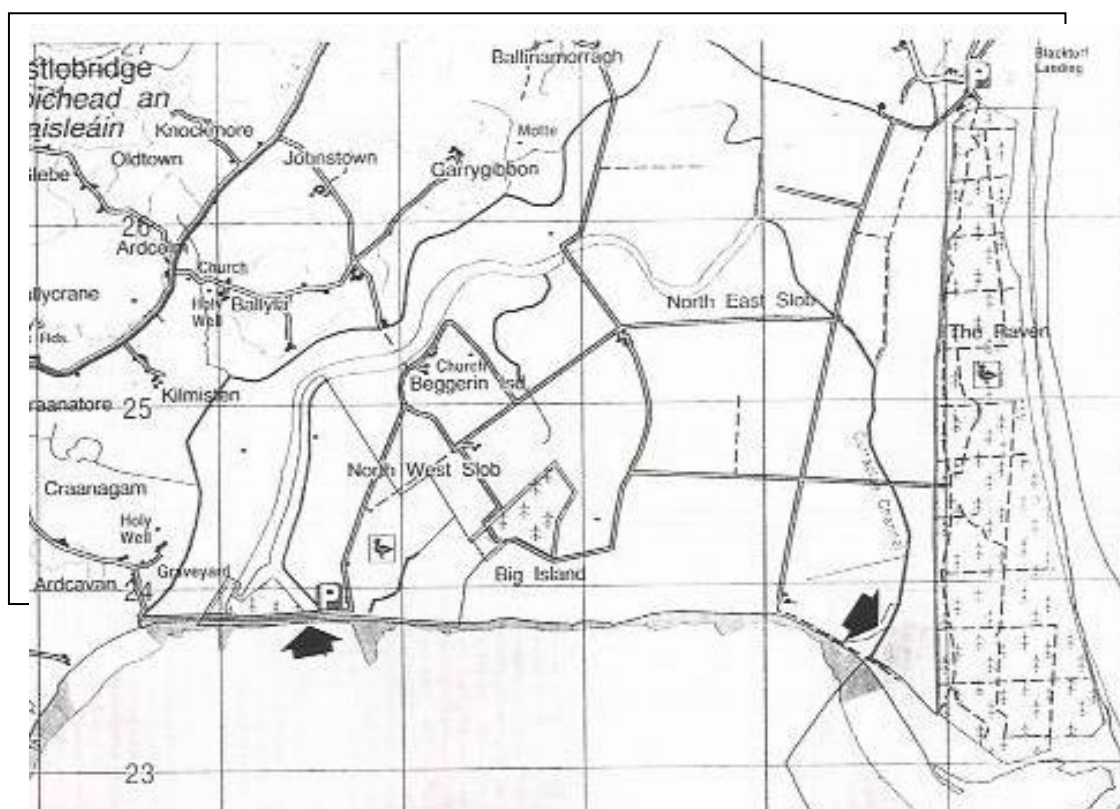




Conservation Designation: pNHA 000712 Wexford Slobs and Harbour

General description:

Formerly an area of mud flat and salt marsh, reclaimed in the mid 1800s by construction of a sea wall. A broad, semicircular channel runs through polder grasslands and crops, covering a total area of approximately 5ha. The area is below high tide level and there is extensive landward seepage of seawater with seepage streams. Mixed seawater and freshwater from streams and drainage ditches is pumped out and the water level is more or less constant. A salinity gradient from about 4‰ in the west to between 20 and 30‰ in the Raven (Curracloe). Channel exists throughout the year.



The North Slob channel was surveyed in 2002/2003 as part of a PhD study (Oliver 2005) and used in a biological classification of Irish coastal lagoons. Six stations were selected for the sampling of aquatic fauna and flora (Figure 4.2, Table 4.1). In addition, as part of this survey, the vegetation was surveyed by C. Roden in 2003 (Roden 2004)

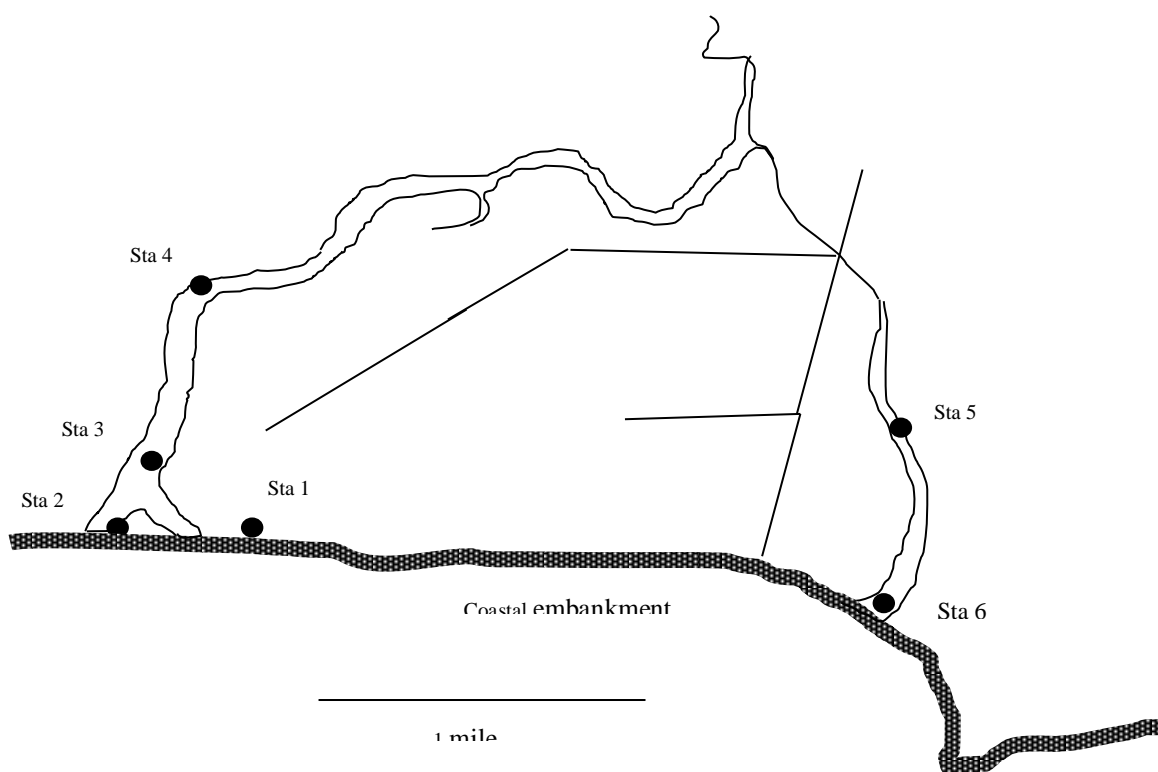


Figure 4.2 Sampling stations used at North Slob channel on 5/9/02 and 13-14/8/03.

Flora

A total of 19 floral taxa were recorded in the North Slob channels, of which 14 were identified to species (Table 4. 1). Four of these species are regarded as lagoonal specialists, two of which are rare. Two other (unconfirmed) charophytes are very rare and listed as “possible” specialists, due to lack of detailed ecological information. Two other plants appear to have a very restricted distribution in Ireland.

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, listed as a lagoonal specialist, and recorded at 49 of the 87 (56.3%) lagoons surveyed.

Chara canescens was recorded in **eight lagoons** during the surveys - North Slob, Lady’s Island L., and Tacumshin L., Co. Wexford, L. Gill, Co. Kerry, L. Murree, Co. Clare, Tanrego, Co. Sligo and Durnesh L. and Inch L., Co. Donegal (Hatch & Healy, 1998; Roden, 1999; Roden 2004). It was also recorded at Shannon Lagoon in 1996 (Hatch and Healy 1998), but not refound at that site in 2003 (Roden 2004). This species is listed in the Red Data Book for Britain and Ireland (Stewart and Church 1992) as although recorded from several European countries it is believed to be declining. It is believed to be extinct in Holland, and there are only a few records from the U.K. since 1960. These Irish locations are very important in European terms, and it is especially encouraging to have found new sites.

Tolypella ?nidifica. *Tolypella* species have only been recorded from this one lagoon site in Ireland. The species was collected in 1896 and identified by Groves and Bullock Webster (1924) who noted the decayed state of the material and stated it was the only true *T. nidifica* known to them from Britain or Ireland. Despite this identification, the material was re-

examined by Moore (1986) who concluded it was *Tolypella glomerata*. There are no records of further material being collected from the North Slob since 1896 until the present survey, when a large population was found there. Despite the identification as *T. glomerata* by Moore, examination of the fresh material agrees with the description of *T. nidifica* given in standard works noted previously. However this identification has not been confirmed.

Chara ?connivens. Like the *Tolypella* species, this is the only lagoon site in Ireland for which there is a record for *Chara connivens*. During fieldwork a spineless *Chara* species was collected from the North Slobs but it lacked any reproductive organs and its identity could not be established. An attempt to collect fertile material in September 2003 had to be abandoned as a dense algal bloom reduced visibility to a few cm. The identity of the form should be investigated as soon as possible. (There is also a "vague" record from Shannon airport lagoon).

Table 4.1 Positions of sampling stations in North Slob channel, with sampling date, hydrological variables (salinity, temperature and depth of water) type of substratum and percent cover of vegetation, bare ground and rotting vegetation. Bold text in red indicates "lagoonal specialist" and notable species.

	Station 1 office pond	Station 2 Pat Walsh	Station 3 main channel	Station 4 Beggerin	Station 5 wooden br.	Station 6 Raven
GPS position	T 076 239	T 074 245	T 076 245	T 080 253	T 103 246	T 106 237
Sampling dates	2-5/9/02	2-5/9/02	13-14/08/03	2-5/9/02	13-14/08/03	2-5/9/02
Salinity(psu)	28.8	2.7	5.5	7-7.1	20.7	25.6
Temperature(C)	19.1	20.5	21.1	18.3	24.1	15.8
Depth(cm)	0-50	0-50	0-100	0-100	0-60	0-100
Substratum	soft mud, occ. stones; sandy in places	soft mud. <i>Phragmites</i> "scraw"	soft mud	soft mud, occ. stones, gravel	sand-sandy mud	clean, muddy sand. Occ. stones
clarity	total	total	poor	poor	total	total
Percentage cover						
ALGAE						
Chlorophyta						
<i>Chaetomorpha linum</i>	10				20	10
<i>Cladophora</i> sp.		25	5	5	5	2
<i>Enteromorpha</i> sp.			1		10	3
<i>Ulva lactuca</i>						1
CHAROPHYTA						
<i>Chara canescens</i>			5			
<i>C. ?connivens</i>			5			
<i>C. aspera</i>		30				
<i>C. vulgaris</i>		10				
<i>Lamprothamnion papulosum</i>					2	
<i>Tolypella ?nidifica</i>			5			
ANGIOSPERMS						
<i>Lemna trisulca</i>			10			
<i>Myriophyllum spicatum</i>		10	1	5		
<i>Phragmites australis</i>		30	5	30		
<i>Potamogeton pectinatus</i>		5	50	5		
<i>Ruppia</i> sp.	1				60	1
<i>Schoenoplectus</i>			5			
<i>Scirpus maritimus</i>			10	2	2	
<i>Zannichellia palustris</i>			2	2		
<i>Zostera angustifolia</i>					5	1
BARE - mineral	90	20	30	50	10	85
BARE - rotting veg.				10		10

***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* at 41, *R. cirrhosa* at 22 sites). The *Ruppia* at this site was not specifically identified as no flowering plants were found.

Zostera angustifolia was only recorded during the lagoon surveys at this site and at Carafinla (Cara na gCoarach) Co. Galway.

Though not surveyed during the lagoon surveys of 1996 and 1998, the North Slob is one of the most important botanical lagoon sites in the country. Based on the diversity of rare charophytes including two forms not otherwise recorded from Irish lagoons, the very large extent of the system and the range of vegetation types from oligohaline to mesohaline (Roden 2004). Based on aquatic vegetation, the site is regarded as of **exceptional conservation value**.

Fauna

A total of 45 faunal taxa were recorded in the North Slob channels, of which 39 were identified to species (Table 4.2). Nine of these species are regarded as lagoonal specialists, and several are regarded as uncommon in Ireland:

Cordylophora caspia. Hydroid also recorded at four lagoons in Donegal (Kincas L., Inch L., Durnesh L., Blanket Nook), Rostellan, Co. Cork, Muckinish, Co. Clare and an unsurveyed site (Rinmore) in Co. Galway and previously at Lady's Island L. (Healy *et al.* 1982). According to Arndt (1984), the species "appears to be an excellent bio-indicator for eutrophic brackish water in the horohaline zone". Proposed as a lagoonal specialist for Ireland by Oliver and Healy (1998).

Idotea chelipes is a common, lagoonal, isopod crustacean, often found in association with the lagoonal form of *Chaetomorpha linum*. Found at 23 of the 87 (26.4%) lagoons surveyed, mostly at relatively high salinity.

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.

Notonecta viridis Hemipteran insect (back-swimmer) also recorded on the east coast at Kilcoole, on the south coast at Lady's Island L., Tacumshin L., Ballyteige, Clogheen/White's Marsh and Kilkeran L. and also 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).

Sigara stagnalis Hemipteran insect (water-boatman). A common lagoonal specialist found at 36 of the 87 (41.4%) lagoons surveyed.

Enochrus melanocephalus Water-beetle recorded only from this lagoon during the surveys. There appear to be no other recent records. This species remains on the proposed Irish list of lagoonal specialists, but its status as a lagoonal specialist is uncertain.

Littorina "tenebrosa" Gastropod mollusc recorded on the North Slob and in a brackish pool close to L. Murree, Co. Clare and at seven lagoons in Co. Galway. These are the only known sites in Ireland. The status of this taxon is still uncertain but specimens appear to be morphologically and ecologically distinct from *L. saxatilis*.

Cerastoderma glaucum Bivalve mollusc. A common lagoonal specialist found at 30 of the 87 lagoons (34.5%) surveyed.

Table 4.2 Faunal taxa recorded at stations in North Slob channel in 2002 and 2003.

r = rare, o = occasional, c = common, a = abundant. Species in bold text are lagoonal specialist or rare species.

		Sampling					
		Sta 1	Sta 2	Sta 3	Sta 4	Sta 5	Sta 6
Cnidaria	<i>Cordylophora caspia</i>			o	o		
Nemertea	indet.	o					
Annelida							
	Oligochaeta <i>Tubificoides heterochaetus</i>	o					
	Polychaeta <i>Arenicola</i> agg	o		o			a
	<i>Nereis diversicolor</i>	o				o	c
Crustacea							
	Ostracoda Indet.			o			
	Mysidacea <i>Neomysis integer</i>			c	o	o	
	<i>Praunus flexuosus</i>					o	c
	Isopoda <i>Idotea chelipes</i>	o				c	c
	<i>Jaera</i> sp.	o	o				
	<i>Lekanesphaera hookeri</i>	o	o	c	c	c	c
	Amphipoda indet		r	c	o	c	o
	<i>Gammarus duebeni</i>		r				
	<i>Gammarus zaddachi</i>			c	o	c	o
	<i>Corophium volutator</i>			c		o	o
	<i>Melita palmata</i>					o	o
	Decapoda <i>Carcinus maenas</i>						o
	<i>Palaemonetes varians</i>	o	r	c	o	r	o
Insecta							
	Odonata <i>Ischnura elegans</i>		o		r		
	Heteroptera Corixidae		c	o	o		
	<i>Corixa panzeri</i>		c	o	o		
	<i>C. punctata</i>		o	r			
	<i>Gerris odontogaster</i>		c	r	o		
	<i>Gerris</i> sp.		c	r	o		o
	<i>Hydrometra stagnorum</i>		o				
	<i>Nepa cinerea</i>		o				
	<i>Notonecta glaucum</i>		o				
	<i>Notonecta viridis</i>				o		
	<i>Notonecta</i> sp.		o		o		
	<i>Plea leachi</i>		c	o			
	<i>Sigara dorsalis</i>		o				
	<i>S. lateralis</i>		o	o			
	<i>S. stagnalis</i>		c		c		
	Coleoptera		c	r			
	<i>Enochrus melanocephalus</i>		r				
	<i>Haliplus ruficollis</i>		o				
	<i>Hygrotus inaequalis</i>		c				
	<i>Laccophilus minutus</i>		o				
	Diptera Chironomidae	c	c	c	a	c	o
	<i>Ephydra riparia</i>	a					
Mollusca							
	Gastropoda <i>Hydrobia ulvae</i>	o					o
	<i>Littorina tenebrosa</i>	o				c	c
	<i>Potamopyrgus antipodarum</i>		c	o	c	c	
	Pulmonata <i>Lymnaea peregra</i>		a				
	Bivalvia <i>Cerastoderma glaucum</i>	o					
Bryozoa	<i>Conopeum seurati</i>	o		a	o	a	a
Pisces							
	<i>Anguilla anguilla</i>			c	o	c	
	<i>Gasterosteus aculeatus</i>		c	c	o	o	c
	<i>Pleuronectes flesus</i>	o					
	<i>Pomatoschistus microps</i>					o	c

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 growth form of this species on the North Slob at Stations 5 and 6 is particularly interesting and worthy of further investigation.

At least one other lagoonal specialist (*Hydrobia ventrosa*) was recorded in the past, and an interesting crustacean (*Cyathura carinata*) was previously common at Station 6, but was not recorded during the lagoon surveys in 2002/3, perhaps as a result of drainage for maintenance work.

The fauna of the North Slob is surprisingly rich with 45 taxa recorded. Nine of the species are regarded as lagoonal specialists, and several are regarded as uncommon in Ireland. Based on this aquatic fauna, the site is regarded as of **high conservation value**.

Summary

Despite the fact that the North Slob is artificial and highly eutrophic, it is remarkable for its high numbers of lagoonal specialists and rare species. It is one of the most important botanical sites in the country, based on the diversity of rare charophytes with two forms not otherwise recorded from Irish lagoons and the range of vegetation types from oligohaline to mesohaline. Faunistically, the site is also remarkable for the high number of lagoonal specialists, many of which are rare species.

Overall Conservation Value = Exceptional

Conservation Status Assessment (from Oliver 2007)

Impacts	Extreme eutrophication from surrounding farmland. Drainage. Modification of hydrology.
Conservation Status	Unfavourable-BAD

Further Information

Surveyed previously by Duff (1976), Redmond (1977) and Galvin (1992). Listed as a lagoon by Healy *et al.* 1997, and Healy 2003. Surveyed in 2002/2003 as part of a PhD study (Oliver 2005) with additional information on vegetation from Roden (2004) and used in a biological classification of Irish coastal lagoons and in the Conservation Status Assessment (Oliver 2007).

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