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**Wind Turbines and Peat Soils:**  
A Spatial Planning Guide for on-shore wind farm  
developments in Cumbria

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*Photo: Tim Melling, RSPB*

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### **Background**

The Inspectors who carried out the Examination in Public of the draft NW Regional Spatial Strategy (RSS) between December 06 to February 07, proposed that '*Maps of broad areas where the development of particular types of renewable energy may be considered appropriate should be produced as a matter of urgency and incorporated into an early review of RSS*'.

The Secretary of State's response is '*In line with PPS22, we consider that an evidence-based map of broad locations for installation of renewable energy technologies would benefit planning authorities and developers. We welcome NWRRA commitment to commission such a map to inform future review of the RSS.*'

**The RSPB, Natural England and Cumbria County Council are supportive of UK renewable energy targets and this Spatial Planning Guide is an attempt to help industry meet these targets by avoiding conflict over ecologically damaging proposals.**

This document has been produced to provide background information to underpin a Renewable Energy Strategy for North West England. A web-link has been set up <http://www.rspb.org.uk/northwestrenewables> , which includes a link to this document plus the following related documents:

1. *Wind Turbines and Sensitive Bird Populations: A Spatial Planning Guide for on-shore wind farm developments in Cumbria* (see below). Document produced in late 07.
2. *Wind turbines, Sensitive Bird Populations and Peat Soils: A Spatial Planning Guide for on-shore wind farm developments in Lancashire, Cheshire, Greater Manchester and Merseyside.*
3. *Biomass planting and Sensitive Bird Populations: A Spatial Planning Guide for biomass energy crop planting in North West England.*

The maps and text in this report are to be used alongside the '*Wind Turbines and Sensitive Bird Populations: A Spatial Planning Guide for on-shore wind farm developments in Cumbria*' document <http://www.rspb.org.uk/cumbriaspacialplanningguide> The Cumbria spatial planning guide only covered bird sensitive areas and did not illustrate deep peat sensitive areas. Subsequently, this guide has been produced for deep peat soils in Cumbria.

### **How to use the alert map**

An alert map illustrating deep peat sensitive areas (for on-shore wind farm developments) in Cumbria is illustrated in **map 1**.

An alert map illustrating deep peat sensitive areas (for on-shore wind farm developments) has also been produced for Lancashire, Cheshire, Greater Manchester and Merseyside – this is included in a document entitled '*Wind turbines, Sensitive Bird Populations and Peat Soils: A Spatial Planning Guide for on-shore wind farm developments in Lancashire, Cheshire, Greater Manchester and Merseyside*' which is available through the <http://www.rspb.org.uk/northwestrenewables> link (see point 2 above).

This alert map has been developed to trigger detailed consultations between developers, local authorities, statutory agencies and other agencies and stakeholders. The document helps to highlight areas where detailed ecological survey work will be necessary, on a site-by-site basis, to determine whether or not a site could be appropriate for a renewable energy development.

**Two** levels of sensitivity have been identified:

1. **White areas** - lower risk of impacts on deep peat soils, although detailed investigation may be necessary.<sup>1</sup>
2. **Mapped deep peat sensitive areas** - highlights **alert** areas where there is a higher risk of impacts on deep peat soils.

### **Introduction**

Areas underlain by a deep peat resource should be avoided for wind farm developments due to the potential damage to fragile habitats and associated species.

In addition, the loss of the carbon storage function of deep peat and the release of carbon that occurs when peat is disturbed may undermine any carbon saving benefits of renewable wind development.

It is **NOT** intended that this document in any way negates the need to carry out thorough ecological surveys on a site-by-site basis, following the best available guidance and consultation with the relevant nature conservation organisations.

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<sup>1</sup> It is important to remember that unmapped areas for sensitive bird populations and peat soils may contain important other habitats and species (eg. bats)

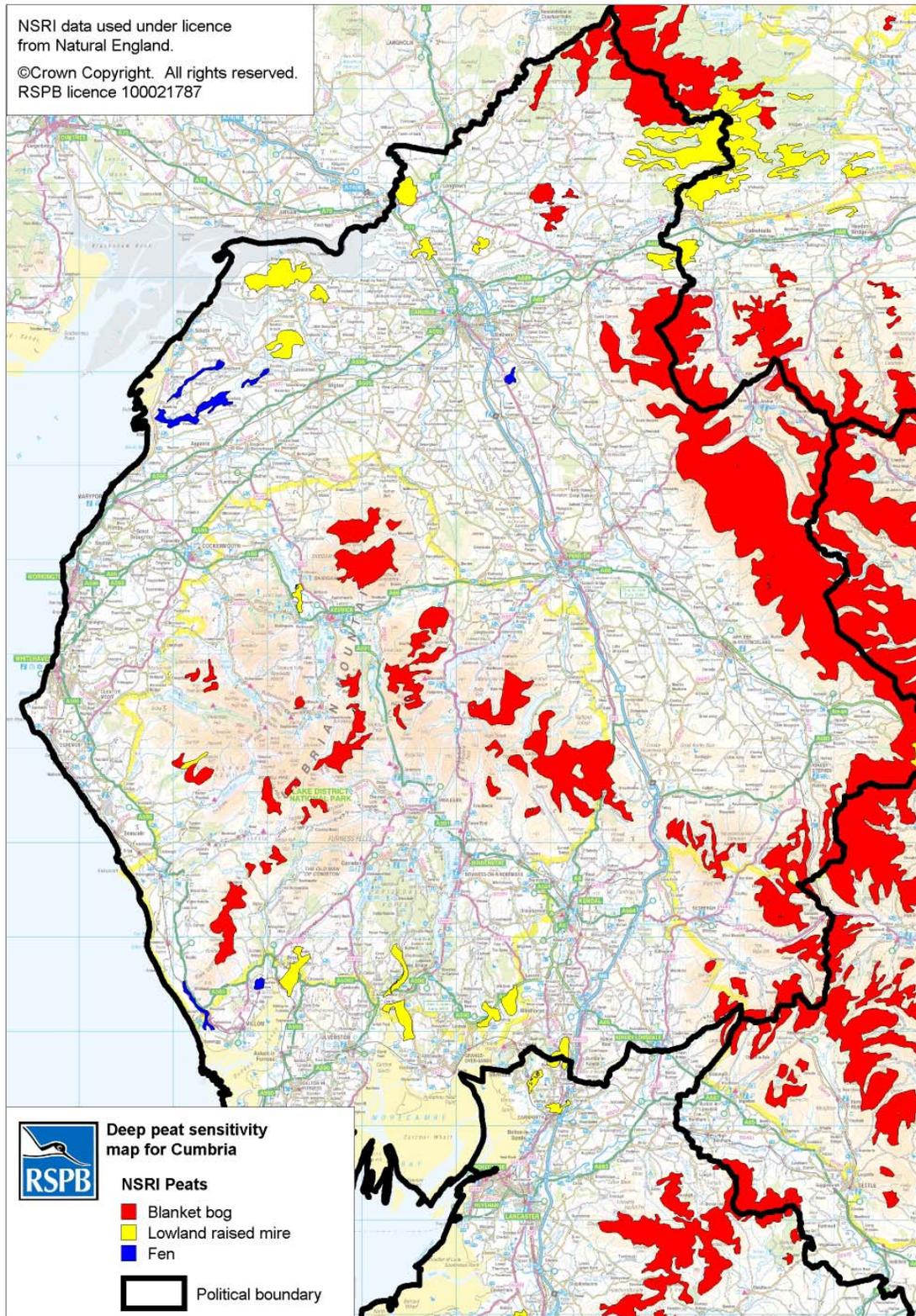
## Key findings- Summary

**Deep peat sensitive areas-** see map 1.

Areas underlain by peat soils have been mapped, using the best available peat soils data. Much of the mapped area supports important habitats of international/ national/ UK BAP importance. Within the mapped areas are deep peat areas (defined as having a depth of 1 metre or more of peat soil).

Wind farm development on deep peat sites should be avoided, unless it can be shown not to be damaging to current or potential ecological interests. The impact of the development on the overall carbon balance should also be taken into account- see page 6 and 7.

**Map 1: Deep peat sensitivity map for Cumbria**



### **Legal protection for birds and habitats within the 'deep peat' mapped areas**

In many situations, a proposed development within a 'deep peat sensitive area' will need to be considered under the Conservation (Natural Habitats, &c.) Regulations 1994 (the Habitats Regulations). Degraded raised bog and active blanket bog feature in Annex 1 of the Habitats Directive. If there is a likelihood of a significant effect on a Special Area of Conservation –SAC- or a Special Protection Area -SPA- (within or outwith the designated area), an Appropriate Assessment will need to be undertaken in view of that site's conservation objectives. The impact of the plan or project will also be assessed in combination with other plans or projects in the area.

### **The role of the NERC Act**

It should be noted that under the Natural Environment and Rural Communities Act (NERC) 2006, Section 40, Part 3, *"Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."*

### **Methodology and definitions**

#### **Deep peat**

See map 1 showing the peat resource in Cumbria. Within the illustrated areas, deep peat (defined as peat over 1 metre deep<sup>2</sup>) will occur.

Wind farm developments on deep peat sensitive areas should be avoided where they will be damaging due to:

- Habitat loss and hydrological disruption by installing turbines.
- The loss of associated sensitive species, some of which occur in internationally or nationally important populations outwith the protected area network.
- The associated release of carbon, which significantly reduces the carbon saving benefits of renewable wind development.

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<sup>2</sup> Paul Thomas, Natural England, Lancashire team (pers comm.)

### **Methods of producing the maps**

Under license from Natural England, National Soil Research Institute (NSRI) soils data<sup>3</sup> has been used to define the peat resource. This dataset has been used because, through discussions with Natural England<sup>4</sup>, it is the best available, up-to-date and regionally applicable information. Three types of deep peat resource have been mapped: Lowland raised mire, fen and blanket bog.

It is important to note that the illustrated areas show where a peat resource exists (**not necessarily peat over 1 metre deep**), but to determine the exact depth of peat, a site-by-site assessment will be required. Peat depths can be highly variable in a given area, subject to the underlying geology and topography.

Much of the deep peat resource identified underlies areas designated as a Site of Special Scientific Interest (SSSI), a SPA or a SAC. There are, however, some areas that are not designated for their nature conservation interests and yet support important bird populations and/or habitat communities. Other areas identified would not qualify as a SSSI/SPA/SAC in their nature conservation importance, but nonetheless still have an important deep peat resource.

### **Caveats and notes**

1. The mapped areas are **not** definitive.
2. Areas covered by existing nature conservation designations (SSSI, SPA, SAC, Ramsar) or landscape designations (AONB, National Park) have not been illustrated on the maps.
3. Note that the data used for defining the deep peat resource is subject to updating, so that this exercise is based upon current knowledge and distributions and this maybe subject to change.

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<sup>3</sup> <http://www.landis.org.uk/soilscapes/>

<sup>4</sup> Chris Lumb, Bart Donato, NE Kendal team (pers. comm.)