Baseline Ecology Survey of Bord na Móna’s Bogs

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Outline

• Extent of the survey so far
• Review of pioneer cutaway habitats
• Future picture of the cutaway
  - aid planning for rehabilitation and after-use
• Accumulation of baseline data - distribution of habitats and species
• Oweninny survey 2011
  – how has rehabilitation of Oweninny progressed?
A baseline ecological survey – Why?

- The backbone of rehabilitation planning
- Identify important biodiversity areas (objective of BAP)
- Baseline ecological data will also aid after-use projects, e.g.,
  - Mountlucas windfarm project
  - amenity and biodiversity projects such as Ballydangan Red Grouse project)

Progress so far
- 56,500 ha surveyed so far (mapped) (~70%)
- Remaining area mainly active production bog
What are we finding?

- Pioneer cutaway habitats dominated by
  - Rush-dominated poor fen communities,
  - Birch scrub/bog woodland,
  - wetland communities,
  - dry heath,
  - dry grassland communities

- Pioneer habitat development dependant on environmental factors
  - depth of remaining peat (exposed subsoil)
  - pH of remnant peat – generally fen peat with pH 5
  - Nutrient status of remaining substrate (peat/marl/sub soil)
  - hydrology and height of water table (some pumped bogs)
  - Local topography (wet basins, dry mounds)

- No prospects for significant development of ombrotrophic peat-forming communities in near future (no significant re-growth of bogs!)
Pioneer cutaway habitats

- Soft Rush-dominated poor fen
- Bog Cotton-dominated poor fen
- Wetlands & Open water
- Dry Heath
- Dry calcareous grassland
- Birch scrub
- Reedbeds
Overview of pioneer habitats developing on cutaway bogs

- Dry calcareous grassland
- Birch scrub
- Heather
- Soft Rush
- Birch scrub
- Marsh Arrowgrass
- Bog Cotton
- Bottle Sedge
- Reedmace

Legend:
- Raised bog peat
- Fen peat
- Lake marl
- Calcareous sub-soil
- Open water
Future picture of the cutaway

• BnM cutaway is still at a relatively young stage of development
  - Turraun one of the ‘oldest’ sites – 1970’s since production

• Habitats and landscapes likely to continue to develop and mature into the future

• Hypothetical model – expected future habitats of the cutaway

• Future landscape also dependant on BnM after-use plans, industrial development, external influences etc

• E.g. Mountlucas windfarm development and rehabilitation of site
Mountlucas LIDAR Map
### Analysis of hypothetical ‘future’ habitats of BnM property

*(based on area surveyed so far)*

Main expected default cutaway habitats of the future include:

- Birch-dominated bog woodland
  (some Pine dominated)

- Wetland mosaics
  - open water, Reedbeds, emergant poor fen communities, wet Willow-dominated woodland (carr type)

<table>
<thead>
<tr>
<th>Habitat</th>
<th>Area (ha)</th>
<th>% area</th>
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<tbody>
<tr>
<td>Hedgerow &amp; treeline</td>
<td>11.8</td>
<td>&lt; 0.1</td>
</tr>
<tr>
<td>Transition mire</td>
<td>15.6</td>
<td>&lt; 0.1</td>
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<tr>
<td>Dry grassland</td>
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<tr>
<td>Wet grassland</td>
<td>82.5</td>
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<tr>
<td>Rich fen</td>
<td>110.7</td>
<td>0.2</td>
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<tr>
<td>Water-courses</td>
<td>139.4</td>
<td>0.3</td>
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<tr>
<td>Agriculture</td>
<td>485.0</td>
<td>1.0</td>
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<tr>
<td>Built &amp; disturbed land</td>
<td>521.7</td>
<td>1.1</td>
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<tr>
<td>Lakes &amp; open water</td>
<td>605.1</td>
<td>1.2</td>
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<tr>
<td>Cutover bog</td>
<td>1030.9</td>
<td>2.1</td>
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<tr>
<td>Heath</td>
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<tr>
<td>Raised bog</td>
<td>5639.7</td>
<td>11.6</td>
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<tr>
<td>Wetlands mosaic</td>
<td>6915.5</td>
<td>14.3</td>
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<tr>
<td>Woodland</td>
<td>30398.8</td>
<td>62.7</td>
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</table>
Species found on cutaway/production bogs
Species using the cutaway

- Ecological baseline survey – accumulation of baseline data
  - Distribution of species and habitats

- Aids planning for after-use and development, identifies important biodiversity areas
  - E.g. Mountlucas windfarm development

- Distribution maps of various species of conservation interest on BnM property
Blue Fleabane
(Red Data Book Species)

Esker species
Likes gravel and disturbance
Kingfisher

Annex I (Birds Directive)

Occasionally visits silt ponds/drains

Possible breeder?
River Suck floodplain
Garryduff/Kilmacshane/Blackwater
(winter flooding 2009)

Whooper Swan
950 in 2009/2010
Internationally important numbers
(Annex I, EU Birds Directive species)
Marsh Arrowgrass sward
A typical picture of butterfly biodiversity on cutaway

15 species (low diversity? – 21 species recorded at Lullybeg)

Small Heath and Dingy Skipper are ‘near threatened’

food plants of several unrecorded species are present at Turraun

Expect to record a few more species in the future

Marsh Fritillary known from 3 BnM sites in Offaly, Kildare and Tipperary
Oweninny survey (Mayo)

- How successful has rehabilitation been at Oweninny?
- How has the cutaway developed since rehabilitation finished (2005)?
Re-vegetation dominated by Rush-dominated poor fen (+/– moss rich) and pioneer Bog Cotton-dominated communities.
Includes Sphagnum spp. development – lawns and hummocks
Substantial proportion of cutaway still relatively bare peat or gravel
Cutaway guide
Grey - bare peat & light scattered vegetation
Yellow - Sphagnum-rich vegetation
Tan - poor fen
Green - scattered scrub & poor fen
Light blue - open water
Purple hatch - blanket bog remnants
Thank You