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Ballyconneely Lake, County Galway O.S. L 620 437

(Loch Baile Conaola)

O.S. Discovery Sheet 44

**Conservation Designation:** Slyne Head Peninsula SAC 002074, pNHA 002074**General description:**

Ballyconneely is a moderate sized (20ha), very shallow (0.5m) **natural sedimentary** lagoon, with an artificial sluiced outlet running under the road into Ballyconneely Bay. Situated 10km northwest of Roundstone, Co. Galway, and 0.5km southeast of Ballyconneely. It is a “borderline” lagoon. Salinity is probably extremely low most of the time, and measured <1psu at the time of sampling (16-17/7/02). In dry summers it almost dries out completely and is perhaps more of a “machair lake” than a lagoon but remains on the lagoon list for the time being.

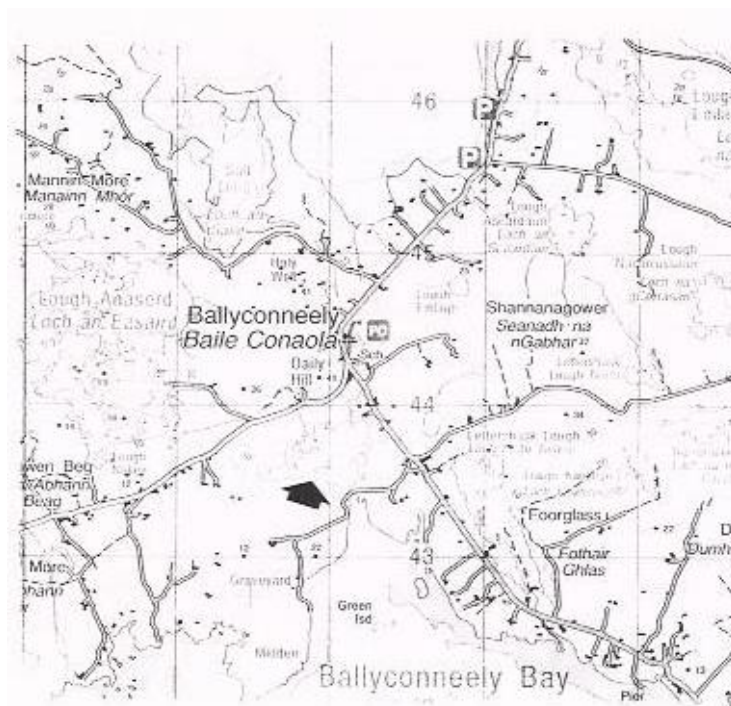


Figure 67.1 Location map of Ballyconneely Lake

Ballyconneely Lake was surveyed in 2002 as part of a PhD study and used in a biological classification of Irish coastal lagoons (Oliver 2005). Aquatic vegetation was examined by C. Roden in 1998 and 2003 (Roden 2004). Four stations were selected for the sampling of aquatic fauna and flora in 2002 (Figure 67.2, Table 67.1)

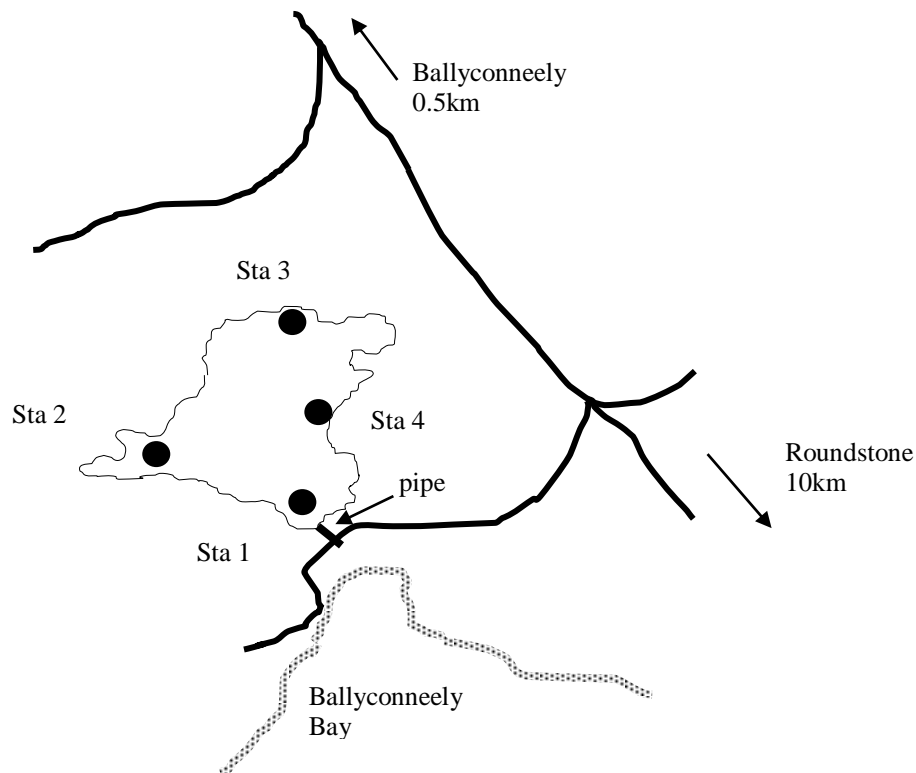


Figure 67.2 Sketch map of sampling stations in Ballyconneely lagoon, 16-17/7/02.

Flora

A total of 10 floral taxa were recorded Ballyconneely lagoon, on 16-17/7/02, including three different species of charophyte, one of which (*Chara ?baltica*) remains uncertain but appears to be a very rare species, which is a lagoonal specialist. The lagoon was visited briefly in 1998 and twice in 2003 by C. Roden (2004), but the identity of the “large Chara” still remains uncertain. One other species (*Ruppia maritima*) is also a lagoonal specialist. Historically, this lagoon has a reputation as a good “charophyte lake”, but eutrophication and desiccation appear to be reducing the charophyte community.

***Chara ?baltica*.** There are recent records of this species from 3 lagoons in Ireland. It was first reported by Hatch & Healy (1998) in L. Aconeera, identified as *C. baltica* by Jim Ryan and confirmed by Mr. Nick Stewart. However, recently Stewart wrote to C. Roden expressing reservations about his identification. The population was resampled and depending on one’s interpretation of the cortex it keys out as either *Chara baltica* or *Chara aspera*, using standard works. Another related lagoonal taxon, known from Brittany and southern Europe is *C. gallioides* which is larger than *C. aspera* and has larger reproductive organs and lacks bulbils. It has not been possible to obtain fertile material which would help in identification, from L. Aconeera and the species remains to be verified. (Roden (1999) recorded *C. baltica* in L. an tSaille in 1998, which is apparently the same species as the *Chara* in L. Aconeera, and similarly remains to be verified).

Another charophyte found in Ballyconneely L. since 1998 easily keys out as *Chara baltica* on the basis of size (>60cm), spines single or in pairs, large reproductive

organs and long uncorticated branchlet end cells, as well as slight encrustation. However this identification has not been confirmed by an expert in the group and Schubert and Blindlow (2004) note differences between the form of *Chara baltica* found in the Baltic Sea and all other European populations identified as this species.

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* appears to be the more common of the species and was found at 41 of the lagoons surveyed (47%). *R. 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. *R. cirrhosa* was only identified at 23 lagoons (26%), but species was not determined at 12 sites.

Table 67.1 Percentage cover of vegetation and bare ground at sampling stations in Ballyconneely lagoon, 16-17/7/02, with salinity, temperature, depth of water and type of substratum. Species in bold text are lagoonal specialists.

	Sta 1	Sta 2	Sta 3	Sta 4	
Salinity(psu)	0.9	0.9	0.5	0.1	
Temperature	19.3	17.9	18.2	17.4	
Depth(cm)	0-25	0-15	0-30	0-15	
Substratum	sand	sand	fine silty sand	sand, occasional stones	
Percentage cover:					
Chlorophyta	<i>Cladophora</i> sp.	80	80	20	10
	<i>Enteromorpha</i> sp.	2	2	2	2
Charophyta	<i>Chara aspera</i>	0	10	50	50
	<i>Chara</i> sp. 2 (<i>baltica</i>?)	0	2	5	5
	<i>Chara vulgaris</i>	0	2	5	5
Angiosperms	<i>Myriophyllum spicatum</i>	5	0	10	10
	<i>Potamogeton pectinatus</i>	0	5	5	0
	<i>Ranunculus baudotii</i>	5	5	5	5
	<i>Ruppia maritima</i>	20	5	5	0
	<i>Scirpus maritimus</i>	5	5	10	10
Bare sand/stones	30	20	5	5	

Ballyconneely has an interesting flora with at least three different chara species, one of which may be a very rare lagoonal specialist, growing in extensive beds of another lagoonal specialist, *R. maritima*. Based on aquatic flora, the site is rated as of **high conservation value**.

Fauna

The aquatic fauna in Ballyconneely lagoon is extremely species-poor with only 10 faunal taxa recorded (Table 67.2). Nearly all of these are very common animals in Ireland, and none of these species was at all abundant, giving the impression of possible recent extermination due to very low water levels and desiccation in large parts of the lagoon. Most of the species recorded would survive equally well in freshwater and it would appear that, based on fauna, Ballyconneely should be regarded much more as a

“machair lake” and a very “borderline” lagoon, in that salinity is probably extremely low most of the time.

Only one lagoonal specialist was recorded in 2002, (*Ochthebius punctatus*) which is a rare water beetle in Britain and Ireland, and only one individual was found.

Table 67.2 Faunal taxa recorded at sampling stations in Ballyconneely lagoon, 16-17/7/02. 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 specialist s or rare species.

	Sta 1				Sta 2				Sta 3				Sta 4			
	SW	Sed	L.T.	Ab	Sed	L.T.	Ab	SW	Sed	L.T.	Ab	Sed	L.T.	Ab		
Crustacea																
Mysidacea <i>Neomysis integer</i>	3.0		15	o			45	o			15	o				
Amphipoda indet.	0.3		4	o									3	o		
<i>Gammarus duebeni</i>			2	o						1	r		3	o		
<i>Gammarus zaddachi</i>	0.3		1	r			r									
Insecta																
Heteroptera Corixidae indet.							1	r								
<i>Gerris</i> sp.				o												
<i>Hydrometra stagnorum</i>														r		
<i>Notonecta</i> sp.														r		
Diptera Chironomidae		0.3		r	1.7		o	0.3	2.3		o	2.3		o		
Hydracarina indet.														o		
<i>Ischnura elegans</i>										1	r					
Coleoptera <i>Haliphus rufficollis</i>	0.3			r												
<i>Hygrotus inaequalis</i>										1	r			r		
<i>Ochthebius punctatus</i>			1	r												
Mollusca <i>Potamopyrgus antipodarum</i>		3.0	8	o	6.7		o	9.0	4	o	24.0			o		
Pisces <i>Gasterosteus aculeatus</i>	2.7		4	o		8	o		2	r			4			
<i>Pleuronectes flesus</i>	0.3			r												

Ochthebius punctatus was recorded at L. an Chara, Inishmore and Ballyconneely, Co. Galway. Listed as a lagoonal specialist in Britain but was only recorded at these two sites during the lagoon surveys. Since 1988, recorded at seven brackish sites in Antrim and Down (Nelson *et al.* 1998).

Apart from the record of one specimen of a rare water beetle, regarded as a lagoonal specialist, the aquatic fauna of the lake is extremely poor. Perhaps if higher water levels were maintained, the fauna would be of greater interest. Based on the survey in 2002, the site is regarded as of **moderate conservation value** as a lagoon based entirely on the presence of one specimen of the rare water beetle *O. punctatus*.

Summary

Ballyconneely is listed as a moderate sized (20ha) **natural sedimentary lagoon** but salinity is extremely low and in dry summers it may nearly dry out completely. Its status as a lagoon is arguable and would be regarded by many as a machair lake. However, the aquatic flora is very interesting with extensive growths of the lagoonal specialist, *Ruppia maritima* and at least 3 charophyte species, one of which is unconfirmed, but appears to be a very rare species (*Chara baltica*) which is also a lagoonal specialist. Aquatic fauna was very species-poor in 2002, indicating possible extinctions due to desiccation of the lagoon. Most of the species recorded are highly mobile insects and common freshwater species. Only one lagoonal specialist was recorded (*Ochthebius punctatus*), but this is also a rare species. The status of Ballyconneely as a lagoon is arguable, but it is scenically very attractive, with possibly two rare species recorded. Overall, the site is rated as of high conservation value, but it appears to be seriously impacted.

Overall Conservation Value = High

Conservation Status Assessment (from Oliver 2007)

Impacts	Poaching by cattle. Eutrophication from surrounding farmland and dwelling houses in very shallow isolated lagoon. Urbanisation. Silting up.
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). Vegetation surveyed in 1998 and 2003 by Roden (2004).

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