

## LODGE BOG CONSERVATION MANAGEMENT PLAN 2011-2016

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### SUMMARY

The conservation value of Lodge Bog, Co. Kildare lies in the presence of active raised bog habitat (7110), degraded raised bog habitat (7120) and bog woodland (91D0), priorities under the European Union Habitats Directive. The site has been managed for conservation by the Irish Peatland Conservation Council since its acquisition from Bord na Móna in 2005. The Lodge Bog Management Plan 2011-2016 involves a review of the research and restoration work carried out on site over the last 5 years and the formulation of 20 objectives to achieve the overall goal of restoring the site to a self-regulating active raised bog ecosystem. This paper details the key results of the research programme and outlines the 20 objectives of the plan.

**KEYWORDS:** raised bog, conservation, management, restoration, Ireland

### INTRODUCTION

Lodge Bog lies within Lullymore Bog in the most easterly part of the Bog of Allen, the largest complex of raised bog in Ireland. Lullymore Bog is the largest single raised bog within the Bog of Allen covering 6,575 ha (Irish Peat Enquiry Committee 1900). Lodge Bog, covering 35 ha, is an intact remnant of this raised bog and is being managed solely for conservation by the Irish Peatland Conservation Council (IPCC). The IPCC are a Environmental Non-Governmental Organisation set up in 1982 with the goal of conserving a representative portion of Ireland's peatlands for future generations to enjoy.

Lodge Bog was first assessed for conservation during an IPCC survey of a representative portion of the Bog of Allen (Hurley 2005). It was deemed as 'Regionally Important' in the context of the survey and recommended for conservation. In 2005 IPCC acquired Lodge Bog from Bord na Móna and the first Conservation Management Plan for the site (Hurley 2005a) was drawn up. This plan was fully implemented over the subsequent 5 years and 2011 saw the production of a new Management Plan for the site (Ó Corcora 2011) which was needed to assess the achievements of the first management plan, identify new threats and renew current best practice in the management and restoration of raised bogs.

The site is of significant local biodiversity value in the midlands of Ireland. It supports raised bog habitat and its associated wildlife which were once quite widespread in the region but have suffered large scale decline as a result of peat extraction (Malone & O'Connell 2009). It is also of national/international importance as it supports active raised bog habitat (7120), degraded raised bog habitat (7120), and bog woodland (91D0) all of which are priority habitats under the EU Habitats Directive (92/43/EEC).

Lodge is one of only five raised bog sites in Co. Kildare which has been set aside for conservation. Though smaller in size it has a distinct advantage over the other sites in being privately owned by the Irish Peatland Conservation Council. IPCC are committed to preserving Lodge Bog which means that the site is unique in that it will be managed in perpetuity solely for the purpose of conservation, education and research.

## MATERIALS & METHODS

### Site Description

Lodge Bog covering 35 ha (grid ref: N714 260) lies approximately 5 km from Allenwood in Co. Kildare on the R414 road to Rathangan. The site consists of two distinct lobes of raised bog habitat which are separated by an area of bog woodland. A further area of bog woodland habitat occurs along the south western margin of Lodge Bog South. The site is surrounded on three sides by actively harvested cutover bog owned by Bord na Móna while on the remaining side the site abuts the mineral soil of Lullymore Island (Fig 1). Three Annex I habitats as defined under the Habitats Directive are present on the site; Active Raised Bog Habitat (**7110**) covers 36% of the site, Degraded Raised Bog Habitat (**7120**) covers 52.5% while the Bog Woodland Habitat (**91D0**) covers 11.5% of the site area.

In developing the Lodge Bog Management Plan 2011-2016 a number of actions were carried out. An intensive literature review of reports on management and research carried out on the site was conducted. On the 8<sup>th</sup> of June 2011 IPCC hosted a stakeholder meeting with landowners in the area immediately adjacent to Lodge Bog. This meeting allowed an opportunity to take on board the opinions of those that are affected by the conservation of Lodge Bog and led to the formulation of the broad objectives of the plan. Following on from this a public consultation document was produced which was uploaded to the IPCC website ([www.ipcc.ie](http://www.ipcc.ie)) and advertised in the local press. Submissions were accepted for a three month period from June to September. Opinion was sought on 18 issues relating to the protection and restoration of the bog. To promote the public consultation, IPCC organised a public information talk on the 28th August 2011 in the Bog of Allen Nature Centre.

IPCC staff also participated in a number of site visits to other raised bog sites around the country to assess what conservation practices were being carried out in different areas. Visits were made to Killyconny Bog, Co. Cavan, Girley Bog, Co. Meath, Cuckoo Hill Bog, Co. Roscommon, Clara Bog, Co. Offaly and Wooddown Bog, Co. Westmeath. Information from these site visits assisted with the development of best practice guidelines, for proposed future management of Lodge Bog.

The 2011-2016 Management Plan for Lodge Bog was prepared using guidelines from the *Staatsbosbeheer*, the Dutch Nature Conservation Body (Schouten 2002).



Fig. 1. Air photograph of Lodge Bog (outlined in white) which is part of Lullymore Bog in the Bog of Allen, Co. Kildare, Ireland. Lullymore Island and the Bord na Móna industrial production cutover are indicated. Photo courtesy of Bord na Móna.

## RESULTS

### Species Diversity

Nine specialized surveys have been carried out over the past 6 years investigating the species diversity of Lodge Bog. Lodge has a recorded diversity of 200 floral species and 188 faunal species (Ó Corcora 2011). Of note are 10 *Sphagnum* species, 17 *Cladonia* lichen species and *Leucobryum glaucum*, as well as *Numenius arquata* (Curlew), *Gallinago gallinago* (Snipe), *Rana Temporaria* (Common Frog), *Lepus timidus hibernicus* (Hare), *Coenonympha tullia* (Large Heath butterfly) and *Hypsosinga albovittata*.

### Vegetation

The vegetation communities of Lodge Bog were first described in Coumans (2005) and subsequently by Newman (2009). Overall it has been found that approximately 40% of Lodge can be considered as 'Active' or peat forming while the remaining 60% is considered 'Degraded but still with capable of natural regeneration'. These estimates were made using the National Parks and Wildlife Service Raised Bog Ecotope Key (Fernandez *et al.* 2005).

### Hydrology

From 2005 to present IPCC have blocked over 6 km of internal drains across the entire site of Lodge Bog. This has required the construction of 191 dams (131 geoflex plastic; 53 peat and 7 composite of peat and geoflex). Since this time IPCC have also carried out monthly water measurements on 7 transects across the bog containing 76 individual piezometers. Of these 68 (90%) show a trend of increasing annual average water measurement since dams were inserted. Maps produced for the Management Plan 2011-2016 estimate that at least 70% of the site is within 30 cm of the surface for the majority of the year, approaching the necessary conditions for *Sphagnum* growth (Ó Corcora 2011).

### Education

Lodge bog has been utilized as an educational resource for nearly 20 years and is a vital resource in IPCC's programme to increase awareness of the value of raised bog habitat. As a result there has been a large amount of footfall with current visitor numbers estimated between 2,000 and 3,000 per year. To minimize the visitor trampling impact, IPCC have installed 2 sections of boardwalk on the bog surface.

### Sphagnum Restoration

In 2008 IPCC began a series of trials of *Sphagnum* cultivation on bare peat areas of the bog. These techniques focus on actively reintroducing *Sphagnum* to areas in need of restoration and are based on the work carried out on cutover peatlands in Canada as described in Quinty and Rochefort (2003). Monitoring of these trial sites continues and there has been confirmed regeneration of a number of *Sphagnum* species to varying levels of success. IPCC have to date constructed 12 plots and through constant monitoring of water levels and *Sphagnum* growth hope to set down informed guidelines to be used for this technique to be successful on Irish raised bogs.

## **The Management Plan**

The overall aim of the Lodge Bog Conservation Management Plan 2011-2016 is “To enhance and maintain Lodge Bog so that it is a fully functioning, self regulating active raised bog ecosystem.” Combining the information gained from research on the site, the public consultation and the stakeholder and site visits this plan sets out 20 objectives to achieve the overall aim. Within these there are 53 actions which have been formulated to achieve the objectives along with a timeline given for each.

## **Objectives**

The Lodge Bog Conservation Management Plan 2011-2016 comprises 20 objectives as follows:

- Objective 1: To control fire on Lodge Bog
- Objective 2: To control the internal hydrology of Lodge Bog
- Objective 3: To control the external hydrology of Lodge Bog
- Objective 4: To control dumping on Lodge Bog
- Objective 5: To control scrub encroachment on Lodge Bog
- Objective 6: To control invasive species on Lodge Bog
- Objective 7: To control predators on Lodge Bog
- Objective 8: To control trampling on Lodge Bog
- Objective 9: To assess the conservation status of Lodge Bog
- Objective 10: To assess the connectivity of Lodge Bog in the landscape
- Objective 11: To assess the effectiveness of the Management Plan
- Objective 12: To manage education programmes and site interpretation
- Objective 13: To co-ordinate further research required on Lodge Bog
- Objective 14: To ensure site consolidation of Lodge Bog
- Objective 15: To manage security, health and safety on Lodge Bog
- Objective 16: To achieve efficient location signage and parking
- Objective 17: To deter shooting on Lodge Bog
- Objective 18: To deter grazing on Lodge Bog
- Objective 19: To ensure human resources to manage the site
- Objective 20: To fundraise to meet the costs of managing Lodge Bog

## **DISCUSSION**

The second Lodge Bog Conservation Management Plan will allow IPCC to continue their successful preservation of this raised bog remnant. It provides a further platform for management and research on the site and dovetails with efforts to seek funding to undertake the bulk of the work required. Additionally this work gives the IPCC greater insight into the experience required as we lobby Government to prepare Management Plans for all raised bog sites designated for conservation in Ireland.

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