

4.12

**Raffeen Lake, Shanbally, County Cork O.S. W 758 647**  
O.S. Discovery Sheet 87



**Conservation Designation:** Monkstown Creek pNHA 001979

**General description:**

Situated 4km east of Carrigaline and 2km west of Ringaskiddy in Cork Harbour. A small (4ha) **artificial lagoon** formed behind a coastal embankment. This lagoon is part of a landscaped golfcourse and has a relatively large permanent tidal inlet. Salinity is generally high, and measured 28 to 32psu. at the time of sampling (26-27/7/06).

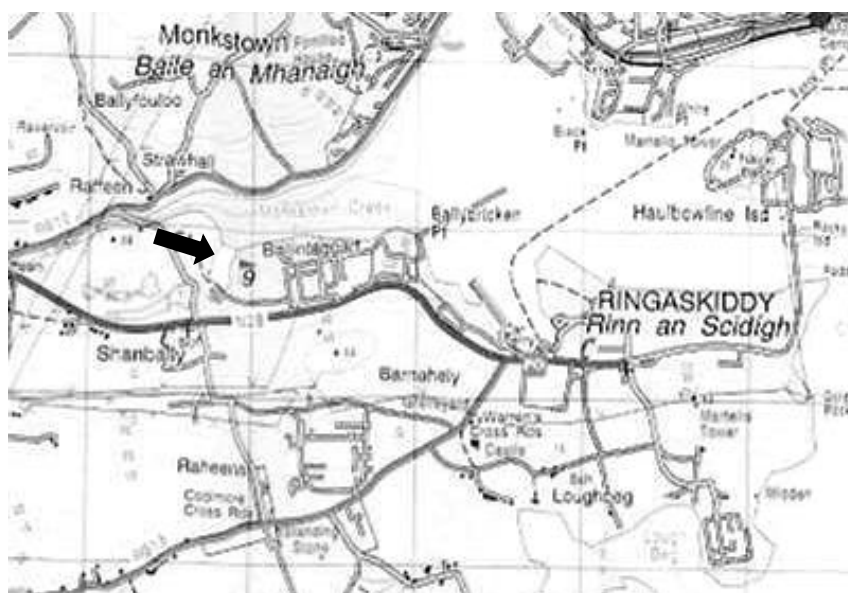


Figure 12.1 Location map of Raffeen Lake.

Raffeen lake was surveyed on 26-27/7/06 for aquatic fauna and flora. Four stations were selected for sampling at this time (Figure 12.2, Table 12.1)

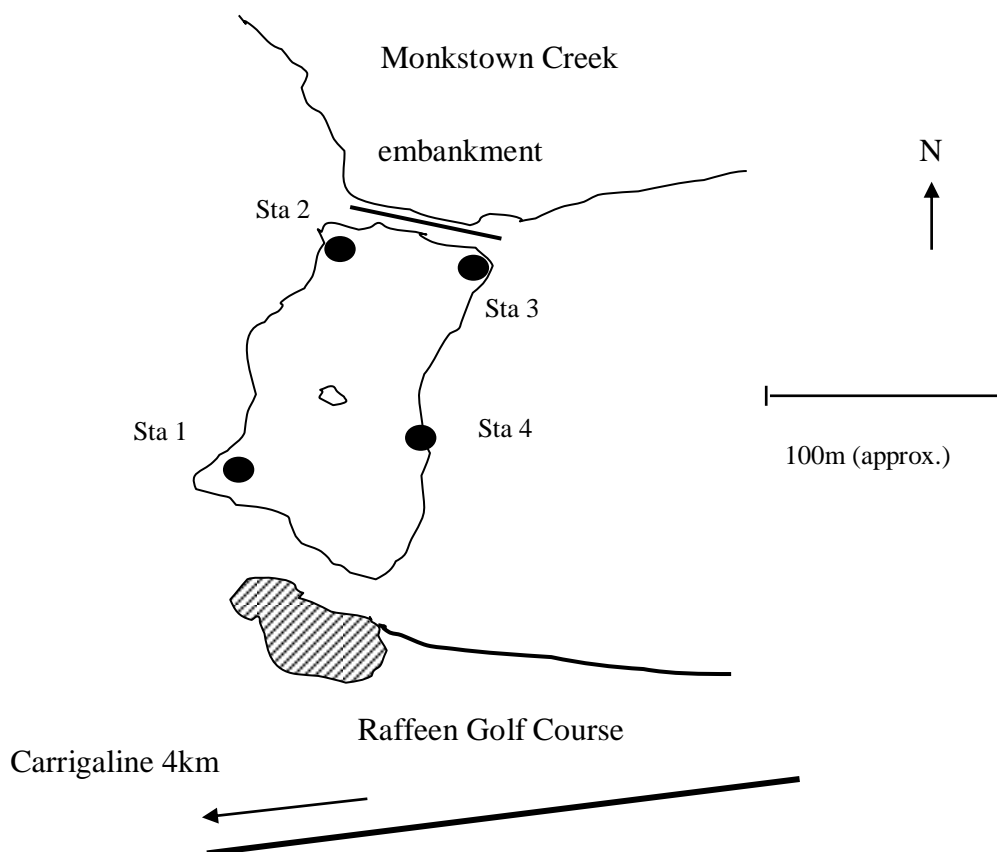


Figure 12.2 Sketch map showing stations used at Raffeen Lake 26-27/7/06.

### Flora

Raffeen lake is an “estuarine” lagoon, and much of the bed of the lagoon is bare soft mud, except for the rocky shoreline of the embankment and tidal inlet. Station 4 was not sampled accurately due to potential disturbance of a tern colony. Only 8 floral taxa were recorded in the lagoon, of which 5 were identified to species (Table 12.1). Most of these taxa are common shoreline algae, but one is lagoonal specialist.

*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.

Most of the bed of the lagoon consists of bare soft mud apart from the large rocks near the inlet and on the island in the middle of the lagoon, which was not sampled due to the presence of a tern colony. On these hard surfaces common algal species are found. In sheltered corners are dense growths of the lagoonal specialist *C. linum* but based on aquatic flora, the site is regarded as of **low conservation value** as a lagoon.

Table 12.1 Percentage cover of aquatic vegetation and bare ground with position of sampling stations with salinity, temperature, water depth and type of substratum recorded at Raffeen on 26-27/7/06.

	Sta 1	Sta 2	Sta 3	Sta 4
GPS position	W 75707 64736	W 75792 64915	W 75877 64896	W 75844 64736
Salinity (psu) surface	31	31.7	28.4	30.2
Salinity (psu) at depth	31.4	31.8	31.2	31.7
Temperature at surface	24.2	20.1	21.7	20
Temperature at depth	22.4	20.1	21.8	21.1
Depth (cm)	0-50	0-120	0-90	0-90
substratum	soft mud, shells, stones	rocks, mud	stones, gravel	mud + stones
Percentage cover				
Chlorophyceae				
<i>Chaetomorpha linum</i>	30	5	10	+
<i>Cladophora</i> sp.			10	+
<i>Enteromorpha</i> sp.	1	5	10	+
<i>Ulva</i> sp.	5	10	20	+
Phaeophyceae				
<i>Ascophyllum nodosum</i>		5	2	
<i>Fucus serratus</i>			2	
<i>Fucus vesiculosus</i>		5	1	
Rhodophyceae				
<i>Gracilaria verrucosa</i>	20	30	10	+
Bare soft mud	50	20	-	+
Stones	5	40	50	+

## Fauna

A total of 45 faunal taxa were recorded at Raffeen Lake, of which 34 were identified to species (Table 12.2). Five of these taxa are regarded as lagoonal specialists in Britain, one of which (*C. insidiosum*) has only recently been recorded in Ireland. One other (unconfirmed) species, *Leptocheirus pilosus* is a proposed specialist for Ireland. Two other species appear to be rare in Ireland.

*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).

*Corophium insidiosum* Amphipod crustacean recorded for the first time in Ireland (Oliver *et al.* 2007) at three lagoons in Co. Cork (Rostellan, Cuskinny, Rosscarbery), following Pinkster's prediction (1978) that it would be found in Ireland. This is an unconfirmed record from Raffeen. Regarded as a lagoonal specialist in England but possibly an introduced invasive species in Ireland.

Table 12.2 Aquatic fauna recorded at Raffeen on 26-27/7/06.

(SW = mean of 3x 30 second sweeps, Seds = mean of 3 x 0.005m<sup>2</sup> 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 or rare species.

		Sta 1				Sta 2				Sta 3			Sta 4		
		SW	Seds	LT	Ab	SW	Seds	LT	Ab	SW	LT	Ab	SW	LT	Ab
<b>Porifera</b>	<i>Halichondria panicea</i>				o				o			o			o
<b>Cnidaria</b>	<i>Actinia equina</i>	o			c				c			c			c
	<i>Obelia ?dichotoma</i>									o		a			
<b>Nematoda</b>	indet.	o			o									5	o
<b>Nemertea</b>	indet.		1		o										
<b>Annelida</b>															
Polychaeta	<i>Arenicola</i> agg.				c										
	<i>?Capitella capitata</i>				o	o			o						
	<b><i>Ficopomatus enigmaticus</i></b>				a				c			c	c		c
	<i>Harmothoe impar</i>								o			r			o
	<i>Neomphitrite figulus</i>			1	o										
	<i>Nereis diversicolor</i>	r	5	1	c	o			c			r			c
	<i>Pomatoceros triqueter</i>														o
	<i>Scolelepis foliosa</i>		1		r										
	<i>Streblospio shrubsolli</i>					c	1		c					7	o
Oligochaeta	Tubificidae indet.	r			r	c			c					3	o
<b>Crustacea</b>															
Copepoda	Harpacticoida indet.							50	c			50	c		
Cirripedia	<i>Balanus improvisus</i>											o			
	<i>Elminius modestus</i>				r				c			c			c
Mysidacea	<i>Neomysis integer</i>			2	o				c						
	<i>Praunus flexuosus</i>			6	o	c		100	c	o		20	c	c	c
Isopoda	<i>Jaera ?forsmani</i>	o		4	o	o		2	o			o			2
	<i>Sphaeroma rugicauda</i>				r										
Amphipoda	<b><i>Corophium insidiosum</i></b>	c	50	100	a							o			
	<i>Corophium volutator</i>					o	c	5	c				c	5	c
	Gammarids (? <i>chevreuxi</i> )	c		10	c	o		2	c	o		3	a	r	5
	<b><i>?Leptocheirus pilosus</i></b>														o
	<i>Melita palmata</i>	o			o			1	o				c	c	50
	<i>Microdeutopus gryllotalpa</i>	a	100	200	a	c	o	100	c	o		10	c	c	100
Decapoda	<i>Carcinus maenas</i>	r			c				c	o			c	o	o
	<i>Crangon crangon</i>												r		
	<i>Palaemon elegans</i>							2	o	o		4	o		
	<i>Palaemon serratus</i>									o		2	o		
	<b><i>Palaemonetes varians</i></b>				o								o	a	24
<b>Insecta</b>															
Diptera	Chironomidae	o	2		o	r	r		o						
<b>Mollusca</b>															
Gastropoda	<i>Hydrobia ulvae</i>	o			o	c			o	c		o		2	o
	<i>Littorina saxatilis</i>				c							c			
Bivalvia	<b><i>Cerastoderma glaucum</i></b>	o			o				o						
	<i>Mytilus edulis</i>				o				c			c			c
<b>Bryozoa</b>	<i>Acyonidium gelatinosum</i>											o			
	<i>Bowerbankia gracilis</i>											o			
	<b><i>Conopeum seurati</i></b>	o			c				c			c			c
<b>Tunicata</b>	<i>Asciidiella aspersa</i>				o				c			c			o
	<i>Asciidiella scabra</i>											c			
<b>Pisces</b>	<i>Pomatoschistus microps</i>	c		2	a			1	c	c		2	c	o	c
	Mugilidae indet.				c				c			c			

***Gammarus chevreuxi*** (UNCONFIRMED) Amphipod crustacean confirmed only recently as an Irish species by the record of a small population in the Douglas Estuary (De Grave and Myers 1997). The record from Durnesh L., Co Donegal (Oliver and Healy 1998) is erroneous. Previously recorded from “N. Ireland, rarely” by Spooner in the Plymouth Marine Fauna (1957) and subsequently from Ireland by Pinkster (1978), but confirmation of these records was described as desirable by Costello *et al.* (1989). Recorded at Rostellan L. and Commoge Marsh, Co. Cork and recently (unconfirmed) from Ballyvodock and Raffeen (Cork) and Rincarna (Galway). Known only from six sites in England and Wales (Bamber *et al.* 2001b) where it is regarded as a rare lagoonal specialist. These records from Co. Cork and possibly Galway are of high conservation interest.

***Leptocheirus pilosus*** (UNCONFIRMED) Amphipod crustacean recorded at three lagoons in Co. Cork (Rostellan, Cuskinny, and Rosscarbery) in association with *C. insidiosum* and possibly Raffeen (unconfirmed), and also at L. Athola, Co. Galway and Furnace L., Co. Mayo. The only other known Irish localities are the south side of Wexford Harbour (Costello *et al.* 1989) and on the North Slob, Co. Wexford (Galvin 1992). Proposed as a lagoonal specialist for Ireland by Oliver and Healy (1998).

***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.

***Ficopomatus enigmaticus*** is a potentially invasive species which can cause problems by blocking pipes and fouling ships. It has been found recently at several sites in Cork Harbour (L. Beg, Fota), and is believed to have arrived from Wales on the Cork-Swansea ferry.

### Summary

Raffeen is a small "estuarine", artificial lagoon with a relatively large number of faunal taxa (45) most of which are typically estuarine or rocky shore species but with a small suite of typically lagoonal species, with 1 floral and 6 faunal lagoonal specialist species, and several notable species.

**Overall Conservation Value = Moderate**

### Conservation Status Assessment (from Oliver 2007)

Impacts	Minimal eutrophication from surrounding golf course and small tern colony but significant tidal flushing
Conservation Status	Favourable.

### Further Information

Listed as a lagoon by Healy *et al.* 1997, Healy 2003 and Oliver 2005 and included 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. 1989. Coastal lagoons of Britain: an overview and conservation appraisal. *Biological Conservation* **49**: 295–313.
- Costello, M.J., Holmes, J.M.C., McGrath, D. & Myers, A.A. 1989. A review and catalogue of the Amphipoda (Crustacea) in Ireland. *Irish Fisheries Investigations. Series B (Marine)*, **33**: 3-70.
- 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.
- De Grave, S. & Myers, A.A. 1997. The occurrence of *Pontocrates arcticus* in Ireland and confirmation of *Gammarus chevreuxi* as an Irish species (Crustacea: Amphipoda). *Irish Naturalists' Journal*, **25**: 383.
- Galvin, P. 1992. *The ecology of the brackish-water lagoons of Wexford and east Cork*. MSc thesis, University College, Dublin.
- 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](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.
- Oliver, G.A., McGrath, D. & the late B. Healy. 2007. The amphipod *Corophium insidiosum* Crawford in Ireland. *Irish Naturalists' Journal*. **Vol. 28(8)** 324-327.
- Pinkster, S. 1978. Amphipoda. In: *Limnofauna Europea*. Illies, J. (ed), 2nd, ed., Stuttgart, Fischer. 244-253.
- Spooner, G.M. 1957. Amphipoda. In: *Plymouth Marine Fauna*. (ed. 3), Marine Biological Association of the United Kingdom, Plymouth. 207-234.
- 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.