

**COASTAL LAGOONS IN THE REPUBLIC OF IRELAND**

**VOLUME II**

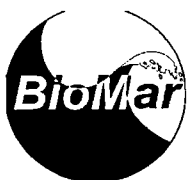
**INVENTORY OF LAGOONS AND SALINE LAKES**

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*Life*

### 3.3 INVENTORY OF LAGOONS AND SALINE LAKES

#### 3.3.1 Introduction

This volume contains brief descriptions of all the sites identified as lagoons or saline lakes during Phase 1 of the survey, and summary descriptions of the 20 sites selected for Phase 2. Some other sites known to the authors but not sampled have been included and also some former lagoons which have been destroyed (Ballycotton L., Akeragh L.) and one (Bunduff L.) which in our opinion is not eligible to be considered as a lagoon, being freshwater at the time of our visit.

#### 3.3.2 Methods

Unless otherwise stated, sites were surveyed in 1-2 hours between 11 June and 7 July, 1996. Methods employed are described in Volume I of this report and details of the 20 sites selected for more intensive survey are in Volume III.

In compiling the inventory, information has been sought on the following:

- Geomorphology - including the mode of origin. Special attention was paid to barriers and inlet/outlets.
- Topography - area, depth, nature of substrate, littoral zone and surrounding land.
- Hydrological regime - freshwater and seawater inputs, water level changes, drainage mechanisms.
- Salinity regime - average values, range, gradients, seasonal and storm-induced variations.
- Water quality - nutrient enrichment (sewage, agricultural run-off etc.) and other sources of pollution in the lagoon and feeder streams.
- Vegetation - species composition and extent of fringing vegetation and submerged macrophytes. Emphasis on aquatic vegetation, especially lagoonal specialists listed by Davidson *et al.* (1991). Rare species and species of special interest.
- Aquatic fauna - number of recorded species; number of lagoonal specialists as listed by Davidson *et al.* (1991); rare species and species of special interest.
- Ecotonal Coleoptera. Indicators of conservation value were those which had a preference for a specific microhabitat associated with lagoon margins, or are reported in the literature as being local or rare, and thus less likely to survive in historically degraded systems.
- Birds - maximum numbers of wintering waterfowl, important breeding species, perceived ornithological importance of the site.
- Exploitation - fishing, reed-cutting, recreational activities.
- Management - method of water level control, amelioration schemes.
- Threats - reclamation proposals, pollution, off-site operations such as dredging and beach sand or gravel extraction.
- Conservation status - existing level of protection by agreement or legislation.

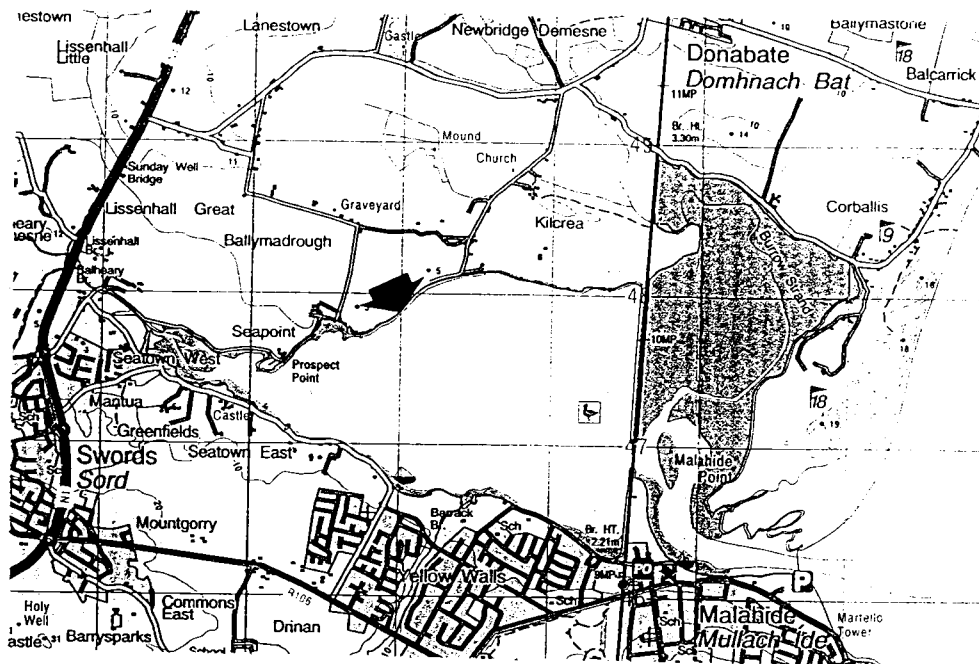
#### 3.3.3 Site descriptions

Sites are listed clockwise from Co. Dublin to Co. Donegal. Maps are from the OS 1: 50,000 (Discovery Series) when available and names are as shown on the same maps. Grid references refer to the centre of the lagoon.

# 1. BROADMEADOW WATER, Co Dublin

OS Grid Ref. O 215473

Inner Malahide Estuary, 15 km north of Dublin centre.



**Lagoon Type:** Artificial saline lake with artificial barrier and open, bridged outlet.

**Description.** Inner part of the Malahide Estuary, isolated by construction of a railway viaduct in the 1840s. Area 300 ha (approx.), depth 2 m or less except near outlet. Substrate silty, shores stony with some boulders (road building).

**Hydrology.** Tidal, range <30 cm. Brackish conditions are created by the Broadmeadow River giving a salinity gradient from 0‰ at the river mouth to 34‰ or more near the viaduct. Range of water levels about 1 m.

**Vegetation.** Fringing vegetation sparse. Small salt marshes on the south shore and at the river mouth where there is some *Spartina*. Aquatics are marine and brackish algae except in a ditch near the river mouth where there is *Ruppia*.

**Exploitation.** Amenity (sailing, sail-boarding, water ski-ing). Formerly fished.

**Birds** Up to 120 Mute Swans. Good wader roost on mud flats near river mouth. Occasional sightings of rare species. International importance for Brent geese (whole estuary). Regional importance for wildfowl and waders

**Threats.** Severely polluted by sewage overflow from Swords treatment plant. A motorway bridge is to be built over the western marsh area.

The following species were recorded in October 1993 The site was not visited in 1996.

### Aquatic Fauna

<i>Obelia longissima</i>	<i>Chironomus sp.</i>
<i>Obelia bidentata</i>	<i>Chunio marinus</i>
<i>Sagartia ?ornata</i>	<i>Einfeldia 3 spp.</i>
<i>Hediste diversicolor</i>	<i>Ischnura elegans</i>
<i>Arenicola marina</i>	<i>Sigara dorsalis *</i>
<i>Pomatocerus triqueter</i>	<i>Cloeon dipterum</i>
<i>Elminius modestus</i>	<i>Hydracarina</i>
<i>Balanus balanus</i>	<i>Hydrobia ulvae</i>
<i>Balanus improvisus</i>	<i>Potamopyrgus antipodarum</i>
<i>Lekanesphaera rugicauda *</i>	<i>Littorina littorea</i>
<i>Jaera sp.</i>	<i>Littorina saxatilis</i>
<i>Corophium volutator</i>	<i>Phytia myosotis</i>
<i>Gammarus duebeni</i>	<i>Mytilus edulis</i>
<i>Gammarus locusta</i>	<i>Mya arenaria</i>
<i>Gammarus zaddachi</i>	<i>Alcyonidium gelatinosum</i>
<i>Echinogammarus marinus</i>	<i>Conopeum seurati ? (L)</i>
<i>Orchestia gammarella</i>	<i>Anguilla anguilla</i>
<i>Melita palmata</i>	<i>Atherina presbyter</i>
<i>Microdeutopus anomalus</i>	<i>Gasterosteus aculeatus</i>
<i>Neomysis integer</i>	<i>Pungitius pungitius *</i>
<i>Praunus flexuosus</i>	<i>Gaidropsarus vulgaris</i>
<i>Palaemonetes varians L</i>	<i>Pomatoschistus microps</i>
<i>Palaemon serratus</i>	<i>Platichthys flesus</i>
<i>Crangon crangon</i>	
<i>Pisidia longicornis</i>	
<i>Carcinus maenas</i>	

\* in ditch in western marsh only. L = lagoonal specialist.

### Aquatic Flora

Algae include fucoids, *Mastocarpus stellatus*, *Ulva* and *Enteromorpha*.

*Ruppia* sp. and *Chaetomorpha linum* (lagoonal specialists) were present in the ditch in the western marsh.

### **Evaluation.**

- The site is artificial and is not a true lagoon.
- Only 1 (2) lagoonal indicator recorded
- The whole estuary is of international importance for Brent geese and of regional importance for wildfowl and waders. The estuary is a Special Protection Area.

Sources: EIS (Fingal Co. Council Parks Dept.)



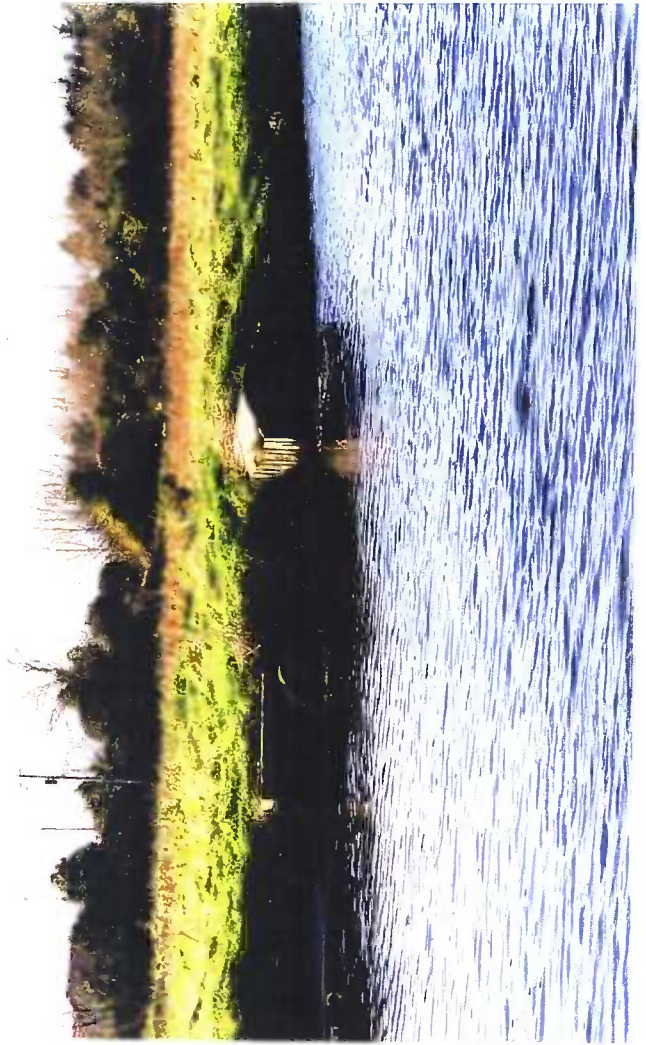
**Broadmeadow Water.** View of railway viaduct and bridge .



**Broadmeadow Water.** West end near the river inflow.



**Broadmeadow Water.** Shallow water near the west end,

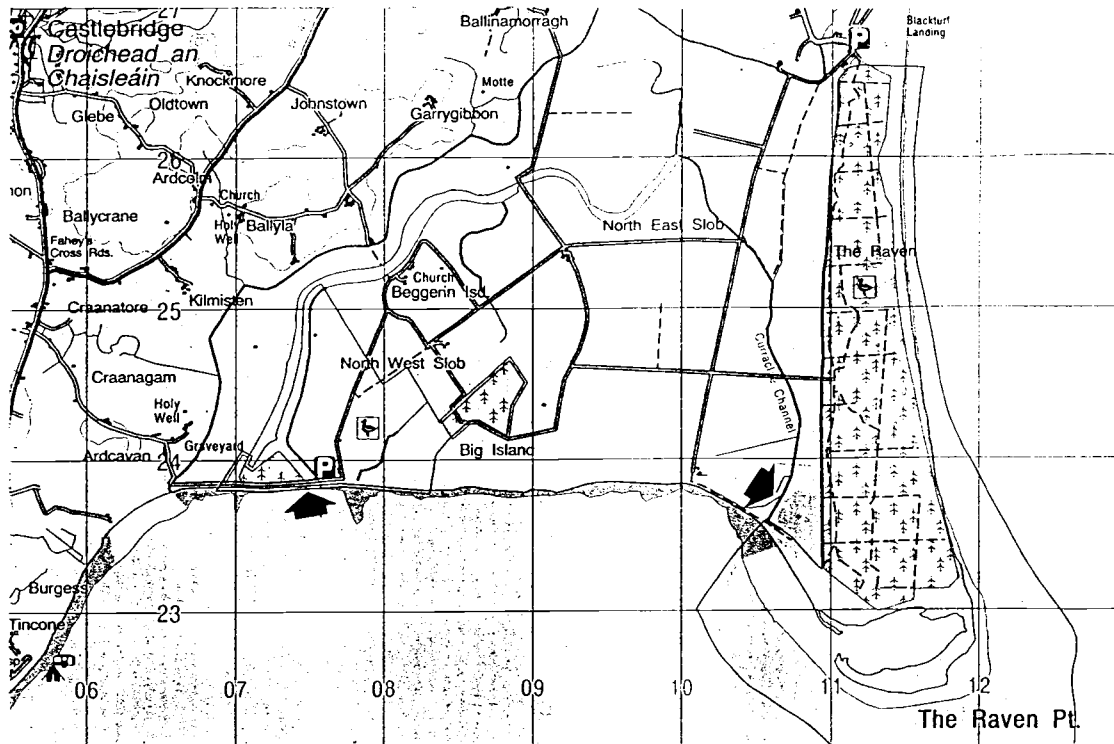


**Broadmeadow Water.** Sewage outfall in Broadmeadow river

## 2. NORTH SLOB CHANNEL, Co. Wexford

OS Grid Ref. T 075239, 106237

North shore of Wexford Harbour, about 5 km from Wexford



**Lagoon Type:** Artificial saline lake. Former salt marsh creeks in reclaimed polder, water level controlled by pumping.

**Description.** Formerly an area of mud flat and salt marsh, reclaimed in the mid 1800s by construction of a sea wall. A broad, semicircular channel runs through polder grasslands and crops. Area of water about 80 ha. Maximum depth 3.5 m. Substrate silt or muddy sand.

**Hydrology.** The area is below high tide level and there is extensive landward seepage with seepage streams. Mixed seawater, and freshwater from streams and drainage ditches, is pumped out and the water level is more or less constant. A salinity gradient from 4‰ in the west to between 20 and 30‰ in the Raven (Curracloe) Channel exists throughout the year.

**Vegetation.** Extensive beds of *Phragmites* in west, *Scirpus maritimus* and *Schoenoplectus lacustris* beds elsewhere., *Zostera marina*, *Ruppia* sp., *Myriophyllum spicatum*, *Chaetomorpha linum* and *Potamogeton pectinatus* at the Raven (east) end. *Chara canescens* (old record).

**Aquatic fauna.** Fauna rich, includes some rare species e.g. *Littorina tenebrosa*, *Notonecta viridis*, *Leptocheirus palmata*.

**Birds.** The Channel and surrounding land are renowned for wildfowl and waders. The site is internationally important for White-fronted goose, Bewick's swan and Brent goose.

**Threats.** Some eutrophication from fertilizer run-off. Extension of the tillage area has been largely halted by land acquisition but some dispute over land use may persist. There is controlled shooting.

## Species records

The following species were recorded in 1991 (Galvin 1992) and from two sites during a brief visit on 1.vii.96:

### Raven Channel

#### Aquatic fauna

*Hediste diversicolor*  
*Arenicola marina*  
*Neomysis integer*  
*Praunus flexuosus*  
*Lekanesphaera hookeri* L  
*Idotea chelipes* L  
*Jaera* sp.  
*Corophium volutator*  
*Gammarus duebeni*  
*Gammarus zaddachi*  
*Palaemonetes varians* L  
*Sigara stagnalis* \* L  
*Potamopyrgus antipodarum*  
*Littorina "tenebrosa"* L  
*Conopeum seurati* L  
*Gasterosteus aculeatus*

#### Aquatic flora

*Chaetomorpha linum* L  
*Myriophyllum spicatum*  
*Potamogeton pectinatus*  
*Ruppia* sp. L  
*Zostera marina*

(*Chara canescens* has been recorded in the past.)

\* in 1991 only. L lagoonal specialist. R rare/infrequent species

### Main Channel (W)

*Neomysis integer*  
*Lekanesphaera hookeri* L  
*Idotea chelipes* L  
*Cyathura carinata* \* R  
*Leptocheirus palmata* \* R  
*Gammarus zaddachi*  
*Palaemonetes varians* L  
*Sigara stagnalis* \* L  
*Sigara ?lateralis* \*  
*?Hesperocorixa linnaei* \*  
*Corixa praeusta* \*  
*Notonecta viridis* \*  
*Gerris lacustris* \*  
*Limnephilus affinis* \*  
*Enochrus helophorus*  
*Helophorus avernicus*  
*Helophorus brevivalpis*  
*Glyptotendipes barbipes* \*  
*Potamopyrgus antipodarum*  
*Pomatoschistus microps*  
*Gasterosteus aculeatus*

## Evaluation

- The site does not qualify as a lagoon, but contains a typical lagoonal fauna with 7 lagoonal specialists recorded.
- The channels are partly artificial in origin and conditions in them are strictly controlled. Perhaps for this reason, the fauna and flora are rich in species and some rare species occur.
- The Wexford Wildfowl Reserve is a Nature Reserve, jointly owned by the State and IWC, and is an SPA and Ramsar site. Resident warden. The channels are within a proposed NHA (Site No. 712)

Sources: Duff 1976, Redmond 1977, Devlin 1992, Galvin 1992, Merne 1974, several bird reports.



**North Slob.** The Raven Channel near the barrier.



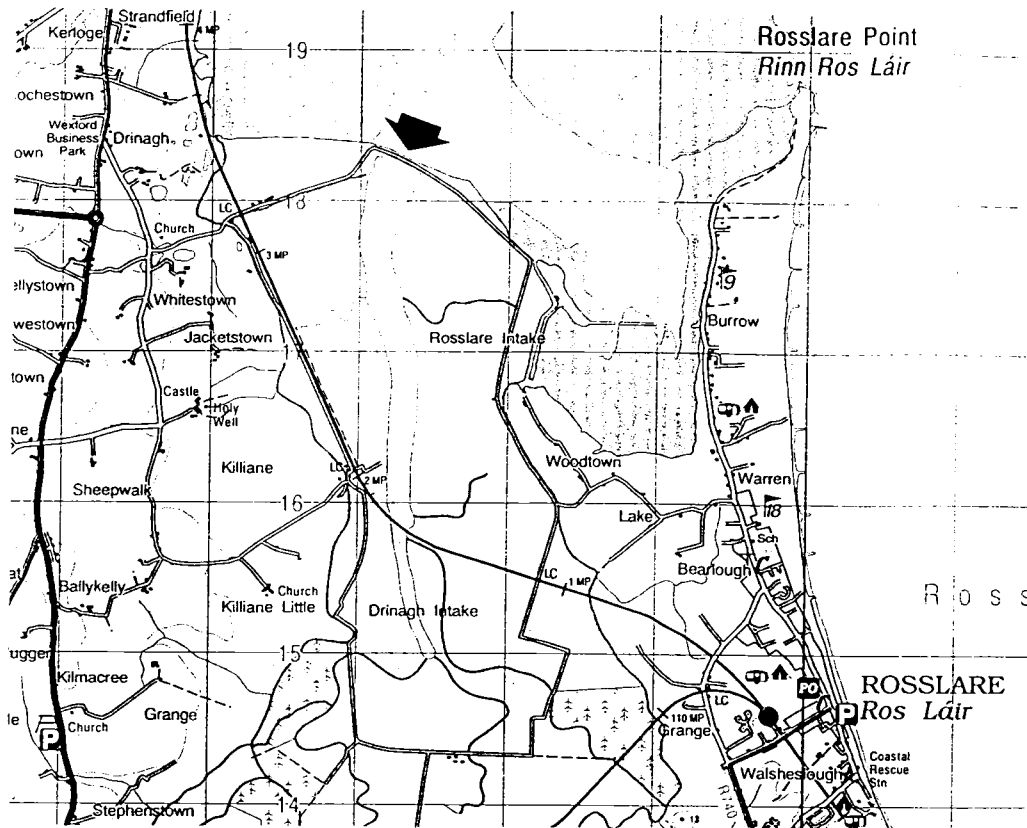
**North Slob** Sea wall, Raven forest in the background.



### 3. SOUTH SLOB CHANNEL, Co. Wexford

OS Grid Ref. T 072183

South side of Wexford Harbour, about 5 km south of Wexford



**Lagoon type:** Artificial saline lake. Former salt marsh creeks in reclaimed polder, water level controlled by pumping

**Description:** Formerly a creek system in mudflats, reclaimed in mid 1800's by construction of a sea wall. The network of creeks joining the large Coal Channel runs through an area of polders and salt marsh. Area of water about 50 ha. Maximum depth 3 m. Substrate near the sea wall muddy sand - sandy mud.

**Hydrology:** Brackish conditions are probably confined to the part of the Coal Channel near the sea wall where landward seepage of seawater occurs, giving a salinity of 2-5‰. Elsewhere water is probably fresh. Excess water is pumped out into Wexford harbour by way of an artificial perimeter canal.

**Vegetation:** Extensive marginal beds of beds *Phragmites*, and some *Scirpus maritimus* and *Schoenoplectus lacustris*. Aquatics abundant near the sea wall.

**Birds** Internationally important for White-fronted goose, Bewick's swan and Brent goose

**Threats:** There was a strong smell from nearby slurry tanks in July 1996 and a green phytoplankton bloom gave evidence of eutrophic conditions.

## Species Records

The following species were recorded from the Coal Channel, near the sea wall in 1991 (Galvin 1992) and during a brief visit on 1.vii.96:

### Aquatic Fauna

Hirudinea

*Neomysis integer*

*Lekanesphaera hookeri* L

*Gammarus duebeni* \*

*Palaemonetes varians* L

*Ischnura elegans*

*Enallagma cyathigerum?* \*

Trichoptera

*Sigara dorsalis*\*

*Corixa panzeri*\*

*Glyptotendipes barbipes* \*

*Gyrinus caspius* \*

*Haliphus flavicollis* \*

*Potamopyrgus antipodarum*

*Lymnaea peregra*

*Gasterosteus aculeatus* \*

### Aquatic flora

*Myriophyllum spicatum*

*Ranunculus baudotii*

*Potamogeton pectinatus*

\* recorded in 1991 only. L lagoonal specialist

*Chara canescens* (old record) *C. connivens?* (old record?)

## Evaluation

- The channels are partly artificial in origin and conditions in them are controlled by pumping.
- Little is known of the fauna and flora away from the sea wall.
- Old records of *Chara canescens* (and *C. connivens?*)
- The channels are within a proposed NHA (Site No. 712)

Sources: Merne 1974, Galvin 1992.



**South Slob Channel.** Coal channel near the barrier.



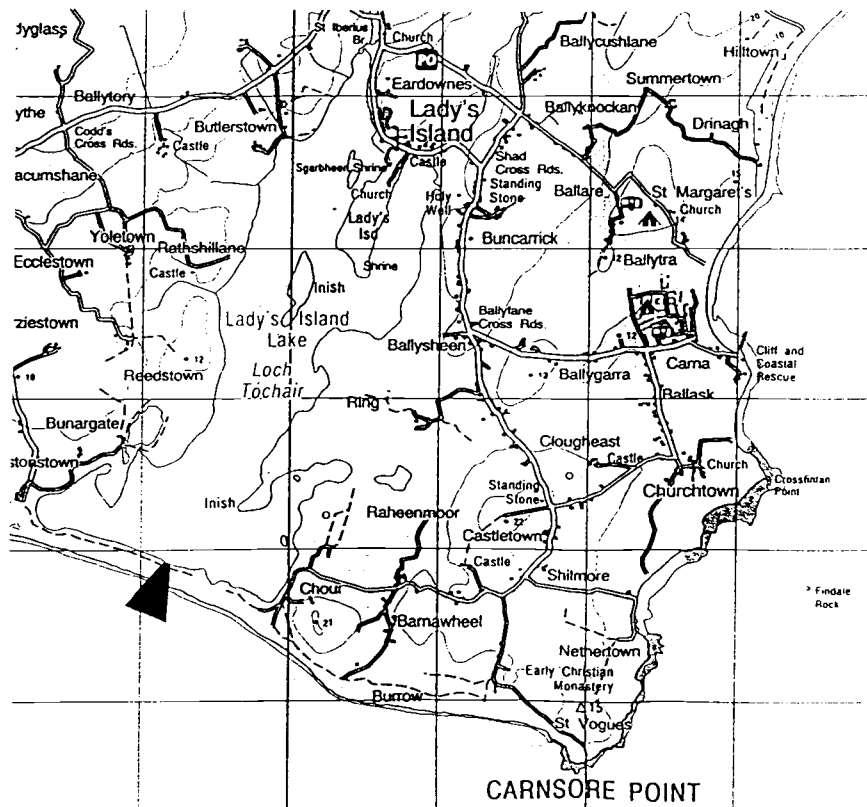
**South Slob Channel.** Coal Channel viewed from the barrier.

#### 4. LADY'S ISLAND LAKE, Co. Wexford

OS Grid Ref. T 099065

Our Lady's Island Lake, Loch Tóchair

3 km W of Carnsore Point, 5 km from Rosslare Harbour



**Selected site in 1996. Summary only, see separate account for details**

**Lagoon Type:** Large, natural, sedimentary, percolating lagoon with sand and gravel barrier, without outlet.

**Description:** Natural lagoon, separated from sea by a sand and gravel barrier and dunes. Area about 400 ha. Maximum depth (winter) 5 m. Substrate grades from soft sandy mud in the north to coarse sandy gravel near the barrier and there are rocks in the southeast. Surrounding land is flat with arable and pasture fields and rough land with rocks.

**Hydrology:** Freshwater enters by a few small streams and leaves by percolation through the barrier. The water level rises in winter flooding farmland and a pilgrimage path and the barrier is usually breached in spring. The lake then becomes tidal until natural closure in 2 weeks - 6 months). Seawater also enters by seepage and overwash of the breach bar. Salinity fluctuates widely according to season and the extent of tidal flow. In October 1996, 4-15‰ was measured at the north end, 23-26‰ near the barrier and 6-10‰ in an isolated pool.

**Vegetation:** Some *Phragmites* and *Scirpus maritimus* but not extensive and confined to narrow strips. *Ruppia cirrhosa* or *Potamogeton pectinatus* abundant when salinity favourable. *Lamrothamnium papulosum* present, *Chara canescens* recorded. Rhodophytes when tidal. Stand of *Otanthus maritimus* on gravel barrier. Extensive marshland in the SE (Ring Marsh).

*Aquatic fauna.* The fauna was moderately rich with species characteristic of all salinity categories except freshwater. 38 taxa were recorded including 8 lagoonal specialists, including, *Sigara concinna* and *Enochrus bicolor*. There was little evidence of recent invasion by marine species although the barrier had been breached in spring. The fauna is well documented and is known to undergo wide changes in species composition according to the prevailing salinity (Healy *et al.* 1982). 58 species were recorded in 1977-78 (Healy *et al.* 1982) and 49 in 1991, including 9 lagoonal specialists (Galvin 1992).

*Ecotonal Coleoptera.* Beetles were collected from *Juncus gerardii* swards and bare sand with *Salicornia*. 13 Carabidae and 36 Staphylinidae were recorded, 3 of which are regarded as indicator species, including *Atheta liliputana* for which there is only one Irish record.

*Birds:* The lagoon is of great ornithological interest for up to 5,000 wintering waterfowl and breeding tern colonies (Hutchinson 1979, Delany 1995, Sheppard 1993). Sandwich terns (*Sterna sandvicensis*) are the most numerous, but Common (*S. hirundo*), Arctic (*S. paradisaea*) and, recently Roseate terns (*S. dougalli*) also breed. This is the second largest colony in Ireland.

*Other features.* Lady's Island Lake is the best documented lagoon in Ireland. There are published accounts of its geomorphology, ornithology, aquatic fauna and rare plants and further papers on fauna and hydrology are in preparation.

*Threats:* Eutrophication due to sewage and fertilizer run-off has been increasing. Destabilisation of barrier is reported, possibly due to gravel extraction near Carnsore Point. A pitch and putt course is extending into the flood area. Breaching may result in low water levels in summer which allow predators to reach tern nests. Long tidal periods can cause mortality to flora and fauna but the community recovers. There are conflicting opinions over management.

## **Evaluation**

- Natural sedimentary lagoon and therefore of international importance.
- The lake is possibly the best remaining example in Europe of a distinct and relatively rare geomorphological formation. Both the barrier and the lagoon itself have provided exceptional opportunities for studying geomorphological, ecological and biological processes.
- Rated as "valuable" for vegetation: widely distributed *Lamprothamnium papulosum*, both *Ruppia maritima* and *R. crrhosa*.
- The barrier and lagoon shoreline are important for endangered plant species
- The aquatic fauna is moderately rich and interesting for the long term changes in species composition.
- The site is listed as of average conservation value for ecotonal Coleoptera.
- Due to ornithological value, the two islands are listed as a Refuge for Fauna and the lagoon is designated as a Special Protection Area.. The lagoon and barrier are a proposed NHA (Site Code No. 704).
- Selected for intensive survey in 1996.
- Recommended for designation as a proposed SAC.

*Sources:* Murphy 1956, Boyden & Russell 1972, Healy *et al.* 1982, Norton & Healy, 1984, Galvin 1992, Carter & Orford 1980, Orford & Carter 1982, Ruz 1989, Moore 1986, Merne 1974, Hurley 1994.



Lady's Island Lake. *Scirpus maritimus* sward east of the peninsula at Lady's Island



Lady's Island Lake. Stranded rock in the southeast in summer showing a hand of



Lady's Island Lake. Rocky area in the southeast.

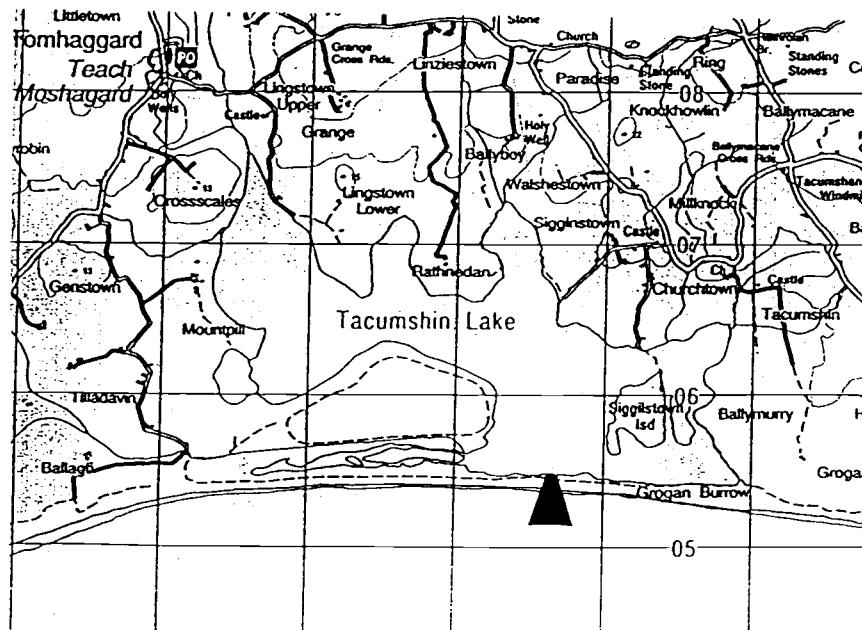


## 5. TACUMSHIN LAKE, Co. Wexford

OS Grid Ref. T 050065

Tacumshane Lake

14 km southwest of Wexford, 1 km west of Lady's Island Lake



**Selected Site in 1996. Summary only, see separate account in this report**

**Lagoon Type:** Natural, sedimentary, percolating lagoon with natural sand and gravel barrier and artificial outlet pipes.

**Description.** Large lake, reaching 450 ha when full of water but currently drained and partly dry in summer. A natural outlet existed prior to 1972 but sealed naturally. There have been several attempts at drainage, the most recent in 1996 achieved by installation of several pipes through the barrier. Depth is <1 m except in artificial channels. Substrate is soft sandy mud with gravel near the barrier. Surrounding land is flat and consists of arable fields and pasture.

**Hydrology.** Freshwater enters by several small streams and leaves by the outlet pipes and by seaward percolation through the barrier. Washover occurs in the western sector. Much of the lake bed was exposed following installation of the pipes during the summer but water was present to 1 m depth by October. Salinity at this time was 8-19‰ on the eastern shore and 3-18‰ in artificial channels near the barrier. The northern sector was still dry.

**Vegetation.** Extensive stands of *Phragmites* and *Schoenoplectus lacustris*. Bays in NW entirely filled with beds of emergents. Sparse growth of *Chara canescens* in western channel and a bay in the north. Occasional dense beds of *Ruppia cf. maritima*.

**Aquatic fauna.** Faunal distribution was correlated with salinity and species characteristic of high salinity were confined to the southwest. 37 taxa were recorded of which 6 are lagoonal specialists. Hemiptera and Coleoptera were particularly numerous and diverse in included *Gerris thoracicus*, *Sigara concinna* and *Enochrus halophilus*. The assemblage as a whole typifies a lagoon with low salinity but subject to occasional influxes of seawater in confined areas.

*Ecotonal Coleoptera.* Beetles were collected from *Agrostis stolonifera* swards, a percolation stream and bare sand. 11 Carabidae and 27 Staphylinidae were recorded, one of which is regarded as an indicator species and for which there is only one Irish record. It was also present at Lough Murree.

*Birds.* The lake holds internationally important numbers of Brent geese (*Branta bernicla hrota*) and nationally important numbers of 11 waterfowl species. The low water levels attract a diverse assemblage of waders including many rare vagrants (Sheppard 1993, Hutchinson 1994). The maximum waterfowl count in the winter of 1994/5 was over 16,000 (Delany 1995).

*Threats* The current flood-management scheme results in excessive drainage of the lake exposing extensive areas of the substrate and causing mortality of the fauna. Attempts to limit overwash are considered to be inappropriate by geomorphologists.

### **Evaluation**

- Natural sedimentary lagoon and therefore of international importance.
- The site is rated as of international geomorphological importance in spite of interference with natural processes. There is extensive documentation of the Tacumshin barrier morphology and processes.
- Rated as "valuable" for vegetation for high species diversity, extensive beds of emergents and the presence of *Chara canescens*.
- The aquatic fauna was not rich in species except for insect groups and no rare species were recorded.
- The site is rated as of low conservation value for ecotonal Coleoptera although one rare indicator species was present.
- The lake is of outstanding ornithological interest and is a Wildfowl Sanctuary and a (proposed?) SPA.
- It is a proposed NHA (Site Code 709).
- Selected for intensive survey in 1996
- Designation as a proposed SAC is recommended.

Sources: Carter and Orford 1980, Orford and Carter 1982, 1984, Ruz 1989, Hutchinson 1986, Galvin 1992, IWC News Autumn 1992, Winter 1992, Hurley 1994.





Tacumshin Lake. *Scirpus maritimus* on the east shore



Tacumshin Lake. North shore which dried out in late summer.



Tacumshin Lake. Drainage channels and landward end of the drainage pipe.



Tacumshin Lake. Seaward end of the drainage pipe.



**Furnace Lough.** Northern end, Lough Feeagh in the background.



**Furnace Lough.** Cobble margin with algae near the south inlet.



**Furnace Lough.** Northern end with Salmon Research Station.

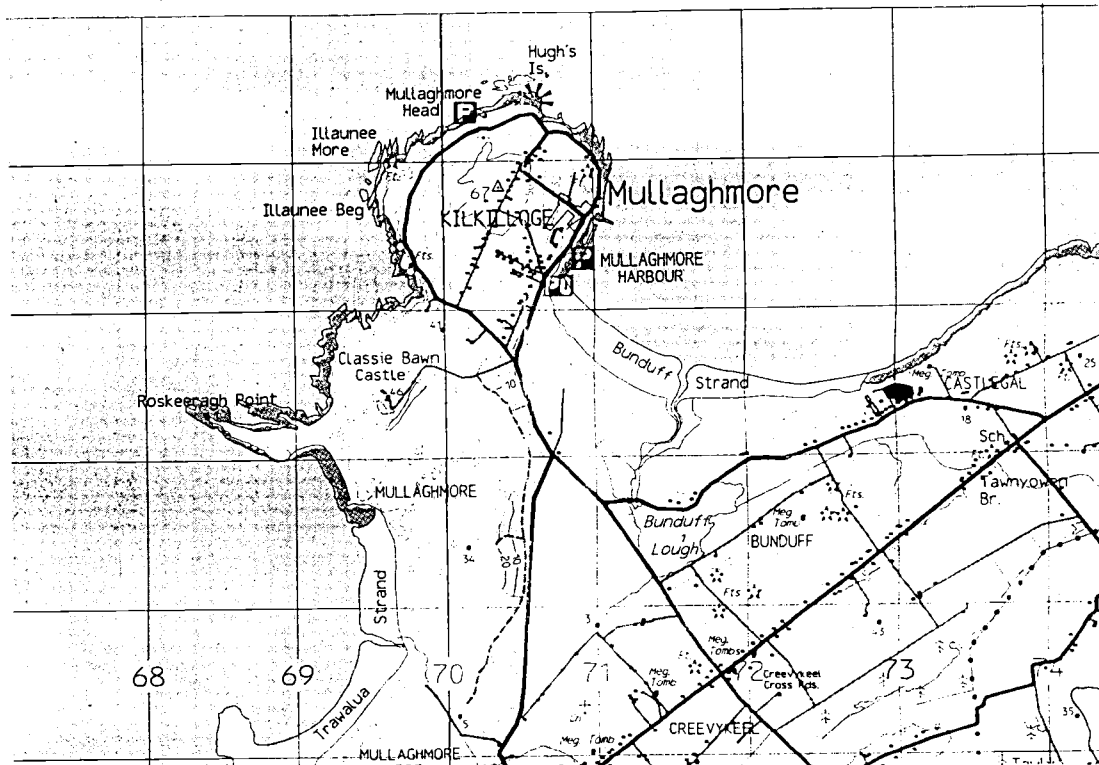


**Furnace Lough.** Small pool west of the lake.

**(BUNDUFF LOUGH, Co Sligo)**

OS Grid Ref. G 715554

South Donegal Bay, 2 km SE of Mullaghmore



**Lagoon Type:** Former natural sedimentary lagoon, now a freshwater lake, probably receiving occasional small influxes of seawater.

**Description.** Now an isolated lake, formerly with a natural outlet to Bunduff Strand through low sandhills. The outlet is now blocked and water diverted into an artificial channel. Substratum sandy. Area 15-20 ha.

**Hydrology.** The lake is about 700 m from the beach (measured on the map) and seawater is unlikely to enter except during exceptional storms. The water was fresh (18.vi.96) and fauna and flora were indicative of freshwater conditions, but juvenile flounder were common near the outlet and must have entered in seawater no more than one month previously.

**Vegetation.** *Equisetum* on the shore and in shallow water, *Menyanthes*, *Polygonum amphibium* and *Equisetum* near the shore; dense beds of charophytes.

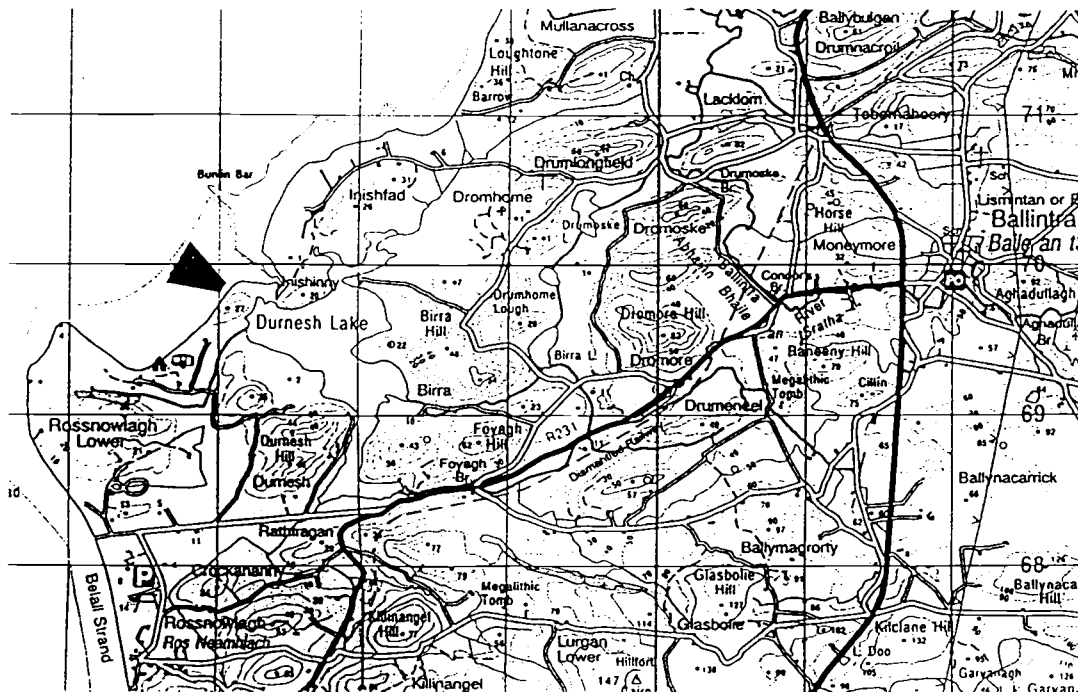
**Fauna.** Not sampled. Appeared to be typically freshwater except for flounder which were localised near the outlet.

**Evaluation.** No evidence of marine influence at the time of sampling, therefore cannot be classified as a lagoon.

## 50. DURNESH LOUGH, Co. Donegal

OS Grid Ref. G 878695

Donegal Bay, 10 km north of Ballyshannon



**Selected site in 1996. Summary only, see separate account for details.**

**Lagoon Type:** Large, natural sedimentary lagoon behind sand dune barrier, with artificial, sluiced outlet.

**Description.** Large, approximately 70 ha, shallow, depth generally <1.5 m. Bed mostly sandy, with stony and muddy shores.

**Hydrology.** Fed by small rivers. Sea enters through artificial channel through dunes, with flap sluice at beach end. Salinity 0-5‰.

**Vegetation.** Extensive beds of *Schoenoplectus lacustris*, with *Juncus gerardii* - *Agrostis stolonifera* community in stony places, *Phragmites* beds near freshwater inflows, and one area of *Typha* swamp. Marginal vegetation grading to pasture, or *Schoenus nigricans* in flushed areas. Most important aquatics were *Ruppia cirrhosa*, replaced by *Potamogeton pectinatus* at lower salinity. Sparse cover of charophytes including *C. aspera* var. *aspera*, *C. hispida* var. *hispida*, and *C. hispida* var. *major*. *Chara canescens* (lagoonal specialist) near the outlet.

**Aquatic fauna.** Oligo-mesohaline fauna with abundant corixids, beetles and amphipods. 46 taxa recorded, only 2 lagoonal specialists. Rare spp.: *Gammarus chevreuxi* (the dominant amphipod), *Cordylophora caspia* abundant.

*Ecotonal Coleoptera.* Beetles were collected from a margin with *Scoenus nigricans*, and *Iris*/grass margin, and a sandflat 8 spp. of Carabidae and 29 Staphylinidae were recorded of which 3 can be regarded as indicator species

*Birds.* Regarded as one of the most important wildfowl sites in Donegal. Can hold internationally important numbers of Scaup and Greenland White-fronted goose.

*Threats.* Farm effluents possible from surrounding farmland. Some angling and shooting.

### **Evaluation**

- This was the only natural sedimentary lagoon with sedimentary barrier identified in Donegal. However, it may owe its brackish nature entirely to the presence of an artificial outlet.
- Site rated as "valuable" for vegetation for its high diversity and variation, the presence of both species of *Ruppia* and three species of charophytes, including *Chara canescens* (lagoonal specialist).
- The faunal assemblage was diverse (especially beetles and corixids) and included two rare species.
- The site is rated as of average conservation value for ecotonal Coleoptera with three indicator species.
- It is an important wildfowl site in Donegal, holding internationally important numbers of two species.
- The lake is within a proposed NHA Site No. 138.
- Designation as a proposed SAC is recommended.



Durness Lough Dune barrier on the left, area subject to flooding behind



**Durnesh Lough.** Outlet channel, lake in the background.



**Durnesh Lough.** Outlet and sluice on the beach, tide rising.

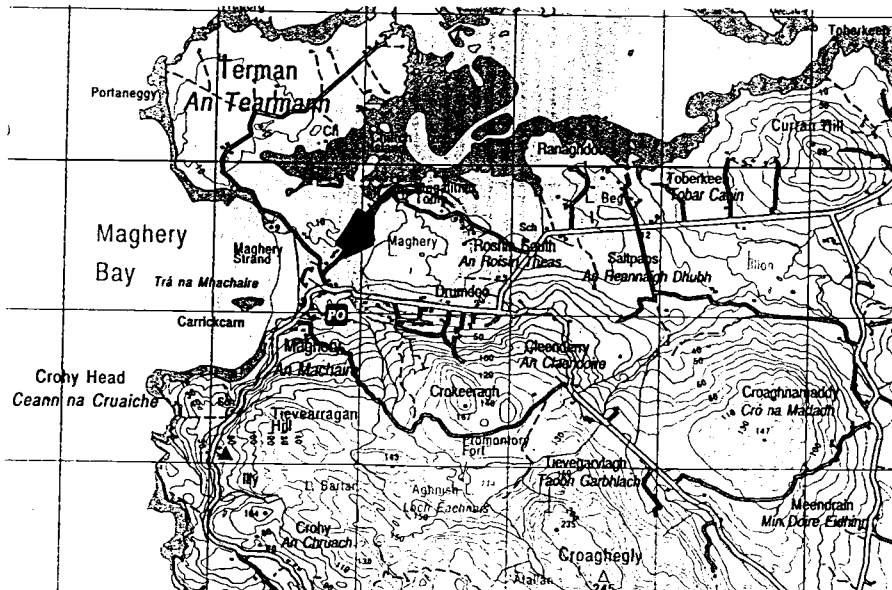


**Durnesh Lough.** Marginal vegetation zones at high water.

## 51. MAGHERY LOUGH, Co. Donegal

OS Grid Ref. B 723094

5 km west of Dunglow



**Lagoon Type:** Natural saline lake with modified, sluiced outlet.

*Description.* Medium-large lake, approximately 20 ha, separated from the sea by a broad barrier of rocky grassland. Depth unknown. The inlet, which was probably natural, has been modified by construction of a road bridge and addition of a wooden sluice flap at the outlet. There are rapids near the bridge. The surrounding land is hilly with pastures and marshes, and the shoreline is rocky with some earth cliffs. Substrate near the outlet was anaerobic mud with rocks and stones.

*Hydrology.* The map shows no streams entering the lake but there was a considerable outflow at low tide. Seawater evidently enters through the sluice which may be jammed open. The salinity at low tide near the outlet on 19.vi.96 was 27‰ and 18‰ was measured on the further shore. The presence in the lake of marine algae and fauna, including fucoids, barnacles and jellyfish, indicate regular inflow of seawater.

*Vegetation.* Typical community of intertidal algae near the outlet, beds of *Phragmites* fringe the inland shore.

*Threats.* Black mud may be due to nutrient enrichment from agriculture, but it could be caused by natural decomposition of algae. Cattle graze the shore. Installation of a more efficient sluice could result in major changes to the fauna and flora.



## Species records for Maghery Lough

The following were collected or recorded from the region of the outlet during a brief visit on 19.vi.96:

	Lake	Outlet only
<i>Fauna</i>	<i>Aurelia aurita</i>	<i>Semibalanus balanoides</i>
	Mysidacea unid.	<i>Littorina littorea</i>
	<i>Jaera</i> sp.	<i>Littorina saxatilis</i>
	Amphipoda	
	<i>Palaemonetes varians</i> L*	
	<i>Carcinus maenas</i>	
	Chironomidae	
	<i>Hydrobia ulvae</i>	
	<i>Potamopyrgus antipodarum</i>	
	<i>Mytilus edulis</i>	
	Bryozoa	
	<i>Anguilla anguilla</i>	
	<i>Gasterosteus aculeatus</i>	
	Other fish	
	<i>Flora</i>	<i>Ascophyllum nodosum</i>
<i>Fucus vesiculosus</i>		
<i>Chondrus crispus</i>		
<i>Chaetomorpha linum</i> L		
<i>Cladophora</i> sp.		
<i>Ruppia</i> sp. L		

\* L = lagoonal specialist

### Evaluation

- Natural saline lake with modified sluiced outlet.
- Maghery Lough is a good example of a saline lake in rocky landscape and is similar to some in Connemara. The sluice has obviously been inefficient for some time and its mode of operation is responsible for the current high salinity and the corresponding flora and fauna. Installation of a more efficient sluice could have far reaching effects.
- Aquatic flora appears diverse with marine algae, *Chaetomorpha*, and *Ruppia*.
- Only three lagoonal faunal species were recorded but others could have been present in less saline regions which were not sampled.
- The lake is not within a proposed NHA but is close to Site No 1195.
- Further investigation recommended.



**Maghery Lough.** Shallow water near the outlet.

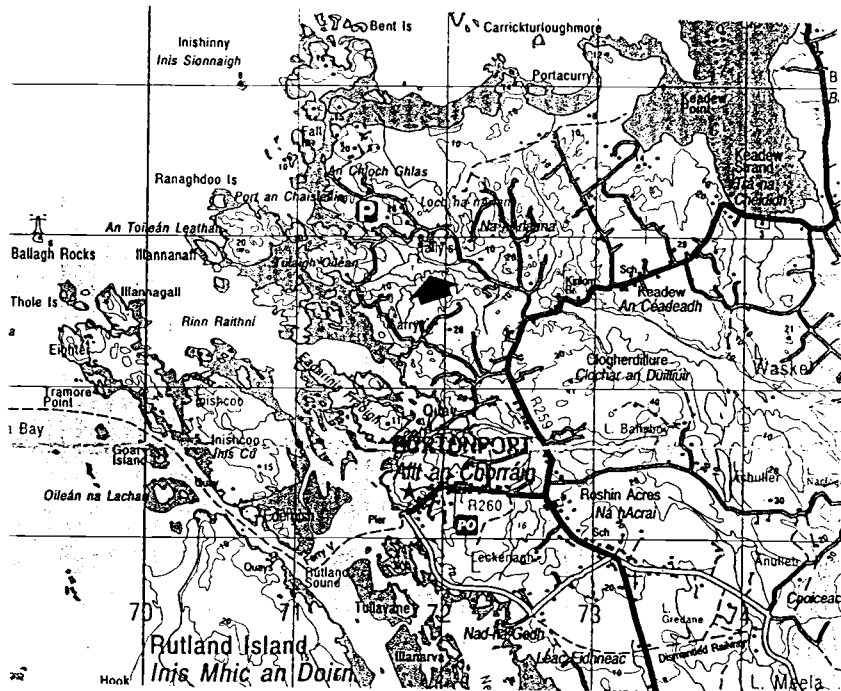


**Maghery Lough.** Inland shore with reed beds.

## 52. SALLY'S LAKE, Co Donegal

OS Grid Ref. B 718158

3 km N of Burtonport



**Lagoon Type:** Artificial saline lake with tidal narrows

**Description:** Formerly a freshwater lake which became tidal following excavation of a channel to the sea. It appears deep, resembling a sea lough. The narrow section of the inlet was not seen. Shore of the lake rocky, surrounded by rocky hills. Substrate was soft, gravelly mud with organic matter. A local person described the lake as "dirty" (hence the name? salach - dirty, polluted).

**Hydrology** The tidal range appears to be small and the water is diluted by freshwater inflows. Salinity was 33‰ at the head of the lake and 35‰ at a point about half way to the sea.

**Vegetation.** Aquatic macrophytes at the head of the lake were marine algae (*Codium*, *Chondrus*, *Cladophora*, *Enteromorpha*). A *Phragmites* bed and salt marsh were seen near the narrows.

**Aquatic fauna.** Not sampled. The following were observed: *Aurelia aurita*, *Clavelina lepadiformis*, *Gasterosteus aculeatus*, red and white tunicates, anemones (*Bunodactis?*), and juvenile *Cerastoderma glaucum* (lagoonal specialist).

### Evaluation

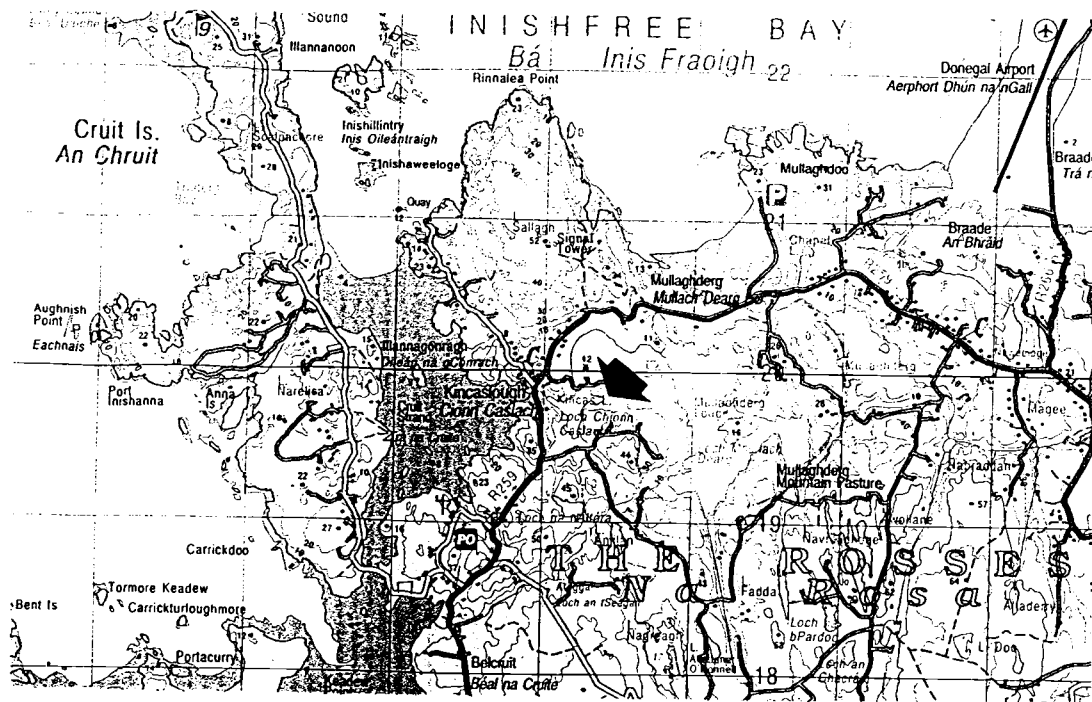
- Artificial saline lake with artificial inlet. High salinity, possibly a borderline lagoon. Could be classified as a lagoon on the basis of the small tidal range, slightly lowered salinity at the time of sampling (possibly lower in winter), and the presence of a lagoonal specialist.
- Further investigation of the system using divers is recommended.

### 53. KINCAS LOUGH, Co. Donegal

OS Grid Ref. B 752197

Loch Chionn Caslach

The Rosses, at Kincaslough, about 6 km west of Annagary



**Lagoon Type:** Natural saline lake with unsluiced, artificial outlet channel.

**Description.** Small-medium sized lake, area about 10 ha, with long, narrow, open, artificial outlet channel, without sluice. The channel passes through a gorge and its depth suggests that before its excavation the lake could not have received seawater. The surrounding land is rocky hills with heather and gorse. Substrate is granitic sand and gravel. The lake is probably shallow.

**Hydrology.** The lake receives freshwater from Mullaghderg Lough by way of a stream, and seawater through the outlet channel. Salinity at the landward shore on 19.vi.96 was 6-10‰.

**Vegetation.** *Phragmites* beds fringe the lake where the shore slopes gently. Good growths of aquatics including algae and pondweed.

**Threats.** None apparent.

## Species records from Kincas Lough

The following were recorded from inland shores during a brief visit on 19.vi.96:

### Aquatic Fauna

*Neomysis integer*

*Jaera nordmanni*

Amphipoda

*Palaemonetes varians* L\*

Trichoptera

*Potamopyrgus antipodarum*

Bryozoa

*Anguilla anguilla*

*Gasterosteus aculeatus*

*Pomatoschistus microps*

### Flora

*Enteromorpha* sp.

*Cladophora* Sp.

*Fucus ceranoides*

*Ruppia* sp. L

\* L = lagoonal specialist

## Evaluation

- Natural? saline lake.
- The lake may owe its brackish conditions entirely to the presence of an artificial outlet channel. The unsluiced channel functions like a natural inlet and the lake like a natural lagoon with limited tidal influence.
- Flora and fauna are typical of a lagoon with medium salinities. *Ruppia* present.
- The lake lies within a proposed NHA (Site No. 1141) (?)
- The area has been little studied and further investigations should be considered.



Kinkas Lough. Lake and artificial outlet through reed bed.



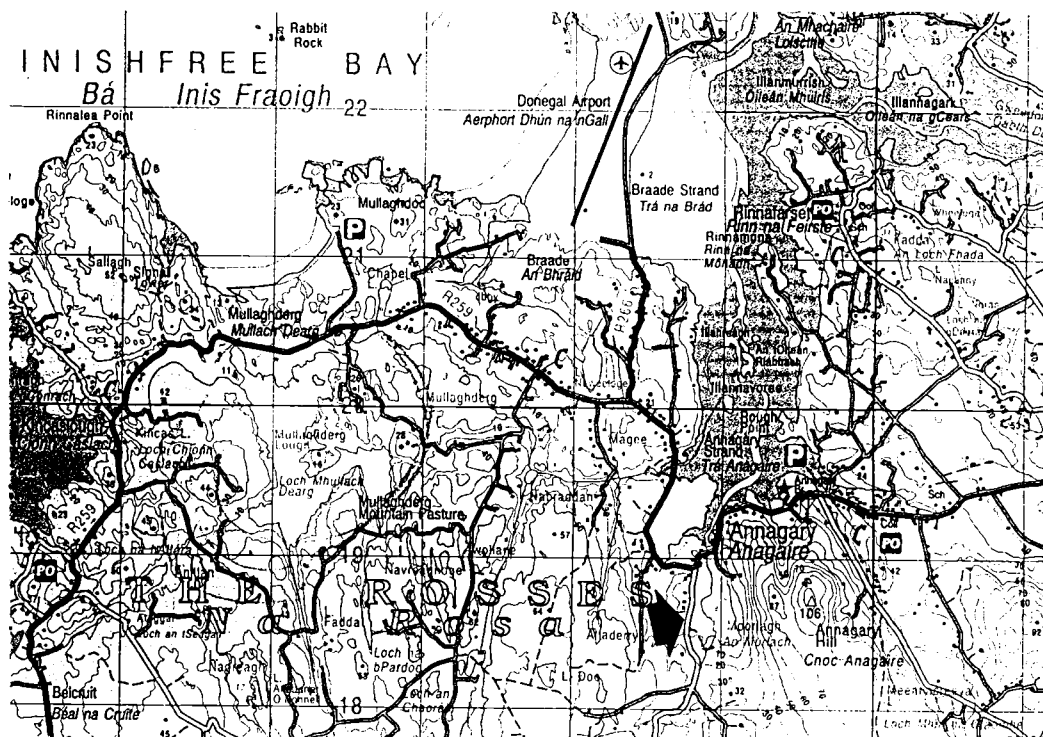
Kinkas Lough. Rocky shore.

## 54. MOORLAGH LOUGH, Co. Donegal

OS Grid. Ref. B 790187

An Murlach

The Rosses. 0.5 km south of Annagary



**Lagoon Type:** Natural saline lake with partly artificial barrier and natural outlet modified by sluices.

**Description.** Medium size, natural lake, approximately 15 ha, elongated with long axis perpendicular to the coast. A causeway has been built across the outlet with three culverted channels, each with a wooden flap sluice. The surrounding land is rocky heath with hills to the east. The shores and shallow water are rocky.

**Hydrology.** The map shows one stream entering the lake. The salinity near the outlet on 20.vi.96 was 5‰ showing that only small amounts of seawater enter.

**Vegetation.** Emergents are scarce on the rocky shores but there were beds of *Juncus maritimus*. Aquatics included dense beds of *Ruppia* and some *Chaetomorpha*.

**Threats.** None apparent.

## Species recorded for Moorlagh Lough

The following were recorded from near the outlet, at low tide, during a brief visit on 20.vi.96:

### Aquatic Fauna

*Neomysis integer*

*Jaera nordmanni*

*Jaera ischiosetosa*

*Lekanesphaera hookeri* L\*

Amphipoda

*Palaemonetes varians* L

*Crangon crangon*

*Carcinus maenas*

Chironomidae

*Potamopyrgus antipodarum*

*Anguilla anguilla*

*Gasterosteus aculeatus*

### Flora

*Chaetomorpha linum* L

*Ruppia* sp. L

\* L = lagoonal specialist

## Evaluation

- Moorlagh Lough is a good example of a natural saline lake with a modified, sluiced outlet.
- It contains *Chaetomorpha* and dense beds of *Ruppia*.
- The fauna is moderately rich. More insect species could be expected further from the outlet.
- The lake is not within a proposed NHA but adjoins Site No. 1141.
- Further investigations should be considered.





**Moorlagh Lough.**



**Moorlagh Lough.** Sluice gates on the seaward side of the causeway.



Tacumshin Lake. West end.



Tacumshin Lake. Part of the old inlet, now sealed.

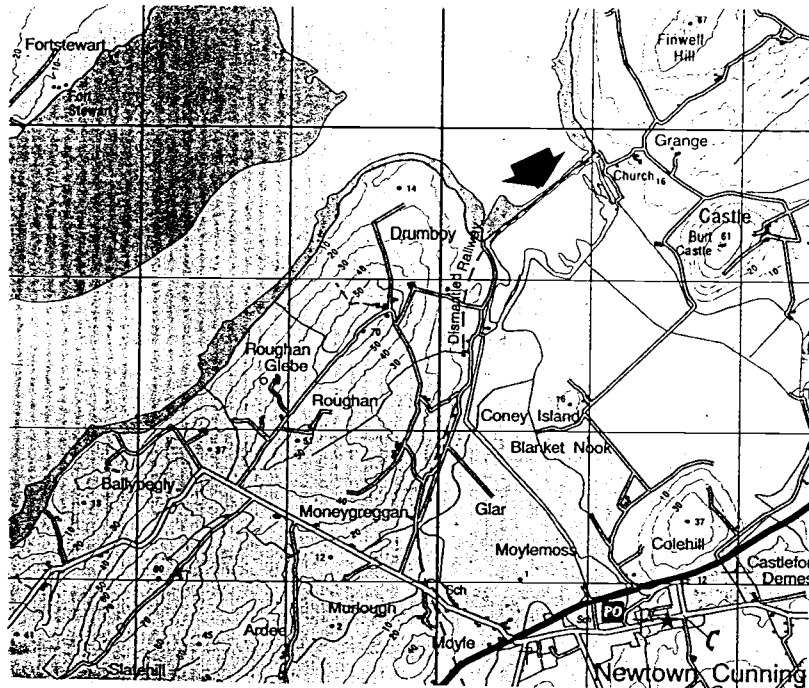


Tacumshin Lake. Part of the old inlet, and dune barrier.



Tacumshin Lake. Vegetation on former lake bed.

East shore of L. Swilly, 2 km north of Newtown Cunningham



**Lagoon Type:** Large artificial saline lake with artificial barrier and unsluiced outlet.

*Description.* Large (about 40 ha) shallow lake, formed in the 1800s by construction of an embankment carrying a railway (dismantled). An unsluiced, artificial channel passes under one end of the causeway and discharges onto the shore. Substrate of the lake is hard clay, softer away from shores, with patches of stones and gravel, and peaty shores. The surrounding land is low-lying consisting mainly of polders drained by ditches.

*Hydrology.* Several streams and drainage ditches empty into the lake. Seawater may percolate through the barrier but most probably enters through the outlet channel at high tide. Salinity was 10‰ near the barrier shore on 21.vi.96.

*Vegetation.* Extensive beds of *Juncus maritimus* and *J. bufonius* were present on the shore. There was good growth of aquatics including algae and *Potamogeton pectinatus*. No *Ruppia*?

*Birds.* Blanket Nook (including the surrounding land) is internationally important for Whooper swans and as part of the L. Swilly region is an important bird area.

*Threats.* The surrounding farmland is intensively cultivated and drainage water may carry fertilizer runoff.

## Species records for Blanket Nook

An interesting feature was the presence of numerous ragworm burrows in the shoreline peat. The following were recorded from near the barrier during a brief visit on 21.vi.96:

### Aquatic Fauna

*Hediste diversicolor*

*Neomysis integer*

*Jaera ischiosetosum*

*Lekanesphaera hookeri* L\*

*Corophium volutator*

Other Amphipoda

*Palaemonetes varians* L

Chironomidae

*Potamopyrgus antipodarum*

Bryozoa

*Pomatoschistus microps*

*Gasterosteus aculeatus*

*Platichthys flesus*

### Flora

*Enteromorpha* sp.

*Cladophora* sp.

*Chaetomorpha linum* L

*Potamogeton pectinatus*

\* L = lagoonal specialist

Shells of *Cerastoderma edule* and *Mya arenaria* were common

## Evaluation

- Artificial saline lake.
- Moderately rich fauna and flora which are typical of medium-low salinities.
- Its importance for wildfowl guarantees its protection
- It is part of the proposed L. Swilly NHA, Site No 166.
- Blanket Nook is a Wildfowl Sanctuary and a proposed (?) SPA. However, protection for birds may not be appropriate for conservation of the aquatic fauna and flora.
- Further investigations are strongly recommended.



**Blanket Nook Lough.** Shore near the barrier.

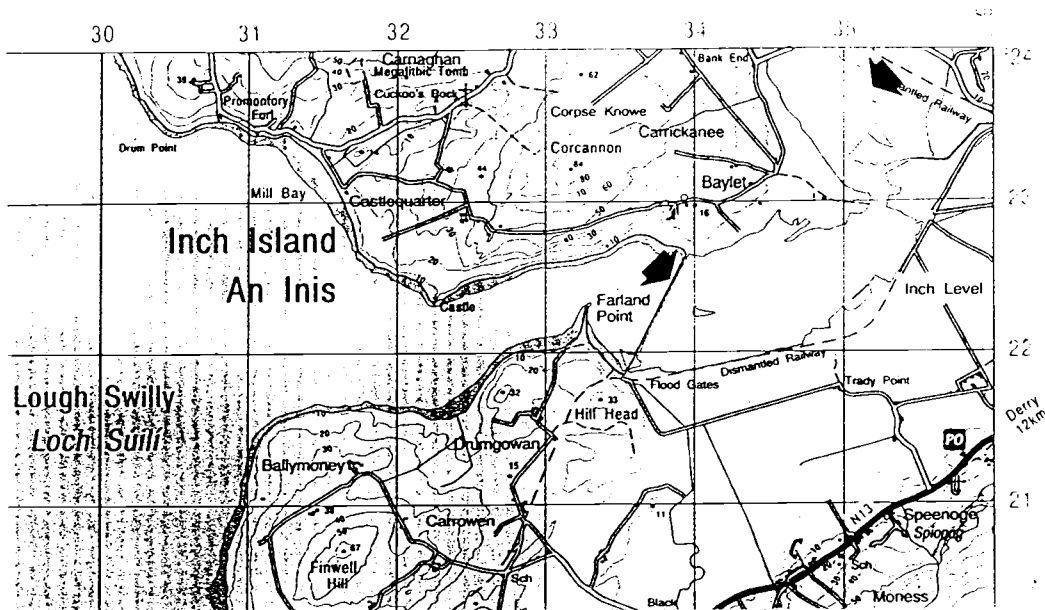


**Blanket Nook Lough.** Low water level exposing peat banks.

## 56. INCH LOUGH, Co. Donegal

OS Grid Ref. C 348227

East shore of L. Swilly, about 9 km south of Bunrana



**Lagoon Type:** Large, artificial saline lake with artificial barrier and sluiced outlet.

**Description.** Large lake, about 200 ha, created by construction of two embankments between Inch Island and the mainland; the northern one carried a railway (dismantled). The surrounding land is drained polder. The lake is shallow, mostly <30 cm, and the bed near the southern embankment was hard, shelly gravel. Peat cliffs are present on the shoreline.

**Hydrology.** Several streams and drainage ditches empty into the lake from the surrounding polders. The outflow is regulated by wooden sluice gates. Seawater may percolate through the barrier but most probably enters through the sluices at high tide. Salinity was 6‰ near the barrier shore on 21.vi.96.

**Vegetation.** Extensive beds of *Scirpus maritimus* were present on the shore. There was good growth of aquatics including algae and *Potamogeton pectinatus*. *Ruppia* absent?

**Birds.** Inch Lough (including the surrounding land) is internationally important for Whooper swans and as part of the L. Swilly region is an important bird area.

**Threats.** The surrounding farmland is intensively cultivated and drainage water may carry fertilizer runoff.

## Species records for Inch Lough

The following were recorded from near the barrier during a brief visit on 21.vi.96:

### Aquatic Fauna

*Neomysis integer*

*Jaera* sp. (all female)

*Lekanesphaera hookeri* L\*

Amphipoda

*Palaemonetes varians* L

Corixidae

Chironomidae

*Potamopyrgus antipodarum*

*Gasterosteus aculeatus*

*Platichthys flesus*

### Flora

*Enteromorpha* sp.

*Cladophora* sp.

*Potamogeton pectinatus*

\* L = lagoonal specialist

## Evaluation

- Artificial saline lake
- Moderately rich fauna and flora which are typical of low salinities.
- Its importance for wildfowl guarantees its protection. However, protection for birds may not be appropriate for conservation of the aquatic fauna and flora.
- It is part of the proposed L. Swilly NHA, Site No 166.
- Further investigations are strongly recommended.



**Inch Lough.** Barrier and outlet, lake in the background, right.



**Inch Lough.** Lake shore and shallow water



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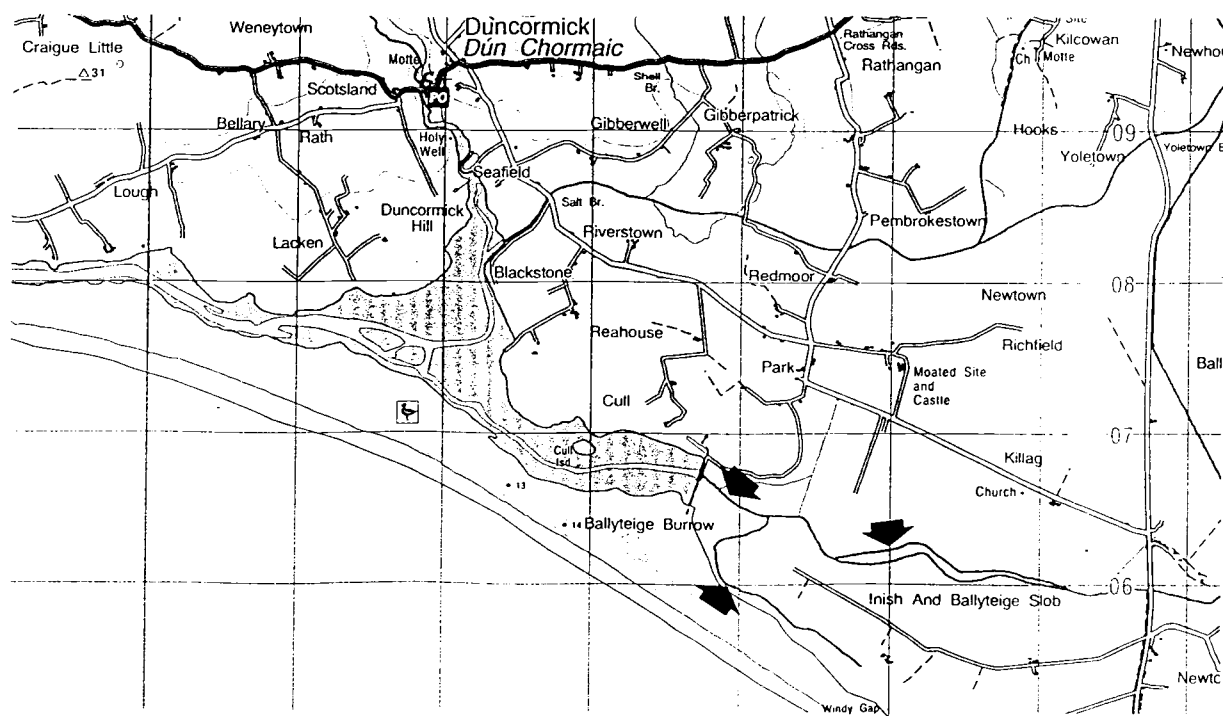
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## 6. BALLYTEIGE SLOB CHANNELS, Co. Wexford

OS Grid Ref. T 950062

Just west of Kilmore Quay, south of Killag



**Lagoon type:** Artificial saline lake. Former salt marsh creeks in reclaimed polder, water level controlled by pumping.

**Description:** The channels are artificial and were excavated to drain a lagoon and salt marsh which were isolated behind a sea wall constructed across the Cull Inlet in the mid 19th century. Polders form rich pasture and arable land. Area of water about 8 ha, length of channels 3.2 km. Maximum depth 3 m. Bed of channels coarse sand, peaty sand or silt. A small artificial pond near the west pump-station contains a rich fauna and flora.

**Hydrology:** The land is below high tide level and extensive landward seepage through the barrier occurs. Water is pumped westward into the Cull and southeastwards into the sea west of Kilmore Quay. The whole area floods rapidly with seawater when pumps fail. A range of salinities from 34‰ near seepage streams to freshwater can be found. 7-18‰ was measured near the pump station in 1991. The small pond near the Cull is usually 4‰.

**Vegetation:** Thick reed beds in some areas, aquatics are algae and *Ruppia* sp.

**Birds:** This is the only site of international importance for Bewick's swans in the country and contains internationally important numbers of Brent geese; together with the Cull mudflats, the area is of national importance for Golden plover, Lapwing and Curlew.

**Threats:** Polders are intensively farmed and channels may be affected by fertilizer run-off

**Sources:** Carter and Orford 1980, Orford and Carter 1982, Ruz 1989, Galvin 1992.

## Species records for Ballyteige

The following records are for 1991 (Galvin 1992). (L= lagoonal specialist)

	Near seepage stream	Near pump station	Cull pond
<u>Aquatic fauna</u>			
<i>Hediste diversicolor</i>	+	+	
<i>Capitella capitata</i>	+		
<i>Arenicola marina</i>	+		
<i>Daphnia longispina</i>			+
<i>Neomysis integer</i>	+	+	
<i>Praunus flexuosus</i>	+		
<i>Lekanespaera hookeri</i> L	+	+	+
<i>Jaera</i> sp.		+	
<i>Melita palmata</i>	+	+	
<i>Gammarus zaddachi</i>		+	+
<i>Gammarus locusta</i>	+		
<i>Corophium volutator</i>	+		
<i>Palaemonetes varians</i> L	+	+	+
<i>Sigara stagnalis</i> L		+	
<i>Corixa panzeri?</i>			+
<i>Plea leachi</i>			+
<i>Helophorus brevipalpis</i>			+
<i>Enochrus halophilus</i> L			+
<i>Noterus clavicornis</i>			+
<i>Haliphus immaculatus</i>			+
<i>Potamopyrgus antipodarum</i>	+	+	+
<i>Amphipholis squamata</i>	+		
<i>Conopeum seurati</i> L		+	
<i>Gasterosteus aculeatus</i>	+		
<i>Pomatoschistus microps</i>	+	+	
<u>Aquatic Flora</u>			
<i>Ulva lactuca</i>	+	+	
<i>Enteromorpha</i> sp.		+	
<i>Chaetomorpha linum</i> L		+	
<i>Potamogeton pectinatus</i>			+
<i>Myriophyllum spicatum</i>			+
<i>Ranunculus spicatum</i>			+
<i>Callitriche</i> sp.			+
<i>Ruppia</i> sp. L	+	+	

*Chara canescens* (L) was recorded in nearby small pools (unconfirmed).

## Evaluation

- Artificial saline lake. Not a true lagoon
- Channels are artificial in origin and the water level controlled. A wide range of salinities allows a large number of species to exist in the system.
- The barrier and dunes (Ballyteige Burrow) is a Nature Reserve and an SPA. The channels are within a proposed NHA (Site No. 696)



**Ballyteige Slob Channel.** Looking west from near the pump station.

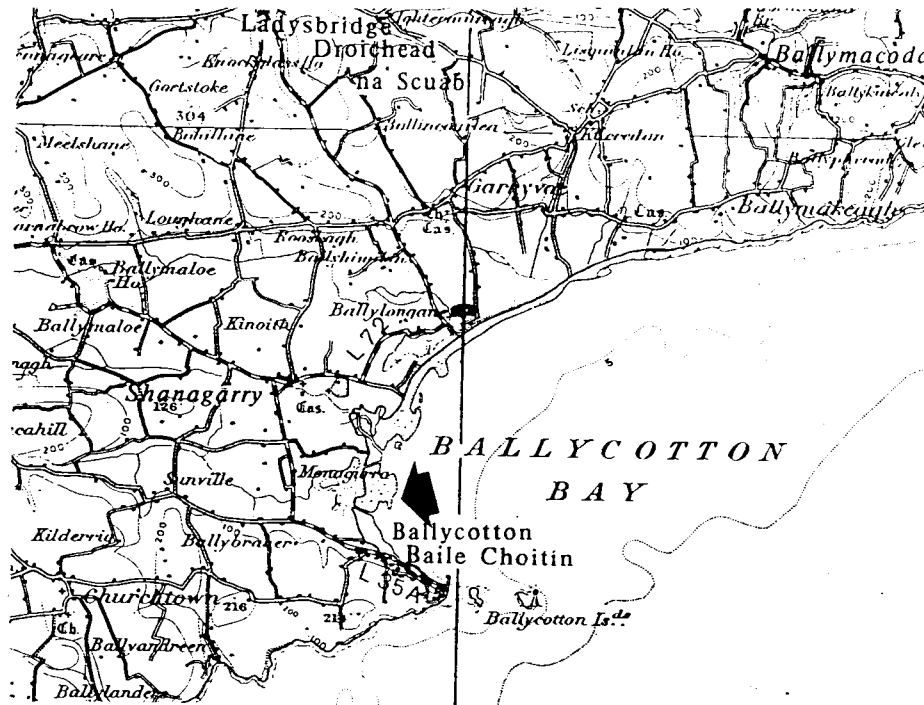


**Ballyteige Slob Channel.** Artificial pool near the pump station.

## (BALLYCOTTON LAKE, Co. Cork)

OS Grid Ref. W 9865

A former lagoon, 1 km east of Ballycotton



**Lagoon Type:** Formerly a natural lagoon with a gravel barrier and intermittent outlet. Now a tidal inlet.

**Description** Ordnance Survey maps of the 19th century show an open estuary in place of the lake. The low shingle barrier which built up since was frequently breached at the request of farmers but resealed naturally. However, in July 1996, the opening was wide and the “lake” tidal. Severe erosion in the area (see plates) indicate that a permanent bar is unlikely to re-build.

**Birds.** Together with the two tidal pools at Shanagarry, and intertidal sand flats, the lake was an important autumn migration site and held nationally important numbers of Teal, Golden plover, Grey plover, Lapwing, Sanderling and Dunlin (Delany 1995).

### Conservation status

- No information on aquatic flora and fauna?
- The area is a Wildfowl Sanctuary and the lake was designated an SPA in 1994. Allen’s Pool is an IWC Reserve.
- The lake is within a proposed NHA (Site No 1978)



**Ballycotton Lake.** Barrier and tidal inlet with former lagoon on the left.



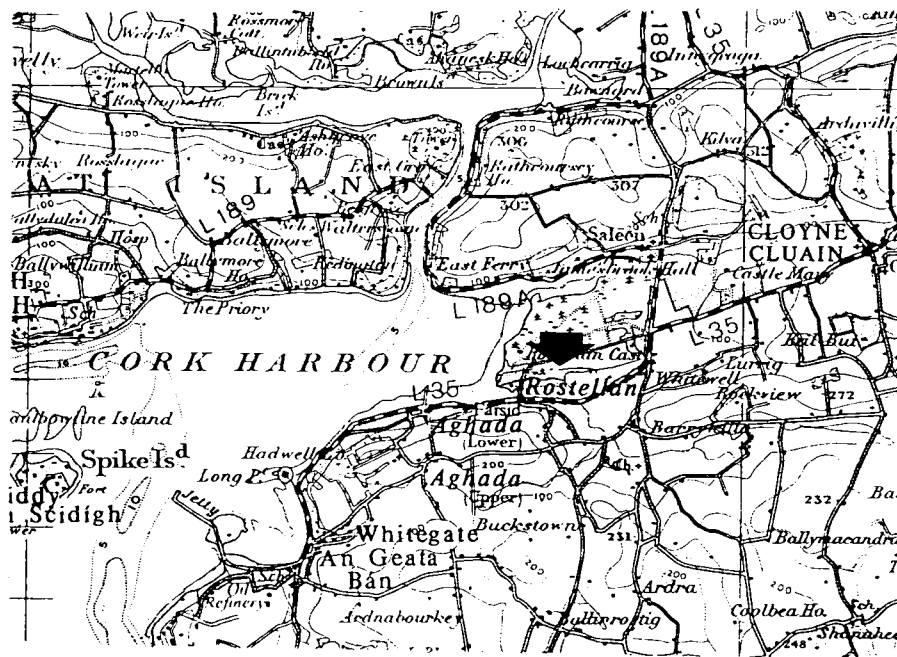
**Ballycotton Lake.** Barrier and drowned sedges on the sea shore.



## 7. ROSTELLAN LAKE, Co. Cork

OS Grid Ref. W 871660

Southeast Cork Harbour, near the village of Farsid.



**Lagoon Type:** Artificial saline lake with artificial barrier and outlet.

**Description** The lake in its present form was presumably created by construction of a causeway across an estuary during road building. It is approximately 50 ha. Depth is less than 1 m and most areas are within the depth range of upending swans (O'Donoghue and O'Halloran 1984). Access to open water is limited nearly everywhere by wide reed beds.

**Hydrology:** The main inflow of freshwater enters the lake at the point furthest from the causeway and flows seawards. Excess water leaves by a narrow, open, unsluiced channel at one end of the causeway. There may be some seepage through the barrier but seawater appears to enter chiefly at high tide through the outlet channel. Salinity on 3.vii.96 was 35‰ near the outlet but only 4‰ at 30 m inland from the causeway. It seems likely that brackish conditions only exist near the causeway and that most of the lake is fresh or nearly so. O'Donoghue and O'Halloran (1984) recorded a gradient of 2.1-0.2‰ along the length of the lake.

**Vegetation** Wide reed beds (*Phragmites* and some *Schoenoplectus lacustris*) fringe most parts of the lake and there were dense beds of aquatics.

**Aquatic fauna.** A rather poor, but definitely brackish fauna was present near the causeway.

**Birds.** The lake holds important numbers of waterfowl and swans.

## Species records for Rostellan Lake

The following species were recorded from near the outlet channel during a brief visit on 3.vii.96.  
(No molluscs were found) L = lagoonal specialist.

### Aquatic Fauna

*Cordylophora caspia*

*Neomysis integer*

*Jaera* sp.

Amphipoda

*Palaemonetes varians* L

*Crangon crangon*

*Carcinus maenas*

*Conopeum seurati* L

*Gasterosteus aculeatus*

Aquatic Flora: A wide dense bed of *Potamogeton pectinatus*, with plants reaching the surface, was present at the edge of the reed beds

### **Evaluation**

- Not a true lagoon. Created artificially by construction of a causeway
- Most of the lake is probably freshwater and the site is not therefore valuable as a lagoon-like habitat.
- It is a proposed NHA, (Site No. 1076).

*Sources*: O'Donoghue and O'Halloran (1984)



**Rostellan Lake.** Outlet channel from the lake.

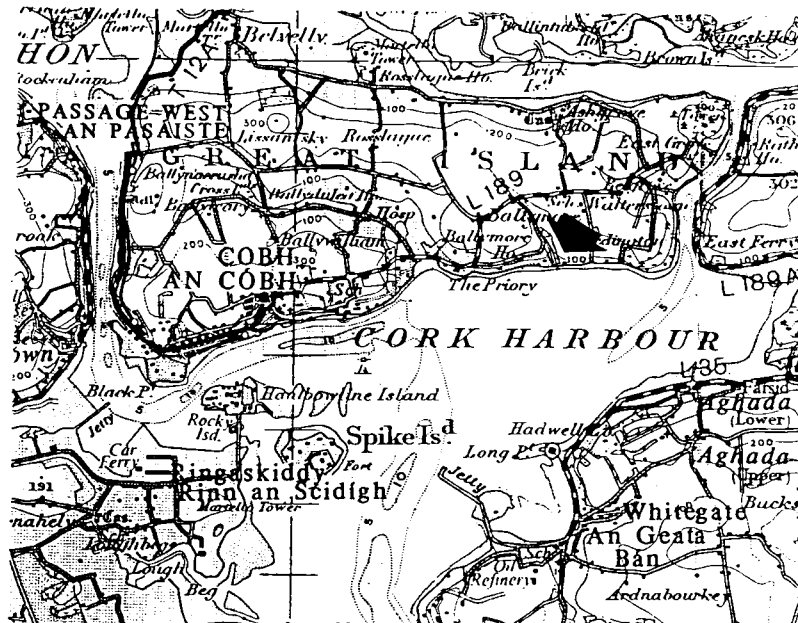


**Rostellan Lake.** The lake seen from the barrier showing reed beds and *Potamogeton pectinatus* at the water surface.

## 8. CUSKINNY LAKE, Co. Cork

OS Grid Ref. W 839674

Cork Harbour, east of Cobh



**Lagoon Type:** Possibly a former natural lagoon, now with a partly artificial barrier and artificial outlet

**Description:** Possibly a natural lagoon, more likely a lake created by blocking a stream exit during road building. Area about 8 ha, depth not known but bed appears to shelve steeply. Substrate near outlet mainly hard clay with some gravel and stones. Surrounding land low, wooded.

**Hydrology:** Freshwater enters mainly by way of a stream at N end and excess water exits through an unsluiced pipe under the road and empties onto the shore. Seawater enters through the pipe and there is a salinity gradient in the lake from freshwater in the north to nearly seawater near the outlet (0-30‰ in 1991). In July 1996, salinity at the south end was 22-27‰. Vertical grassy banks indicate only minor fluctuations in water level.

**Vegetation:** *Phragmites* beds in the northern half. Few aquatics except green algae.

**Threats:** There is said to be eutrophication from fertilizer run-off.

## Species records from Cuskinny Lake

The following species were recorded at two stations in 1991 and at the south end during a brief visit in 1996. (L = lagoonal specialist)

	North	South
<i>Aquatic fauna</i>		
<i>Hediste diversicolor</i>	+	+ *
<i>Tubificoides benedii</i>	+	+
<i>Neomysis integer</i>	+	+ *
<i>Lekanesphaera hookeri</i> L	+	+
<i>Gammarus zaddachi</i>		+
<i>Gammarus locusta</i>		+
<i>Corophium volutator</i>		+
<i>Palaemonetes varians</i> L		+
<i>Crangon crangon</i>		+ *
<i>Carcinus maenas</i>		+ *
<i>Cloeon dipterum</i>	+	
<i>Limnephilus affinis</i>	+	
<i>Corixa praeusta</i>	+	
<i>Sigara stagnalis</i> L	+	
<i>Sigara dorsalis</i>	+	
<i>Notonecta</i> sp.		+ **
<i>Hydrophilidae</i>	+	
<i>Coelambus</i> sp.	+	
<i>Potamopyrgus antipodarum</i>	+	
<i>Anguilla anguilla</i>	+	
<i>Pomatoschistus microps</i>		+

\* Recorded in 1996. \*\* only recorded in 1996

*Flora:* Some *Enteromorpha* and *Cladophora* at the south end. Nothing else recorded.

### Evaluation

- Not a true lagoon.
- The fauna and flora are not rich in aquatic species and nothing of special interest has been recorded.
- The lake is of some ornithological interest. It is an IWC Reserve.
- The lake is within a proposed NHA (Site No 1987).

*Sources:* (Galvin 1992).



Cuskinny Lake. View of the lake and outlet channel.



Cuskinny Lake. North end of the lake in winter, 1991.



Cuskinny Lake,  
Outlet channel

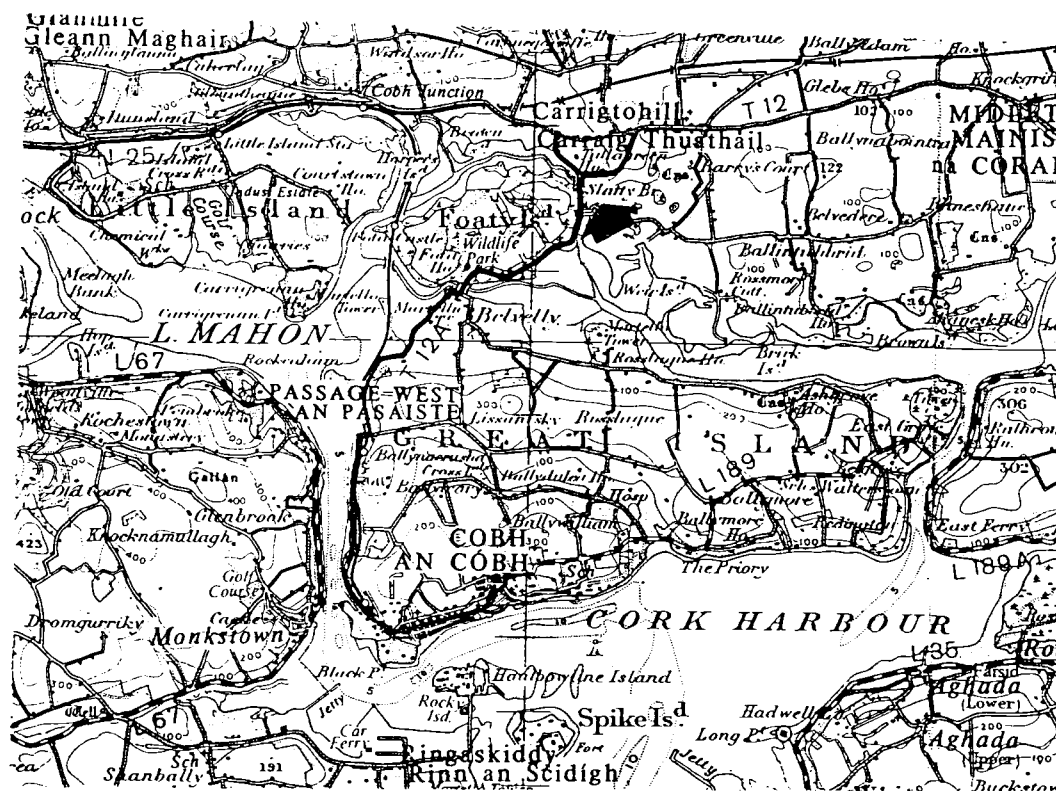


Cuskinny Lake. Water flowing from outlet channel onto the beach.

## 9. FOTA LAKE, Co. Cork

OS Grid Ref. W 808723

Cork Harbour, Slatty Bridge, Fota Island



**Lagoon Type:** Artificial saline lake with artificial barrier; probably young.

**Description:** Probably created artificially by the construction of the Slatty Bridge (causeway), connecting Fota Island to the mainland east of Cobh. The lake appears young and poorly colonised. Area not known, map not available. It appears to be shallow. Substrate near the shore is stony mud. The lake is surrounded by pasture and access to the south shore is easy.

**Hydrology:** Seawater enters under or through the causeway to give a salinity of 21‰ near the causeway, falling to 11‰ over 100 m (July 1996).

**Vegetation.** Emergents absent on the south shore, aquatics scarce. *Phragmites* bed on north shore.

**Threats.** None apparent.

## Species records

*Fauna and flora* poor. The following faunal species were recorded during a brief visit on 2.vii.1996 (L = lagoonal specialist):

*Palaemonetes varians* L  
*Potamopyrgus antipodarum*  
Coleoptera indet.  
*Enteromorpha* sp.

## Evaluation

- Not a true lagoon.
- The lake is artificial and poor in species. It is of no conservation value. It is not in a proposed NHA.





**Fota Lake.** Lake seen from Slatty Bridge.

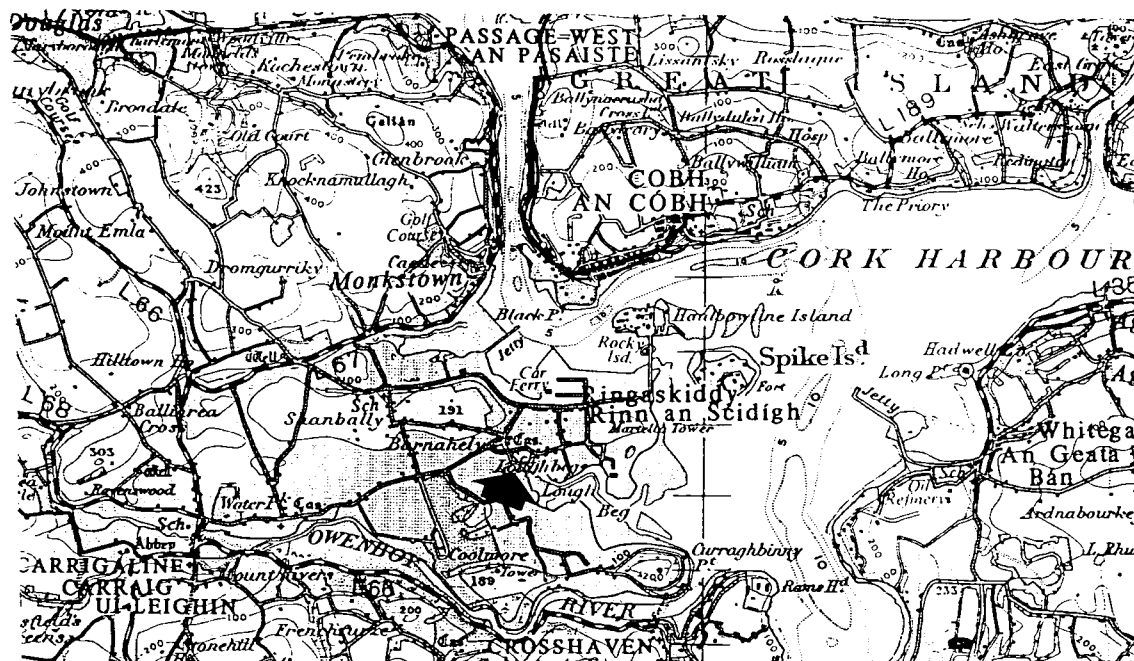


**Fota Lake.** Slatty Bridge and outlet.

## 10. LOUGH BEG Co. Cork

OS Grid Ref. W 775634

West side of Cork Harbour, near Ringaskiddy



**Lagoon Type:** Artificial saline lake with artificial barrier and sluiced outlet.

**Description:** Originally an inlet of Cork Harbour (part of Lough Beg), isolated by construction of a causeway and road leading to the Penn Chemicals plant. The surrounding land is marshy grassland. Area approximately 2 ha, depth mostly <math>< 50\text{ cm}</math>, maximum depth 1 m. Substratum clay-silt, fairly firm, almost no stones or rocks.

**Hydrology:** Freshwater drains from the surrounding marsh and several small streams. Excess water leaves through a pipe, with flap sluice on the seaward side, which passes under the road and empties into Cork Harbour. Seawater enters through the pipe and there is a little seepage. Salinity throughout most of the lake in winter was 1-2‰ but reached 10‰ near the causeway (1990-91).

**Vegetation:** Extensive beds of *S. maritimus* (expanding) and some *S. lacustris* and *Spartina*. Submerged aquatics absent. Mats of *Oscillatoria* developed in spring.

**Aquatic fauna.** Poor owing to the recent formation of the lake and the very shallow water.

**Birds.** The lake is convenient for observation of waterfowl and there is a well situated hide.

**Threats:** *Scirpus* beds spreading, threatening shore roosts.

## Species Records for Lough Beg

The following species were recorded between December 1990 and March 1991 (Galvin and Healy 1991):

### Aquatic Fauna

*Neomysis integer*

*Lekanesphaera hookeri* L

*Gammarus zaddachi*

*Gammarus duebeni*

*Allomelita pellucida*

*Palaemonetes varians* L

*Crangon crangon*

*Carcinus maenas*

*Platycnemis pennipes* ?

*Sigara stagnalis* L

*Limnephilus affinis*

Dytiscidae

Hydrophilidae

*Chironomus* sp.

*Einfeldia* sp.

*Procladius* sp.

*Hydraphantes rubra* ?

*Potamopyrgus antipodarum*

*Gasterosteus aculeatus*

*Pomatoschistus microps*

*Atherina presbyter*

L = lagoonal specialist

### Evaluation

- Not a true lagoon. Created by construction of a causeway.
- The site is too small to be of any importance. The lake is an IWC Reserve by agreement with Penn Chemicals.
- It is in a proposed NHA (Site No 1066)

Sources: Galvin and Healy 1991, Galvin 1992. Cork Bird Reports.



Lough Beg. *Scirpus maritimus* bed flooded in winter.



Lough Beg. Causeway and *Spartina* clumps.



Lough Beg. Outlet sluice.

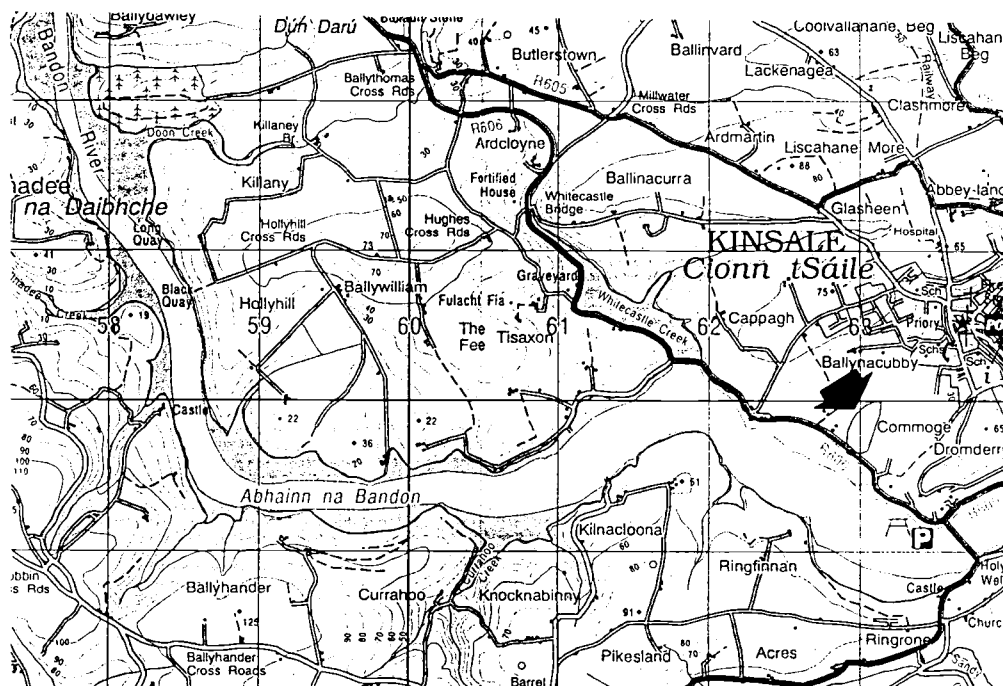


Lough Beg. Aerial view showing freshwater inflows and barrier.

## 11. KINSALE MARSH Co Cork

OS Grid Ref. W 630498

West of Kinsale beside estuary of Bandon River



**Lagoon Type:** Shallow, artificial saline lake with artificial barrier and sluiced outlets

**Description:** The lake appears to have been created artificially by construction of a road in the 19th century which isolates it from the Bandon River estuary. The surrounding land is low-lying pasture. There are two connecting lakes, each with its own outlet pipe. Total area approximately 3 ha, maximum depth 1 m. Substratum firm mud with stones and a few small rocks.

**Hydrology:** Freshwater enters from two small streams and drains from surrounding land. Excess water exits through two pipes under the road one of which has a flap sluice. Seawater enters readily, however, and the salinity remains high near the road. In 1991, a salinity gradient of 1-38‰ was recorded in summer and 1-26‰ in winter (Galvin 1992). In July 1996, 25-35‰ was recorded throughout the system.

**Vegetation:** Emergents scarce, some *Scirpus maritimus*. Aquatics were algae only.

**Birds:** Good for rare waders, wader roost at high tide (Hutchinson 1994).

**Threats:** Plans to reclaim a corner of the marsh for road building (1997)

**Sources:** Galvin 1992

## Species records from Kinsale Lake

*Fauna.* The fauna is rich, reflecting the persistent salinity gradient and ease of colonisation. The following species were recorded in 1991 (Galvin 1992) and in July 1996. A number of species not listed could not be fully identified.

<i>Obelia dichotoma</i> **	<i>Gammarus duebeni</i>
<i>Actinia equina</i>	<i>Gammarus zaddachi</i>
<i>Rhizostoma octopus</i>	<i>Corophium volutator</i> *
<i>Capitella capitata</i>	<i>Microdeutopus gryllotalpa</i>
<i>Hediste diversicolor</i> *	<i>Palaemonetes varians</i> * L
<i>Eteone longa</i>	<i>Palaemon serratus</i>
<i>Nephtys caeca</i>	<i>Palaemon elegans</i>
<i>Anaitides maculata</i>	<i>Crangon crangon</i>
<i>Cirratulus cirratus</i>	<i>Carcinus maenas</i> *
<i>Arenicola marin</i>	<i>Limnephilus affinis</i>
<i>Pomatocerus triqueter</i>	<i>Cloeon dipterum</i>
<i>Tubifex costatus</i>	<i>Sigara stagnalis</i> L
<i>Elminius modestus</i> *	<i>Coelambus confluens</i>
<i>Semibalanus balanoides</i> **	<i>Helophorus brevipalpis</i>
<i>Neomysis integer</i> *	<i>Helophorus immaculatus</i>
<i>Praunus flexuosus</i> *	<i>Enochrus halophilus</i> L
<i>Idotea chelipes</i> * L	<i>Gyrinus caspia</i>
<i>Cyathura carinata</i> *	<i>Patella vulgata</i>
<i>Jaera sp.</i>	<i>Littorina littorea</i> *
<i>Lekanesphaera hookeri</i> L	<i>Hydrobia ulvae</i>
<i>Gammarus locusta</i>	<i>Mytilus edulis</i>
<i>Apherusa jurinei</i>	<i>Scrobicularia plana</i>
<i>Melita palmata</i>	<i>Conopeum seurati</i> ** L
<i>Allomelita pellucida</i>	<i>Gasterosteus aculeatus</i>
<i>Echinogammarus marinus</i>	<i>Pomatoschistus microps</i>
<i>Gammarus ?salinus</i>	<i>Atherina presbyter</i>

\* recorded in 1991 and 1996; \*\*recorded in 1996 only. L lagoonal specialist

*Vegetation:* Emergents scarce, some *Scirpus maritimus*. Aquatics were algae only.

Marine algae near outlet pipe, including *Fucus vesiculosus*, *Ascophyllum nodosum* and *Mastocarpus stellatus*.

## Evaluation

- Not a true lagoon. Created by construction of a causeway.
- Fauna is rich with a high proportion of lagoonal species. No aquatic vascular plants.
- Valued for birds
- Not in a proposed NHA



**Kinsale Marsh.** The two adjoining lakes seen from the road.

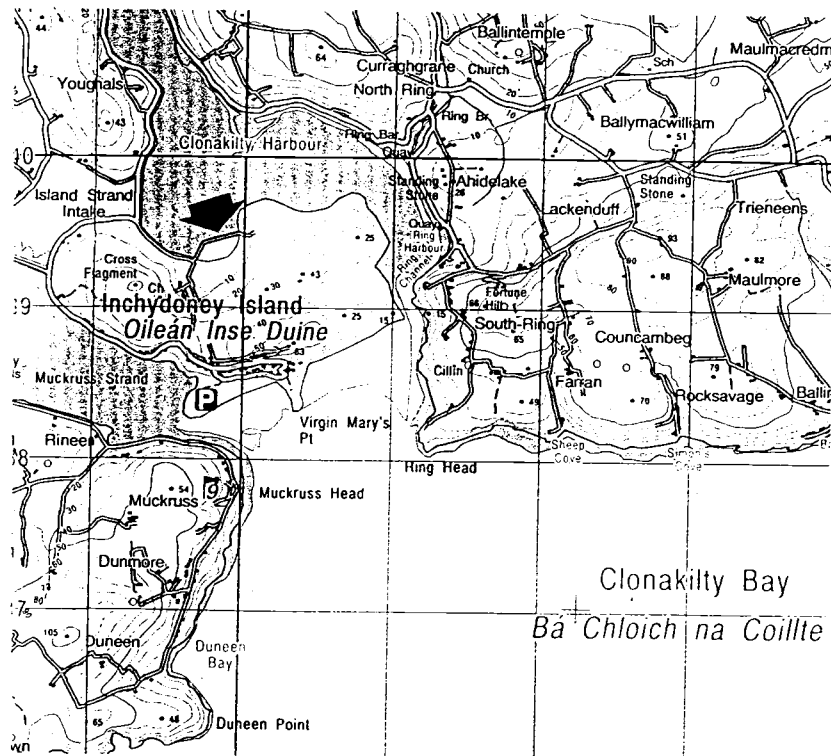


**Kinsale Marsh.** Water flowing from outlets into the estuary.

## 12. INCHYDONEY LAKE Co Cork

OS Grid Ref. W 398394

Clonakilty Harbour, 2 km south of Clonakilty



**Lagoon Type:** Artificial saline lake with artificial barrier and unsluiced outlet.

**Description:** A shallow, artificial lake, isolated from the sea by a causeway and road. Water exits through a channel under the road. Area approximately 2 ha, depth mostly < 30 cm when sampled. Substrate soft, black mud, shoreline stony.

**Hydrology:** No freshwater streams shown on map. Seawater enters through the outlet channel which appeared to have been recently dredged (July 1996). High salinity indicates that the lake may be tidal and that freshwater inflow is small. Salinity near the road on 3.vii.96 was 37‰. A number of benthic animals were recently dead or dying at the time. *Phragmites* beds on shores far from the road indicate lower salinity.

**Vegetation:** *Phragmites* beds on shores away from the road. Aquatics were green algae only.

**Fauna.** Poor, consisting almost entirely of marine, euryhaline or polyhaline species. Many animals were in poor condition, dying or recently dead at the time of the visit.

**Threats.** The lake is eutrophic and the fauna appears to be subject to mortalities for reasons unknown.



## Species records at Inchydoney

The following species were recorded during a brief visit on 3.vii.96:

### Aquatic fauna

*Arenicola marina* (casts)

*Neomysis integer*

Amphipoda

*Palaemonetes varians* L

*Crangon crangon*

*Carcinus maenas*

*Hydrobia* sp.

*Littorina littorea*

*Cerastoderma glaucum*† L

*Mytilus edulis*

† all dead or dying. L lagoonal specialist

### Evaluation

- Not a true lagoon. Created by construction of a causeway.
- The lake may be too shallow and eutrophic to support a permanent fauna and flora.
- It is of little conservation value for its aquatic fauna.
- It is not in a proposed NHA (?)



**Inchydoney Lake** seen from the barrier.

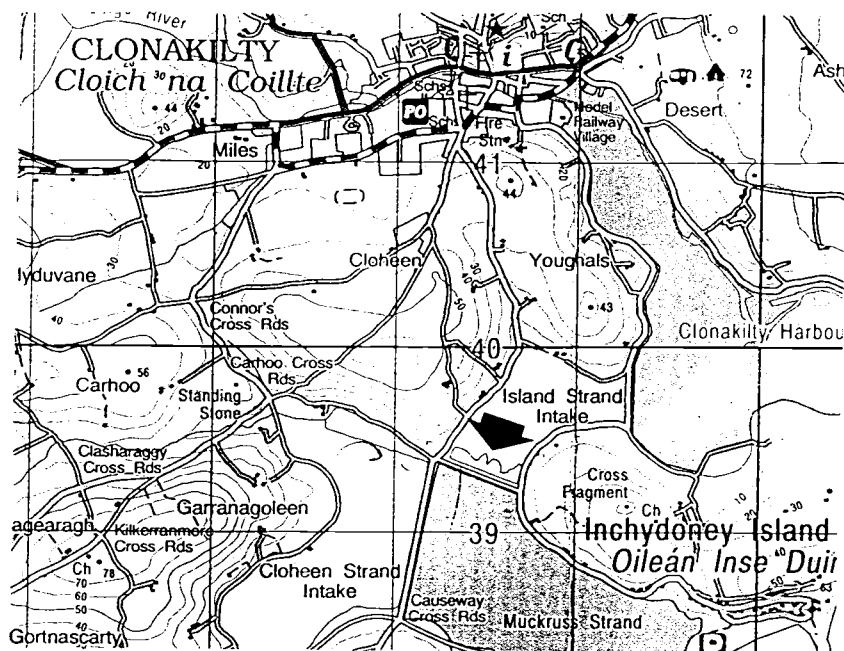


**Inchydoney Lake.** Outlet channel.

### 13. MUCKRUSS LAKE, Co. Cork

OS Grid Ref. W 384393

Clonakilty Bay, 2 km south of Clonakilty



**Lagoon Type:** Artificial saline lake with artificial barrier and unsluiced outlet.

**Description:** Small, shallow, elongated lake, isolated from the sea by a causeway and road, believed to have been built about 150 years ago. Formerly a tidal creek. Pipe outlet to sea under road from one end of the lake. Area 1-2 ha, depth < 30 cm. Substratum soft mud with some stones at edge and near outlet. Access difficult except near outlet.

**Hydrology:** Lake receives freshwater by drainage and two small streams. The pipe outlet on the shore could not be seen but is probably unsluiced, allowing seawater to enter the lake at one end which creates a W-E salinity gradient. In 1991, 0-26‰ was measured in winter and 28-38‰ in summer (Galvin 1992). On 3.vii.96, 40‰ was measured near the outlet. High salinities are probably due to evaporation of the shallow water.

**Vegetation:** The landward edge of the lake is fringed with beds of *Juncus maritimus* and *J. gerardii* and emergent beds of *Scirpus maritimus* and *S. lacustris*. Aquatics are marine and brackish algae only.

**Aquatic fauna.** Brackish and marine species were present, the latter dominating near the outlet.

**Threats:** The water is very shallow in most places and is eutrophic. There is evidence that these factors are causing faunal mortality.

## Species list for Muckruss Lake

The following species were recorded from both ends of the lake in 1991 (Galvin 1992) and from near the outlet only on 3.vii.96.

### Aquatic fauna

*Obelia dichotoma*\*  
*Hediste diversicolor*  
*Arenicola marina*  
*Tubifex costatus*  
*Neomysis integer*  
*Gammarus ?salinus*  
*Melita palmata*  
*Corophium volutator*  
*Palaemonetes varians* L  
*Crangon crangon*\*  
*Carcinus maenas*  
*Limnephilus affinis*  
*Chironomus aprilius*  
*Einfeldia* sp.  
*Potamopyrgus antipodarum*  
*Hydrobia ulvae*  
*Mytilus edulis*  
*Scrobicularia plana*\*†  
*Cerastoderma glaucum* † L  
*Cryptosula pallasiana*  
*Pomatochistus microps*

\* in 1996 only; † dying or recently dead in 1996; L lagoonal specialist

Aquatic Flora. *Ulva lactuca*, *Enteromorpha* sp. Rhodophyta. *Chaetomorpha linum* (lagoonal specialist) in 1991 only.

## Evaluation

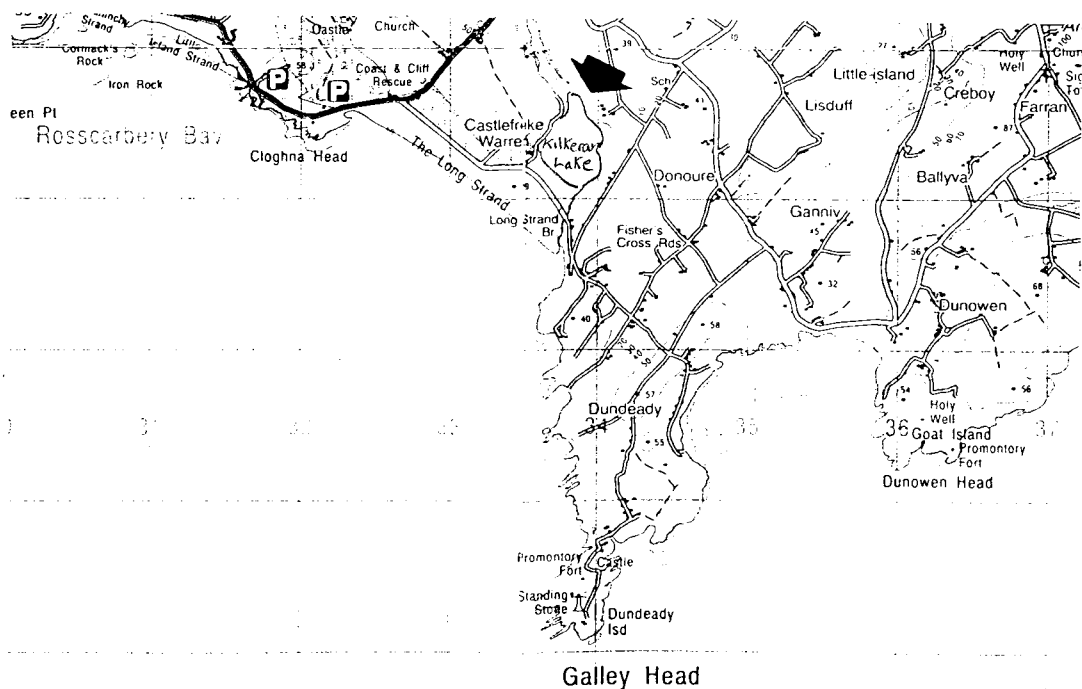
- Not a true lagoon. Created by construction of a causeway.
- The lake is of little importance for aquatic fauna and vegetation owing to its small size.
- It is part of an area important for birds
- It is in a proposed NHA (Site No. 91).

Sources: Galvin 1992

## 14. KILKERAN LAKE, Co. Cork

OS Grid Ref. W 3432

Kilkern/Kilkerran/Kilkieran Lake  
Just north of Galley Head



**Selected Site in 1996. Summary only, see separate account in this report**

**Lagoon Type:** Natural sedimentary lagoon with sand and gravel barrier with intermittent natural inlet.

*Description.* The lake lies behind a broad barrier in the Castlefreke dunes. A 300 m outlet forms through the barrier periodically, generally in winter. The lake is of moderate size, approximately 15 ha, and depth is <3 m. Substrate is mainly sand covered by a deep layer of organic mud. The surrounding land consists of dunes, coniferous woodland and good pasture.

*Hydrology.* Freshwater enters the lake by two streams and percolates seawards through the barrier when the outlet is closed. The barrier is often breached to alleviate flooding. Small amounts of seawater enter the outlet when it is present and by overtopping the barrier. The volumes of freshwater entering ensures low salinities for most of the year. Salinities of 1-2‰ were recorded in June-September 1966. Galvin reported 6‰ in 1991 and the OPW recorded 0.2-4.4‰ from June 1993-May 1994.

*Vegetation.* A rather narrow band of *Phragmites*, *Schoenoplectus lacustris*, and *Scirpus maritimus* fringes all except the northern shore. *Potamogeton pectinatus* abundant. Some *Ruppia maritima* and *Chara aspera* var. *aspera*.

*Aquatic fauna.* The fauna was abundant and rather rich for such a small, and relatively homogenous system. 30 taxa were recorded including 3 lagoonal specialists. The assemblage was typical of a lagoon without direct contact with the sea, where low salinity persists and marine influence is small. Hemipterans were particularly diverse (9 spp.) and included *Notonecta viridis*

and *Corixa concinna* for which there are few Irish records. Galvin (1992) recorded 44 taxa including *Hydrometra gracilentata* (first Irish record). Two “freshwater” bryozoans present

*Ecotonal Coleoptera.* Beetles were collected from *Scirpus maritimus* and *Phragmites* swards. 9 Carabidae and 17 Staphylinidae were recorded, including 3 which are regarded as indicator species.

*Birds.* Waterfowl on the lake were described as “surprisingly interesting” (Hutchinson 1986), but this may no longer be true.

*Threats.* There was evidence of eutrophication resulting from agricultural effluents.

### **Evaluation**

- The site is a natural sedimentary lagoon within an area of relatively unspoilt sand dunes. It is thus of International Importance. It is probably the best example in the southwest of Ireland of a lagoon with a sand/gravel barrier.
- Barrier morphology is well documented and studies of its history are ongoing.
- Rated as “potentially valuable” for vegetation. Species poor but interesting for the presence of both *Ruppia maritima* and *Polygonum amphibium*.
- For such a small lake, the fauna appears to be highly diverse. Several rare species have been recorded in the lake, at least one for the first time in Ireland.
- The site is rated as of average conservation value for ecotonal Coleoptera, with 3 indicator species.
- The lake has some ornithological interest.
- It lies within a proposed NHA (Site Code No. 1061).
- Designation as a proposed SAC recommended.

Sources: Galvin 1992.



**Kilkeran Lake.** View of outlet channel, looking south toward the barrier.



**Kilkeran Lake** Looking north



**Kilkeran Lake** Looking towards the outlet.



**Kilkeran Lake** Edge of barrier and beach.



**Kilkeran Lake.** West shore of the lake.



**Kilkeran Lake.** View of barrier, looking east from the dunes.



**Kilkeran Lake.** View of outlet channel, looking south toward the barrier.



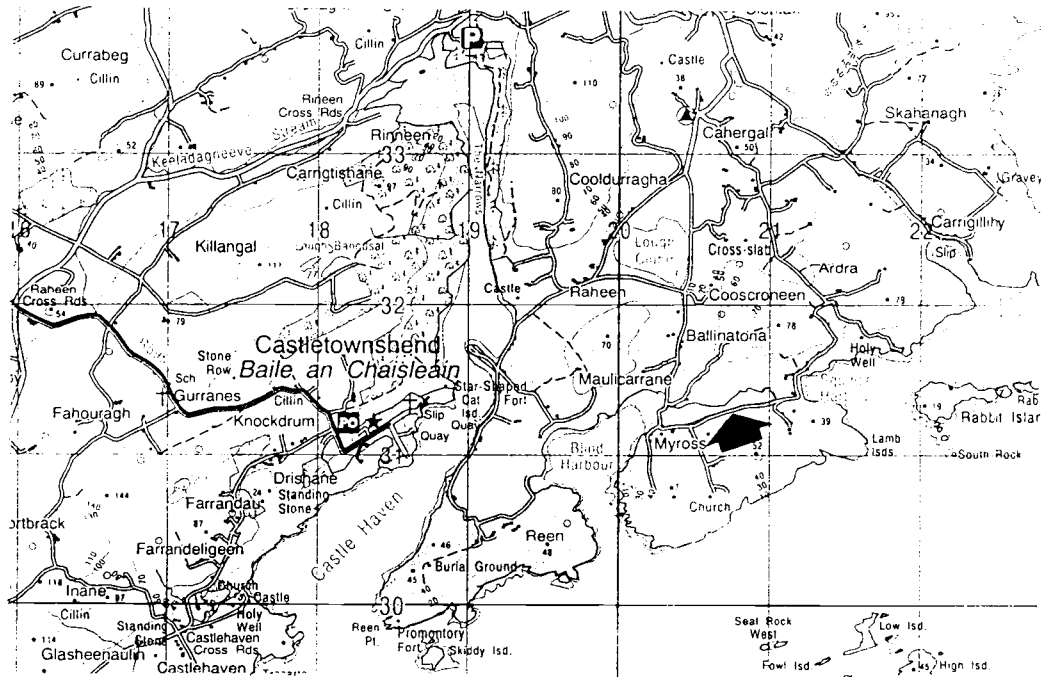
**Kilkeran Lake.** Seepage stream on the beach.



## 15. BLIND HARBOUR, Co. Cork

OS Grid Ref. W 206313

3.5 km south of Unionhall.



**Lagoon Type:** Artificial saline lake with artificial barrier and open outlet/inlet allowing tidal flow.

**Description.** An artificial saline lake created by construction of a road causeway across a sea inlet. The lake tapers inland giving way to saltmarsh with creeks and pans. Area approximately 8 ha.

**Hydrology.** Seawater enters under a bridge in the causeway and the lake is tidal. The tidal range could not be assessed because the water level was too high during sampling. On 4.vii.96, the salinity was 35‰ throughout the lake.

**Vegetation.** Only a few pieces of floating *Enteromorpha* were seen.

**Fauna.** The only species taken during a brief visit to the head of the lake on 4.vii.96 were *Idotea baltica*, *Palaemonetes varians* (lagoonal specialist), *Gasterosteus aculeatus* and unidentified Amphipoda.

**Threats** Not known.

### Evaluation

- Not a true lagoon. Created by construction of a causeway.
- The lake is of little ornithological value. The aquatic fauna and flora could not be assessed because water level was too high.
- The lake is not in a proposed NHA.



**Blind Harbour.** View of causeway and outlet to the sea.

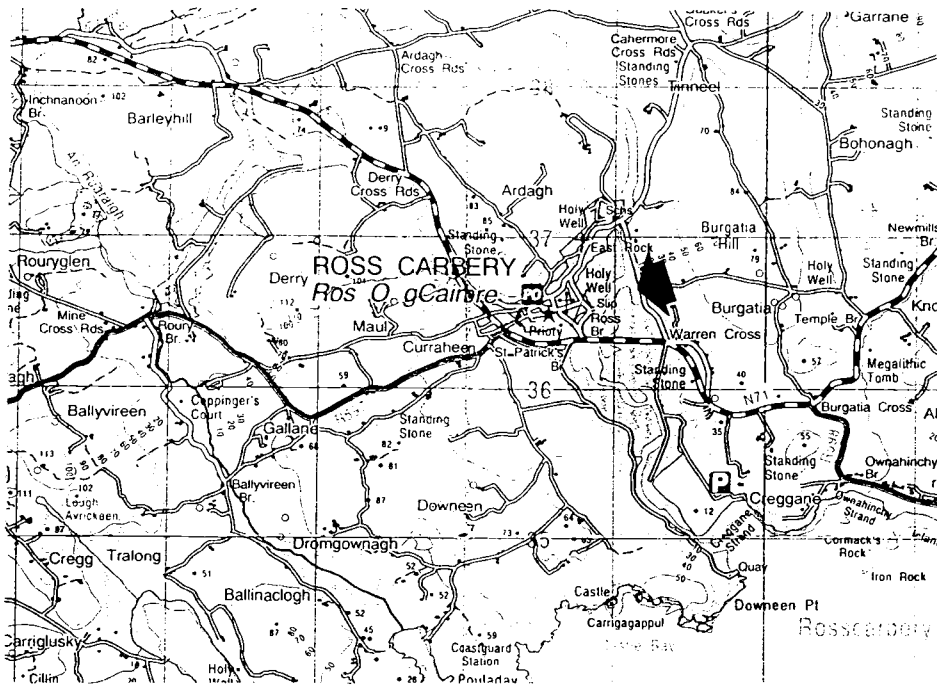


**Blind Harbour.** salt marsh at the head of the lake.

## 16. ROSSCARBERY LAKE, Co. Cork

OS Grid Ref. W 290367

Rosscarbery town.



**Lagoon Type:** Artificial saline lake with artificial barrier and open inlet/outlet.

**Description:** An artificial lake created by construction of a causeway and road across an arm of the sea. A narrow bridge allows tidal flow. Area about 20 ha, depth not known. Substrate near shore stony mud, rocks at high water level.

**Hydrology:** The lake is tidal, seawater entering under the bridge. The distribution of salinities (see map) indicated a clockwise circulation of seawater. (Freshwater streams?)

**Vegetation.** Walls surround most of the lake and there are few natural shores. Emergents are scarce and aquatics appeared to be green algae only.

**Aquatic fauna:** The water level was exceptionally high at the time of sampling and very few species were collected.

**Birds.** The lake is interesting for wilfowl.

**Threats.** The lake is in an urban setting and is probably polluted.

**Species records:** The following were recorded from three stations during a brief visit on 4.vii.96:

Aquatic fauna

*Neomysis integer*

*Palaemonetes varians* L

Amphipoda

*Carcinus maenas*

Flora

*Enteromorpha* sp.

*Cladophora* sp.

L = lagoonal specialist

**Evaluation**

- Not a true lagoon. Created by construction of a causeway.
- The lake is of little conservation value for aquatic fauna and vegetation.
- It is of some ornithological interest.
- It is not in a proposed NHA.

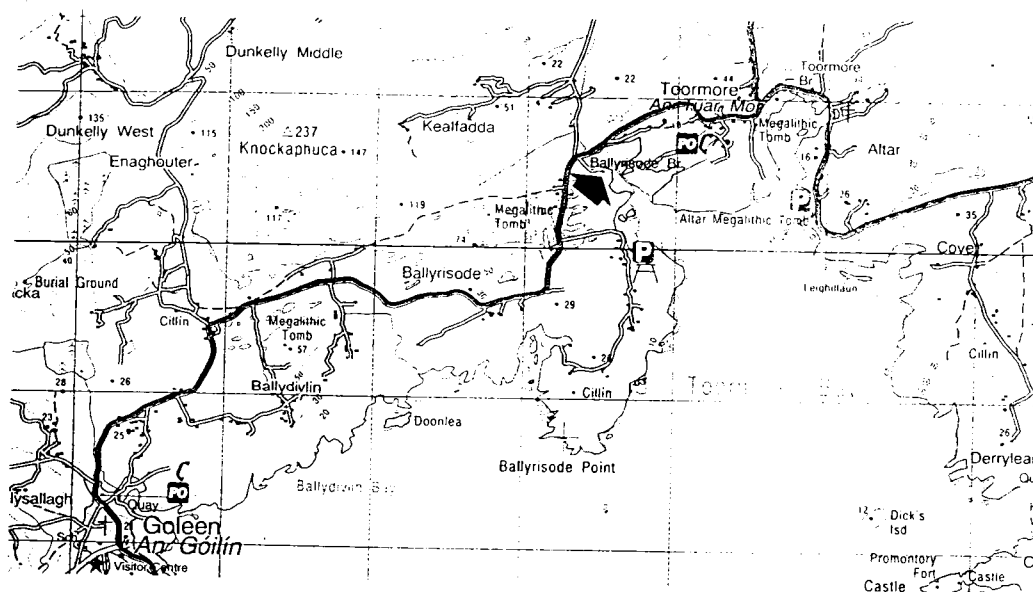


Rosscarbery Lake. Causeway and bridge over inlet.

## 17. TOORMORE LAKE, Co. Cork

OS Grid Ref. V 844306

Ballyrissode Bridge, about 9 km west of Schull.



**Lagoon Type:** Artificial saline lake with artificial barrier and unsluiced outlets.

**Description.** Shallow, artificial saline lake, created by road construction. The lake is isolated from the sea by a causeway through which run a number of outlet pipes at about the level of high spring tides (see Photo). Area 1-2 ha. Substrate a soft, peaty mud. Access easy.

**Hydrology.** The water level was below the outlet pipes at the time of the visit and seawater was pouring in at high tide (springs). No freshwater streams were apparent and the salinity may remain high throughout the year. Salinities of 35-39‰ were recorded on 3.vii.96. Vertical, eroding banks indicated little variation in water level.

**Vegetation.** Beds of *Juncus maritimus* fringed the lake away from roads on covered several islands (Plate ). Aquatics consisted of algae only, mainly attached to rocks near and at the causeway.

### Species records.

**Aquatic Fauna.** The only species recorded during a brief visit on 4.vii.96 were *Praunus flexuosus*, *Palaemonetes varians* (a lagoonal specialist), *Carcinus maenas* and an unidentified hydrobiid. Shells of recently dead *Cerastoderma glaucum* (a lagoonal specialist), and shells of *Cerastoderma edule*, were common.

**Flora.** *Fucus ceranoides*, *F. spiralis*, *Enteromorpha*.

### Evaluation

- Not a true lagoon. Created by construction of a causeway.
- The lake is of little value owing to its small size, artificial formation and poor fauna and flora.
- It is not in a proposed NHA.



Toormore Lake. Islands of *Juncus maritimus*.

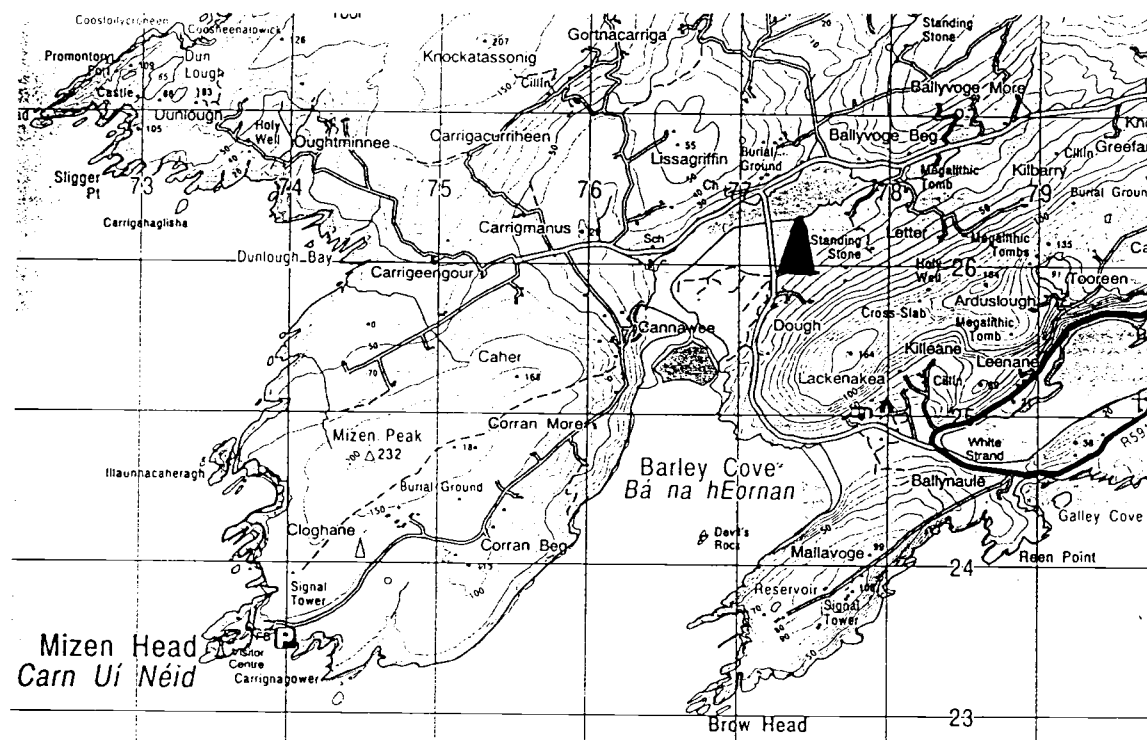


Toormore Lake. Causeway with outlet pipes

## 18. LISSAGRIFFIN LAKE, Co. Cork

OS Grid Ref. V 775265

West end of the Mizen Peninsula, 5 km west of Crookhaven.



Selected site in 1996. Summary only, see separate account for details

**Lagoon Type:** Artificial saline lake with artificial barrier and unsluiced outlets.

**Description.** The lake was created by construction of a causeway across a long, narrow, tidal inlet in an area of sand dunes. Impounded water escapes through a bridged outlet and several pipes. The lake is of medium size, approximately 12 ha, depth mostly < 1 m. Substrate is mainly sand with softer organic muds in sheltered areas. Surrounding land is hilly to the east and north, with wet heath, small bogs and small pasture fields, and to the west it is dune grassland. Bedrock is Old Red Sandstone.

**Hydrology.** Seawater appears to enter through the outlet and pipes on all tides, giving a water level variation of about 30 cm at neaps. Two small streams enter the head of the lake and maintain relatively low salinities. 6-8‰ was recorded at points distant from the causeway in July but higher salinity probably occurs at springs throughout the lake (see Aquatic fauna).

**Vegetation.** *Phragmites* beds in N., *Scirpus maritimus* and *Scoenoplectus lacustris* on S. shore, *Puccinellia* dominated salt-marsh near the outlet. *Ulva* and *Fucus* near the barrier. Some low-growing *Ruppia* sp.

**Aquatic fauna.** The strong salinity gradient was reflected in faunal distribution with marine species near the causeway and insects at the inland stations. 24 taxa were recorded including 2 lagoonal specialists. The assemblage typifies a system with medium to high salinities, i.e. much higher than those recorded during sampling. Given the frequency of tidal flow, the lake was poor in species. None of those recorded is rare or of special interest.



*Ecotonal Coleoptera.* Beetles were collected from marshy pasture, *Phragmites*/grass, sand and cobbles, *Scirpus maritimus*, and sand flat. 5 Carabidae were recorded and 17 Staphylinidae, one of which is regarded as an indicator species (single individual). The staphylinid assemblage was poor in species and characterised by eurytopic species tolerant of disturbance.

*Birds.* The lake and inlet are of interest for the number of vagrant American waders and is valued as a feeding area for small numbers of waders and wildfowl, including Whooper and Bewick's swans, especially during hard weather.

*Threats.* None apparent. Regular flushing makes eutrophication unlikely. Parts of the dune system have recently been purchased by Cork County Council by compulsory purchase.

### **Evaluation**

- Not a true lagoon. Partly created by construction of a causeway.
- The area is of geomorphological interest but the lake itself is largely artificial.
- Rated as "not valuable" for vegetation. Species-poor, no species of interest.
- The aquatic fauna was poor with only two lagoonal specialists and no rare or interesting species.
- The site is rated as of low conservation value for ecotonal Coleoptera with only one indicator species
- The lake and inlet are of ornithological interest.
- The lake is part of a proposed NHA (Site No. 1040) which includes the dunes and rocky hillsides.



Lissagriffin Lake. Northeast end of the lake with *Phragmites* bed.



Lissagriffin Lake. Lake and barrier, looking east.



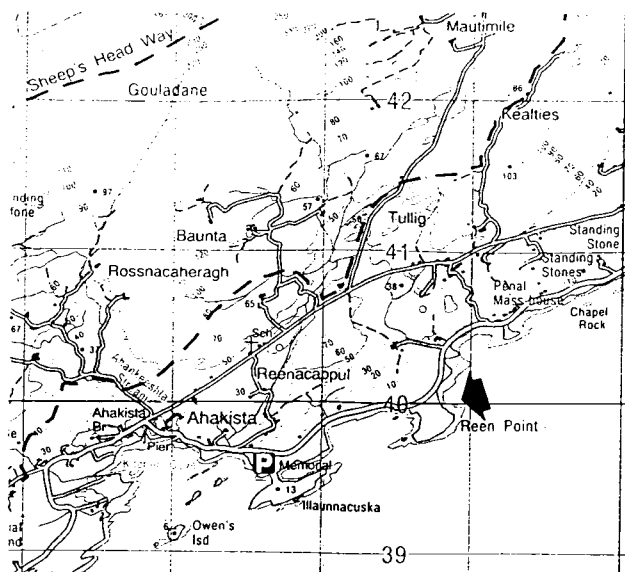
Lissagriffin Lake. Causeway with bridge over outlet.

Lissagriffin Lake. Tidal inlet below the causeway.

## 19. REEN POINT POOLS, Co. Cork

OS Grid Ref. V 888399

Durrus Peninsula, about 6 km west of Durrus.



**Lagoon Type:** Natural sedimentary lagoon on a tombolo with two cobble barriers, without inlets.

*Description.* Several small pools, together only about 1 ha, impounded between two cobble barriers..

The pools have not been sampled and there is no further information.

### **Evaluation**

The lake may be of some geomorphological interest but its small size means that it is unlikely to be of conservation value for its flora or fauna.

It is not in a proposed NHA



**Reen Point.** The lake and one of the cobble barriers.

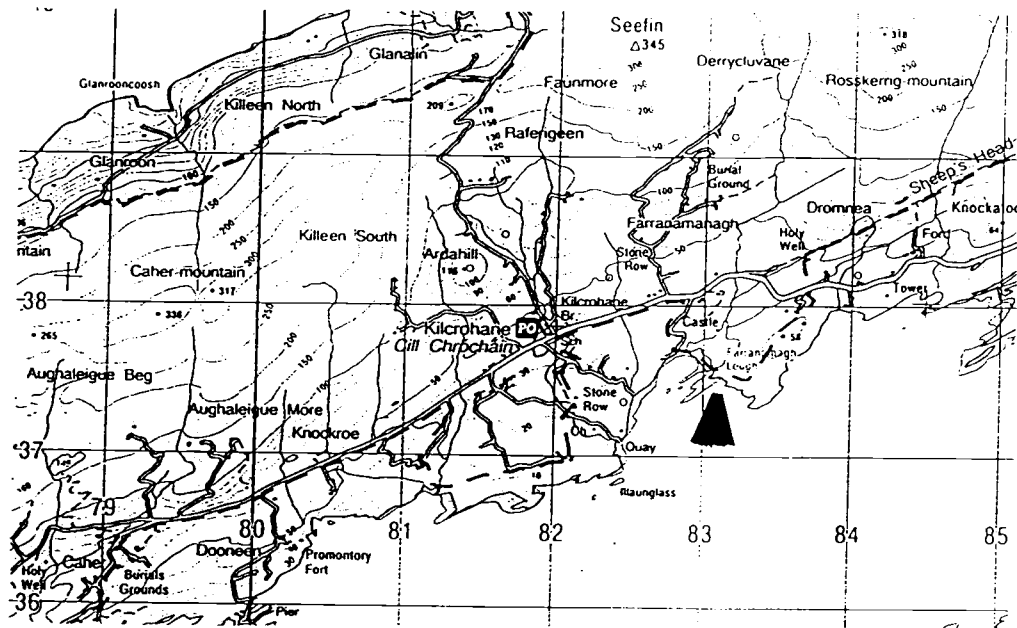


**Reen Point.** Barrier at other side of the lake.

## 20. FARRANAMANAGH LAKE, Co. Cork

OS Grid Ref. V 830378

Dunmanus Bay, south side of Sheep's head Peninsula. 3 km east of Kilcrohane



Selected site in 1996. Summary only, see separate account for details

**Lagoon Type:** Natural sedimentary lagoon with cobble barrier and permanent natural sea inlet.

**Description.** Small lake, approximately 5 ha, depth about 2 m at its deepest point. Substrate is cobbles and gravel silt and peat in sheltered places. Surrounds are mainly rocky hills with wet heath, small bogs and small pasture fields. Bedrock is Old Red Sandstone.

**Hydrology.** A small stream enters from the north. Seawater enters through the inlet on spring tides but no tidal variation in water level was apparent. Water level can be 1 m higher in winter. The sea overwashes the barrier during storms. Freshwater inflow may be sufficient to maintain low salinity for most of the time. 2-6‰ was recorded in July and August 1966.

**Vegetation.** *Scirpus maritimus* and *Schoenoplectus lacustris* fringe parts of the shore. Sparse, patchy cover of *Ruppia* sp. Fen vegetation with willow carr at the stream inlet. *Fucus* in the outlet channel.

**Aquatic fauna.** Fauna was poor in species and numbers throughout the lake. 17 taxa were recorded of which one is a lagoonal specialist. Insects were absent in spite of the low salinity and abundant macrophytes, suggesting that periods of high salinity occur. The assemblage typifies a low salinity lagoon receiving occasional small incursions of seawater. No species of interest were recorded.

*Ecotonal Coleoptera.* Beetles were collected from a *Juncus maritimus*/grass area, a grass bank and the lake/barrier margin. 13 Carabidae and 35 Staphylinidae were recorded, one of which is regarded as an indicator species. It occurs on marshy shores and flood meadows.

*Other features* *Zostera marina* is present on the lower shore below the barrier.

*Threats.* None apparent. A "garden walk" passes along the barrier and over the inlet and may attract increasing numbers of visitors.

### **Evaluation**

- The lake is a good example of a natural sedimentary lagoon with a cobble barrier and natural inlet and as such is unusual for this part of the coast.
- Rated as "potentially valuable" for vegetation. The site appeared to be species-poor but additional species may be present offshore.
- The aquatic fauna was poor in species with only one lagoonal specialist and nothing of interest was recorded.
- The site is rated as of no conservation value for ecotonal Coleoptera; the single indicator species would be vulnerable to flooding.
- A bed of *Zostera marina* on the shore below the barrier has attracted scientific interest.
- The site is picturesque and its character is valued by the local inhabitants.
- The lake does not lie within a proposed NHA.
- Designation as a proposed SAC is recommended.



Farranamanagh Lake. Barrier and inlet.

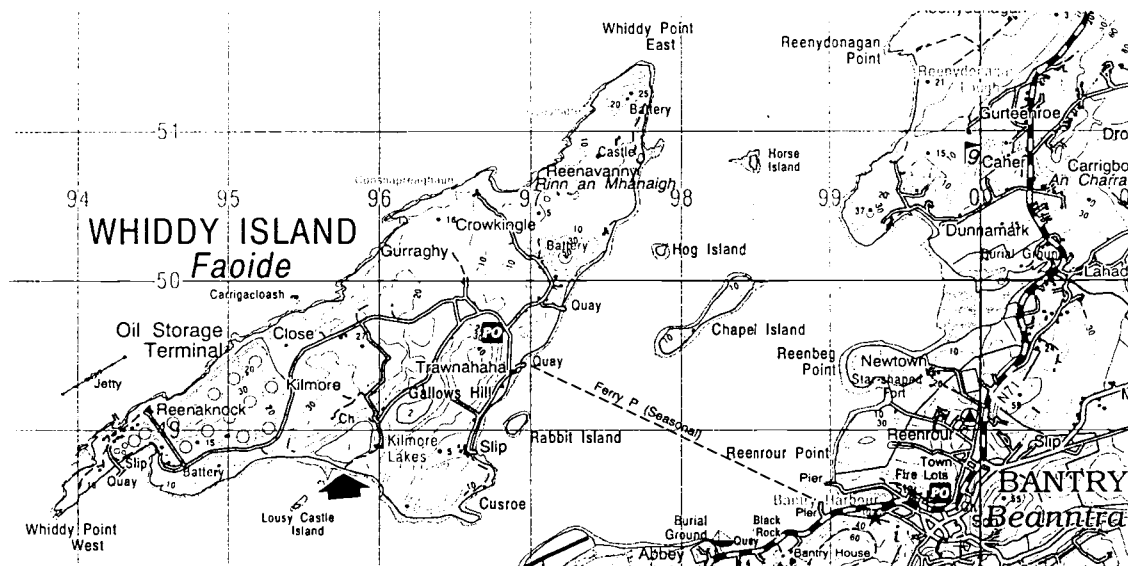


Farranamanagh Lake. North of the lake with *Schoenoplectus* bed in sheltered bay.

## 21. KILMORE LAKE, Co. Cork

OS Grid Ref. V 958489

Whiddy Island, Bantry Bay



**Lagoon Type:** Natural, sedimentary lagoon with cobble barrier and natural temporary inlet.

*Description.* Small lake, about 15 ha. Seawater was flowing over a low point in the barrier at high tide in July 1996.

The lake was only visited briefly by one member of the team and was not sampled.

The oil terminal on the island is about to resume operations and all habitats in the area will be threatened

### Evaluation

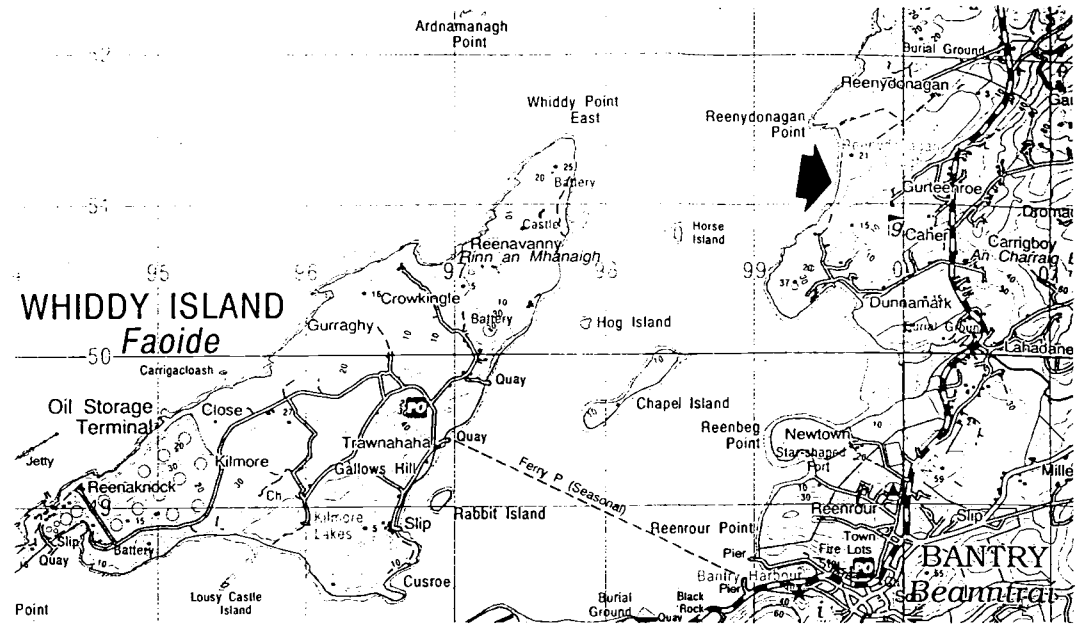
- Natural sedimentary lagoon and therefore a site of International Importance.
- Little is known about the lake but it seems to be a good example of a geomorphological type and would be worth further investigation.
- It is not in a proposed NHA
- Further investigation is strongly recommended.



= Salt Lake  
 (002101)  
 = 2666 ahrs

**22. REENYDONAGAN LAKE, Co. Cork OS Grid Ref. W 000514**

(Reenydonegan Lake) 3 km north of Bantry



**Lagoon Type:** Natural sedimentary lagoon with a cobble barrier and artificial unsluiced outlet.

*Description.* Area approximately 25 ha. The shape and situation suggest that it was a drowned valley. The depth is not known. Bracken and Murray (1973) described it as “shallow” but it may be deeper than most lagoons. The sea shore to the north of the barrier consists of conglomerate cliffs representing the remains of drumlins. The lake is surrounded by hills with pasture and some woodland. Substrate stony near the barrier.

*Hydrology.* The lake is fed by two streams and water exits through a primitive, artificial outlet (oil drums) through the barrier, installed in 1959 by the Inland Fisheries Trust (Bracken and Murray 1973). Previously, flooding had been relieved by breaching. Salinity remained at about 0.5‰ between 1965 and 1969 (Bracken and Murray 1973) but on 5.vii.96 it was 12‰ half way along the south shore and 15‰ near the outlet. Seawater may enter by seepage and through the outlet pipe and probably washes over a low region of the barrier. The presence of jellyfish on 5.vii.96 indicated recent inflow of seawater.

*Vegetation.* *Phragmites* beds on parts of the northern shore, elsewhere the banks are steep. Dense beds of *Potamogeton* near the shore except near the outlet where there are algae.

*Aquatic fauna.* Bracken and Murray (1973) reported 20 species of insects in emergence traps, 18 of which were Chironomidae. Dominant species were *Pentapedilum sordens*, *Chironomus pseudothummi*, and *Endochironomus albipennis*. The salinity at the time was 0.5‰ and brackish species of insects and crustaceans were said to be present.

*Threats.* A phytoplankton bloom in July 1996 was evidence of nutrient enrichment, probably from fertilizer runoff. Local residents say there are no longer any fish in the lake.

## Species records for Reenydonagan Lake

The following species were recorded from near the outlet during a brief visit on 5.vii.96:

### Aquatic fauna

*Aurelia aurita*

*Lekanesphaera hookeri* L

*Jaera* sp.

*Palaemonetes varians* L

Amphipoda

Corixidae

Hydrobiid indet.

*Conopeum seurati* L

*Anguilla anguilla*

*Gasterosteus aculeatus*

L = lagoonal specialist

Flora. Dense beds of *Potamogeton* were present near the south shore. Near the outlet, *P. pectinatus* was accompanied by marine and brackishwater algae, including *Fucus ceranoides*, *Fucus spiralis*, *Enteromorpha* and *Cladophora*

### **Evaluation**

- Natural sedimentary lagoon and potentially, therefore, a site of International Importance.
- Currently highly eutrophic.
- The lake has little ornithological value and is probably too eutrophic for survival of game fish. It used to be restocked annually with trout, but dense growth of *Potamogeton* was said to hinder shore angling (Bracken and Murray 1973).
- The lake and barrier may have some geomorphological interest.
- Its fauna and flora are little known and may be worth further investigation.
- The lake is not in a proposed NHA.
- Further investigation strongly recommended

*Source:* Bracken and Murray 1973.



**Reenydonagan Lake.** View towards the barrier.

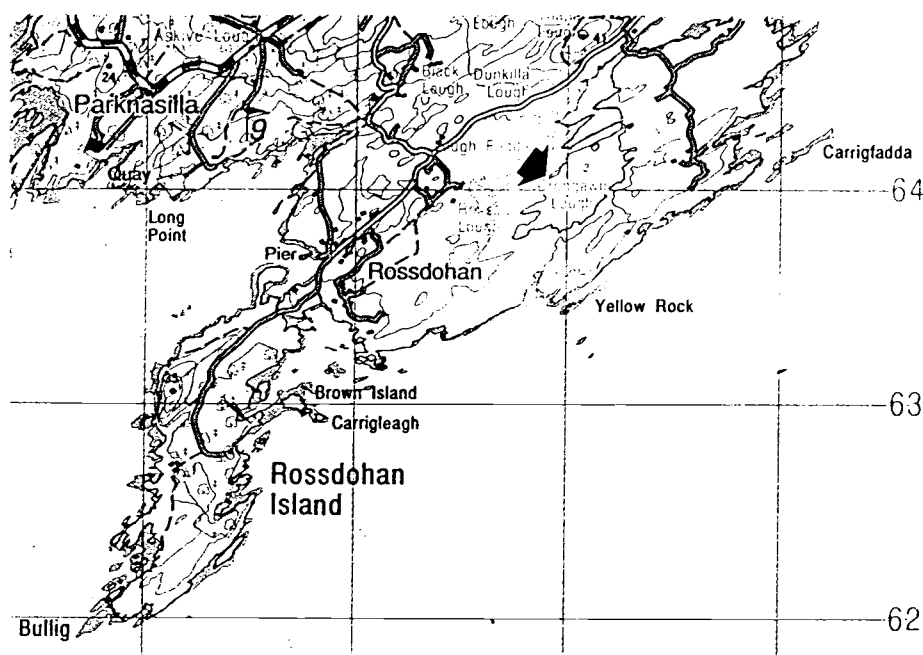


**Reenydonagan Lake.** Outlet pipes through the barrier.

## 23. DRONGAWN LOUGH, Co. Kerry

OS Grid Ref. V 731640

South coast of Ring of Kerry, 6 km east of Sneem



### Selected site in 1996. Summary only, see separate account for details

**Lagoon Type:** Deep, natural saline lake with narrow sea inlet and rapids.

**Description.** Medium size, Approximately 20 ha, depth reaches 18 m. The lake connects with an arm of Coongar Harbour through narrows, about 3 m wide, with rapids. Substrate is mainly rock or stones with some unconsolidated peaty silt. Shores rocky. The surrounding hilly land is rocky heath and bog with small fields of semi-improved pasture. Bedrock is Old Red Sandstone.

**Hydrology.** Spring tides enter through the shallow inlet, giving small tidal fluctuations. Some small streams enter the lake and brackish conditions are probably maintained by gradual release of freshwater from surrounding peatlands. Salinity was 28-30 in September but could be lower in winter.

**Vegetation.** Emergent vegetation absent. Marginal vegetation is a narrow strip of *Juncus maritimus*. *Ruppia cf cirrhosa* abundant. *Fucus* and *Codium* present.

**Aquatic fauna.** The fauna was rich in species, especially in the rapids. 67 taxa were recorded including 3 lagoonal specialists. Marine species predominated but 18% can be described as poly-euryhaline. The isopod *Jaera forsmanni* may not have been officially been recorded from Ireland but is known to occur. There is only one previous record of the amphipod *Erichthonius difformis* (from L. Hyne). Only shallow waters were sampled and it is likely that further species would be found in deeper water.

*Ecotonal Coleoptera.* Beetles were collected from *Juncus maritimus* and cobbles on a rocky shore. 6 Carabidae and 10 Staphylinidae were recorded, one of which is regarded as an indicator species and was abundant. It is associated with peat and bog margins.

*Birds.* A small flock of Whooper swans is seen on the lake in winter.

*Threats.* None immediate. The area is sparsely inhabited. Mussels are farmed commercially in the adjacent inlet. The lake may be considered good for oyster culture (oysters occur naturally in the lake).

### **Evaluation**

- The lough is a good example of a completely natural, saline lake with a natural tidal inlet.
- The site is rated as potentially valuable for vegetation for its extensive *Ruppia* beds together with furoid algae and possibly more species not sampled.
- The aquatic fauna was rich and interesting and included 3 lagoonal specialists and 2 rare crustaceans. Further study using divers to collect in the deeper regions is recommended.
- The site is rated as of low conservation value for ecotonal Coleoptera for which diversity was poor and the only indicator species which is associated with peat is abundant.
- The lake is in a sparsely populated area. The main threats are from possible development of mariculture.
- The lake lies between two small proposed NHAs (Site Nos. 1375 and 2098).
- Further investigation of flora and fauna is recommended.
- Designation as a proposed SAC is recommended.



**Drongawn Lough.**



**Drongawn Lough.**



**Drongawn Lough. View of the narrow inlet**

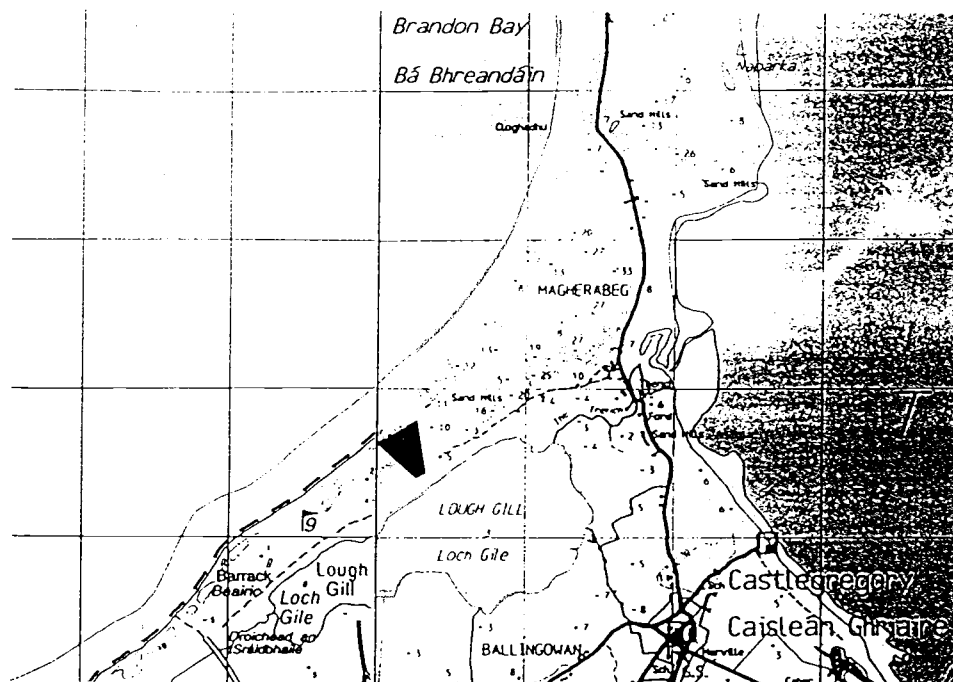


## 24. LOUGH GILL, Co. Kerry

OS Grid Ref. Q 606142

Lough Gile

North coast of Dingle Peninsula, 1 km from Castlegregory



Selected site in 1996. Summary only, see separate account for details

**Lagoon Type:** Natural sedimentary lagoon on a tombolo, with artificial, sluiced outlet.

**Description.** Large, shallow lake, approximately 160 ha, depth only 30-40 cm except in a dredged channel at the southern end and one deep pool up to 3 m. An artificial outlet, The Trench, extends for about 800 m to Tralee Bay. Sluice gates and a weir limit seawater entry and the outlet tends to become blocked by sand and is frequently breached. The substrate is mostly firm sand with some stones and silt. The surrounding land is mainly dune grassland with a golf course in the northwest and improved pasture on peaty soils in the south.

**Hydrology.** The main freshwater inflow is from a small river. Some seawater enters through The Trench but amounts are small and there is no tidal fluctuation. Salinity was ‰ in the inland sector but reached 2-5‰ nearer the outlet. Although surrounding hills are acidic, the lake water is base-rich suggesting an inflow of alkaline groundwater.

**Vegetation.** Extensive *Phragmites* beds. Fringing *Scirpus maritimus* and *Schoenoplectus lacustris* in the E. Dense beds of *Ruppia maritimus* and sparse *Potamogeton pectinatus*. *Zannichellia palustris* locally abundant. *Myriophyllum spicatum* and *Chara aspera* var. *aspera* widely distributed.

**Aquatic fauna.** The fauna was rich in species reflecting the salinity gradient. 43 taxa were recorded, including one lagoonal specialist. 5 spp. corixid and 11 spp. beetles identified. Both freshwater and brackishwater species were present and the assemblage typified an

essentially freshwater system receiving small incursions of seawater. First Irish record of *Cercyon sternalis*. Freshwater bryozoan present.

*Ecotonal Coleoptera.* Beetles were collected from *Phragmites* beds and sandy shores with algal mats. 21 Carabidae and 55 Staphylinidae were recorded of which 2 are regarded as indicator species and are associated with coastal shores.

*Birds.* The lake is important for wintering waterfowl although there has recently been a drastic decline in numbers.

*Other features.* The area is of major importance as the breeding site of the Natterjack toad (*Bufo calamita*). The lake is an important trout fishery.

### **Evaluation**

- Geomorphologically Lough Gill is a classic example of a natural sedimentary lagoon lying between two barriers. However, salinity levels, determining the biological community, are controlled by management. If seawater was allowed to enter on a regular basis the lake would merit more protection as a classic brackish lagoon.
- Site rated as potentially valuable for vegetation for the high diversity of marginal spp. and aquatic macrophytes.
- The aquatic fauna consists mainly of freshwater species but a significant brackish element is also present which includes a lagoonal specialist. The freshwater fauna appears to be diverse.
- The lake is an important trout fishery and of great concern to the local inhabitants. Its freshwater fauna is currently being investigated.
- The lake is of ornithological value and is a Wildfowl Sanctuary and SPA.
- The dune area is important as the main breeding site of the Natterjack toad.
- The lake lies within a proposed NHA.
- Designation as a proposed SAC is recommended.
- 

*Sources:* An Taisce Report. Merne 1989, Guilcher and King 1961, Gresson and O'Dubhda, Wildlife Service Report on Wetlands (1974).





Lough Gill



Lough Gill Dredging of outlet channel, July 1996.



Lough Gill



Lough Gill Unidentified bryozoan.



**Lough Gill.** Dense growth of aquatic macrophytes.



**Lough Gill.** View of freshwater inlet entering southern end of Gill, Station A.

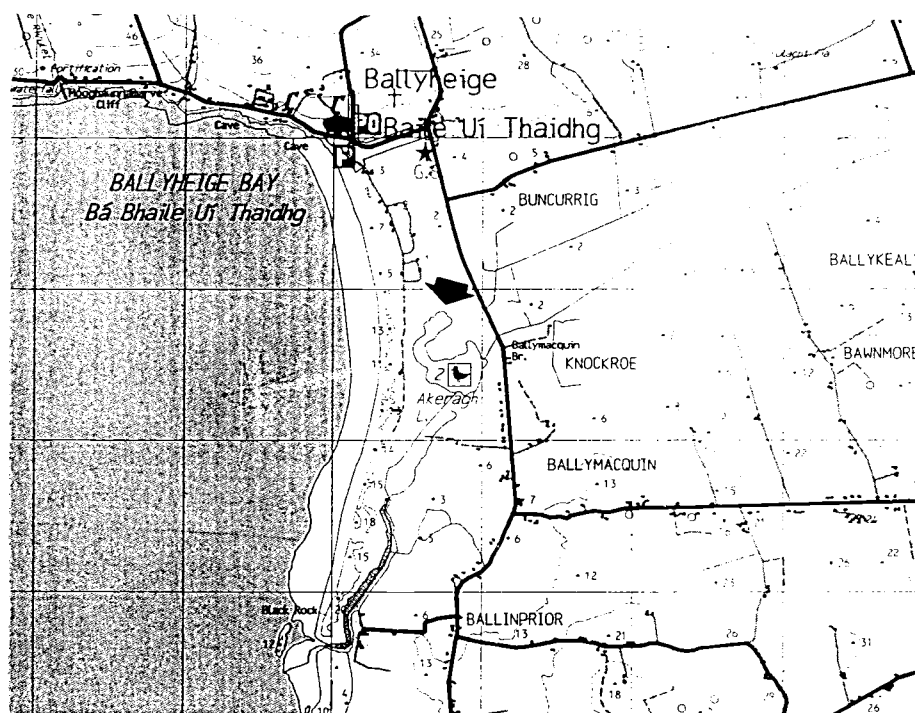


**Lough Gill.** The weir, with *Enteromorpha* growing on the substrate.



**Lough Gill.** The Trench channel and sluice gates.

Ballyheige Bay, 1.5 km south of Ballyheige.



**Lagoon Type:** Former lagoon ?, now drained and vegetated.

*Description.* The lake as shown on the 1:50,000 map was about 20 ha in area. The surrounding land is low-lying and drained by a number of ditches which emptied into the lake. A long channel connecting the lake with a sea inlet has been blocked by an artificial barrier with sluice gates. The lake may fill with water in winter but the amount of vegetation in the former lake bed indicates that flood periods are short.

Formerly holding internationally important numbers of wildfowl and waders (Sheppard 1993)



**Lough Akeragh.** Dry and vegetated basin of former lake.

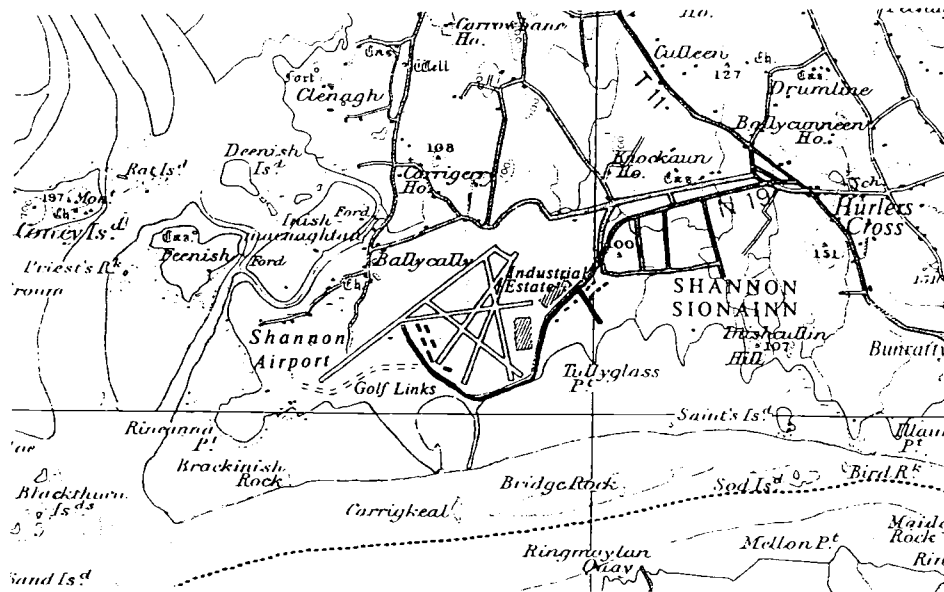


**Lough Akeragh.** Artificial barrier and sluice gates.

## 25. SHANNON AIRPORT LAGOON, Co. Clare

OS Grid Ref. R 351622

In the airport grounds



**Lagoon Type:** Artificial saline lake with artificial barrier and sluiced outlet.

**Description.** A completely artificial lagoon created in an area of mud flats by construction of embankments. Area approximately 2 ha. Substrate near the shore sandy mud with stones. Access to open water limited to a few points by reed beds.

**Hydrology.** The water level is controlled by sluice gates and seawater may enter by this route. The salinity on 7.vii.96 was 13‰.

**Vegetation.** Beds of *Phragmites* and *Scirpus maritimus* surround most of the lagoon. Aquatics include *Potamogeton pectinatus*, *Chara canescens* and *C. connivens* (to be confirmed).

**Aquatic fauna** Sampling was difficult owing to the extent and density of the reed beds. Few species were collected.

## Species records in Shannon Airport Lagoon

The following were recorded during a brief visit on 7.vii.96:

### *Fauna.*

*Praunus flexuosus*

*Lekanesphaera hookeri* L

*Potamopyrgus antipodarum*

Coleoptera

Chironomidae

*Gasterosteus aculeatus*

### *Flora.*

*Cladophora* (abundant)

*Enteromorpha* (a little)

*Chara canescens* L

*Chara connivens* L

*Zannichellia palustris*

*Potamogeton pectinatus*

L = lagoonal specialist

### **Evaluation**

#### Not a true lagoon.

The lagoon is owned by Aer Rianta who manage it as a wildfowl Reserve and control visitors.

Although it is artificial in origin, the flora and fauna are typical of a lagoon with low to medium salinity and two rare charophytes were recorded.

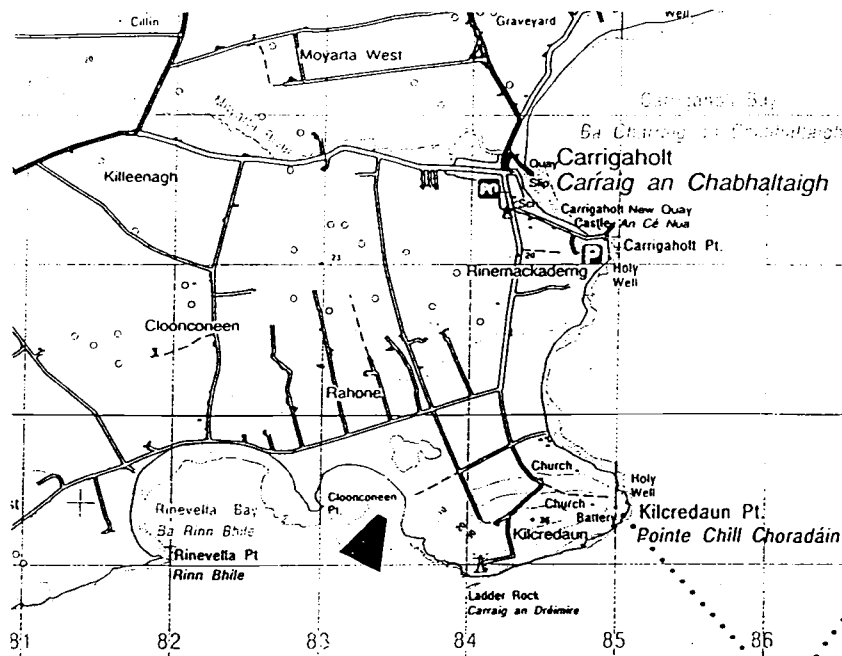
The site may be worth further investigation.

## 26. CLOONCONEEN POOL, Co. Clare

OS Grid Ref. Q 836497

Rinevella Bay, Kilcredaun Pool

North shore of Shannon mouth, 2 km south of Carrigaholt.



**Selected site in 1996. Summary only, see separate account for details**

**Lagoon Type:** Natural sedimentary lagoon on peat, probably an old peat cutting, with low cobble barrier overtopped by the sea at spring tides.

*Description.* Small lake, approximately 4-5 ha during dry periods, lying in a small valley of partially cut peat. The whole valley is subject to flooding by the sea and is crossed by drainage ditches. A low cobble barrier with washover fans lies on a peat platform which extends into the intertidal zone where there is a drowned forest. The pool has a uniform depth of about 80 cm and the substrate is unconsolidated peat with stones near the barrier.

*Hydrology.* No large streams enter the lake but there are several drainage ditches. Seawater enters by percolation through the barrier, apparently at most high tides, and by overwash of the barrier at spring tides when an area of the surrounding land is flooded. The salinity was only slightly below that of seawater on two sampling occasions but could be lower in winter.

*Vegetation.* Narrow fringe of *Scirpus maritimus* and *Juncus maritimus* and a little *Phragmites*. *Ruppia maritima* and *Cladophora* the only macrophytes.

*Aquatic fauna.* The fauna was poor, reflecting the small size of the pool and the unsuitable substrate. Only 14 taxa were recorded but these included 6 lagoonal specialists. None of the species is rare. The assemblage typifies a lagoon without tidal inlet but receiving frequent influxes of seawater. Special features were an abundance of juvenile cockles (*Cerastoderma*

*glaucum*) but no adults, and large numbers of *Sigara stagnalis* which is unusual for such high salinity.

*Ecotonal Coleoptera.* Beetles were collected from *Festuca rubra* salt marsh, a *Phragmites* bed and a barrier washover fan. 5 Carabidae and 5 Staphylinidae were recorded of which 2 are regarded as indicator species. The most abundant species, *Brundinia meridionalis*, has not previously been recorded in Ireland but was present at Bridge Lough and Lough Murree. Most species were halophilus or stenotypic species of marshy shores and flooded meadows.

*Other features.* The drowned forest in the intertidal zone is said to be the best coastal example in Ireland.

*Threats.* The area around the pool is grazed. A recent storm caused severe flooding and cattle were washed onto the beach. There is thus a serious threat of drainage.

### **Evaluation**

- Natural sedimentary lagoon.
- Although small, and probably not originating completely by natural processes, the pool is a true lagoon with a low cobble barrier which has not been modified by installation of a drainage pipe as is usually the case. It represents a type which may be unique to Ireland (and possibly Scotland) in that the substrate is composed almost entirely of peat which also underlies the barrier and extends onto the shore. The presence of an intertidal drowned forest, said to be the best coastal example in Ireland, makes this site of special historical interest.
- Site rated as not valuable for vegetation. Species-poor.
- The aquatic fauna is not diverse but is typical of a brackish lagoon with a high salinity, and includes a high proportion of lagoonal specialists.
- The site is rated as of average conservation value for ecotonal Coleoptera, with 2 indicator species, one of which is a new Irish record.
- The pool does not lie in or near a proposed NHA.
- Designation as a proposed SAC is recommended.

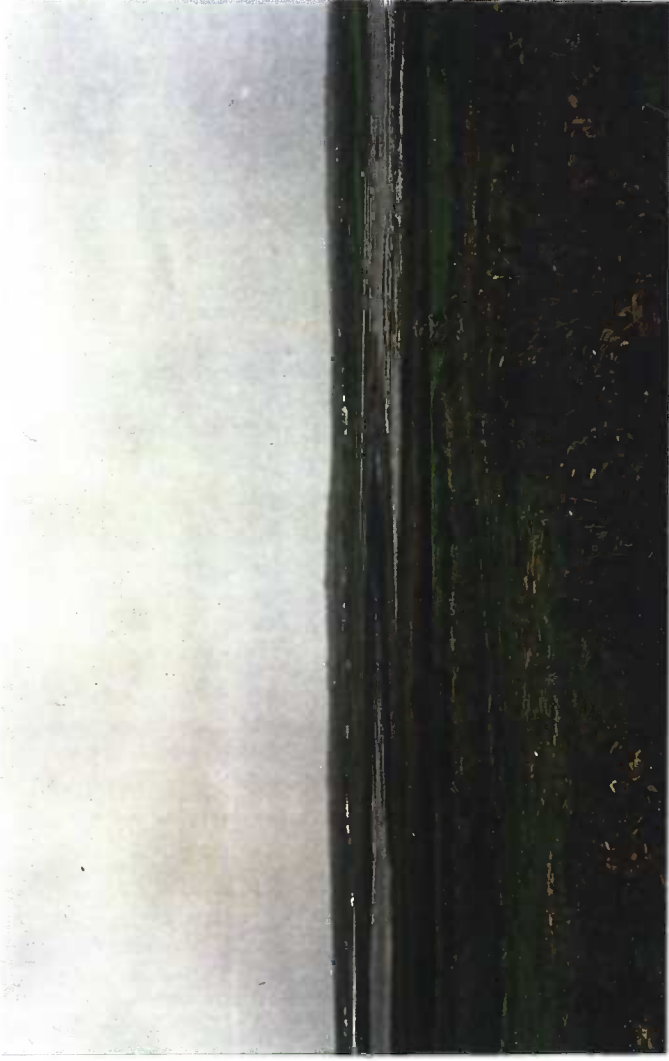




**Cloonconeen Pool** Intertidal zone with drowned forest.



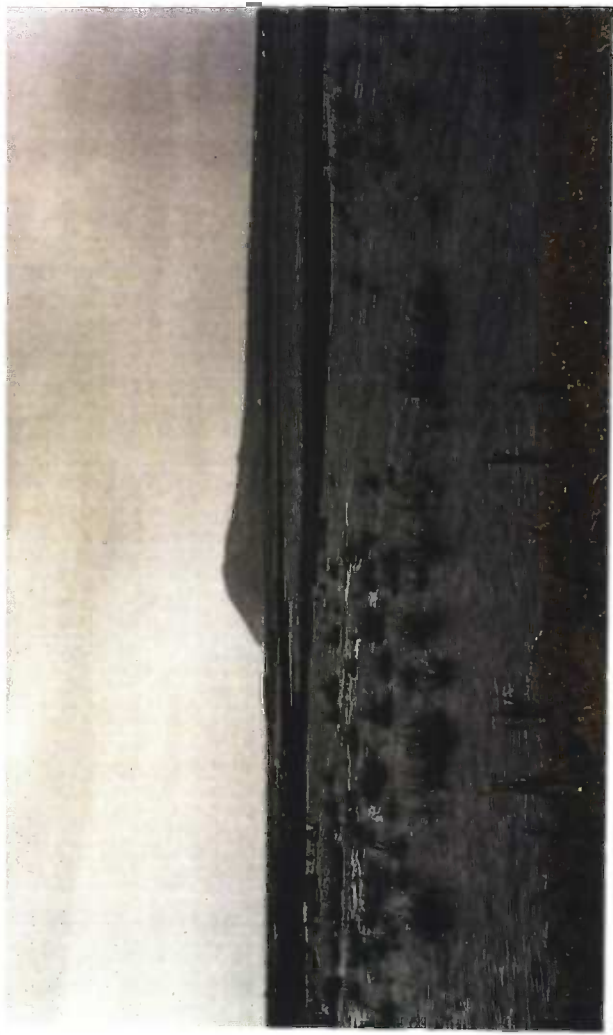
**Cloonconeen Pool.** Edge of cobble barrier, peat with covering of green algae, and drowned forest.



**Cloonconeen Pool.** Barrier and pool (on the right).



**Cloonconeen Pool.** Tree stump in the barrier.



**Cloonconneen Pool.** Pool margins flooded at high spring tide.



**Cloonconneen Pool.** *Juncus gerardii* - *Agrostis stolonifera* - *Festuca rubra* swaic



**Cloonconneen Pool.** Edge of cobble barrier, peat with covering of green algae, and drowned forest.

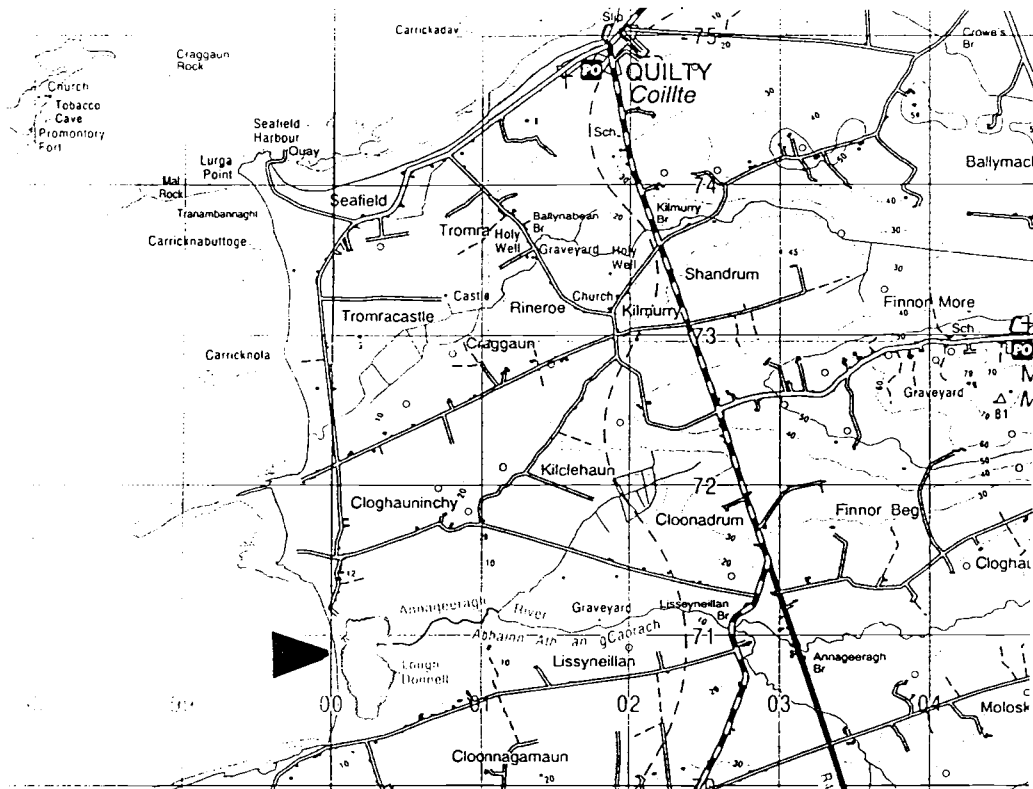


*Callitriche maritima*

## 27. LOUGH DONNELL, Co. Clare

OS Grid Ref. R 002707

Mid Clare coast, 4 km south of Quilty



**Selected site in 1996. Summary only, see separate account for details**

**Lagoon Type:** Natural sedimentary lagoon with cobble barrier and artificial, unsluiced outlet.

*Description.* Medium size, approximately 20 ha, lying behind an impressive barrier 7 m in height, through which an outlet pipe has been installed. Water in most areas is very shallow and rarely exceeds 1m. Substrate is sand with some cobbles near the barrier. Surrounding land is low-lying and poorly drained and is mainly grazing.

*Hydrology.* Freshwater enters from the east by a small river. Seawater enters through the outlet pipe at high tides but the amount is insufficient to cause a significant rise in water level. Seawater also enters by percolation through the barrier, especially in the south where there are seepage pools and streams. The river flow is sufficient to maintain low salinity in the lake even during spring tides. Salinities of 3-6‰ were recorded in the lake and 26‰ in a seepage stream from the barrier.

*Vegetation.* Mixed and single species stands of *Phragmites*, *Scirpus maritimus* and *Schoenoplectus lacustris*. Salt marsh communities near seepage sites. Patchy, low-growing *Ruppia maritima*. *Cladophora* was the only other submerged macrophyte. *Potamogeton pectinatus* absent.

*Aquatic fauna.* The fauna was moderately rich and species distribution was correlated with small differences in salinity. 32 taxa were recorded but only 2 are lagoonal specialists. One bass and several mullet were taken. This is the most northerly known locality for *Notonecta viridis*. The assemblage is characteristic of persistently low salinities and poor colonisation from the sea.

*Ecotonal Coleoptera.* Beetles were collected from grass, sand flats, sandy shore, cobbles and a pocket beach. 5 Carabidae and 24 Staphylinidae were recorded, 2 of which are regarded as indicator species. One species, *Cypha punctum* is rare in Europe.

*Birds.* The site is of major importance for waders (Sheppard 1993) and might support larger numbers of waterfowl if shooting were controlled.

*Threats.* Regular flushing by river and seawater probably prevent eutrophic conditions developing.

### **Evaluation**

- Natural sedimentary lagoon but the outlet is artificial.
- The site is of geomorphological value as a natural, sedimentary percolation lagoon with a high cobble barrier through which an artificial outlet has been installed.
- Rated as “potentially valuable” for vegetation. Marginal vegetation diverse but aquatics poor. Interesting for the presence of *Ruppia maritima* at low salinity and the absence of *Potamogeton pectinatus*.
- The aquatic fauna typifies a persistently low salinity system with open, but restricted access of seawater but the assemblage included only 2 lagoonal specialists and no rare or interesting species. The lake may be a route for salmon migrating to the river.
- The site is rated as of low conservation value for ecotonal Coleoptera although one species is rare in Europe.
- The lake has ornithological value for wildfowl and waders.
- The lake is in a proposed NHA, (Site No. 1018).
- Designation as a proposed SAC recommended.



**Lough Donnell.** Exposed bed at the south end.



**Lough Donnell.** Looking south.



**Lough Donnell.** Cobble barrier, lagoon on the left.



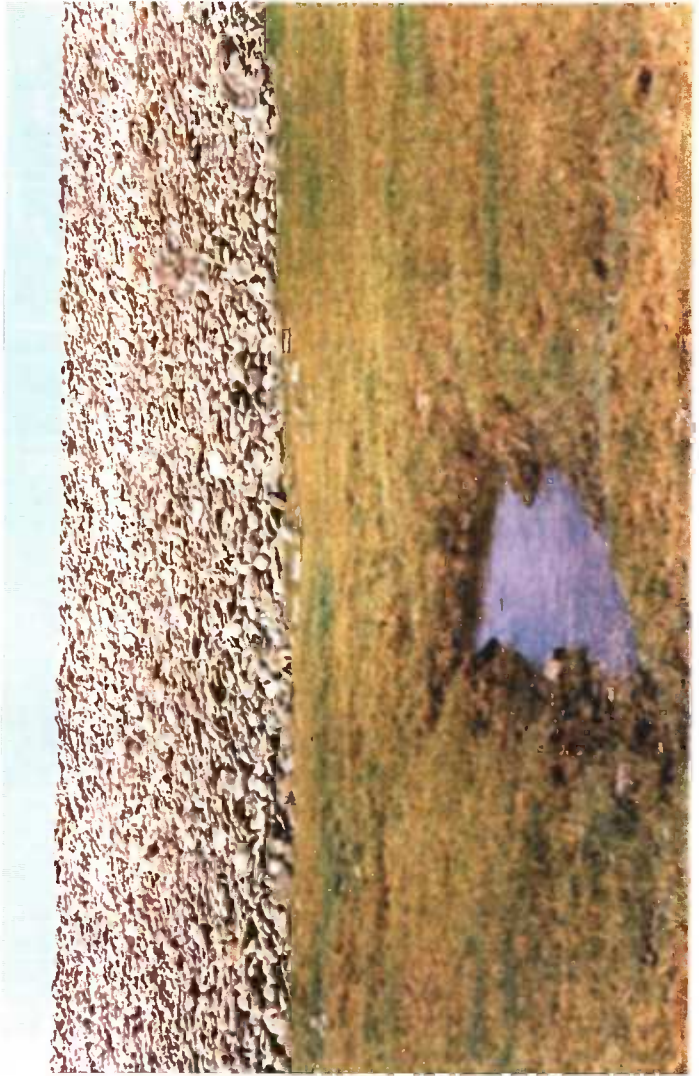
**Lough Donnell.** Close-up of the cobble barrier.



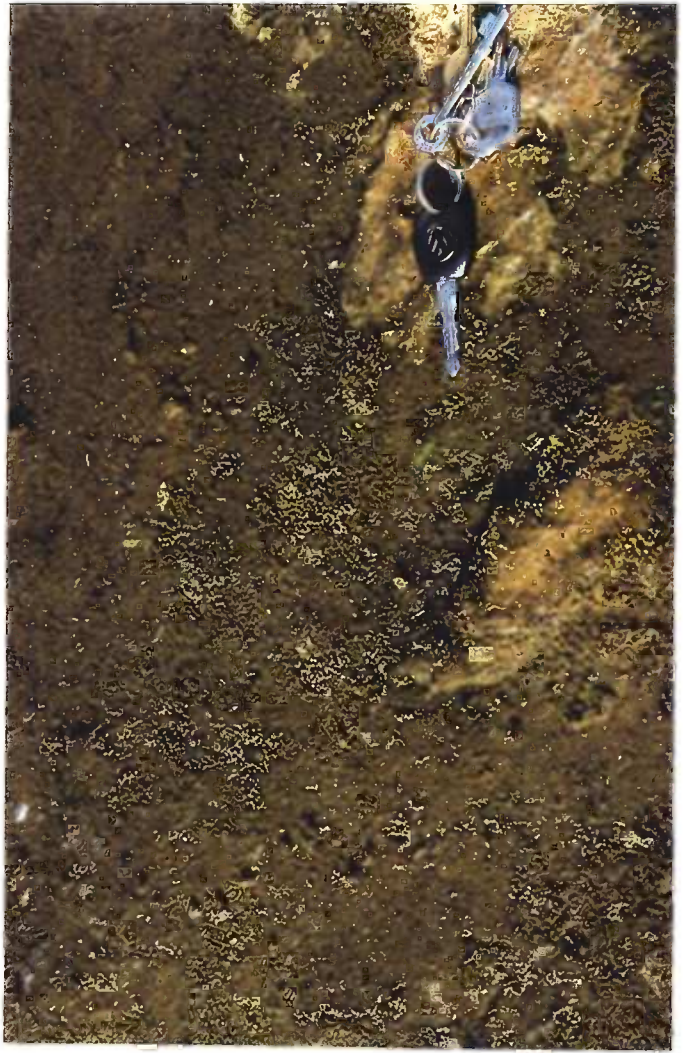
**Lough Donnell.** View from the barrier.



**Lough Donnell.** Outlet pipe and barrier.



**Lough Donnell.** Seepage pool and barrier.

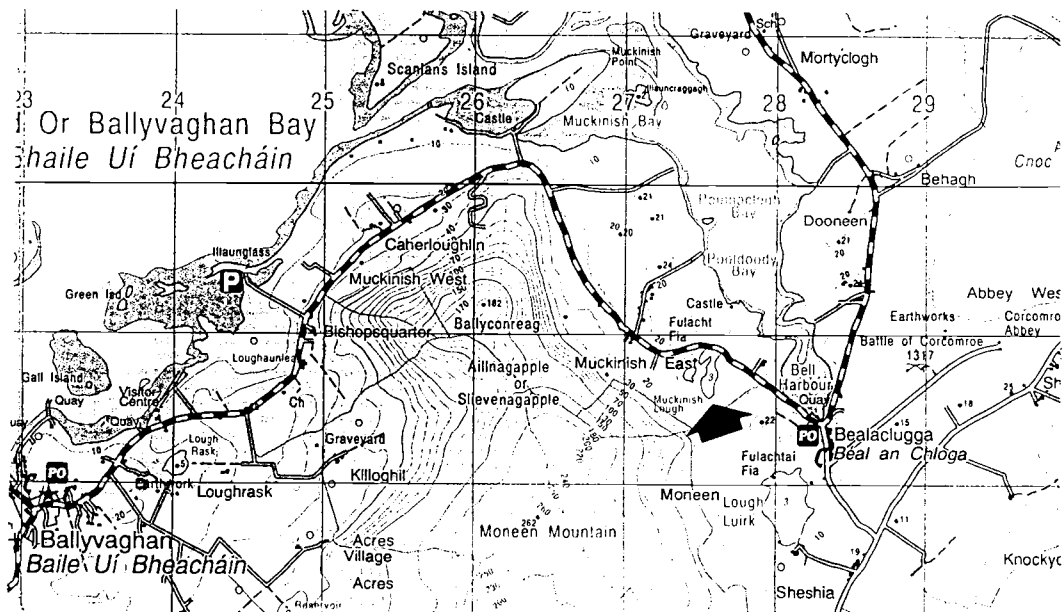


**Lough Donnell.** Hydraenid casts on a pocket beach.

## 28. MUCKINISH LOUGH, Co. Clare

OS Grid. Ref. M 276087

6 km NW of Ballyvaughan, 1 km NE of Bealaclugga



**Lagoon Type:** Natural rock lagoon with karstic barrier allowing “percolation”.

**Description.** Small, very shallow lake in karst, possibly a true turlough, situated about 250 m away from the sea. Area approximately 1 ha in June 1996, possibly much larger in winter. Depth mostly <20 cm. Substrate stones and gravel, and some rocks.

**Hydrology.** Salinity on 22.vi.96 was 14‰. Seawater must enter through fissures in the limestone as the land is too high to allow overwash. The lake may become more saline and largely dry out in summer while in winter it is likely to become considerably diluted.

**Vegetation.** Some small stands of *Scirpus maritimus* and *S. lacustris*. Aquatics sparse consisting of a little *Ruppia* and one small charophyte patch (unidentified). Both submerged and stranded rocks were covered with a knobby brown microbial mat with a calcareous base.

**Fauna.** Poor. The only species found were unidentified amphipods and hydrobiids.

### Evaluation

- Natural rock lagoon but rather small
- The lake is of geomorphological interest as an example of a rock lagoon receiving seawater entirely through rock fissures. (The only other definite example is L. Murree.)
- It may be considered too small, and the fauna and flora too poor, to be worthy of conservation on its own but it deserves further investigation.
- The lake is within a proposed NHA (Site No 54). (?)



**Muckinish Lough.** View of lake with low water level.



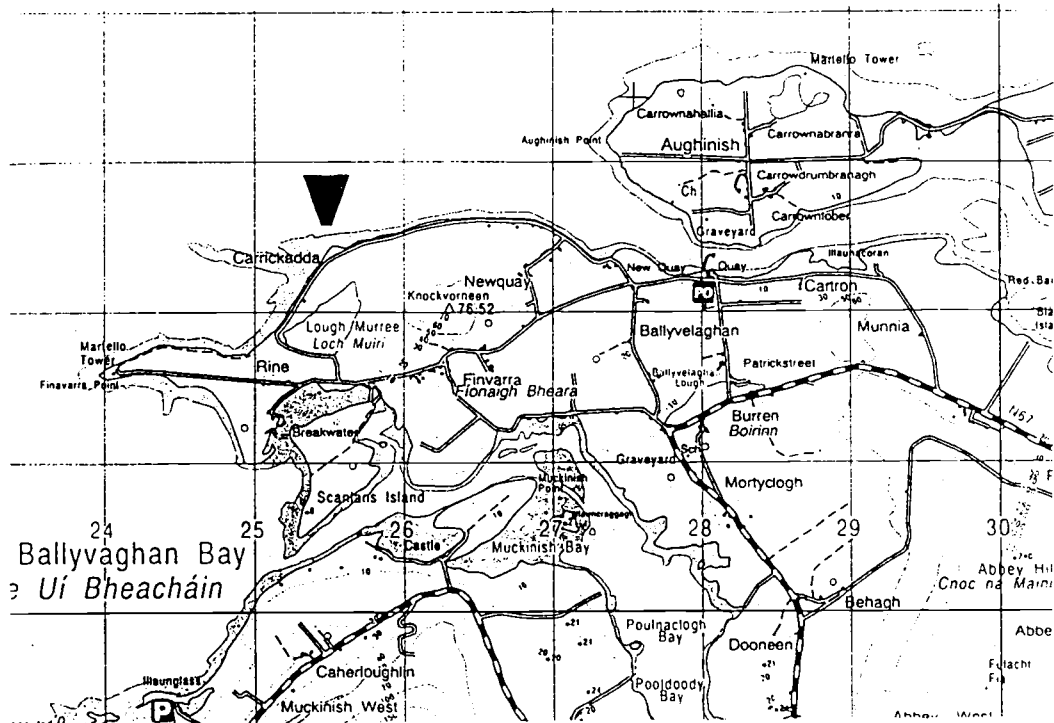
**Muckinish Lough.** Upper surface of a partly submerged rock showing microbial mat.



## 29. LOUGH MURREE Co. Clare

OS Grid Ref. M 255119

Lough Murry, Loch Muiri  
South side of Galway Bay, 12 km west of Kinvarra



Selected site in 1966. Summary only, see separate account for details

**Lagoon Type:** Natural rock lagoon with wide karstic rock barrier, fronted by a cobble barrier, without inlet.

**Description.** The lake is about 300 m from the sea from which it is separated by fields, a road and a cobble barrier. Medium size, about 20 ha, mostly <2 m in depth. The substrate on northern and western shores is limestone bedrock, elsewhere there are deposits of sand, mud, gravel and stones. The central area is soft mud. Shores rocky or stony. The surrounding land is grassland, cultivated fields and outcropping Burren limestone.

**Hydrology.** There are no freshwater streams but two small springs supply the lake. Surface drainage is poor due to the karstic nature of the bedrock. Seawater enters chiefly from seepage streams issuing in a nearby field, probably connecting with underground fissures. There may also be some overwash during storms. Salinity throughout most of the lake was 10-13‰, reaching 24‰ near the seepage stream. Salinity in a small, isolated pool was 20-27‰, indicating better penetration of seawater. Long term changes in the salinity regime have been recorded. (Pypus and Pybus 1980).

**Vegetation.** Emergent and shore vegetation sparse, *Scirpus maritimus* present as a narrow band. 6 spp. of aquatic macrophytes including *Ruppia maritima* and *R. cirrhosa*, *Potamogeton pectinatus*, *Chara canescens* and *Lamprothamnium papulosum*.

*Aquatic fauna.* The faunal assemblage typifies a medium salinity lagoon with no direct contact with the sea. 25 taxa were recorded but only 3 were lagoonal specialists. None of the species is rare or of special interest. Only one insect species was recorded but more insects were present in the past when the salinity was presumably lower. Species other than insects are limited by poor opportunities for colonisation.

*Ecotonal Coleoptera.* Beetles were collected from a grass bank and from *Scirpus maritimus* beds. 8 Carabidae and 22 Staphylinidae were recorded, 2 of which are regarded as indicator species. One abundant species, *Brundinia meridionalis*, has not previously been recorded in Ireland; another, *Stenus nigritulus* has only been recorded once. The dominant species are halophilous or associated with riparian or marsh habitats. Species occurring in nutrient-rich soils were rare (contrast Bridge Lough).

*Other features.* The lake is fairly well documented and there are published accounts of algae, Hemiptera and hydrology.

*Threats.* The lake was highly eutrophic and there was a severe *Enteromorpha* bloom in June. The source of nutrients is believed to be agricultural runoff but the problem is not new. Eutrophic conditions were reported in 1960.

### **Evaluation**

- Natural rock lagoon
- The lake is of special interest for its geomorphology. It is the best example in Ireland of a lagoon in karstic rock, receiving seawater almost entirely through underground fissures.
- Site rated as "valuable" for vegetation. Marginal flora rather uniform but aquatic flora rich. *Chara canescens* and *Lamprothamnium papulosum* present.
- The aquatic fauna included only 2 lagoonal specialists and was only moderately rich owing to the poor opportunities for colonisation, but is of some interest for this reason.
- The site is rated as of average conservation value with 2 indicator species, one of which is a new Irish record.
- The site is relatively well documented and the adjacent shore has been well studied. A small field station, owned by University College, Galway, is near the lake.
- The lake is in a proposed NHA (Site. No. 268).
- Designation as a proposed SAC is recommended.

*Sources:* Lansbury 1965, Pybus and Pybus 1980.



**Lough Murree.** Northwest corner with *Scirpus maritimus* bed and dense, floating green algae



**Lough Murree.** Looking southwest, showing thick, decaying green algae.



**Lough Murree.** Seepage pools in nearby field. UCG field station in the background.

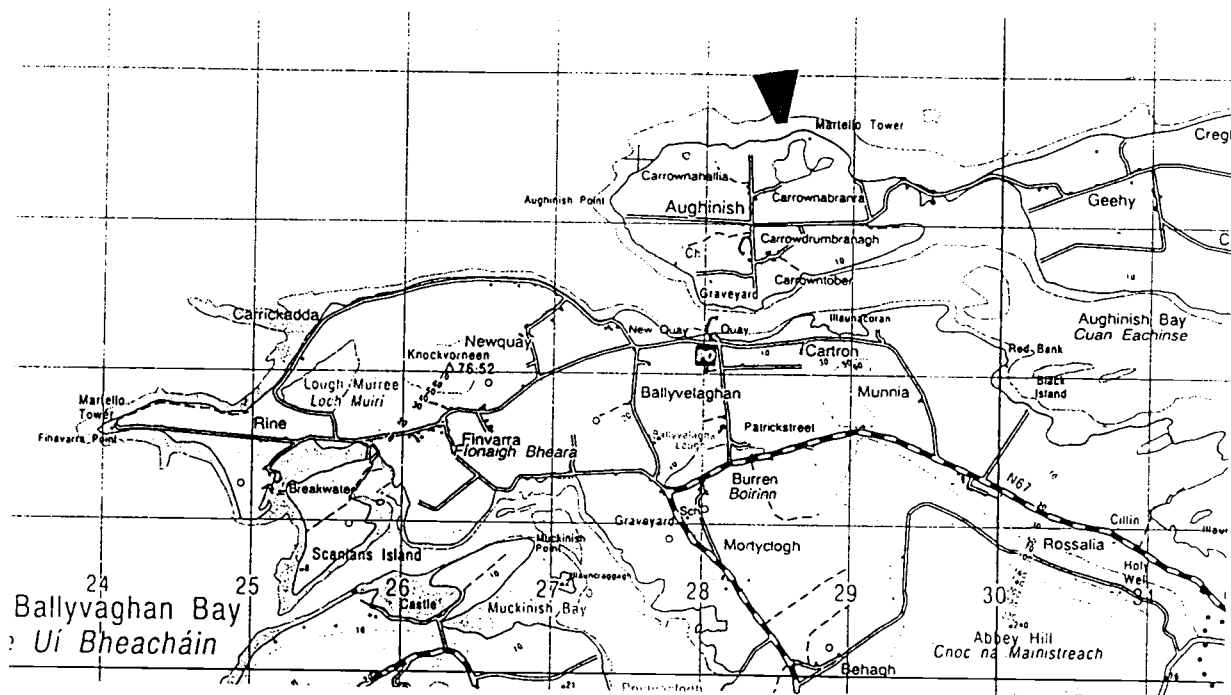


**Lough Murree.** Separate pool with attached *Enteromorpha*.

## 30. AUGHINISH LAGOON, Co. Galway

OS Grid Ref. M 286134

South side of Galway bay, 5 km west of Kinvarra



**Selected site. Summary only, see separate account for details**

**Lagoon Type:** Shallow, natural sedimentary lagoon in karstic limestone, with cobble barrier and natural tidal inlet.

*Description.* Medium size lagoon, about 10 ha, separated from the sea by a cobble barrier. Depth mostly <2 m. substrate is limestone bedrock with varying amounts of rocks, cobbles and soft organic sediments. The surrounding land is poor farmland on limestone

*Hydrology.* No obvious freshwater inlets and no surface runoff but the lake lies on karstic bedrock and may be fed by underground channels. Spring tides enter through the inlet channel in the east causing a slight rise in water level and the barrier is overtopped in the west during storms. It is also possible that seawater enters through rock fissures or percolation through the barrier.

*Vegetation.* No emergent vegetation. Marginal community is salt marsh. Aquatics are all marine algae, 9 spp. including the "rather rare" *Cystoseira foeniculata* which was dominant in most areas.

*Aquatic fauna.* Rich in species. 56 taxa recorded, most of which were marine or polyhaline species. Only one lagoonal species, *Gammarus chevreuxi*, which is believed to be very rare in Ireland.

*Ecotonal Coleoptera.* Beetles were collected from *Salicornia* salt meadow. Only 3 Carabidae and one species of Staphylinidae were recorded, none of which can be regarded as indicator species. Periodic flooding limits the marginal fauna. All were halobionts or ripicolous, adapted to flooding disturbance.

*Threats.* The water level appears to have been rising recently, causing flooding of fields. There may be attempts to reclaim lost land. Eutrophic problems are probably avoided by regular flushing of seawater.

### **Evaluation**

- Natural sedimentary lagoon with a natural tidal inlet
- The lagoon is a rare example in Ireland of a rock lagoon with cobble barrier and natural inlet, situated in karstic limestone.
- Salinity close to seawater or hypersaline.
- The aquatic flora is unusual for a lagoon in being composed entirely of marine algae. *Cystoseira foeniculata*, which is rather rare was plentiful.
- The aquatic fauna was rich in species, a high proportion of which were marine. Only one lagoonal specialist which is rare in Ireland..
- The site is rated of no conservation value for ecotonal Coleoptera.
- The shallow water and virtual absence of tides make it a potentially useful site for teaching.
- The lagoon is in a proposed NHA (Site No. 268).
- Designation as a proposed SAC recommended.



**Aughinish Lagoon.** Eastern arm of the lake, and Martello Tower.



**Aughinish Lagoon.** View northwards; vegetated barrier in the foreground.





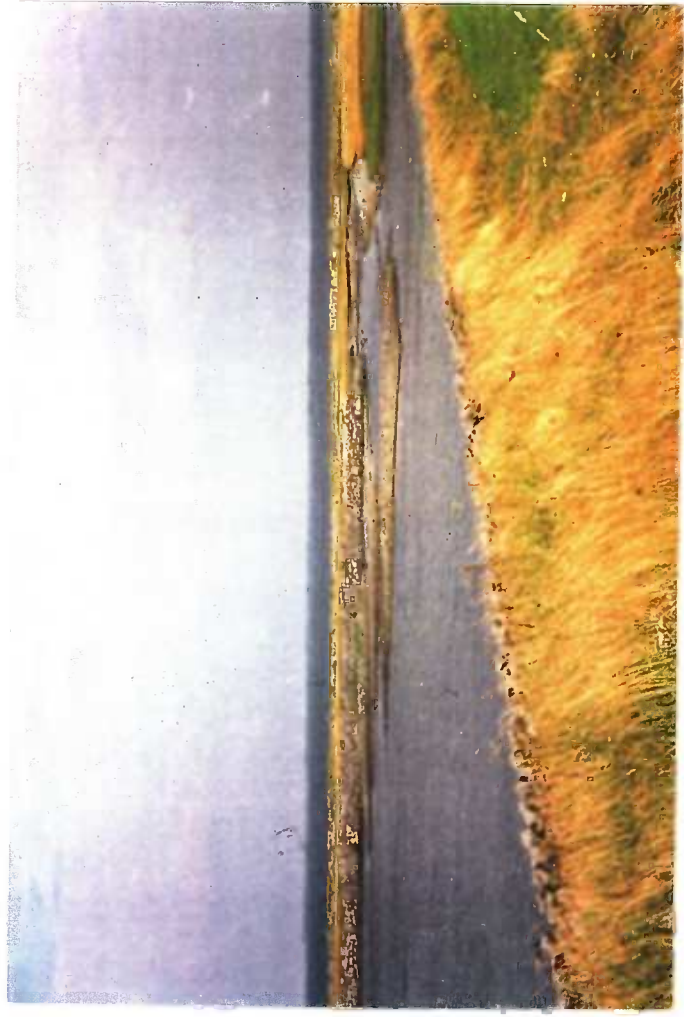
**Aughinish Lagoon** The barrier in early July.



**Aughinish Lagoon** Part of the barrier with cobbles and sand/gravel.



**Aughinish Lagoon** Shallow water near the Martello Tower



**Aughinish Lagoon** East end, tidal inlet to the right.

### 31. BRIDGE LOUGH, Co. Galway

OS Grid Ref. M 342128

South side of Galway Bay, 10 km west of Kinvarra, nearest village Knockakilleen



**Selected site in 1996. Summary only, see separate account for details**

**Lagoon Type:** Shallow, artificial saline lake in karstic limestone with artificial barrier and sluiced outlet.

*Description.* Small, shallow lake, approx. 5 ha, with an additional connecting section partly separated by a road or 2-3 ha. Depth mostly <1 m. Substrate is limestone bedrock with rocks and cobbles, most of which is covered by a thick layer of organic mud. The lake is separated from the sea by a road causeway with a narrow inlet/outlet.

*Hydrology.* There is no obvious freshwater inlet but the lake lies on karstic bedrock and may be fed by underground channels. Seawater enters through the outlet channel and possibly also through fissures in the limestone. Salinities of 31-38‰ were measured.

*Vegetation.* Emergents scarce. Small areas of salt marsh. The main aquatic species were *Enteromorpha* and *Chaetomorpha* sp. (possibly *C. linum*, a lagoonal specialist), both of which were abundant, with some *Ruppia*.

*Aquatic fauna.* It was not possible to sample extensively because of objections by the landowner. 20 taxa were recorded during a brief visit, including 6 lagoonal specialists. A feature of the lake was a black variety of the common beadlet anemone *Actinia equina*, and



large *Limapontia depressa*. No rare species were recorded. *Idotea chelipes* and *Cerastoderma glaucum* were particularly abundant.

*Ecotonal Coleoptera.* *Juncus gerardii* swards and limestone grass margins yielded 11 species of Carabidae and 31 Staphylinidae, of which one is regarded as an indicator species. The staphylinid assemblage from *J. gerardii* were mainly species associated with nutrient rich agricultural soils.

*Threats.* The lake was highly eutrophic, partly due to the limited flow of water through the system but also possibly to agricultural effluent. Attempts appear to have been made to reclaim part of the lake.

### **Evaluation**

- Not a true lagoon. Created by construction of a causeway.
- The lake is artificial in origin with an artificial barrier but is interesting because it is in an area of karstic limestone.
- Rated as “not valuable” for vegetation. Marginal vegetation uniform and aquatic community poor. *Ruppia* and *Chaetomorpha* present.
- A small sample of aquatic fauna indicated a moderately rich brackishwater fauna with 6 lagoonal specialists and two interesting species.
- The site is rated as of no conservation value for ecotonal Coleoptera.
- The lake is highly eutrophic and the sediments anaerobic.
- The lake lies within a proposed NHA (Site No 268).



**Bridge Lough.** Northeast corner with stranded *Cladophora*.



**Bridge Lough.** Rocks with fucoids near the barrier.



**Bridge Lough.** Outlet sluice.

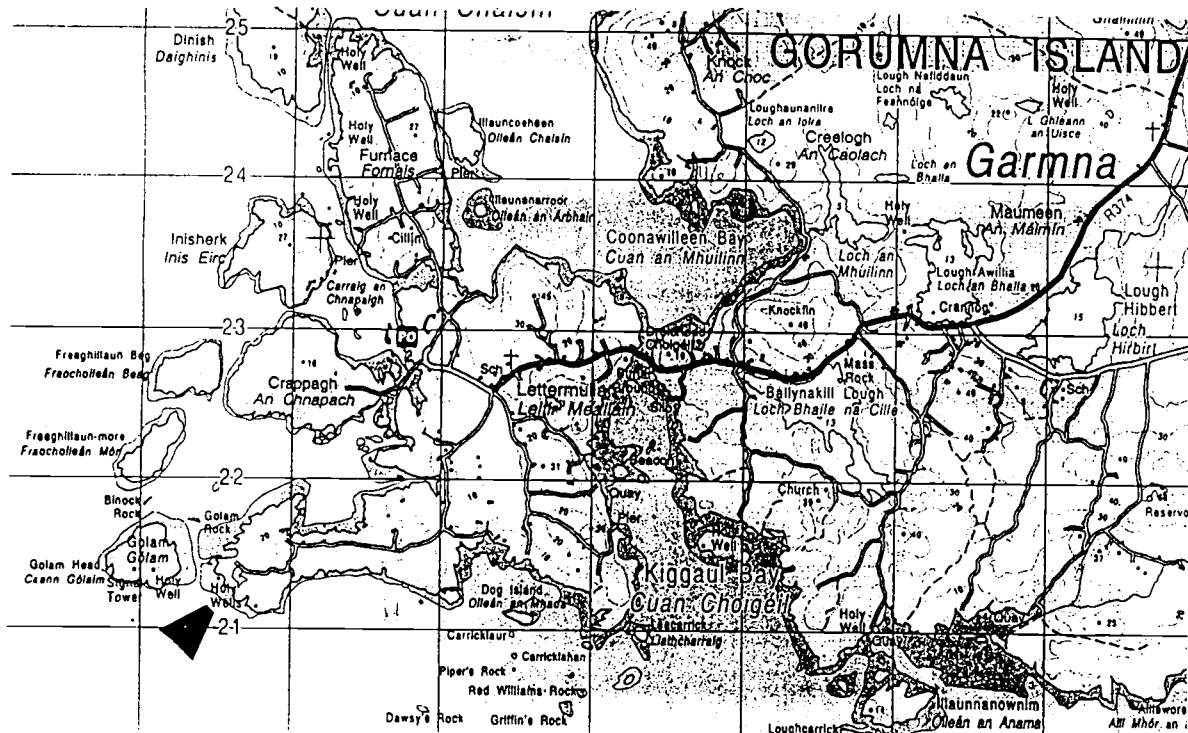


**Bridge Lough.** Shallow water in the southwest.

## 32. LETTERMULLEN POOL, Co. Galway

OS Grid Ref. L 827213

SW Connemara, west shore of Lettermullen Island



**Selected site in 1996. Summary only, see separate account for details**

**Lagoon Type:** Small rock lagoon with rock barrier, receiving seawater by overwash.

**Description.** Small pool (or large supralittoral rock pool), about 1 ha, lying behind a rocky shore. Depth up to 4 m. Substrate consisting mostly of granite bedrock with patches of organic silty sand. Surrounding land rocky heath and rough pasture.

**Hydrology.** Freshwater enters from a small stream and from seasonal groundwater springs. Seawater enters during spring tides and storms at two overwash sites. Salinity was 35-37‰ in summer 1966 but 28‰ was recorded in summer 1990.

**Vegetation.** Margin vegetation was poorly developed owing to the rocky nature of the shoreline. Aquatics were abundant and varied and distinctly zoned, and included a number of marine algae, extensive beds of *Zostera marina*, some *Ruppia cirrhosa* (lagoonal specialist) and swards of the rare charophyte *Lamprothamnium papulosum* (lagoonal specialist).

**Aquatic fauna.** Rich in species with a predominance of marine, meso-polyhaline and euryhaline species. 52 taxa were recorded including 5 lagoonal specialists and 2 rare species: the hydroid *Laomedea angulosa*, which is associated with *Zostera*, and *Littorina "tenebrosa"* for which only one other Irish locality is known. Several large fish were caught including ling and conger.

*Ecotonal Coleoptera.* There was insufficient habitat to allow comparative sampling or to support viable populations of ecotonal beetles. A search of gravel and cobbles yielded no carabids or staphylinids.

*Threats.* None immediate except for grazing cattle at the margin. The landowner has designated an area near the pool as a campsite (tents only) and if it proves popular may provide facilities.

### **Evaluation**

- The pool is an unusual type of rock lagoon receiving seawater by overwash of a rock barrier. No other example is known in Ireland and the type may be unique in Europe.
- Site rated as “valuable” for vegetation, for the high diversity of aquatics which included *Zostera*, *Ruppia* and the rare charophyte *Lamprothamnium papulosum*.
- The aquatic fauna is rich in species and includes 4 lagoonal specialists and 2 species believed to be rare in Ireland.
- The site is rated as of no value for ecotonal Coleoptera.
- The area is remote and unlikely to be developed, although a campsite may become established.
- The pool is not in or near a proposed NHA.



**Lettermullen Pool** View towards Golam Head.



**Lettermullen Pool** *Zostera marina* near the shore.



**Lettermullen Pool**. Shallow overwash site.



**Lettermullen Pool**. Arm of the lake in the southwest.



**Lettermullen Pool.** View towards Golum Head.



**Lettermullen Pool.**



**Lettermullen Pool.** Looking towards the sea.



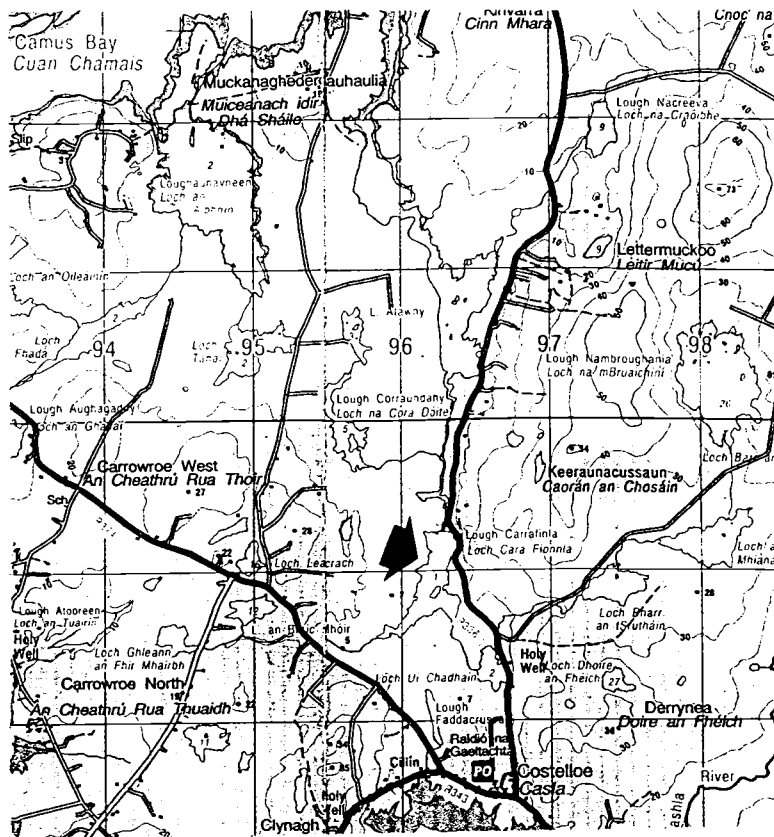
**Lettermullen Pool.** Pool in background viewed from the sea.

### 33. LOUGH CARAFINLA Co. Galway

OS Grid. Ref. L 962280

Loch Cara Fionnla.

South Connemara, 1.5 km north of Costelloe



**Lagoon type:** Natural saline lake. Large peat lagoon with long tidal inlet.

**Origin and Description.** Possible originating in old peat cuttings. Inlet may be partly artificial. Surrounding land is rocky heath with bracken. Area 15-20 ha. The inlet, which has vertical peat banks, meanders northwards for about 1 km to join a 3 km long inlet of Camus Bay, opening into the Bay through Kinvarra saltmarsh. Substrate in the north is granitic sand and gravel with peat and some rocks.

**Hydrology.** The inlet is tidal, at least during springs when seawater flows into the lake. Slow release of freshwater from surrounding peatlands probably maintains medium to low salinity throughout most of the lake and a persistent N-S salinity gradient is likely. Near the north end, 14‰ was recorded in July 1991, 10‰ in June 1996, and 34‰ during a spring tide in September. A salinity gradient of 6-34‰ existed in September.

**Vegetation.** *Phragmites* bed at the south end. Moderate growths of aquatics including algae and pondweeds.

**Threats.** None apparent. The surrounding land is rough grazing only.

## Species records from Lough Carafinla

The following were recorded from near the north end during a brief visit on 22.vi.96:  
(L = lagoonal specialist)

### Fauna

Mysidacea indet.

*Lekanesphaera hookeri* L

*Jaera nordmanni*

Amphipoda

*Ischnura elegans*

Chironomidae

*Potamopyrgus antipodarum*

*Pomatoschistus microps*

*Platichthys flesus*

(some shells of *Cerastoderma glaucum* were present. In 1990, *Palaemonetes varians*, a lagoonal specialist, was also recorded.

### Flora

*Enteromorpha*

*Cladophora*

*Fucus ceranoides*

*Ruppia* sp. L

*Potamogeton pectinatus*

## Evaluation

- Natural saline lake
- Lough Carafinla is one of several "peat lagoons" in south Connemara, among which L. Tanai was selected for more intensive study and proved interesting. L. Carafinla differs from L. Tanai in having a lower salinity and a definite, and probably persistent, salinity gradient. Peat lagoons are unusual in the European context and are therefore of geomorphological interest.
- The inlet, but not the lake, is within a proposed NHA, Site No. 2075.





Lough Carafinla. Looking south from near the outlet.



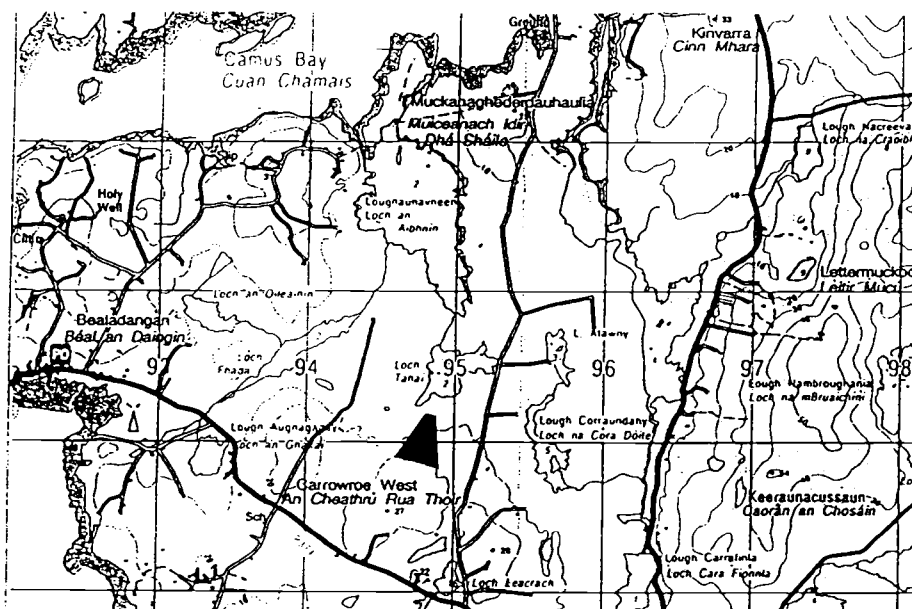
Lough Carafinla. View of outlet, looking north.

## 34. LOCH TANAI, Co. Galway

OS Grid Ref. L 950305

Lough Nacrimina

Connemara, 5 km north of Costelloe, 6 km south of Camus



Selected site in 1996. Summary only, see separate account for details

**Lagoon type:** Natural or man-made saline lake with a tidal inlet, probably artificial, through peat.

**Description.** Medium size, shallow lake, approximately 12 ha, depth 50-120 cm. Substrate mainly unconsolidated peat with rocks. The long, narrow, tidal inlet, about 7 m wide, leading to Loughaunavneen in south Camus Bay appears to have been cut deliberately, possibly to drain peat. The surrounding land is relatively flat, wet heath and bog.

**Hydrology.** Freshwater enters from on permanent stream and from the peat. Seawater enters through the inlet at springs, and possible also at neaps, but tidal fluctuations are small. Salinity was 29-34‰ throughout most of the lake but fell to 11‰ near the stream outlet.

**Vegetation.** The only emergents were *Phragmites* fringing the largest islands. Narrow zone of marginal *Juncus maritimus*. Nine species of aquatics including fucoid algae, *Lamprothamnium papulosum*, *Ruppia cirrhosa* and *R. maritima*.

**Aquatic fauna.** The assemblage was moderately rich in species and characteristic of a lagoon with consistently high salinity. 36 taxa recorded, including 10 marine species and 6 lagoonal specialists. No rare species were found but some were unusual for a lagoon e.g. *Akera bullata* and *Syngnathus typhle*. A thriving population of *Cerastoderma glaucum* was present.

*Ecotonal Coleoptera.* The extensive swards of *Juncus maritimus* yielded 3 species of Carabidae and 17 Staphylinidae, including 2 indicator species, both characteristic of bogs or freshwater marshes.

*Threats.* None apparent.

### **Evaluation**

- A good example of a natural saline lake in peat with a tidal inlet, although both the lake and the inlet may have originated from peat-cutting.
- Site rated as “valuable” for vegetation for the diversity of aquatics with *Ruppia cirrhosa*, *R. maritima*, *Zostera marina* and algae, and the presence of *Lamprothamnium papulosum*.
- The aquatic fauna is moderately rich with 6 lagoonal specialists, and included some species unusual for lagoons.
- The site is rated as of average but potentially exceptional interest for ecotonal Coleoptera.
- The lake and inlet lie close to the proposed Kinvarra salt marsh NHA (Site No. 2075).
- Proposal as an SAC is recommended.



Lough Tanai.

Lough Tanai. Marginal vegetation



Lough Tanai. East end of the lake near the road.

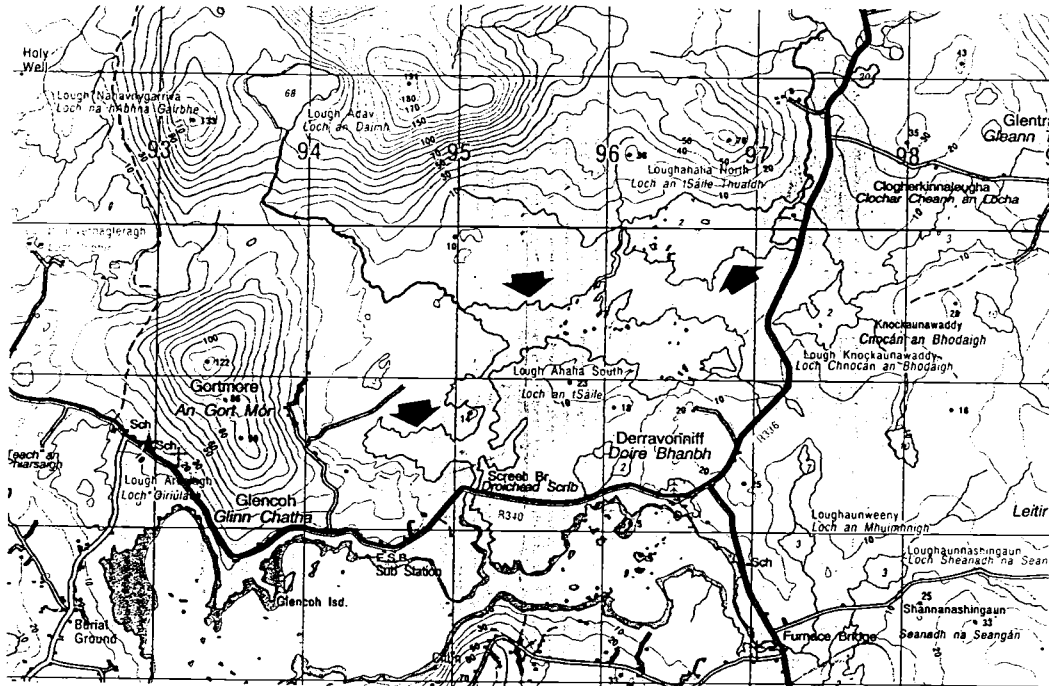


Lough Tanai. Rocks with lichen zones indicating variation in water level.

**35. LOUGH AHALIA, Co. Galway OS Grid Ref. L 950385, 960393, 966400**

Loch an tSáile.

Connemara, Camus Bay, just north of Screeb



**Lagoon type:** Natural saline lakes with natural outlet.

*Origin and Description.* Three natural connecting lakes (L. Ahalia North, L. Ahalia South and an unnamed one) opening into the north end of Camus Bay through a broad, apparently natural, inlet. Total area about 200 ha. Surrounding land mainly bog and rocky heath. Depth not known but a salmon cage in the middle lake suggests that it may be quite deep. Substrate granitic gravel with mud, peat and boulders.

*Hydrology.* Tidal flow is said to extend to the upper lake but may have little effect on eastern and western shores. Freshwater enters by a number of streams, some of which drain other lakes. Salinity on the eastern shore on 13.vi.96 was 1‰ in the lower lake and 2‰ in the middle lake. 8‰ was recorded in the inlet in July 1990.

*Vegetation.* Banks are mostly vertical or rocky and there is little emergent vegetation. Aquatics sparse.

*Threats.* Salmon cage in middle lake. Surrounding land too poor for managed grazing.

## Species records for Lough Ahalia

The following species were recorded during a brief visit on 13.vi.96:

	Lower lake	Middle lake
<i>Fauna</i>		
<i>Neomysis integer</i>	+	
<i>Lekanesphaera hookeri</i> L*	+	
<i>Jaera nordmanni</i>	+	+
<i>Palaemonetes varians</i> L		+
Chironomidae		+
<i>Potamopyrgus antipodarum</i>	+	+
<i>Mytilus edulis</i>	+	
<i>Pomatoschistus microps</i>	+	

### *Flora*

*Cladophora* sp.

*Enteromorpha* sp.

Floating *Zostera*, *Ruppia* (L), and fucoid algae.

\*L = lagoonal specialist

### Evaluation

- Natural saline lakes with a more or less natural outlet.
- Flora and fauna indicate predominantly low salinity but the open outlet allows colonisation by marine species.
- A grille across the outlet, probably placed to prevent the escape of game fish, limits access by larger marine faunal species and also floating algae and their attached biota.
- The lakes are an important trout fishery
- All three lakes lie within a proposed NHA (Site No 2034).
- Further study is recommended



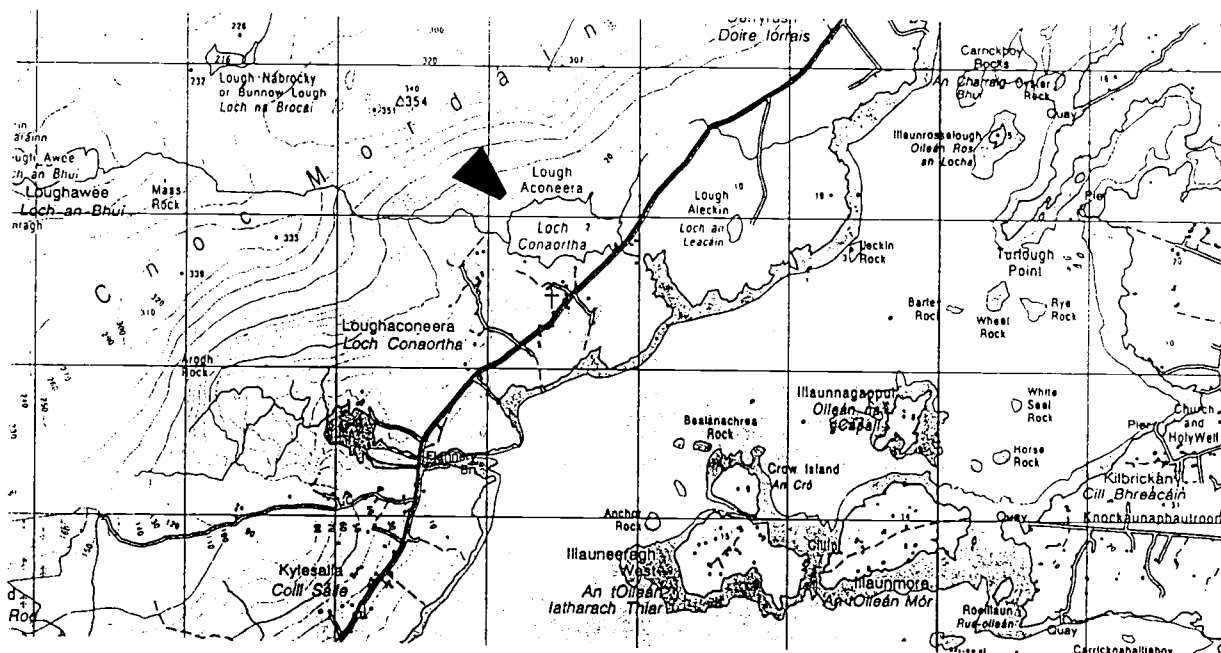
**Lough Ahalia.** Lower lake looking north.

### 36. LOUGH ACONEERA, Co. Galway

OS Grid Ref. L 875369

Loch Conaortha, Loughoneera

Connemara, northern shore of Kilkieran Bay, 6 km north of Kilkieran



**Selected site in 1996. Summary only, see separate account for details**

**Lagoon Type:** Natural saline lake in rocky peatland with tidal inlet which is possibly artificial in origin.

**Description.** Large lake, about 28 ha, at the base of Cnoc Mordáin (354 m). Depth mostly 1-1.5 m but reaches 5 m. Bed mainly granite bedrock and boulders with patches of sand, silt and unconsolidated peat. The inlet runs through a “barrier” of rocky peatland. Surrounding land is blockfields with wet heath.

**Hydrology.** One permanent stream enters in the NW. Seawater enters through the inlet on all tides giving a water level range of about 10 cm at neaps and a rise of 40 cm at springs. Salinities in summer were 10-14‰, falling to 0-5‰ near freshwater inflows.

**Vegetation.** Marginal vegetation consisted of open stands of *Scirpus lacustris* with some *Phragmites*, or dense *Phragmites* beds. Some parts of the shore were heavily grazed and poached. Marginal vegetation grades to wet heath with freshwater flush communities. *Fucus ceranoides* was abundant near the sea inlet, elsewhere the dominant aquatics were *Ruppia cirrhosa* (lagoonal specialist), *Potamogeton pectinatus*, *Enteromorpha* and *Cladophora*, with some *Chara baltica*. (lagoonal specialist, first Irish record).

**Aquatic fauna.** Marine and brackishwater species were present with euryhaline species predominant. 22 species were recorded (identifications incomplete) with 4 lagoonal specialists. No rare species. This was the only lagoon in which live *Mya arenaria* were found.



*Ecotonal Coleoptera.* Habitat availability was reduced by flooding and other disturbances. Beetles were collected from *Juncus maritimus* swards, a vegetated island, and a peat cliff. 9 Carabidae and 13 Staphylinidae were recorded, including 2 indicator species from the *Juncus maritimus* area which are associated with peatland and salt marsh.

*Threats.* None apparent.

### **Evaluation**

- Good example of a natural saline lake in rocky peatland with tidal inlet, possible artificial in origin but natural-looking.
- The surrounds are sparsely inhabited and the lake is unlikely to be threatened.
- Site rated as “valuable” for the presence of *Chara baltica* (first confirmed Irish record) and extensive aquatic macrophyte beds.
- The fauna is moderately rich and includes 4 lagoonal specialists but no rare species.
- The site is rated as of low conservation value for ecotonal Coleoptera with 2 indicator species.
- The lake lies close to a proposed NHA (Site No. 2008) and could be included in that area.
- Designation as a proposed SAC is recommended.



View of Lough Aconera looking northwest. Station A in the foreground.



Lough Aconera. View from the road, looking northwest.



Lough Aconera. Outlet to the sea.



Lough Aconera. Small bed of *Schoenoplectus lacustris* in the northeast.



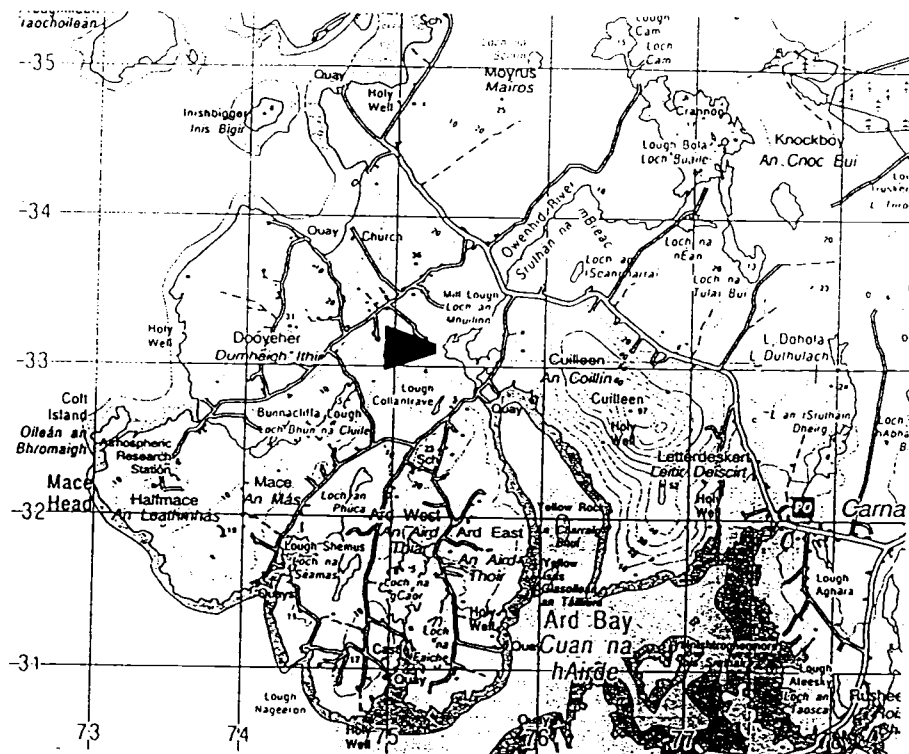
Lough Aconera. Outlet under road bridge

## 37. MILL LOUGH, Co. Galway

OS Grid Ref. L 755331

Loch an Mhuillin

SW Connemara, north of Ard Bay, 4 km west of Carna



Selected site in 1996. Summary only, see separate account for details

**Lagoon Type:** Natural saline lake in rocky peatland, with natural tidal inlet.

**Description.** Small lake, about 5 ha, depth 1-2 m in most areas. Bed composed of granite bedrock with patches of sand and unconsolidated peat. Inlet short, and bridged; may have been modified. Surrounding land rocky heath.

**Hydrology.** Freshwater enters from one stream in the northeast. Seawater probably enters on all tides giving a tidal range up to 1.3 m at springs. Salinity varies widely according to tides and freshwater inflow. Values from 2-31‰ were measured at the same point on different occasions.

**Vegetation.** Marginal vegetation is either open *Juncus maritimus* with *J. gerardii* and *Agrostis stolonifera* or dense beds of *Phragmites*. The more open margins were heavily poached and grazed. Dominant aquatics were *Ruppia cirrhosa* (lagoonal specialist), *Enteromorpha* and *Cladophora*, with *Fucus ceranoides* and other fucoids near the sea inlet. Some *Zostera* fragments seen.

**Aquatic fauna.** The fauna was dominated by species characteristic of high salinities. 30 taxa were recorded, including 4 lagoonal specialists. No rare or interesting species.

*Ecotonal Coleoptera.* Beetles were collected from *Juncus maritimus* and *J. gerardii* swards, and a cobble shore at the inlet. Only one species of Carabidae and 5 Staphylinidae were recorded, none of which can be regarded as indicator species. The staphylinid assemblage consisted mainly of grassland and marsh species.

*Threats.* Local residents report a decline in fish catches which they attribute to agricultural and domestic effluents from nearby farms.

### **Evaluation**

- The lake is a good example of a natural saline lake in rocky peatland with a natural tidal inlet
- Site rated as “potentially valuable” for vegetation because although macrophyte diversity appears low, it was not possible to sample the deeper regions. (e.g. some *Zostera* fragments were found).
- The aquatic fauna was typical of a lagoon with significant tidal inflow and included 4 lagoonal specialists. No rare or interesting species were identified.
- The site is rated as of no conservation interest for ecotonal Coleoptera.
- The lake is not within or near a proposed NHA.
- Designation as a proposed SAC is recommended.



Mill Lough. View of the southern area.



Mill Lough. Eastern shore flooded at high spring tide.



Mill Lough. Outlet channel at low tide.



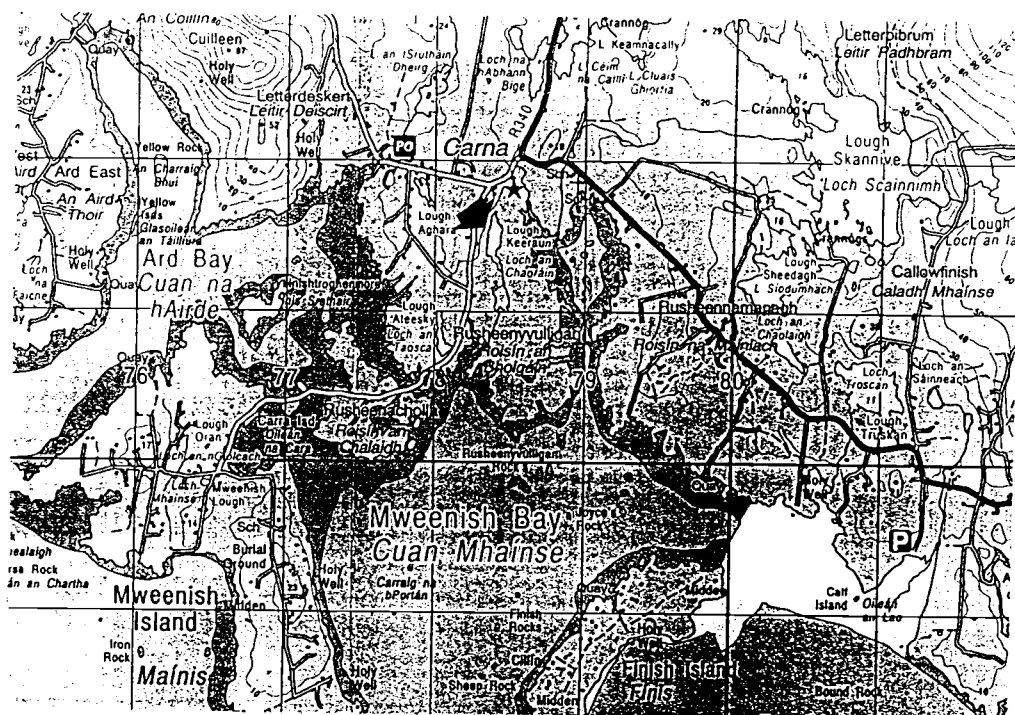
Mill Lough. Northwestern area with *Phragmites* and *Juncus maritimus* beds.

## 38. LOUGH KEERAUN, Co. Galway

OS Grid Ref. L. 784315

Loch an Chaoráin

South Connemara, 0.5 km south of Carna.



**Lagoon Type:** Natural saline lake with intermittent inlet.

**Origin and Description.** Small lake in rocky heath and rough pasture with a temporary outlet/sea inlet connecting with another smaller lake and thence with Mweenish Bay. In June 1996, the channel was dry and well vegetated with marshy grassland and rushes. Area approximately 1 ha; maximum depth about 1 m. Substrate granitic sand, gravel and stones.

**Hydrology.** No streams were seen entering the lake. Seawater probably enters by overwash during storms. Percolation is unlikely as the soil is peaty and wet. Salinity on 12.vi.96 was 2-3‰ and in March 1994 was 7‰.

**Vegetation.** The shoreline is rocky and emergents scarce. Aquatics plentiful consisting of pondweeds and algae.

**Fauna.** Poor, mainly oligohaline-freshwater taxa.

**Threats.** The lough may be evolving to a freshwater lake by natural processes as vegetation growth raises the level of the supposed sea inflow channel. Cattle graze around the lake and drink from it.

## Species records from Lough Keeraun

No sample was taken from this site but the following species were recorded during a brief visit on 12.vi.96 (L = lagoonal specialist):

### *Fauna*

Amphipoda

*Palaemonetes varians* L

Trichoptera

Corixidae

*Hydrometra* sp.

*Ischnura elegans*

Coleoptera

*Potamopyrgus antipodarum*

*Gasterosteus aculeatus*

*Pomatoschistus microps* (?)

### *Flora*

*Enteromorpha* sp.

*Cladophora* sp.

*Potamogeton pectinatus*

One specimen of *Neomysis integer* was taken in March 1990.

## Evaluation

- Natural saline lake
- The lake is of some interest for its obscure hydrology which may be worth further investigation.
- Fauna and flora are moderately rich but the lake is too small to be of much conservation value.
- The lake is not within a proposed NHA (?)
- Not recommended for designation as a proposed SAC.





**Lough Keeraun.** Looking north away from the outlet.



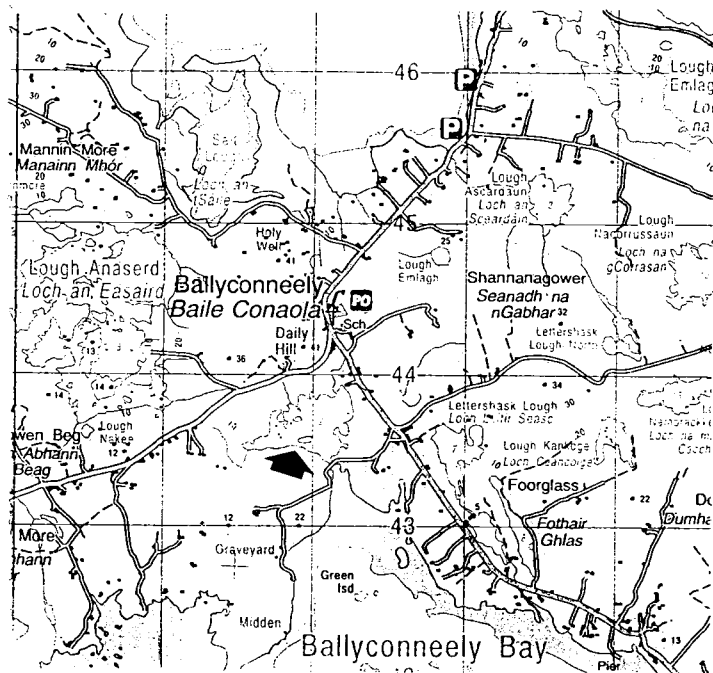
**Lough Keeraun.** Vegetated outlet channel.

### 39. BALLYCONNELY LAKE, Co. Galway

OS Grid Ref. L 620437

Loch Baile Conaola (un-named on the OS 1:50,000 map)

West Connemara, north Ballyconneely Bay, 1 km south of Ballyconneely.



**Lagoon Type:** Natural sedimentary lagoon with shingle barrier and artificial outlet.

*Origin and Description.* Medium-sized lake, about 20 ha, surrounded by grassland to the south and rocky heath to the north, separated from the sea by a grassed sand bank, about 50 m wide, fronted by a cobble barrier. Lake banks gently sloping. depth of lake unknown. Substratum near the outlet muddy sand.

*Hydrology.* Freshwater enters by streams and runoff chiefly in the north and west. Water level is partly controlled by an outlet pipe with flap sluice which passes under the road and grassland to empty into the cobble barrier. Some seawater probably enters through the sluice and there may be some percolation but the low salinity recorded on two occasions near the outlet indicate that the marine influence is small. Salinity near the outlet on 11.vi.96 and in March 1994 was 4‰. Water at the northern shore may be fresh.

*Vegetation.* Emergents scarce. Water level too high at the time of sampling to allow a proper assessment of aquatics. (Only a small section of the shoreline examined).

*Threats.* Some nutrient enrichment from grazing animals. Housing developments being constructed on east shore.

## Species records from Ballyconneely Lake

The following species were recorded from near the outlet during a brief visit on 11.vi.96 when the water level was high:

### *Fauna*

*Neomysis integer*

Amphipoda

Chironomidae

Tipulidae

*Potamopyrgus antipodarum*

*Lymnaea peregra*

*Gasterosteus aculeatus*

### *Flora*

*Ranunculus baudotii*

## Evaluation

- Natural sedimentary lagoon with artificial outlet.
- The lake is of some geomorphological interest as an example of a true lagoon (or former lagoon) with a shingle barrier, on a part of the coast where they are rare. However, brackish conditions may be due entirely to the presence of an artificial outlet.
- Too little is known about the fauna and flora to make an assessment of conservation value.
- The lake lies within a proposed NHA (Site No 2074).
- Further investigation recommended.



**Ballyconneely Lake.** Southern shore near the outlet.



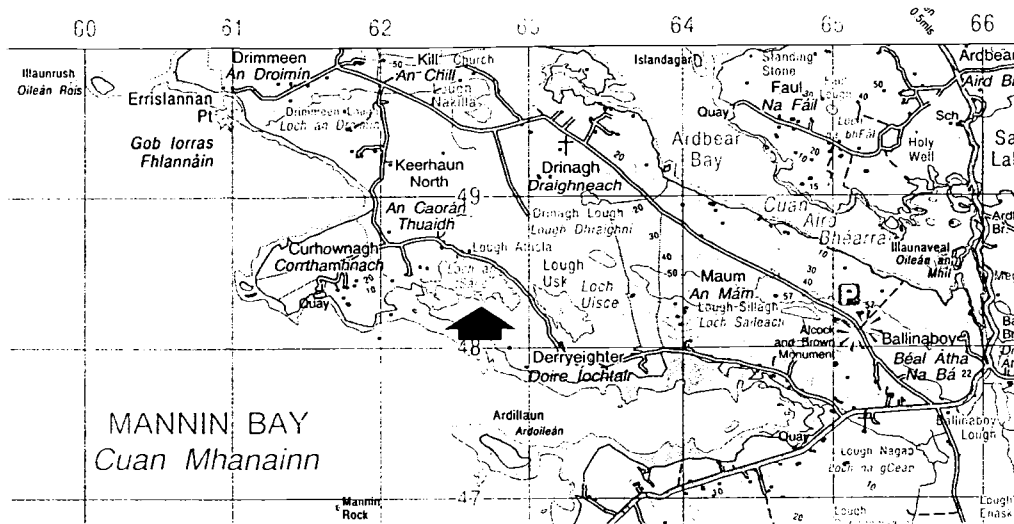
**Ballyconneely Lake.** Cobble barrier and beach.

## 40. LOUGH ATHOLA, Co. Galway

OS Grid. Ref. 626484

Loch an tSáile

West Connemara, north shore of Mannin Bay. About 4 km west of Ballinaboy.



**Lagoon Type:** Natural saline lake with natural tidal inlet through creeks in salt marsh on peat.

**Origin and Description.** Medium-size lake, approximately 15 ha, separated from the sea for most of its length by rocky hills, draining through a small area of salt marsh on peat. Northern shores are peaty with salt marsh, or rocky with fucoids. Depth not known but probably several metres. Substratum near northern shore rocky with coarse peat deposits.

**Hydrology.** Tidal but tidal range small. Several small streams enter including a gushing one in the northeast. On 12.vi.96, salinity near the northeast stream inflow was 6‰, in the northwest 27‰ and in the inlet 33‰. Slow release from surrounding peatlands probably maintain a similar gradient throughout the year.

**Vegetation.** Few emergents apart from some *Juncus maritimus*. Algae abundant and varied; some *Ruppia* in the northeast. A little *Zostera* in the inlet.

**Threats.** None apparent.

## Species records from Lough Athola

The following species were recorded from the northeast in 6‰ during a brief visit on 12.vi.96:

### *Flora*

Polychaeta indet.

*Praunus flexuosus*

*Tanais dulongi*

Amphipoda

Chironomidae

*Littorina saxatilis*

*Skeneopsis planorbis*

*Cerastoderma glaucum* L\*

*Asciodiella* spp.

*Clavelina lepadiformis*

*Anguilla anguilla*

*Gasterosteus aculeatus*

Other unid. fish

### *Flora*

*Cladophora* spp.

*Enteromorpha* sp.

*Chaetomorpha linum* L

*Codium* sp.

*Fucus ?spiralis*

*Ruppia* sp. L

\* L = lagoonal specialist

## Evaluation

- Natural saline lake with natural outlet through peat.
- The lake is of interest as a geomorphological type, unusual in the European context, being partly isolated from the sea by a peat barrier. The fauna and flora are predominantly marine but with lagoonal elements.
- There is a strong salinity gradient and a wide range of habitats.
- Both fauna and flora appear to be rich.
- The lake lies within a proposed NHA (Site No. 2074).
- Worth further investigation using divers for collecting. A brief diving survey has been carried out by the BioMar team.



**Lough Athola.** View from the east end of the lake, looking towards the inlet.

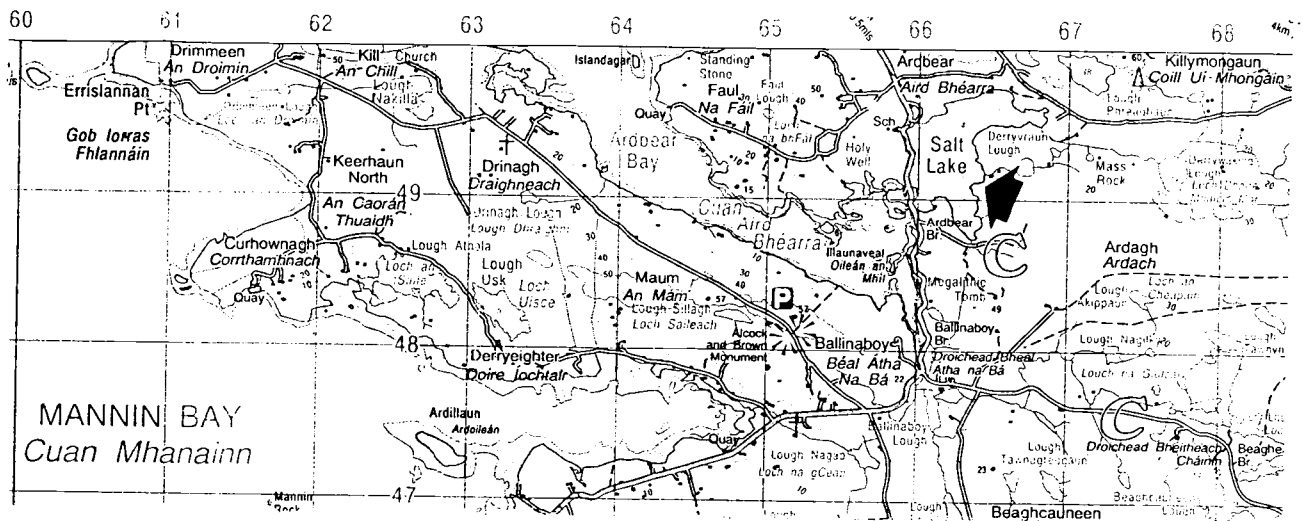


**Lough Athola.** Inlet creeks in salt marsh.

## 41. SALT LAKE, Co. Galway

OS Grid Ref. L 662493

West Connemara, Ardbear Bay. 1.5 km southeast of Clifden.



**Lagoon Type:** Deep, natural saline lake with a more or less natural (?), but modified, tidal inlet and rapids.

**Description.** Large, deep lake, approximately 50 ha with silled tidal inlet and rapids. The inlet is bridged and has been modified during road building. Steep, rocky surrounds. Depth at least 20 m, possibly 30 m. The edges shelve quickly and there is little shallow water. Substrate at the sampling site in the northwest was rocky with stones and a little fine sediment. Access from the shore difficult.

**Hydrology.** Tidal, but tidal range small. A few streams enter from the east but low salinities are probably confined to inshore waters. Water is stratified; a gradient of 28-35‰ from the surface to 20 m was recorded on 12.vi.96. The salinity in the northeast corner on 11.vi.96 was 16-25‰ but was only 4‰ at the same position in March 1994.

**Vegetation.** Shore are too steep and rocky for emergents. Aquatics are probably algae only, especially fucoids near the shore.

**Threats.** Some mussel culture



## Species records from Salt Lake

Sampling from the shore is difficult and collecting during the survey was confined to a narrow zone in the northeast. The following species were taken during a brief visit on 11.vi.96:

### *Fauna*

*Praunus flexuosus*

*Jaera* sp. (all females)

*Palaemonetes varians* L\*

*Palaemon serratus*

*Carcinus maenas*

*Hydrobia ulvae*

*Littorina saxatilis*

*Littorina littorea*

### *Flora*

*Pelvetia canaliculata*

*Fucus spiralis*

\* L = lagoonal specialist

The lagoonal specialist *Cerastoderma glaucum* has been recorded in the past.

## Evaluation

- Natural saline lake with tidal narrows.
- The lake resembles a sea lough but unlike L. Hyne, the surface water is consistently brackish.
- The lake is of scientific interest and is well known to marine biologists.
- The fauna is known to be diverse and presents some unusual features such as a serpulid reef and a rare nudibranch (*Cuthona*). No systematic survey of the fauna has been carried out, however.
- The lake lies within a proposed NHA (Site No. 2034).
- Further investigation is recommended.



Salt Lake. View from the northeast corner.

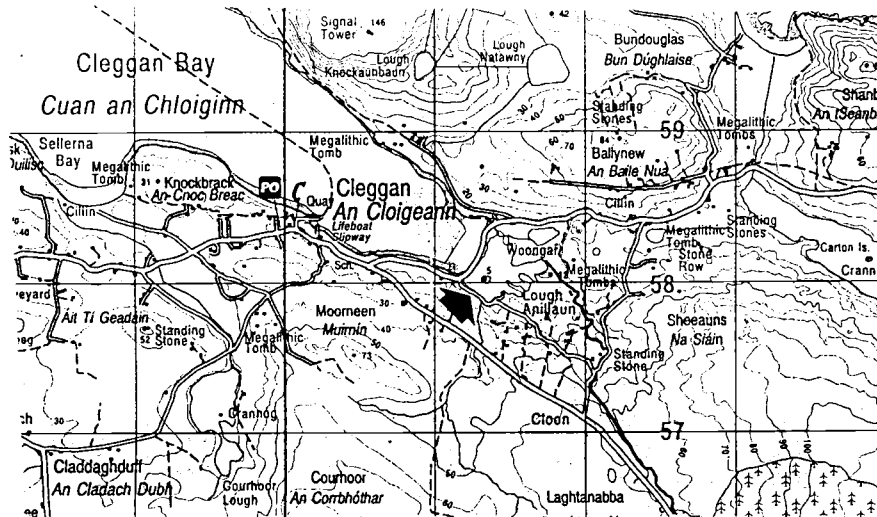


Salt Lake. Water flowing into the sea from the tidal inlet.

## 42. LOUGH ANILLAUN, Co. Galway

OS Grid Ref. L 613581

Northwest Connemara, Cleggan Bay. 1.5 km east of Cleggan



**Lagoon Type:** Natural sedimentary lagoon with shingle barrier; inlet probably artificial or at least modified.

**Description.** The lake lies behind a 30 m cobble barrier consisting of stones up to 25 cm, backing a sandy beach at the head of Cleggan Bay. A road has been built along the top of the barrier with a bridge over a narrow outlet at one end. Wooded hills overlook the lake to the south and there is marshy land in the northeast. Area approximately 15 ha; depth not known but probably shallow. Substrate near the barrier sandy with stones near the shore.

**Hydrology.** A number of streams enter the lake which maintain a low salinity in spite of the open inlet. The salinity was 0‰ near the barrier on 14.vi.96 following a spell of dry weather and it is evident that most seawater entering is quickly flushed out.

**Vegetation.** Extensive beds of *Scirpus maritimus* near the barrier and *Phragmites* in the east. Aquatics included *Cladophora*, *Ruppia*, and unidentified charophytes but no *Enteromorpha*.

**Threats.** None known.

## Species records for L. Anillaun

The following were recorded from the barrier shore during a brief visit on 14.vi.96:

### Aquatic Fauna

*Neomysis integer*

*Jaera nordmanni*

Amphipoda

*Ischnura elegans*

Chironomidae

*Potamopyrgus antipodarum*

*Pomatoschistus* (juv.)

### Flora

*Cladophora* sp.

*Ruppia* sp. L\*

Unidentified charophytes

\* L = lagoonal specialist

## Evaluation

- Natural sedimentary lagoon with modified shingle barrier and artificial outlet
- The lake is of some geomorphological value as an example of a true lagoon but has been modified by road construction.
- The large freshwater input limits marine influence in spite of an open inlet and only one lagoonal faunal specialist was recorded. The fauna appears to be poor but needs further investigation, especially near the outlet.
- *Ruppia* and unidentified charophytes present.
- The lake is not within, or adjoining, a proposed NHA.
- Further investigation strongly recommended.

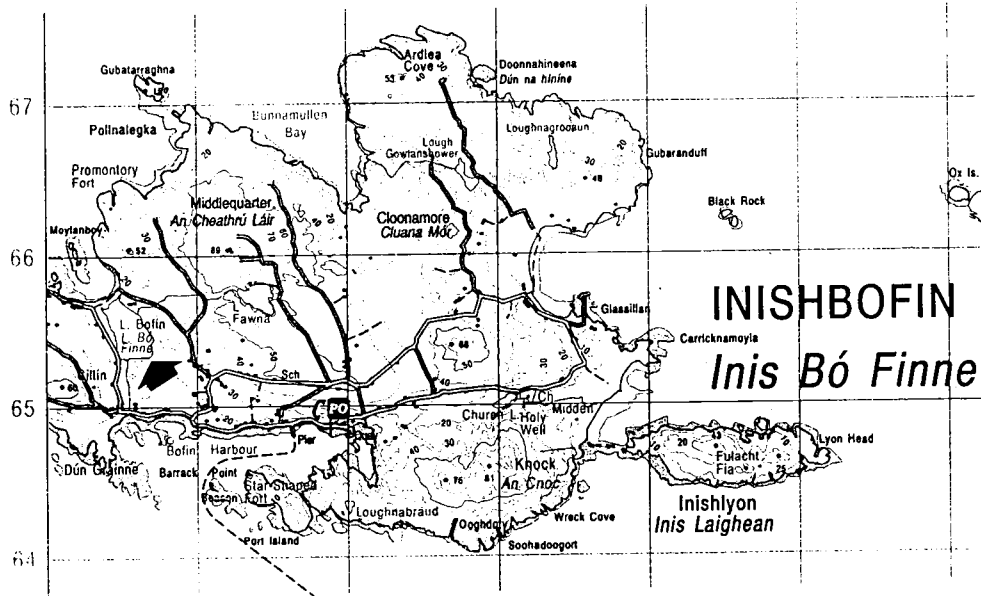


**Lough Anillaun.** View of lake from the south.



**Lough Anillaun.** South shore of the lake seen from the barrier.

## Loch Bó Finne. Inishbofin



**Lagoon Type:** Natural, sedimentary lagoon with cobble barrier, apparently without inlet.

**Description.** The lagoon was not visited by a member of the survey team but photographs and reports from colleagues give some idea of marginal vegetation and environmental conditions. The area is approximately 15 ha and most parts of the shore are gently sloping with peaty salt marsh. The cobble barrier appears high and unlikely to be overwashed except during severe storms. However, the salinity in August 1996 was 35-37‰ which suggests extensive landward seepage or the presence of an inlet. Surrounding land is rocky peatland.

#### Evaluation

- Little is known about the lake but it appears to be a good example of a natural sedimentary lagoon, possibly in pristine condition.
- The lake is in a proposed NHA (Site No. 278).
- Further investigations strongly recommended.

**Sources:** Brodie and Sheehy Skeffington (1990)



Lough Bofin. Lake shore.



Lough Bofin. Lake and barrier.





*Ecotonal Coleoptera.* Beetles were collected from *Juncus maritimus* swards and a sand flat. 7 species of Carabidae, one heterocerid and 14 Staphylinidae were recorded, none of which are regarded as indicator species.

*Other features.* The lake lies in an area displaying a complex and dynamic barrier system of dunes and cobbles, with lagoons in various stages of evolution, most of which are now freshwater lakes, brackish conditions being limited by the large volume of freshwater issuing from inland.

*Threats.* No human impacts apparent but the lake has changed shape and size considerably in recent years as a result of natural infilling processes.

### **Evaluation**

- The value of the lake is chiefly as an example of a completely natural sedimentary lagoon with sedimentary barrier, evolving towards a freshwater lake. It should be evaluated in the context of other coastal lakes with similar origin on this part of the coast.
- The post-glacial history of the area is of interest to geomorphologists and some regions have been studied in detail.
- Site rated as “potentially valuable” for vegetation (some deeper areas not sampled). A variety of marginal communities was present but aquatic flora was poor, one lagoonal specialist (*Ruppia maritima*), no charophytes.
- Aquatic fauna poor in species, two lagoonal specialists. No rare or interesting species.
- The site is rated as of no conservation interest for ecotonal Coleoptera.
- The lake is part of a proposed NHA which includes the Mweelrea Mountains (Site No. 1932).
- Designation as a proposed SAC (as part of a complex) is recommended.

### *Sources:*

Bekkers *et al.* (1976); Decoy *et al.* (1996); Delaney and Devoy (1995); Westermann and Westhoff (1974).



Corragauin Lough. West end of the lake at low tide.



Corragauin Lough. Tidal inlet, sea in the background.



Corragauin Lough. Northern shore showing low peat cliffs with stranded *Cladophora* backed by *Juncus maritimus*.

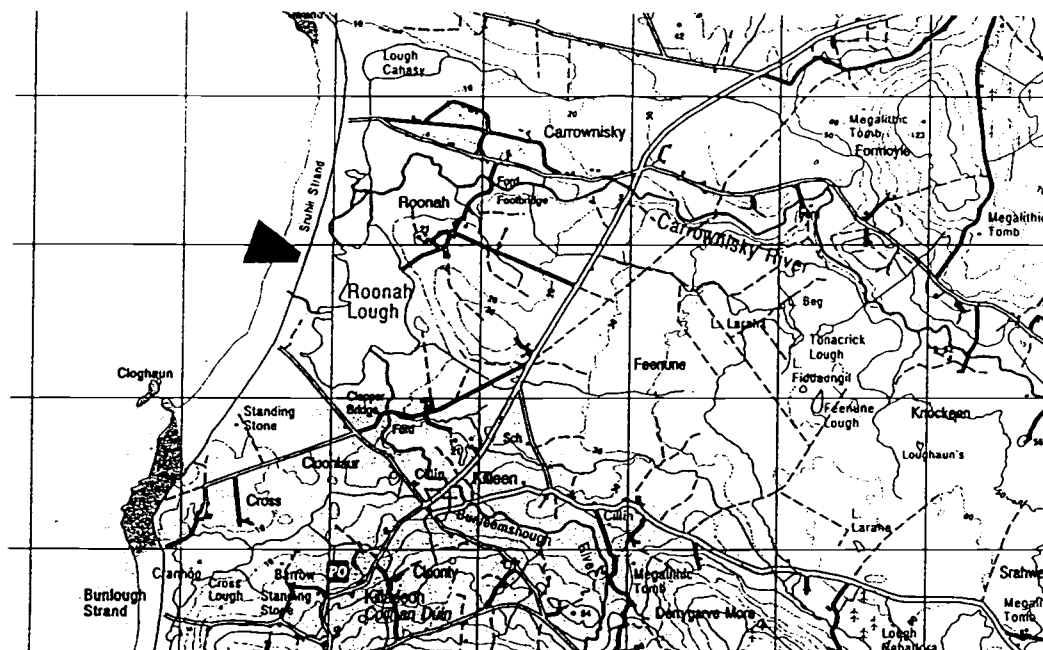


Corragauin Lough. Looking east to the Mweelrea Mountains.

## 45. ROONAH LOUGH, Co. Mayo

OS Grid Ref. L 755765

West Mayo, 10 km north of Killary Harbour, 2 km from Killadoon



Selected site in 1996. Summary only, see separate account for details.

**Lagoon Type:** Natural sedimentary lagoon with cobble barrier and natural, but altered outlet.

*Description.* Large lake, approximately 50 ha, lying behind a low, cobble barrier through which runs a natural outlet. Shallow, depth mostly 25-80 cm. Bed sandy with some silt and unconsolidated peat.

*Hydrology.* Receives freshwater from the Carrownisky and Bunleenshough Rivers. Seawater enters through the outlet channel on spring tides only and is quickly flushed out. The salinity was 0‰ throughout the lake in September 1996.

*Vegetation.* Shoreline with beds of *Schoenoplectus lacustris* up to 30 m wide and narrower beds of *Scirpus maritimus*-*Agrostis stolonifera*. Other marginal vegetation mainly *Eleocharis* - *Agrostis* dominated. Low cover of aquatics, dominant species low-growing *Ruppia maritima*, *Enteromorpha* and *Cladophora*. Sparse cover of *Chara globularis* var. *virgata* and *Chara globularis* var. *annulata*.

*Aquatic fauna.* Assemblage typifying a slightly saline lake with occasional direct contact with the sea. 31 taxa were recorded (identification incomplete) but only one lagoonal specialist. A high proportion of the species were limnic or oligohaline. Rare species: one freshwater bryozoan (underrecorded group).

*Ecotonal Coleoptera.* Beetles were collected from margins with *Potentilla anserina*, a grass sandbank, and a sandflat. 9 Carabidae and 15 Staphylinidae were recorded of which one is regarded as an indicator species. A halobiont assemblage was present on sandflats and the sand bank.

*Other features.* The lake lies in an area displaying a complex and dynamic barrier system of dunes and cobbles, with lagoons in various stages of evolution, most of which are now freshwater lakes, brackish conditions being limited by the large volume of freshwater issuing from inland.

*Threats.* None immediate. Some development of tourist facilities is likely.

### **Evaluation**

- The value of the lake is chiefly as an example of a completely natural sedimentary lagoon with cobble barrier, evolving towards a freshwater lake. It should be evaluated in the context of other coastal lakes with similar origin on this part of the coast.
- The post-glacial history of the area is of interest to geomorphologists and some regions have been studied in detail.
- Rated as “potentially valuable” for vegetation (deeper areas not sampled). Two charophyte species (not lagoonal specialists).
- The aquatic fauna presented no features of interest. A high proportion were freshwater species and no lagoonal specialists were found.
- The site is rated as of no conservation interest for ecotonal Coleoptera.
- The lake is part of a proposed NHA (Site No. 1529).
- Designation as a proposed SAC (as part of a complex) is recommended.

### *Sources:*

Bekkers *et al.* (1976); Decoy *et al.* (1996); Delaney and Devoy (1995); Westermann and Westhoff (1974).



**Roonah Lough.** Northern part showing sand/gravel barrier and inlet of the Carroninsky River.



**Roonah Lough.** View of the barrier.



**Roonah Lough.** Inland shore.

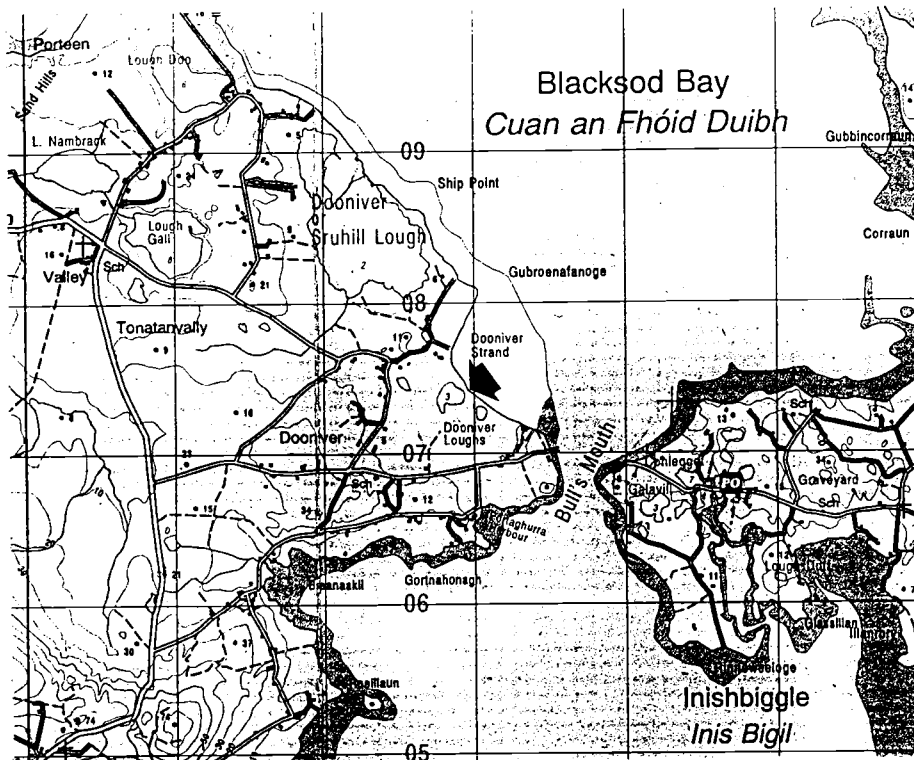


**Roonah Lough.** View looking southwest.

## 46. DOONIVER LOUGH, Co. Mayo

OS Grid Ref. F 728074

Northwest Achill Island, facing Blacksod Bay



**Lagoon Type:** Small, sedimentary lagoon behind a cobble barrier overlying sand and peat, with an artificial outlet.

*Description.* Small, shallow lake in pasture, behind a high cobble barrier and well vegetated dunes. A concrete channel drains the lake into the barrier. Substrate is sandy with peat near the edges and stones near the outlet.

*Hydrology.* The outlet channel was obviously constructed to alleviate flooding of the low-lying pasture. Freshwater seepage could be seen on the sandy beach. Seawater probably enters by percolation through the barrier. The salinity was 0‰ on 16.vi.96 following a dry spell and the lake is probably freshwater, or nearly so, for much of the year.

*Vegetation.* No emergents. Aquatics plentiful.

*Threats.* Shores of the lake heavily poached, and water enriched, by cattle.

## Species records from Dooniver Lough

The following species were recorded during a brief visit on 16.vi.96:

### Aquatic fauna

*Neomysis integer*

Corixidae

*Ischnura elegans*

Coleoptera

Chironomidae

Hydracarina

*Potamopyrgus antipodarum*

*Lymnaea* sp.

Bryozoa unid.

*Gasterosteus aculeatus*

### Flora

*Cladophora* sp.

*Ruppia* sp. L

*Callitriche* sp.

L = lagoonal specialist

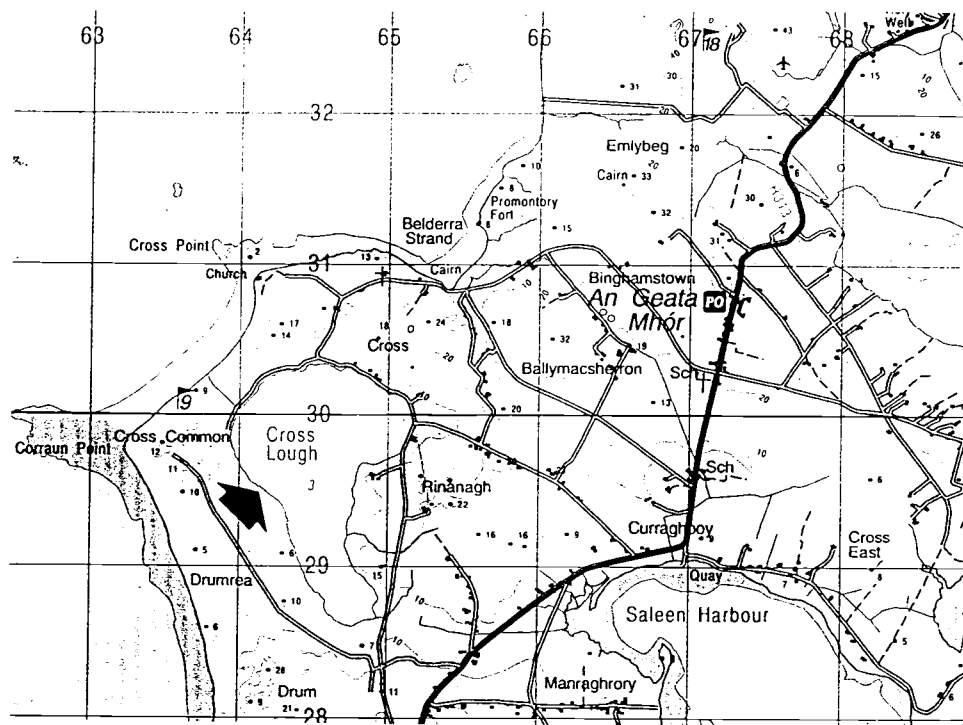
### **Evaluation**

- Natural sedimentary lagoon with artificial outlet.
- The lake is small and polluted and of little conservation value even as an example of a geomorphological type.
- It does not lie within or near a proposed NHA.
- Not recommended for further study.

## 47. CROSS LOUGH, Mullet, Co. Mayo

OS Grid Ref. F 645296

Mullet Peninsula, about 7 km southwest of Belmullet



**Lagoon Type:** Large, natural sedimentary lagoon with sand dune barrier and intermittent outlet/inlet, evolving into a freshwater lake.

*Description.* Large lake, about 110 ha, behind a wide barrier of dune grassland. Water is shallow but a shelf near the shore suggests seasonal variation in water level. Substrate sandy mud-muddy sand; yellow colour of the water was probably due to clay in the lake bed.

*Hydrology.* The lake is now essentially a freshwater system and the only evidence of seawater entry was the presence of brackishwater crustaceans. The barrier is too high for overtopping and probably too wide for landward seepage. Seawater presumably enters by way of the ditch during storms. The salinity was 0‰ on 17.vi.96.

*Vegetation.* Emergents absent (?). Aquatics abundant.

*Threats.* The lake is managed for angling and any tendency for it to revert to a brackish lagoon would be unwelcome.



## Species records from Cross Lough

The following were recorded during a brief visit on 17.vi.96:

### Aquatic Fauna

Hirudinea

*Neomysis integer* (abundant)

Amphipoda

Ephemeroptera

Trichoptera

Corixidae

*Ischnura elegans*

Coleoptera

*Potamopyrgus antipodarum*

*Lymnaea palustris*

### Flora

Unidentified charophytes

*Potamogeton pectinatus*

*Ranunculus baudotii*

*Myriophyllum alterniflorum*

## Evaluation

The lake is probably a former lagoon but is now practically a freshwater lake and of little value as a lagoon. Although one brackishwater crustacean (*Neomysis integer*) was abundant, no lagoonal specialists were recorded.

The lake is within a proposed NHA (Site No. 470).



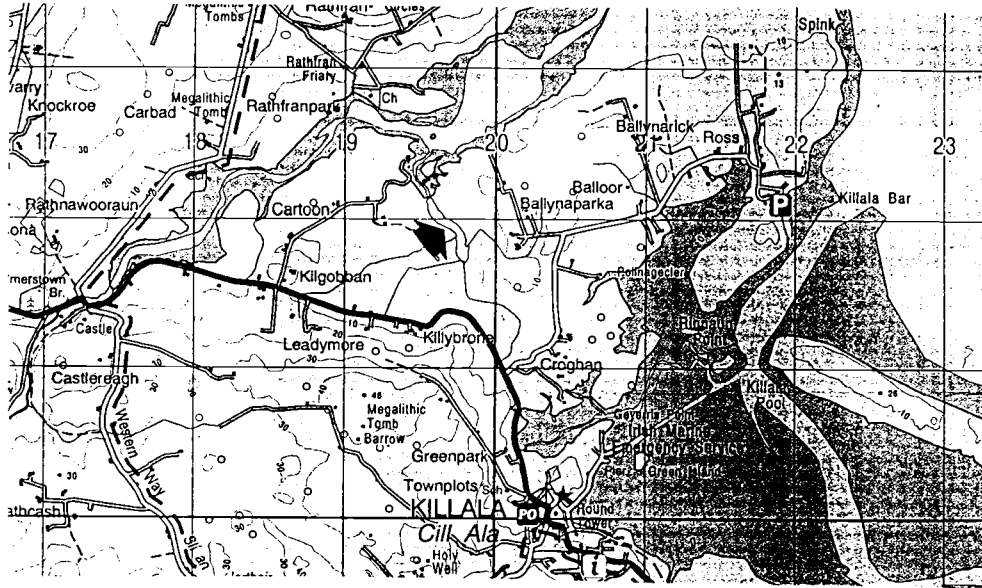
**Cross Lough, Mullet.** View towards the dune barrier.

## 48. "CARTOON LOUGH", Co. Mayo

OS Grid Ref. G 197319

Un-named on the OS 1:50,000 map

Cloonmore R. Estuary, about 2.5 km north of Killala, between Cartoon and Ballynaparka.



**Lagoon Type:** Artificial saline lake with partly artificial barrier and sea inlet.

*Origin and Description.* Probably a former arm of the sea, isolated behind a rock and cement barrier, with narrow outlet/inlet. Long, shallow lake, 300-400 m long, area about 1.5 ha. Substrate soft mud with stones.

*Hydrology.* The map shows four streams entering the lake but the salinity on 17.vi.96 was 33-35‰ throughout and thus there was little freshwater inflow at the time. The lake may be tidal.

*Vegetation.* Small stands of *Juncus maritimus* on the shore. Aquatics were fucoid algae and *Chaetomorpha linum* (a lagoonal specialist).

*Aquatic Fauna.* No samples were taken. The following were observed:

*Corophium* sp.  
*Carcinus maenas*  
*Littorina littorea*  
small fish

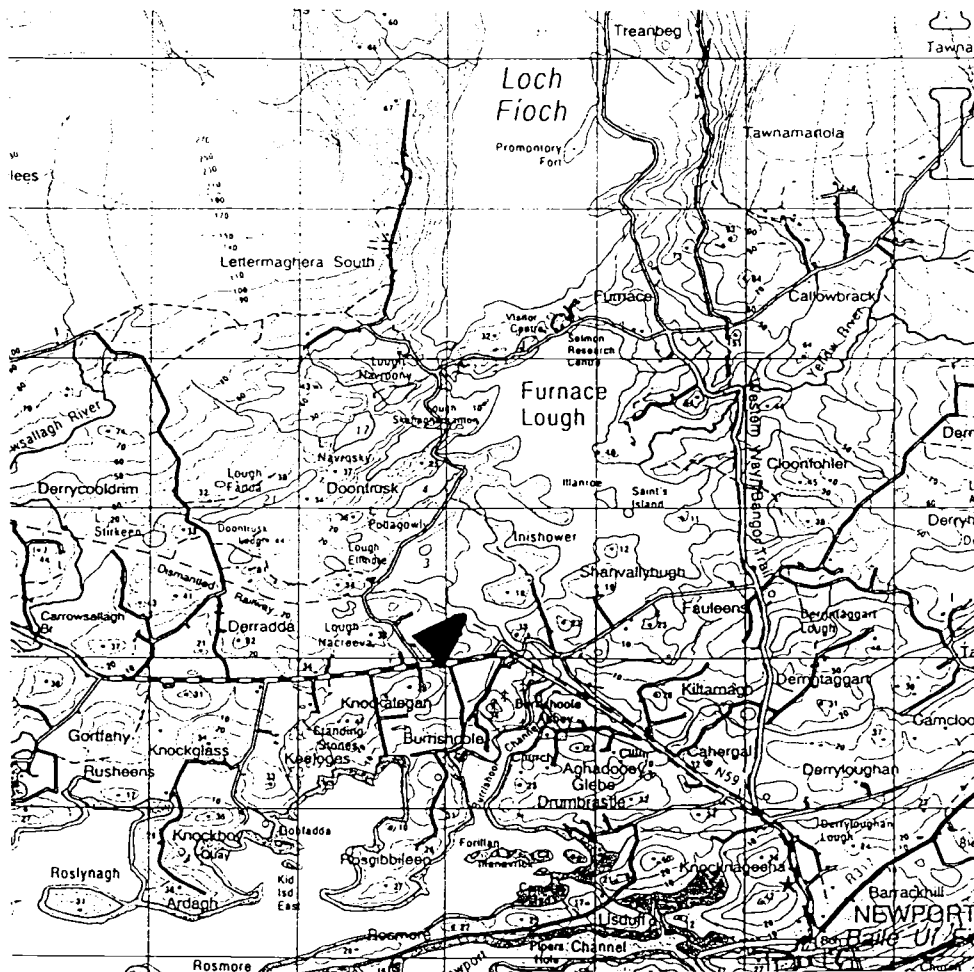
### Evaluation

- Artificial saline lake.
- The lake has no geomorphological interest and information on flora and fauna is inadequate for an evaluation.
- No features of special interest apparent
- It is not within or near a proposed NHA.
- Further investigations worth considering.

## 49. FURNACE LOUGH, Co. Mayo

OS Grid Ref. L 965975

Northeast corner of Clew Bay, 2 km northwest of Newport.



Selected site in 1996. Summary only, see separate account for details

**Lagoon Type:** Large, deep natural saline lake, connected to the sea by a natural, but modified, tidal inlet.

**Description.** Large, approximately 125 ha, depth mostly 1-9 m but reaching 21 m. Tidal inlet with weirs. Surrounding land hilly, mainly heath with rough grazing.

**Hydrology.** Tidal, but relatively low salinity at the surface throughout the year. Permanently stratified with a halocline, oxycline and thermocline at 4-6 m. Salinity in northern sector 0-15‰, reaching 22‰ in the south near the inlet.

**Vegetation.** Steeply sloping banks limit marginal communities except near the inflow from L. Feagh where there is a *Phragmites-Molinia* bed. A halophytic community forms a narrow band on the shore in many places, generally *Eleocharis* (or *Littorella*) - *Agrostis stolonifera*. Aquatics never abundant, dominant species *Ruppia cf. cirrhosa* widely distributed, *Potamogeton pectinatus* and *Enteromorpha*. A little *Chara aspera* var. *aspera*. *Fucus* near the tidal inlet.

*Aquatic fauna.* Diverse, with marine and brackish species but limnic species very localised. 35 taxa were recorded including 3 lagoonal specialists. Oligohaline species mainly occurred in a connecting pool. The amphipods *Leptocheirus pilosus* and *Lembos longipes* are rare in Ireland. Three spp. of *Jaera* were present at one station.

*Ecotonal Coleoptera.* Beetles were collected from an *Alnus glutinosa* area, cobbles near *Scirpus maritimus*, and a grass bank. 12 Carabidae and 21 Staphilinidae were recorded, none of which can be regarded as indicator species.

*Other features.* The lake is part of the Burrishoole Fishery. Environmental conditions are well documented and monitored by the Salmon Research Agency, but there is little information on vegetation or invertebrates.

*Threats.* Peat erosion due to overgrazing on surrounding hills is believed to have caused recent fish kills by raising the level of the oxycline.

### **Evaluation**

- Large, natural saline lake, relatively unaltered by constructions. Of high conservation value as a rare geomorphological type in Ireland.
- Hydrology interesting for permanent stratification of the water, well documented.
- Site rated as "potentially valuable" for vegetation (deeper areas not sampled). Survey indicated interesting species assemblages.
- Aquatic fauna diverse near the inlet with some rare species and interesting assemblages.
- The site is rated as of no conservation value for ecotonal Coleoptera.
- The lake is part of a proposed NHA (Site No. 1482).
- Designation as a proposed SAC is recommended.

### *Sources:*

De Burgh and Smart (1969); Parker (1977); Parker and West Poole (1994).