

4.76

Cartoon Lough, Killala Bay, County Mayo O.S. G 197 319
O.S. Discovery Sheet 24



Conservation Designation: NONE

General description:

Situated on the Cloonamore River estuary, 1.5km north of Killala, Co. Mayo. A small (1.5ha) **artificial “saltmarsh” lagoon** formed behind a coastal embankment with a sluiced inlet. Seawater appears to enter on most, if not all tides. As an “estuarine” lagoon salinity probably varies considerably and ranged from almost fresh (1.4 psu) at the inner most part, up to 32.6 psu near the tidal inlet at the time of sampling (9-10/8/05, 7-8/11/05).

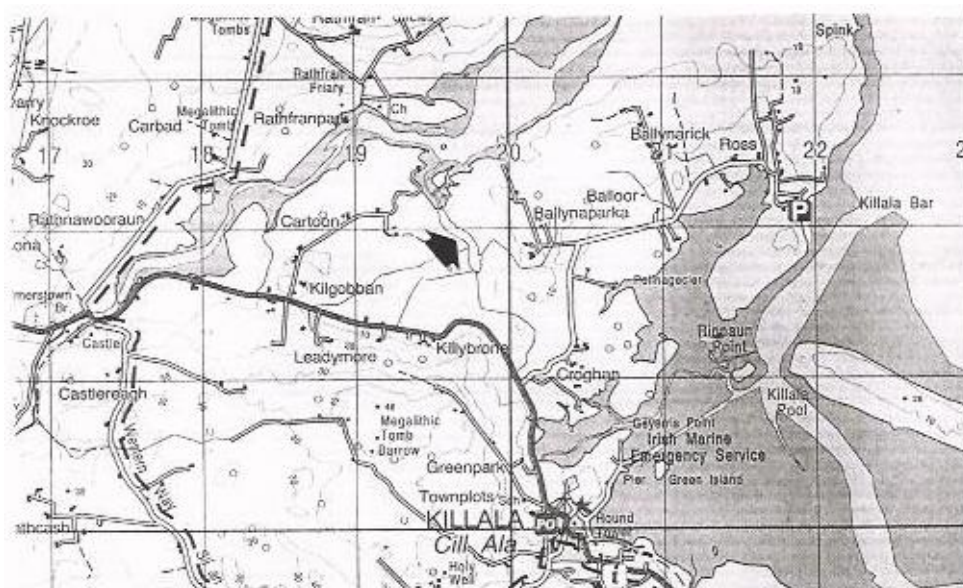


Figure 76.1 Location map of Cartoon L., Killala Bay.

Cartoon Lough was surveyed on 9-10/8/05 and 7-8/11/05 for aquatic fauna and flora. Three stations were selected for sampling at this time (Figure 76.2, Table 76.1)

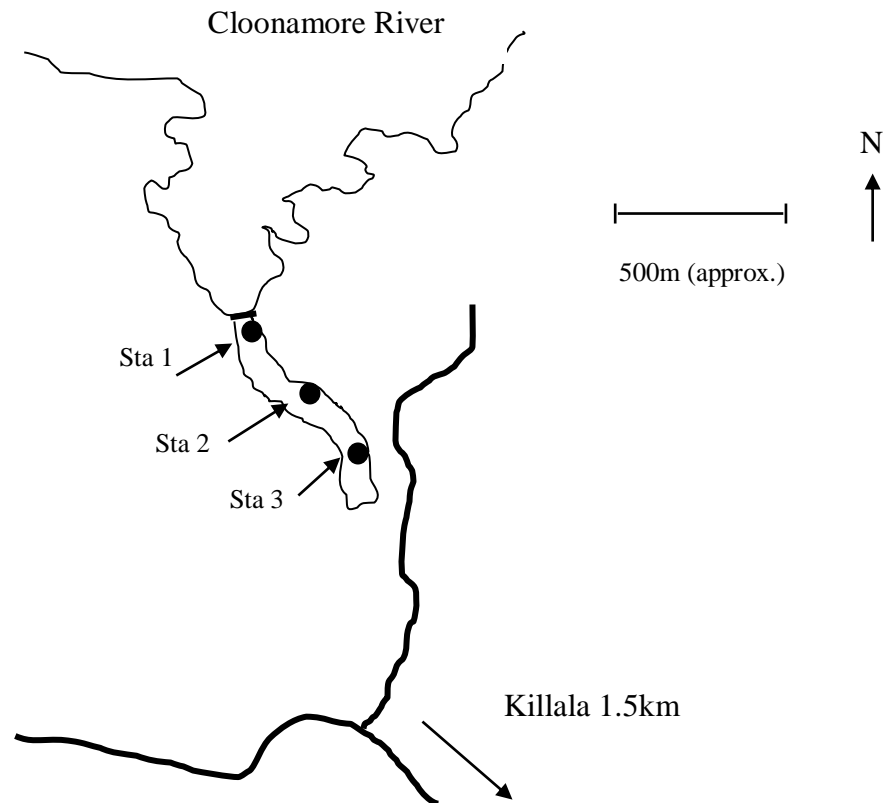


Figure 76.2 Sampling stations used at Cartoon Lough 9-10/8/05, 7-8/11/05.

Flora

Cartoon Lough is an “estuarine” lagoon and most of the bed of the lagoon consists of soft bare mud. Only 8 floral taxa were recorded during the sampling period (Table 76.1), one of which, *Ruppia cirrhosa*, is a lagoonal specialist. Another lagoonal specialist alga, *Chaetomorpha linum* was reported on a previous occasion but was not found during this sampling period. There are also records of *Cladophora vagabunda*, *Ulothrix flacca* and *Spartina* sp., presumably made as casual observations on earlier visits.

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. *R. maritima* appears to be the more common of the species and was found at 41 of the lagoons surveyed (47%). *R. 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. *R. cirrhosa* was only identified at 23 lagoons (26%), but species was not determined at 12 sites.

Table 76.1 Positions of sampling stations in Cartoon Lough, with salinity, temperature depth of water and type of substratum and percentage cover of vegetation and bare ground. Species in bold text are lagoonal specialists.

	Sta 1	Sta 2	Sta 3
GPS position	G 19555 32138	G 19757 31951	G 19798 31764
Salinity(psu)	32.6	24.5	1.4
Temperature	17.7	17.6	16.5
Depth(cm)	0-100	0-70	0-30
Substratum	Soft mud, occasional rocks, gravel	Soft mud, gravel	Firm sandy mud
Percentage cover:			
Chlorophyta			
	<i>Cladophora</i> sp.	5	
	<i>Enteromorpha</i> sp.	15	5
	<i>Ulva</i> sp.	5	
Phaeophyta	<i>Ascophyllum nodosum</i>	2	
Rhodophyta	<i>Gracilaria gracilis</i>	5	5
Xanthophyta	<i>Vaucheria</i> sp.	+	
Angiosperms	<i>Juncus maritimus</i>	5	5
Angiosperms	<i>Ruppia cirrhosa</i>	5	30
	<i>Schoenoplectus lacustris</i>	5	10
Bare ground	Mud	65	70
	stones	10	10

Most of the bed of the lagoon consists of bare, soft mud and the algal species are generally confined to hard substrates mostly near the inlet. *Ruppia cirrhosa* is generally believed to be the rarer of the two *Ruppia* species, but even so, based on aquatic vegetation, the site is regarded as of **low conservation value** as a coastal lagoon.

Fauna

A total of 27 faunal taxa were recorded at Cartoon Lough (Table 76.2), most of which are common estuarine species. Three species are lagoonal specialists, but all are common in lagoonal habitats in Ireland. Empty shells of another lagoonal specialist, *Cerastoderma edule*, were also found and it is possible that live specimens may be found on other occasions.

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.

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.

Three of the species recorded are lagoonal specialists, but all are common in lagoonal habitats in Ireland. Based on aquatic fauna, the site is regarded as of **low conservation value** as a coastal lagoon.

Table 76.2 Faunal taxa recorded at stations in Cartoon Lough 9-10/8/05, 7-8/11/05
 L.T. = Light trap, r = rare, o = occasional, c = common, a = abundant . Species in bold
 text are lagoonal specialists.

		Sta 1	L.T.1	Sta 2	L.T. 2	Sta 3
Annelida						
Polychaeta	<i>Nereis diversicolor</i>	c				
	Spionidae indet.					r
Oligochaeta	Tubificidae indet.	o				
Crustacea						
Ostracoda	Ostracoda indet.			o		o
Cirripedia	<i>Balanus improvisus</i>	shells				
Mysidacea	<i>Neomysis integer</i>		1		1	
	<i>Praunus flexuosus</i>		3			
Isopoda	Gnathidae indet.		1			
	<i>Jaera</i> sp.	o		o		
	<i>Lekanesphaera hookeri</i>	c	2	o	15	c
Amphipoda	<i>Corophium volutator</i>	r		c		c
	<i>Gammarus zaddachi</i>	o		o	3	o
	<i>Melita palmata</i>	o				
Decapoda	<i>Carcinus maenas</i>	o				
	<i>Crangon crangon</i>	o	2	o	1	o
	<i>Palaemon elegans</i>	a	3			
	<i>Palaemonetes varians</i>	o	27	o	10	o
Acarina	Hydracarina indet.		2			
Insecta						
Trichoptera	Trichoptera indet.			o		o
Diptera	Chironomidae indet.	c		c		c
	<i>Ephydra riparia</i>					o
Mollusca						
Gastropoda	<i>Hydrobia ulvae</i>	c		o		o
	<i>Littorina littorea</i>	c				
	<i>Potamopyrgus antipodarum</i>				1	
	<i>Cerastoderma glaucum</i>	shells				
Bivalvia	<i>Mytilus edulis</i>	c				
Bryozoa	<i>Conopeum seurati</i>	c				
Pisces	<i>Pleuronectes flesus</i>	c		c		c
	<i>Gasterosteus aculeatus</i>			o	7	o
	<i>Pomatoschistus microps</i>	o			2	

Summary

Cartoon Lough is a small (1.5ha), artificial "saltmarsh", lagoon with a relatively low number of taxa (9 floral, 27 faunal) most of which are typically estuarine species. A total of five species are lagoonal specialists (1 floral, 4 faunal) but all are relatively common in lagoonal habitats in Ireland. The lagoon is a typical example of a small estuarine lagoon, with no species of any great conservation value. Overall conservation value is rated as low.

Overall Conservation Value = Low

Conservation Status Assessment (from Oliver 2007)

Impacts	Moderate eutrophication from surrounding farmland. Poaching by cattle in places.
Conservation Status	Unfavourable-Inadequate

Further Information

Listed as a lagoon by Healy *et al.* (1997), Healy (2003) and Oliver (2005), but not surveyed until 2005. Included in the Conservation Status Assessment (Oliver 2007). Otherwise, no further information available.

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.
- Hatch, P. & Healy, B. 1998. Aquatic vegetation of Irish coastal lagoons. *Bulletin of the Irish Biogeographical Society*. **21**: 2-21.
- 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. 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.
- 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.