



**Conservation Designation:** Termon Strand SAC 001195, pNHA 001195

**General description:**

Maghery Lough is a moderate sized (19ha), shallow (<2m) **natural rock/peat lagoon** with a modified, sluiced outlet, on the shore of Maghery Bay, 5km to the west of Dungloe, Co. Donegal. The inlet is probably natural but has been modified by the building of a road bridge and addition of a wooden sluice flap, which was broken at the time of sampling (4-5/9/98). Seawater probably enters on most tides and salinity ranged from 15 to 34psu at the time of sampling.



Figure 80.1 Location of map of Maghery Lough.

Maghery Lough was surveyed in 1998 for vegetation (Roden 1999), aquatic fauna (Oliver 1999) and ecotonal coleoptera (Good 1998, Good & Butler 2000). Results of these surveys are summarised by Healy (1999a,b; 2003).

Stations used for faunal sampling are not necessarily the same as those used for vegetation or ecotonal coleoptera.

## Flora

The vegetation of L. Athola was surveyed in 1998 by C. Roden. The following is based on the report by Roden (1999), following his survey on 29/6/98 and 7-8/9/98.

Benthic vegetation includes both *Ruppia maritima* and *Ruppia cirrhosa* and the rare charophyte *Lamprothamnium papulosum*, all of which are lagoonal specialists.

*Lamprothamnium papulosum* was known from only three sites in Ireland before 1996 (Hatch and Healy 1998). As a result of the surveys it was relocated at two of these sites (Lady's Island L., Co. Wexford, L. Murree, Co. Clare), but not at Tacumshin L., Co. Wexford. It is also now known from a total of 14 lagoon sites, most of which are clustered in Connemara, but there are also new records from the North Slob, Co. Wexford, L. Bofin, Co. Galway and Maghery, Co. Donegal. This species is listed in the Red Data Book for Britain and Ireland (Stewart and Church 1992). Although recorded from the Baltic to the Mediterranean and Black Sea and also South Africa, it is believed to be declining in Europe. There are only five recent records from the south of England, but there are 12 important sites in the Outer Hebrides (Bamber et al. 2001). These Irish locations are very important in European terms, and it is especially encouraging to have found new sites.

*Ruppia spp.* are the most characteristic aquatic plant taxa of Irish coastal lagoons. The species are hard to distinguish when not flowering, and remain uncertain at some sites, but *Ruppia* of one species or the other (*R. maritima*, *R. maritima* var *brevirostris*, *R. cirrhosa*) was found at 62 of the 87 lagoons (71.3%) surveyed, and is one of the most useful indicators of coastal lagoon status. *Ruppia maritima* appears to be the more common of the species and was found at 41 of the lagoons surveyed (47%). *Ruppia cirrhosa* is believed to tolerate higher salinities than the former species and to be less common, but neither of these statements is clearly supported in Irish lagoons and the two species were often found growing together. *Ruppia cirrhosa* was only identified at 23 lagoons (26%), but species was not determined at 12 sites.

Extensive beds of *Phragmites australis* border the lagoon, with an understorey of *Ruppia* sp. and the *flabellatus* form of *Potamogeton pectinatus*. A single plant of *Zostera marina* was seen on the eastern side.

Poorly developed macroalgal communities are found near the inlet, where they grow on scattered rocks protruding from the sandy bed. Species include *Phyllophora pseudoceranoioides*, *Chondrus crispus*, *Coccolytus truncata*, *Furcellaria lumbricalis*, *Cladophora rupestris* and *Enteromorpha* sp. This community corresponds to the OB24 of Covey and Thorpe (1994).

The phytoplankton contained several brackish water dinoflagellates.

Marginal vegetation was well developed and included the *Juncus gerardii* community, *Juncus maritimus* stands and *Schoenoplectus tabernaemontani*/*Phragmites* stands grading into freshwater marsh.

This is the only known locality in Ulster of the rare charophyte *Lamprothamnium papulosum*. Based on the presence of this species and two other lagoonal specialists (*Ruppia spp.*), and the unusual form of *P. pectinatus* (also found in Loch an tSaile, Co. Galway), the site is regarded as of **high conservation value** for aquatic vegetation.

## Fauna

Five stations were selected for faunal sampling in Maghery Lough on 4-5/9/98 (Oliver 1999, Figure 80.2, Table 80.1).

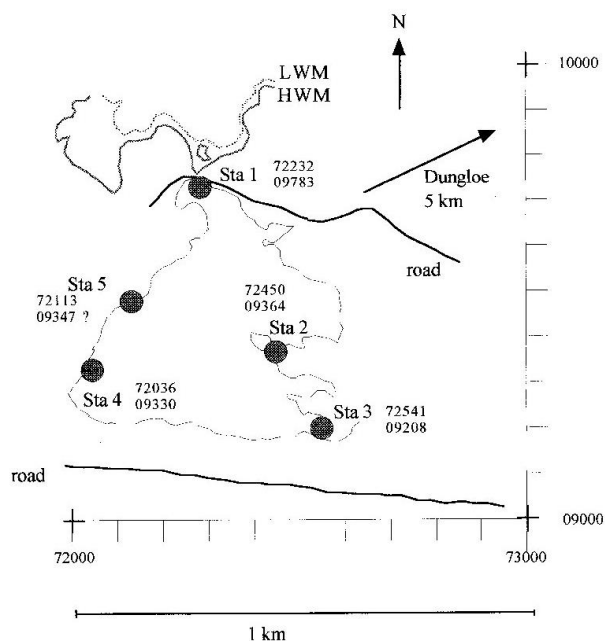


Figure 80.2 Faunal sampling stations used at Maghery Lough 7-8/9/98.

Table 80.1 Positions of faunal sampling stations in Maghery Lough, 7-8/9/98 with salinity, depth of water and type of substratum.

	Sta 1	Sta 2	Sta 3	Sta 4	Sta 5
GPS position	B 72232 09783	B 72450 09364	B 72541 09208	B 72036 09330	B 72113 09317
Salinity(psu)	23.4	23.8	15-23	19-23	23
Depth(cm)	0-100	0-100	0-150	0-50	0-50
Substratum	Isolated rocks, gravel, sand, mud	Stones, gravel, organic silt	Coarse sand, fine silty peat,	Soft silty peat	Clean coarse shell

A total of 32 faunal taxa were recorded in Maghery Lough (Table 80.2). Four of these species are regarded as lagoonal specialists in Britain and one other is a proposed specialist for Ireland. One other crustacean (*Jaera ischiosetosa*) appears to be rare in Ireland.

*Idotea chelipes* is a common, lagoonal, isopod crustacean, often found in association with the lagoonal form of *Chaetomorpha linum*. Found at 23 of the 87 (26.4%) lagoons surveyed, mostly at relatively high salinity.

*Jaera nordmanni*. Isopod crustacean recorded at 24 of the 87 lagoons surveyed (27.6%) and may occur at others where it was not recorded due to the fact that only adult males are easily identified. Described in England (Barnes 1994, Hayward and Ryland 1995) as occurring in streams flowing down the shoreline, on south and west coasts only. All records in Ireland are from West Cork to Donegal. Proposed as a lagoonal specialist for Ireland by Oliver and Healy (1998).

***Palaemonetes varians*** Decapod crustacean listed as a lagoonal specialist in the U.K. by Barnes (1989) and Bamber (1997), but apparently is no longer regarded as such. Although found in estuaries, this species appears to be far more characteristic of lagoons in Ireland, found in 64 of the 87 lagoons surveyed (73.6%) and may require a lagoonal environment for reproduction. Therefore, it remains on the proposed list of lagoonal specialists for Ireland.

Table 80.2 Aquatic fauna recorded at stations in Maghery Lough, Co. Donegal. 1998. L.T. = light trap; F = Fyke net. + = present, o = occasional, c = common, a = abundant. Species in bold text are lagoonal specialists or apparently rare species.

Taxa	Sampling Stations									
	1	L.T. 1	2	L.T. 2	3	L.T. 3	4	L.T. 4	5	
Cnidaria	<i>Opercularella lacerata</i>	+								
<b>Polychaeta</b>	<i>Arenicola marina</i>	+								+
	<i>Hediste diversicolor</i>					c				
<b>Crustacea</b>										
Cirripedia	<i>Semibalanus balanoides</i>	(+)								
Mysidacea	<i>Neomysis integer</i>	c	7	c	2	o	1	c	16	
	<i>Praunus flexuosus</i>	o	1	o	1					
Isopoda	<b><i>Idotea chelipes</i></b>						1			
	<b><i>Jaera ischiosetosa</i></b>	1		c						
	<b><i>J. nordmanni</i></b>	+				+	5			
Amphipoda		+	+	a	+	+	+	+	+	+
	<i>Corophium volutator</i>	+				1				
	<i>Gammarus zaddachi</i>	123	34	136	6	34	34	59		52
	<i>Melita palmata</i>	1						1		
Decapoda	<i>Carcinus maenas</i>	F=126								
	<i>Crangon crangon</i>	a								
	<i>Palaemon elegans</i>	c	1				+			
	<i>P. serratus</i>	c	1							
	<b><i>Palaemonetes varians</i></b>	c								
<b>Arachnida</b>	Acarina indet.								1	
<b>Insecta</b>										
Heteroptera	<i>Hydrometra stagnorum</i>					+				
	(Corixidae indet.)							3		
Coleoptera	<i>Agabus bipustulatus</i>							1		
	<i>Helophorus brevipalpis</i>							1		
	<i>Hydroporus memnonius</i>							6		
Diptera	Chironomidae indet.	o		c		a		c		a
<b>Mollusca</b>										
Prosobranchia	<i>Hydrobia ulvae</i>	+								
	<i>Littorina littorea</i>	(+)		o						
	<i>L. saxatilis</i>	(+)								
	<i>Potamopyrgus antipodarum</i>	12				25		+		+
Bivalvia	<b><i>Cerastoderma glaucum</i></b>	o				shells				
	<i>Mya arenaria</i>	o		c		a		o		a
	<i>Mytilus edulis</i>	o								
<b>Bryozoa</b>	<b><i>Conopeum seurati</i></b>	+		+						
<b>Pisces</b>	<i>Anguilla anguilla</i>	F=2				F=7				
	<i>Pleuronectes flesus</i>	o		o						
	<i>Pomatoschistus microps</i>	(+)								
	<i>Gasterosteus aculeatus</i>	o		c	1	c		c	7	+
	<i>Taurulus bubalis</i>	F=2								

***Cerastoderma glaucum*** Bivalve mollusc. A common lagoonal specialist found at 30 of the 87 lagoons (34.5%) surveyed.

*Conopeum seurati* Bryozoan recorded at 49 of the 87 lagoons surveyed (56.3%), but is not listed in a recent review of Irish marine Bryozoa (Wyse Jackson 1991). Either the species is under-recorded or is truly a lagoonal specialist.

*Jaera ischiosetosa* Isopod crustacean recorded at 12 sites from West Cork to Donegal. The only previous record appears to be for L. Hyne. Co. Cork (Goss Custard *et al.* 1979).

The fauna of the lagoon is mostly euryhaline and marine/polyhaline and not particularly rich, but five species are lagoonal specialists and one crustacean (*J. ischiosetosa*) appears to be rare. Based on aquatic fauna, the site is rated as of **moderate conservation value**.

### Ecotonal coleoptera

Nine species of carabid and twenty seven species of staphylinid beetles were recorded at Maghery Lough in 1998 (Good 1999, Good & Butler 2000), one of which (*Atheta aquatilis*) is an indicator species. This species was only recently recorded in Ireland, from Lynn Lagoon, Larne, Co. Antrim (Anderson *et al.* 1997) and is a “stenotopic species restricted to moss and litter in flooded shaded habitats, springs, flushes and wet woodland”. However, with only one indicator species, based on ecotonal coleoptera, the site is regarded as of **low conservation value**.

### Summary

Maghery Lough is a good example of a moderate sized **natural rock/peat lagoon**, a type of lagoon, similar to the Scottish “obs”, which are characteristic of parts of the west coast of Ireland, especially in Connemara. They are permanent, shallow and brackish, with restricted tidal influence due to the presence of a “barrier” of peat or rock. This is the only known locality in Ulster of the rare charophyte *Lamprothamnium papulosum*. Based on the presence of this species and two other lagoonal specialists (*Ruppia* spp.), and the unusual form of *P. pectinatus* (also found in Loch an tSaile, Co. Galway), the site is regarded as of **high conservation value** for aquatic vegetation. The fauna of the lagoon is mostly euryhaline and marine/polyhaline and not particularly rich, but five species are lagoonal specialists and one crustacean (*J. ischiosetosa*) appears to be rare. Based on aquatic fauna, the site is rated as of **moderate conservation value**. One species of ecotonal coleoptera (*Atheta aquatilis*) is an indicator species and rare in Ireland, but with only one indicator species, based on ecotonal coleoptera, the site is regarded as of **low conservation value**. Overall conservation value is rated as high, as it is a good example of a relatively rare lagoon type in Europe, with a rare charophyte (*L. papulosum*).

**Overall Conservation Value = High**

### Conservation Status Assessment (from Oliver 2007)

Impacts	At present no major impacts but interest from local anglers in manipulating sluice. Leisure fishing. Modification of hydrology. Urbanisation.
Conservation Status	<b>Favourable</b>

### Further Information

Listed as a lagoon by Healy *et al.* 1997. Surveyed in 1998 for vegetation (Roden 1999), aquatic fauna (Oliver 1999) and ecotonal coleoptera (Good 1998, Good & Butler 2000). Results of these surveys are summarised by Healy (1999a,b; 2003). Included in a biological classification of Irish coastal lagoons (Oliver 2005) and in the Conservation Status Assessment (Oliver 2007).

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