

4.85

Carrick Beg Lough, County Donegal O.S. C 157 366
O.S. Discovery Sheet 2



Conservation Designation:

NONE

General description:

Carrick Beg Lough is a small (2ha), **artificial lagoon** formed behind a coastal embankment, on the western shore of Mulroy Bay, 12km north of Milford, County Donegal. Tidal water enters the lagoon from the north and salinity probably varies considerably, ranging at the time of sampling (19-20/7/03) from 25-29psu.

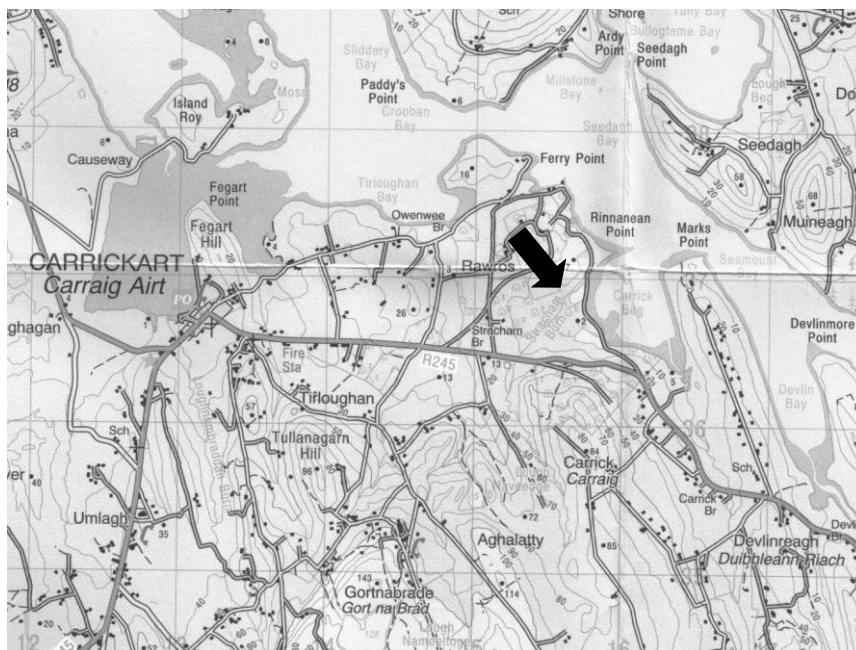


Figure 85.1 Location map of Carrick Beg Lough, Co Donegal.

Carrick Beg Lough was surveyed in 2003 as part of a PhD study and used in a biological classification of Irish coastal lagoons (Oliver 2005). Four stations were selected for the sampling of aquatic fauna and flora (Figure 85.2, Table 85.1)

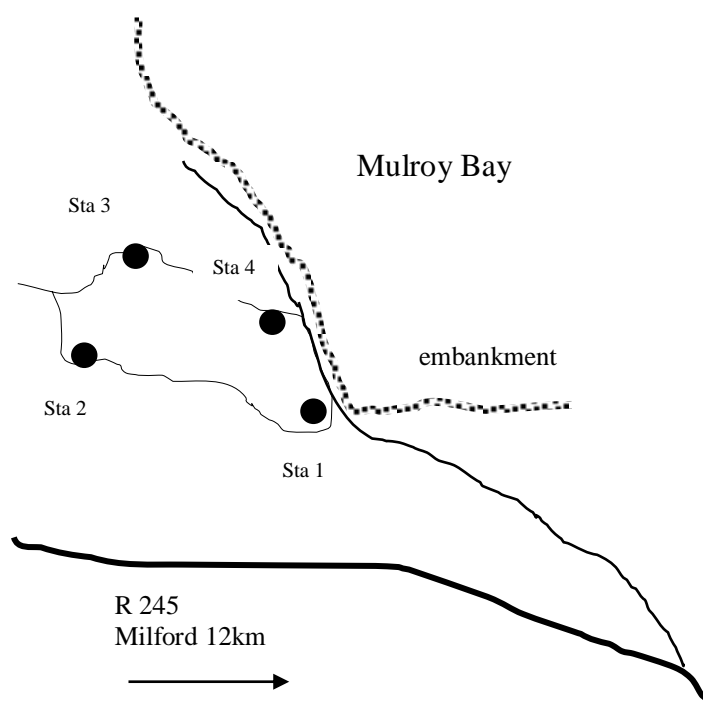


Figure 85.2 Sampling stations used at Carrick Beg Lough on 19-20/7/03.

Flora

Only four floral taxa were recorded in Carrick Beg Lough (Table 85.1), two of which are lagoonal specialists.

Table 85.1 Percentage cover of vegetation, bare ground and rotting vegetation in Carrick Beg Lough 19-20/7/03, with salinity, temperature and depth of water and type of substratum. Species in bold text are lagoonal specialists.

Taxa	Sampling Stations			
	Sta 1	Sta 2	Sta 3	Sta 4
Salinity (psu)	27.4	26.2-31.6	25.1-29.3	25.2-32.1
Temperature	22.1	22.2-25.5	22.2-24.6	22.2-25.1
Depth (cm)	0-60	0-60	0-50	0-100
Substratum	Soft, organic mud, occ. stones	Soft, organic mud, occ. stones	Soft, organic mud	Soft mud with pebbles and stones
Percentage cover:				
Algae				
Chlorophyta <i>Chaetomorpha linum</i>	50	40	15	30
<i>Cladophora</i> sp.	50	40	10	35
Angiosperms				
<i>Ruppia maritima</i>	2	5	20	5
<i>Schoenoplectus lacustris</i>			30	
Bare ground				
Mud and stones	5	20	25	30
rotting vegetation	10	10	5	

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. *Ruppia maritima* appears to be the more common of the species and was found at 41 of the lagoons surveyed (47%).

The aquatic flora of Carrick Beg Lough is poor with only four taxa recorded. Two of these are lagoonal specialists but both of these are common in lagoonal habitats in Ireland. Based on aquatic flora, the site is regarded as of **low conservation value**.

Fauna

The aquatic fauna of Carrick Beg is poor with a total of only 19 taxa recorded (Table 85.2). Two of these are lagoonal specialists but both are common in lagoonal habitats in Ireland.

Table 85.2 Faunal taxa recorded at stations in Carrick Beg Lough 19-20/7/03 (SW = mean of 3x 30 second sweeps, Sed = mean of 3 x 0.005m² diameter sediment cores, L.T. = Light trap, Ab = overall abundance of all sampling methods, including visual searches) r = rare, o = occasional, c = common, a = abundant. Species in bold text are lagoonal specialists.

	Sta 1				Sta 2				Sta 3				Sta 4			
	SW	Sed	L.T.	Ab	SW	Sed	L.T.	Ab	SW	Sed	L.T.	Ab	SW	Sed	L.T.	Ab
Annelida																
Polychaeta <i>Nereis diversicolor</i>		0.3		r												
Crustacea																
Ostracoda Indet.								o	1.3			o				
Mysidacea <i>Neomysis integer</i>	1.7			o	51.7		7.0	c	47.0		3.0	c	1.7		2.0	o
<i>Praunus flexuosus</i>	0.3			r									1.0			o
Isopoda <i>Jaera</i> sp.								o								
Amphipoda indet.	1.0			o	0.3			o							1.0	r
<i>Gammarus duebeni</i>					0.3			o	0.3						1.0	r
<i>Melita palmata</i>	0.3			o												
Decapoda <i>Carcinus maenas</i>				o												
<i>Palaemonetes varians</i>	1.3		16.0	c	2.3		19.0	o	5.7		32.0	o	0.3		1.0	r
Insecta																
Heteroptera Corixidae indet.								o								
<i>Gerris</i> sp.								o				r				
<i>Sigara stagnalis</i>								o	1.7		3.0	o				
<i>Velia caprai</i>											1.0	r				
Coleoptera indet.				o												
<i>Gyrinus substriatus</i>				o												
<i>Helophorus aequalis</i>				o												
Diptera Chironomidae	4.0	4.3		o	4.0	7.3		c	11.3	4.3	2.0	a	19.3			c
<i>Ephydrida riparia</i>									0.7			o				
Mollusca																
Gastropoda <i>Potamopyrgus antipodarum</i>	2.3		3.0	c	32.7		16.0	c	14.7		2.0	c	23.7			c
Pisces																
<i>Anguilla anguilla</i>				a				a								
<i>Gasterosteus aculeatus</i>	2.0		8.0	o	1.0			o	0.7			o	0.3		3.0	o

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.

None of the other faunal species appear to be of particularly high conservation interest. Based on aquatic flora, the site is regarded as of **low conservation value**.

Summary

Carrick Beg Lough is a small **artificial lagoon** with a relatively low number of both floral and faunal taxa recorded (4 and 19 respectively). Two of the plants (*Chaetomorpha linum*, *Ruppia maritima*) and two of the animals (*Palaemonetes varians*, *Sigara stagnalis*) are lagoonal specialists, but all of these are common in lagoonal habitats in Ireland and no particularly rare species recorded. Overall conservation value is rated as low.

Overall Conservation Value = Low

Conservation Status Assessment (from Oliver 2007)

Impacts	Poaching by cattle. Eutrophication from surrounding farmland in small lagoon.
Conservation Status	Unfavourable-Inadequate

Further Information

Listed as a lagoon by Healy *et al.* 1997, and Healy 2003. Surveyed in 2002/2003 as part of a PhD study and used in a biological classification of Irish coastal lagoons (Oliver 2005) and in the Conservation Status Assessment (Oliver 2007).

References:

- Barnes, R.S.K. 1989a. Coastal lagoons of Britain: an overview and conservation appraisal. *Biological Conservation* **49**: 295–313.
- Bamber, R.N. 1997. Assessment of saline lagoons within Special Areas of Conservation. *English Nature Research Reports* No. 235.
- 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.