

4.57

**L. Tanaí Galway O.S. L 950 305**

O.S. Discovery Sheet 45

**Conservation Designation:** Kilkieran Bay and Islands SAC 002111**General description:**

Loch Tanaí is situated in western Connemara, 5 km north of Costelloe and 6 km south of Camus. The lagoon is a medium sized (12ha), shallow (1m) and lies in an area of lowland peat, connected to Loch an Aibhnín (Section 4.58) by a narrow channel. A good example of a type of lagoon, rare in a European context, but characteristic of parts of the west coast of Ireland, especially in Connemara, referred to as **rock/peat lagoons** with restricted tidal influence due to the presence of a “barrier” of bedrock and peat. Salinity probably varies considerably, and ranged from 11-34psu at the time of sampling (22-24/8/96). Very little appears to be known about any aspect of the functioning of brackish lagoons situated in acid peat bogs.

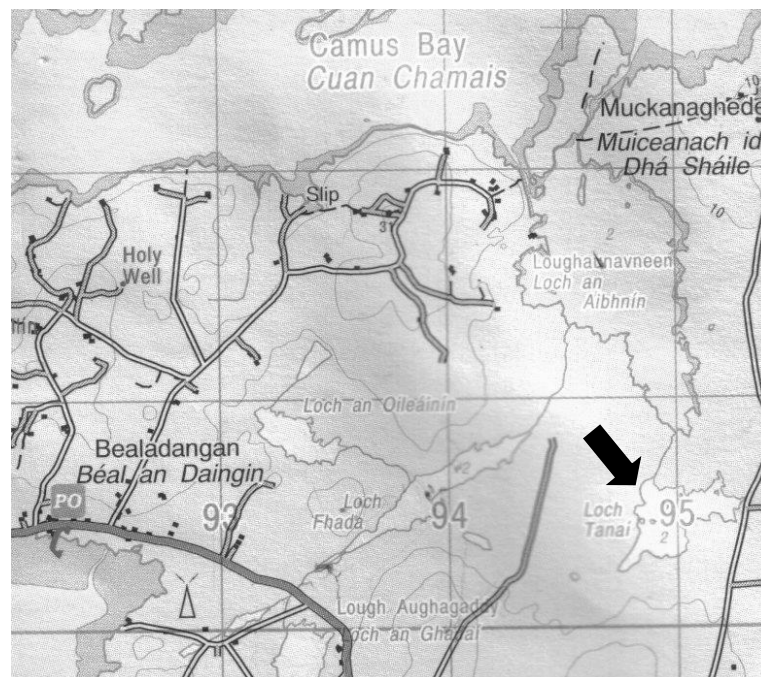


Figure 57.1 Location of map of L. Tanaí.

Loch Tanaí 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

The vegetation of L. Tanaí was surveyed by P. Hatch in 1996 (Hatch 1996, Hatch & Healy 1998). Species distribution reflected a high degree of spatial variation in salinity. Fucoid algae were abundant and well distributed around the shore.

*Phyllophora pseudo-ceranoides* also occurred here. *Ruppia* and *Zostera marina* were abundant around much of the site in dense, often mixed stands. It is considered notable that both *Ruppia maritima* and *R. cirrhosa* occur here.

The rare charophyte *Lamprothamnium papulosum* was more or less frequent around most of the shore and abundant in places, often growing amongst *Ruppia* beds. Its presence here is reason enough in itself to regard this site as valuable.

A distinct zonation of algal and higher plant species occurred along the rockier shores with dense *Ruppia* and *Zostera* beds, frequently with *Lamprothamnium*, lying beyond a narrow belt of fucoids.

Marginal vegetation was restricted due to the rocky, steep-sided nature of much of the site. No emergent species occurred here. The dominant marginal community is species-poor salt tolerant vegetation dominated by *Juncus maritimus*.

Three of these species are lagoonal specialists:

*Lamprothamnium papulosum* was known from only three sites in Ireland before 1996 (Hatch and Healy 1998). As a result of the surveys it was relocated at two of these sites (Lady's Island L., Co. Wexford, L. Murree, Co. Clare), but not at Tacumshin L., Co. Wexford. It is also now known from a total of 14 lagoon sites, most of which are clustered in Connemara, but there are also new records from the North Slob, Co. Wexford, L. Bofin, Co. Galway and Maghery, Co. Donegal. This species is listed in the Red Data Book for Britain and Ireland (Stewart and Church 1992). Although recorded from the Baltic to the Mediterranean and Black Sea and also South Africa, it is believed to be declining in Europe. There are only five recent records from the south of England, but there are 12 important sites in the Outer Hebrides (Bamber *et al.* 2001b). These Irish locations are very important in European terms, and it is especially encouraging to have found new sites.

*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 (47%). *Ruppia cirrhosa* is believed to tolerate higher salinities than the former species and to be less common, but neither of these statements is clearly supported in Irish lagoons and the two species were often found growing together. *Ruppia cirrhosa* was only identified at 23 lagoons (26%), but species was not determined at 12 sites.

Loch Tanaí is a good representative of a highly saline lagoon with a permanent connection to the sea. Species composition and shore zonation are interesting, frequency and abundance of most species were high and *Lamprothamnium* was abundant. Three lagoonal specialists were recorded including both species of *Ruppia* and the rare charophyte *Lamprothamnium papulosum*. For these reasons the site is regarded as of **high conservation value** as a coastal lagoon.

## Fauna

Five stations were selected for faunal sampling in 1996 (Figure 57.2, Table 57.1) (Healy & Oliver 1996, Oliver & Healy 1998).

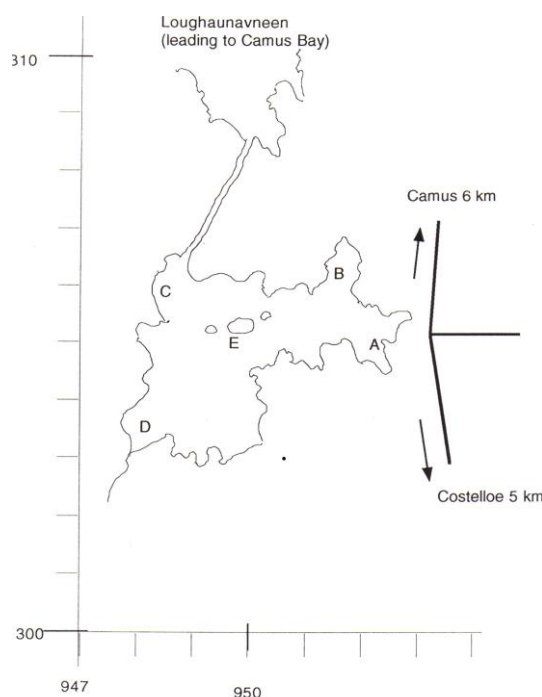


Figure 57.2 Sampling stations used at L. Tanaí.

Table 57.1 Positions of sampling stations in L. Tanaí, 22-24/8/96, with salinity, depth of water and type of substratum.

	Sta A	Sta B	Sta C	Sta D	Sta E
GPS position	L 9521 3057	L 9515 3057	L 9492 3061	L 9488 3036	L 9498 3052
Salinity(psu)	32-34	11	28-32	14-27	34
Depth(cm)	0-60	0-15	0-100	0-100	0-100
Substratum	Fine silt, peat, occasional stones	Soft, unconsolidated peat	Soft, unconsolidated peat	Soft, unconsolidated peat	Granite rocks and boulders. Coarse sand, silt.

A total of 36 faunal taxa were recorded in 1996 (Table 57.2), of which six species are lagoonal specialists:

*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.

Table 57.2 Aquatic Fauna Recorded at Loch Tanaí. June and August 1996.

+ = present; o = occasional; c = common; a = abundant; F = fyke net; L.T. = light-trap.

Species in bold text are lagoonal specialists.

		Sampling Stations									
		A	L.T.A	B	L.T.B	C	L.T.C	D	L.T.D	E	L.T.E
<b>Cnidaria</b>	<i>Aurelia aurita</i>	+								+	
<b>Nemertea</b>	Nemertea	+									
<b>Annelida</b>	<i>Arenicola marina</i>	o		a							
	<i>Hediste diversicolor</i>			+		+	1			+	
	Polychaeta indet.	+									
	Tubificidae indet.	+									
<b>Crustacea</b>											
	Mysidacea <i>Praunus flexuosus</i>	a	>100	a		a	100	a	>100	a	c100
	Isopoda <i>Lekanesphaera hookeri</i>	+	4	+				+	+	3	
	<i>Idotea chelipes</i>	+		+		+		+		+	1
	Amphipoda <i>Caprella acanthifera</i>					+					
	<i>Corophium volutator</i>			+				+			
	<i>Dexamine spinosa</i>										+
	<i>Melita palmata</i>	+						+		+	
	Decapoda <i>Carcinus maenas</i>	+						F, 1			
	<i>Palaemonetes varians</i>	o	3								
<b>Arachnida</b>	Hydracarina						1				
<b>Insecta</b>											
	Coleoptera <i>Enochrus bicolor</i>			+							
	Diptera Chironomidae	+						+			
<b>Mollusca</b>											
	Prosobranchia <i>Hydrobia ulvae</i>	+						+			
	<i>Hydrobia ventrosa</i>	+		+				+			
	<i>Littorina saxatilis</i>	+				+		+	12	+	1
	<i>Rissoa membranacea</i>	+				c		+		+	
	Opisthobranchia <i>Akera bullata</i>	c	6			+		+		+	
	Bivalvia <i>Cerastoderma glaucum</i>	a				o		+		+	
	<i>Musculus discors</i>	+				+				+	
	<i>Mytilus edulis</i>	+				+		+		+	
<b>Bryozoa</b>	<i>Conopeum seurati</i>	+				+				+	
<b>Tunicata</b>	<i>Asciidiella scabra</i>	+				+				+	
	<i>Clavelina lepadiformis</i>	+				+		+		+	
<b>Teleostei</b>	<i>Anguilla anguilla</i>							F,			
	<i>Gasterosteus aculeatus</i>	o	2			o	2	o	3		
	Mugilidae	a	1								
	<i>Platichthys flesus</i>	F,									
	<i>Syngnathus typhle</i>					1					

*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).

*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.

*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.

In spite of the soft substrate, much of which was unconsolidated peat, burrowing forms were relatively well represented throughout the lake and were not more abundant or diverse at stations with more sand or silt. The most abundant species at all stations was *Praunus flexuosus*. *Cerastoderma glaucum* was represented by both adults and juveniles. Faunistically, the lake is a good example of a lagoon with salinity in the middle to upper range. A wide range of ecological types of invertebrate was represented and there were some unusual species present, e.g. *Akera bullata* and *Syngnathus typhle*, but no rare species were recorded. Loch Tanaí, and the other similar lakes in the area, appear to be unknown to marine biologists and their communities have not, therefore, been investigated. The habitat is unusual for brackish species.

### Ecotonal coleoptera

Seventeen species of staphylinid and three species of carabid beetles were recorded in 1996 by Good & Butler (1998), of which two species were indicator species (*Philonthus fumarius*, *Stenus opticus*). Both species appear to be very local in Ireland. The former occurs in marshes and muddy freshwater shores and especially in coastal marshes in Britain. The latter is restricted to marshes, Alder carr, and bogs, occurring in *Sphagnum* and *Carex*. Based on ecotonal coleoptera, L. Tanaí is described as of **significant conservation value**, which refers to the fact that the site is worth conserving in terms of their ecotonal coleoptera.

### Summary

Loch Tanaí is a type of lagoon, rare in a European context, but characteristic of parts of the west coast of Ireland, especially in Connemara, referred to as **rock/peat lagoons** with restricted tidal influence due to the presence of a “barrier” of bedrock and peat. and is valued as moderate/high for its geomorphology because the type is rare in the European context. A wide range of ecological types of aquatic fauna are represented, with 7 lagoonal specialists. Species composition and shore zonation of the vegetation are interesting, frequency and abundance of most species are high and the rare charophyte *Lamprothamnium papulosum* was abundant. Three lagoonal specialist plants were recorded with both *R. maritima* and *R. cirrhosa*. The presence of two indicator species of ecotonal Coleoptera, plus a majority of staphylinid species associated with bogs and wetlands, indicates ecologically well-developed habitats. This peat/lagoon ecotonal habitat may be unique to Atlantic coasts. Overall, Loch Tanaí is regarded as of high conservation value.

**Overall Conservation Value = High**

### Conservation Status Assessment (from Oliver 2007)

Impacts	No significant impacts. Dumping in small area near the road.
Conservation Status	<b>Favourable</b>

### Further Information

Loch Tanaí 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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