

4.56

**Loch Fhada, County Galway O.S. L 939 305**

O.S. Discovery Sheet 45



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

**General description:**

Loch Fhada is one of a group of lagoons approximately 1 km east of Bealadangan, which were included previously as part of the Lough Fhada complex. Seawater enters these lagoons occasionally from high tides flooding through saltmarsh channels in the northwest which then flows into Loch an Aibhnín. It is possible that seawater also enters the pools from Loch an Aibhnín on flood tides. Loch Fhada is a small (10ha) **rock/peat lagoon**. Depth is up to 7m and the water was stratified at the time of sampling with a noticeable halocline at 3m and a salinity and temperature gradient below this depth. In one area, lower salinity water (15.5psu) was recorded at 5m depth, as if diluted by an underground spring of freshwater.

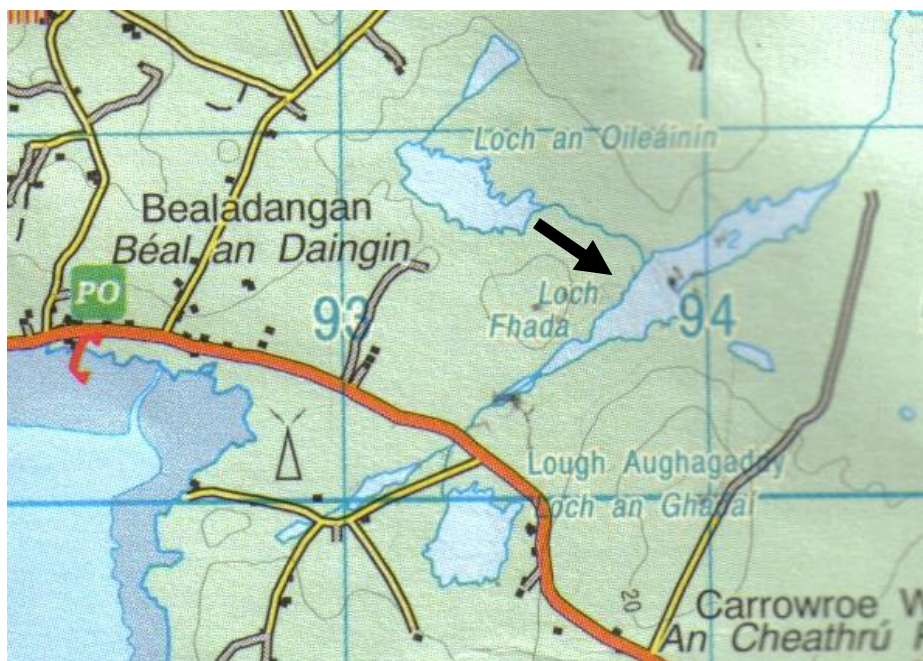


Figure 56.1 Location of map of Loch Fhada.

Loch Fhada 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 Loch Fhada was surveyed by C. Roden in 1998 (Roden 1999).

A total of 18 floral taxa were recorded in Loch Fhada, of which 15 were identified to species. Four of these taxa are regarded as lagoonal specialists. Most notable about this lagoon is the presence of both species of *Ruppia*, the abundance of the rare charophyte, *Lamprothamnium papulosum* and the dense mats of *Chaetomorpha linum* and the two rare *Cladophora* species (*C. liniformis*, *C. vagabunda*).

Flora recorded in Loch Fhada by Roden (1999):

*Chaetomorpha linum*

*Cladophora liniformis*

*Cladophora vagabunda*

*Enteromorpha* sp.

*Chondrus crispus*

*Hildenbrandia* sp.

*Phyllophora pseudoceranooides*

*Polysiphonia macrocarpa*

*Polysiphonia nigrescens*

*Fucus vesiculosus*

*Chara aspera*

*Lamprothamnium papulosum*

*Cladium mariscus*

*Eleocharis* sp.

*Juncus maritimus*

*Ruppia maritima*

*Ruppia cirrhosa*

*Schoenoplectus tabernaemontana*

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

*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.

*Cladophora liniformis* was recorded in Loch Fhada (and L. an Ghadaí). Not previously recorded in Ireland.

*Cladophora vagabunda* was recorded at 10 sites from Galway to Donegal.

With four lagoonal specialists, one of which is a rare charophyte (*L. papulosum*) and two rare *Cladophora* species, based on aquatic vegetation, Loch Fhada is regarded as of **high conservation value**.

### Fauna

Two stations were selected by Oliver (1999) for faunal sampling in 1998 (Figure 56.2, Table 56.1).

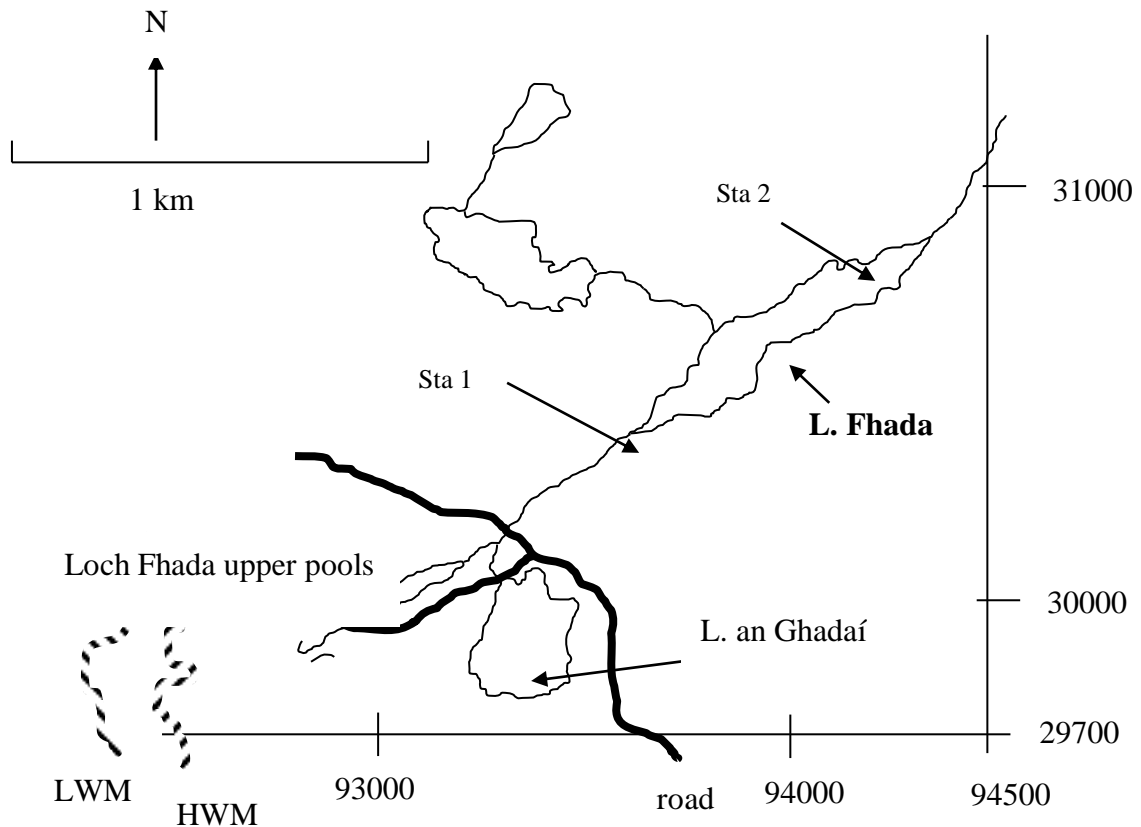


Figure 56.2 Sketch map showing faunal sampling stations used in Loch Fhada on 30/7/98 and 22/9/98.

Table 56.1 Positions of faunal sampling stations in Loch Fhada, with sampling date, salinity, depth of water and type of substratum.

	Sta 1	Sta 2
Sampling date	29-30/7/98	21-22/9/98
GPS position	L 937 304	L 94251 30834
Salinity(psu)	25	7-6-25.1
Temperature(C)	17	17.9-12.5
Depth(cm)	0-100	0-700
Substratum	Rocks, gravely sand	Granite rocks, bedrock. Muddy bottom at depth

Table 56.2 Aquatic fauna recorded at stations in Loch Fhada, Co. Galway. 1998. F = Fyke net; L.T. = light trap; + = present, o = occasional. c = common, a = abundant. Species in bold text are lagoonal specialists and rare species.

Taxa		Sampling stations			
		1	2	L.T.2a	L.T.2b
<b>Turbellaria</b>	planarian indet.		o		
<b>Cnidaria</b>	<i>Aurelia aurita</i>		c		
	<i>Clava multicornis</i>		o		
<b>Crustacea</b>					
Mysidacea	<i>Neomysis integer</i>		o	o	
	<i>Praunus flexuosus</i>		o	c	53 38
Isopoda	<b><i>Idotea chelipes</i></b>		o	+	6 2
	<b><i>Jaera forsmanni</i></b>		o		
	<b><i>Jaera nordmanni</i></b>		o	o	
	<b><i>Lekanesphaera hookeri</i></b>		a	a	120 38
Amphipoda			a	a	54
	<i>Corophium volutator</i>		1		
	<i>G. zaddachi</i>		28	77	25
	<i>Melita palmata</i>			2	
<b>Insecta</b>					
	<i>Gerris sp.</i>			+	
Diptera	Chironomidae indet.			+	
<b>Mollusca</b>					
Prosobranchia	Hydrobiidae			+	6
	<b><i>Littorina "tenebrosa"</i></b>		o		1
	<b><i>Rissostomia membranacea</i></b>		o		
Bivalvia	<b><i>Cerastoderma glaucum</i></b>		spat		
	<i>Mya arenaria</i>		c	+	
	<i>Mytilus edulis</i>		+	+	
<b>Bryozoa</b>	<b><i>Conopeum seurati</i></b>		+	+	
<b>Pisces</b>	<i>Anguilla anguilla</i>			F=1	
	<i>Gasterosteus aculeatus</i>		o	o	2
	<i>Pomatoschistus microps</i>		o	o	

A total of 23 faunal taxa were recorded (Table 56.2), of which 20 were identified to species. Seven of these taxa are regarded as lagoonal specialists and two species appear to be rare.

***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 forsmanni*** was recorded at Raffeen and Kilmore L. (Co. Cork), Drongawn L. (Kerry), Aibhnín, L. Fhada and L. Fhada upper pools (Connemara). The only previous record for this, probably under-recorded species was for L. Hyne, Co. Cork in De Grave and Holmes (1998).

***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. This species may occur in freshwater, as in L. Errol, Cape Clear, Co. Cork. 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).

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

***Littorina "tenebrosa"*** Gastropod mollusc recorded on the North Slob and in a brackish pool close to L. Murree, Co. Clare and at seven lagoons in Co. Galway. These

are the only known sites in Ireland. The status of this taxon is still uncertain but specimens appear to be morphologically and ecologically distinct from *L. saxatilis*.

***Rissoa membranacea* var.** Gastropod mollusc recorded at eleven of the 87 lagoons surveyed on the west coast from Co. Cork to Co. Galway and also at Castle Espie, Co. Down. These records refer to a ‘lagoonal’ variety of the species, proposed as a lagoonal specialist for Ireland by Oliver and Healy (1998).

***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.

The halocline was marked by a “dwarf” *Aurelia aurita* (1-2cm), which seemed to keep position along the discontinuity.

The fauna is not rich but includes a large proportion of lagoonal specialists (7 species). Based on aquatic fauna, the site is regarded as of **moderate conservation value**.

### Ecotonal coleoptera

Two species of carabid and nine species of staphylinid beetles were recorded at Loch Fhada in 1998 (Good 1999, Good & Butler 2000), one of which (*Stenus lustrator*) is regarded as an indicator species, but based on ecotonal coleoptera, the site is regarded as of **low conservation value**.

### Summary

A total of 18 floral and 23 faunal taxa were recorded in Loch Fhada, of which 12 were lagoonal specialists (7 faunal, 4 floral). Most notable about this lagoon is the presence of both species of *Ruppia*, the abundance of the rare charophyte, *Lamprothamnium papulosum* and the dense mats of *Chaetomorpha linum* and the two rare *Cladophora* species. The fauna is comprised of a high proportion of lagoonal specialists and at least two apparently rare species (*J. forsmani*, *L. “tenebrosa”*).

**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 as part of the Loch Fhada complex 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).

### References:

- Bamber, R.N. 1997. Assessment of saline lagoons within Special Areas of Conservation. *English Nature Research Reports* No. 235.
- Bamber, R.N, Gilliland, P.M. & Shardlow, M.E.A. 2001. *Saline lagoons: a guide to their management and creation* (interim version). ISBN 1 85716573 X. Peterborough, English Nature.
- Barnes, R.S.K. 1994. *The brackish-water fauna of northwestern Europe: a guide to brackish-water habitats, ecology and macrofauna for field workers, naturalists and students*. Cambridge University Press. 287 pp.
- Barnes, R.S.K. 1989. Coastal lagoons of Britain: An overview and conservation appraisal. *Biological Conservation* 49: 295–313.

- De Grave, S. & Holmes, J.M.C. 1998. The distribution of marine Isopoda (Crustacea) in Lough Hyne. *Biology and Environment: Proceedings of the Royal Irish Academy*. **98B**: 23-30.
- Good, J.A. 1999. A survey of *Irish coastal lagoons*. Vol V. *Ecotonal Coleoptera (Staphylinidae and Carabidae)*. Dúchas, Dublin.
- Good, J.A. & Butler, F.T. 2000. Coastal lagoon and saline lake shores as a habitat for Staphylinidae, Carabidae and Pselaphidae (Coleoptera) in Ireland. Part 2. *Bulletin of the Irish Biogeographical Society*. **24**: 111-41
- Hatch, P. & Healy, B. 1998. Aquatic vegetation of Irish coastal lagoons. *Bulletin of the Irish Biogeographical Society*. **21**: 2-21.
- Hayward, P. J. & Ryland, J.S. (eds.) 1995. *Handbook of the Marine Fauna of North-West Europe*. Oxford University Press. PB. 899 pp.
- Healy, B. 1999a. *Survey of Irish coastal lagoons. 1996 and 1998. Vol. 1 Part 1. Background, description and summary of the surveys*. Dúchas, Dublin.
- Healy, B. 1999b. *Survey of Irish coastal lagoons. 1996 and 1998. Vol. 1 Part 2. Lagoons surveyed in 1998*. Dúchas, Dublin.
- Healy, B. 2003. Coastal Lagoons. In: *Wetlands of Ireland*. R. Otte (ed). Chapter 4. University College Dublin Press. Dublin. 44-78.
- Healy, B., Oliver, G.A., Hatch, P. & Good, J.A. 1997. *Coastal lagoons in the Republic of Ireland. Vol. 3. Inventory of lagoons and saline lakes*. Report to the National Parks and Wildlife Service, Dublin.
- Oliver, G.A. 1999. *A survey of Irish coastal lagoons. Vol. IV: Aquatic Fauna*. Unpublished report for Dúchas, The Heritage Service. Dublin.
- Oliver, G.A. 2005. *Seasonal changes and Biological Classification of Irish Coastal Lagoons*. PhD Thesis. U.C.D., Dublin. Available on [www.irishlagoons.com](http://www.irishlagoons.com)
- Oliver, G.A. 2007. *Conservation status report: Coastal Lagoons (1150)*. Unpublished report to the National Parks and Wildlife Service, Dublin.
- Oliver, G.A. and Healy, B. 1998 Records of aquatic fauna from coastal lagoons in Ireland. *Bulletin of the Irish Biogeographical Society*. **21**: 66-115.
- Roden, C. 1999. *Irish coastal lagoon survey, 1998. Vol. III, Flora*. Dúchas, Dublin.
- Stewart, N.F. & Church, J.M. 1992. *Red Data Books of Britain and Ireland. Charophytes*. Joint Nature Conservation Committee and Office of Public Works, Dublin.
- Wyse Jackson, P.N. 1991. Distribution of Irish marine Bryozoa, together with biographical notes relating to the chief researchers in the group. *Bulletin of the Irish Biogeographical Society*. **14**: 129-18.