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Moorlagh, County Donegal O.S. B 790 187

O.S. Discovery Sheet 1



Conservation Designation: Gweedore Bay and Islands SAC 001141, pNHA 001141

General description:

Moorlagh is a moderate sized (9.5ha), shallow (<1m) **rock/peat lagoon**, with an artificial barrier formed by a causeway and road bridge, with 3 culverted channels each with a wooden sluice, 0.5 km south of Annagary, Co. Donegal. Seawater enters from the north on most tides but large streams enter from the south. Salinity probably varies considerably and in August 1998 measured 7.3 - 9.7psu on the surface of the main body of the lagoon, and up to 30.1psu at 0.75m depth but 0.5 - 2psu at the southern end of the lagoon.

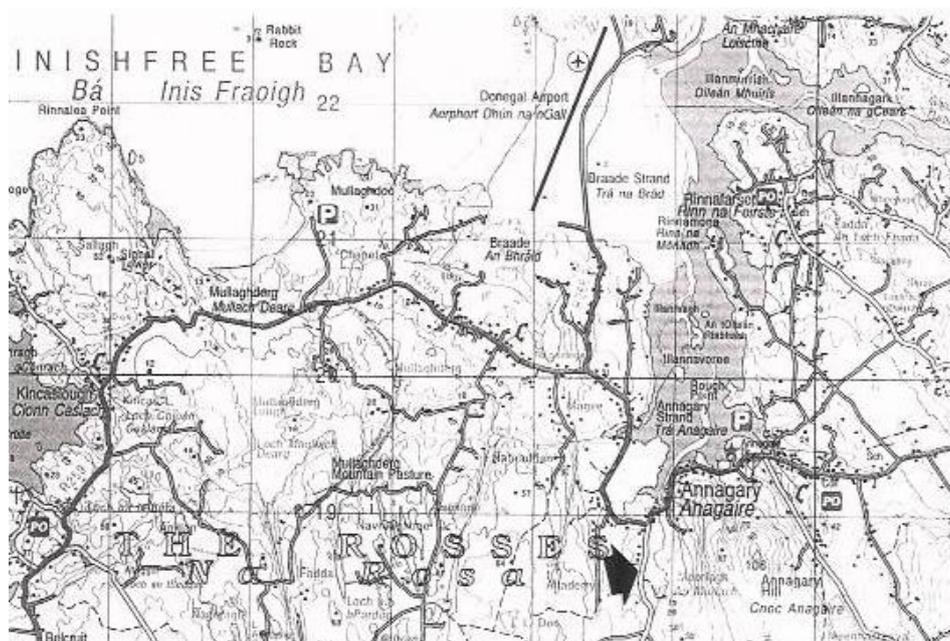


Figure 83.1 Location map of Moorlagh.

Moorlagh 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 Moorlagh was surveyed in 1998 by C. Roden (Roden 1999). The following is based on the report by Roden, following his survey on 26/7/98 and 10/9/98.

The benthic flora is a very uniform mixture of *Ruppia* sp. which could not be identified to species as no fruiting plants were found, and drift *Cladophora*, identified tentatively as *C. vagabunda*. Rocks were covered with some macroalgae, mainly *Fucus ceranoides* and *Enteromorpha*. Marginal vegetation included *Juncus maritimus*, *Festuca rubra* and the *Juncus gerardii* association.

Moorlagh appears to have no distinctive floristic or vegetational features of note, other than the extensive beds of *Ruppia* sp. and based on aquatic flora is rated as of **low conservation value**.

Fauna

Five stations were selected for faunal sampling in Moorlagh on 9-11/9/98 (Oliver 1999, Figure 83.2, Table 83.1).

A total of 29 faunal taxa were recorded in 1998 (Table 83.2). Three of these species are listed as lagoonal specialists in Britain and one other is a proposed lagoonal specialist in Ireland. Two other species were recorded when visited briefly in 1996, including one (*Jaera ischiosetosa*), which is an apparently rare species in Ireland.

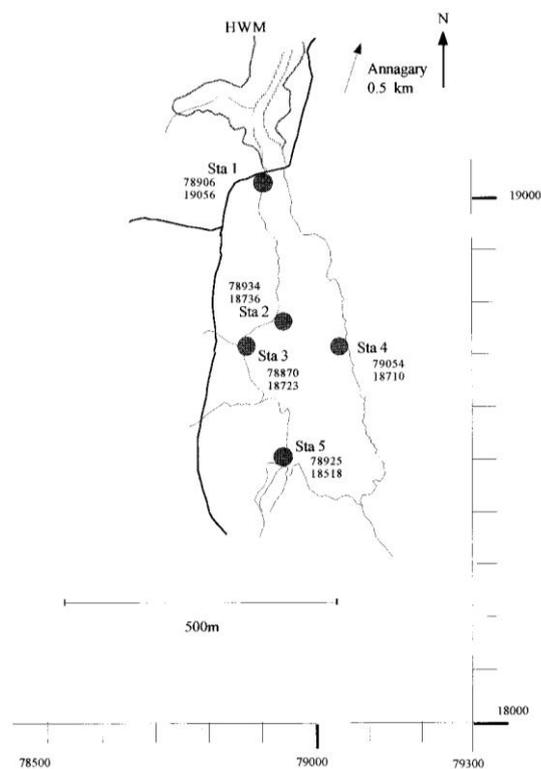


Figure 83.2 Sampling stations used at Moorlagh.

Table 83.1 Positions of faunal sampling stations in Moorlagh, 9-11/9/98 with salinity, depth of water and type of substratum. (salinity varies with tidal conditions and depth)

	Sta 1	Sta 2	Sta 3	Sta 4	Sta 5
GPS position	B 78906 19056	B 78934 18736	B 78870 18723	B 79054 18710	B 78925 18518
Salinity(psu)	9-17	7.3-8.5	9.7-18.5	6.8-7.8	0.5-29
Depth(cm)	0-50	0-75	0-75	0-30	0-100
Substratum	Rocks, gravel, peaty sand and silt	Rocks, gravel, sandy silt	Rocks, peaty silt, clay, "scraw".	Gravel, peaty silt	Peaty silt

Table 83.2 Aquatic fauna recorded at stations in Moorlagh, Co. Donegal 9-11/9/98. L.T. = light trap; F = Fyke net; + = present, o = occasional, c = common, a = abundant. () = previous record from 1996. Species in bold text are lagoonal specialists or apparently rare species.

Taxa		Sampling Stations									
		1	L.T. 1	2	L.T. 2	3	mid	4	L.T. 4	5	L.T.5
Nemertea	<i>Tetrastemma melanocephalum</i>		+								
Crustacea											
	Isopoda <i>Jaera ischiosetosa</i>	(+)									
	<i>J. nordmanni</i>	c		2							
	<i>Lekanesphaera hookeri</i>	a	120	+	60	+		+	12	+	5
	Mysidacea <i>Neomysis integer</i>	c	5	+	5	+	+	+	15		5
	<i>Praunus flexuosus</i>	c									
	Amphipoda	+				+				+	5
	<i>Gammarus zaddachi</i>	20		1		6	2	3		2	5
	<i>Melita palmata</i>			2			1				1
	Decapoda <i>Carcinus maenas</i>	+								F=1	
	<i>Crangon crangon</i>	c	20	+							
	<i>Palaemonetes varians</i>	c		+	2	+	+	+		+	
Insecta											
	Odonata Aeshnidae indet.			+							
	<i>Ischnura elegans</i>					o				o	
	Heteroptera <i>Gerris lacustris</i>									c	
	<i>Hydrometra stagnorum</i>							o			
	Coleoptera										
	<i>Gyrinus substriatus</i>										1
	<i>Haliplus fulvus</i>										2
	<i>H. lineolatus</i>										5
	<i>H. rufficollis</i>										2
	<i>Helophorus flavipes</i>					1					
	Diptera Chironomidae indet.	+									+
Mollusca											
	Prosobranchia Hydrobidae indet.	+		+	+	+	+	+		+	a
	<i>Hydrobia ulvae</i>	+			2						
	<i>H. ventrosa</i>						+				
	<i>Potamopyrgus antipodarum</i>			c				c		c	
	<i>Skeneopsis planorbis</i>	+			+						
	Bivalvia <i>Mya arenaria</i>	o									
Pisces											
	<i>Anguilla anguilla</i>	+	1	F=2						F=5	
	<i>Gasterosteus aculeatus</i>	(+)									
	<i>Pleuronectes flesus</i>									F=7	
	<i>Pomatoschistus microps</i>	+		+							
	<i>Salmo trutta</i>			F=2						F=1	

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%).

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.

Hydrobia ventrosa. Gastropod mollusc commonly found in brackish lagoons and ditches and generally not on the open coast. Recorded at 18 of the 87 (20.7%) lagoons surveyed up to 2006.

Jaera ischioetosa 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 aquatic fauna is generally poor and dominated largely by euryhaline and marine/polyhaline species most of which are highly mobile and able to enter and leave fresh or seawater freely. The Coleopteran species may easily have been washed into the lagoon as a result of high rainfall and freshwater discharge from the streams.

Four species are lagoonal specialists, but only one species (*J. ischioetosa*) is considered to be rare and none are particularly abundant. The lagoon is very shallow and undoubtedly undergoes extreme variations in salinity and could be described as what Hartog (1974) refers to as a “shock system”, which could explain the paucity of resident species. Based on aquatic fauna, the site is rated as of **moderate conservation value**.

Ecotonal coleoptera

Eight species of carabid and eighteen species of staphylinid were recorded at Moorlagh in 1998 (Good 1999, Good & Butler 1999), none of which are indicator species. Based on shoreline coleoptera, the site is rated as of **no conservation value**.

Summary

Moorlagh is moderate sized **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, but relatively rare in European terms. This lagoon is not a particularly good example of a rock/peat lagoon, as it undergoes extreme variations in salinity and is what Hartog (1974) refers to as a “shock system”, which could explain the paucity of resident species. The lagoon appears to have no distinctive floristic or vegetational features of note, other than the extensive beds of *Ruppia* sp. and based on aquatic flora is rated as of low conservation value. The aquatic fauna is generally poor, but four species are lagoonal specialists, and one species (*J. ischioetosa*) appears to be rare in Ireland. Overall conservation value is rated as moderate.

Overall Conservation Value = Moderate

Conservation Status Assessment (from Oliver 2007)	
Impacts	"Shock lagoon" but no significant impacts. Leisure fishing.
Conservation Status	Favourable

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).

References:

- Bamber, R.N. 1997. Assessment of saline lagoons within Special Areas of Conservation. *English Nature Research Reports* No. 235.
- Barnes, R.S.K. 1989. Coastal lagoons of Britain: an overview and conservation appraisal. *Biological Conservation* **49**: 295–313.
- 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.
- 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
- Goss Custard, S., J. Jones, J.A. Kitching & Norton, T. A. 1979. Tidepools of Carrigathorna and Barloge Creek. *Philosophical Transactions of the Royal Society of London*. Series B, **287**: 1-44.
- Hartog, C. den 1974. Brackish-water classification, its development and problems. *Hydrological Bulletin*, **8**: 15-28.
- 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
- 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.