



Conservation Designation: The Murrrough Wetlands

SAC 002249, SPA 004085, pNHA 000730

General description:

The lagoonal habitat of Kilcoole channels lie 1.5km southeast of the town of Kilcoole and comprise a number of artificial drainage channels in an area of drained saltmarsh. Total area is approximately 5ha and salinity varies from almost freshwater at the more inland sites to almost full seawater near the Breeches.

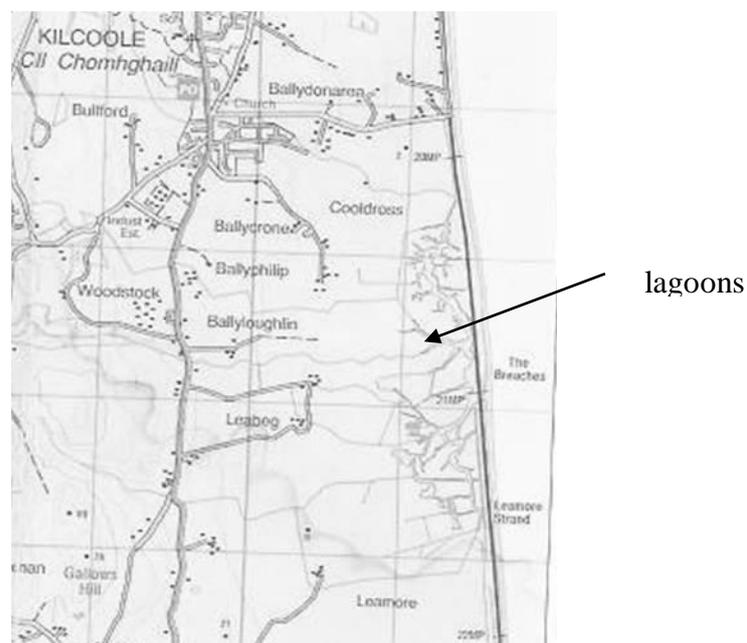


Figure 3.1 Location of map of Kilcoole lagoons.

Kilcoole lagoons were surveyed in 2003 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 3.2, Table 3.1)

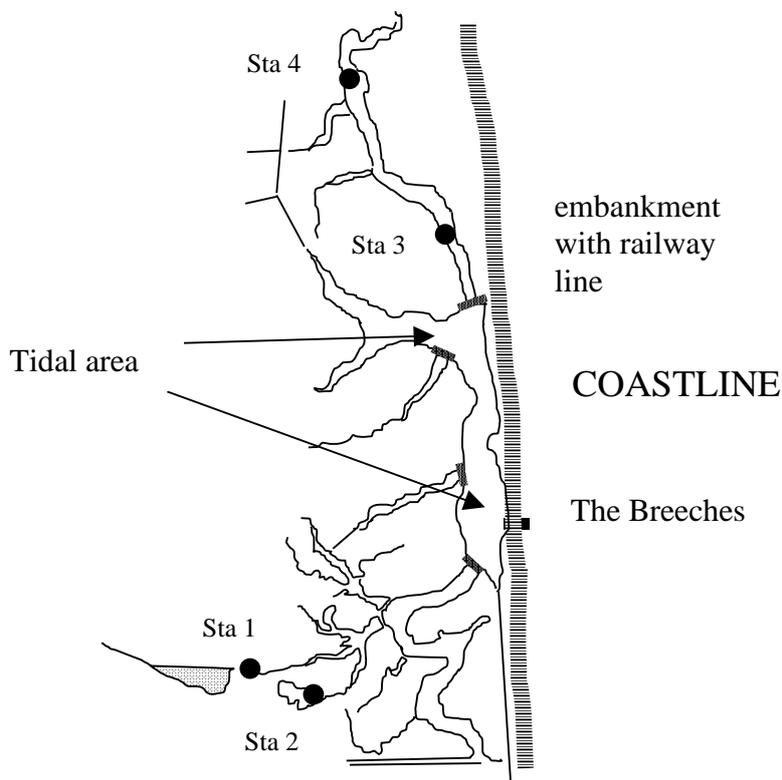


Figure 3.2 Sampling stations used at Kilcoole.

Flora

A total of 14 floral taxa were recorded at Kilcoole, of which 7 were identified to species (Table 3.1). Two of these taxa are regarded as lagoonal specialists, but none are particularly rare:

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. The *Ruppia* at Kilcoole was not identified specifically but is assumed to be *R. maritima* which appears to be the more common of the species and was found at 41 of the lagoons surveyed.

Both of the lagoonal specialists are common in lagoonal habitats in Ireland, and none of the other plants are in any way unusual. Based on aquatic vegetation the channels are regarded as of **low conservation value**.

Table 3.1 Positions of sampling stations in Kilcoole, with sampling date, hydrological variables (salinity, temperature and depth of water) type of substratum and percent cover of vegetation, bare ground and rotting vegetation. Species in bold text are lagoonal specialists or rare species.

	Sta 1	Sta 2	Sta 3	Sta 4
GPS position	T 31171 08663	T 31133 06087	T 31351 07307	T 31129 07573
Sampling dates	12-13/08/03	12-13/08/03	2-3/09/03	2-3/09/03
Salinity(psu)	0.1	23.6	24.1	5.2
Temperature	18.5	16.7	22.7	22.8
Depth of water(cm)	0-60	0-100	0-60	0-40
Substratum	clay, decaying wood stumps, overlain with anoxic mud	deep, soft loose peat	soft deep mud, occ. Stones	clay, soft mud, occ. stones
Percentage cover:				
ALGAE				
Chlorophyta				
<i>Chaetomorpha linum</i>			5	5
<i>Cladophora sp.</i>	5	20	+	
<i>Enteromorpha sp.</i>		+	+	+
Xanthophyta				
<i>Vaucheria sp.</i>		20	5	
CHAROPHYTA				
<i>Chara polyacantha</i>	80			
ANGIOSPERMS				
<i>Eleocharis sp.</i>	5			
<i>Myriophyllum spicata</i>		10		
<i>Phragmites australis</i>	+	10		
<i>Potamogeton pectinatus</i>	+	10		
<i>Ruppia sp.</i>			30	90
<i>Salicornia sp.</i>			+	
<i>Schoenoplectus</i>	10	10		
<i>Scirpus maritimus</i>	5	5		
<i>Sparganium sp.</i>	+			
BARE - mineral	0	40	70	
BARE - rotting vegetation	20	10	10	5

Fauna

A total of 53 faunal taxa were recorded at Kilcoole, of which 40 were identified to species (Table 3.2). This relatively high number of faunal taxa is largely due to the high number on coleopteran and Hemipteran insects at the low salinity stations (1 and 2), but four of these taxa are regarded as lagoonal specialists, and two others have been proposed as lagoonal specialists for Ireland.

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.

Enochrus bicolor Water-beetle recorded at 12 lagoons of the 87 surveyed, from the southern half of the country from Co. Wicklow to Connemara including the Aran Islands. There are only two recent records from N. Ireland (Nelson *et al.* 1998).

Table 3.2 Faunal taxa recorded at stations in Kilcoole.

(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 . Text in bold indicates lagoonal specialist or rare species.

		Sta 1			Sta 2		Sta 3			Sta 4				
		SwM	L.T.	Ab	SwM	Ab	SwM	sedm	L.T.	Ab	SwM	sedm	L.T.	Ab
Cnidaria	<i>Hydra sp.</i>	0.3		r										
Annelida														
	Polychaeta <i>Nereis diversicolor</i>													o
	Hirudinea ? <i>Erpoidella octoculata</i>			o										
	? <i>Helobdella stagnalis</i>			o		o								
Crustacea														
	Ostracoda indet.					c								
	Copepoda ? <i>Argulus foliaceus</i>										0.3			
	Isopoda <i>Asellus acuaticus</i>					c								
	<i>Lekanesphaera rugicauda</i>												1.0	r
	Amphipoda indet					r					4.7		10.0	c
	<i>Allomelita pellucida</i>					r								
	<i>Gammarus zaddachi</i>										4.7		10.0	c
	Decapoda <i>Crangon crangon</i>								1.0	r	0.7			o
	<i>Palaemonetes varians</i>				0.3	r	11.0		1.0	o				
Acarina	Hydracarina indet.	3.7		c	0.7	o								
Insecta														
	Odonata <i>Ischnura elegans</i>	1.0		o	1.0	o					3.7			c
	Heteroptera Corixidae indet.	43.7	4.0	c	8.0	o	57.3		6.0	c	113.3		160.0	c
	<i>Corixa panzeri</i>	1.7		o	0.3	r								
	<i>Gerris odontogaster</i>			c		o								
	<i>Gerris thoracicus</i>			c										
	<i>Gerris sp.</i>	5.3		c	1.3	o								o
	<i>Hesperocorixa linnaei</i>	0.3		r										
	<i>Hydrometra sp.</i>													o
	<i>Nepa cinerea</i>					r								
	<i>Notonecta ? glaucum</i>			c		o								
	<i>Notonecta viridis</i>										0.3		1.0	o
	<i>Notonecta sp.</i>	3.3		o	1.7	o					0.3		1.0	o
	<i>Plea leachi</i>	11.0		c		o								
	<i>Sigara concinna</i>										35.0			c
	<i>S. distincta</i>				0.3	r								
	<i>S. dorsalis</i>	28.3	4.0	c	5.7	o								
	<i>S. falleni</i>	0.7		o	1.0	o								
	<i>S. lateralis</i>	0.3		r							0.3			
	<i>Sigara stagnalis</i>						57.3		6.0	c	39.3		160.0	c
	Coleoptera	6.7	2.0	c	3.3	o								o
	<i>Agabus bipustulatus</i>					r								
	<i>Enochrus bicolor</i>													o
	<i>Haliphus confinis</i>					r								
	<i>H. flavicollis</i>													
	<i>H. obliquus</i>	2.3		c										
	<i>Helophorus griseus</i>	1.3		o										
	<i>Hygrotus inaequalis</i>	1.0		o		c								
	<i>Laccophilus minutus</i>					r								r
	<i>Laccobius minutus</i>				3.3	c								
	<i>Noterus clavicornis</i>					r								
	? <i>Phytobius leucogaster</i>					r								
	Diptera Chironomidae indet.	23.7		c	2.3	o	1.0	19.3		c	32.3	9.3	26.0	c
	Diptera sp.				9.0	c								
	Ephemeroptera	6.0		c	2.0	o								
	<i>Ephydra riparia</i>	4.3		c			2.7			o				

Table 3.2 cont. Faunal taxa recorded at stations in Kilcoole.

	Sta 1			Sta 2		Sta 3			Sta 4				
	SwM	L.T.	Ab	SwM	Ab	SwM	sedm	L.T.	Ab	SwM	sedm	L.T.	Ab
Mollusca													
Gastropoda <i>Hydrobia ulvae</i>						4.3			o				
<i>Potamopyrgus antipodarum</i>	2.3		o		o					0.7			o
Pulmonata <i>Lymnaea peregra</i>	0.0			3.0	c								
<i>Physa fontinalis</i>	1.7		o										
Bryozoa													
<i>Conopeum seurati</i>									o				o
Pisces													
<i>Gasterosteus aculeatus</i>	3.3	27.0	o	5.7	c			15.0	c				
<i>Pomatoschistus microps</i>								2.0	o			7.0	c

Allomelita pellucida. Amphipod crustacean recorded also at six sites in Cork (Cuskinny, L. Beg, Kilkeran, Lissagriffin, Farranamanagh, Reenydonegan) and in Furnace L., Co. Mayo. There are also 2 unconfirmed records for Ballyvodock (Co Cork) and Muckinish (Co. Clare). The only previous records are for L. Hyne and Glengarriff in Co. Cork and Furnace L. (Costello *et al.* 1989). Proposed as a lagoonal specialist for Ireland by Oliver and Healy (1998).

Notonecta viridis Hemipteran insect (back-swimmer) recorded also on the south coast at Lady's Island L., Tacumshin L., Ballyteige, Clogheen/White's Marsh and Kilkeran L. and on the west coast at Reenydonegan, Co. Cork and L. Donnell, Co. Clare. A rare brackish water species in Ireland. According to Southwood and Leston (1959), it was recorded only for Wexford and North Kerry. Recorded previously in Lady's Island L (Healy *et al.* 1982) in Lady's Island L. and the North Slob by Galvin (1992) and from the Dingle Peninsula by McCarthy and Walton (1980). *N. viridis* is found at inland sites in the U.K. but appears to be largely restricted to lagoons in Ireland, and was proposed as a lagoonal specialist for Ireland by Oliver and Healy (1998).

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.

Plea leachi has been recorded from Ballyteige, Tacumshin and The North Slob (Co. Wexford) and from Kilcoole (Co. Wicklow) and curiously from two sites in Galway (Doorus Lakes, Loch an Chaorain). Recorded previously from Tacumshin and Ballyteige (Galvin 1992). Otherwise appears to be rare, but is small and could be overlooked. Halbert (1935) recorded it from L. Gill (Co. Kerry) and described it as widespread, but local, usually "in stagnant water near the coast". Proposed as a lagoonal specialist for Ireland, but there is now some doubt about this decision.

The aquatic fauna of Kilcoole channels is relatively rich, largely due to the high number of insects in the low salinity area. However, it also includes estuarine species and a small suite of lagoonal specialists, some of which are relatively rare species.. Based on aquatic vegetation, the site is regarded as of **moderate conservation value**.

Summary

The lagoons at Kilcoole are a group of **artificial lagoons** in what remains of a drained saltmarsh. The species list is quite high (14 floral, 53 faunal) but many of these are generally freshwater taxa at two of the least saline areas sampled. There is however a small suite of lagoonal specialists (2 floral, 4-6 faunal) which are important to conserve.

Overall Conservation Value = Moderate

Conservation Status Assessment (from Oliver 2007)	
Impacts	Eutrophication from surrounding farmland. Modification of hydrology. Siltling up. Poaching by cattle.
Conservation Status	Unfavourable-Inadequate

Further Information

E.I.A carried out by Healy *et al.* (1989). 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).

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