

Figure 1: Location and boundaries of the Girley Bog NHA in County Meath. Source: NPWS Map Viewer 26.2.14 www.npws.ie.



Figure 2: Ordnance survey map of Girley Bog from 1836 showing the drains marking out the townland boundaries within the bog. Source: www.osi.ie



Figure 3: Satellite image of Girley Bog from 2015 showing the high bog habitat, the partially forested cutover bog and the farming landscape surrounding the bog. The townlands of the boog are indicated. Source: applemaps.



Collaborative Conservation of Girley Bog

Co. Meath, Ireland

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Girley Bog, Co. Meath (GPS 53.68483N -6.94971E) is a raised bog Natural Heritage Area (NHA1580). It is 100ha in extent located on the eastern margin of the range of raised bog distribution in Ireland. Girley Bog is owned by state agencies, non governmental organisations and private individuals. The bog is of significant importance for biodiversity and recreation. The successful management of Girley Bog for its species and habitats and its amenity value has required collaboration between a diverse range of community individuals and stakeholder groups. These include the National Parks and Wildlife Service, Coillte Teoranta, Dutch Foundation for the Conservation of Irish Bogs, Meath County Council, Meath Eco Tours, Irish Peatland Conservation council, Native Woodland Trust, Denyer Ecology, Causey Farm, Queen's University Belfast and local community members.



Figure 4: The IPCC poster paper presented to the Irish Peat Society/International Peat Society meeting in Tullamore in 2015 on the theme of Peatlands - A New Conversation which described the work of the different stakeholders on Girley Bog. What was the name of the poster and get its pdf from Nuala.



Figure 5: Maps of the Parish of Girley in the Barony of Kells and of Glrley Bog from the Down Survey 17th century. Source: Trinity College Dublin.



Figure 6: Map of the Girley Bog NHA boundaries presented with the Statutory Instrument No. 600 in 2003.



Figure 7: Ownership map of Girley Bog where known drawn by IPCC 2015.



Figure 8: Archaeological sites and monuments located in the vicinity of Girley Bog drawn by IPCC 2015.



Figure 9: Map showing the location of the National Loop Walk No.51 at Girley Bog. Source: www.irishtrails.ie

Girley Bog - Portach Greillighe



Coillte property should not be interpreted as conferring a right of way.

Figure 10: Source: www.coillteoutdoors.ie



Figure 11: Girley Bog, Co. Meath Loop walk interpretive drawing prepared by Christopher Somerville, Irish Independent 2009. Source: www.walksireland.ie





Figure 12a: The welcome sign for visitors located in the car park off the N52. Source: NPWS

Kells Girley Bog Eco Walk Forest and Scrub

When the turf is cut away and the area abandoned it is not long before scrub invades and takes over. Most of this walk is around the edge of the bog in areas of 'cut-over' bog. Stands of the Bracken fern invade first and later birch and willow trees form thick scrub. This natural scrub hosts a wide variety of birds, including migrant species, which come from Africa each summer to raise their chicks. Although difficult to see they have loud, distinct and very tuneful songs. Willow Warbler, Chiff-chaff and Blackcap are the three most common species. Resident species like Long-tailed Tits can be seen throughout the year.

In the south-west of the high bog there is coniferous forestry plantation. The cutover on the western half of the site is also dominated by coniferous forestry. The coniferous trees are fast-growing species that originate in North America. The two common species are Sitka Spruce and Lodgepole Pine.

Although not so rich in wildlife, conifer plantations are host to species such as squirrel and goldcrest, Ireland's smallest bird.

Merlin, a small bird of prey, is also found in the forest areas.



Figure 12b: The forest and scrub themed visitor panel on the Girley Loop Walk. Source: NPWS

Kells Girley Bog Eco Walk Plants and Animals of the Bog



The most obvious plant species on the bog is Ling Heather and in the wetter areas Cross-leaved Heath is also found. However, on closer inspection there are a host of other species including Hare's-tail Cottongrass, Cranberry and Bogrosemary. In the wettest parts of the bog there are several species of bog mosses. These bog mosses can form dense cushions or hummocks. Each species has a unique colour and together they can form a brilliant mosaic. The scarce bog moss S. fuscum is found at the centre of the bog. The insectivorus plant Great Sundew (Drosera anglica) is also found. This plant gets nutrients by ingesting insects that it traps in its sticky leaves. Many species of lichen can be found on the bog. Lichens are ancient and simple plants that result from a symbiotic relationship between fungus and bacteria. The presence of the lichens is an indication that the area is free of air pollution.

Snipe and skylark are the two birds most often seen on the high bog. Snipe rise from the dense heather vegetation with a startle and zig-zig away over the bog. Skylark are most obvious in the middle of summer singing their incessant and tuneful song as they hover high above the bog.

Badgers, foxes and hares also criss-cross the bog in feeding forays.



Figure 12c: The plants and animals of bog themed visitor panel on the Girley Loop Walk. Source: NPWS

Girley Bog Eco Walk Human History

Throughout most of history Irish bogs were impassable. To cross the wet, boggy terrain people built bog roads or "toghers". In the twentieth century as the bogs were exploited for fuel thousands of important archaeological finds have been made. These "bog finds" include swords, gold jewellery, trumpets and even human bodies preserved by the acid nature of the bog. In July 2006, 20 pages of a Medieval bible (800AD - 1000AD) were found on an Irish Bog.

The walk around the bog is mostly on old bog roads that allowed people access their turf plots. The turf was the only source of heating and cooking for most people in the area. Traditionally, the turf was cut with a spade called a 'slane'. The wet 'bricks' of turf were then spread out on the low 'cut-over' ground and left there to dry for a few weeks. Once the turf was a bit firmer it was then stacked up and left to dry out more thoroughly. When properly dry the turf was either taken home or was gathered together into a stack or 'clamp'. The clamp may have stayed on the bog until September and then brought home. Another interesting use of the bog was the tradition of putting butter made in summer into the bog. The bog kept the butter cool and it was taken out and used or sold at a local market in the Christmas or spring. There have been many finds of butter in Irish bogs (sometimes in special wooden containers called 'methers'). The turf from Girley Bog was of low quality and no one has cut turf on the bog for the last 10 years and so there is a large area of intact high bog remaining on the bog. This makes the bog of special interest in nature constraint terms.



Figure 12d: The human history themed visitor panel on the Girley Loop Walk. Source: NPWS



Figure 12e: The Coillte welcome site sign at the Drewstown entrance to Girley Bog. Photo: C. O'Connell



Figure 12f: The Coillte welcome Information sign at the Drewstown entrance to Girley Bog. The sign is presented in both English and Irish. Photo: C. O'Connell



Figure 13: Map showing the location of the loop walk, the position of the interpretive signs and the various services for visitors surrounding the bog. Drawn by IPCC.



Figure 14: Map showing the natural hydrological boundary of Girley Bog and the present extent of the high bog. Drawn by IPCC. Source: www.osi.ie.



Figure 15a: 1995 air photograph of Girley Bog showing a fire scar to the north west. Source: www.osi.ie



Figure 15b: 2013 air photograph of Girley Bog showing the fire scars running north west to south east across the centre of the bog. Source: Native Woodland Trust



Figure 15c: Map showing the fire events in 1995 and 2013 on Girley Bog. Drawn by IPCC. Girley Bog Conservation Action Plan 2016-2020



Figure 16: Map showing the location of dumping on Girley Bog 2015. Drawn by IPCC.



Figure 17: A portion of the 1910 Ordnance Survey Map showing the names and locations of the wooded areas at Girley bog. Source: www.osi.ie



Figure 18: Future habitats predicted for the portion of Girley bog restored by Coillte as part of an EU funded Life Project. Source: J. Derwin, Coillte.



Figure 19: Map summarizing the results of a field hydrochemical survey of the drains immediately surrounding Girley Bog. (Completed August 2012). All electrical conductivity readings were corrected for temperature effects, i.e. Specific Electrical Conductivity (SEC). Source: Flynn & Regan 2012.



Figure 20: Water table map of Girley Bog generated using water level data collected on the 24th October 2012. Values beside each piezometer are heads (groundwater elevations about datum). Source: Flynn & Regan 2012.



Figure 21: One metre DTM map of Girley bog showing the locations of the piezometers installed by Flynn & Regan 2012 and by Coillte 2011, the principal discharge points of water from the bog and the details of the drains on the high bog. Source: Flynn & Regan 2012.



Figure 22: Restoration Plan for the hydrology and peat forming ecotopes in a central core area of Girley Bog Co. Meath 2012. The area encompases almost all part of the high bog (11%) where the topographic gradient is less than 1%. Primary dams are located at those points where the drain elevation has dropped by 10cm. Additional dams are located in those areas where the gradient is gentler, but where at least 3 dams per 100m length of drain are required. Source: Flynn & Regan 2012.





Figure 23: Map showing the total number of 145 water monitoring piezometers on Girley Bog. Source Cushnan pers. comm 2015. The image above show the detailed locations of the IPCC installed piezometers.



Figure 24: Drain blocking undertaken by IPCC on Girley Bog in 2014 and 2015 and the rationale for dam insertion into Drain B.

Figure 25: List of moth fauna for Girley Bog NHA. Source: mothsireland.ie

NPWS Site Synopsis for Girley Bog NHA

SITE CODE: 001580

Girley Bog NHA is located 7 km south-west of Kells, mainly in the townlands Chamberlainstown, Girley, Drewstown Great and Ethelstown in Co. Meath. The site comprises a raised bog that includes both areas of high bog and cutover bog, and is bounded in parts by coniferous forestry to the south and north. The site is partially divided by a large drain that runs across the high bog. There is an area of hummocks and pools in the southern half of the high bog, although parts of the south-west have been afforested. Cutover is found all around this site and in the north-west and southwest the cutover has been utilised for forestry.

Much of the high bog has vegetation typical of a Midland Raised Bog, consisting of Ling Heather (*Calluna vulgaris*), Hare's-tail Cottongrass (*Eriophorum vaginatum*), Cranberry (*Vaccinium oxycoccus*) and Bog-rosemary (*Andromeda polifolia*). Cross-leaved Heath (*Erica tetralix*) and the lichen Cladonia portentosa are common on areas of the high bog. The bog mosses *Sphagnum papillosum*, *S. capillifolium* and *S. magellanicum* are common in the centre and south-west of the high bog and the scarce bog moss *S. fuscum* is found at the centre of the site. The bog moss *S. cuspidatum* is found in the pools at the centre of the bog and is also found in the tear pools in the north-west of the site in association with Great Sundew (*Drosera anglica*). The bog moss *S. magellanicum* and White Beak-sedge (*Rhynchospora alba*) are found growing on the edges of these tear pools. Young Lodgepole Pine (*Pinus contorta*) and Scots Pine (*Pinus sylvestris*) are frequently encroaching on the high bog in the north-west and south-east of the site. In the south-west of the high bog there is coniferous forestry plantation. The cutover on the western half of the site is also dominated by coniferous forestry. The remainder of the cutover is dominated by Ling Heather and Downy Birch (*Betula pubescens*) scrub.

Current landuses on the site include forestry, both on the high bog and on the cutover. There has been burning on the north-west of the high bog in the past. There is active peat-cutting in the north-west and south-east of the site. Damaging activities associated with these landuses include drainage throughout the site and burning of the high bog. There are major drains running through the centre of the high bog. All these activities have resulted in loss of habitat, damage to the hydrological status of the site, and pose a continuing threat to its viability.

Girley Bog NHA is a site of considerable conservation significance comprising as it does a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. This site supports a good diversity of raised bog microhabitats, including hummocks and pools. This site is one of the few remaining raised bogs in County Meath and represents the eastern extreme of the range of raised bogs in the country. Ireland has a high proportion of the total E.U. resource of this habitat type (over 50%) and so has a special responsibility for its conservation at an international level.

14.11.2002

Figure 26: Site synopsis for establishing Girley Bog as a Natural Heritage Area. Source: www.npws.ie

Site 704 - Girley Bog Wood - National Survey of Native Woodlands 2005



Figure 27: Site 704 Bog Woods, Cloncat, Co. Meath (Girley Bog Wood) surveyed by Perrin et al (2008) for the National Survey of Native Woodlands 2003-2008.



Figure 28: Ecotope survey of Girley bog 2014 showing the distribution of peat forming and non-peat forming communities on Girley Bog. Source: Denyer 2014.



Figure 29: Detailed location of the 1.36ha of active peat forming sub central ecotope on Girley Bog 2014. Source: Denyer 2014.



Figure 30: Detailed location of the active peat forming habitat and the modelled area of degraded raised bog habitat on Girley Bog The area of each habitat is 1.6ha amounting to 3.6ha or 1% of the national active raised bog target. The area of the remaining hight bog is outlined in black. Source: Macklin pers comm from the NHA Review 2014.



Figure 31: LiDAR map of Girley bog, Co. Meath. Source: Francis Macklin pers comm, NHA Review 2014).



Figure 32: Slope map of Girley bog, Co. Meath. Source: Francis Macklin pers comm, NHA Review 2014).



Figure 33: Contour map of Girley bog, Co. Meath. Source: Francis Macklin pers comm, NHA Review 2014).



Figure 34: Drainage patterns on Girley Bog. Drawn by the RPS as part of the Natural Heritage Area Review in 2014.



Figure 35: Depressions located in the cutover areas of Girley Bog which may be sutiable for Active Raised Bog Restoration. Drawn by the RPS as part of the Natural Heritage Area Review in 2014.



Figure 36: Slope patterns on the cutover bogland areas of Girley Bog. Drawn by the RPS as part of the Natural Heritage Area Review in 2014. Slopes of les than 0.3% are suitable for active raised bog formation provided the water table is high enough and there is a source of *Sphagnum* mosses. Drawn by RPS as part of the Natural Heritage Area Review in 2014.



Figure 37: *Sphagnum* moss restoration on the cutover of Girley by IPCC in 2014 and 2015.



Figure 38: Subsoil geological map of Girley Bog and the surrounding area. The red line shows the extent of the bog in 1865. Source: Flynn & Regan 2012.

Safe Visit Guidelines

As you explore Girley Bog you can learn more by information signs located throughout the loop walk. ensure you have a safe Here are some tips to stopping at the many visit and to help

generations can enjoy it too. that future

Figure 39a Girley Bog visitor map and guide published by the IPCC in 2014.

- prohibited as they damage the bog and spoil the Dumping of rubbish and personal items is environment.
- Camping, fires and the use of motorised vehicles on the bog are prohibited as they disturb wildlife.
 - Please keep pets on a leash as they can disturb wildlife.
- remove or otherwise disturb any natural feature or It is an offence to feed or molest wildlife or plant on the bog.
 - It is dangerous to walk on the bog surface owing brambles. Please use the loop walk trail and the to hidden ditches, soft ground, tree stumps and boardwalks provided.
- Liability Act 1995, the occupiers of these premises puts all visitors to his premises on notice that his disregard for the visitor or the property of the sole duties to them are: (a) not to injure the intentionally, and (b) not to act with reckless "Pursuant to the provisions of the Occupiers' visitor or damage the property of the visitor

visitor."

visiting the Bog of Allen Nature www.ipcc.ie where you will find lots Learn more about peatlands by Centre run by the Irish Peatland of information about Irish peatlands including a peatland passport offering Conservation Council. Visit

you a selection of peatland sites that you

A AND AND

can visit throughout Ireland.



Getting to Girley Bog



Access and parking are available at the trail head for the Girley Bog National Loop Walk (No. 51) Girley Bog is located 8km south west of Kells. Facilties: which is signposted from the N52. GPS: N53.68483 E-6.94971 Grid Ref: N 705 680

0 Status: Natural Heritage Area

Area: 100ha No. 1580

Owners: private individuals, non governmental Conserving Girley Bog is a meitheal between private individuals and the following groups: organisations and the Irish Government.



Partnership Fund 2013 and from the Environmental Acknowledgment: This leaflet was produced with Technology, Research and Innovation for the through the Local Agenda 21 Environmental funding support from Meath County Council Protection Agency as part of the Science, Environment (STRIVE) programme.



Artwork: © J. Simmons, D. Conroy, T. Ó Corcora, Bog of Allen Nature Centre, Lullymore, Rathangan, Co. Kildare. Irish Peatland Conservation Council, Text: © 2014 IPCC. Design: N. Madigan. K. Flood and C. O'Connell





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protect Girley Bog and its wildlife so



Figure 39b Girley Bog visitor map and guide published by the IPCC in 2014.



Figure 40: Effects of drainage on Girley Bog described by Flynn & Regan 2012.

Onirthmiling Cirk y Bog

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Girley Bog, Co. Meath **Conservation Action Plan 2015-2025** Ouestionnaire



The Gatey Eog Mirifland Team mode you to give your opinion on the importance of Gigley Bog to you and the issues you think used to be dealt with to astroguest and promote thesaits.

The curvey will only take a few manufactor your time. We would write your opinion and throughts and would like to include them in the Conservation Action Fign for the site. This plan will span the next 10 years to 2025. Thesk Vin.

PS: If you would like to complete this anyoy on line please want terms lood is and click on the lists provided.

You can post this questionances to Gastay Bog Meilhest, C/O IPCC, Ludynow, Rathanges, Co. Körkes or head if is to Malt Muriagh, Owasy Parm, Forthform, Navas, Co. Meeth.

Closing date for questionanties is Friday 29th May 2815



Hairperject is supported by the Hairbace Council works the Constructed - based Hairbace Goud Scheme 1915

Protecting and Enhancing Cirley Bog

Are you ensure of the following management work or projects being undertalon. on Other Bog (the set tick if yes)

- Drain blocking to raise the roster level in the high bog.
- The planting around the long to enhance utilities inclinently.
 Bubbishnemoved from the loop wells for he dih and sefety researched.
- Beginnerse translantvien on the entower bog to restore bog growth.
 Benovel of investor species from the bog and the woodlands which the vien native triff species
- Construction of v bog bridge writes the high bog w on extension to the loop realiz-around its perimeter to add to the visitor experience of the bog.
- Ide southgrowter levels on the bog is a series of dipte ells to ensure conditions are right for past growth year round
- Recenting the local history of Only log to enhance our understanding of the importance of this site
- Benoval of a conferplantation from the high bog by Unille to help review the original raised bog plants and vagetation.
- Provision of public space for visitors
- Provision of information signs to avise assurances of the termlars of Oitley

Getting Involved

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- 11. Are you interested in getting involved in projects on Girley Bug? Ves D He

12. Would you be interested in attending as information event shout. Gitley bog fails 🛛 Yes 🗆 Ho reason?

Please give your name and contact email or telephone musicar if you answered 13. yes to the bet two questions or if you wish to be added to the Oirky Begunding list.

N-KON:

Hence use this box for any further comments you wish to make

Figure 41: The Girley Bog Community Opinion Survey which helped to inform the development of the Conservation Action Plan.



Figure 42: Vegetation Map of Girley Bog drawn by IPCC. Source: Applemaps