

4.20

Rosscarbery Lake, County Cork O.S. W 290 367

O.S. Discovery Sheet 89

**Conservation Designation:**

NONE

General description:

Situated 0.5km east of the town of Rosscarbery. A moderate sized (20ha), shallow (<3m) **artificial lagoon** created by construction of a causeway carrying a road across the inner part of an estuary, ranging in salinity at the time of sampling (20-21/7/02) from 12.5-15.3 psu.

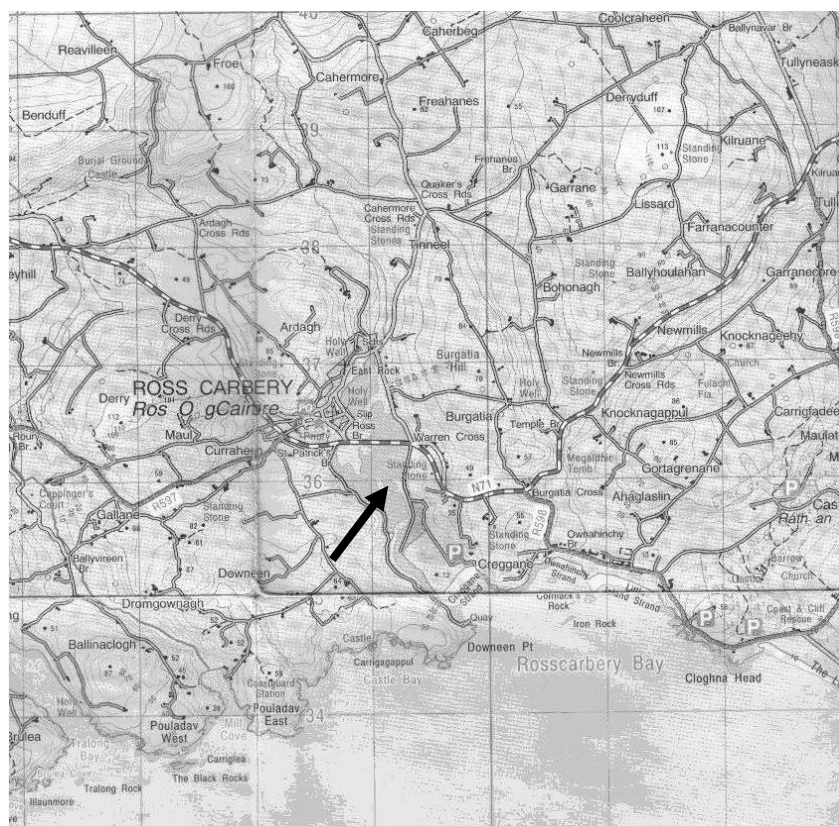


Figure 20.1 Location map of Rosscarbery Lake.

Rosscarbery Lake was surveyed in 2002 as part of a PhD study (Oliver 2005) and used in a biological classification of Irish coastal lagoons. Four stations were selected for the sampling of aquatic fauna and flora (Figure 20.2, Table 20.1)

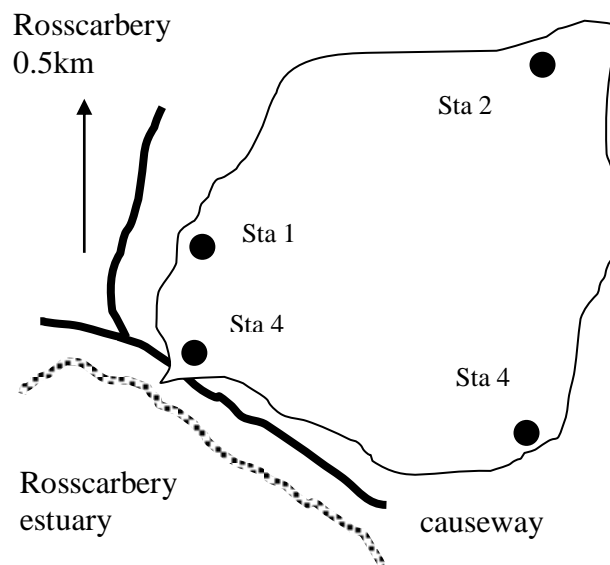


Figure 20.2 Sketch map of sampling stations used at Rosscarbery Lake 20-21/7/02

Flora

Rosscarbery Lake is an “estuarine” lagoon and most of the bed of the lagoon is bare mud. Only six floral taxa were recorded (Table 20.1), three of which were identified to species. None of these are lagoonal specialists and none are rare.

Table 20.1 Sampling date, hydrological variables (salinity, temperature and depth of water), type of substratum and percentage cover of vegetation and bare ground of sampling stations in Rosscarbery Lake.

		Sampling stations			
		Sta 1	Sta 2	Sta 3	Sta 4
Sampling dates		20-21/7/02	20-21/7/02	20-21/7/02	20-21/7/02
Salinity(psu)		12.5	13.1	14.5	15.3
Temperature		25.3	21.9	22.1	21.4
Depth(cm)		0-30	0-30	0-50	0-1m
Substratum		Soft mud, occasional stones	Gravelly mud	Gravelly mud	Rocks and stones
Chlorophyta	<i>Enteromorpha</i> sp.	1	1	30	0
	<i>Ulva</i> sp.	1	1	5	0
Rhodophyta	<i>Gracilaria verrucosa</i>	10	10	10	1
	<i>Polysiphonia</i> sp.	0	0	0	1
Phaeophyta	<i>Fucus vesiculosus</i>	0	0	0	2
Angiosperms	<i>Phragmites australis</i>	2	2	0	0
Bare ground		90	90	80	96

Fauna

A total of 26 faunal taxa were recorded at Rosscarbery Lake, of which 23 were identified to species (Table 20.2). Five of these species are regarded as lagoonal specialists and two are rare.

Table 20.2 Faunal taxa recorded at stations in Rosscarbery Lake 20-21/7/02. 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 and rare species.

	Sta 1				Sta 2				Sta 3				Sta 4		
	SW	Sed	L.T.	Ab	SW	Sed	L.T.	Ab	SW	Sed	L.T.	Ab	SW	L.T.	Ab
Annelida															
Polychaeta <i>Arenicola</i> agg															
<i>Hediste diversicolor</i>					8			c	4.7			c			o
Crustacea															
Cirripedia <i>Elminius modestus</i>															c
Mysidacea <i>Praunus flexuosus</i>													12.7	7	c
Isopoda <i>Jaera</i> sp.															o
<i>Corophium insidiosum</i>				r											r
<i>Corophium volutator</i>															
<i>G. zaddachi</i>	2.7			c	5.3			c							o
<i>Leptocheirus pilosus</i>	6.7			c	1.3			o							o
<i>Melita palmata</i>															o
Decapoda <i>Carcinus maenas</i>				o				o							c
<i>Palaemon serratus</i>															o
<i>Palaemonetes varians</i>	24.0		97	c	28.7		120	c	283.3		9	a	45.3		c
Chironomidae indet.	5.3	2.0		c	0.3			o	2.7		1	o	1.3		o
<i>Ephydra riparia</i>															
Mollusca															
<i>Cerastoderma glaucum</i>															
<i>Hydrobia ulvae</i>	0.7			c					0.7				1.3		o
<i>Potamopyrgus antipodarum</i>					2.0		2	o							
<i>Mya arenaria</i>								c							
<i>Mytilus edulis</i>															o
Bryozoa <i>Bowerbankia gracilis</i>															o
<i>Conopeum seurati</i>				a				o							c
Pisces															
<i>Gasterosteus aculeatus</i>								r							
Mugilidae				c				c							o
<i>Pomatoschistus microps</i>			1	o			3	o			1	c			
<i>Salmo trutta</i>				c				o							o

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. Recent unconfirmed record from Raffeen (Co. Cork). Regarded as a lagoonal specialist in England but possibly an introduced invasive species in Ireland.

Leptocheirus pilosus 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.

The aquatic fauna of Rosscarbery Lake is relatively poor but includes a small suite of lagoonal specialists with two crustaceans which are rare in Ireland. Based on this fauna, as a lagoon the site is regarded as of **moderate conservation value**.

Summary

Rosscarbery Lake is a moderate size "**estuarine**", **artificial lagoon** with a relatively low number of taxa (6 floral, 26 faunal) most of which are typically estuarine species but with a small suite of typically lagoonal species, with 5 faunal lagoonal specialist species, two of which are rare.

Overall Conservation Value = Moderate

Conservation Status Assessment (from Oliver 2007)

Impacts	Moderate eutrophication from surrounding farmland and effluents from town but significant tidal flushing. Urbanisation. Leisure fishing. Boating/leisure activities
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 (Oliver 2005) and used in a biological classification of Irish coastal lagoons 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.
- 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.
- Galvin, P. 1992. *The ecology of the brackish-water lagoons of Wexford and east Cork*. MSc thesis, University College, 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. 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.
- 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.
- 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.