



**Conservation Designation:** Gweedore Bay and Islands SAC 001141, pNHA 001141

**General description:**

Kincas Lough is a small (6ha), relatively shallow (5m) **rock/peat lagoon**, lying opposite Cruit Island, approximately 6 kms west of Annagary, Co Donegal. According to local information, the channel from Lough Mullaghderg was deepened in order to relieve flooding. As a result, this raised water levels in Kincas Lough and the tidal inlet was deepened in order to lower these water levels. Seawater enters from the west on most tides but the lakes also receive large volumes of freshwater from small streams and the channel which drains from Lough Mullaghderg to the north. Surface salinity varied from 5-10psu on 19/6/96 and 7.4 - 13.1psu in September 1998 but measured 32-33psu below 1m depth.

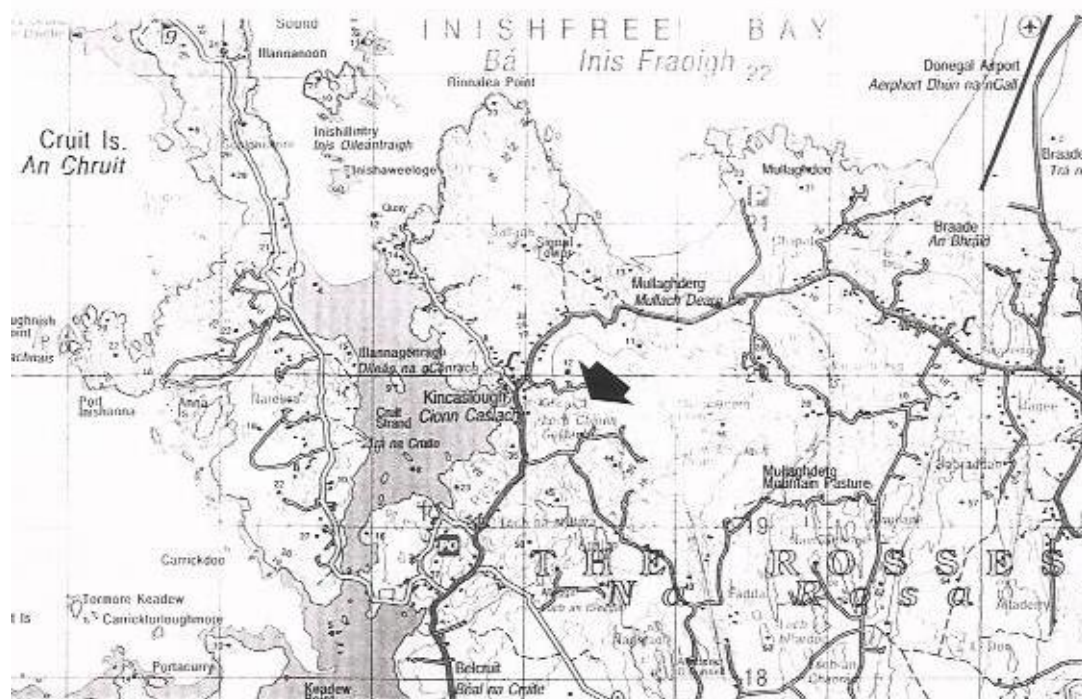


Figure 82.1 Location of map of Kincas Lough, Co. Donegal.

Kincas Lough was surveyed in 1998 for vegetation (Roden 1999), aquatic fauna (Oliver 1999) and ecotonal coleoptera (Good 1998, Good & Butler 2000). Results of these surveys are summarised by Healy (1999a,b; 2003).

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

## Flora

The vegetation of Kincas Lough was surveyed in 1998 by C. Roden (Roden 1999). The following is based on the report by Roden, following his survey on 29/6/98 and 9/9/98.

Kincas Lough is a stratified lagoon with a variety of vegetation types. The sides of the lagoon are rocky with mud on the lagoon floor. In shallow water (50cm) stands of *Chara aspera* occur on gravel. Stands of *Ruppia cirrhosa* occur at 1m depth with *Cladophora vagabunda*. Below 1-2m pure stands of often very dense *Chaetomorpha linum* occur. Two of these species are lagoonal specialists.

*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. *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. *R. cirrhosa* was only identified at 23 lagoons (26%), but species was not determined at 12 sites.

Below 3-4m no plants were found due to lack of light. Patches of a white growth, possibly *Beggiatoa* were noted, perhaps indicating anoxic conditions. Several large stands of *Phragmites australis* were recorded growing on the margins. While it was not possible to adequately survey the marginal vegetation, one stand of *Blysmus rufus* was noted. The phytoplankton of the lagoon was dominated by freshwater species and detritus probably washed into the lagoon from Mullaghderg.

The aquatic flora of the lagoon includes two lagoonal specialists, but otherwise is poor, probably resulting from eutrophication, algal blooms and anoxic conditions at depth. One stand of *Blysmus rufus* was noted on the margin of the lagoon, but based on aquatic flora, the lagoon is rated as of **low conservation value**.

## Fauna

Four stations were selected for faunal sampling in Kincas Lough on 7-8/9/98 (Oliver 1999, Figure 82.2, Table 82.1). A total of 27 taxa were recorded in 1998, of which 23 were identified to species (Table 82.2). Two of these species are listed as lagoonal specialists in Britain and two others proposed as lagoonal specialists in Ireland. Empty shells of another specialist (*Cerastoderma glaucum*) were also found, suggesting that live specimens may occur on other occasions. The hydrobiids were identified as *Potamopyrgus antipodarum* and *Hydrobia ulvae* although some live specimens showed pigmentation of the tentacles similar to that described for *H. neglecta*. However, all preserved specimens were identified as one of the former two species.

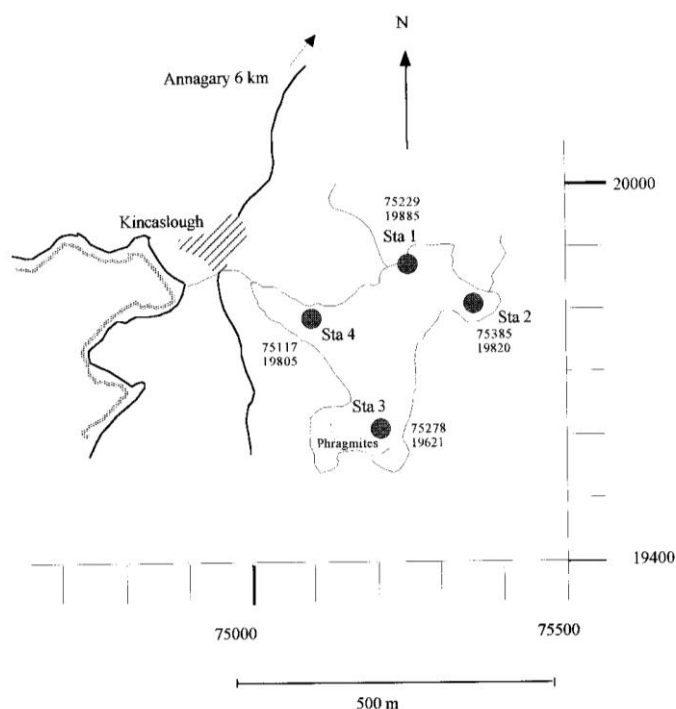


Figure 82.2 Sampling stations used at Kincas Lough.

Table 82.1 Positions of faunal sampling stations in Kincas Lough, 7-8/9/98 with salinity, depth of water and type of substratum.

	Sta 1	Sta 2	Sta 3	Sta 4
GPS position	B 75229 19885	B 75385 19820	B 75278 19621	B 75117 19805
Salinity(psu) at surface	7.4-8.6	9.1	12.2	11.4
Salinity(psu) at depth	29	29	30.9	27.5
Depth(cm)	0-100	20-100	30-100	20-100
Substratum	Rocks, stones, gravel	Rocks, gravel, sand, anoxic silt	Anoxic organic silt, clay	<i>Phragmites</i> "scraw"

***Cordylophora caspia***. Hydroid recorded at four lagoons in Donegal (Kincas L., Inch L., Durnesh L., Blanket Nook), on the North Slob, Co. Wexford, 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).

***Jaera nordmanni***. Isopod crustacean recorded at 24 of the 87 lagoons surveyed (27.6%) and may occur at others where it was not recorded due to the fact that only adult males are easily identified. This species may occur in freshwater, as in L. Errol, Cape Clear, Co. Cork. Described in England (Barnes 1994, Hayward and Ryland 1995) as occurring in streams flowing down the shoreline, on south and west coasts only. All records in Ireland are from West Cork to Donegal. Proposed as a lagoonal specialist for Ireland by Oliver and Healy (1998).

***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



the lagoon may be considerably more interesting. Based on aquatic fauna, the site is rated as of **moderate conservation value**.

### Ecotonal coleoptera

Thirteen species of carabid and twenty species of staphylinid were recorded at Kincas Lough in 1998 (Good 1999, Good & Butler 1999), none of which are indicator species. Based on shoreline coleoptera, the site is rated as of **no conservation value**.

### Summary

Kincas Lough is a small **rock/peat lagoon**, a type of lagoon similar to the Scottish “obs”, which are characteristic of parts of the west coast of Ireland, especially in Connemara, but relatively rare in European terms. The lagoon is situated in an area of scenic interest but the lagoon is not a particularly good example of its type. The aquatic flora of the lagoon includes two lagoonal specialists (*C. linum*, *R. cirrhosa*), but otherwise is poor, probably resulting from eutrophication, algal blooms and anoxic conditions at depth. One stand of *Blysmus rufus* was noted on the margin of the lagoon, but based on aquatic flora, the lagoon is rated as of low conservation value. The aquatic fauna is not rich and is dominated by euryhaline and marine/polyhaline species, most of which are highly mobile and able to enter and leave the lagoon freely and at least two of the species appear to indicate eutrophic conditions. However, at least four of the species are lagoonal specialists and if the anoxic conditions improved, the lagoon may be considerably more interesting. Overall conservation value is rated as moderate.

**Overall Conservation Value = Moderate**

### Conservation Status Assessment (from Oliver 2007)

Impacts	Eutrophication in small lagoon both naturally and due to effluents from upstream caravan park. Ind/commercial activities. Caravans.
Conservation Status	<b>Unfavourable-Inadequate</b>

### Further Information

Listed as a lagoon by Healy *et al.* 1997. Surveyed in 1998 for vegetation (Roden 1999), aquatic fauna (Oliver 1999) and ecotonal coleoptera (Good 1998, Good & Butler 2000). Results of these surveys are summarised by Healy (1999a,b; 2003). Included in a biological classification of Irish coastal lagoons (Oliver 2005) and in the Conservation Status Assessment (Oliver 2007).

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