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**Loch an Ghadaí, County Galway O.S. L 933 299**

O.S. Discovery Sheet 45



**Conservation Designation:** Kilkieran Bay and Islands SAC 002111

**General description:**

Loch an Ghadaí is one of a group of lagoons, approximately 1 km east of Bealadangan which includes L. Fhada upper pools and Loch Fhada, which were included previously as part of the Lough Fhada complex. Seawater enters these pools occasionally from high tides flooding through saltmarsh channels in the northwest which flows to the northeast into Loch Fhada, then into Loch an Aibhnín. It is possible that seawater also enters from Loch Fhada on flood tides. This is the lowest salinity lagoon of the group, measuring 2.9-3.3psu at the time of sampling, but 6-10psu in June 1998 and probably gets considerably higher at times. The lagoon is shallow (mostly <1m) with a bed of granite and coarse sand with luxuriant growths of *Ruppia*, *Chaetomorpha* and *Lamprothamnium*.



Location map of Loch an Ghadaí.

Loch an Ghadaí was surveyed in 1998 as part of the Loch Fhada complex, for vegetation (Roden 1999) and aquatic fauna (Oliver 1999). 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.

## Flora

The vegetation of Loch an Ghadaí was surveyed in 1998 by C. Roden (1999).

This is a very shallow lake with very large areas of flat outcropping granite bedrock. The entire lake bottom is covered by vegetation. *Ruppia* sp. and *Lamprothamnium papulosum* form a dense sward in the centre while flat slabs of granite are covered with *Chaetomorpha linum* and *Cladophora liniformis*.

*Cladophora liniformis* has not previously been recorded in Ireland.

*Chaetomorpha linum*. There is some doubt about the taxonomic status of the unattached lagoonal form of this species, and it was recorded by Hatch and Healy (1998) as *C. mediterranea*. It is a common, characteristic alga of semi-isolated Irish lagoons, recorded at 49 of the 87 (56.3%) lagoons surveyed.

*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.

The *Ruppia* was not specifically identified as flowering plants are needed for certain identification, but is assumed to be *Ruppia maritima* which 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.

*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 Maghera, 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. 2001b). These Irish locations are very important in European terms, and it is especially encouraging to have found new sites.

Four of the above species are lagoonal specialists, one of which is a rare charophyte. Based on aquatic vegetation, the site is regarded as of **high conservation value**.

## Fauna

A total of 20 faunal taxa were recorded in Loch an Ghadaí, of which 18 were identified to species. Six of these taxa are regarded as lagoonal specialists:

*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 northwest Europe (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).

*Lekanesphaera hookeri* is a common lagoonal isopod crustacean, found at 37 of the 87 lagoons surveyed (42.5%).

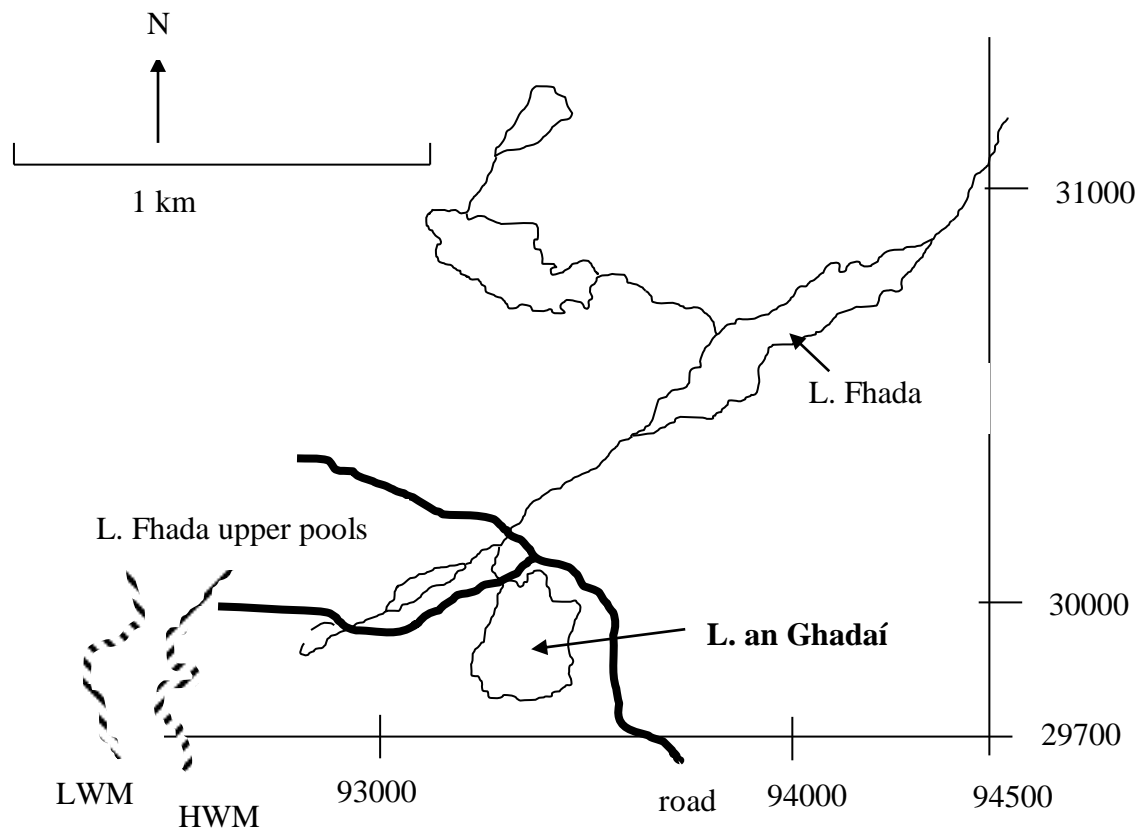


Figure 55.2 Sketch map showing sampling area in Loch an Ghadaí

Table 55.1 Positions of faunal sampling stations Loch an Ghadaí with sampling date, salinity and depth of water and type of substratum.

	Sta 1
Sampling date	27-28/7/98
GPS position	L 93304 29905
Salinity(psu)	2.9-3.3 (6-10 in June 1998)
Depth	0-200
Substratum	Granite bedrock and rocks, coarse sand. Small patches of finer sediments

*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.

*Sigara stagnalis* Hemipteran insect (water-boatman). A common lagoonal specialist found at 36 of the 87 (41.4%) lagoons surveyed.

*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.

Eels were recorded in fyke nets, as was (surprisingly) one specimen of *Taurulus bubalis*, a marine fish common on rocky shores, indicating the obvious incursion of marine water. None of the other faunal species appear to be of particularly high conservation interest.

Faunal taxa recorded at stations in Loch Fhada upper pools on 27/7/98.

L.T. = Light trap, + = present, o = occasional, c = common, a = abundant, F = Fyke net. Species in bold text are lagoonal specialists.

			Sta 1		
			search	L.T.	L.T.2
<b>Crustacea</b>					
	Ostracoda	indet.	a		
	Mysidacea	<i>Neomysis integer</i>	+		
		<i>Praunus flexuosus</i>	a	450	30
	Isopoda	<i>Jaera nordmani</i>	+	4	1
		<i>Lekanesphaera hookeri</i>	a	45	30
	Amphipoda	<i>Corophium volutator</i>			2
		<i>Gammarus duebeni</i>		2	
		<i>Gammarus zaddachi</i>	o	18	4
	Decapoda	<i>Palaemonetes varians</i>	o	3	
<b>Insecta</b>	Odonata	<i>Ischnura elegans</i>	r		
	Heteroptera	<i>Sigara stagnalis</i>	o		
<b>Mollusca</b>					
	Gastropoda	<i>Potamopyrgus antipodarum</i>	a		
	Bivalvia	<i>Cerastoderma glaucum</i>	spat		
		<i>Mytilus edulis</i>	o		
<b>Bryozoa</b>		<i>Conopeum seurati</i>	o		
<b>Pisces</b>		<i>Anguilla anguilla</i>	F = 6		
		<i>Gasterosteus aculeatus</i>	o	11	
		Mugilidae indet.	o		
		<i>Pomatoschistus microps</i>		1	
		<i>Taurulus bubalis</i>	F = 1		

### Summary

Loch an Ghadaí is a small (5ha) lagoon, of a type which is rare in a European context, but characteristic of parts of the west coast of Ireland, especially in Connemara, referred to as **rock/peat lagoons** with restricted tidal influence due to the presence of a “barrier” of bedrock and peat. Based on aquatic vegetation, the site is regarded as of **high conservation value** as four species are lagoonal specialists, one of which is a rare charophyte, *Lamprothamnium papulosum*. The aquatic fauna is not rich but six species are lagoonal specialists. The lagoon is of an unusual type in Europe and the biota comprises a large proportion of lagoonal specialists including a rare charophyte. Overall conservation is regarded as high.

**Overall Conservation Value = High**

**Conservation Status Assessment (from Oliver 2007)**

Impacts

No significant impacts.

Conservation Status

Favourable

**Further Information**

Listed as a lagoon by Healy *et al.* 1997. Surveyed in 1998 for vegetation (Roden 1999) and aquatic fauna (Oliver 1999). 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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