

Extended abstract No: 203

TOWARDS THE FIRST PEATLAND POLICY IN IRELAND

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SUMMARY

Peatlands cover a large part of the land surface in the Republic of Ireland, occurring as raised bogs, blanket bogs and fens and forming cultural landscape icons in many parts of the country. The BOGLAND Project was funded as part of the Sustainable Development Research Programme of the Environmental Protection Agency to reveal the global significance of this national resource and the dilemmas of peatland management, utilisation and conservation. The project yielded a lot of information on many aspects of peatlands covering the four pillars of sustainability: environmental, social, economic and institutional. The project has demonstrated the compelling evidence of the importance of Ireland's peatland resource as (1) a major carbon store, (2) the negative potential of degraded peatlands to augment the greenhouse effect, (3) the positive role of natural and restored peatlands to actively sequester carbon from the atmosphere, (4) the role of peatlands in watershed management, (5) their contribution to biodiversity and (6) their essential attributes that confer them a cultural and informative function. In conclusion, managing peatlands sustainably, so that they can deliver all these benefits will require a mixture of economic instruments, regulation and institutional design. But most of all, it requires immediate actions. This presentation will summarise where we are today in Ireland:

- 1) Ten things we didn't know about Irish peatlands
- 2) Ten facts showing that Irish peatlands are currently not managed sustainably
- 3) Overview of the protocol which delivers an action plan or set of recommendations to be used to draft a much-needed National Peatland Policy

Keywords: policy, sustainability, peatland strategy, sustainable management, biodiversity, ecosystem services.

INTRODUCTION

Ireland has a total of about 1.46 Million hectares of peatlands, about 20% of the total land area. Of the current area, a mere 16% is protected but this area is far from being intact. In fact the vast majority of Irish peatlands has been degraded. All Irish peatlands have been impacted by natural and anthropogenic disturbances over the course of their history, but the worst damage occurred in the 20th century with industrial peat extraction and reclamation of peatlands for agriculture and forestry. The biggest disturbances in the 21st century will be: domestic peat extraction (turf cutting), private afforestation, wind farms, recreational activities, invasive species and agricultural policies.

The Irish State needs to change the way the peatland resource is currently viewed and managed if it wishes to secure the multiple benefits offered by these natural ecosystems and avoid the costly consequences of further peatland deterioration. This was demonstrated by the

cross-disciplined analysis carried out in the BOGLAND project (Renou-Wilson *et al.* 2011a). The research work was conducted in four sub-projects, twenty work-packages, with the core research work focusing on three areas: (1) Biodiversity; (2) Characterisation of the physical peatland resource and its use and (3) Socio-cultural, economic aspects and institutional policy.

10 THINGS WE DIDN'T KNOW ABOUT IRISH PEATLANDS

Biodiversity

New surveys of birds (Bracken *et al.* 2008), aquatic and terrestrial invertebrates, as well as vegetation and micro-organisms comprise critical information about our four types of peatlands: raised bogs, mountain blanket bogs, Atlantic blanket bogs and fens as well as information on new emerging peatland ecosystems such as abandoned cutaway and cutover peatlands. These are useful data against which the effectiveness of future management practices of peatlands can be measured.

1. This research confirmed that peatlands support a high proportion of protected and Red Data species and new species have yet to be discovered. The project surveys revealed two species new to Ireland, a mite (*Limnozetes aminicus* (Behan-Pelletier) and a caddis fly (*Erotesis baltica McLachlan*) (Hannigan *et al.* 2009)
2. The actual number of species was relatively low but each species was found to be specific to its micro-habitat within a peatland. Therefore habitat heterogeneity (pools, hollows, flushes, lakes, soak systems, lawns, hummocks) is a good indicator of biodiversity.
3. Peatlands degradation leads to increase species number but these species are commonly found in other ecosystems (homogenisation).

Characterisation of the physical peatland resource and its use

4. A new map has been generated showing that peat soils cover 20.6% of the national land area (Connolly and Holden 2009). This resource is therefore larger than prior estimated.
5. Estimating the carbon stock of Irish peatlands is critical and therefore a peat depth inference model was developed to improve this estimate for a blanket bog region in Ireland (Holden and Connolly 2011). Together with other published data, it was concluded that Irish peatland may contain more than 75% of the national soil organic carbon.
6. Most importantly perhaps, in the context of Climate Change policies, is the carbon value of peatlands which has been so far neglected by all users and policy makers. The Bogland project revealed that near-intact peatlands may actively sequester on average 57,402 t Carbon per year (Wilson *et al.* 2012).
7. However, damaged peatlands are a persistent source of carbon dioxide (CO₂) and, at the national level, Irish peatlands are a large net source of carbon, estimated currently at around 2.64 Mt Carbon per year (Wilson 2008). This is without accounting for peatlands reclaimed for grassland and which are also a source of Carbon to the atmosphere.
8. Irish peat soils are clearly a national hot spot for C emissions, estimated at 14 Mt CO₂ if using current estimated land use of peatlands (see final report). In view of these findings, it is clear that carbon dynamics should be driving policies for peatland management. Active and remedial management options, such as avoiding drainage (conserving) and re-wetting (full

restoration or paludiculture “wet cultivation”) may be effective ways to maintain the carbon storage of peatlands and to re-create conditions whereby the peatland may actively sequester carbon in the future.

Socio-cultural and economic dimensions

9. Our socio-cultural and economic analysis of Irish peatlands within the project revealed that peatlands are public goods that deliver benefits of great economic and social value but these are often ignored by the general public despite a change in people’s attitude (Bullock and Collier 2011). While there is a lack of public awareness of peatlands in general, more so regarding their benefits in terms of public goods, there is also an ambiguity marked by the fact that people support the protection of peatlands but still attach a value to domestic turf cutting (Collier and Scott 2008).

10. People showed (1) a ‘willingness-to-pay’ for the creation of a National Peatland Park and (2) an interest in being consulted when transforming the industrial cutaway peatland landscape so that wildlife and green energy production (windfarms) are promoted (Bullock and Collier 2011). Industrial peat extraction areas have been actively prospected for developing wind farms. They are generally already close to established high voltage lines and key areas within the national electricity supply grid. The rehabilitation of these industrial sites could provide a dual benefit in terms of biodiversity and so called ‘climate friendly’ energy generation (Renou-Wilson and Farrell 2009).

10 FACTS SHOWING THAT IRISH PEATLANDS ARE NOT MANAGED SUSTAINABLY

The Irish landscape is the product of many centuries of human interference and, in the case of peatlands, it has been significantly degraded as a result of wide range of disturbances. Past and current management of peatlands are generally unsustainable and have had major negative impacts on the ecosystem services that they provide.

1. The 20th century saw (1) the introduction of mechanised turf extraction schemes (both industrial and domestic), (2) afforestation schemes, (3) intensification of agriculture through the CAP, (4) land reclamation through drainage schemes, all of which contributed to the dramatic decline in natural peatlands.
2. The biggest disturbances of Irish peatlands in the 21st century are: (1) industrial and domestic peat extraction, (2) private afforestation, (3) wind farm and associated infrastructural developments, (4) recreation activities, (5) invasive species and (6) climate change.
3. Policies affecting peatlands have been determined mainly by the value of peat. Fixed, short-term economic uses have prevailed and have even been subsidised.
4. Hydrologically and ecologically intact peatlands have become rare.
5. A very small proportion of the original peatlands (20%) is being protected and the majority in deteriorating condition.
6. Less than 3/4 of the protected area is deemed of conservation value and a tiny proportion is ‘active’ (<1% in the case of raised bogs).
7. The boundaries of most protected peatlands do not allow hydrological management and therefore cannot be fully restored to their full functioning capacity.

8. Long-term economic uses of ecosystem services such as carbon storage and sequestration as well as biodiversity function have been ignored (high cost of burning peat!).
9. Conflicts between governmental departments who have key policy responsibilities that shape how peatlands are managed; e.g. poorly planned renewable energy schemes; biomass to replace peat.
10. Decisions about management of peatlands are often made remotely and by interest-groups who are often insufficiently informed about the local conditions and consequences of inappropriate actions.

OVERVIEW OF THE PROTOCOL TO SUPPORT THE PROMOTION OF THE SUSTAINABLE MANAGEMENT OF PEATLANDS

The BOGLAND project revealed not only the global significance of Irish peatlands and the dilemmas of peatland management and utilisation but also engaged the general and local public as well as stakeholders in peatland discussions. This collation of information provides a strong scientific and socio-economic evidence base, ready to be translated into strategy to assist decision making. In that regard, a protocol is presented with the aim to develop a strategy to manage peatlands in a responsible manner (Renou-Wilson *et al.* 2011b). Overarching targets and the preferred means or actions of achieving these targets are presented under seven headings:

1. Managing peatlands for biodiversity
2. Managing peatlands for carbon, climate and archives
3. Managing peatlands for water
4. Managing peatlands for other land uses
5. Managing state-owned peatlands
6. Managing peatlands using socio-economic instruments
7. Managing peatlands for and with the people

The most urgent action is to set up a working group which would draft a much needed National Peatland Strategy to, urgently, (1) increase the number of protected peatlands and assure a more pro-active management of these sacred places; (2) enforce already-existing regulations; to restore protected peatlands to stop carbon loss to the atmosphere; (3) review the peat industry and its role in responsible management of peatlands; (4) establish a code of good practice for all developments on peatlands and finally (5) to support the creation of a National Peatland Park as requested by the people. A scientific committee is currently being formed and together with the Peatland Council (<http://www.npws.ie/peatlandsturf-cutting/peatlandscouncil/>) which was established by the government in April 2011 to assist Ireland in responding in a strategic way to the requirements of the EU Habitat's Directive (to stop turf cutting on protected sites), the government has made a first step in the direction of a first peatland policy in Ireland.

CONCLUSION

Technical information about the services provided/affected by peatland use and management should now be readily presented to politicians and influential decision makers with a clear impression of the consequence of alternative decisions and policies. Increasing the awareness

(particularly to the wider public) of the current situation and possible future scenarios (backed up by enhanced scientific understanding) is critical to this evidence-based policy development. The *protocol* delivers an action plan or set of recommendations which should be used to draft a much-needed National Peatland Policy, which should ensure that this natural heritage is not lost in the future, but that it is safeguarded and enhanced during a challenging period of economic transition. In short, any vision of the future of Ireland must include the maintenance and enhancement of one of its last natural resource: peatlands. This protocol aims to succeed in achieving such a vision that serves the needs of the people and preserves our natural heritage.

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