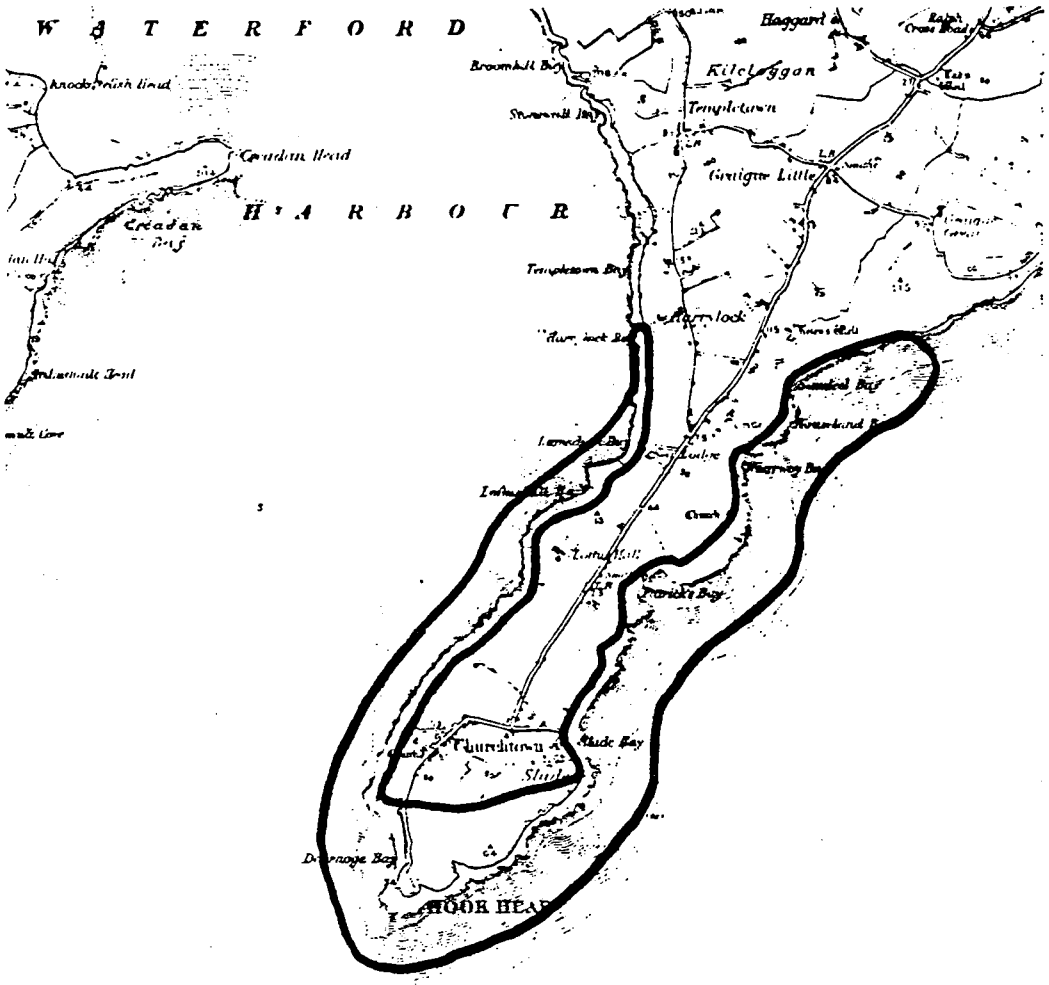
Grid Reference	X 72 97
Area	760 ha
Interest	Geological, Ornithological, Botanical, Zoological
Rating	International importance
Priority	C

Hook Head shows an excellent example of the junction between the Devonian Old Red Sandstone and the overlying Carboniferous limestone. The latter forms low rocky cliffs around the extremity of the point though small sandy beaches sometimes occur below them, as at Slade. The rock itself contains an abundance of fossils, especially echinoderms and also has interesting sedimentological structures derived from the old environments, riverine sandstone and marine clearwater limestone. Its structure, gently dipping with abundant joints, creates platforms and niches for a wide variety of marine life both plant and animal. On land the golden samphire (Inula crithmoides) and sea lavender (Limonium binervosum) are characteristic of the rocks together with sea thrift (Armeria maritima and rock spurry (Spergularia rupicola). A small patch of saltmarsh with the strawberry clover (Trifolium fragiferum) occurs below Loftus Hall.

The interest in its bird life stems from its position, as migrant species are attracted to it as a landfall and also by moving along the coast from both sides before flying south over the sea. It also lies within the range of migrating seabirds in both spring and autumn and large numbers are often seen, particularly after storms.

Evaluation The area is internationally known for its geological features and is a very good educational site. It is also probably the best area in Wexford for shallow-water marine communities.

HOOK HEAD Scale 1 : 63360



Vulnerability Any restriction of access along the coast would hinder the usage and value of the site, as would development close to the shore. Over-collecting of animals from the offshore areas by divers is also likely to lead to an impoverishment of the community. The bird life will be little affected by any of these developments.

Recommendations Consideration should be given to establishing a nature trail in this area as it is well used at present and shows many features appreciable to the layman. The advisability of establishing an offshore nature reserve should be investigated with the Forest and Wildlife Service.

In view of the peninsula's characteristic and still largely uniform building style consideration should be given to making it an Area of Special Amenity. This would fit in well with its scientific values.

In the event of oil spillage dispersants should not be used in the vicinity of this site in order to preserve the diversity of marine life.

MOYNE MIDDLE

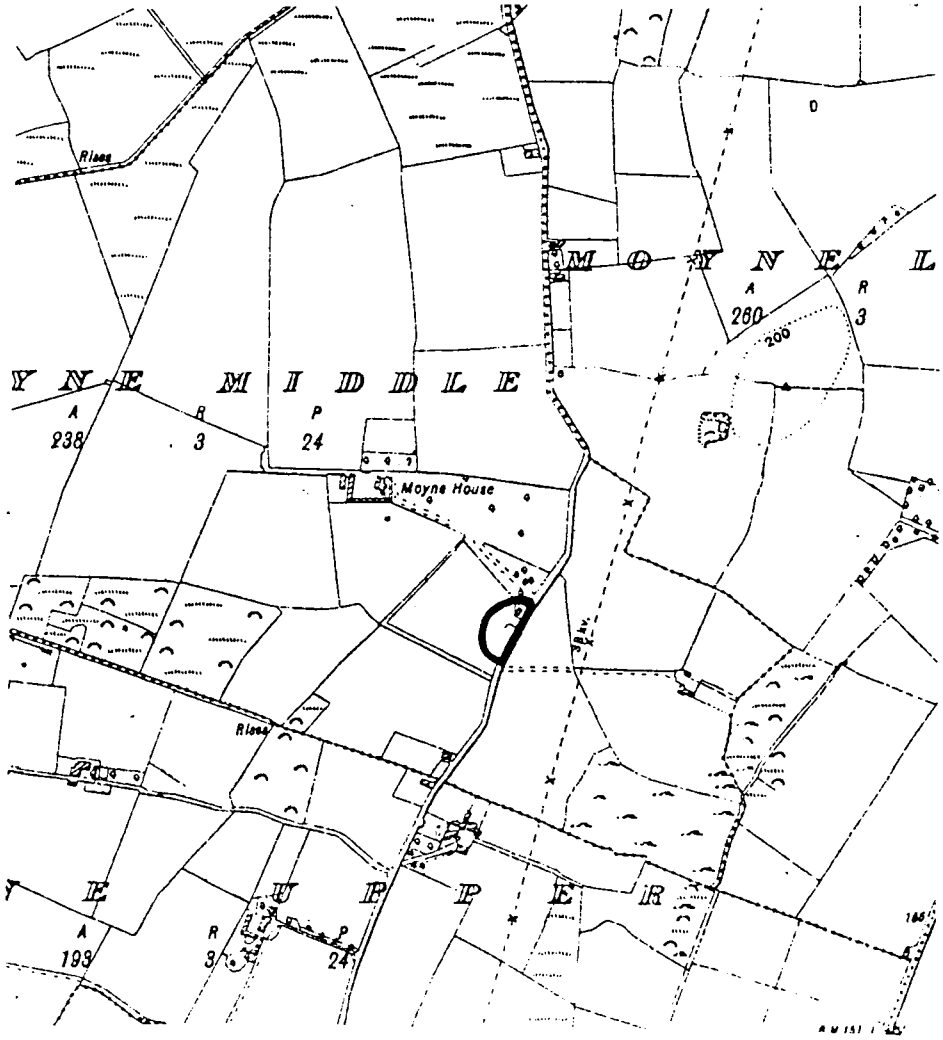
Grid Reference	S 971 423
Area	0.3 ha
Interest	Geological (Palaeontology)
Rating	International importance
Priority	C

A small overgrown quarry lies on the south western side of a knoll in Moyne Lower and it has produced fossils of a trilobite of North American faunal affinities. These fossils are found in volcanic ash of Ordovician age which is an unusual location.

Evaluation This is the type locality for the species and its only station in Europe. Since it also occurs in a unique section it is considered to be of international value.

Vulnerability and Recommendation Quarrying, by producing new exposures of the rock, might improve the site. Infill by refuse dumping is the only major threat to the area. It should be prevented.

MOYNE MIDDLE Scale 1 : 10560



GREENVILLE

Grid Reference	S 963 414
Area	0.4 ha
Interest	Geological (palaeontology, stratigraphy)
Rating	International importance
Priority	A

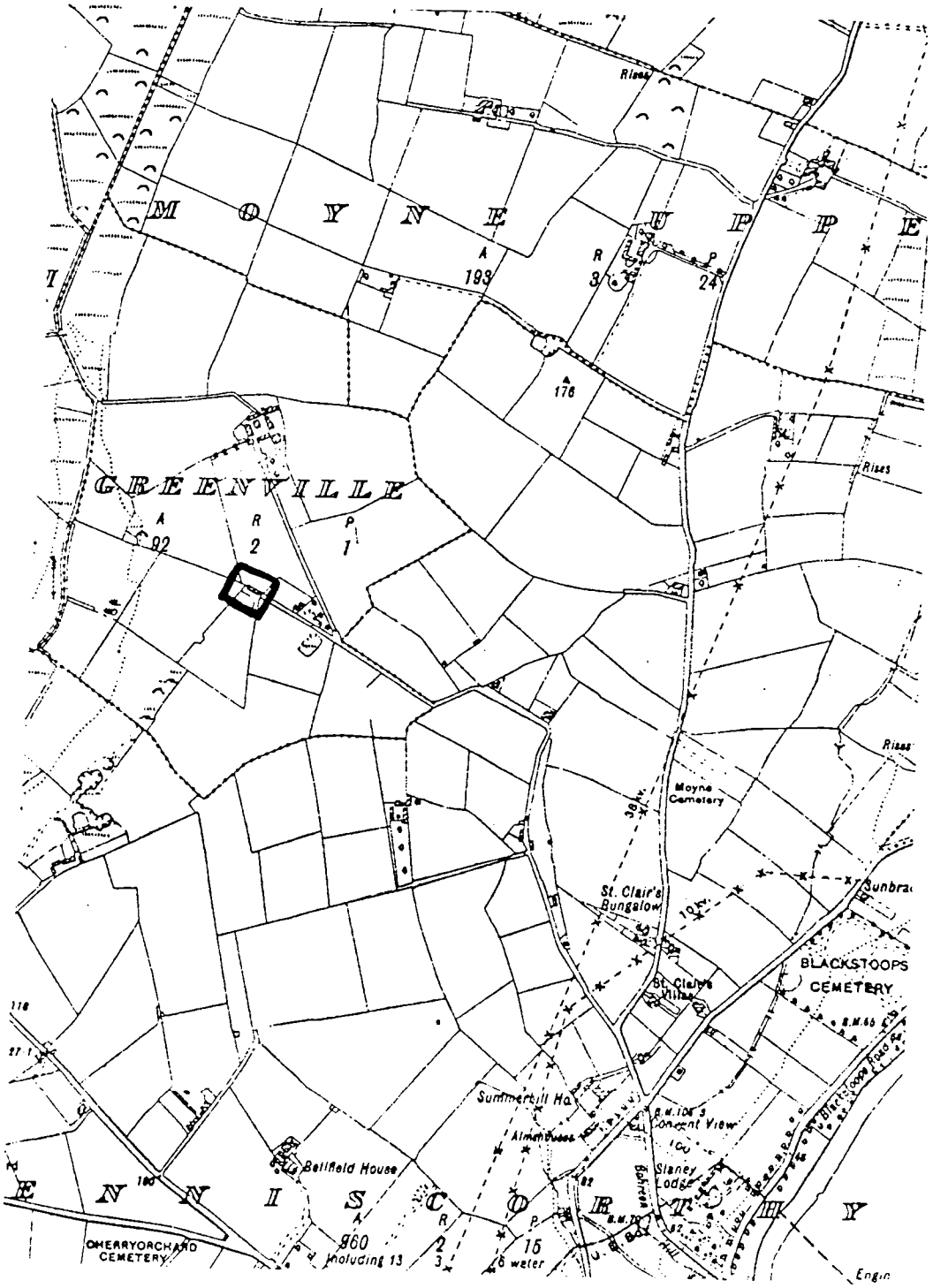
The site is an outcrop of Ordovician rocks in a disused farmyard. It has yielded comprehensive trilobite and brachiopod faunas from the period and is the type locality for one species - Trihodus agnostiformis.

Evaluation As a type locality for a trilobite species the site is of international significance for professional geologists.

Vulnerability The fossils were obtained by excavation so further exposure of the rock might be of benefit. The laying of a concrete yard or other development is the only major threat.

Recommendations No development that would involve obscuring the rock surface in this small area should be permitted.

Scale 1 : 10560



CAMAROSS CROSSROADS

Grid Reference	S 87 24
Area	20 ha
Interest	Geological (geomorphology)
Rating	International importance
Priority	A

The land in this area is generally poorly drained pasture and it is unusual in the prevalence of circular mounds or areas of clay banks. These are the remains of pingos (palsas) which are ice-cored mounds that form in conditions of permafrost during a glacial period. An ideal fossil pingo consists of a raised ring 30-100 m across and 2-5 m high, enclosing a basin. They are formed when a lens of ice forms within the soil raising the surface into a hillock. When thawing occurs the soil slips downwards piling up at the base of the mound. When the ice itself melts a ridge of soil is left on the ground around a small pond.

The group of such structures at Camaross is extensive though some have been flattened during the course of agriculture. The attached map gives an impression of those that have been identified.

Evaluation Fossil pingos are now being widely recognised in western Europe, for example, in Scandinavia, the Low Countries, and Britain. They seem to be exceptionally common and well developed in that part of Ireland not covered by the last (Midlandian) glaciation. At Camaross their quality and accessibility is unsurpassed in Ireland.

Vulnerability The removal of these soil banks by bulldozing is the major threat to them and it has occurred in many places on the better soils.

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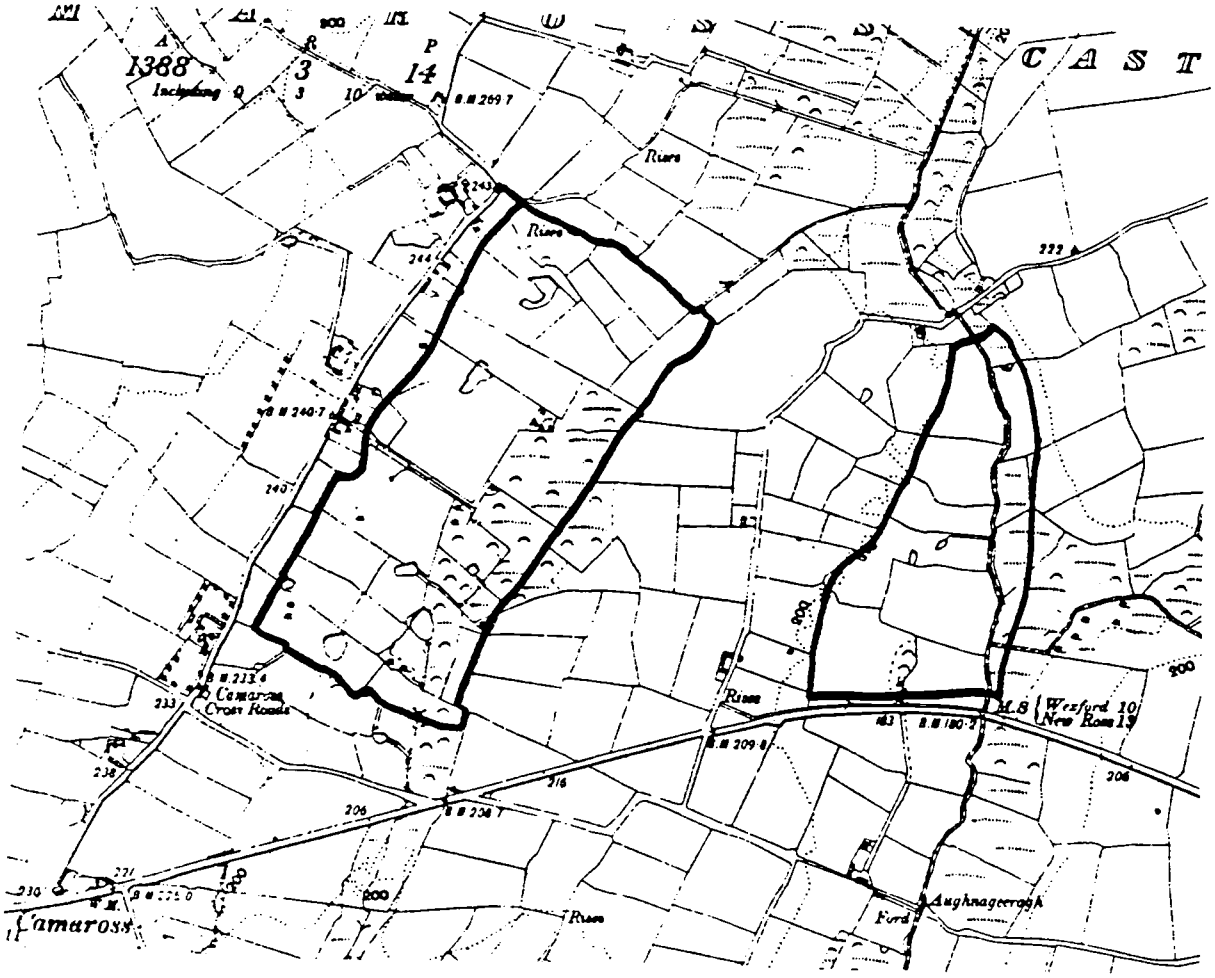

Recommendations The site deserves basic protection in view of its importance. No development should be allowed to interfere with the structures within the outlined area and grants for land reclamation should not be allocated. The relevant agency (Dept. of Agriculture) should be notified of the scientific importance of the area.

NEWTOWN-WOOD VILLAGE

Grid Reference	S 80 06
Area	1.3 ha
Interest	Geological (stratigraphy)
Rating	International importance
Priority	C

The coastal cliffs south of Cahore Point are made up of four components. Glacial till from the Munsterian glaciation lies on top of a loosely defined deposit, itself resting on a raised beach. The present height of sea level has cut a shore platform slightly below the raised beach but the shore above is subject to erosion by storm waves.

Evaluation This is one of the finest sections in this type of deposit in western Europe. It is of prime importance for determining the age or stratigraphical horizon of the raised beach. Raised beaches of considerable age are widely found but their precise dating is usually impossible. In this case the sealing of the head deposit by till allows dating.

Vulnerability The site is in danger from marine erosion but any defence works would obscure the features of value. There is also some use of the area for recreation but this causes no threat.

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

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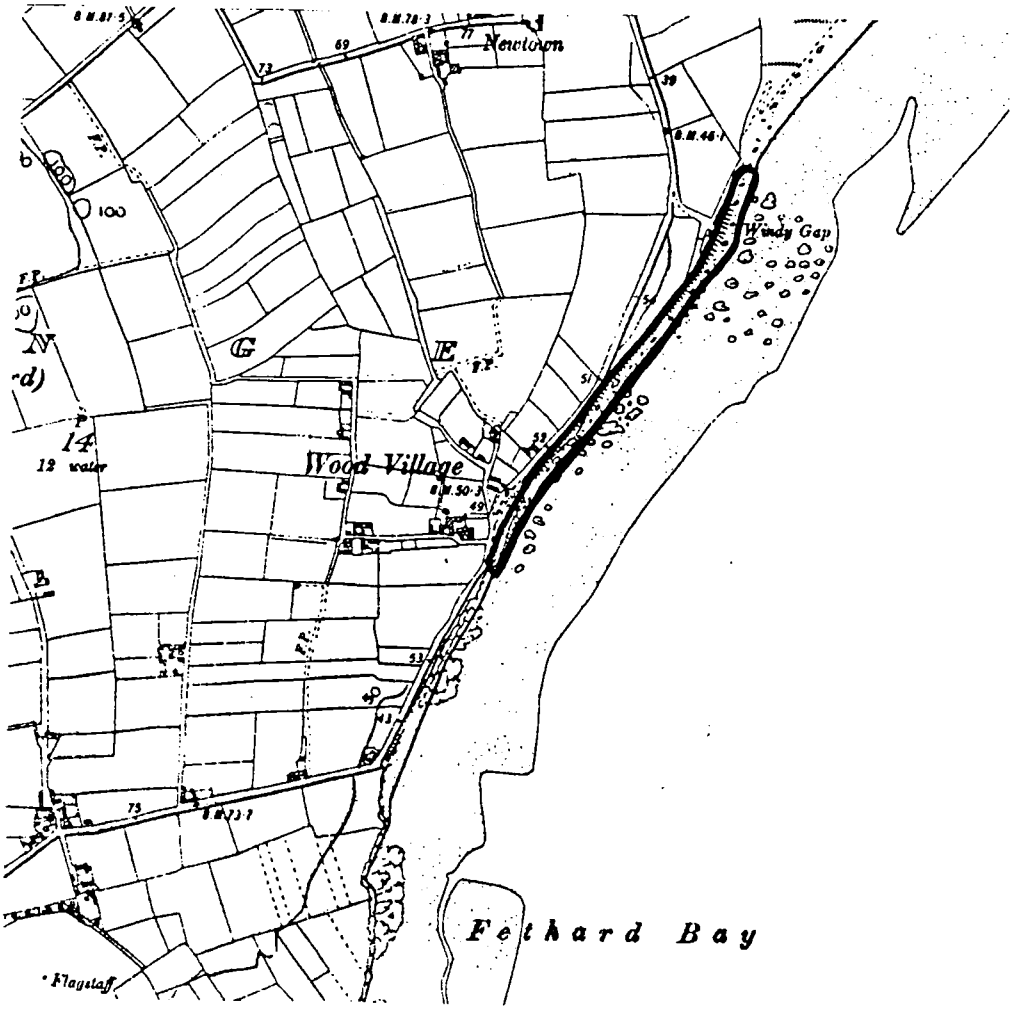

WEXFORD SLOBS

Grid Reference	T 08 24, T 07 16
Area	3480 ha
Interest	Ornithological
Rating	International importance
Priority	B

The sloblands around Wexford Harbour were reclaimed from the sea in the 1840's by the construction of dykes across the mudflats. In each there remains a central channel which is filled by drainage from the fields and emptied by pumping into the sea. All the rest of the 2000 ha is agricultural land, on the North Slob largely tilled for cereals but on the South Slob left as grassland for a grassmeal plant.

The primary interest of the area is its wintering birdlife and this, being mobile, is shared by both the Slobs. For this reason they are treated together. The flocks of white-fronted geese at 5-6000 are the most notable feature but six other types of goose have been recorded. Before 1940 it was the grey lag goose that was present in such large numbers but they declined when an agricultural change in Scotland provided additional food for them. The latest change has been the increase of Bewick's swans which now number 3-400, roughly four times their former population. Wildfowl counts over the past ten years or so allow the average (and maximum) numbers that are likely to occur in any winter to be listed.

White-fronted goose	2597 (7200)
Barnacle goose	26 (36)
Brent goose	25 (600)
Mallard	1099 (3800)
Teal	261 (2000)
Gadwall	13 (60)
Wigeon	379 (2750)

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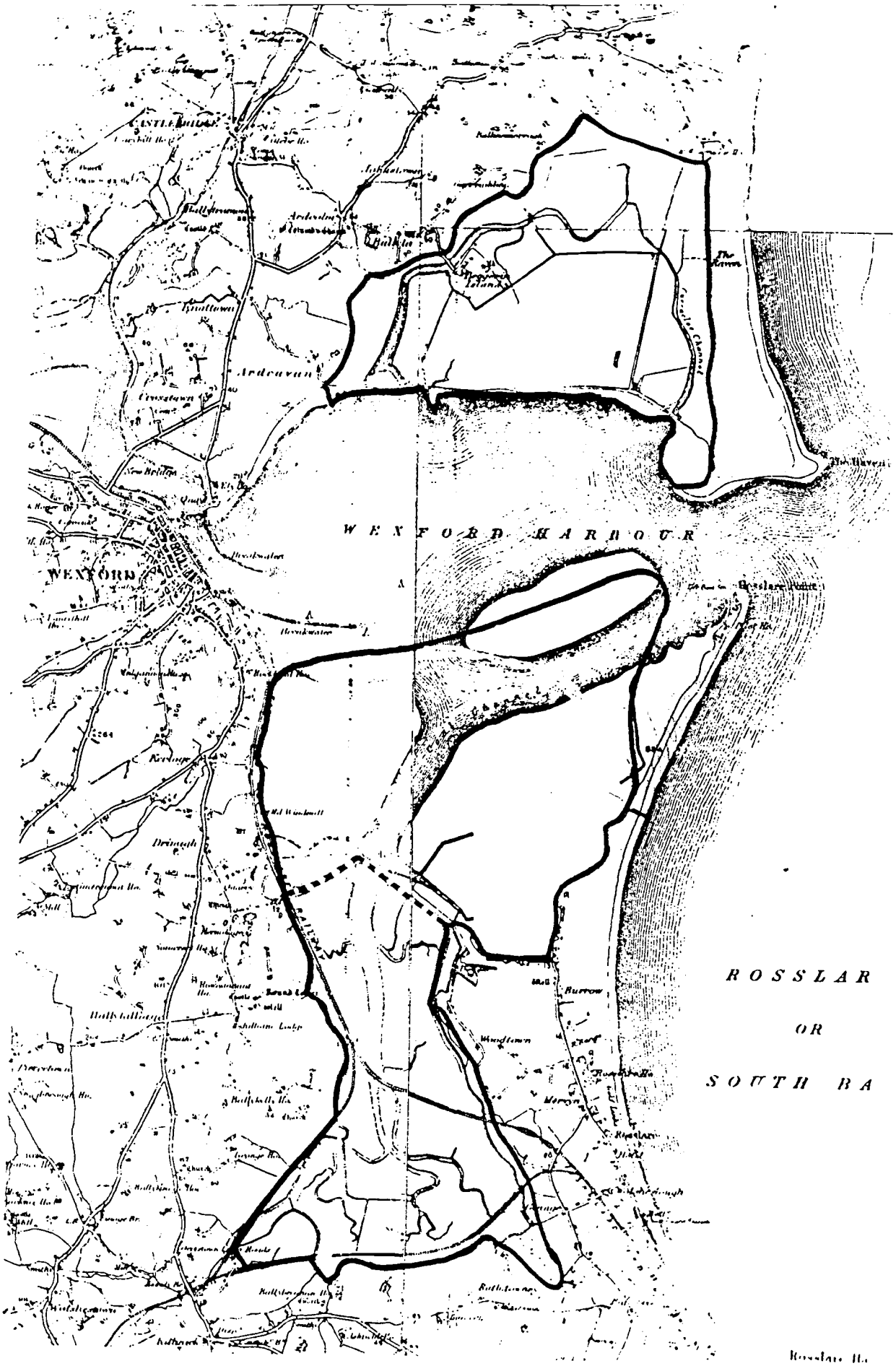

Pintail	91 (1150)
Shoveler	41 (160)
Scaup	18 (800)
Tufted duck	110 (650)
Pochard	46 (550)
Goldeneye	9 (300)
Red-breasted merganser	1 (40)
Shelduck	30 (160)
Mute swan	91 (268)
Whooper swan	12 (70)
Bewick's swan	126 (680)

Fifteen species of wading birds are common on the Slobs and in certain circumstances they can add up to about 60,000. The majority of these are species of grassland such as golden plover, lapwing and black-tailed godwit but sizeable numbers of curlew, dunlin and oystercatchers also occur. The following list gives a summary of the position.

Golden plover	483 (1865)
Lapwing	699 (2418)
Curlew	397 (889)
Black-tailed godwit	90 (667)
Dunlin	13 (197)
Oystercatcher	67 (439)
Redshank	22 (306)
Spotted redshank	14 (132)
Greenshank	5 (34)
Whimbrel	2 (11)
Ruff	5 (38)

Altogether 190 species of bird have been recorded in this area including many rare vagrants. Being at the S.E. corner of Ireland it is on a migration route for birds entering and leaving the country.

Evaluation The area provides a wintering ground for more than half the population of the Greenland white-fronted goose, a species which is declining throughout the rest of the country. It is also of international significance for its numbers of pintail and black-tailed g[illegible]t.

The North Slob inc[illegible]es hides and interpretative facilities associated with the Wexford Wildfowl Reserve - 150 ha of land owned jointly by the Department of Fisheries and Forestry and the Irish Wildbird Conservancy and managed as grassland by the farmer. It therefore has considerable educational use and has attracted about 15000 people/year in recent years.

Vulnerability The goose population is dependant on grass for food and thus the proportion of pasture or grassland on the Slobs is an important factor in their survival. One of the reasons for the establishment of the Wildfowl Reserve was the decline in grassland on the North Slob. Disturbance can also be a threat even if food is plentiful and the birds are susceptible on their feeding grounds or roosting areas. The geese generally fly to sand banks in Wexford Harbour at night time.

Recommendations The grass-meal factory is an important influence in maintaining the bird populations, as is the acreage of potatoes and stubbles in any winter. Research is being carried on to establish the optimum conditions for the wildfowl species and in view of possible changes in land use, it is important to keep in touch with the results.

The present level of visitor access and of controlled shooting creates an acceptable amount of disturbance and the bird population does not seem to suffer appreciable damage from it. More frequent shooting along the foreshore of Wexford Harbour, for example, should be discouraged.

LADY'S ISLAND LAKE

Grid Reference	T 10 06
Area	440 ha
Interest	Botanical, Zoological, Ornithological
Rating	International importance
Priority	B

The site is a large shallow lake which is brackish, especially at its southern end. It is surrounded by flat agricultural land from which several small streams flow in. Salinity varies from 1.89% at the northern end to 1.93% near the coastal barrier. This takes the form of a shingle ridge which allows some but not sufficient water to escape to sea. At times of flooding therefore it is artificially breached, causing large exposures of mud to become available. The shingle is the site of a famous colony of cottonweed (Otanthus maritimus), a plant very sensitive to human disturbance and rare outside the Mediterranean shores. It grows here with sea spurge (Euphorbia paralias), sea bildweed (Calystegia soldanella) and sea couch (Elymus junceiforme), avoiding the sandier tracts dominated by marram (Ammophila arenaria).

The lake bed where it is shallow enough, is covered by various pondweeds (Ruppia maritima, Potamogeton pectinatus, Zannichellia palustris) or stoneworts (Chara, Tolypella, Lamprothamnion). The former provide food for herbivorous wildfowl, such as swans, wigeon and coot. At the edges, orache is prominent on the sandier soils (Atriplex littoralis, A. hastata, A. of glabriuscula) with species such as crowfoot (Ranunculus baudotii, R. sceleratus) or goosefoot (Chenopodium rubrum) on the clayier sites. The golden dock (Rumex maritimus) is found in certain years also. Where more permanent water exists, marsh plants like sea club-rush (Scirpus maritimus), water dock (Rumex hydrolapathum),

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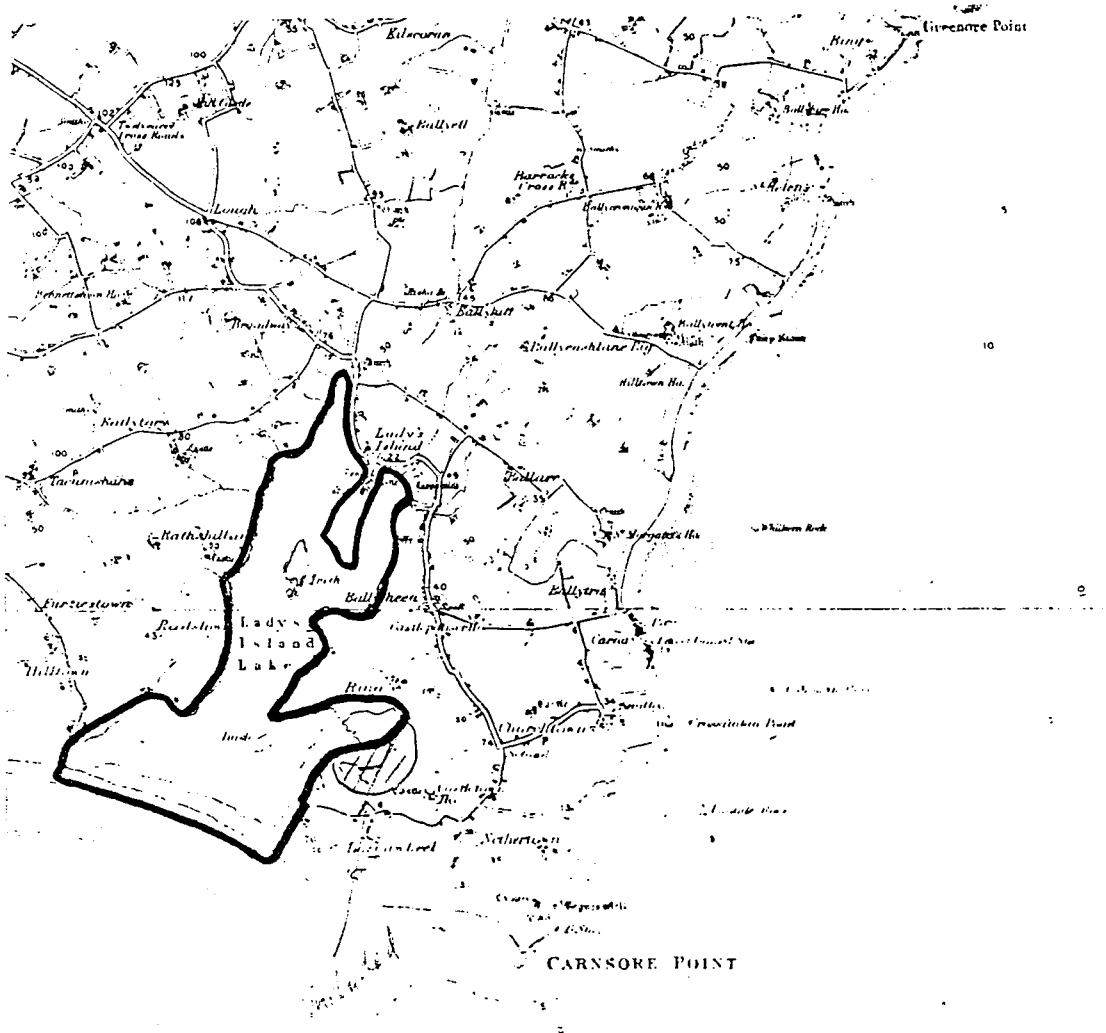

gipsywort (Lycopus europaeus) and burr marigold (Bidens cernua) form a community. Pools with several duckweed species (Lemna gibba, L. minor, L. polyrhiza) also occur and there is a sizeable area of reeds on the east side which provides cover for nesting water birds. The sandy ground at the south end of the lake contains many interesting invertebrates and plants, in particular lesser centaury (Centaurium pulchellum, allseed (Radiola linoides), dodder (Cuscuta epithymum), eyebright (Euphrasia curta) and various clovers (Trifolium striatum, T. scabrum, T. ornithopodioides and where the ground floods T. fragiferum). A large number of granite boulders on the sand is a characteristic feature of the east side.

Three islands occur in the lake and except for Lady's Island itself they are sometimes used by nesting terns and other birds, including mute swans. The autumn gathering of moulting swans at 300-400 is also a noteworthy feature. At that time of the year the lake is visited by a wide variety of migrant waders either from northern Europe or occasionally North America. Wintering wildfowl occur in good numbers and average (and peak) numbers in the last five years are as follows:

Mallard	22	(151 (Jan.)
Teal	99	(526 (Jan.)
Gadwall	6	(48 (Nov.)
Wigeon	64	(5130 (Dec.)
Pintail	5	(124 (Dec.)
Shoveler	11	(240 (Dec.)
Pochard	1	(1850 (Nov.)
Tufted duck	16	(775 (Nov.)
Scaup	27	(77 (Nov.)
Goldeneye	1	(18 (Jan.)

Red-breasted merganser	12 (80 (Jan.)
Mute swan	26 (595 (Dec.)
Whooper swan	2 (95 (Dec.)
Bewick's swan	2 (268 (Dec.)
Coot	372 (2850 (Nov.)

Evaluation An area of varied habitats with a wide range of interests, Lady's Island Lake is of an overall international importance. The birdlife and many of the plant communities are of national value while there are several peculiar forms of plant species that have yet to be satisfactorily named. The cottonweed stand is the largest in northern Europe and the algae Lamprothamnium papulosum has so far been found in only one other lake in Ireland.

Vulnerability and Recommendations Disturbance of the tern colonies which nest on the islands is a significant threat as it has been responsible in the past for the birds abandoning the site. Shooting pressure in winter is high at the weekends and should be curtailed if it inhibits feeding during the midweek period also. The low average numbers of wildfowl as compared to the peaks indicates this frequent disturbance.

The plant communities are now in balance with the fluctuating water levels of the lake but the periodic opening of the channel should be done carefully to minimise vegetation damage. Development of chalets or caravan parks at the southern end of the lake should generally be discouraged and if specific proposals are made the should be subjected to the closest scruting for their impact on the valuable sites, even those at some distance away. There is a good case for protecting this end of the area or the entire lake with a Special Amenity Area Order before the pressure for development becomes acute. A Conservation Order for the cottonweed site could then be reapplied.

Pollution of the lake is not significant at the moment but in view of its shallowness care should be taken with the siting and treatment of any new effluent input.

ST HELEN'S HARBOUR*

Grid reference	T 15 10
Area	4.5 ha
Interest	Geological
Rating	National importance
Priority	C

The area consists of a wave-cut platform which is largely intertidal. On this the pre-Caledonian (Ordovician and Silurian) basement rocks are exposed, showing a complex sequence of deformation and intrusion features.

Evaluation This is the most interesting exposure of the Rosslare Complex and is the only good exposure of its type for teaching purposes in Britain or Ireland.

Vulnerability Development on the shore is the only threat to this area and it seems most unlikely to happen.

Recommendation Land use and public access should remain in its present form.

* Max (M.D) & DH Dhonan (N.B.) A new look at the Rosslare Complex, Sci. Proc. R.D.S.4 (1971) 103-120.

Baker (J.W.) The petrology of the metamorphosed Precambrian Rocks of south-easternmost Co. Wexford. Proc. R.IA 69B (1970) 1-20.

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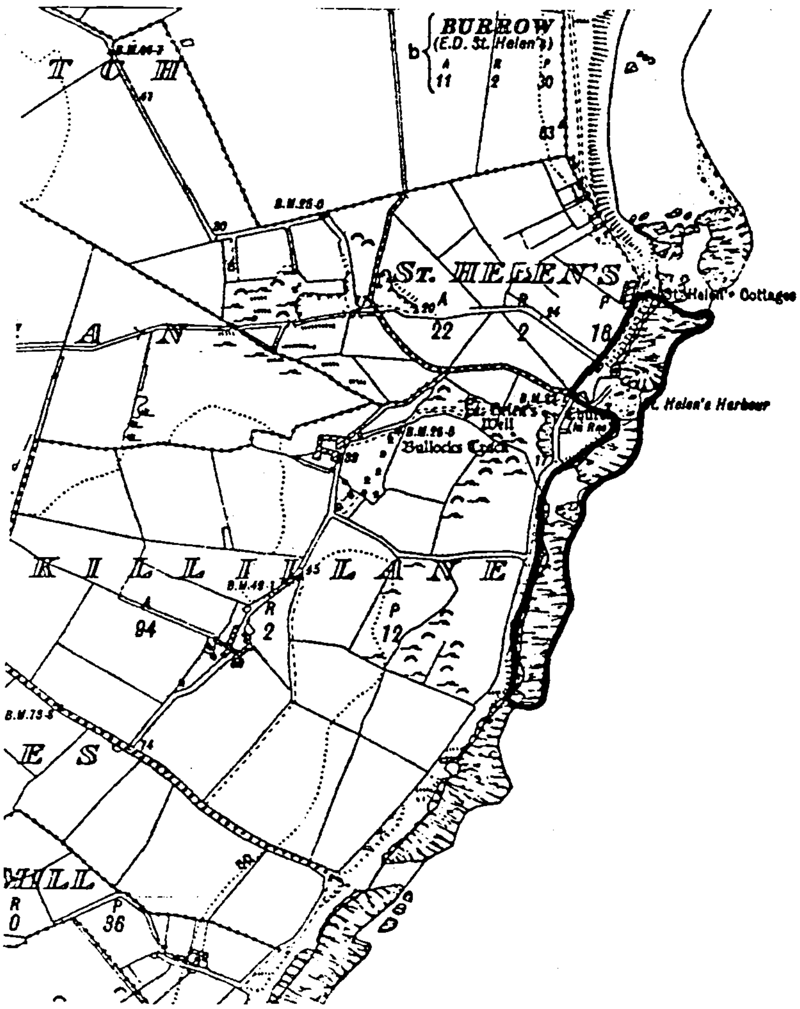
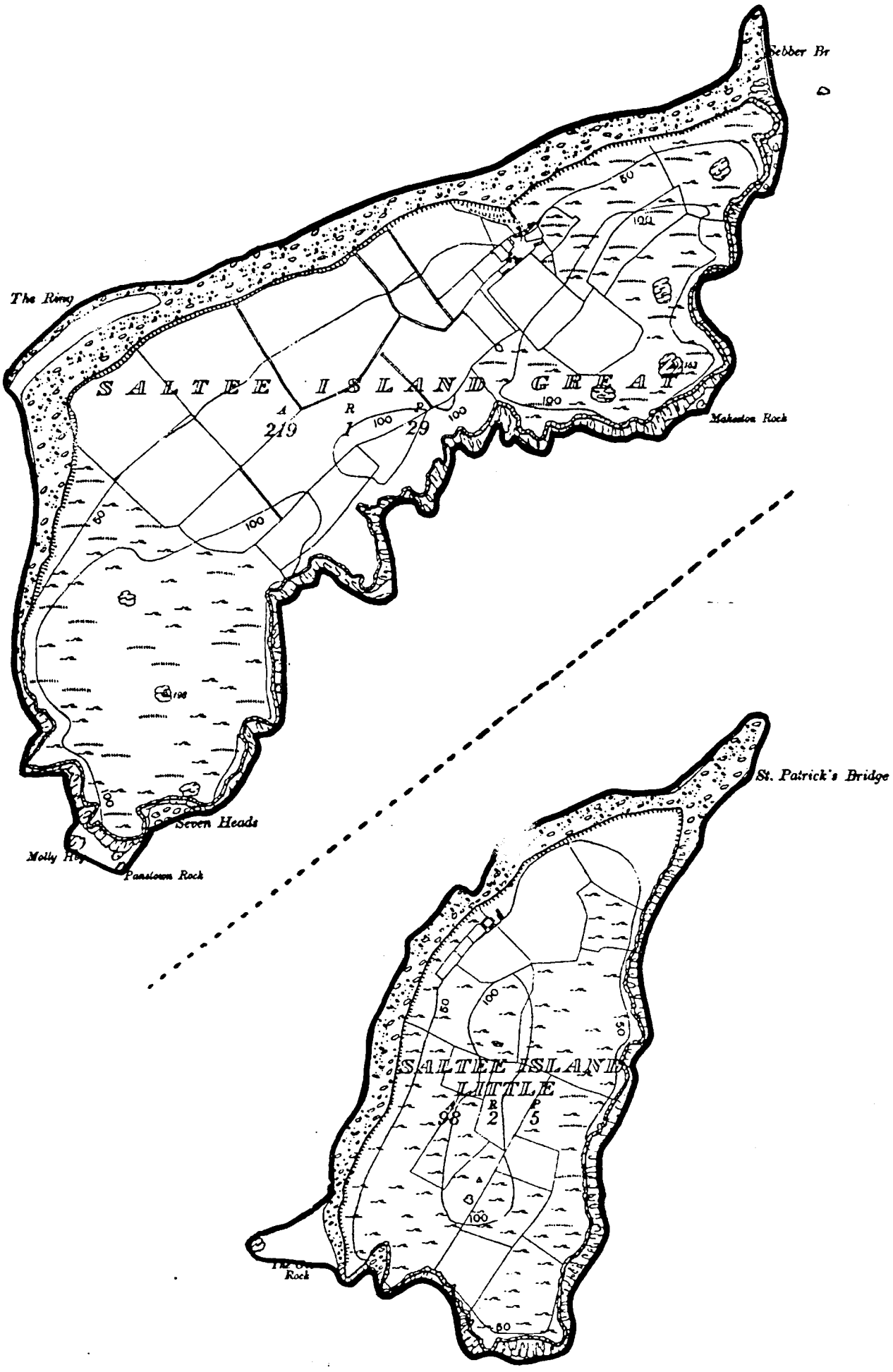

BURROW
(E.D. St. Helen's)
ST. HELEN'S
St. Helen's Cottages
St. Helen's Harbour
Bullocks Creek
KILLILLANE

SALTEE ISLANDS

Grid Reference	X 95 79
Area	149 ha
Interest	Ornithological, Botanical, Zoological
Rating	National importance
Priority	B

The rocky Saltee Islands are formed of Precambrian gneiss and granite and are a continuation of Crossfarnogue or Forlorn Point on the mainland. Little Saltee has a boulder beach on the western side and low cliffs on the east while higher cliffs surround much of Great Saltee, except on the north shore. Although once farmed, the vegetation is now largely a dense growth of bracken (Pteridium aquilinum) and some brambles (Rubus fruticosus). Large bluebells (Hyacinthoides non-scriptus) are characteristic of this community. On the thinner soils a sward including bent grass (Agrostis tenuis) and heathers (Erica cinerea, Calluna vulgaris) occurs while near the cliffs the vegetation responds to the presence of large bird colonies. Two maritime plants, rock spurry (Spergularia rupicola) and bladder campion (Silene vulgaris) flourish, along with sorrel (Rumex acetosa, R. acetosella). The more interesting plants are of maritime habit such as sea spleenwort (Asplenium marinum), golden samphire (Inula crithmoides), lesser centaury (Centaurium pulchellum) and red goosefoot (Chenopodium rubrum). Allseed (Radiola linoides) is found in this peat soil on rock while the marsh plants include greater birdsfoot (Lotus uliginosus), water purslane (Lythrum portula) and a St. John's wort (Hypericum elodes). Offshore, the plant and animal life is of considerable diversity and interest partly due to the southerly location.

The Saltees are probably best known for their birdlife. They harbour a very varied breeding population of seabirds and also


Sebber Br
The Rinny
SALTEE ISLAND GREAT
A R P
219 1 29
Mahaston Rock
Seven Heads
Molly Roy
Panstown Rock
St. Patrick's Bridge
SALTEE ISLAND LITTLE
A R P
98 2 5
Rock

are a major landfill of migrating land birds both leaving and arriving in Ireland. The seabirds can be listed in order of abundance.

	Great Saltee	Little Saltee
Herring gull	3600	2500
Razorbill	5805	75
Guillemot	4837	-
Kittiwake	3689	-
Puffin	750	25
Great black-backed gull	200	250
Lesser black-backed gull	150	300
Shag	236	72
Cormorant	-	300
Fulmar	170	20
Gannet	150	-
Storm petrel	50	-
Manx shearwater	50	-

The visiting passerine birds include large numbers of skylarks, goldfinches, thrushes and warblers. Depending on weather conditions a great variety of species can occur from eastern and northern Europe and from America. The other fauna has not been investigated systematically but is nevertheless thought to be interesting in view of the position and prevailing climate of the islands.

Evaluation The islands are of exceptional scientific interest, having good numbers of practically all seabird species nesting in Ireland and an interesting terrestrial ecology. In addition they are of high educational and amenity value.

Vulnerability Seabirds are vulnerable to disturbance during the breeding season and those on Saltee suffer considerably because the cliffs are relatively low and accessible. They are also controlled by food availability and other factors at sea, such as oil pollution and drift-netting.

Recommendations Although the islands are a private bird sanctuary no control of visitors is carried out. To reduce the level of disturbance it is suggested that the absolute number of visitors on popular weekends, particularly Whit week-end is reduced and that some control of their movements on the Great Saltee is introduced in conjunction with the owner. For example, the signposting of paths to the less vulnerable sites could be done with advantage. The appointment of a warden for about eight weekends at the critical time of year (May-June) should be considered also to reduce incidents of disturbance.

Drift netting should not be carried out in areas where birds are feeding and dispersants for oil spills not used in the vicinity of the islands unless a spill occurs in the middle of the breeding season. This prohibition will preserve the nature of marine life.

DOO LOUGH KETTLEHOLES

Grid reference	T 10 29
Area	48 ha
Interest	Botanical, Zoological, Geomorphological
Rating	National importance
Priority	B

The end moraine of the Midlandian ice advance has produced the fresh topography of the Screen hills, a hummocky area of hills and hollows. The hollows are kettleholes, formed by the decay of buried ice blocks during the melting phase. They are now mostly roundish ponds surrounded by pasture or tillage. A great variety of plant and animal communities is found. varying from open water to marsh. The Screen soils are acidic sands and so the species are generally adopted to acidic conditions.

The open water ponds generally have a fringe of water horsetail (Equisetum fluviatile) and bottle sedge (Carex rostrata) with bog bean (Menyanthes trifoliata) and marsh cinquefoil (Potentilla palustris). Where they are used for drinking by cattle a muddy shore is characteristic with rushes (Juncus bufonius, J. articulatus) and some lesser marshwort (Apium inundatum). Offshore, water starwort (Callitriche spp.) several species of pondweed. (Potamogeton spp.), water milfoil (Myriophyllum spicatum) and sometimes water crowfoot (Ranunculus fluitans) occur, though the water often gets too deep for plant life quite quickly.

More usually there is a wider zone of marshland and the following species are found, among others:

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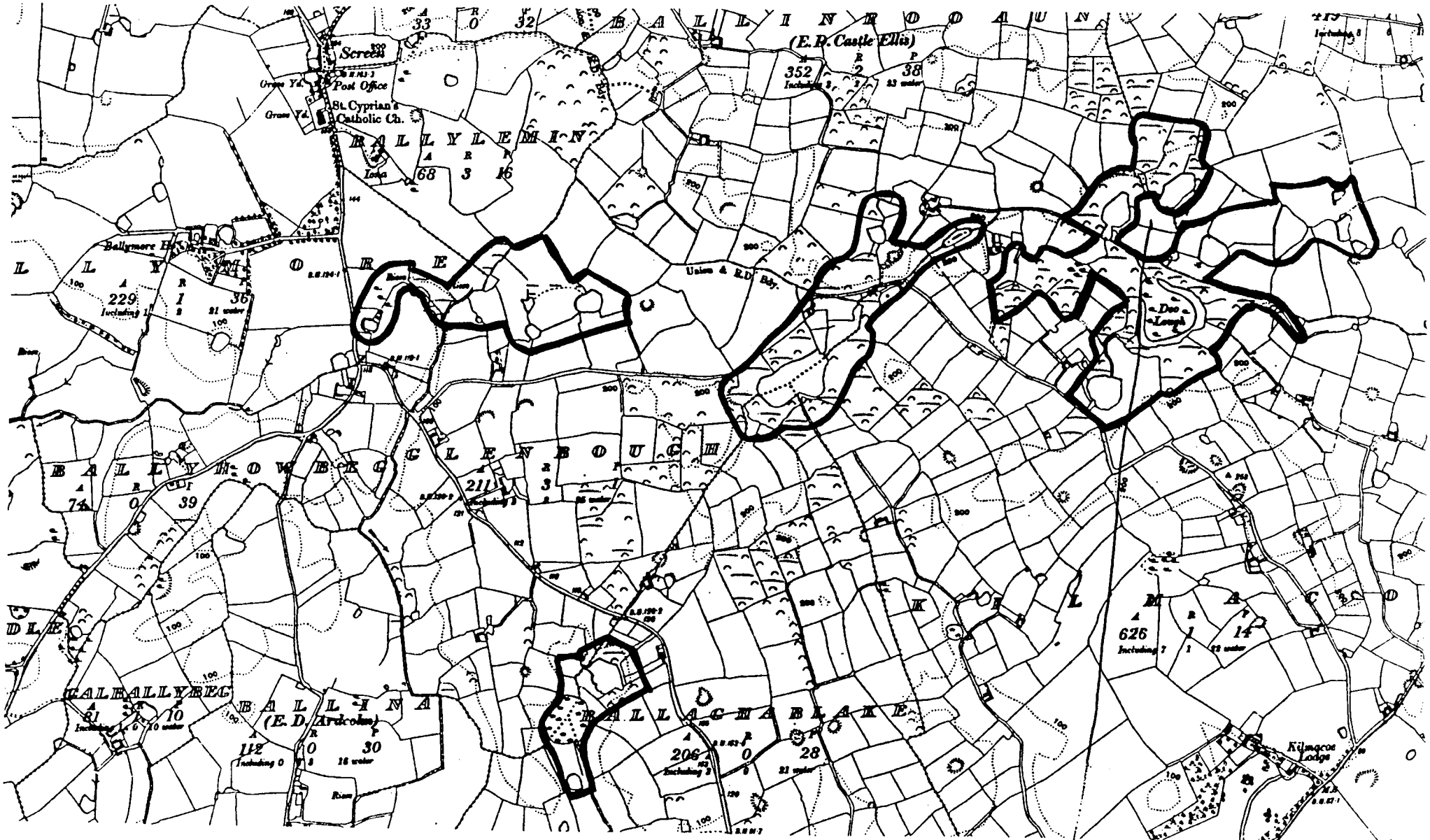

These fields need to go...

Lythrum salicaria	purple loosestrife
Mentha palustris	water mint
Galium palustre	marsh bedstraw
Epilobium palustre	marsh willowherb
Caltha palustris	marsh marigold
Valeriana officinalis	marsh valerian
Lycopus europaeus	gypsywort
Veronica scutellata	marsh speedwell

Water purslane (Lythrum portula), marsh St. John's wort (Hypericum elodes), star sedge (Carex echinata) and various mosses (Polytrichum commune, Aulacomnium palustre, Sphagnum subsecundum) show the acidic nature of the habitat that develops over time in the situation.

One of the extremes of the series is found at Doo Lough where a raised bog has developed on the accumulated debris of marsh plants. Here Sphagnum mosses, sundew (Drosera rotundifolia) heather (Calluna vulgaris) and bog cotton (Eriophorum angustifolium)occur on the peat with birch (Betula pubescens) and a buckler fern (Dryopteris carthusiana) near the edges. Waterwort (Elatine hexandra) has been found on mud in the lake itself.

Fish were seen in some of the lakes although the species is not known. The habitat also supports a few wildfowl, especially mallard, with moorhen and little grebe but the small size of each lake does not favour aquatic birdlife. The invertebrate fauna is characteristic of such an area - surface living bugs (Notonecta velia) and beetles (Gyrinus sp.) giving way to Ephemeroptera, flatworms and corixids below. Dragonflies and damselflies seem to occur in good numbers.

Evaluation The kettleholes present a fascinating series of aquatic and semi-terrestrial habitats which have developed differently despite very similar environmental factors. The area is among the six best such sites in the country and the bog one of very few in Wexford. The whole complex is of great potential for educational use.

Vulnerability Since the waterbodies occur in deep hollows they seem relatively secure from drainage. However eutrophication from sewage, or silage effluent or fertilizers on these sandy soils is a significant threat as is excessive trampling by cattle.

Recommendations Land use should remain in its present form but care should be taken to prevent any additional input of nutrients into the lakes. An examination of the possibility of using some of the larger lakes as educational or amenity areas should be made.

THE RAVEN

Grid Reference	T 11 23
Area	140 ha
Interest	Botanical, Zoological, Ornithological
Rating	National importance
Priority	C

The long line of sand dunes stretching south from Curracloe terminates in Wexford Harbour at Raven Point. It is planted extensively with conifers, maritime pine (Pinus nigra) being the most frequent. In many places, especially on the outer dunes, the trees have not grown well and have had little influence on the natural vegetation. The dunes are punctuated in two or three places by blowouts leading in from the beach but these are now stable. In vegetation they resemble the other dune slacks which are found between parallel dune ridges. The plant cover is well developed over the whole area and a complete succession of communities from the unstable dunes on the beach to a scrub of brambles (Rubus fruticosus), burnet rose (Rosa pimpinellifolia) and willows (Salix repens, S. cinerea) is found. On the western side of Raven Point saltmarsh also occurs.

Much of the area outlined is covered by dune grassland dominated by red fescue (Festuca rubra) and meadow grass (Poa pratensis) but with stunted marram (Ammophila arenaria) persisting from an earlier more mobile stage. Lady's bedstraw (Galium verum) and birds-foot trefoil (Lotus corniculatus) are characteristic flowering plants in it. In May and June the spring squill (Scilla verna) may sometimes be found and in autumn the field gentian (Gentianella campestris). Under intensive rabbit grazing this community can be converted to one dominated by mosses and lichens which normally covers the drier summits of dunes. The mosses are generally Tortula ruraliformis and Hypnum cupressiforme and the

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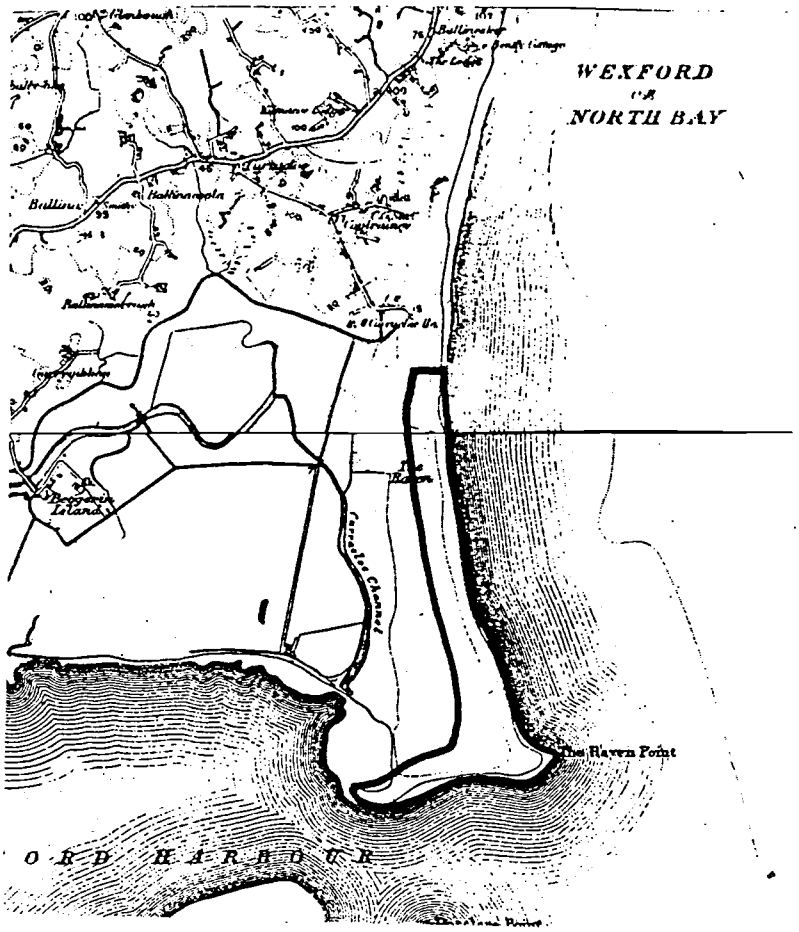

lichens, species of Cladonia. In this are scattered biting stonecrop (Sedum acre), sea pansy (Viola tricolor) and such seasonal plants as whitlow grass (Erophila verna), mouse-ears (Cerastium diffusum, C. glomeratum, C. semidecandrum), sand timothy (Phleum arenarium) and other grasses (Catapodium rigidum, Vulpia fasciculata).

The slacks have some of the more unusual communities with abundant creeping willow (Salix repens), some alder (Alnus glutinosa) and common willow (S. cinerea). The sharp rush (Juncus acutus) grows at the bottom of these with other less frequent species like early marsh orchid (Dactylorhiza) incarnata), marsh helleborine (Epipactis palustris), wintergreen (Pyrola rotundifolia), broad leaved helleborine (E. helleborine) and yellow bird's nest (Monotropa hypopitys). The slacks seem to have suffered from a drop in water table in recent years, probably because of the nearby forest. The presence of the last two species which are normally plants of woodland, may result from this.

The invertebrate fauna of the area is of very great interest, including a high proportion of all dune species that occur in Ireland. Three of the most important species are Armadillidium album, a woodlouse, Nebria complanata and Pristonychus terricola (beetles), all organisms with a requirement for undisturbed dunes and therefore a very limited distribution. In general terms the insect fauna is characteristic of 'yellow dunes' or dune grassland. The planted conifers have as yet accumulated little fauna of their own but they have an important role in providing shelter. Butterfly numbers are high and the species include gatekeeper, grayling and dark green fritillary, as well as the commoner types.

The area is an important feeding station for migrating birds and large numbers of passerines pass through it, especially in autumn.

Evaluation This large and well-developed dune system has a greater range of habitats within it than any other area in Wexford despite extensive afforestation. It is one of the only such places in Ireland that is undisturbed by people or by grazing livestock and the valuable invertebrate fauna results from this factor and from the local climatic conditions.

The flora also contains very rare species and the dune form of the Pyrola has not been found anywhere else in the county.

Vulnerability The natural communities in this area would be especially sensitive to trampling or grazing pressures since they have developed in the absence of these factors. Therefore significant damage would be done wherever people or domestic animals went. Continuing tree growth may further dry out the dune slacks and the presence of small planted trees within areas of natural vegetation may interfere with the ecology of the communities.

Recomendations The best use for this area would seem to be as a nature reserve but in places it could accept much greater recreational and educational use than it receives at present. This would have to be subject to some control, however. Management of the area should include the removal of certain stands of non-commercial trees and of those 'garden' plants naturalised around a pond at the southern end.

BALLYTEIGUE DUNES

Grid Reference	S 93 06
Area	240 ha
Interest	Botanical, Zoological.
Rating	National importance
Priority	B

This is an extensive dune system which stretches for about 9 km west of Kilmore Quay. Its foundation is a shingle ridge which has grown westwards by longshore drift to form a lagoon, the Cull, fed by three local rivers. The land around the Cull is low-lying and naturally swampy but artificial drainage with a pumping station has lowered the watertable sufficiently to make it productive. It also has removed some of the scientific value, particularly the wildfowl that formerly wintered here.

The dunes themselves are particularly finely developed, being very large and showing the usual features of dune slacks and separate ridges. The further west one goes the less disturbed is the vegetation but cattle have access to the whole system. They are overwintered at the eastern end where fodder is brought in. The vegetation includes sea bindweed (Calystegia soldanella) on the beach with herbs such as storksbill (Erodium maritimum), carline thistle (Carlina vulgaris), portland spurge (Euphorbia portlandica), sea holly (Eryngium maritimum), lady's bedstraw (Galium verum) and a clover (Trifolium campestre) in the grassland. The rarer T. scabrum also occurs and wild asparagus (Asparagus officinale) is widespread in the more stable areas. Away from the sea, shrubs become more frequent and rest harrow (Ononis repens), burnet rose (Rosa pimpinellifolia) and dewberry (Rubus caesius) are conspicuous.

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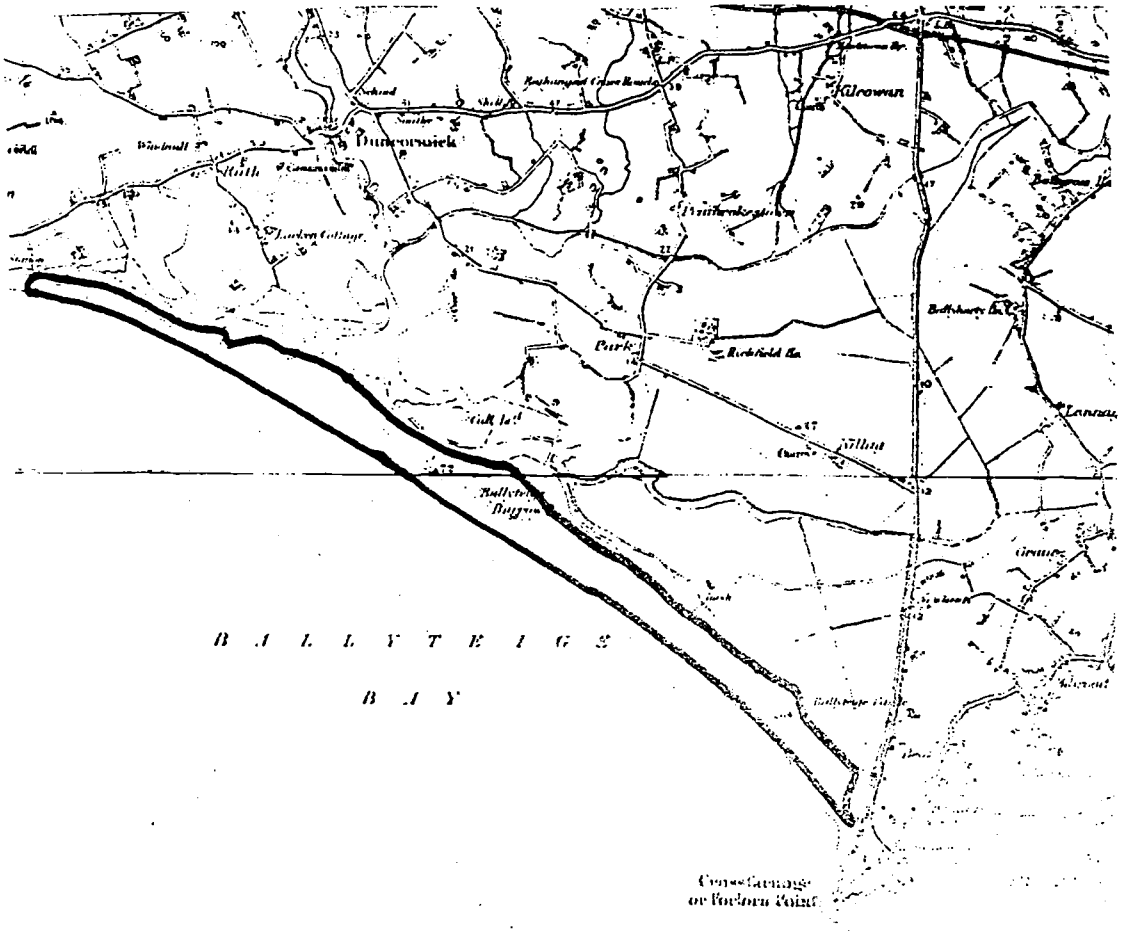

The cut behind the dunes still has an interesting aquatic flora including clubrush (Scirpus tabernaemontani), a pond weed (Potamogeton pectinatus) horned pondweed (Zannichellia palustris) and water milfoil (Myriophyllum spicatum). The sedge (Carex otrubae) is characteristic of the damper ground nearby.

Ballyteigue has a rich invertebrate fauna and several species of hymenoptera (wasps and ants) were first found here or indeed have not been met with elsewhere. Its southern location favours such insects but there is also a good beetle fauna and some butterflies and moths. It is also the only Irish locality for a conspicuous lichen (Fulgensia subbracteata) which occurs in drier sites particularly on small mounds.

The dunes have a high density of nesting skylarks and meadow pipits with some terns on the beach. A variety of waders feed on the Insh in autumn and winter, including sometimes large numbers of plover.

Evaluation The site includes some particularly undisturbed tracts of vegetation and shows better dune development than anywhere else on the south Wexford coast. Several organisms of extreme interest occur showing that the diversity of micro-habitats is high.

Vulnerability Dune erosion is restricted to the eastern part of the system but is of small extent. A greater danger is the modification of the grassland vegetation by excessive densities of cattle, especially where they are confined in winter. There is evidence too of damage by horses to the turf.

Recommendations An area such as the tip of the spit should be set aside at this stage from which grazing animals are excluded. This would preserve and increase the ecological interest of the vegetation. More intensively used areas should be varied to prevent animals or people from exposing bare sand and the density of cattle should be lessened at the eastern end. The area should be zoned as of scientific interest and protected by a Special Amenity Area Order as it is one of the most important sites in Wexford of its type.

MACMINE MARSHES

Grid reference	S 98 32
Area	106 ha
Interest	Botanical, Zoological
Rating	National importance
Priority	C

An enormous area of marshland and fen is found beside the Slaney above Oilgate. Reeds (Phragmites australis) cover the major part and form a stand 3-4 m high extending right down to the river channel. At the landward edge the vegetation is more varied and west of the railway line, for example, there are largely separate stands of sedges (Carex riparia, C. vesicaria, Cladium mariscus, and of wooded swamp with willows (Salix cinerea) and tussock sedge (Carex paniculata). A wider variety of marsh plants co-exist with these communities than with Phragmites and such species as yellow loosestrife (Lysimachia vulgaris), greater skullcap (Scutellaria galericulata) and marsh hawksbeard (Crepis paludosa) can be seen. Summer snowflake (Lencojum aestivum) occurs in muddy ground below Macmine Castle but may not be natural here. In drains and pools the aquatic plants include a water milfoil (Myriophyllum alternifiorum), various pondweeds (Groenlandia densa, Potamogeton spp.) and water starwort (Callitriche stagnalis, C. truncata).

Animal life is closely tied to the prevailing plant cover and is rich in species dependant on Phragmites, especially various moths (Microlepidoptera). In summer the sedge warbler is abundant together with reed bunting, moorhen, snipe, water rail and mallard. The winter brings a variety of other wildfowl to the area, including red-breasted merganser on the river and many teal, while the marshes provide a roost for flocks of small birds on migration (swallows, warblers).

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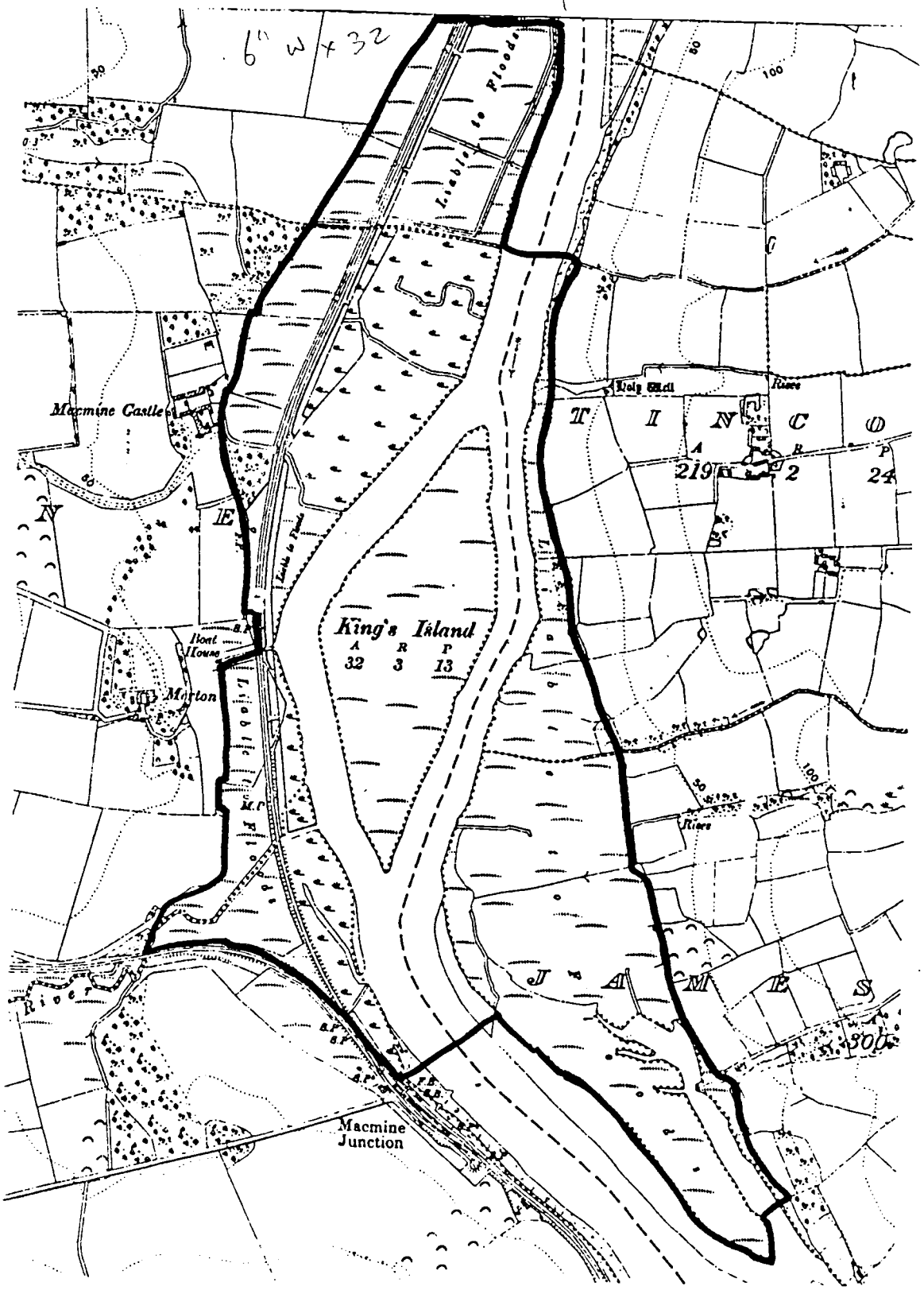

Evaluation The Slaney marshes are among the most extensive and best developed reedswamps in the country and are of great ecological interest. They are as yet little explored but are known to contain at least one species (Callitriche truncata) not found elsewhere in Ireland. The habitat is suitable for several rather specialised birds such as bearded reedling, spotted crake and bittern and these have sometimes been seen there.

Vulnerability The area could be drastically altered by the embankment of the river channel and the drainage of the marshes. Otherwise it is in little danger except from reed-cutting. Although the use of reeds for thatching is not currently widespread it may grow in importance in the future.

Recommendations Land use should remain in its present form in the area which could well form a nature reserve at some stage in the future.

KILLOUGHRIM FOREST

Grid Reference	S 89 41
Area	61 ha
Interest	Botanical, Zoological
Rating	National importance
Priority	A

There have been trees on this site for many years but the stand is at present uniformly young and in active growth. Clear-felling must have been carried out about thirty years ago with the result that the main species today are birch (Betula pubescens), oak (Quercus spp), holly (Ilex aquifolium) and hazel (Corylus avellana). These form a closed canopy 10 m high which is broken only by paths. The ground flora is poor because of the shade and the quantity of leaf litter. Also the soil is very stony and acid in reaction. Bluebell (Hyacinthoides non-scriptus) is the commonest species followed by wood sage (Teucrium scorodonia), greater woodrush (Luzula sylvestris), hard fern (Blechnum spicant) and frochan (Vaccinium myrtillus). Little ivy (Hedera helix) occurs but honeysuckle (Lonicera periclymenum) is abundant.

Low-lying clayey soils are associated with the streams and here wood sorrel (Oxalis acetosella), primrose (Primula vulgaris) and other woodland herbs grow. These include several sedge species in the more open sites (Carex flacca, C. acutiformis and C. cf strigosa).

Heath vegetation occurs where the tree cover becomes thin and includes heather (Calluna vulgaris), autumn gorse (Ulex gallii), bent grass (Agrostis tenuis), golden rod (Solidago virgaurea), St. John's wort (Hypericum pulchrum) and the bryophytes Hylocomium splendens and Diplophyllum albicans. The large broomrape (Orobanche rapum-genistae), which is now a very rare species, was formerly abundant.

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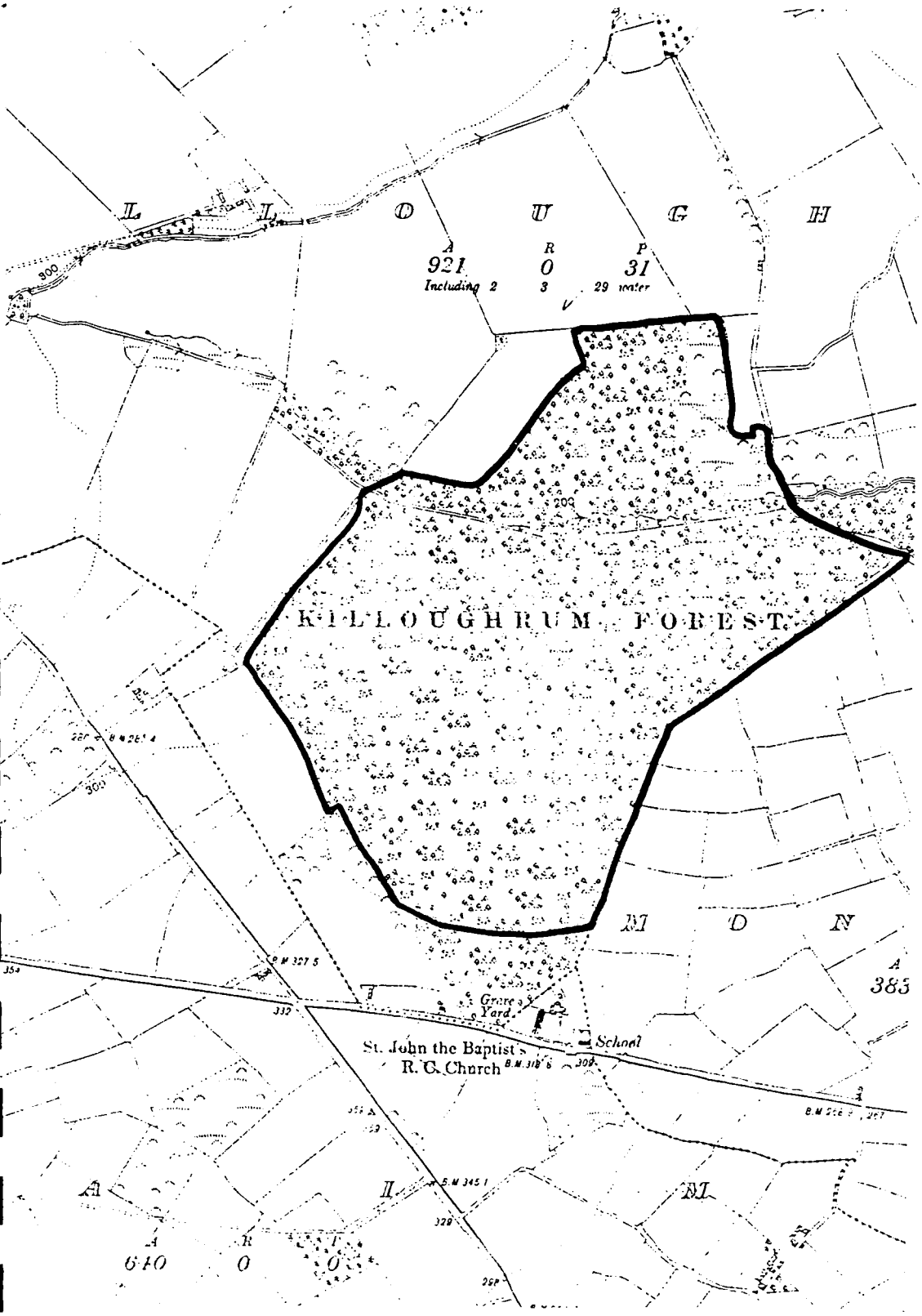

The bird fauna consists of a limited range of species which are at present in high numbers because of the uniformity of the wood. Wood pigeon, robin, chaffinch and wren seem the dominant species but some woodcock, treecreeper, willow warbler and thrushes also occur. Invertebrate animals were investigated in the old forest and many interesting insect species are recorded from the early years of this century.* Many of them doubtless still occur but the wood ant (Formica rufa), one of the most notable, seems to have vanished. Two hairstreak butterflies probably still occur (Thecla betulae and Quercusia quercus) with the full range of commoner species.

Evaluation Killoughrim forest is the largest naturally developing deciduous woodland in Wexford and one of the largest lowland ones in the whole country. The absence of introduced species is notable as is the dense understory of holly. It is also unusual in the absence of domestic grazing animals. The rabbit exerts some influence but active regeneration of all tree species occurs despite it.

The whole area contains a diversity of habitats although the woodland is generally uniform. It is of quite exceptional ecological and educational importance and the presence of old written records adds to its value.

Vulnerability The woodland, though it is a stony type of the Clonroche soil series, could be cleared for agricultural use. It could also be planted with coniferous species.

Recommendations It is essential to take active measures to preserve this woodland. Its survival to the present day must be due to a variety of factors such as the size of the total land holding

* Moffat, C.B. Irish Naturalist 1889 - 1920.

which includes it and the apparantly unsuitable nature of the ground for agriculture. Neither of these things is unchangeable however, and the wood should be covered by a Tree Preservation Order under Section 45 of the Local Government (Planning and Development) Act, 1963. It would be an ideal site to open to the public, at least in part, and this should be investigated by the local authority.

KILMORE QUAY SHORE

Grid Reference	S 95 03
Area	35 ha
Interest	Geological
Rating	Regional importance
Priority	C

This intertidal foreshore is composed of rocks belonging to the Rosslare Complex, as at St. Helen's. The latest phase in the evolution of the rocks is well shown here. This is local metamorphism resulting from the emplacement of dykes. The best part of the section,which occurs on both sides of Kilmore Quay, is on the western side.

Evaluation Apart from the section at St. Helen's this is the only exposure of this rock complex and is considered of regional value.

Vulnerability Dumping or other development on the intertidal rocks, possibly in connection with coastal protection, would be damaging to the value of the site but neither seems likely.

Recommendations Access should be preserved to this site and shore development, if any, analysed for its possible impacts to it.

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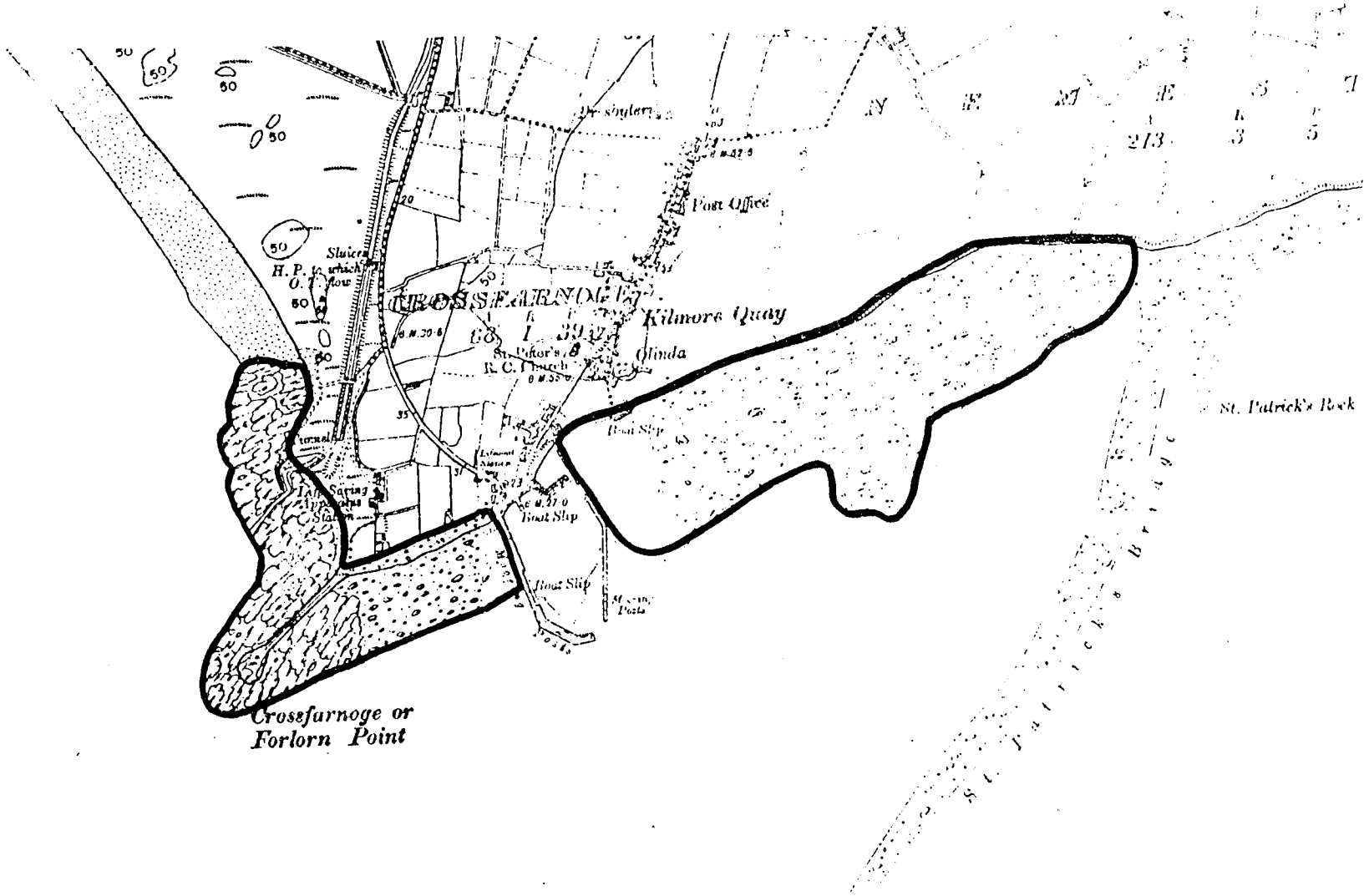

BALLYMONEY STRAND

Grid Reference	T 22 60
Area	11 ha
Interest	Geological (stratigraphy, sedimentology) Botanical
Rating	Regional importance
Priority	C

At the back of the beach the cliff section on this coast displays an interesting sequence of rock types, in particular an unconformity between two periods in the Ordovician (Arenig-Caradoc). It also provides the best exposures of several rock formations widespread inland, for example, the Courtown limestone, Balinatray and Riverchapel slates.

A characteristic flora is developed on the boulder clay and rock outcrops: at one point it includes a ragwort (Senecio erucifolius)

Evaluation This is an important site for the understanding of the local geology and is thus of some educational value. The most southerly location of the Senecio occurs here. It has a very local distribution in Ireland, almost restricted to Co. Dublin.

Vulnerability and Recommendations The site is secure and easily accessible. It could be developed for recreation provided access is retained.

Brenchley, (P.J.) & Treagus (J.E.) The stratigraphy and structure of the Ordovician rocks between Courtown and Kilmichael Point, Co. Wexford. Proc. R.I.A. 69B (4) 1970.

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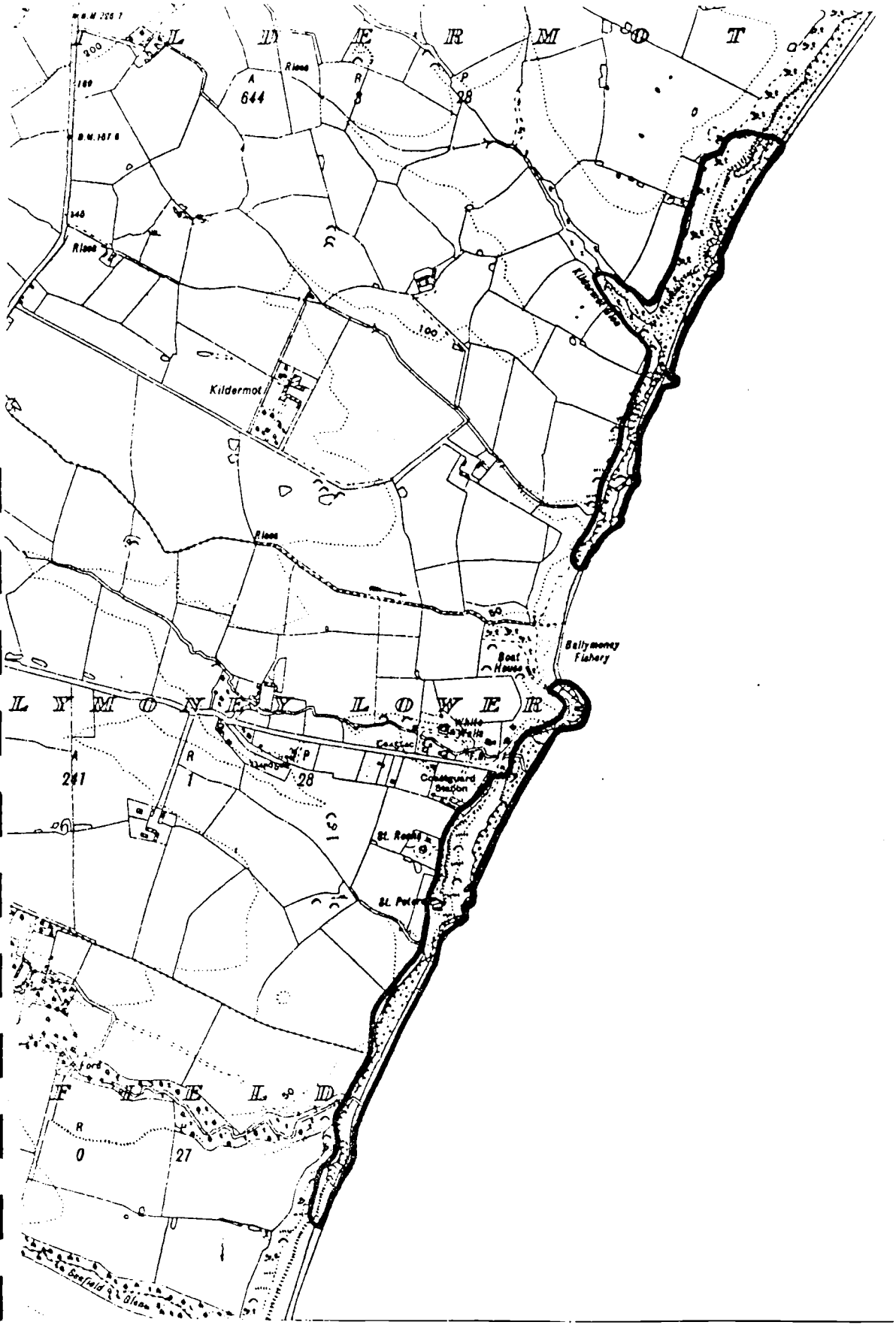

CURRACLOE COASTAL AREA

Grid Reference	T 11 27
Area	50 ha
Interest	Geological, Botanical, Zoological
Rating	Regional importance
Priority	B

Two types of shore occur around Curracloe. To the north a long cliff of glacial drift occurs. It is derived from a moraine marking the point where Irish Sea ice of Midlandian age was temporarily stationary during the last glacial period. So thick is this deposit that it obscures all the bedrock as far north as Cahore Pt. South of Curracloe the dunes that guard the north side of Wexford Harbour begin. They were originally formed offshore and the land behind them is scarcely above tidal level and is marshy throughout. Ponds mark the former site of a lagoon and bear an interesting flora and fauna. They are now often dominated by reeds (Phragmites australis) in the deeper water and a rush (Juncus subnodulosus) at the edges. Submerged in the water is a pondweed (Potamogeton coloratus) and lesser marshwort (Apium inundatum). The fauna appears to be rich in Corixids.

The adjacent ground carries the vegetation of a calcareous marsh, for example,

Carex lepidocarpa	yellow sedge
C. flacca	glaucous sedge
C. panicea	carnation sedge
Cardamine Pratensis	lady's smock
Berula erecta	lesser water-parsnip
Pedicularis palustris	red rattle

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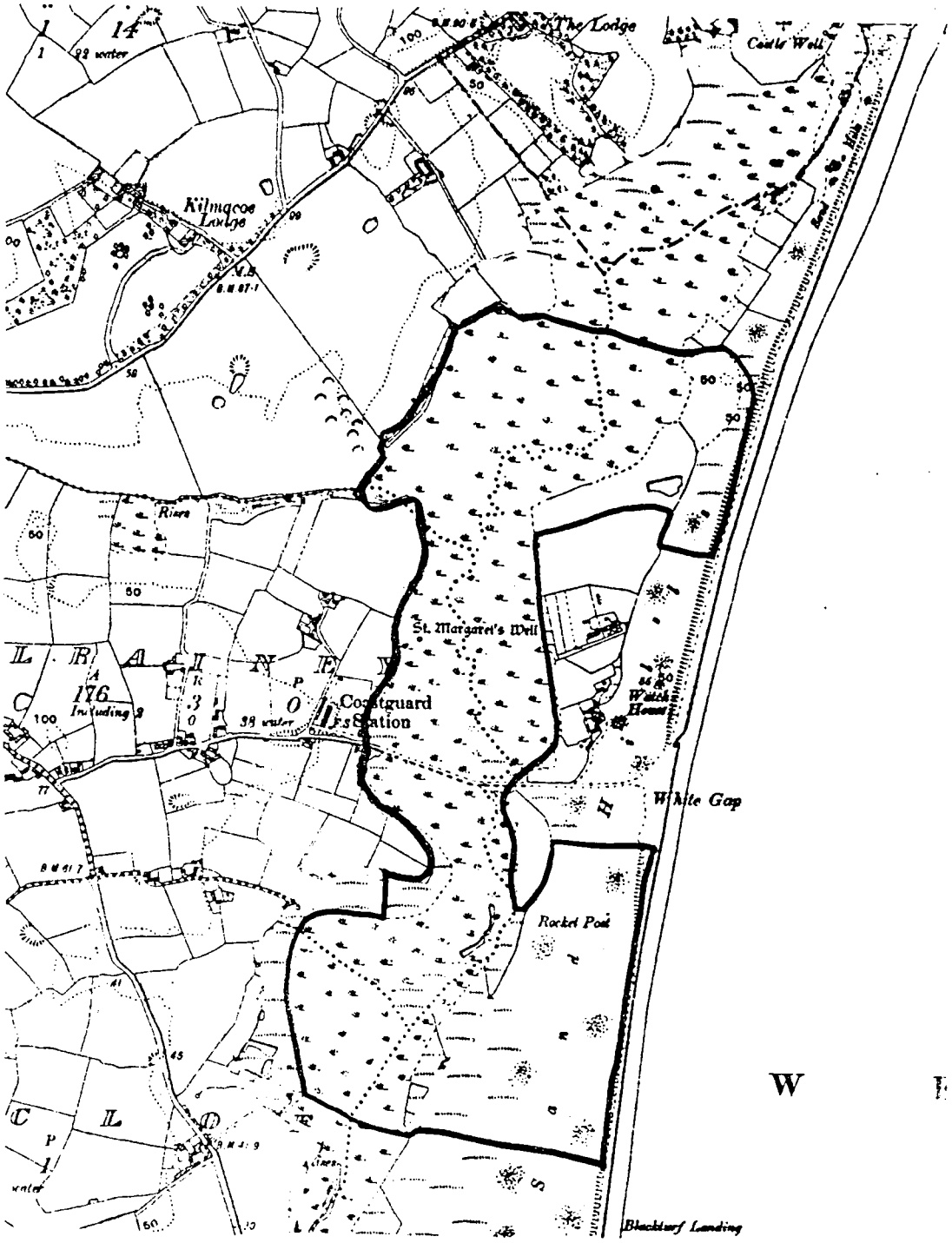

Hypericum tetrapterum	St. John's wort
Rumex hydrolapathum	great water dock
Epilobium obscurum	willowherb

The dunes at this point are in places over-used and the vegetation has lost some of its interest. However, patches of burnet rose (Rosa pimpinellifolia) and various orchids (Anacamptis pyramidalis, Dactylorhiza incarnata) occur in the stabilised grassland. There is in addition a record of lesser centaury (Centaurium pulchellum) from the area.

Small numbers of waders and wildfowl use the wetter dune slacks and ponds. These include lapwing, golden plover, curlew, mallard and teal.

Evaluation The coastal section through the moraine is of great value in the analysis of the glaciation of this part of the country. It also gives a sample of the fauna that lived in the Irish Sea during the preceding interglacial period.

A variety of interesting communities are associated with the sand dunes, mostly on the wetter sites and these alone would rank of regional importance. The vegetation of the high dunes improves to the south and is dealt with under Raven Point.

Vulnerability The geological site is not subject to any danger and the further inroads of the sea into it will reveal fresh sections of interest.

The vegetation is however threatened by trampling on the dunes and by drainage of the low-lying lands behind. Sewage or other pollution would damage the small ponds.

Recommendations Visitor access in this much frequented area should be strictly controlled so that the great majority of people getting onto the beach do so on 'hard' pathways without damaging the vegetation and initiating more wind erosion.

The marshy ground behind the dunes should not be filled in nor drained but could be made more attractive by proper management. Sewage effluent should not be allowed to enter it.

THE CULL

Grid reference	S 93 06
Area	170 ha
Interest	Ornithological, Botanical
Rating	Regional importance
Priority	B

This area is really part of the Ballyteigue sandhills site since it is the lagoon that has been left behind this spit. However since it is of distinct character it is treated separately. The habitat is a shallow tidal estuary which dries out almost completely at low tide producing large mudflats. The eastern end of the Cull was reclaimed in the last century and though it was then an important area for wildfowl subsequent improvements in field drainage have removed this interest. Elsewhere the margins of the area where they are not embanked show typical saltmarsh vegetation with a fringe of glasswort (Salicornia herbacea) or cord grass (Spartina sp) outside the grassy fescue zone. The perennial glasswort (Salicornia perennis) also occurs near Duncormick and towards the western end. The saltmarsh vegetation is finely developed around a small island off the spit which provides an important roosting site for waders and wildfowl at high tide.

The bird fauna is an important feature of the area, especially in winter when a great variety of species may occur. Counts since 1970 indicate that the average (and maximum) number of birds to be expected are as follows:

Mallard	36	(204)
Teal	6	(374)
Wigeon	42	(364)
Pintail	1	(33)

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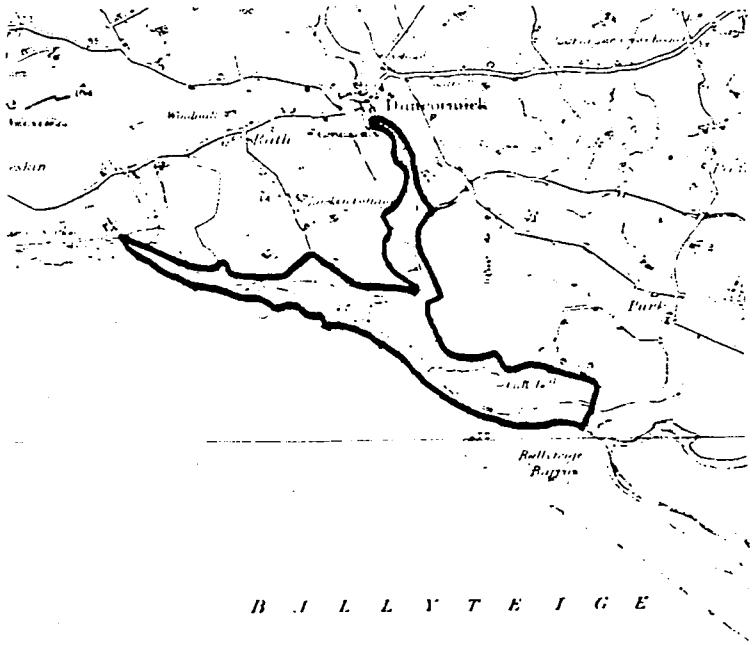

Pochard		(1)
Goldeneye		(2)
Red breasted merganser	15	(35)
Shelduck	23	(101)
Mute swan	4	(25)
Brent goose	6	(80)
Oystercatcher	36	(200)
Golden plover	146	(1400)
Grey plover	9	(50)
Lapwing	212	(1496)
Dunlin	266	(900)
Knot	5	(200)
Redshank	80	(400)
Black-tailed godwit	24	(280)
Bar -tailed godwit	66	(300)

The less common waders such as little stint, curlew sandpiper, ruff and spotted redshank also occur regularly in small numbers at migration time.

Evaluation The plant Salicornia perennis is a southern species in Europe and it occurs nowhere else in Ireland as far as is known. Its occurrence here is therefore of national importance. However the bird life, though varied, does not have a similar significance in terms of the south coast estuaries. For this reason the site is rated as of overall regional importance.

Vulnerability & Recommendations Further reclamation of mud-flats would endanger the scientific interest of the area and it should not be permitted within the areas marked with an asterisk.

TACUMSHIN LAKE

Grid Reference	T 05 06
Area	680 ha
Interest	Ornithological, Botanical
Rating	Regional importance
Priority	A

This lake has a similar origin to Lady's Island Lake though it is now open to the sea and is largely an estuarine habitat. The sea, however, seldom fills the entire area and it requires winter flooding to do so. The surrounding land has recently been drained by opening channels across the lake bed. This means that run-off has been speeded up and the frequency of flooding has declined, affecting the ecology of the low-lying fields and the edges of the lake. Plant colonisation of the mudflats has been encouraged and scattered annual plants are found for a distance of up to 400 m from the edge. Sea blite (Suaeda maritima), sea orache (Atriplex littoralis) and glasswort (Salicornia herbacea) are characteristic here on rather sandy ground and they give way to eelgrass (Zostera sp) and tassel-weed (Ruppia maritima) on the tidal mudflats. Invertebrate remains indicate the usual range of brackish water molluscs, cockle (Cardium spp), mussels (Mytillus edulis), the sand gaper (Mya arenaria) and crustacea. A type of midge (Chironomidae) was noted as especially numerous.

These communities support an interesting bird fauna. In summer the nesting species include oystercatcher, ringed plover and shelduck with herring gulls (250 pairs) on one of the islands. At other times of the year large numbers of waders occur, either feeding on the mudflats or roosting on two of the low islands. Wildfowl, in particular wigeon and brent goose, are also sometimes

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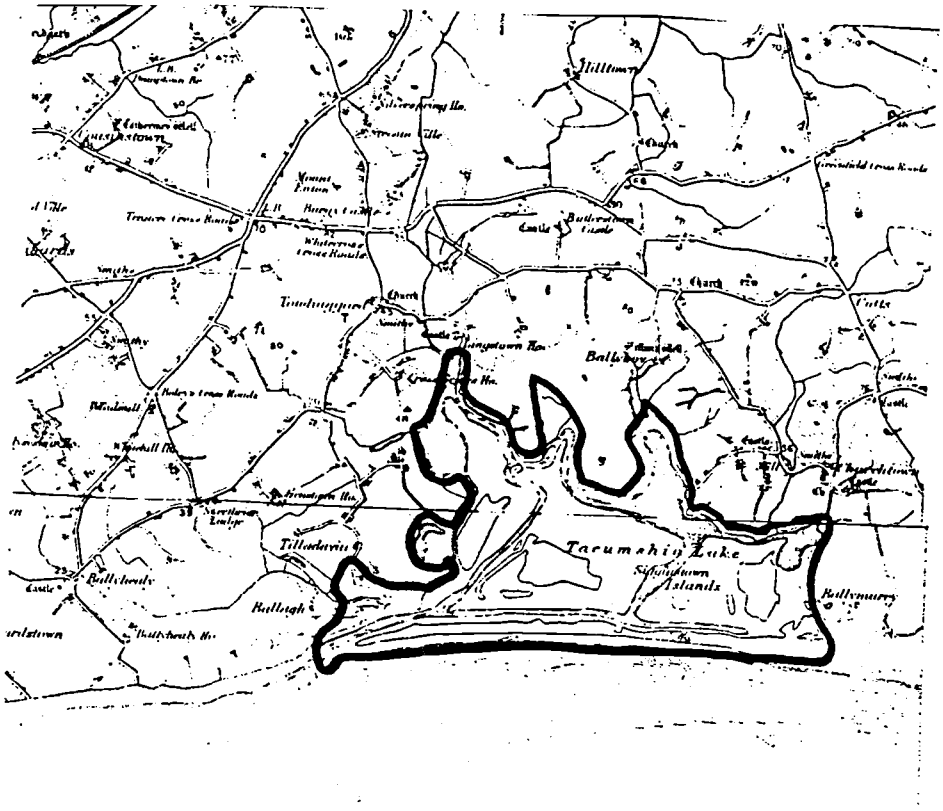

numerous. The following list shows the average (and maximum) figures to be expected (Merne 1974).

Mallard	29	(318)
Teal	74	(536)
Wigeon	297	(1915)
Pintail	33	(205)
Shoveler	23	(202)
Tufted duck	40	(427)
Scamp	27	(440)
Goldeneye	13	(84)
Red-breasted merganser	2	(84)
Shelduck	56	(147)
Brent goose	44	(672)
Mute swan	35	(204)
Bewick's swan	3	(177)
Lapwing	189	(1301)
Golden plover	128	(850)
Curlew	245	(2099)
Redshank	22	(76)
Dunlin	259	(1520)
Sanderling	25	(183)

The shingle ridge south of the lake provides a nesting ground for terns in some years.

In the north-west part of the area a small area of water is separated from the main lake by a sluice. This is brackish at the dyke but becomes fresh further in with a dense bed of reed (Phragmites australis).

Evaluation The lake is an interesting ecological site subject to changes caused by drainage. It is a useful area for field studies

especially those based on plant colonisation and succession. Its main scientific value is the flock of brent geese which at 2% of the European population gives Tacumshin an international importance for this species.

Vulnerability Reclamation works following the drainage of some of the sandflats would considerably devalue the site which depends on some winter flooding and tidal penetration to retain its present communities. In the same way interference on the mudflats and tidal area would remove feeding areas for the wildfowl.

Recommendations Land use in the area should remain in its present form and the reclamation of the lake bed discouraged. The drainage of surrounding areas should not be prevented.

RIVERBANK AT NEW ROSS

Grid Reference	S 72 28
Area	4 ha.
Interest	Botanical
Rating	Regional importance
Priority	C

The steep slopes of the Barrow valley are largely tree-covered at this point with oak (Quercus sp.), ash (Fraxinus excelsior) and sycamore (Acer pseudo-platanus) frequent. Holly (Ilex aquifolium) and hawthorn (Crataegus monogyna) form an under-story with gorse (Ulex europaeus) in the clearings. Some of the gorse in fact reaches 6 m in height in trying to compete with the other woody species. The ground flora shows the site to be acidic (Ordovician slates) and the froachan (Vaccinium myrtillus) and stitchwort (Stellaria holostea) are common, with wood sage (Teucrium scorodonia), ivy (Hedera helix), shield fern (Polystichum setiferum) etc. Just above high water mark on the river bank moisture loving species appear such as meadowsweet (Filipendula ulmaria), water mint (Mentha aquatica) and tall fescue (Festuca arundinacea). These grow on silt and exposed rock with the moss Cinclidotus. Amongst these species, saw-wort (Serratula tinctoria) is found for about half a kilometre along the valley.

The habitat, being undisturbed and rich in invertebrate food, supports a good density of small birds including long-tailed tit, mistle thrush and tree-creeper.

Evaluation This is the only site in the country at which Serratula is found and is therefore of considerable ecological interest.

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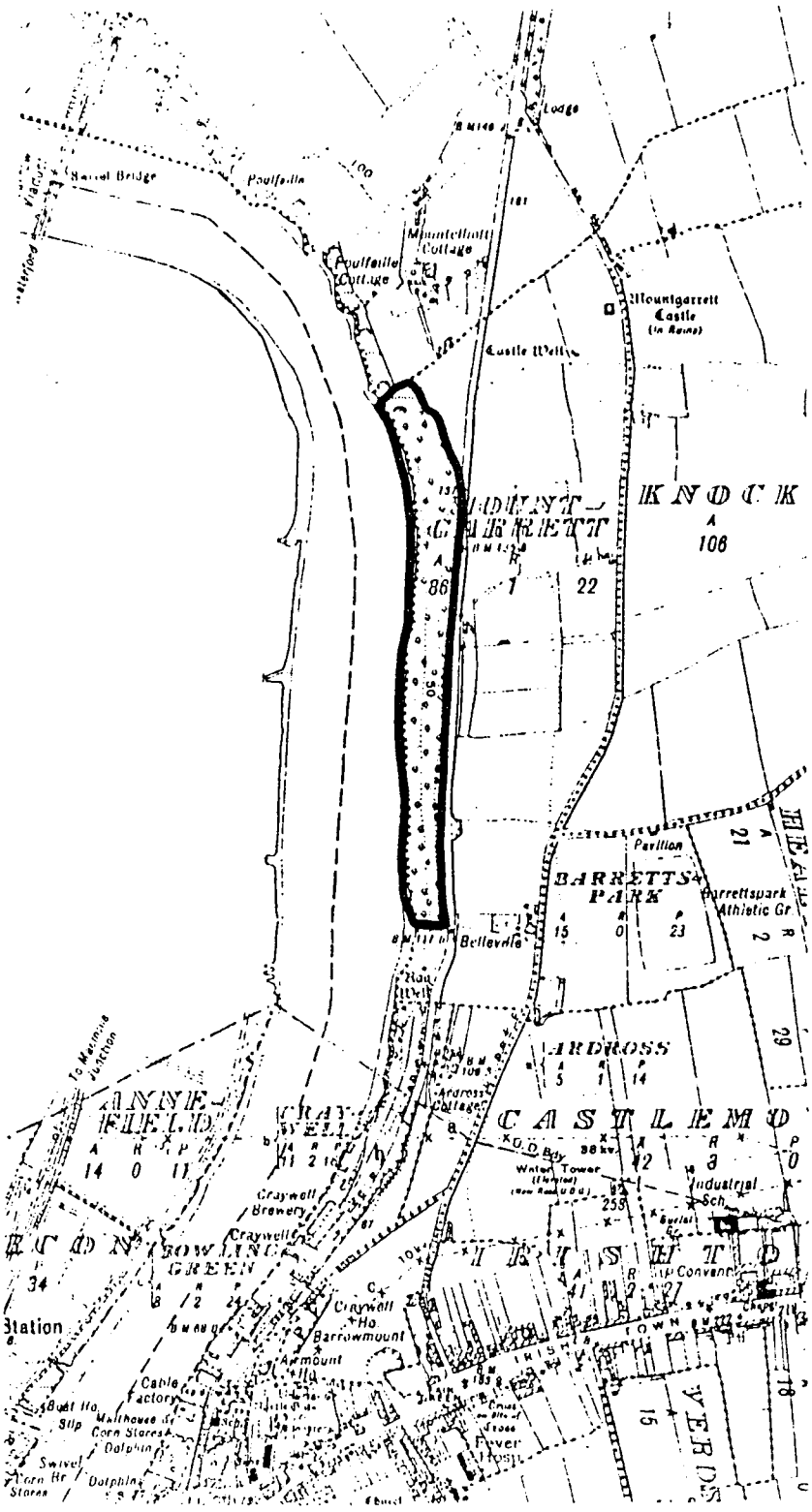

Vulnerability and Recommendations The area is relatively secure being difficult of access and not used for anything at the moment. It also has some amenity value because of the deciduous woodland on the valley side. In the event of an application to develop this site an assessment of the impact on the vegetation should be made before a decision is reached.

BALLYHACK

Grid Reference	S 70 10
Area	0.5 ha
Interest	Botanical
Rating	Regional importance
Priority	A

The E-W ridges of Old Red Sandstone that form the Cork and Kerry mountains just reach across Waterford Harbour to form the hill between Arthurstown and Ballyhack. Many annual plants grow in this soil around the rock outcrops and clovers (Trifolium spp) are especially noticeable. A list of species will characterise the vegetation within this site.

Trifolium repens	white clover	a
Bellis perennis	daisy	a
Cynosurus cristatus	crested dog's tail	a
Agrostis stolonifera	creeping bent	c
Aira praecox	early hair grass	f
A.caryophyllea	silver hair grass	o
Lepidium campestre	field pepperwort	o
Aphanes arvensis	parsley piert	f
Veronica arvensis	wall speedwell	f
Trifolium dubium	shamrock	f
T. striatum	knotted clover	l.f
T. glomeratum	clustered clover	l.c.
T. ornithopodioides	fenugreek	o
T. micranthum	slender trefoil	o
Torilis nodosa	knotted hedge-parsley	

This community is especially well developed on the west side of mud-capped walls beside the road but the species of special

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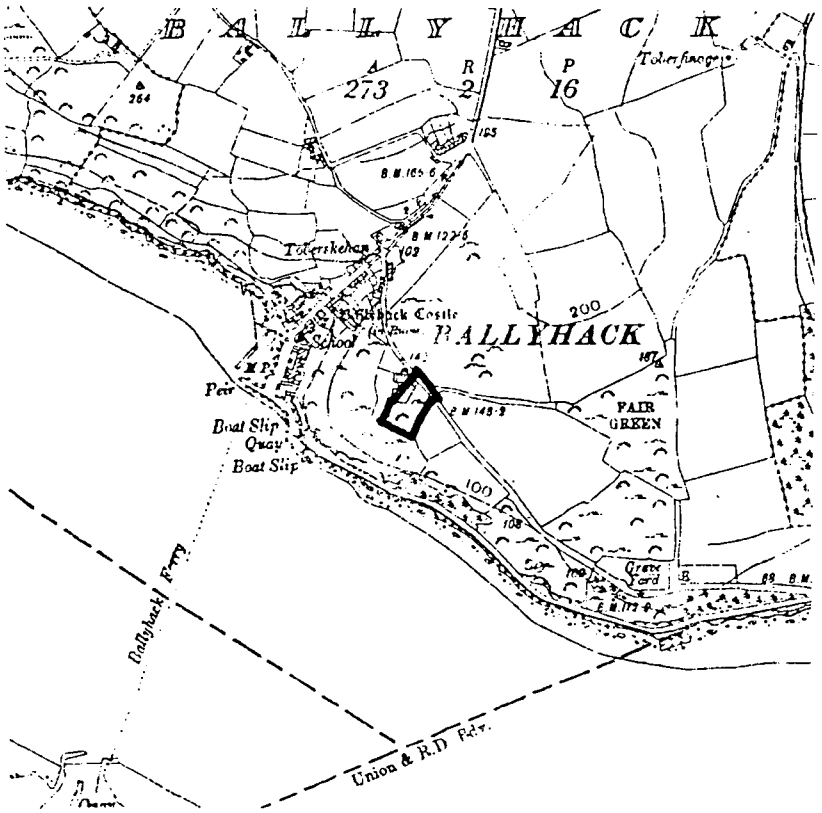

interest (T. glomeratum) occurs up to 20 m away. Further away different vegetation types come in, for example, a group of rock-dwelling species, stonecrop (Sedum anglicum), sheep's bit (Jasione montana) and madder (Rubia peregrina).

Evaluation Communities such as those found in this site occur widely on thin soils on the coasts of S.E. Ireland but this is one of only two areas that Trifolium glomeratum still occurs in. Apart from this it is also richer in species than many similar areas.

Vulnerability The Trifolium occurs most commonly on a road-side wall so it would be vulnerable to road widening or the rebuilding of the wall. Housing development may also occur here or further into the site.

Recommendations The importance of maintaining this section of wall intact should be noted by the district road engineer. Housing development should not be permitted within the outlined area.

BARROW SALTMEADOWS

Grid Reference	S 69 18 S 71 14
Area	83 ha
Interest	Botanical
Rating	Regional importance
Priority	C

At intervals down the east side of the Barrow estuary the mouths of incoming streams or other inlets have become filled with sediment and now form small saltmarshes. Being far from the open sea the brackish influence is somewhat restricted and rather grassy communities have developed with an abundance of red fescue (Festuca rubra) and some sea hard grass (Parapholis strigosa) and sea sedges (Carex distans, C. extensa). Another sedge (C. divisa) occurs more rarely.

At Alderton the saltmarsh grades into a freshwater swamp with some trees, for example, willows (Salix cinerea, S. triandra). Greater meadow rue (Thalictrum flavum) and a water dropwort (Oenanthe fistulosa) are among the more interesting species.

Evaluation Peculiar environmental factors have allowed plant communities to develop here that are found nowhere else in the country. One of the species (Carex divisa) formerly occurred at Dublin also but is now extinct there.

Vulnerability Reclamation of these sites is the chief threat but it is unlikely to occur because of their small size. Overgrazing would reduce some of the value but the communities would probably survive short periods of it.

Recommendations Land use should remain in its present form in these areas.

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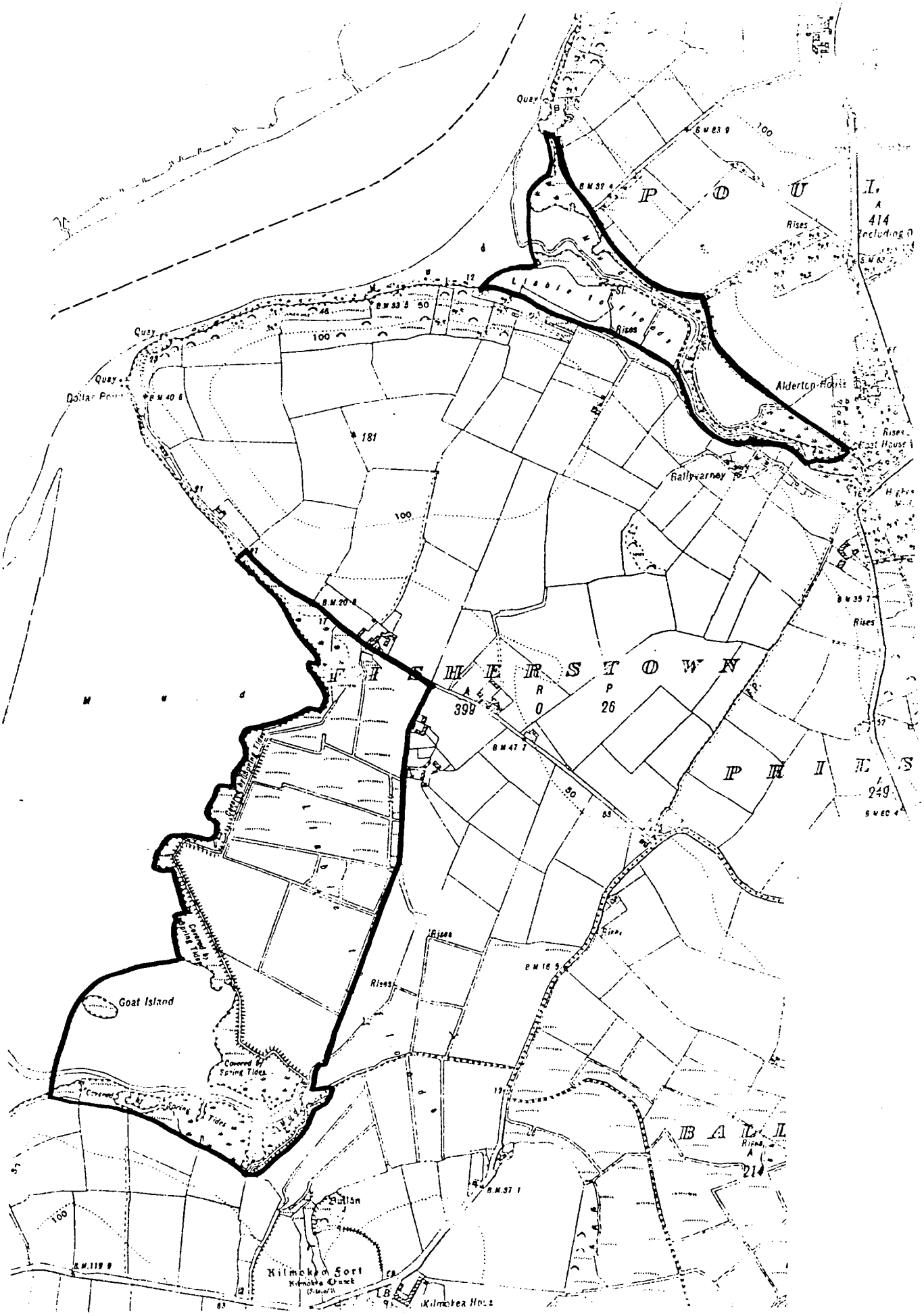

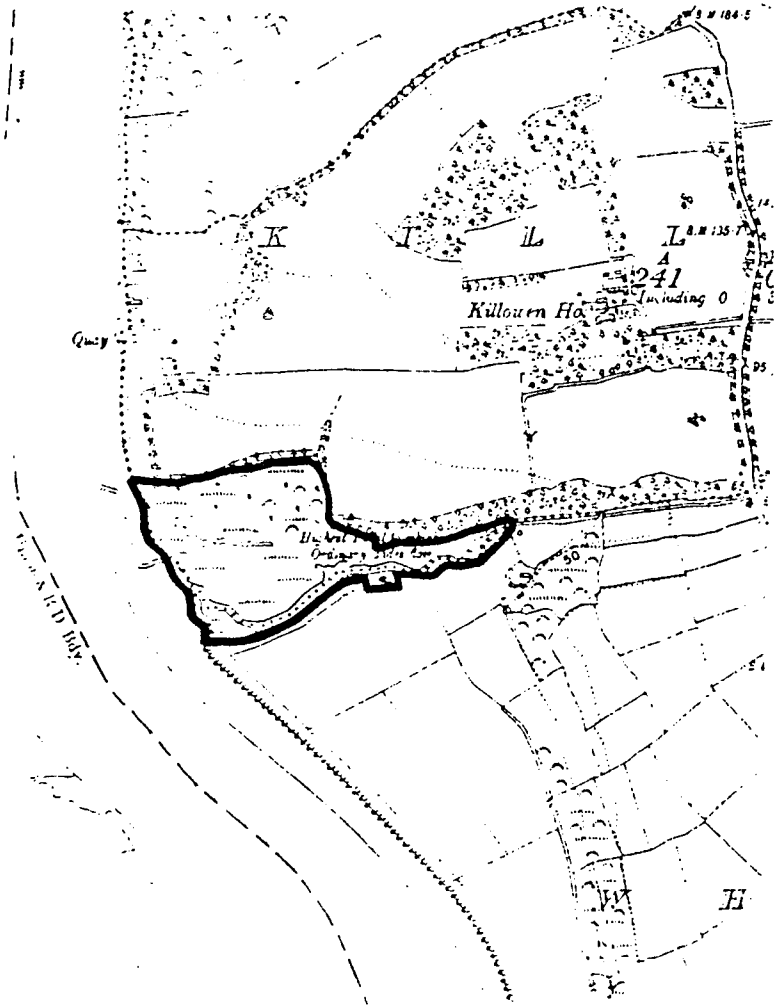
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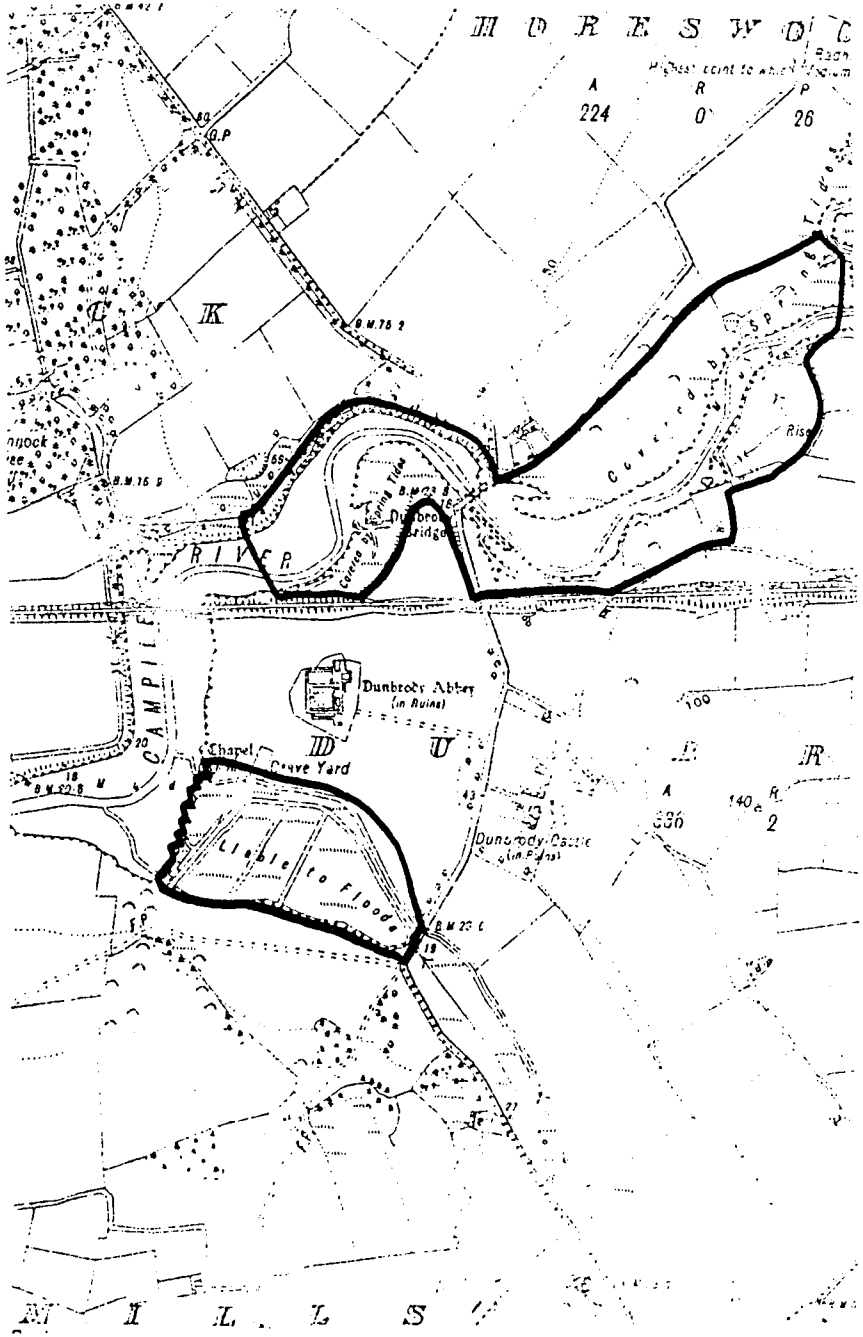
H O R E S W O O D
K
R I V E R
CAMPILE
Dunbrody Abbey
(in Ruins)
Chapel
Grave Yard
Liable to Floods
Dunbrody Castle
(in Ruins)
M I L L S

BANNOW BAY

Grid reference	S 83 10
Area	1120 ha
Interest	Ornithological, Botanical
Rating	Regional importance
Priority	C

Bannow Bay is a large sea inlet which is almost closed by Bannow Island and its adjacent sand dunes. The surrounding land is agricultural and unlike similar bays to the east it slopes steeply to the shore. Another feature which differentiates it from the Cull or Tacumshin Lake is that a considerable volume of freshwater is discharged at the head of the bay by the Carock and Owenduff rivers. The habitat is therefore estuarine for a large part and extensive mudflats occur at low tide. These are the feeding area for waders and wildfowl through much of the year (August-April). Average and peak counts during recent years show the population to be:

Teal	49	(256)
Wigeon	140	(1034)
Pintail	21	(123)
Red-breasted merganser	24	(62)
Shelduck	94	(305)
Brent Goose	84	(300)
Oystercatcher	103	(706)
Lapwing	586	(3500)
Grey plover	26	(136)
Golden plover	1605	(7250)
Curlew	436	(1800)
Black-tailed godwit	75	(752)
Bar-tailed godwit	270	(987)

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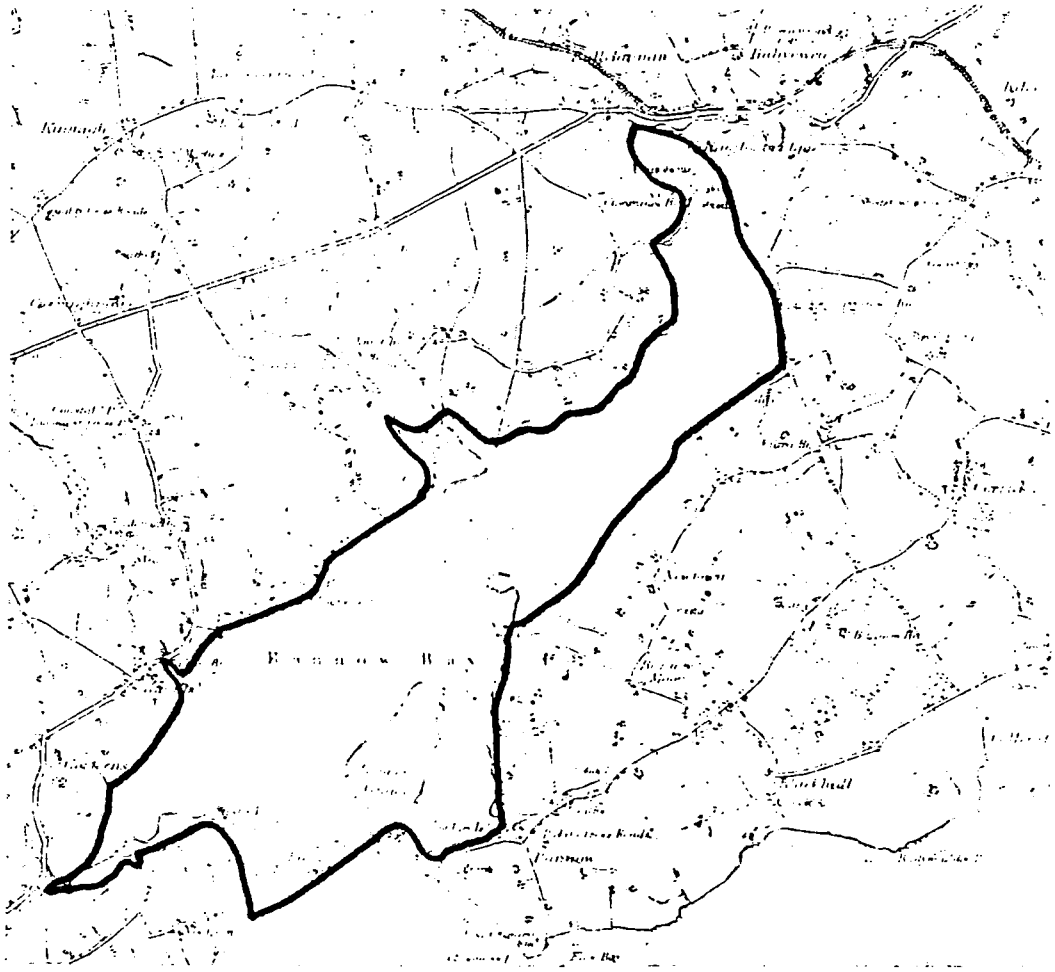

Redshank	249 (1019)
Greenshank	9 (63)
Knot	56 (520)
Dunlin	577 (2348)

At high tide the birds roost on the saltmarsh at Clonmines at the head of the bay, on the isthmus to Bannow Island and at the west side of the entrance.

The vegetation of sand dunes and saltmarshes near the entrance is quite well developed and in sandy ground on Bannow Island some interesting species occur such as henbane (Hyoscyamus niger), asparagus (Asparagus officinalis), greater knapweed (Centaurea scabiosa) and knotted hedge-parsley (Torilis nodosa). The sand hills have suffered from much erosion.

Evaluation This is a little known area but its bird populations at least give it regional importance. The saltmarsh at Clonmines is also very well developed and one of the largest in the county.

Vulnerability Disturbance through shooting is a significant threat to bird life in such habitats and it probably reduces the true carrying-capacity of the area at present. Shore development in sand dune areas could be a threat to their stability and interest.

Recommendations It is desirable that shooting pressure here is kept within limits both to safeguard the survival of the brent geese (a protected species) and to maintain the other bird populations. The possibility of making some of Bannow Bay a no-shooting area under the Wildlife Act 1976 should be investigated

with the Forest and Wildlife Service. Development of the shore around this bay, if it is allowed at all, should be subject to close scrutiny to prevent sand blow.

MOUNT LEINSTER & BLACKSTAIRS MTS

Grid Reference	S 83 52
Area	200 ha
Interest	Botanical, Zoological
Rating	Local importance
Priority	C

The mountain chain that runs from Dublin to Brandon Hill in Kilkenny has a core of granite which infiltrated the Ordovician slates and sandstones during the Caledonian phase of mountain building. Much of the overlying country rock has been removed by erosion but on Mt. Leinster and the Blackstairs Mountains it reaches almost to the summit from the eastern side. Where this rock forms cliffs, plant communities that are barred from the blanket bogs around and also from exposed granite, can get a foothold.

On the east side of the summit of these mountains a few plants with arctic or alpine affinities occur, for example starry saxifrage (Saxifraga stellaris), a sedge (Carex bigelowii) and a clubmoss (Lycopodium clavatum). A filmy fern (Hymenophyllum wilsonii) is found on rock with an abundance of crowberry (Empetrum nigrum), heather (Calluna vulgaris), froachan (Vaccinium myrtillus) and purple moor grass (Molinia caerulea).

The populations of grouse and other mountain birds are relatively high in this area, being favoured by a good climate and relatively vigorous plant growth.

Evaluation This is the part of Wexford in which the plant and animal communities of mountains are best developed and is therefore useful for educational work. It also represents one of the extremes of climate and of nutritional status in the

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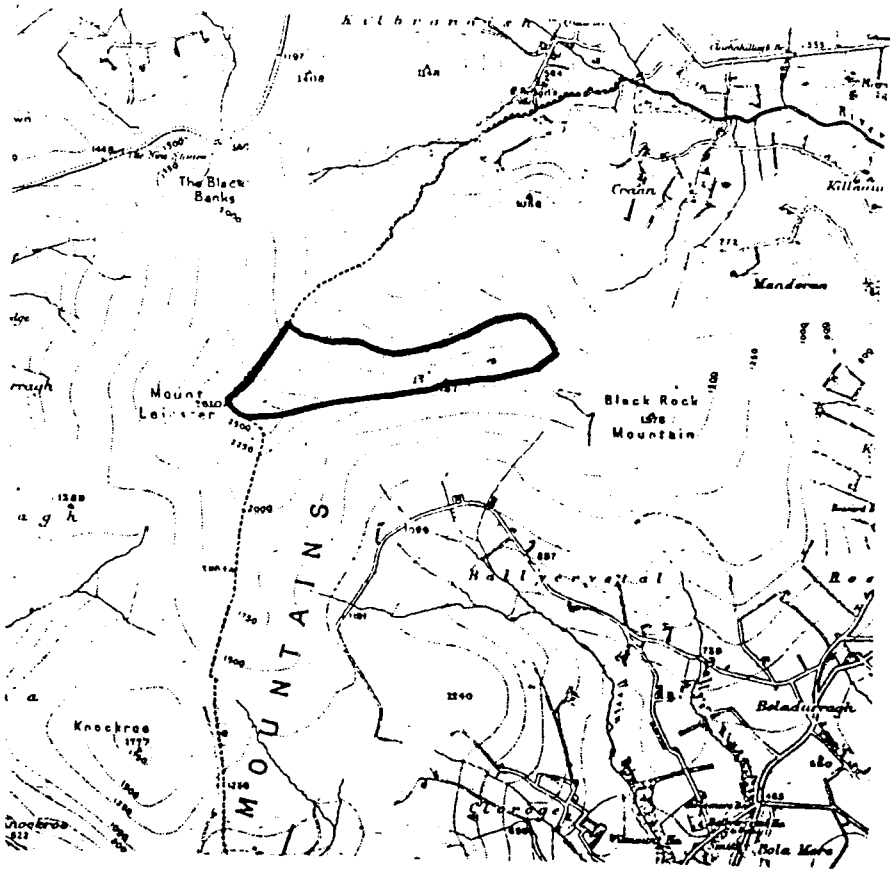

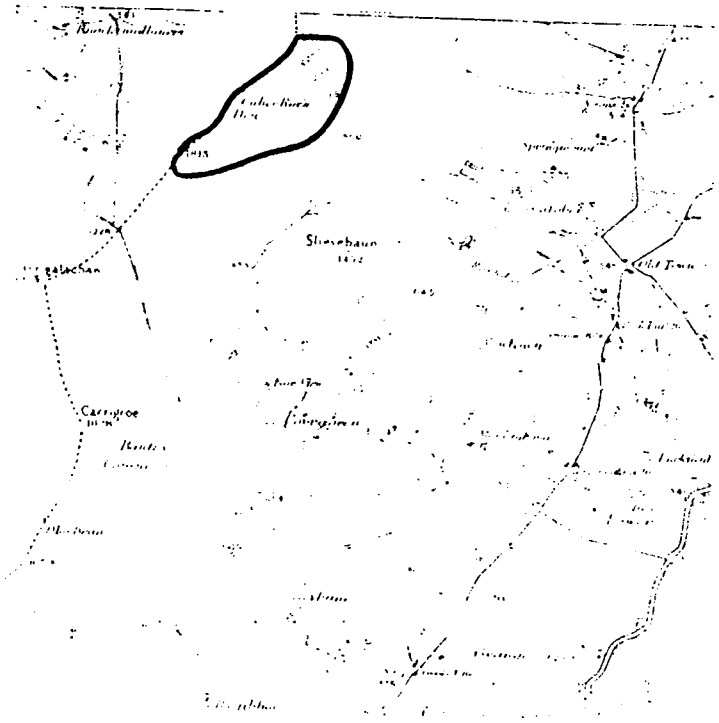

bedrock in the country.

Vulnerability & Recommendations The communities mentioned above are in equilibrium with the pressures of sheep grazing and are most threatened by afforestation. With sensitive treatment the scientific values can be integrated with forestry operations but a blanket programmes of afforestation should be avoided.

URRIN HEADWATERS

Grid Reference	S 86 48
Area	18 ha
Interest	Botanical, Zoological
Rating	Local importance
Priority	B

Marshy fields towards the valley bottom are the interesting site in this case and a variety of natural communities is found, from mineral flushes and patches of incipient blanket bog to the river itself surrounded by thin natural woodland. A noticeable plant community is of purple moor grass (Molinia caerulea) and a rush (Juncus acutiflorus), with heather (Erica tetralix) and bog asphodel (Narthecium ossifragum) in the wetter places and bracken (Pteridium aquilinum) and gorse (Ulex europaeus) in the drier. Red vattle (Pedicularis palustris) occurs where there is water movement and several Sphagnum mosses where there is none. Interesting species include the mountain fern (Thelypteris limbosperma), ivy-leaved bellflower (Wahlenbergia hederacea) which grows amongst Sphagnum and pale butterwort (Pinguicula lusitanica). A large number of alder trees (Alnus glutinosa) are scattered through this area making it appear in places like woodland from a distance. The trees become more dense along the river where birch (Betula pubescens), willows (Salix cinerea), hazel (Corylus avellana) and holly (Ilex aquifolium) are the commonest species. The banks have much flood-borne granite sand and mossy boulders form a conspicuous feature.

The woodland ground flora is typical of an acid mountain wood and its natural tree cover, oak (Quercus petraea), birch and rowan (Sorbus aucuparia) appears in quantity in the southern part of the area. Here a cut-over stand of oak is regenerating freely.

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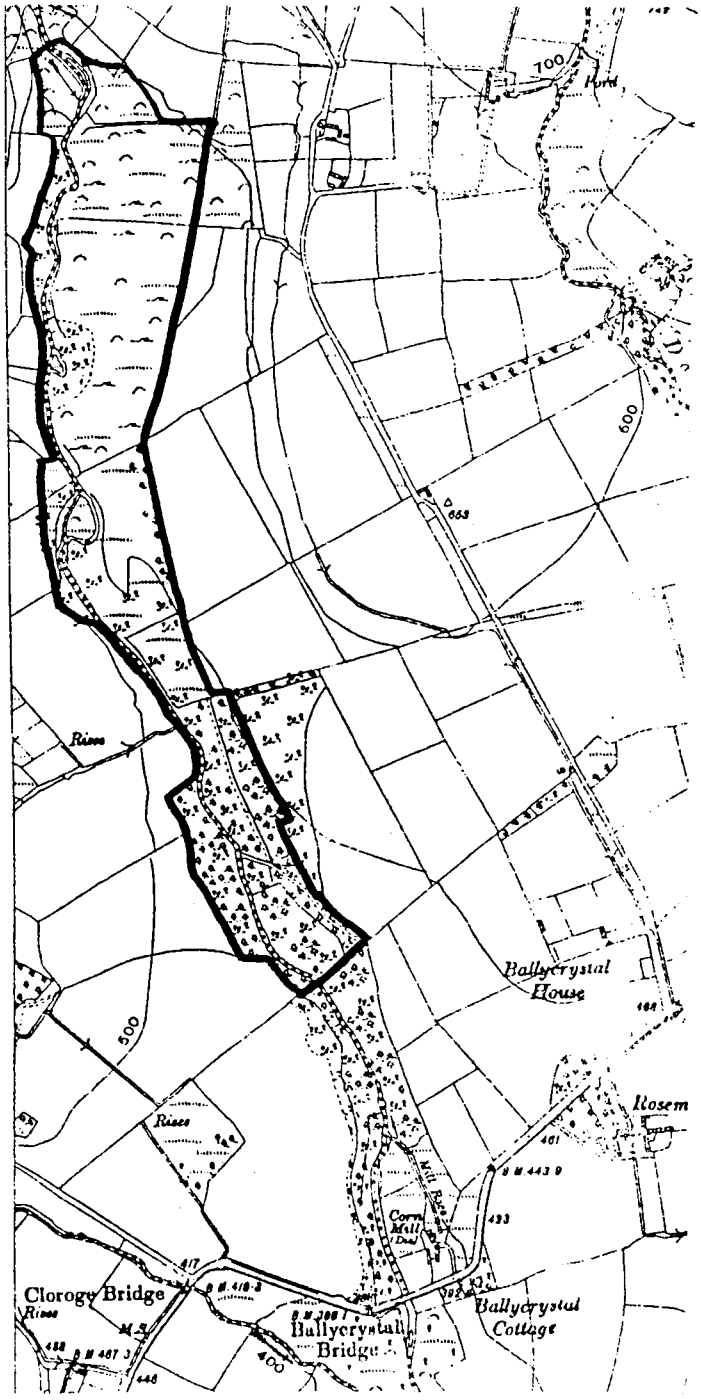

The fauna of this area is not known well but conditions are suitable for a large population of whitethroats, meadow pipits and cuckoos in the summer. The passerine birds seen included redpolls and linnets.

Evaluation The area includes a variety of acid habitats of considerable educational and amenity value.

Vulnerability Afforestation with or without drainage is a major threat to this type of ground. The ordinary felling of trees for firewood could also destroy some of its values.

Recommendations This vegetation should be retained in its natural state despite changes that may occur in land use in the surrounding area. Any opportunity to obtain public access into it should be taken as it is most attractive.

FORTH MOUNTAIN

Grid Reference	S 97 18
Area	55 ha
Interest	Botanical, Zoological
Rating	Local importance
Priority	A

Forth Mountain is formed of a ridge of more resistant Cambrian quartite standing up above the softer slates of the region. Its thin acid soils have been widely used for afforestation and building sites and only toward the summit does the natural vegetation prevail. Here it is upland heath with an abundance of furze (Ulex europaeus, U. gallii), heathers (Calluna vulgaris, Erica cinerea, E. tetralix) and various grass-like plants (Juncus squarrosus, Scirpus caespitosus, Nardus stricta and Agrostis tenuis). The surface has been so frequently burnt that the plant cover is dwarfed and poorly developed: rocks from the underlying quartzite frequently show through the surface. In fact along the crest of the hill the bedrock itself is exposed as several tors, though these have a different origin.

Associated animals are limited in number because of the poor condition of the vegetation but are those that would be expected. The larger types, for example, include pygmy shrew, tiger beetle, meadow pipit, kestrel and the more upland bumble bees.

Evaluation Forth Mountain is of ecological interest since it represents the most south-easterly heathland in the country. This community is not widespread and in many wetter regions it has already passed to blanket bog. Here however, the climate restricts peat development and the vegetation resembles that in parts of Wales and S.W. England.

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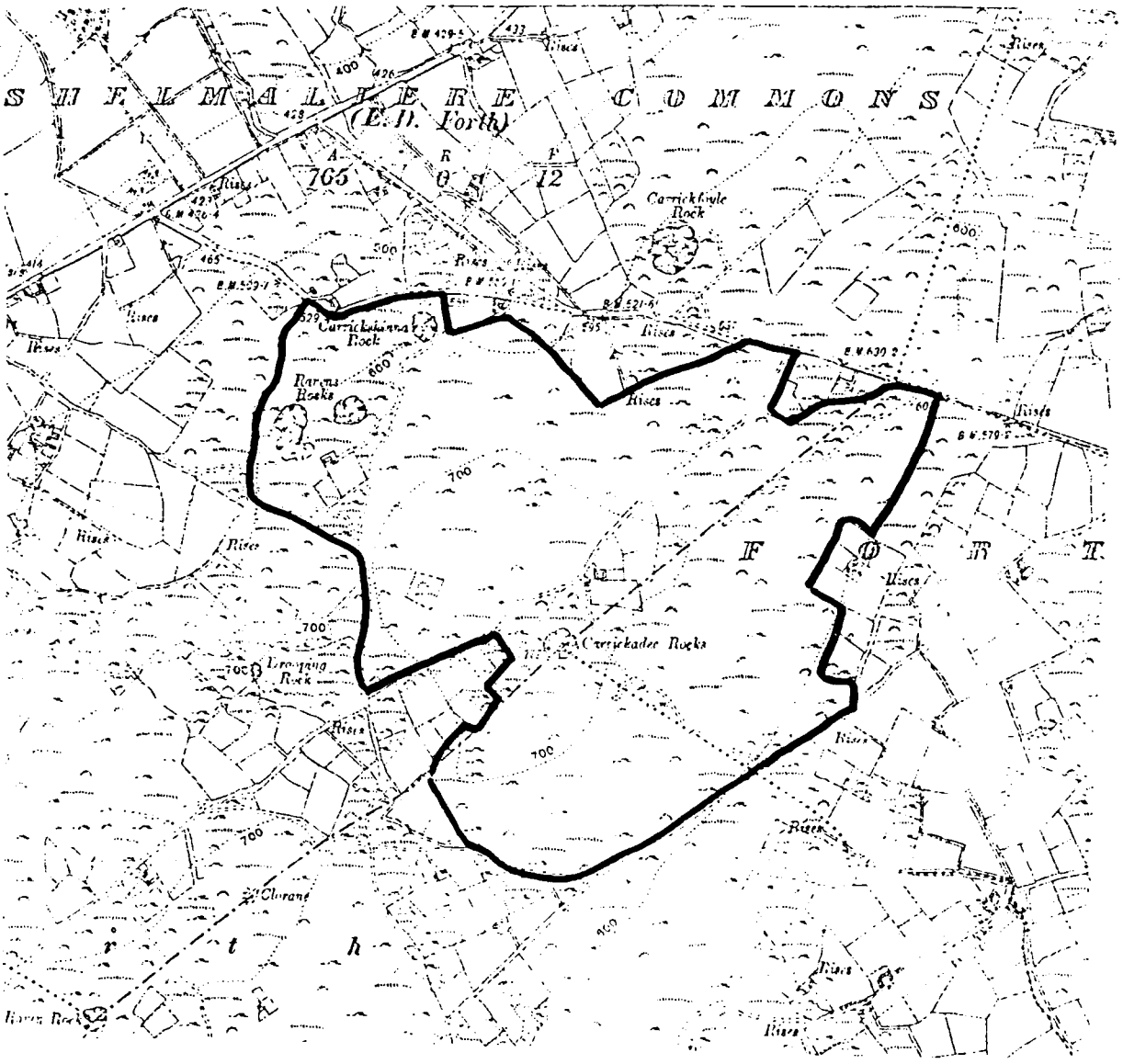

The area is of easy access to the people of Wexford and is a recognized amenity. It also has considerable educational value in a region where natural vegetation is rare.

Vulnerability The two main threats to the area have been mentioned already, i.e. home development and afforestation. Traditional agriculture favours the development of heath though it sometimes results in the too-frequent burning of the vegetation.

Recommendations In view of the high amenity value of the area which results both from its position and height relative to Wexford town and from its scientific values, no further development should be permitted within the outlined area and discussions with the Forest and Wildlife Service should seek to halt the upward climb of afforestation elsewhere. A somewhat larger area should be retained, for amenity purposes in its present form.

CASTLEBRIDGE MARSH

Grid Reference	T 04 25
Area	100 ha
Interest	Botanical, Zoological
Rating	Local importance
Priority	C

Extensive marshes occur around this part of Wexford Harbour varying from saltmarsh to brackish marsh. The Castlebridge River has a considerable local effect and produces a good zonation in the vegetation. There are large stands of reeds (Phragmites australis) which are cut in part for thatching, sea clubrush (Scirpus maritimus), sea rush (Juncus maritimus) and soft rush (Juncus effusus). True saltmarsh is limited to the fringes of creeks and the outer edge of the area but it includes an interesting variety of species including flat-sedge (Blymus rufus), English scurvy grass (Cochlearia anglica) and,in situations slightly inland,a spike rush (Eleocharis uniglumis). In addition there is a record of a grass (Puccinellia fasciculata) of very local distribution. The strawberry clover (Trifolium fragiferum) is a frequent species where it occurs.

The animal life has not been investigated but it is thought to show an interesting mixture of terrestrial and marine species in view of the shelter and unusual proximity of reedbeds to the sea.

Evaluation This is a site of high ecological interest where the environmental conditions are unusual and could be well studied. Several rare plant species occur within the outlined area.

Vulnerability Reclamation of the marshes is the chief threat and it would probably take place by dumping refuse out from the land.

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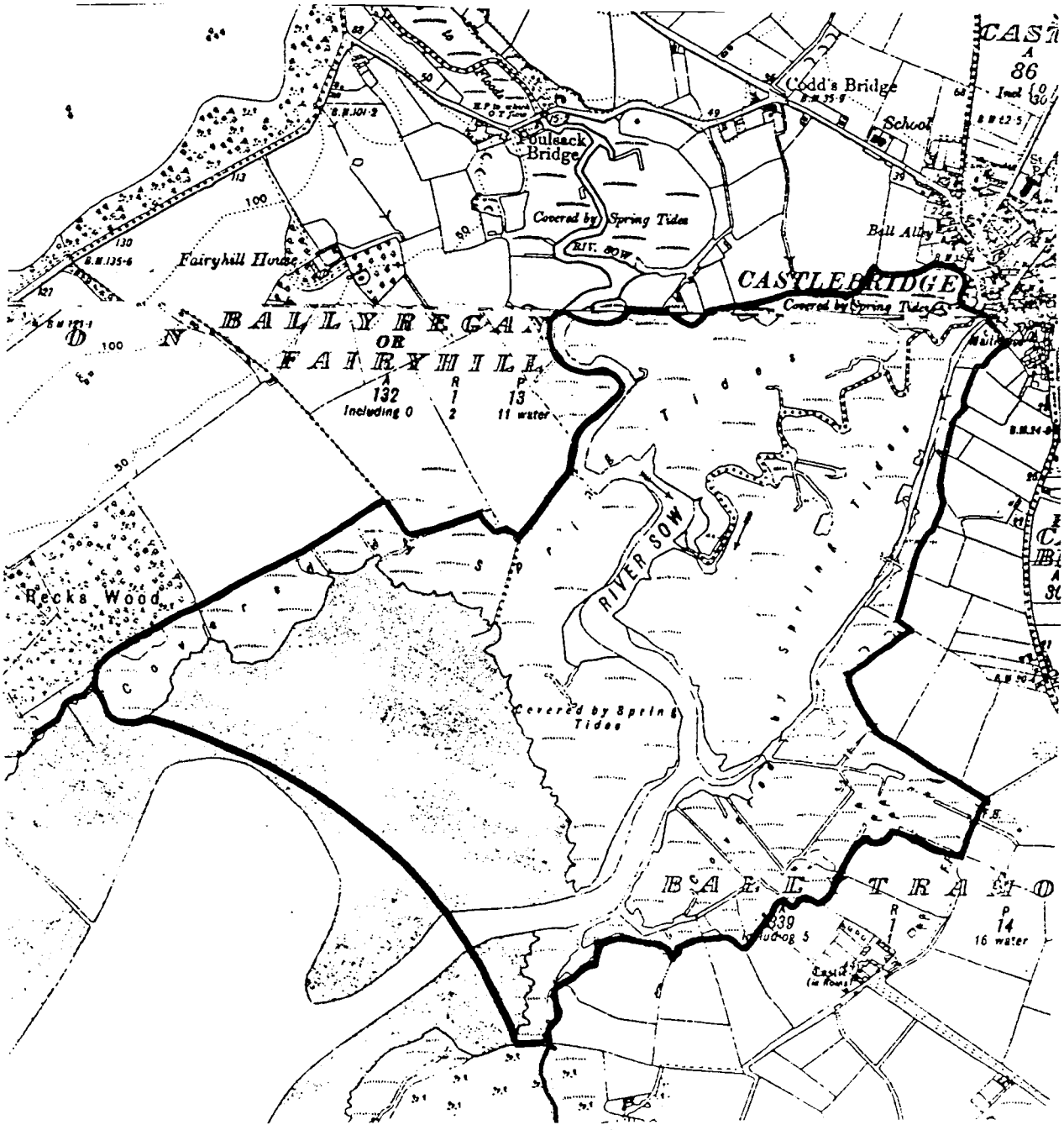

Pollution of the Castlebridge River, while it may be unpleasant, does not influence these communities though it could have more serious effects on the mudflats beyond. Some reed cutting takes place on this site but on a limited scale it adds to the ecological diversity and does little damage.

Recommendations The site should be retained in its present form even if development occurs in adjacent areas.

BALLYNABARNY WOOD

Grid Reference	S ~~49 41~~ 995410
Area	8 ha
Interest	Botanical, Zoological
Rating	Local importance
Priority	C

Where the river valley is steep a deciduous woodland dominated by hazel (Corylus avellana) in the north and oak (Quercus sp.) in the south exists. Former felling of the larger trees has resulted in the oaks being young and all under 12 m in height. Beside the river itself, which occupies a broad anastomosing channel in the winter, willows (Salix cinerea, S. caprea) are common and there is some spindle tree (Euonymus europaeus) also. The clayey or shaley soil is acid in reaction and so the ground flora is restricted in variety. However the river deposits silt along its banks and many different herb species occur here, making up a long list altogether.

Greater woodrush (Luzula sylvaxtica) grows in patches along the upper parts of the wood with frochan (Vaccinium myrtillus), buckler fern (Dryopteris dilatata) and stitchwort (Stellaria holostea). The bluebell (Hyacinthoides non-scriptus) is very common whilst such mosses as Thuidium, Eurynchium striatum, and Mnium hornum are similarly widespread. Holly (Ilex aquifolium) and birch (Betula pubescens) are found here also. Towards the river, where accumulations of oak leaves are absent, wood sanicle (Sanicula europaea) wood speedwell (Veronica montana), bush vetch (Vicia sepium), celandine (Ranunculus ficaria) and goldilocks (R. auricomus) appear. Pignut (Conopodium majus) and wood anemone (Anemone nemorosa) are characteristic of sandy ground

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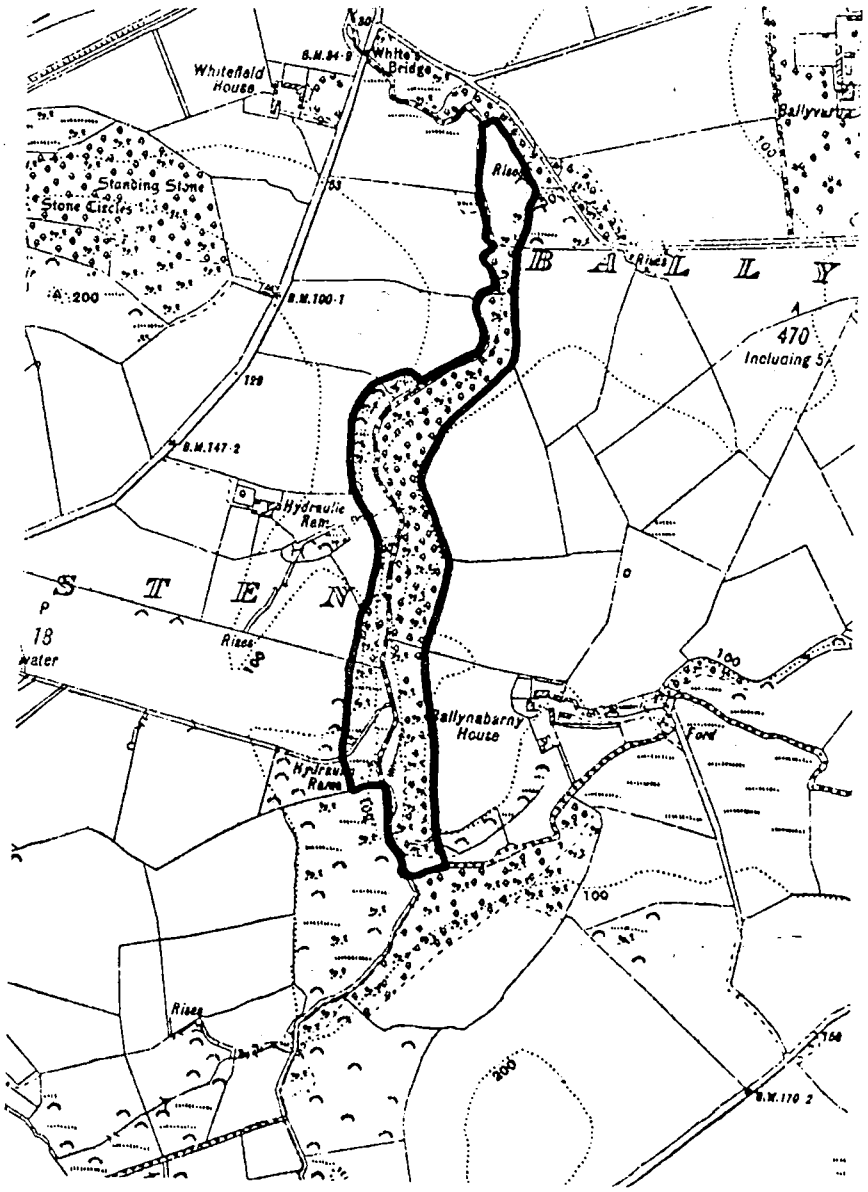

near the river and water dropwort (Oenanthe crocata) of the river itself. Mountain vetchling (Lathyrus montana) and St. John's wort (Hypericum pulchrum) show the acidity of most of the soil.

The bryophyte and fern flora is well developed because of the humidity of the site. It includes (Hookeria lucens, Rhodobryum roseum and Plagiochila asplenoides with Climacium dendroides, Thamnium alopecurum and Mnium undulatum by the river. The soft shield fern (Polystichum setiferum) is the commonest fern species.

A large population of passerine birds is supported in this area but the breeding species are not known as the site was visited in winter.

Evaluation This is a very natural stand of secondary woodland which could be of great educational value in view of its proximity to Enniscorthy. Practically all of the most characteristic woodland herbs are found within its boundaries.

Vulnerability Bulldozing hedges in the fields above the valley has resulted in material slipping into it and there is also tipped refuse in one place. Cattle penetrate the wood at one point and cause an immediate reduction of the herb flora. Either of these influences could be damaging if carried out on a large scale. The timber value of the trees is low at the moment however.

Recommendations The wood has considerable amenity value though it is seen from few roads. It is felt that it should be protected by a Tree Preservation Order under Section 45 of the Local Government (Planning and Development) Act, 1963.

OAKLANDS WOOD

Grid Reference	S 71 26
Area	
Interest	Botanical, Zoological
Rating	Local importance
Priority	A

Oak (Quercus sp.) is the dominant tree in parts of these woods although coniferous species have been widely planted. Beech (Fagus sylvatica) too is common and is regenerating well. The trees reach 15 m and create a closed canopy above abundant holly bushes (Ilex aquifolium). The ground flora includes much frochan (Vaccinium myrtillus) and woodrush (Luzula sylvatica) and a good variety of woodland herbs. The following list indicates the character of the flora.

Oxalis acetosella	wood sorrel
Hyacinthoides non-scriptus	bluebell
Stellaria holostea	greater stitchwort
Glechoma hederacea	ground ivy
Sanicula europaea	wood sanicle
Solidago virgaurea	golden rod
Hedera helix	ivy
Rubus fruticosus	bramble
Dryopteris dilatata	buckler fern
D. pseudomas	male fern
Blechnum spicant	hard fern

Animal communities associated with this vegetation are likely to be of some interest in view of the long persistence of woodland on this site.

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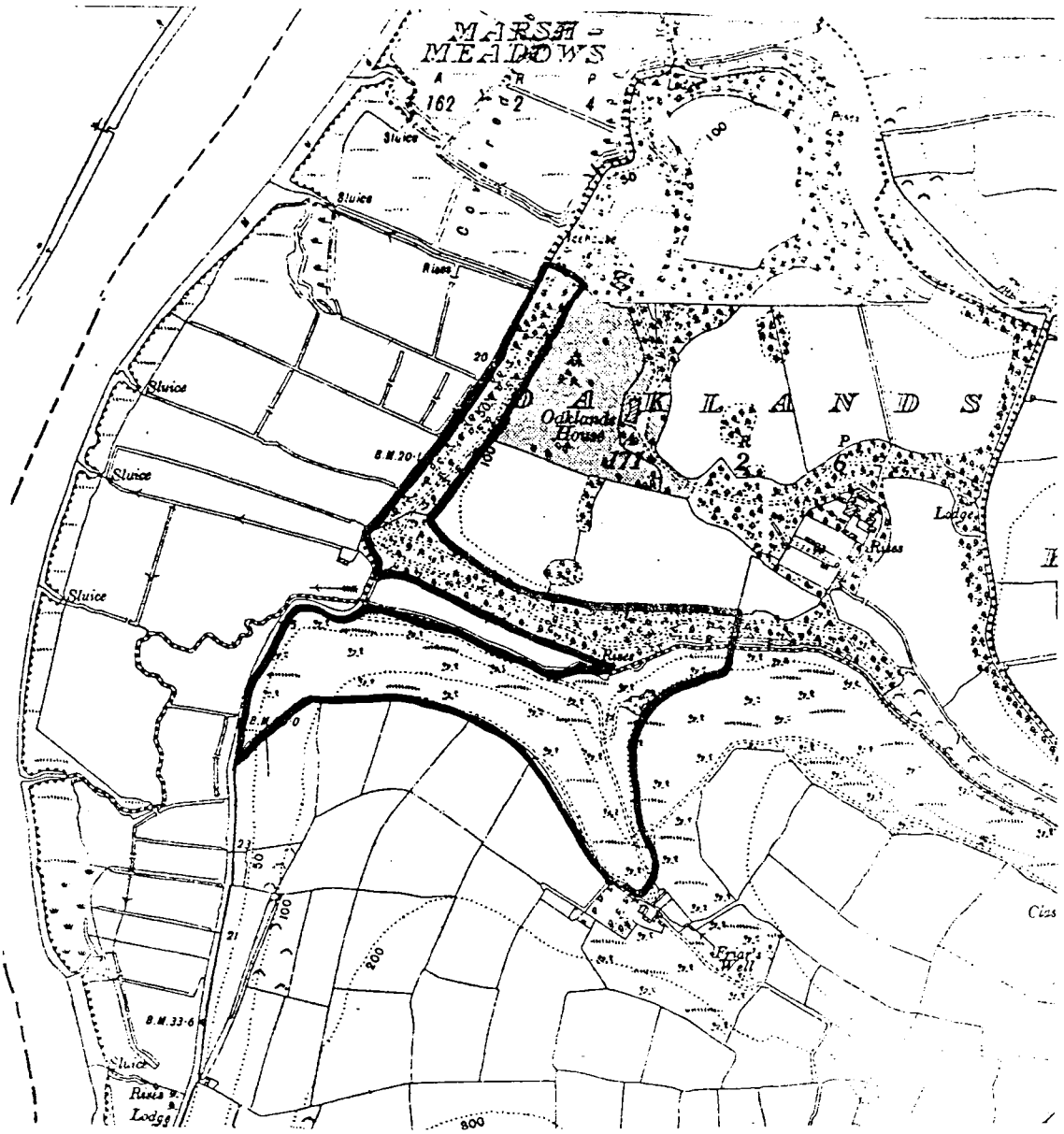

Evaluation An interesting woodland of considerable amenity value, this would make a useful teaching area for New Ross.

Vulnerability Tree felling coupled with replanting with coniferous species is the most likely threat to this area. The spread of Rhododendron, which already occurs in the vicinity, would also damage its value.

Recommendations The possibility and means of opening up a small part of the wood for public and school use should be investigated. In view of its amenity value the stand should be covered by a Tree Preservation Order under Section 45, Local Government (Planning & Development) Act, 1963.

KEERAGH ISLANDS

Grid Reference	S 86 05
Area	17 ha
Interest	Ornithological
Rating	Local importance
Priority	C

These low islands lie about 1.5 km offshore in the western part of Ballyteigue Bay. They are surrounded by rocky platforms with considerable growth of seaweed in the more sheltered locations. Cliffs are absent and the surface is covered by maritime vegetation, especially red fescue (Festuca rubra), sea pink (Armeria maritima), scurvy grass (Cochlearia officinalis) and bladder campion (Silene maritima).

A variety of seabirds breed in the area and a count in 1970 gave the following result.

Cormorant	88 pairs
Shag	10 pairs
Great black-backed gull	50 pairs
Lesser black-backed gull	15 pairs
Herring gull	280 pairs
Arctic tern	12 pairs

Evaluation The cormorant and arctic tern are both notable species on the Keeragh Islands as they each have only one other breeding colony in the county.

Vulnerability The seabirds are sensitive to disturbance during the breeding season (May-July) and could be prevented from breeding successfully by people landing on the islands.

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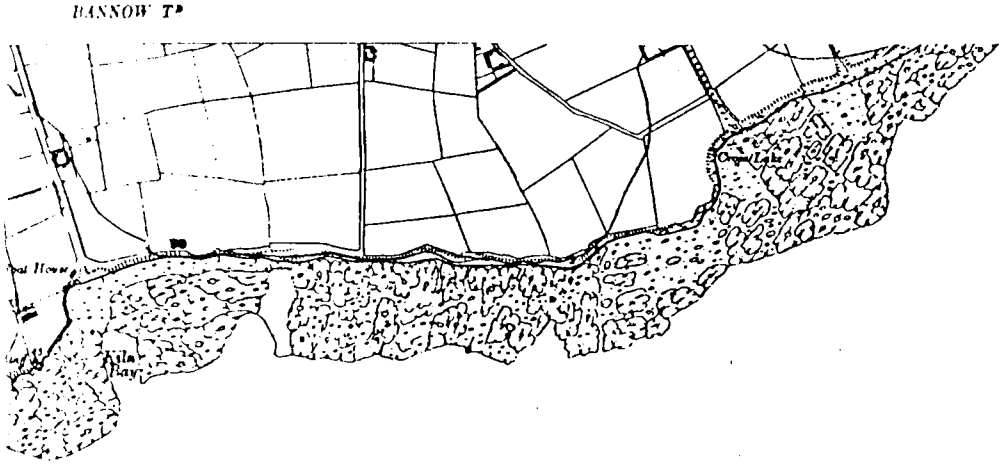

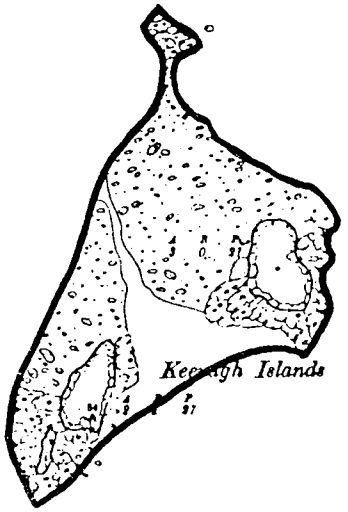

Recommendations Unrestricted access should be prevented during spring and early summer. Since the islands are a bird reserve owned by the Irish Wildbird Conservancy this is unlikely to occur.

BUNCLODY SLATE QUARRIES

Grid Reference	S 89 54
Area	12 ha
Interest	Botanical, Zoological
Rating	Local importance
Priority	B

The thin soils on these slatey hills carry a well developed heath vegetation that is comparatively rich in species. Autumn gorse (Ulex gallii) is a major dominant with bracken (Pteridium aquilinum), common gorse (U. europaeus) and, in places, broom (Cytisus scoparius). Heathers (Erica cinerea, Calluna vulgaris) are locally common while such species as wood sage (Teucrium scorodonia), stonecrop (Sedum anglicum), foxglove (Digitalis purpurea), hard fern (Blechnum spicant) and sheepsbit (Jasione montana) are associated with rock outcrops. Heath violet (Viola lactea) occurs rarely. On the old slate piles or tips of overburden, mosses such as Polytrichum aloides, Hypnum cupressiforme and Dicranella heteromalla grow with the stonecrop and hairy birdsfoot (Ornithopus perpusillus).

The fauna of this area has not been studied as far as is known but can be expected to be rich in certain beetle and ant species.

Evaluation Heaths develop in Ireland on well drained hills with relatively low rainfall, for example, in the rain shadow of a mountain range. This is a fairly good example though it has been much modified by quarrying for slates. Long exploratory shafts extend southwards into the area though none are active today. The site is unique, however, in the occurrence of Ornithopus which is associated with the coast in the rest of the country.

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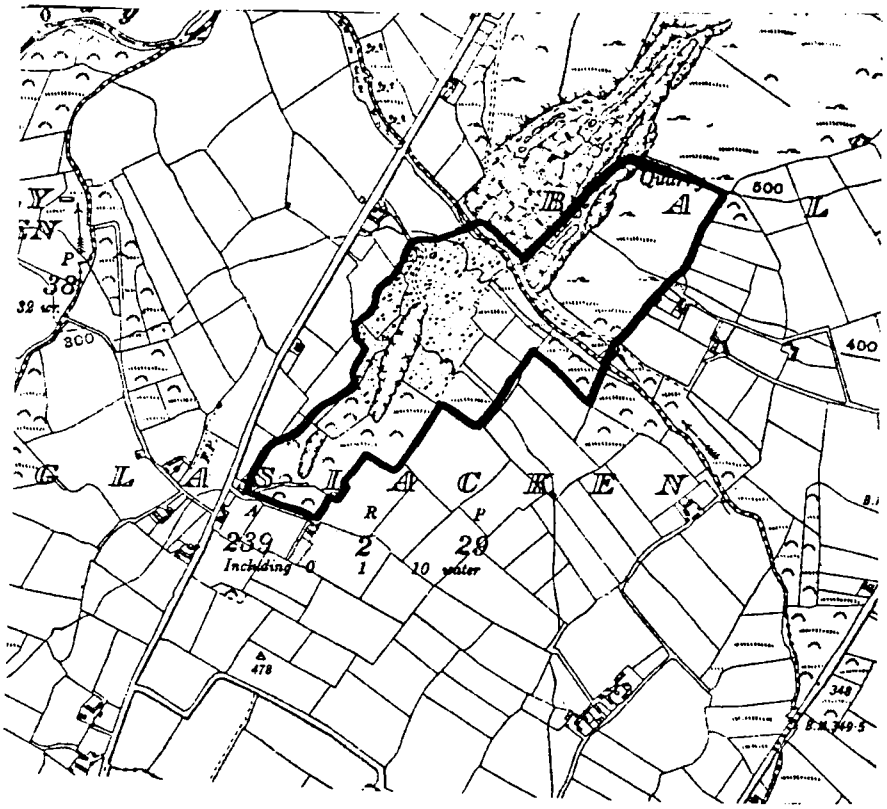

Vulnerability The northern of the two hills is now covered by coniferous trees so afforestation could obscure the interesting communities here also. The small amount of quarrying that is going on at the moment is not regarded as a threat.

Recommendations The present form of land use, the grazing of sheep and cattle, is in balance with the vegetation and should continue. No development should be allowed on any part of the site.

COURTOWN DUNES

Grid reference	T 20 57
Area	21 ha
Interest	Botanical, Zoological
Rating	Local importance
Priority	B

This site lies north of the town and having a linear access road along it is much used by the public. The dunes are remarkable for the luxuriance of the sea buckthorn (Hippophae rhamnoides and sycamore (Acer pseudoplatanus) which together cover much of the area. The buckthorn covers an extensive zone at the south end with an impenetrable thicket and grows even on the seaward face of the dunes. Here it is found among marram (Ammophila arenaria), sea lyme grass (Leymus arenarius) and a horsetail (Equisetum moorei).

Although sycamore grows in a stunted form on the crest of the dunes it is best developed inland of this, especially overlooking the Owenavorragh river which flows north before discharging into the sea. The ground flora consists largely of ivy (Hedera helix), bluebell (Hyacinthoides non-scriptus) and various ferns, polypody (Polypodium interjectum), hart's tongue (Phyllitis scolopendrium) and shield fern (Polystichum setiferum) in order of abundance. Additional species occur west of the road in the more mature woodland. The trees provide a site for a sizeable roost of rooks and starlings in the winter.

Patches of dune grassland also occur and where they are not excessively trampled they contain a typical flora with the following interesting species.

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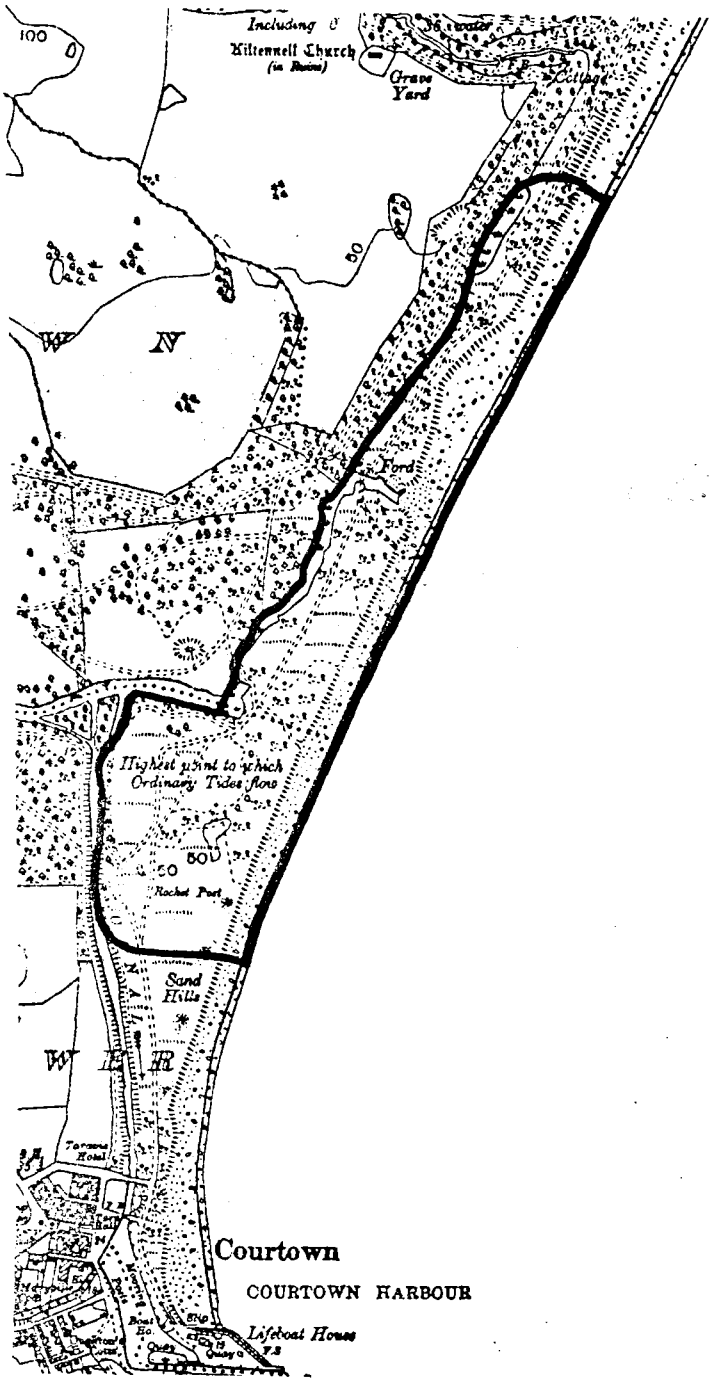

Thalictrum minus	meadow rue
Myosotis ramosissima	forget-me-not
Gentianella campestris	field gentian
G. amarella	autumn gentian
Anacamptis pyramidalis	pyramidal orchid
Ophrys apifera	bee orchid
Vulpia fasciculata	dune fescue

The tidal part of the river behind the dunes contains species of pondweeds (Ruppia spp., Potamogeton pectinatus) and is bordered by banks with a little reed (Phragmites australis) and canary grass (Phalaris arundinacea) on them.

Evaluation This area has an artificial origin in that both the dominant species, Hippophae and Acer are introduced and were originally planted here. However it has developed into one of the only wooded dune systems in the country and is therefore of some ecological importance. It is a classical site for Hippophae which shows its full potential for dune stabilisation and resultant prevention of access.

Vulnerability Recreational pressures on the dunes are obvious close to Courtown with erosion along paths and around car-parking areas. Away from the paths however there is less damage. The continual spread of Hippophae would reduce the interest in the other dune communities.

Recommendations A management plan should be drawn up for the area so as to separate the regions of greatest recreational use from those with interesting vegetation. Development can then be concentrated in the former.

Interest	Botanical
Rating	Local importance
Priority	C

The Owenavarragh River has cut a deep gorge in the rocks inland of Courtown so that it is almost at sea level, 25 m below the general level of the land. The glen has always had deciduous woodland in it but this was largely replaced by planted conifers about forty years ago. Portions of the flat valley bottom north of the bridge have been planted with poplars (Populus sp.) and these are now well grown, providing an open site for a varied ground flora. The land is sometimes flooded in winter and is made up of silt and sand. It is dominated by nettle (Urtica dioica) and cow parsely (Anthriscus sylvestris) close to the river and by wild garlic (Allium ursinum) further back. In spring this species covers extensive areas in pure stand but other niches are filled by blue-bells (Hyacinthoides non-scriptus), calandine (Ranunculus ficaria), golden saxifrage (Chryosplenium oppositifolium) and wood speedwell (Veronica montana). The list is completed by such species as:

Arum maculatum	cuckoo pint
Geum urbanum	wood avens
Carex sylvatica	wood sedge
C. pendula	sedge
C. strigosa	sedge
C. remota	sedge
C. divulsa	sedge
Cardamine flexuosa	wood cress

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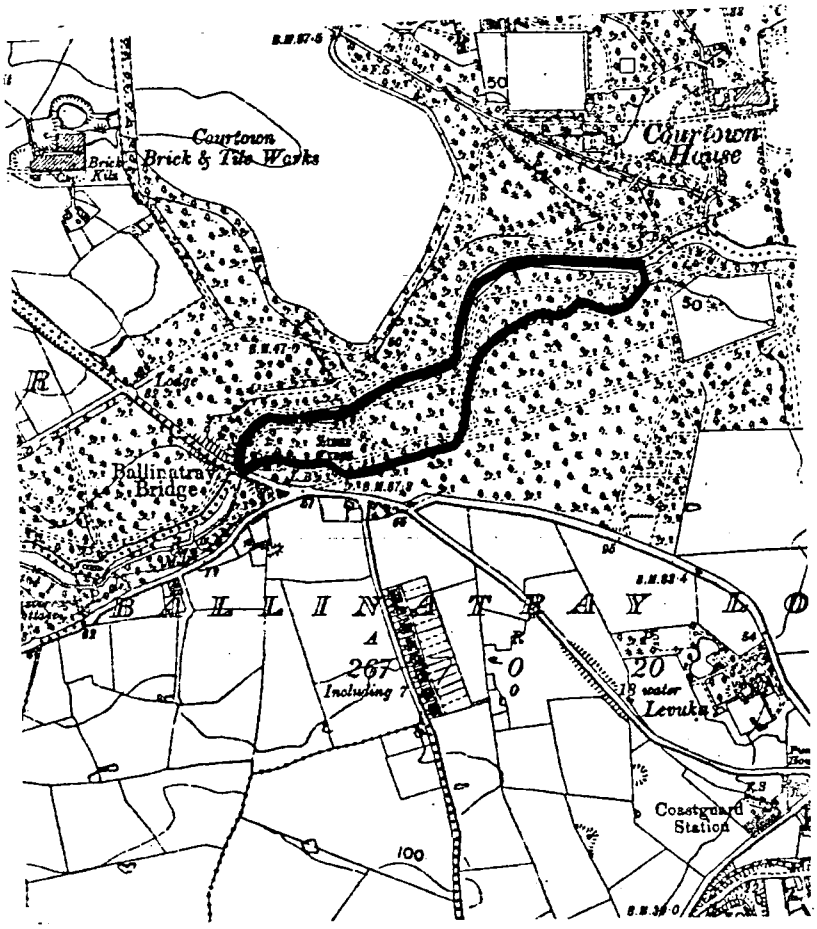


C. pratensis	lady's smock
Polystichum setiferum	soft shield fern
Phyllitis scolopendrium	hart's tongue

There is some shrub growth beneath the trees with brambles (Rubus fruticosus), elder (Sambucus nigra) and laurel (Prunus laurocerasus) on the valley sides.

Bird life in the glen is rich, including the full variety of passerine species and larger birds like woodcock, sparrowhawk and hooded crow.

Evaluation Despite afforestation a diverse and interesting ground flora has remained on this site which is of considerable educational value. Several rare species which were formerly recorded here may still survive.

Vulnerability Use of evergreen trees on this site would remove much of the interest in the flora by shading it. It is unlikely that such species would be planted however, because of the intermittent flooding.

Recommendations The tree cover should remain in its present form in this area and access should be given to it from the forest walks already laid out.

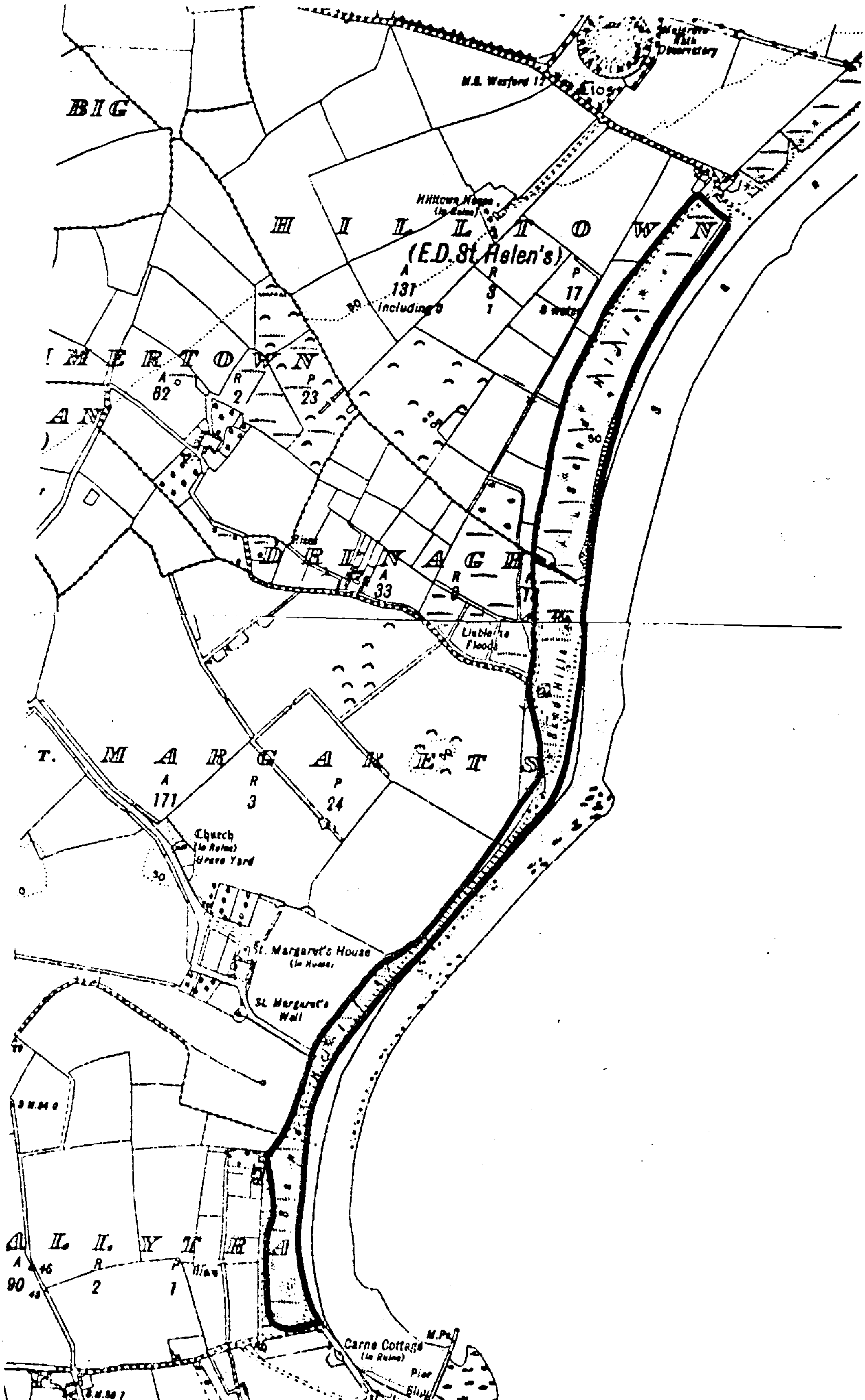
ST. MARGARETS COAST

Grid Reference	T 13 06
Area	12 ha
Interest	Botanical
Rating	Local importance
Priority	B

The coastline both north and south of St. Margaret's is of interest. To the north a low boulder clay cliff occurs, usually with some windblown sand on its crest; to the south the dunes of Carne beach soon begin, reaching a height of 10 m above beach level. The front slope of the dunes rises directly from the beach without any development of protective embryo dunes and is suffering from wind erosion. The dune grassland behind is being invaded by blowing sand. Where it is stable the flora includes much red fescue (Festuca rubra) with such typical species as bulbous buttercup (Ranunculus bulbosus) and white clover (Trifolium repens). Wild clary (Salvia horminoides) is relatively common with sea radish (Raphanus raphanistrum) in the more disturbed soils. A variety of winter annuals occur, in particular mouse-ears (Cerastium diffusum, C. semidecandrum) and whitlow grass (Erophila verna).

In the northern part of the area the less sandy conditions favour different communities. Bracken (Pteridium aquilinum) is very frequent while closer to the sea both yellow horned poppy (Glaucium flavum) and hound's tongue (Cynoglossum officinale) occur sparingly.

Evaluation This area represents a typical type of Wexford coastline with an interesting variation in coastal communities. It is a centre of distribution of the Salvia.



BIG
H I L L T O W N
(E.D. St Helen's)
A 131 including
R 3 1
P 17
M E R T O W N
A 62
R 2
P 23
D R I N A G H
A 33
R 0
Liable to Floods
M A R G A R E T S
A 171
R 3
P 24
Church (in Ruins) Grave Yard
St. Margaret's House (in Ruins)
St. Margaret's Well
A 90
R 2
P 1
Carne Cottage (in Ruins)
Pier
Slip
Life Saving Station
Carne House

Vulnerability The southern part of the site suffers from excessive recreational usage and it is for this reason that the dunes are in retreat. Trampling and car traffic on the grassland will soon damage the interest of the area.

Recommendations Control measures should be instigated to curtail car movements on the grassland and to 'channel' visitors along definite paths to the beach. Some beach protection work is also advisable. *

* Erosion at Carne, Co. Wexford with some management proposals. An Foras Forbartha, July 1978.

RECOMMENDED ACTION

Name of Area	General Planning Control	Specific Action Mentioned	Tree Preservation Order	Special Amenity Area Order	Conservation Order
Hook Head		x		x	
Moyne Lower	x				
Greenville	x				
Camaross	x				
Newtownwood	x				
Wexford Slobs	x				
Lady's Island L.				x	x
St. Helen's Harbour	x				
Saltee Islands		x			
Doo L. Kettleholes	x	x			
The Raven		x			
Ballyteigue dunes				x	
Macmine marshes	x				
Killoughrim Forest			x		
Kilmore Quay shore	x				
Ballymoney strand		x			
Curracloe coast	x				
The Cull	x				
Tacumshin Lake	x				
Riverbank at New Ross	x				
Ballyhack	x				
Barrow salt meadows		x			
Bannow Bay					
Mt. Leinster and Blackstairs	x				
Urrin headwaters	x	x			
Forth Mt.	x	x			
Castlebridge marsh	x				
Ballynabarny wood			x		
Oaklands Wood			x		
Keeragh Is.	x				
Bunclody slate quarry	x				
Courtown dunes		x			
Courtown glen		x			
St. Margaret's coast		x			