



Conservation Designation: Tacumshin Lake SAC 000709, SPA 004092, pNHA 000709

General description:

Large (430ha) natural sedimentary lagoon with a sand/shingle barrier. In total area this is the largest Irish lagoon but is currently drained and partly dry in summer. A natural outlet has existed intermittently but seals naturally. The substrate soft sandy mud with gravel near the barrier. Surrounding land is flat and consists of arable fields and pasture. Freshwater enters by several small streams and leaves by the outlet pipes and by seaward percolation through the barrier. Washover occurs in the western sector. Much of the lake bed was exposed during the summer of 1996 following installation of pip but water was present to 1m depth by October. Salinity at this time was 8-19‰ on the eastern shore and 3-18‰ in artificial channels near the barrier. Water levels have been monitored recently in an attempt to establish optimum acceptable level order to preserve its conservation value.

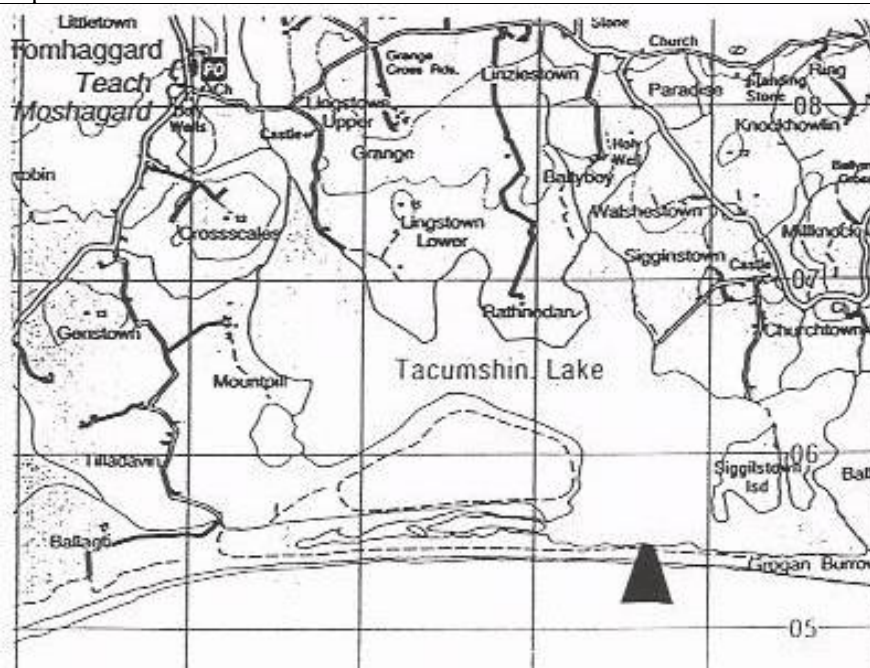


Figure 7.1 Location of map of Tacumshin

Tacumshin Lake was surveyed in 1996 for vegetation (Hatch 1996, Hatch & Healy 1998), aquatic fauna (Healy & Oliver 1996, Oliver & Healy 1998) and ecotonal coleoptera (Good 1996, Good & Butler 1998). Results of these surveys are summarised by Healy *et al.* (1997a,b,c), Healy & Oliver (1998) and Healy (1999, 2003).

Stations used for faunal sampling are not necessarily the same as those used for vegetation or ecotonal coleoptera.

Flora

This large site was surveyed in 1996 by transects only. Five transects were carried out at the lagoon itself and one at a channel at the western end of the site. This is one of six Irish sites at which *Chara canescens* has been recorded since 1970. This rare charophyte was found on this occasion growing sparsely in a northern bay. It was also found in a western channel during a previous site visit. Its presence alone is reason enough to regard Tacumshin Lake as a valuable site. *Ruppia c.f. maritima* was found at four out of five lagoon transects. It grows in occasional dense beds within 50 metres of the barrier shore. *Potamogeton pectinatus* was found at the two northern transects and in a western channel, forming more or less dense beds at all of these. A previous site visit found *Potamogeton pusillus*, *Zannichellia palustris*, *Myriophyllum spicatum* and *Ranunculus baudotii* at low salinities (0-4 parts per thousand) in western and north western channels amongst swamp vegetation. The most notable feature of the marginal vegetation is the extent of swamp species. *Phragmites australis* and *Schoenoplectus* beds fill the two north western bays and much of the south western area. These species and *Scirpus maritimus* fringe much of the north shore and are again extensive in the north central and the north eastern bayheads.

(Previous records for this site include *Lamprothamnion papulosum* and *Zostera* but neither of these has been recorded recently).

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 re-found at that site in 2003 (Roden 2004). This species is listed in the Red Data Book for Britain and Ireland (Stewart and Church 1992). 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 therefore very important in European terms.

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.

Fauna

Positions of sampling stations are shown in Figure 7.1. and details are given in Table 7.1. Among 40 taxa recorded (Table 7.2), 38 are identified to species. Four of these are listed as lagoonal specialists in Britain and two others are on a proposed list for Ireland (Oliver and Healy 1998). Benthic species were probably undersampled and

only small fish were collected because fyke nets were not used at this site due to low water levels.

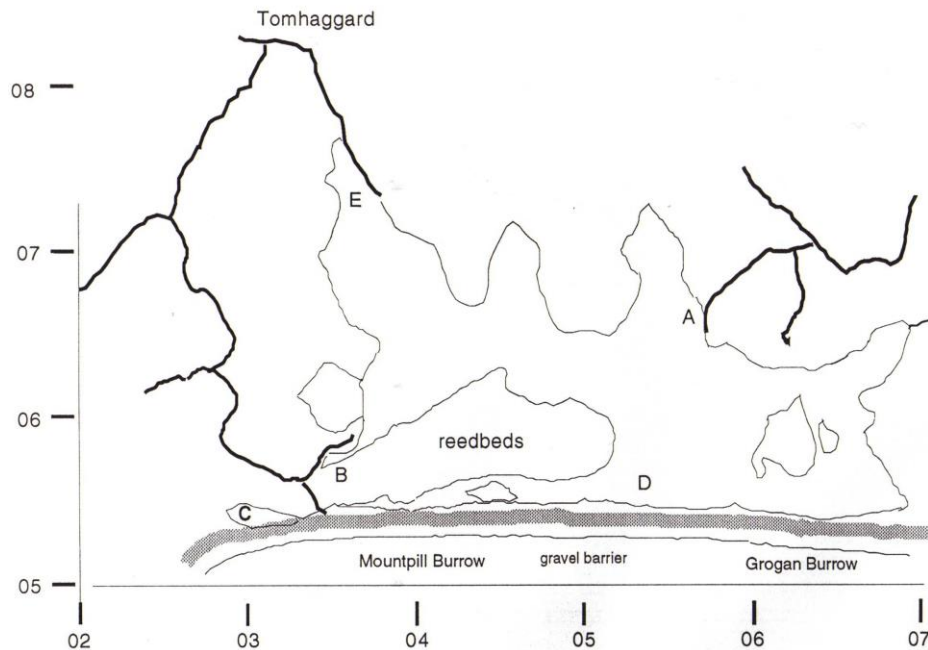


Figure 7.2 Sampling stations used at Tacumshin

Table 7.1 Positions of sampling stations in Tacumshin Lake, with sampling date, salinity, depth of water and type of substratum. * sampled in June but dry in October.

	Station A	Station B	Station C	Station D	Station E*
GPS position	T 0569	T 0345	T 0295	T 0599	T 035
	0666	0565	0542	0548	075
Sampling dates	1-3/10/96	1-3/10/96	1-3/10/96	1-3/10/96	1/7/96
Salinity (psu)	8	3-5	18	19	0
Depth (cm)	0-60	0-150	0-60	0-20	
Substratum	Silty sand, mud and occasional stones.	Sand, gravel, mud	Fine sand and silt, occasional stones.	Fine silty sand and soft mud.	

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.

Table 7.2 Aquatic Fauna Recorded at Tacumshin Lake, Co. Wexford. July and October, 1996. L.T. = light trap; () = records from July. + = present, r = rare, o = occasional, c = common, a = abundant. Text in bold indicates lagoonal specialist or notable species.

Taxa	Sampling Stations							
	A	L.T.A	B	L.T.B	C	L.T.C	D	E
Annelida								
<i>Hediste diversicolor</i>	c				c		+	
<i>Pomatoceros triqueter</i>					shells			
Crustacea								
Cirripedia <i>Balanus improvisus</i>					shells			
Mysidacea <i>Neomysis integer</i>		1	1 (c)		1			
Isopoda <i>Lekanesphaera hookeri</i>	c	>100	+	<100	c	2		(+)
<i>Asellus aquaticus</i>								(+)
Amphipoda <i>Gammarus salinus</i>	+	+	+		+	+		
Decapoda <i>Palaemonetes varians</i>	+	?	a	>100	c	2		
Acarina					+			
Insecta								
Odonata <i>Ischnura elegans</i>	1		+		a			
Hemiptera <i>Gerris odontogaster</i>					+			
<i>G. thoracicus</i>					+			
<i>Notonecta glaucum</i>			+		+			
<i>N. viridis</i>		+	+		a			
<i>Plea leachi</i>			+		1			
Corixidae	+		a	>100	a	c100		
<i>Callicorixa praeusta</i>	+	+	+		c			(a)
<i>Corixa punctata</i>			(+)					(a)
<i>C. panzeri</i>		+	+		+	+		
<i>Hesperocorixa linnaei</i>					+			
<i>Sigara dorsalis</i>			a	+	+			(+)
<i>S. concinna</i>					+	+		
<i>S. stagnalis</i>	+		a	a	+	a		
Coleoptera			+		+			(+)
<i>Colymbetes fuscus</i>			+					
<i>Enochrus halophilus</i>	+							
<i>Gyrinus caspius</i>			+					
<i>Hydrobius fuscipes</i>								(+)
<i>Hydroporus planus</i>			+					
<i>Hygrotus impressopunctatus</i>	+							
<i>H. inaequalis</i>			+					
<i>Laccophilus minutus</i>			+					
<i>Noterus clavicornis</i>	+		+					
<i>Rhantus frontalis</i>	+		+			+		
Diptera Chironomidae	c		+		a		+	(+)
Mollusca								
Prosobranchia <i>Hydrobia ventrosa</i>					5			
<i>Potamopyrgus antipodarum</i>	c		3		11			(+)
Pulmonata <i>Lymnaea peregra</i>			+					(+)
<i>L. palustris</i>			+					
<i>Planorbis leucostoma</i>			+					(+)
Bivalvia <i>Cerastoderma glaucum</i>	shells							
Teleostei								
<i>Gasterosteus aculeatus</i>	a	c100	+	15	a	>100	?	(+)
<i>Pungitius pungitius</i>			1					

Notonecta viridis Hemipteran insect (back-swimmer) recorded on the east coast at Kilcoole and the North Slob, 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 is proposed as a lagoonal specialist for Ireland.

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 (Dorus 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.

Enochrus halophilus Water-beetle recorded only at this site during the lagoon surveys and previously from samples collected from L. Beg, Co. Cork in 1992. One specimen was found in L. Murree by Pybus and Pybus (1980). There appear to be no other recent records.

Ochthebius marinus Water-beetle identified from Tacumshin L. in 1996, by Galvin from Lady's Island and Tacumshin in 1991, and at Clogheen/White's Marsh, Co. Cork in 2003. Only recorded from one 10-km square in Ireland by Foster *et al.* (1992). Four recent records from Co. Down (Nelson *et al.* 1998).

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

Hydrobia ventrosa. Gastropod mollusc commonly found in brackish lagoons and ditches and generally not on the open coast. Recorded at 18 of the 87 (20.7%) lagoons surveyed up to 2006.

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

Shells of *Cerastoderma glaucum* were present at station A but no live specimens could be found. A thriving population was present in 1977 in an area of the southeast known locally as the "cockle lake", and live specimens were taken at station A in 1991 (Galvin 1992).

Ecotonal coleoptera

Only one indicator species was recorded in Tacumshin Lake in 1996 (Good 1996, Good & Butler 1998), and based on ecotonal coleoptera, the site is regarded as of **low conservation value**.

Summary

Tacumshin Lake is a very large **natural sedimentary lagoon**. The lagoon and barrier are good examples of geomorphological types and there is a long history of scientific investigations. Despite drainage attempts, it is still largely natural, although current management practices are controversial and effective solutions to the conflicting interests are subject to financial constraints. This is one of only 8 lagoons in the country where the rare charophyte *Chara canescens* is known. *Lamprothamnion papulosum* was recorded here previously. The aquatic fauna is rich with 40 taxa recorded of which 7 are lagoonal specialists. The assemblage typifies a low salinity lagoon with a consistently high input of freshwater, and few opportunities for colonisation from the sea. Overall conservation value is rated as exceptional.

Overall Conservation Value = Exceptional

Conservation Status Assessment (from Oliver 2007)

Impacts	Severe drainage and major modification of hydrology. Disturbance from recreational activities. Invasion by exotics.
Conservation Status	Unfavourable-BAD

Further Information

Tacumshin Lake was surveyed in 1996 for vegetation (Hatch 1996, Hatch & Healy 1998), aquatic fauna (Healy & Oliver 1996, Oliver & Healy 1998) and ecotonal coleoptera (Good 1996, Good & Butler 1998). Results of these surveys are summarised by Healy *et al.* (1997a,b,c), Healy & Oliver (1998), and Healy (1999, 2003). Included in a biological classification of Irish coastal lagoons (Oliver 2005) and in the Conservation Status Assessment (Oliver 2007).

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