

Wetlands designated, pursuant to Article 2(5) of the Convention on Wetlands of International Importance especially as Waterfowl Habitat by Ireland, to be included in the List of Wetlands of International Importance, established under the terms of the Convention.

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Rogerstown Estuary and Baldoyle Estuary Co. Dublin which were recently established as statutory nature reserves under Section 15 of the Wildlife Act, 1976 and shown outlined in black on attached maps are hereby designated by Ireland for inclusion in the List of Wetlands of International Importance under Article 2.5 of the Convention. The sites are state owned foreshore. This brings to 11 the total number of sites designated by Ireland.

Rogerstown Estuary is a small tidal bay in north County Dublin which is the estuary of several small rivers/streams which flow in at the western and north-western sides. It is sheltered from the open sea by a long sand spit running north from Portrane. Over 90% of the bay dries out at low tide, exposing extensive areas of mud, sand and gravel which provide rich feeding for waterfowl, and a small area comprising a permanent deep water channel.

Rogerstown Estuary is primarily important as a wintering area for waterfowl, especially for Pale-bellied Brent Geese Branta bernicla hrota from the Canadian Arctic/N. Greenland. For this species the site is internationally important. It also holds up to 5,300 wildfowl (ducks, geese and swans) and up to 7,800 waders.

Baldoyle Estuary situated north east of Dublin city is a tidal bay protected from the sea by a large sand dune system. The bay is also the estuary of some small streams - mainly muddy substrate at low tide with 95% of the area drying out at low springs. Large areas of *Spartina* occur in the northern portion. It is rated as of international importance as a wintering area for Pale-bellied Brent-Geese Branta bernicla hrota, and also supports a variety of other migratory waterfowl species.

The estuaries are the habitats of certain species of birds included in Annex 1 of EEC Council directive 409/79 on the conservation of wild birds (Bird Directive) and as such are the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. Accordingly they will shortly be designated as special protection areas under Article 4 of that Directive.

A description of Rogerstown Estuary has also been forwarded to the Canadian Wildlife Authority for inclusion in their network of Sister Reserves.

## 1. PREFACE.

The Irish Wildbird Conservancy understands that the European Commission has received two formal complaints, relating to the presence and operation of Balleally tiphead in Rogerstown estuary, north County Dublin. Following the failure of the Irish Government to reply to requests for information on the site, the Commission has decided to commence infringement proceedings against Ireland. We understand that the Commission is proceeding on the basis of evidence of breaches of the following Directives:

75/442/EC on Waste

85/337/EC on Environmental Impact Assessment

79/409/EC on Birds

and of a possible breach of Directive 78/319/EC on Toxic and Dangerous Waste.

This report details the importance of Rogerstown estuary for birds, describes the threats to the site, and makes recommendations as to the future management of the area in the interests of conservation. It is intended for circulation to the following authorities, all of whom have a role in the management of this important bird area:

Department of the Environment

Department of the Marine

Dublin County Council

European Commission

Ramsar Secretariat

Wildlife Service, Office of Public Works

## 2. SITE LOCATION AND PROTECTIVE DESIGNATIONS

COUNTRY: IRELAND

NAME OF SITE: ROGERSTOWN ESTUARY

LOCATION: COUNTY DUBLIN

CO-ORDINATES: 53 30' N, 06 06' W.

NUMBER OF SITE (1): 095

AREA: 368 ha

CONSERVATION STATUS: 196 ha ARE DESIGNATED AS A NATIONAL NATURE RESERVE AND RAMSAR SITE.  
THE ENTIRE SITE IS A NO-SHOOTING AREA.  
ROGERSTOWN ESTUARY IS ALSO ONE OF AN INTERNATIONAL NETWORK OF SISTER RESERVES FOR PALE-BELLIED BRENT GEESE.

OWNERSHIP: THE ENTIRE AREA OF FORESHORE IS STATE OWNED. THE REMAINDER IS IN PRIVATE OWNERSHIP.

## 3. GENERAL DESCRIPTION.

Rogerstown is a small estuary, with the outlet to the sea constricted by a sand and shingle bar, and with saltmarsh and wet meadows adjoining the sand/mudflats. The estuary is divided into inner and outer portions by a viaduct carrying the Dublin/Belfast railway line. Because of the constriction of tidal flow, drainage from the inner estuary continues for 3.5 hours after low tide, but the time of high tide coincides in the inner and outer estuaries (2). A tiphead (Balleally tiphead) operated by Dublin County Council is located in the northern portion of the inner estuary.

## 4. ORNITHOLOGICAL DESCRIPTION.

Rogerstown estuary is one of a series of east coast sites which is important for wintering wildfowl and waders, and for birds on passage. The highest numbers of wintering birds were recorded at Rogerstown in the early 1970's, following the introduction of a no-shooting area at the site in 1971. Numbers have fallen subsequently for most species. The estuary holds internationally important numbers of Pale-bellied Brent geese, the increased numbers of this sub-species since the 1970's reflect the increase in the total population. Average winter maximum numbers recorded at Rogerstown in the early 1970's and mid 1980's are as follows:

Species	Source	early 1970's (3)	mid 1980's (4)
Brent geese		400**	841**
Shelduck		600*	328
Wigeon		1100	600
Teal		500	373
Pintail		200*	57
Shoveler		100	43
Oystercatcher		500	183
Redshank		500	583

International importance \*\*, national importance \*.

Monthly bird counts were carried out between November 1989 and April 1990 by the Fingal Branch of the Irish Wildbird Conservancy with the following results:

Species	Nov.	Dec.	Jan.	Feb.	March	April
Brent goose ** (200)	536	618	572	582	494	312
Shelduck * (125)	320	411	412	615	379	329
Wigeon (1000)	800	881	728	910	8	-
Teal * (500)	600	222	347	473	118	76
Pintail (50)	5	2	4	-	-	-
Shoveler * (50)	60	6	10	6	-	-
Mallard * (500)	500	177	152	210	20	45
Red-breasted Merganser (50)	4	13	6	12	7	8
Goldeneye (100)	-	11	-	4	3	-
Bar-tailed Godwit (230)	4	16	38	14	209	-
Black-tailed Godwit * (80)	101	30	-	35	-	380
Curlew * (1000)	502	51	38	2175	248	216
Dunlin * (1000)	1060	320	680	2355	72	83
Grey Plover (50)	20	-	-	9	-	1
Ringed Plover * (100)	-	-	12	143	19	4
Golden Plover (1000)	-	-	-	700	-	-
Knot (250)	5	-	20	-	-	-
Redshank * (250)	850	404	347	1095	420	494
Greenshank (50)	36	2	2	8	2	6
Oystercatcher * (700)	306	180	155	952	260	379
Lapwing * (2000)	2001	2300	161	5140	67	4
Turnstone (100)	6	11	15	28	-	30

International importance \*\*, national importance \*. Qualifying levels for national importance (4) are given in brackets.

## 5. THREATS TO THE ECOLOGY OF THE ESTUARY.

### 5.1. COUNTY COUNCIL TIPHEAD.

Dublin County Council has been operating a tiphead for domestic refuse and non-toxic industrial waste at Balleally, in the inner part of Rogerstown estuary, since 1970. The tiphead is not lined and there is no containment or treatment of leachate. It was extended in 1978 and currently covers an area of 40 ha (see map, Appendix 1). Most of the area covered was formerly mud-flat, and included one of the two principal feeding areas used by waterfowl within the estuary (9).

In addition to the loss of mud-flat, the tiphead impacts on the estuary through:

#### 5.1.1. Toxic heavy metals.

Sediment samples taken in the estuary in 1981 showed elevated levels of Cadmium (2.48  $\mu\text{g/g}$  dry weight), Copper (64.6  $\mu\text{g/g}$ ), Lead (168.5  $\mu\text{g/g}$ ) and Zinc (304  $\mu\text{g/g}$ ) in the vicinity of the tiphead sufficient to cause concern (6). More recent analyses of Lead, Zinc and Copper in sediment and *Fucus* have shown that the tiphead continues to be the major source of heavy metal contamination in Rogerstown estuary (10).

Nickel hydroxide sludge is dumped in Balleally tiphead. Nickel Hydroxide is a base used in metal treatment, and as such is listed in the list of Toxic or Dangerous substances in Directive 78/319/EC. There is evidence that both Cadmium and Zinc can be mobilised from hydroxide sludges in contact with sea water (11). Initially Nickel Hydroxide sludge was dumped directly into the tiphead, but following complaints from local groups this practice was changed. The sludge is now deposited in polyethelene lined pits within the tiphead. The tiphead is not licenced to receive toxic industrial waste, and deposition of the sludge is also likely to be in breach of Directive 78/319/EC

5.1.2. Siltation. Some 27% of the material dumped in the tiphead consists of cinders and dust, and suspended solids in water sampled at the viaduct are 5 times higher than in water upstream of the estuary (5). Silt deposition favours the spread of the cordgrass *Spartina*.

Monitoring of the impact of Balleally tiphead on Rogerstown estuary is the responsibility of Dublin County Council, under the supervision of the Department of the Marine which licences the tiphead operation. Water monitoring procedures are inadequate both in the number of sampling locations and in the parameters analysed, and in the case of metals, analytical methods are not stringent enough to reveal whether contamination is occurring. There has been no monitoring of sediment by Dublin County Council. All of the information on heavy metal pollution of Rogerstown estuary comes from independent sources.

## 5.2. SPARTINA.

The cordgrass Spartina anglica was first recorded in Rogerstown in 1938 (7), but was not observed during an intensive vegetation survey by O'Reilly and Pantin in 1957 (8). Subsequently, it has reappeared and colonised the areas of mudflat previously occupied by Salicornia, and is now the dominant vascular plant in the estuary (9). While Spartina is a source of organic detritus within an estuary, serving as a food source for invertebrate populations, it impacts adversely on the density and diversity of invertebrate species in the areas it covers. In addition, some species of wading bird are reluctant to feed close to the cover provided by Spartina, and this also reduces the area available for feeding. However, in Rogerstown the main impact is the inverse relationship between the occurrence of Spartina and the species of eelgrass and green algae, which are important food plants for both Brent Geese and Wigeon (12).

## 5.3. DISTURBANCE.

Disturbance to birds on the mud-flats is caused, often daily, by people picking Cockles and Periwinkles in the outer estuary. Instances of illegal shooting along the foreshore have occurred.

## 6. SUITABLE STRATEGY FOR SITE PROTECTION.

### 6.1. BALLEALLY TIPHEAD, REMEDIAL WORKS.

1. A leachate containment system should be installed by Dublin County Council immediately, so that leachate can be collected and treated before safe disposal. Containment of leachate would also minimise siltation from the tiphead, and would be of benefit in the control of Spartina.
2. An adequate monitoring programme of both water and sediment should be put in place. As shellfish are harvested in Rogerstown estuary for human consumption, the possibility of heavy metal contamination of shellfish should be investigated immediately.
3. There should be no further expansion of the area of the tiphead.
4. Estuarine landfill is no longer acceptable as a means of waste disposal. The operation of the existing tiphead should be phased out over a period of five years. This would provide ample time for an alternative site to be established, with full impermeable lining, provision for ground water monitoring, and landfill gas collection facilities.

Rogerstown estuary provides an example of the problems associated with waste management throughout Ireland. Waste management and disposal procedures are governed by an increasing number of EC Directives. These are implemented in Ireland by Regulations, which require each local authority to formulate and implement policies on the management of various categories of waste. There is no national policy on waste management, and co-operation between local authorities is minimal. Expertise and supervisory functions are fragmented through a number of Government agencies and Departments, and there is a wide variation in the standards achieved in waste disposal facilities. There is a great need for a central authority with the technical expertise and facilities to supervise all waste management, using a licencing system to ensure that high standards are achieved in all waste handling operations. This should be a function of the proposed Environment Protection Agency, which Government has promised to put in place by the end of 1990, but for which there is as yet no enabling legislation.

## 6.2. REHABILITATION OF BALLEALLY TIPHEAD.

Balleally tiphead occupies an area of 40 ha, most of which was formerly mudflat used by wintering wildfowl and waders. When dumping ceases at the tiphead, it would be appropriate to reinstate the site as bird habitat. A wildlife park should be designed to provide habitat for the species already using the estuary. A large part of the tiphead could be seeded to grass and managed for Brent Geese with an appropriate regime of fertilising and mowing. Such grassland would also be used by feeding Oystercatchers, and as a high tide roost by both wildfowl and waders. Rough grass, scrub and berrying bushes could be planted along the railway line and in the northern portion of the tiphead, to provide cover and food for passerines. A detailed management plan for the site would require a feasibility study.

Access by members of the public could be provided by screened walkways to hides overlooking both the mudflats and the rehabilitated tiphead. Carparking and interpretative facilities could be provided near the road in the northern portion of the site. Rehabilitation costs should be met by Dublin County Council.

## 6.3. PROTECTION OF ROGERSTOWN ESTUARY.

The outer portion of Rogerstown estuary is currently designated both as a National Nature Reserve and as a Ramsar site by the Wildlife Service, Office of Public Works. These protective designations are compromised by the operation of Balleally tiphead in the inner estuary, as the presence of an unlined dump discharging directly into the estuary is not compatible with the requirements for habitat protection inherent in such designations. The Wildlife Service therefore has a role in ensuring that remedial and rehabilitation works detailed above are carried out.

Both the National Nature Reserve and Ramsar designations should be extended to cover the inner estuary. A protected site should be a self-sufficient area which provides all the requirements of the birds for which it is important, during the time when they are present (1). The inner estuary is extensively used by feeding birds, and the salt marsh and wet pasture areas adjoining it are used as high tide roosts.

## 6.4. SPARTINA.

A programme of monitoring and control of Spartina in the estuary should be initiated. This could be included in the management of the National Nature Reserve, and carried out by the responsible authority, the Wildlife Service, Office of Public Works.



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#### 6.5. MANAGEMENT OF THE PROTECTED AREA.

Despite designation of part of the estuary as a National Nature Reserve in April 1988, and as a Ramsar site in October 1988, no management plan or regulations controlling access to and use of the site have been drawn up by the Wildlife Service, Office of Public Works. Such a plan should be drawn up in consultation with local residents and conservation groups. In addition, the Wildlife Service has no field staff in the vicinity to monitor the estuary, and to enforce any regulations on access to and use of the area that may be contained in the management plan. Similar problems occur in many other designated areas in Ireland, and both the deployment and availability of adequately qualified personnel and resources for planning and management of areas of ecological importance must be addressed by government as a matter of urgency. Commitment to environmental protection can be demonstrated only by ensuring that all statutory authorities involved are empowered to fulfil their national and international obligations.

Irish Wildbird Conservancy.  
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## 7. REFERENCES.

- (1) Grimmett, R.F.A., and T.A. Jones, 1989. Important Bird Areas in Europe. International Council for Bird Preservation / International Waterfowl and Wetlands Research Bureau. ICBP Technical Publication No. 9.
- (2) Fahy, E., R. Goodwillie, J. Rochford, and D. Kelly, 1975. Eutrophication of a partially enclosed estuarine mudflat. Marine Pollution Bulletin 6 (2): 29-31.
- (3) Hutchinson, Clive, 1979. Ireland's wetlands and their birds. Irish Wildbird Conservancy.
- (4) Sheppard, Ralph, in prep. The Winter Wetlands Survey, a review of Ireland's wetlands and their birds. Irish Wildbird Conservancy.
- (5) Dublin County Council, unpublished data.
- (6) Wilson, James G., 1988. The biology of estuarine management. Croom Helm, and unpublished data.
- (7) Praeger, R.L., 1939. A further contribution to the flora of Ireland. Proceedings of the Royal Irish Academy 45B: 231-254.
- (8) O'Reilly, H., and G. Pantin, 1957. Some observations on the salt marsh formation in Co. Dublin. Proceedings of the Royal Irish Academy 58B: 89-126.
- (9) O'Briain, M., 1977. Vegetation survey of Rogerstown Estuary, Autumn 1976. Unpublished report for Aer Lingus Young Scientists Exhibition, and pers. comm.
- (10) Kavanagh, Peter, 1989. Assessment of Copper, Lead and Zinc levels in Rogerstown estuary. B.A. (Mod.) thesis, Trinity College Dublin.
- (11) Department of the Environment, London, 1976. Waste Management paper No. 11; Metal Finishing Wastes.
- (12) Nairn, R.G.W., 1986. Spartina anglica in Ireland and its potential impact on wildfowl and waders - a review. Irish Birds 3 (2): 215-228.