

Restoration & Management of the Murrough Wetlands for Annex 1 Habitats and Birds

Project Ref: LIFE NAT/03/IRL/000107



LAYMAN'S REPORT



Wetland restoration in Co. Wicklow- a success story.

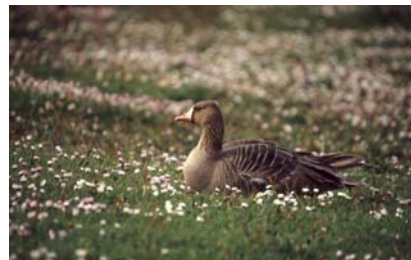
BirdWatch Ireland, Ireland's largest independent nature conservation organisation, has over the last four years been working to create a wetland nature reserve at Blackditch, near Newcastle, Co. Wicklow. There have been few attempts to restore wetlands habitats in Ireland; the project shows the potential for returning rare habitats to their former glory and for wildlife friendly farming. The public have access to the nature reserve to view a multitude of rare birds and plants, only a short distance from Dublin.

The reserve is located in the Murrough Wetlands, the largest wetland complex on the east coast of Ireland, stretching from Kilcoole in the north to Wicklow town in the south. The Murrough has a wide range of coastal and freshwater habitats, threatened plants, a rich invertebrate fauna and important sites for both wintering and breeding bird's species. Despite the significance of the Murrough, it is in fact, quite small and much reduced in size principally through past agricultural drainage. Wetlands in Ireland and throughout Europe, are highly threatened and diminished, only fragments remain of what in the past would have been extensive areas teeming with wildlife. The importance of what remains in the Murrough is reflected in a number of European nature conservation designations.

Under the EEC Birds Directive each member state is required to designate protected areas which have been scientifically identified as critical to the survival of bird species which are either migratory and/or particularly threatened. These areas are known as Special Protection Areas or SPAs. Using similar criteria, threatened plants and habitats are required to be afforded protection under the EEC Habitats Directive. Designated areas in this instance are known as SACs or Special Areas of Conservation. Together these designations form the cornerstone of European conservation policy and are designed to protect the wetlands from further exploitation forming part of a network of European conservation sites called Natura 2000. Natura 2000 sites will hopefully protect the best of what remains of European wildlife, areas such as pristine forests and mountains, as well as wetlands, such as the Murrough.



Calcareous fen with Saw Sedge



Greenland White-fronted Goose

The Blackditch reserve is comprised of a mosaic of habitats, birch and alder woodland, wet grasslands and fen including the rare fen habitat Calcareous fen with Saw Sedge. Work has focused on restoring the grasslands and fen, providing ideal conditions for the threatened water bird species Greenland White-fronted Goose, Whooper Swan, Kingfisher and Little Egret. In addition, the public have been encouraged to come to the reserve and learn about Ireland's wetland heritage, on the capitals doorstep.

Prior to purchase by BirdWatch Ireland, the grasslands were being used for intensive sheep and cattle grazing, deep drains cut across the land and botanical diversity was low overall. The fen was in a degraded state, drains and a plantation of conifers were lowering the water table and as a result drying the fen out and creating ideal conditions for the spread of trees and scrub; basically the fen was turning into woodland.

In order to restore and manage the site for its conservation interest a number of methods are being used - water management, livestock grazing, tree and scrub removal and the planting of crops. In addition, public access and education are provided in a number of ways. These methods and their results are explained below.

Water management

Water management on the reserve has involved raising the water table and the control of water levels through the installation of sluices. Sluices give control of water between and within the different habitats on the reserve. Water levels are maintained in the fen throughout the year but water levels are dropped in the grasslands during the summer to allow cattle grazing. Simple flexible pipes connecting to the main drain are also used to control water within the grasslands at a finer scale so as to manage shallow flooding in the fields during the winter months. The success of these combined techniques of controlling the rise and fall of water levels is reflected in the increased usage of the fields by wader species such as Snipe (up to 71 birds), Curlew (up to 211), Redshank (up to 21 birds) and up to 200 Greylag Geese.



Shallow flooding of coastal fields following installation of water controls

The drains at Blackditch are unlike conventional drains with steep sides; they have been reshaped and now have gently sloping sides. This has increased their ecological value through promoting emergent vegetation and has allowed the easy movement of water birds, encouraging their use of the reserve. With traditional stock fencing removed, the drains act as 'wet fences' preventing cattle from wandering. Through their grazing cattle keep the cleared and re-profiled banks clear. These improved drains have allowed access to the water by the young of breeding bird species including Mute Swan, Mallard and Moorhen and provided feeding opportunities for waders and Little Egrets which are now a common sight at Blackditch.

The creation of approximately 1 hectare of open water has provided safe roosting and feeding sites for water birds. Mixed flocks of up to 200 Mallard, 220 Teal and 300 Wigeon have been attracted to the pools as well as up to 67 Greylag geese. Many of these species are considered to be 'site faithful' and, if conditions allow, will return to the same site year after year and this now appears to be the case with Blackditch. As well as the target species many other wintering species have shown increased periods of usage during the winter months as well as increased numbers.



From a grass field.....



.....to a scrape pond.

While appropriate water levels are very important, it is also the quality of that water which is crucial. Use of the ditches, pools and fields by foraging ducks, geese and waders is dependant on the quality of food available to them. Changes in agricultural techniques and limiting chemical input have been a high priority with regular monitoring allowing us to gauge water quality at given points in time and also to see if management work is having a positive or negative effect. Results from this monitoring to date show little in the way of change but taken as a whole indicate an improving trend.

Restoration grazing

The use of conservation grazing animals has been increasingly recognised as a valuable management tool in the control of vegetation. Local farmers were invited to supply grazing stock to the reserve for approximately 22 weeks per year between May and October and in return for grazing they help with crop planting and mowing as need arises. This low intensity restoration grazing by cattle (less than 0.5 Livestock units per hectare) on the grassland areas of the site is providing suitable feeding conditions for both wintering and breeding birds through the creation of 'tussocky' and patchy swards. During the spring Sky Larks, Reed buntings, Meadow Pipits and Stonechats benefit from the improved feeding as do Grey Geese, Curlews and other waders during the winter.

In the fen, similarly low intensity grazing by 'Kerry Bog' ponies helps control encroaching coarse herbaceous species and the re-growth of scrub material. As a result specialised fen plants are provided with suitable conditions for their re-colonisation. These ponies were originally bred to haul turf off bogs in the west of the country. With their hardy pedigree, they are well suited to life in the wet conditions of the fen and have proved their worth in the restoration of the fen. At present three ponies have been donated to the project by 'Genetic Heritage Ireland' and have been hard at work since 2006. In the future it is hoped to increase the herd number as areas of scrub are cleared from the fen.



Tree and scrub removal

The removal of trees on the fen has been the most time consuming element of the work in the restoration of the fen. Two elements were essential, the removal of a plantation of Lodgepole Pine and the control of a large percentage of invasive willow and gorse. Combinations of methods were required to ensure that the sensitive vegetation of the fen was not damaged. Use of standard forestry machinery was effective in removing the conifers after they had been felled using chainsaws. Willow and gorse scrub on the main body of the fen was felled using similar methods though extraction was limited due to the sensitive nature of the ground and likely damage that would have been caused by excessive machine movements. On-going control of the re-growth of scrub will depend largely on a mixture of restoration grazing, increased water levels and manual cutting and treating by BirdWatch Ireland staff and a dedicated, volunteer workforce.



Fen showing plantation and scrub

Fen after felling and clearance

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The removal of trees lines on the grassland areas of the site has created an 'open vista' over part of the reserve; this has encouraged geese which prefer exposed situations. This has resulted in regular goose usage, including the target species Greenland White Fronted Goose, up to six birds being recorded for the first time in over a decade.

Crops

Planting sacrificial crops allows finches and buntings to feed on a huge 'bird table' of seeds in the winter months. Crops, such as Linseed, Quinoa and Oats, provide a huge resource for birds and have attracted flocks of Greenfinch, Linnet, Chaffinch, Goldfinch, Redpoll and Brambling, up to 200 strong. Such crops also provide cover for ground feeding birds such as Song Thrush and Pheasant Other, hardy biennial crops like Sugar Beet have provided a ready food source for wintering ducks and geese and with the additional provision of waste potatoes, barley and wheat have attracted several species not seen at Blackditch in some years.

Public provision

BirdWatch Ireland has been hard at work to inform the local and wider community of its work at Blackditch. Public access to the reserve is now possible along footpaths through the grasslands, fen and woodland and has the added benefit of linking with the existing coastal shingle ridge path providing a 2km walk through all the major habitats. A purpose built, elevated bird watching hide has been constructed providing disabled access and disturbance free viewing of water birds on the pools and fields at the northern end of the reserve .



Our educational programme started in May 2005 when 38 nearby schools were invited to visit the project so that their students could take part in age-appropriate field education activities. The aim was to raise their awareness of the purpose and value of the LIFE project and the Natura 2000 network and to further their understanding of how The Murrough Wetlands pSCI contributes to conservation in the area. Field education activities were designed to

introduce students to the ecology of the reserve and to learn about particular species present on the site at that time of year. The success of the programme was continued in 2006 and 2007 with 41 schools invited from the local and wider area. Since the commencement of the programme in excess of 300 pupils between the ages of 9-17 years from a total of 13 schools have visited the project site. In addition to school visits to the reserve, 7 visits have been made to schools with visual presentations given to pupils to explain the purpose of the project.



In addition to the schools programme BirdWatch Ireland has held a number of open days allowing members of the public access to the reserve with the benefit of guided walks and talks given by members of staff explaining the purpose of the work as well as interpreting the sights and sounds to be enjoyed. To date over 1,000 people have attended.

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Public talks, presentations and surveys have been a regular feature of the project, allowing BirdWatch Ireland to address any concerns members of the local community might have held and to gauge their appreciation and knowledge of the reserve and its objectives.

Interpretation panels have been placed at strategic locations around the reserve outlining the ecology of the different habitats. Other panels and posters placed in the viewing hides will assist visitors in the identification of the more common bird species that they are likely to see.



A web page was initially created for this project in December 2004 and completely redesigned and updated in the spring of 2007. The web page is hosted on the BirdWatch Ireland main website, and can be accessed on:

www.birdwatchireland.ie/bwi/pages092003/conswork/projects/eastcoastreserve

Monitoring

Monitoring is a hugely important part of our work on the reserve allowing us to measure the effects of management tasks in order to show whether they are being successful when compared with the objectives. Regular surveys are carried out to count the birds, particularly the target species, to give us a picture of the species present, their numbers and where and how they use the site.

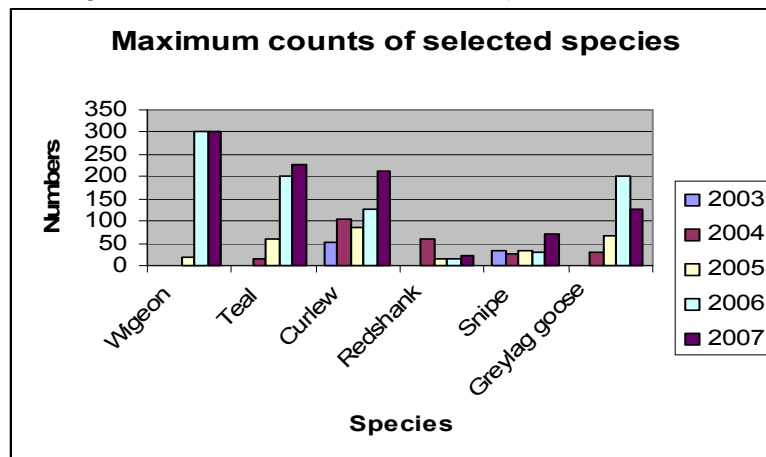
Table 1. Use of site by target bird species.

	2003		2004		2005		2006		2007	
	Rec.	Peak	Rec.	Peak	Rec.	Peak	Rec.	Peak	Rec.	Peak
Little Egret	2	1	16	1	105	7	143	4	130	4
Whooper Swan					2	4	7	14	1	6
White-fronted Goose					22	6			2	1
Kingfisher	1	1	6	1	6	1	9	1	4	1

Rec: No. of days on which birds were recorded. Peak: Maximum number of birds counted.

As well as collection of data on the target species these surveys and observations have also allowed us to show that there has been an general increase in species and numbers and the period of time that they use the reserve. To date 123 species have been recorded of which 17 are Annex 1 species of the EEC Birds Directive. Of the remainder 9 are red listed and 37 amber listed as birds of conservation concern in Ireland. The general increase in numbers of ducks, waders and geese over the lifetime of the project and particularly since water management work has been completed is notable and shown in Figure 1. below.

Figure 1. Maximum counts of selected species 2003 - 2007



In addition to those for birds, regular surveys are carried out for all the main flora and fauna groups to test for any improvement in the general biodiversity of the reserve. Amongst these and to date 210 species of moth, 18 species of butterfly (including the rare Marsh Fritillary), 15 species of dragonflies and damselflies and 5 species of bat have been recorded.

Monitoring the restoration of the fen is a long term event with few changes being apparent in the first few years. Whilst restorative measures have been put in place only minor changes have been recorded though since the removal of the pine plantation in 2006 and further felling and scrub clearance work we are already seeing a selection of grasses and flowering plants re-colonising where previously there were few or none. A plant typical of fen conditions, the Narrow - leaved Marsh Orchid, had long since disappeared through the drying out of the fen, encroaching scrub and the subsequent loss of its natural habitat. Since improvements in water management were completed together with the clearance of encroaching scrub it has returned and it is hoped that it, along with a host of other species will be able to flourish.

Surveys were held at the beginning and end of the project to gauge public perception of the reserve and knowledge of Natura 2000 designation and purpose. The responses from the second survey, when compared directly with the first, clearly demonstrate that the project has had a very positive impact on promoting a wider recognition locally of Natura 2000 and the benefits of special nature protection status for land in a local area.

Costs and benefits

The cost of the project was €2,129,864 with a € 1,597,398 contribution from the European Union LIFE fund. This allowed the purchase of the 89 Hectare site and its management over a period of four and a half years. The bulk of money- €1,509,000 was spent on the land purchase.

Over the lifetime of the project BirdWatch Ireland has spent a large amount of money on equipment, goods and services. Excluding the cost of land purchase and overheads, we have spent 26% on goods and services within a 25km radius of the project site thus injecting some €153,000 into the local economy.

In addition, open days and guided group walks have brought in excess of 1000 people to the reserve, many of whom have spent money in the immediate vicinity.

From a conservation perspective the project has realised its main priority of the protection and enhancement of 19 hectares of Annex 1 priority habitat to the benefit of the four target bird species. Although small in terms of area this is still significant in the context of the Republic of Ireland and particularly the east of the country. Over the last decade some 79% of all fen/wetland habitat in Ireland has been lost to land reclamation, drainage for agricultural purposes and infilling. Of the 19,620 hectares remaining much is still under threat from all of the above as well as general

development. Much of this remaining area is fragmented with most areas less than 100 hectares.

With 43ha of the site proposed designation as SPA and the remainder as candidate SAC, its inclusion within The Murrough Wetlands pSCI and Kilcoole Marshes SPA has extended the area of these designations and created a more continuous area of protected sites along the coast.

The Kingfisher has experienced a decline in its Irish breeding range and has an unfavourable conservation status in Europe and Ireland. The species has been attracted to the site and has been recorded regularly. The species is known to nest close to the project site and BirdWatch Ireland estimates that the project site can maintain two pairs of breeding birds. Four Kingfisher nesting banks have been constructed in anticipation of their future use.



Over 20% of northwest European wintering population of both Greenland White-fronted Goose and Whooper Swan are found in Ireland. Both these species winter at a limited number of sites, making them vulnerable to disturbance and habitat change. Both these species are very 'site faithful' but have been attracted to Blackditch in small numbers and it is hoped that over time their use of the site will increase.



Little Egret

The Irish breeding population of Little Egret is only found in 14 sites (2004). Two breeding pairs are found close to Blackditch and benefit from the disturbance free feeding found on the site. This species has been attracted to the site in increasing numbers and over extended periods of time. It is hoped that the nearby colony will grow in response to the ideal conditions that BirdWatch Ireland is providing.

Transferability

Much of the work carried out over the course of the project has shown demonstrable value to a variety of land managers.

BirdWatch Irelands involvement in the Rural Environment Protection Scheme (REPs) and implementation of supplementary measures required by it, including the provision of bird cover tillage crops and hedgerow planting, have been the basis of demonstrations to local farmers and landowners to witness the benefits of the scheme from a farming and conservation perspective.



Other groups of conservation managers have been invited and attended 'walk and talk' outings around the reserve in order to share experiences and to discuss common problems and resolutions.

The involvement of local farmers in the grazing regime in return for help when needed has been a great success and allowed for an increase in awareness of the purpose of the objectives of the project and helped in promoting better understanding of conservation centred land management.

The use of Kerry bog ponies, a rare breed has demonstrated their use in the restoration of wetland sites through their ability to control coarse vegetation. These small, sure-footed, versatile ponies were used on family holdings in the mountains and valleys of Kerry for centuries. They were known locally as Hobbies. It is thought locally that this name may have been derived from a practice in Gaelic-speaking areas of calling "Hup, Hup" repeatedly to a pony to attract it home to the farmyard. The modern name - Kerry Bog Pony - reflects the qualities of their living and working environment. The successful use of an Irish rare breed

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has not only demonstrated benefit through its use as a conservation management tool but also to the breed itself in ensuring its future.

The Future

BirdWatch Ireland will continue to manage the reserve in order to benefit the target habitats and species, to secure the integrity and increase the general bio-diversity of the site.

Public access infrastructure will be improved and added too. The construction of two further viewing hides are planned for 2008/9 and a hard surface path is hoped to be in place in summer 2008 providing disabled access to the existing hide. Existing paths will be extended and upgraded, particularly in the wetter parts of the site, adding to the present network and allowing access to other areas of the site during the spring and summer months.

The educational programme will be extended to include invitations to schools and other interested groups to visit the reserve from a wider area.

Demonstrations of management best practice will be offered to interested private and public groups with particular emphasis on agri-environmental elements and public access.

Open days will continue to be held on an annual basis with guided walks and talks by project management staff available.

The web page will be updated on a regular basis with information on management work, activities, species and habitats made available to BirdWatch Ireland members and the general public.

Funding for woodland management work in 2008 has been secured with other grants available for conservation management applied for.

A public appeal for funds to continue with the restoration and improvement of habitats post EU LIFE/NATURE funding was set up at the commencement of the project and has been successful in raising funding to ensure the continuation of the work of the reserve and BirdWatch Irelands desire to create a flagship reserve for habitats, species and people.