

# **The Peatlands Climate Action Scheme (PCAS)**

**New developments in peatland rehabilitation**

**CIEEM**

**Nature Based Solutions – Opportunities in a time  
of biodiversity crisis and climate emergency**

April 2021

NEWS

SPORT

BUSINESS

OPINION

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CULTURE

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## Bord na Móna ends all peat harvesting

Company suspended the activity last year following a 2019 High Court decision

© Fri, Jan 15, 2021, 09:46

Updated: Fri, Jan 15, 2021, 09:48

Colin Gleeson



hospitality-sector-in-store-for-phenomenal-re-awakening-1.4541590

# Peatland Climate Action Scheme – Why?

# Peatland Climate Action Scheme – Why?

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- EPA IPC Licences for peat production: Condition 10  
*...plan for permanent rehabilitation of the cutaway boglands ....*
- BnM obliged to carry out peatland rehabilitation
- PCAS will significantly go beyond what is required to meet rehabilitation and decommissioning obligations



# Peatland Climate Action Scheme

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- 125 Million investment
- Supported by the Government's Climate Action Fund
- Supports Bord na Mona/midlands Just Transition – 350 jobs
- Climate Action benefits
- Re-wet 109m T residual carbon – carbon storage
- Avoid emissions of a further 3.3m tonnes of GHGs (reduced emissions and trajectory towards carbon sequestration)
- Other ecosystem service benefits – biodiversity, water, landscape



# PCAS – Climate Action Objectives

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**Objective – **optimising** suitable hydrology for climate action benefits**

- Re-wetting residual peat (**carbon storage**)
- Accelerating the trajectory of development of naturally functioning peatland ecosystems (**reduced carbon source/ carbon sequestration – avoided carbon losses**)
- PCAS focused on creating **optimum** hydrological conditions
- Water levels at or slightly above the peat surface
- Avoiding deeper water, where possible.
- Creating a flatter topography to allow optimal hydrological management.
- Some inoculation of plant material



## Climate Action – reducing carbon emissions, creating future sinks



### Oweninny

Co. Mayo  
Re-wetted cutaway  
Sphagnum-rich  
Carbon Sink



### Moyarwood

Re-wetted high bog  
GHG Sink  
(sink for CO<sub>2</sub>, source for  
Methane)



### Blackwater

Reedbeds  
Sink 1 year, Source (the  
2<sup>nd</sup> year  
Best outcome is a  
reduced Carbon Source

**Optimising hydrology – optimises conditions for carbon storage and for accelerated trajectory towards natural peatland habitats**

# PCAS- creating sites with multiple benefits - biodiversity







**From this.....  
Industrial scale:  
drainage, milling**

**To this.....  
Industrial scale:  
Rewetting**





**Starting point – raised bog**

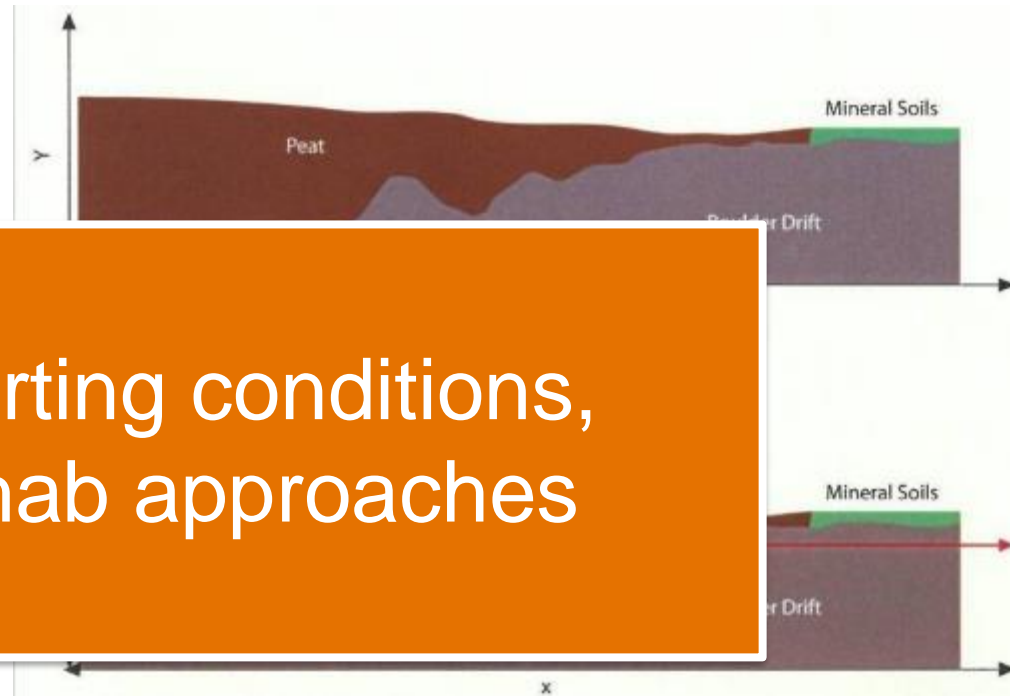
**Can't be restored in short-term**



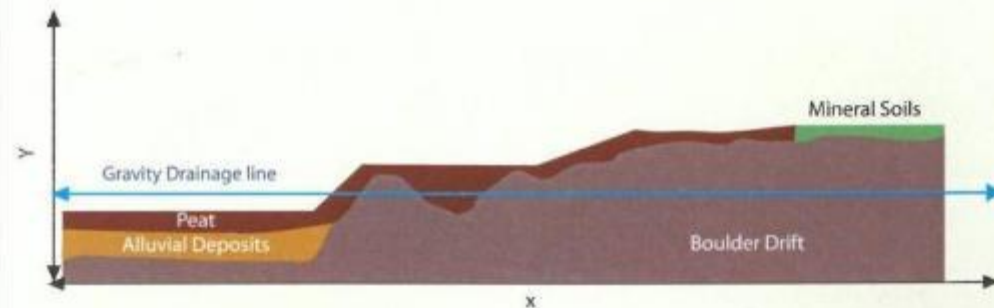


# Development of Bord na Móna production bog and cutaway

Different starting conditions,  
different rehab approaches



**Fig. B** Typical industrial raised bog after approximately 25 years production (not to scale)



**Fig. C** Typical industrial raised bog following cessation of production (not to scale)

## Typical cutaway habitats



**Soft Rush-  
dominated poor fen**



**Bog Cotton  
-dominated poor fen**

**Wetlands  
& Open water**



**Birch scrub**

**Dry Heath**



**Dry calcareous grassland**





# Targets – wetland cutaway

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Wetland cutaway – creation of soggy conditions, emergent vegetation, minimising deeper water where possible, minimising dry Birch woodland – creation of fens and Reedbeds (best outcome for climate action – reduced carbon source.....carbon sink in time? – when peat forming)

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# Targets – deep peat cutaway

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Creation of soggy conditions, water levels at peat surface, re-wetting residual deep peat, accelerate Sphagnum-rich vegetation, embryonic raised bog , best outcome for climate action – GHG sink

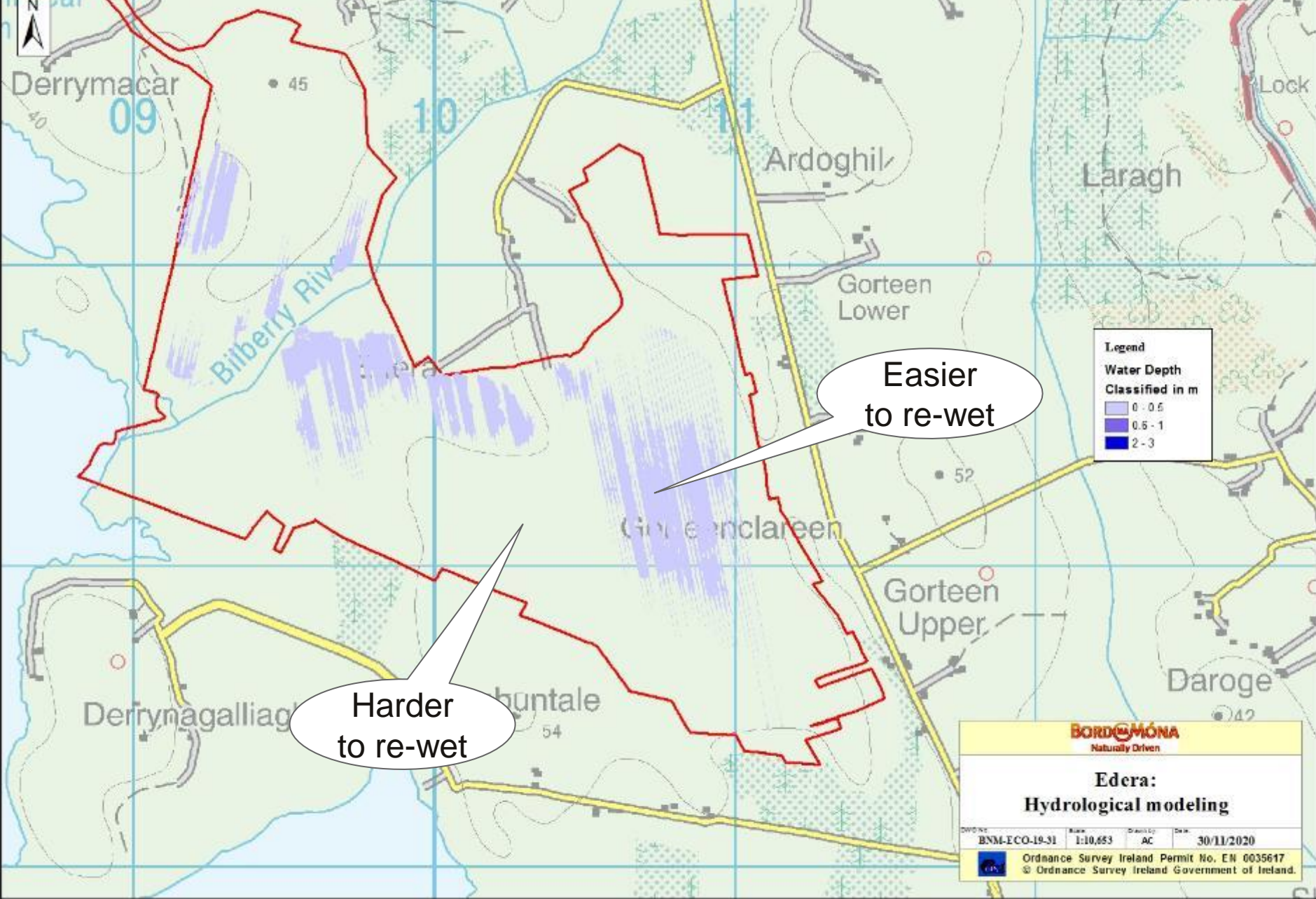
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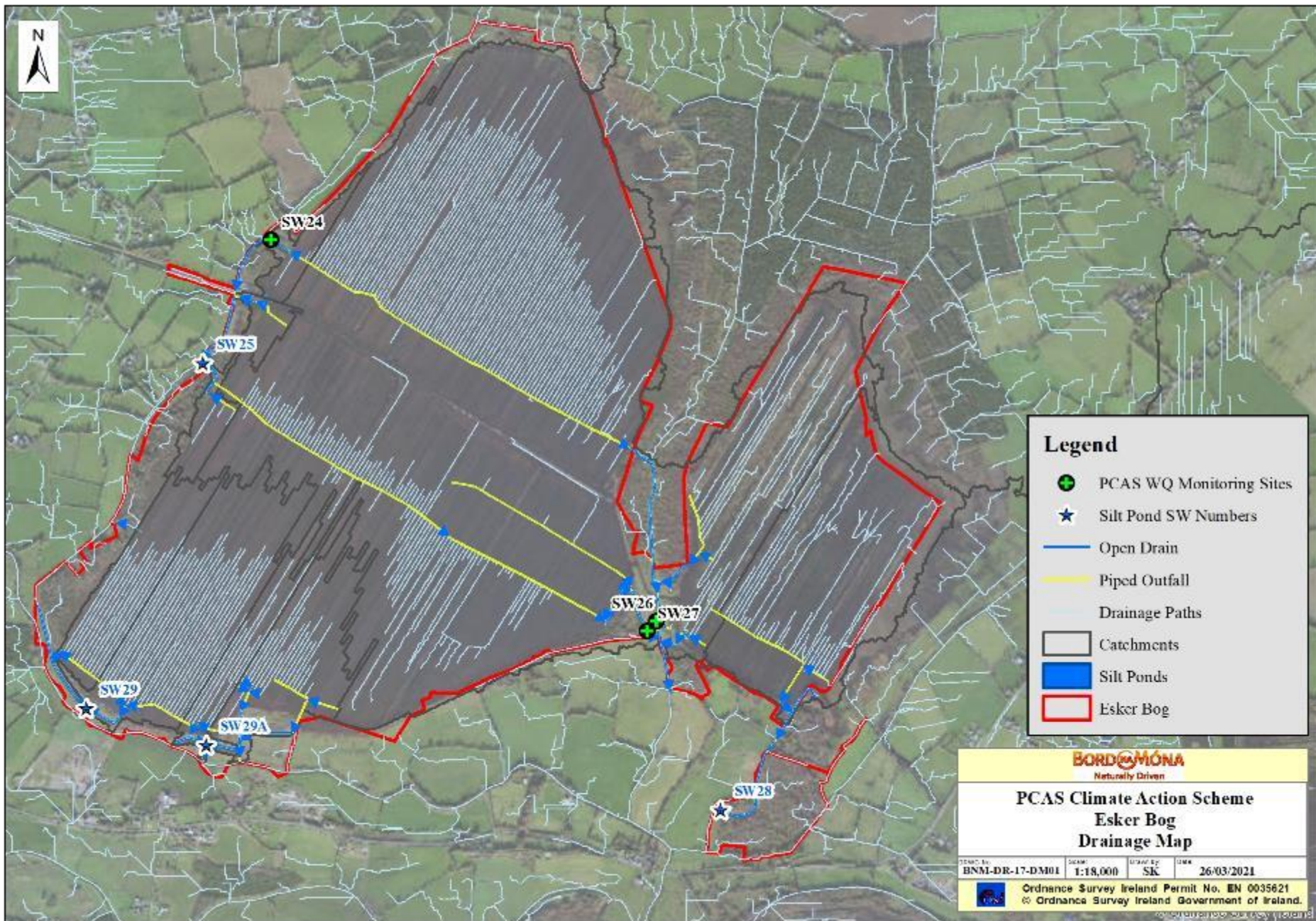
# EXAMPLES OF PEATLAND REHABILITATION IN THE UK















### Legend

 Oughter Bog

### Slope Surface

Classified in m

-  0 - 0.5%
-  0.501 - 1%
-  1.01 - 2%
-  2% +

**BORD MÓNA**  
Naturally Driven

## Oughter Bog Slope Classification

DWG No:  
BNM-DR-08-ER-07

Scale:  
1:14,000

Drawn by:  
ML

Date:  
22/03/2021

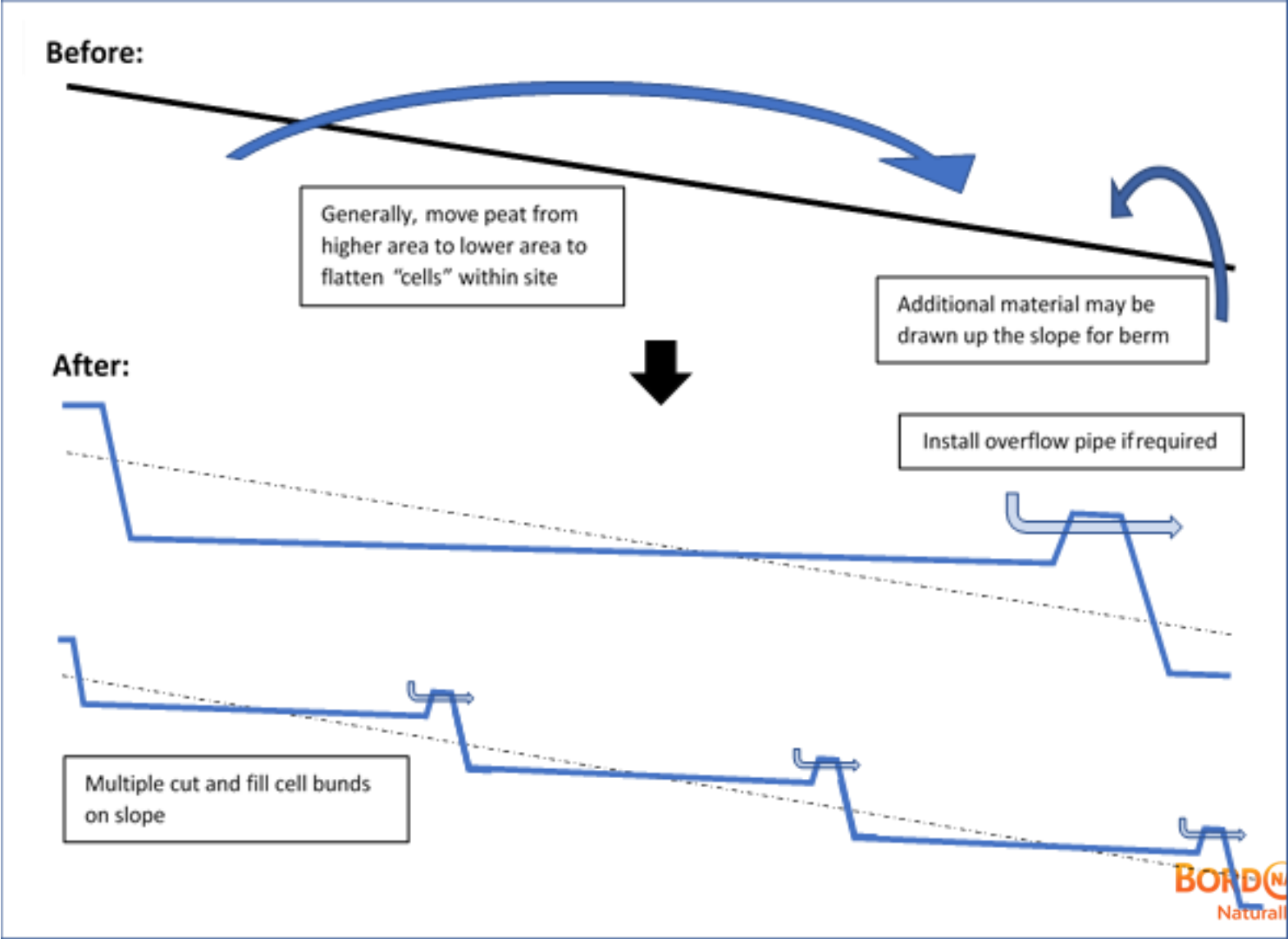


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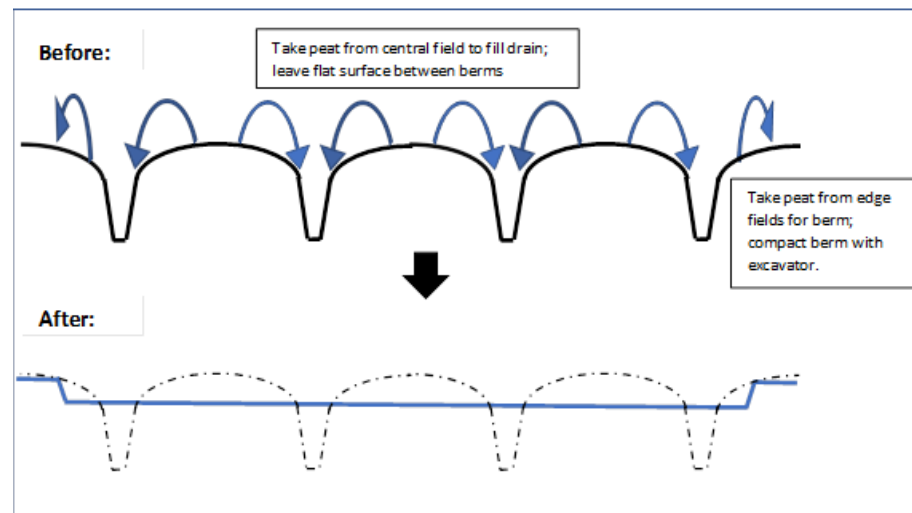
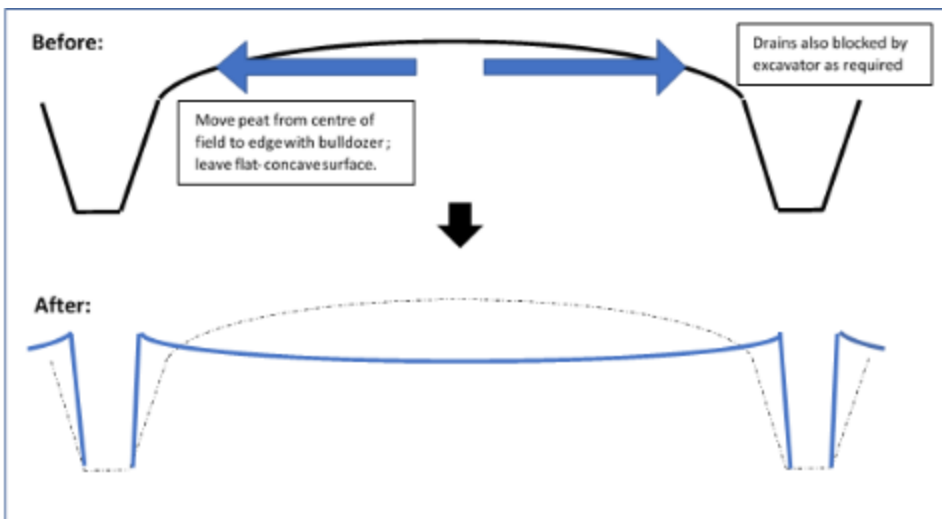
Information from Ordnance Survey



# Enhanced cutaway rehab – modifying topography with bunding and re-profiling



## ENHANCED CUTAWAY REHAB – FIELD RE-PROFILING







# Castlegar Bog

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# Castlegar Bog

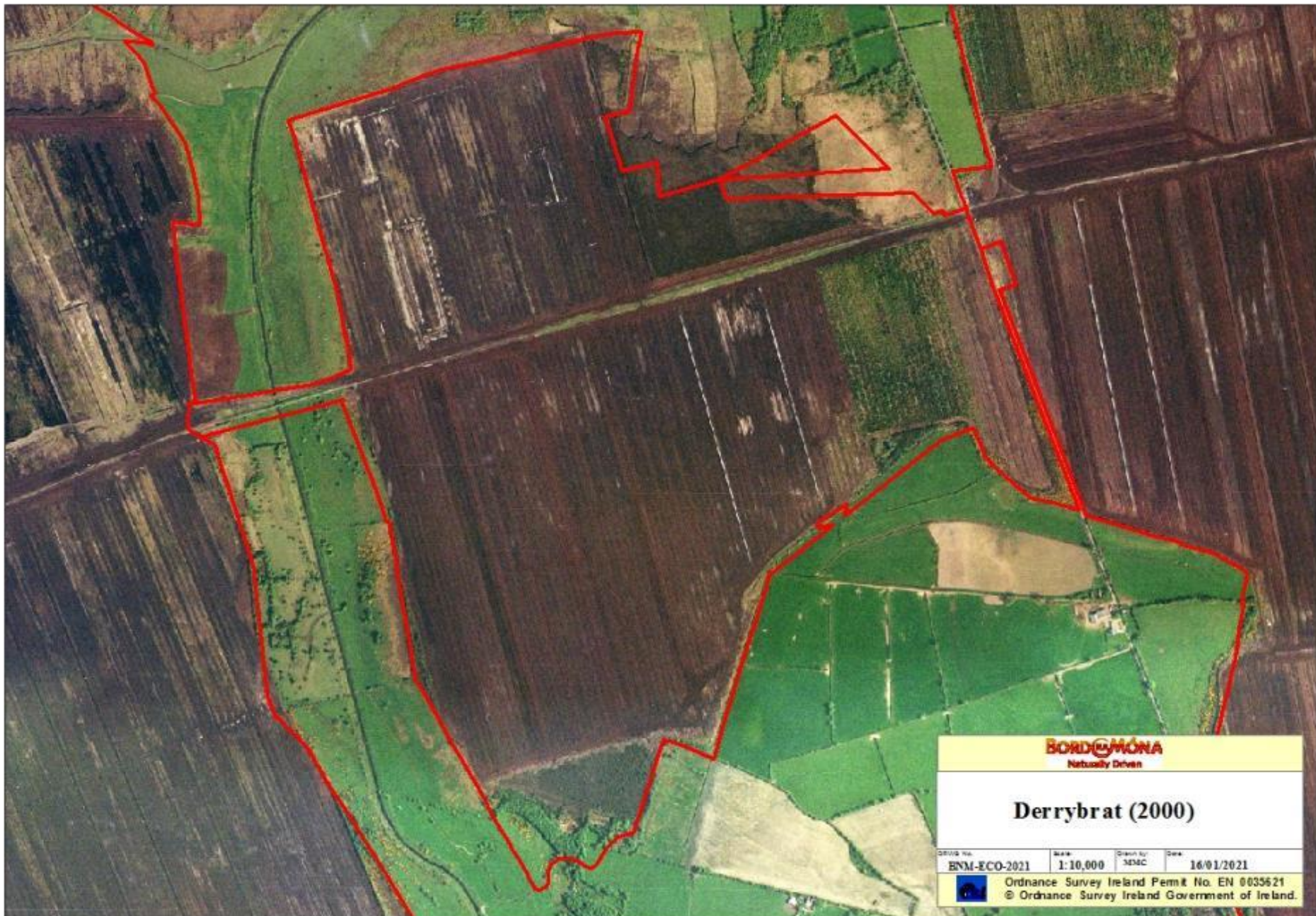




# Castlegar Bog







**BORD BUNNA**  
Naturally Driven

## Derrybrat (2000)

GR208 No.	Scale	Drawn by	Date
ENM-ECO-2021	1:10,000	MMAC	16/01/2021
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**BORD BUNNA**  
Naturally Driven

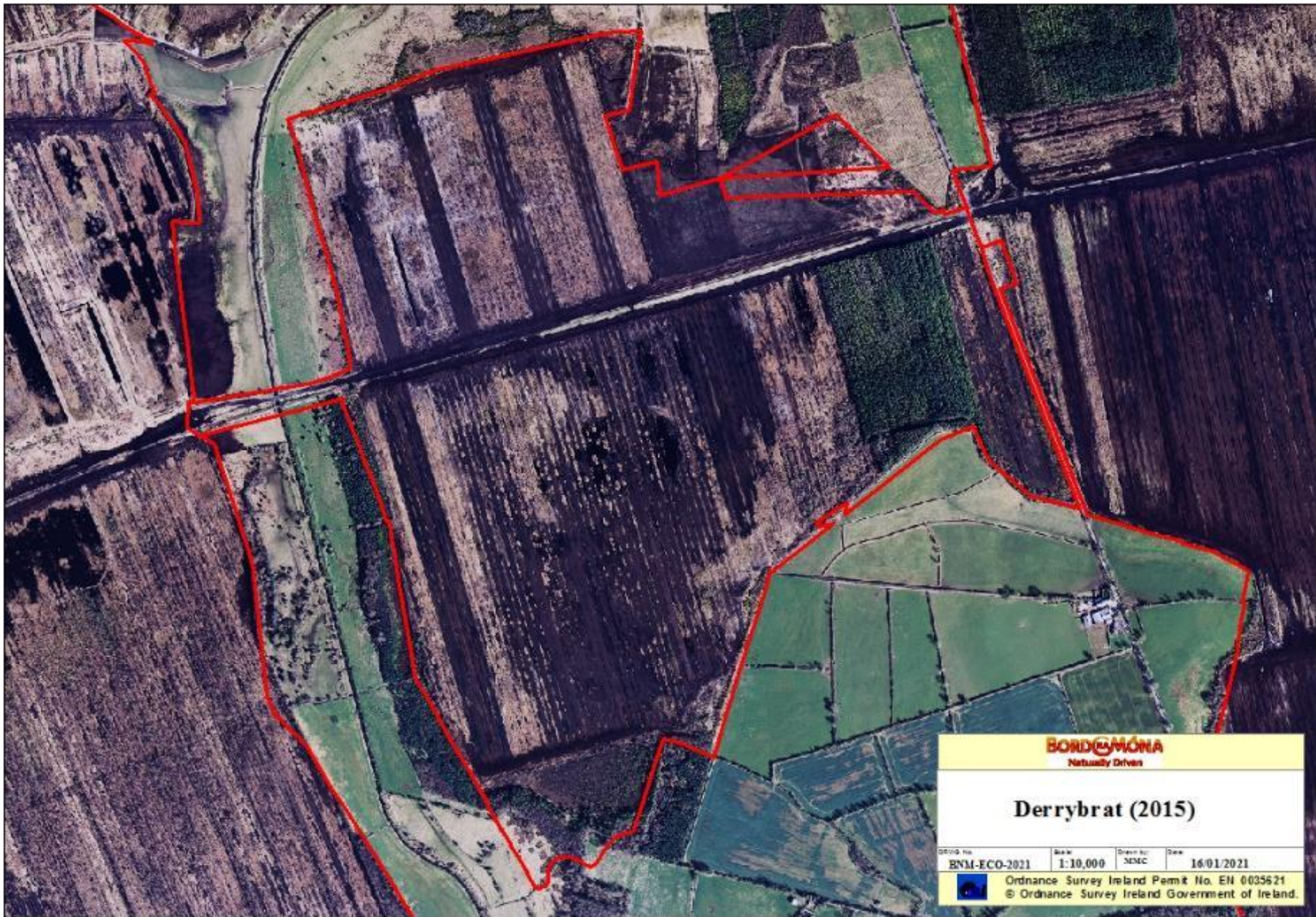
**2000.** The site is still mostly in peat production. Vegetation starting to appear in the northern section. Some sub-soil exposed.





**2005.** The northern section is now out of peat production. This area is developing vegetation. Peat production continuing in southern section.






**BORD na MÓNA**  
Naturally Driven

**Derrybrat (2015)**

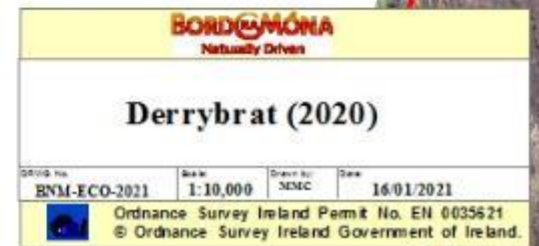
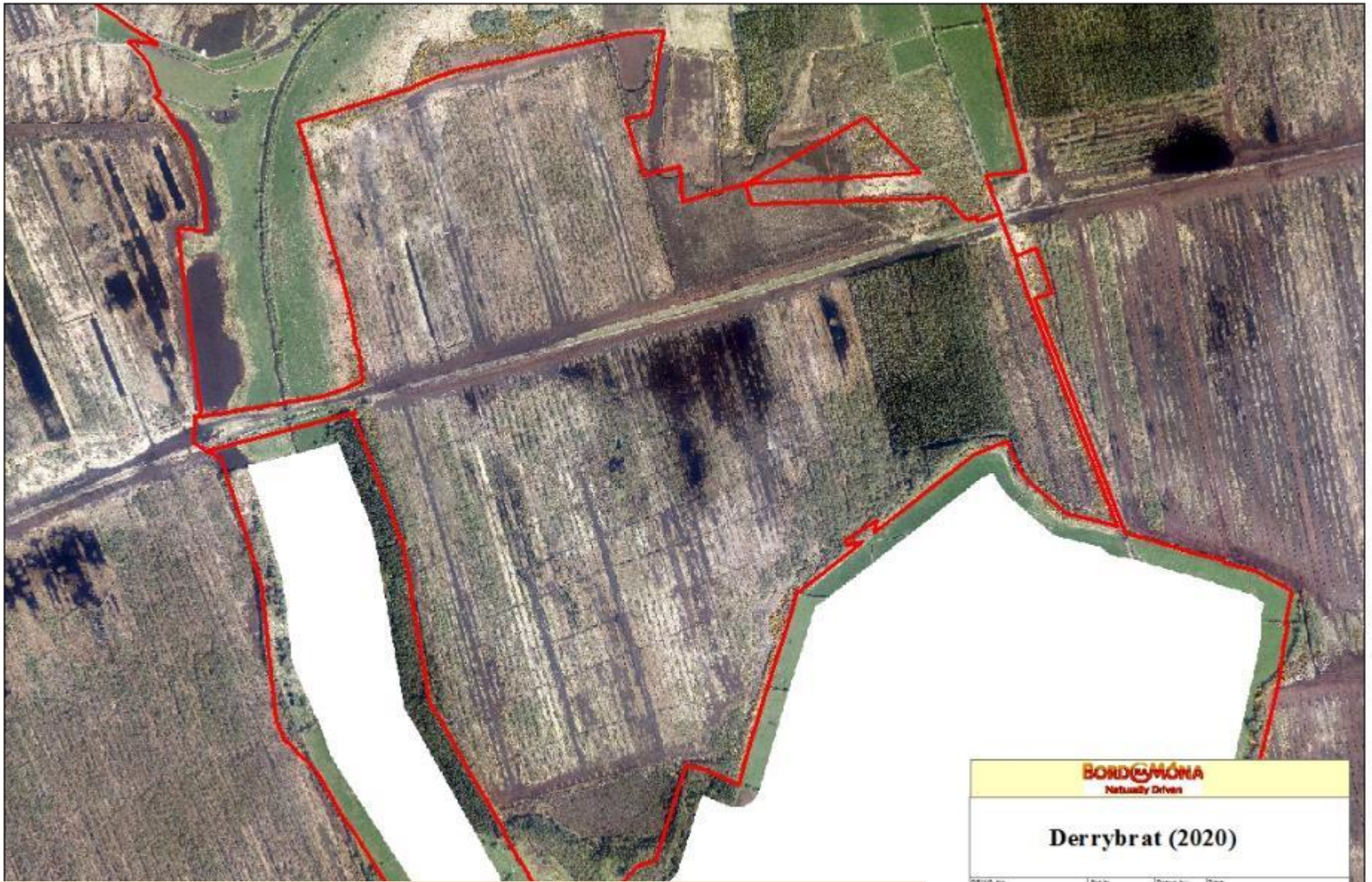
OSDID No.	Scale	Drawn by	Date
BNM-ECO-2021	1:10,000	DMC	16/01/2021

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**2015.** Peat production ceased in southern section.  
Vegetation increasing in cover. Bare peat reducing.

**BORD na MÓNA**  
Naturally Driven





**2020.** Wetlands developing as well as patches of scrub. Drain-blocking has been carried out in the southern section. Over 20 years – site has vegetated and stabilised with only a small amount of bare peat remaining.

# Monitoring and verification

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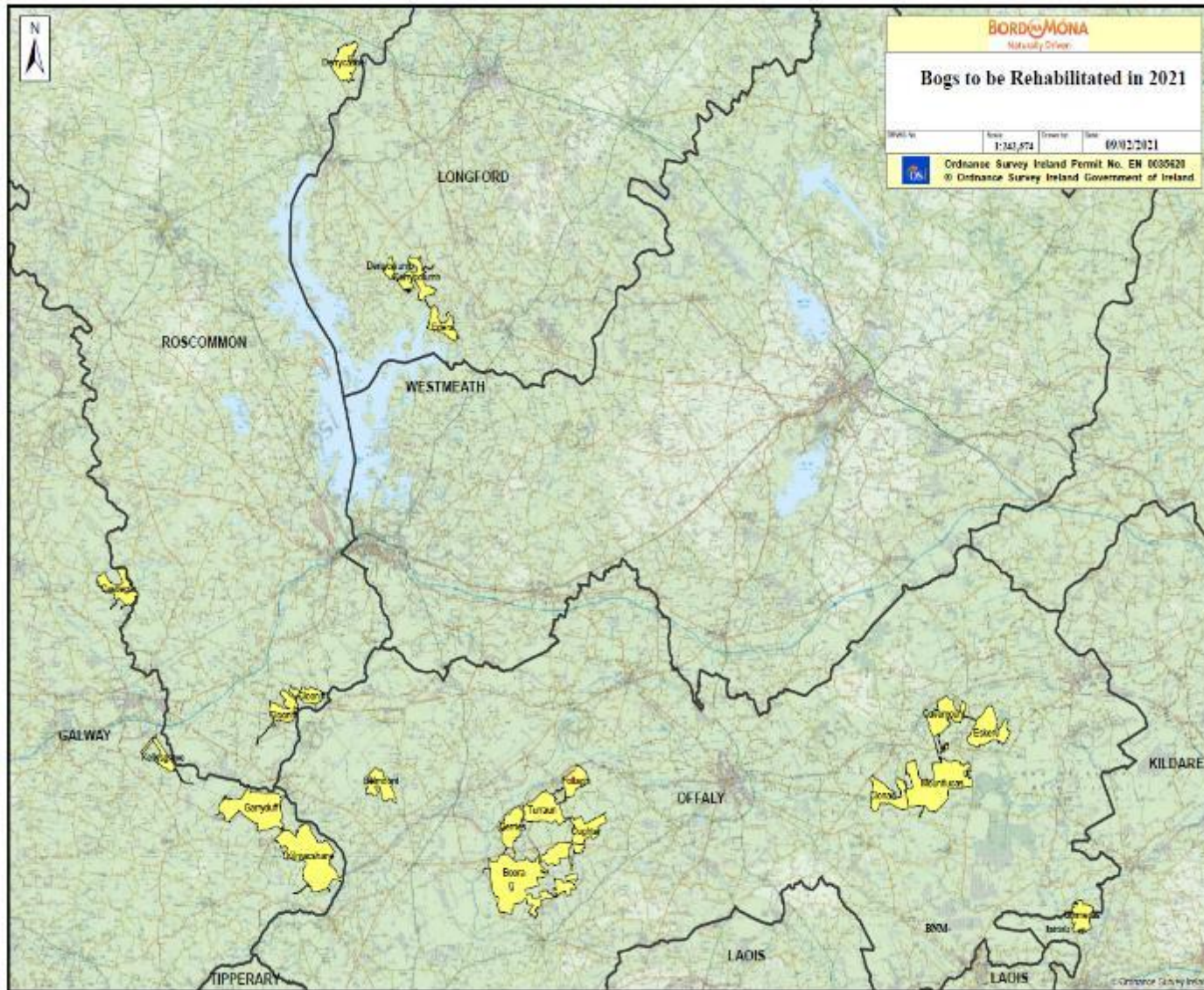
Monitoring over the next four years will include:

- Carbon fluxes (GHGs & fluvial carbon, flumes and chamber measurements)
- Water levels (piezometers)
- Water quality (e.g Ammonia)
- Water attenuation (e.g. flows)
- Habitats
- Biodiversity (e.g. breeding birds)
- Remote sensing (aerial and LIDAR)
- Bog condition
- Research – PCAS – 2 PhD projects funded + post-doc





# Sites for 2021



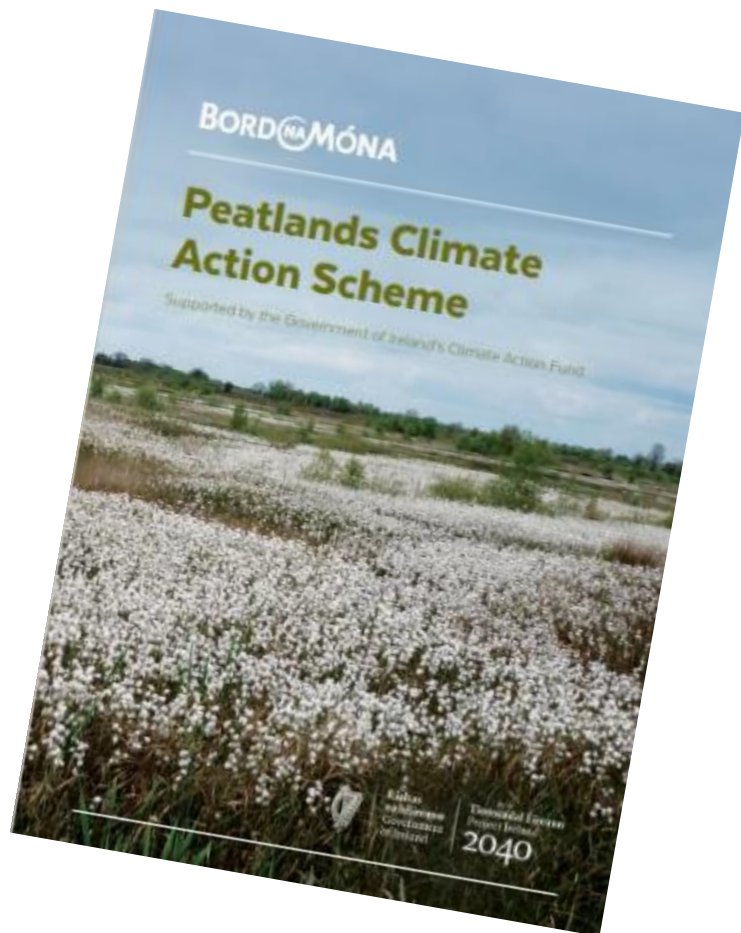
Ref	Bog Name	County
1	Castlegar Bog	Galway
2	Kellysgrove Bog	Galway
3	Edera Bog	Longford
4	Derrycolumb Bog	Longford
5	Clooniff Bog	Roscommon
6	Oughter Bog	Offaly
7	Esker Bog	Offaly
8	Ummeras Bog	Offaly / Kildare
9	Kilmacshane Bog	Galway
10	Garryduff Bog	Galway
11	Derrycashel Bog	Roscommon
12	Cavemount Bog	Offaly
13	Clonad Bog	Offaly
14	Pollagh Bog	Offaly
15	Derries Bog	Offaly
16	Turraun Bog	Offaly
17	Mountlucas Bog	Offaly
18	Belmont Bog	Offaly
19	Boora Bog	Offaly

## PCAS –Key messages

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- Target - 33,000 ha of cutaway rehabbed over 4 years
- Wetter means more Carbon trapped in the ground
- Different outcomes, Reedswamp, fen, wet woodland, embryonic *Sphagnum*-rich vegetation
- Wetter means more likely to be on a trajectory towards new peat forming habitats
- Wetter means more benefits for ecosystem services, wildlife, people
- PCAS will support WFD, The National Climate Action Plan, The National Biodiversity Action Plan, The National Raised Bog SAC Management Plan 2016-2021.....





## For more information:

Look at the website  
**[www.bnmpcas.ie](http://www.bnmpcas.ie)**

Check the brochures

Watch out for ongoing media

Contact us at  
**[pcasinfo@bnm.ie](mailto:pcasinfo@bnm.ie)**

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