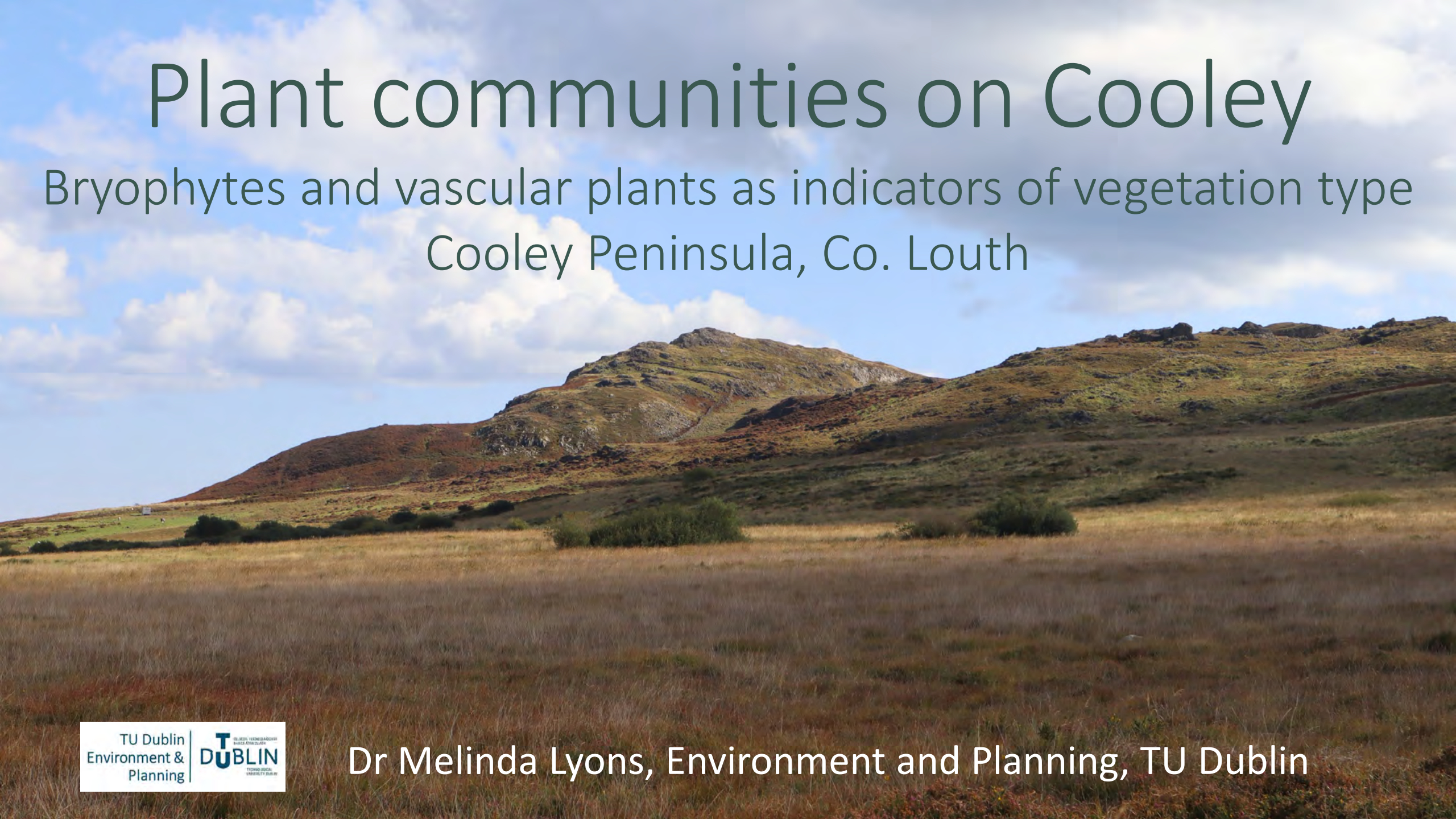
Plant communities on Cooley

Bryophytes and vascular plants as indicators of vegetation type Cooley Peninsula, Co. Louth



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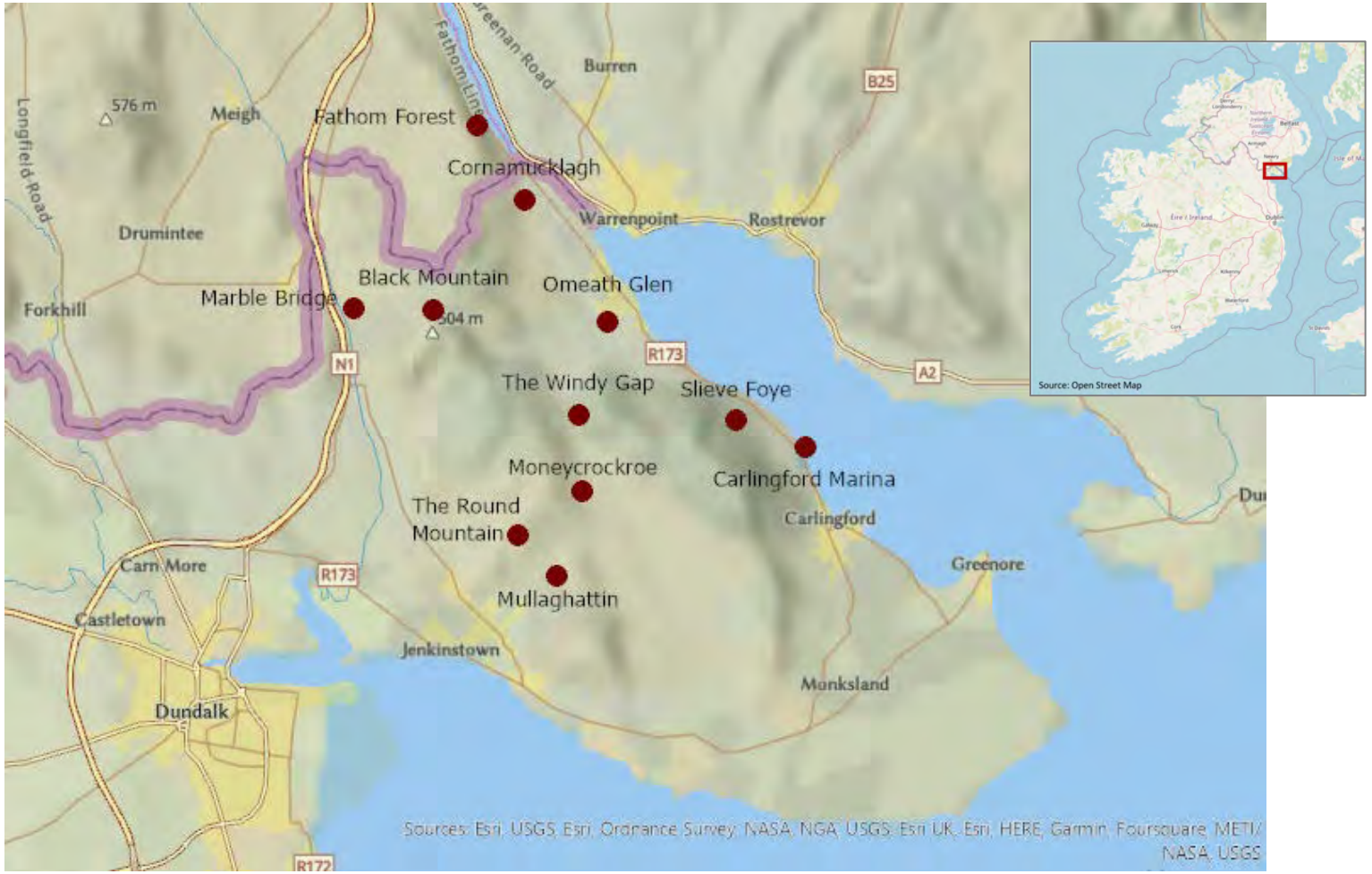
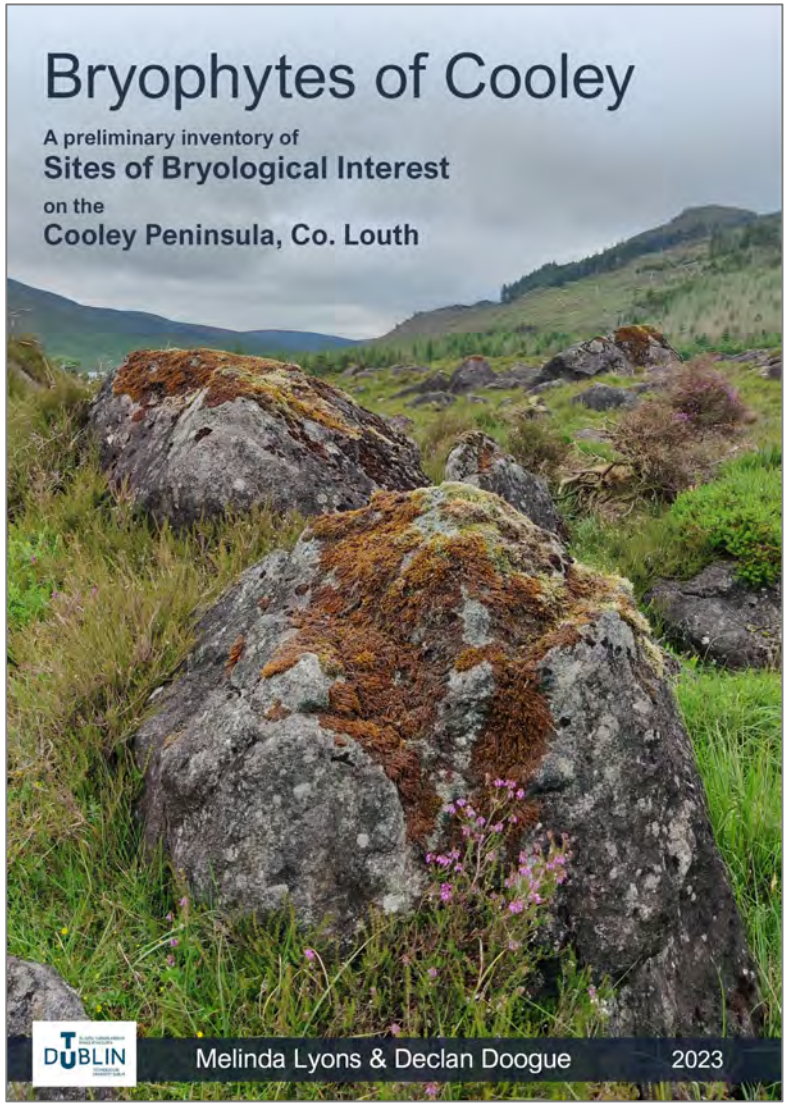
Dr Melinda Lyons, Environment and Planning, TU Dublin





Bryophytes of Cooley Study

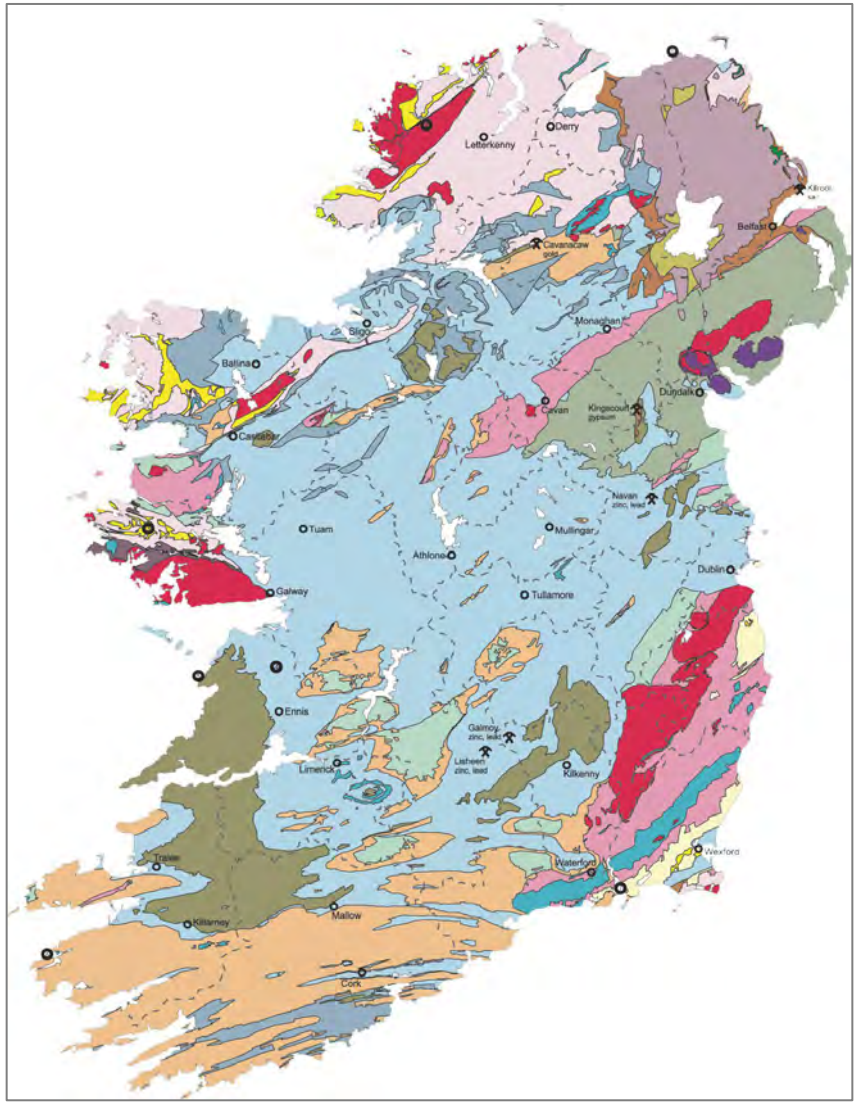
- Study conducted with Dr Declan Doogue FLS during 2022 and 2023
- Cooley Peninsula, Co. Louth. Highest peak: Slieve Foye 587m
- Northern portion of biogeographical area of interest lies within County Armagh
- 42 bryophyte species deemed to be ecologically significant (approx. 146 bryophyte species recorded in total)

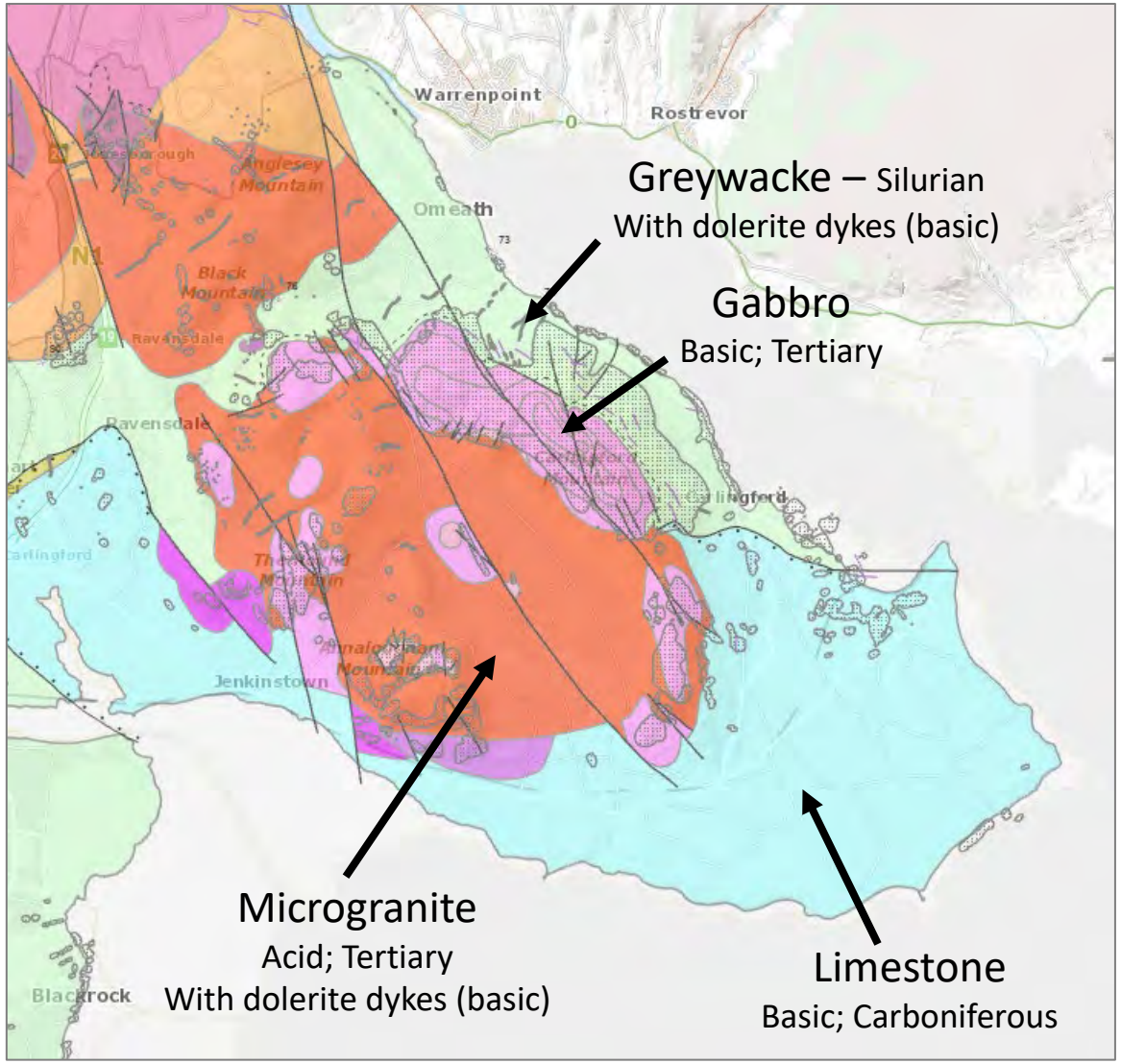
Plant communities of Flushes

1. Acid end of spectrum: Cornamucklagh (NVC M29)
2. Base-rich end: Carlingford Marina (‘*Cratoneurion*’)
3. Circumneutral: species-rich complexes with mosaics of localised communities at various locations in Cooley
   - — In very wet places, e.g. White Bog
   - — Springhead to flush transition
   - — Ecological complexity of springs and flushes

- What determines distribution of species / communities?
- Where do these communities fit into classification schemes?

Bedrock Geology





Geological Survey Ireland: online map viewer — www.gsi.ie

M29

Hypericum elodes – Potamogeton polygonifolius soakway

Rodwell, 1991, British Plant Communities II

Characteristic of shallow soakways and pools in peats and peaty mineral soils with fluctuating waters, moderately acid to neutral and with low nutrient levels (i.e. not polluted).

Vegetation is inundated with shallow water for much of the year, but drier in summer.

Ecologically significant species:

- *Sphagnum auriculatum*
- *Eleocharis multicaulis*
- *Eriophorum angustifolium*
- *Carex demissa*
- *Hydrocotyle vulgaris*
- *Anagallis tenella*
- *Lotus uliginosa*
- *Narthecium ossifragum*

Cornamucklagh

No legal conservation designation

Potamogeton polygonifolius and *Hypericum elodes* in wetter parts of site.

Complexity of vegetation: *Sphagnum* spp amongst a large number of other wetland species.

Pinguicula lusitanica

Philonotis fontana

Carex demissa

M29

Hypericum elodes – Potamogeton polygonifolius soakway

Cornamucklagh, water pH 5.9

Palustriella commutata, a brown moss (above); tufa (above right); pH 7.2 – 8.0

Philonotis calcarea

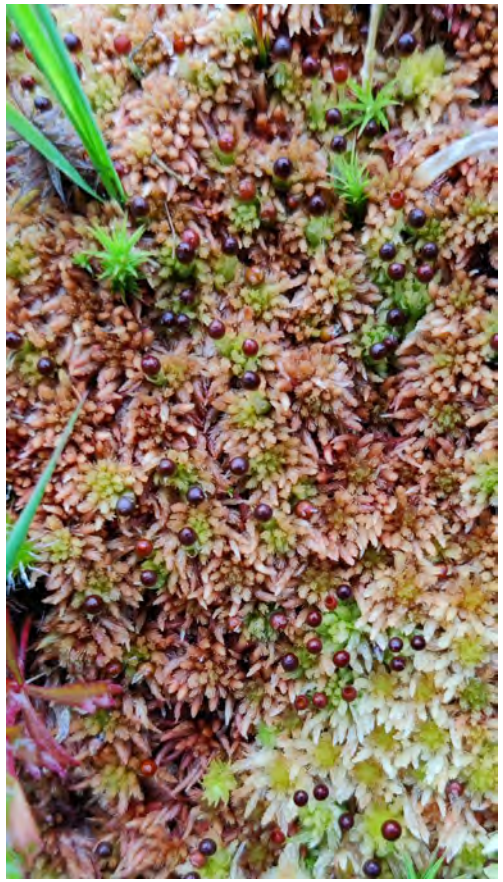
Fissidens adianthoides

Carlingford Marina

Base-rich, calcareous flush with tufa formation

NVC M10 / M37 / M38; IVC FE4B *P. commutata-B. pseudotriquetrum* spring

'Petrifying Spring' Habitats Directive priority habitat 7220* *Cratoneurion*



Philonotis fontana
pH typically 5.9 – 7.0

<– lower pH – *Sphagnum* – – – Brown mosses – higher pH –>

All depend on damp conditions, with a continuous throughput (flushing) of clean, low-nutrient water.

Subtle differences in water chemistry, soils etc, influence distribution of these species.

Form recognisable, ecologically significant communities of plants.

Philonotis calcarea
pH typically 7.3 – 8.3

White Bog, Slieve Foye, Alt. 400m

Scorpidium scorpioides

Characteristic of flushes and pool edges.

In Cooley: common associates are *Schoenus nigricans, Narthecium ossifragum, Pinguicula lusitanica*. pH: 6.5 – 7.2

M14 *Schoenus nigricans-Narthecium ossifragum* mire (mildly calcicole moorland flushes).

S. scorpioides at White Bog (left) and with capsules (above, centre); capsules are rare. More often grows flat on the ground (above, right).

Spring near The Windy Gap

Above left:

Springhead with *Philonotis fontana*, pH 6.4 – 6.6

Above right:

Flush 50 m below springhead with brown mosses pH 6.8 – 6.9

Right:

Springhead with *Philonotis fontana*

and flush below

The Round Mountain

Wetter areas with low plant cover, kept open by scouring effect of water:

- *Carex demissa*
- *C. lepidocarpa*
- *Blindia acuta* (on rocks)
- *Bryum alpinum* (on rocks)
- *Scorpidium* species

Mosaic of communities where locally dominant species include:

- *Eriophorum angustifolium*
- *Juncus acutiflorus*
- *Schoenus nigricans*
- *Sphagnum* species

pH 6.5 – 7.2

System of Flushes

Moneycrockroe

ECOLOGICALLY COMPLEX HABITATS

Chemistry influenced by:

- Bedrock geology
- Overlying soils / till
- Water quantity / movement

Juxtaposition of species with different requirements

Scorpidium revolvens s.s.
(in water)
A brown moss, characteristic of base-rich habitats

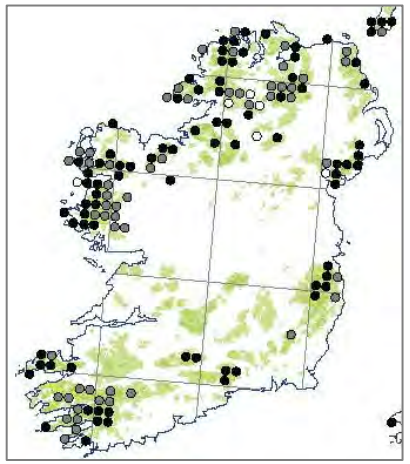
Drosera rotundifolia
(bottom left, red leaves)
Round-leaved Sundew, characteristic of base-poor habitats

Water pH 6.0

Flush

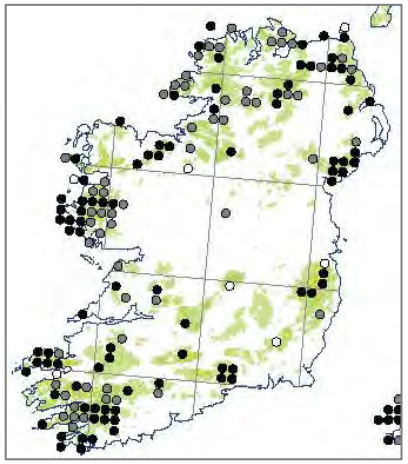
Slieve Foye

Ecologically interesting circumneutral flushes



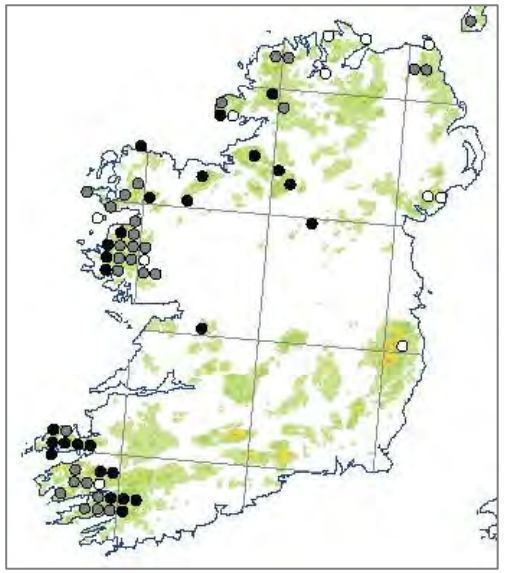
Blindia acuta

pH 6.7 – 7.1



Bryum alpinum

pH 5.4 – 7.2



Sarmentypnum sarmentosum

pH 6.5 – 7.2

First discovered in Co. Louth at
Moneycrockroe, Cooley Peninsula, July 2024
Growing with *Scorpidium revolvens* s.s. (above)

Upland / climatic influence: several 'Atlantic' bryophyte species occur in Cooley

Other underlying factors / minerals in water…?

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