

National Soil Carbon Observatory

Karl Richards, Head of Teagasc Climate Centre

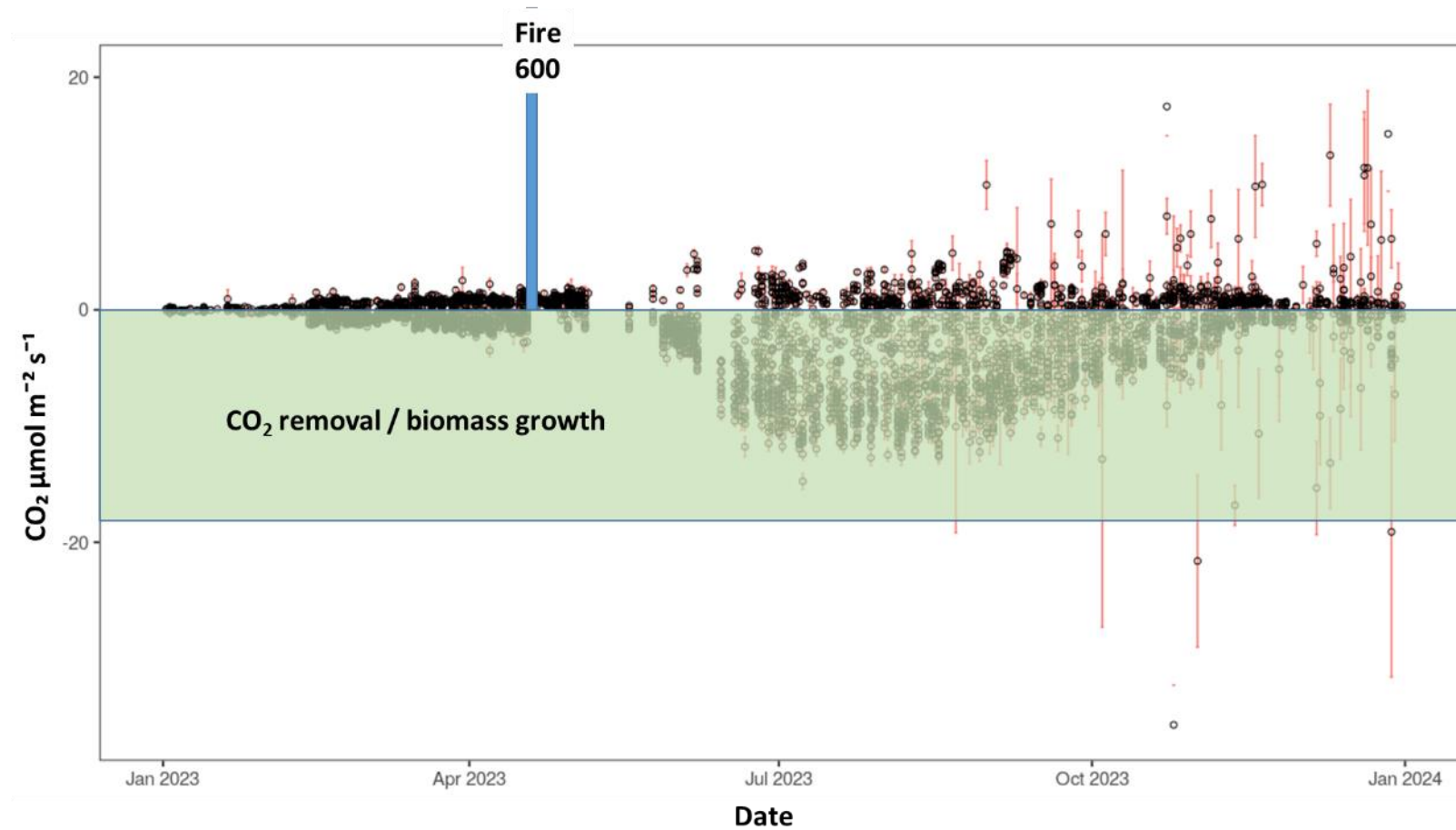
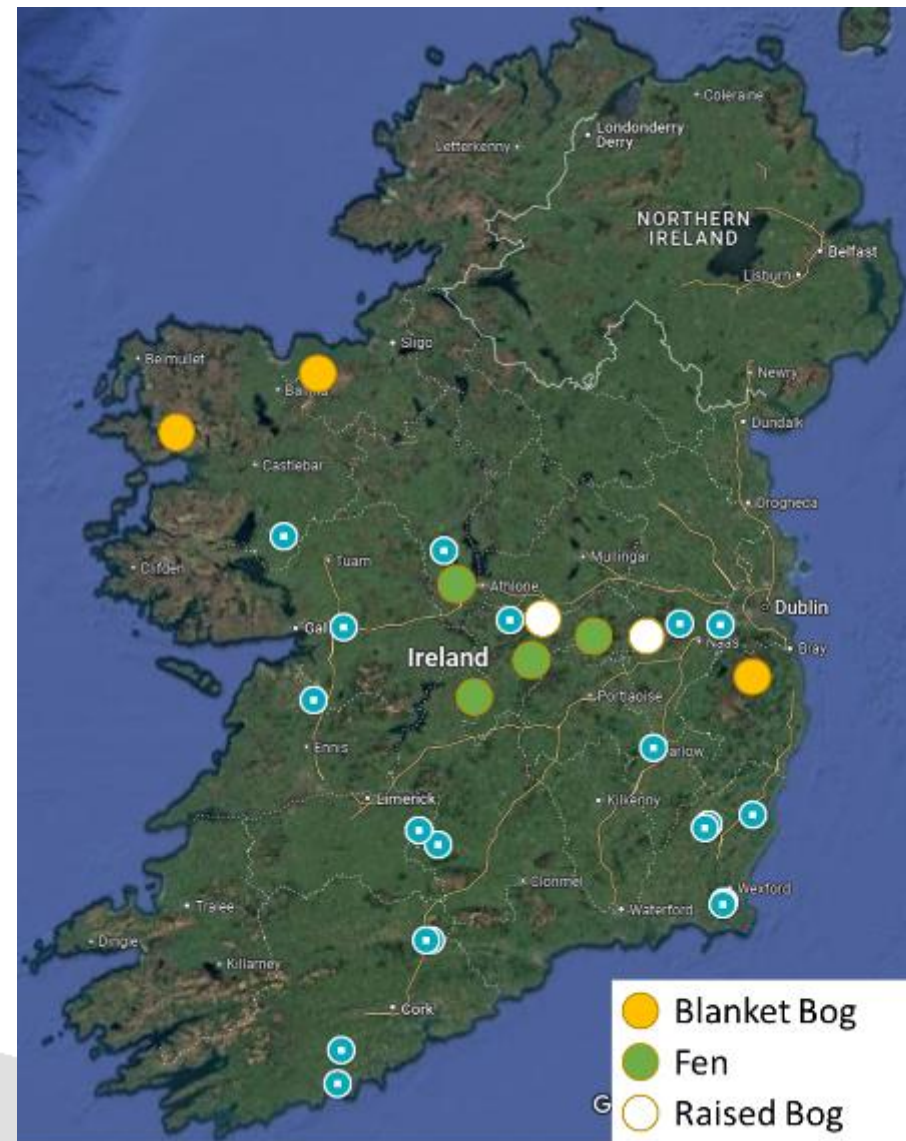


Teagasc Climate Centre

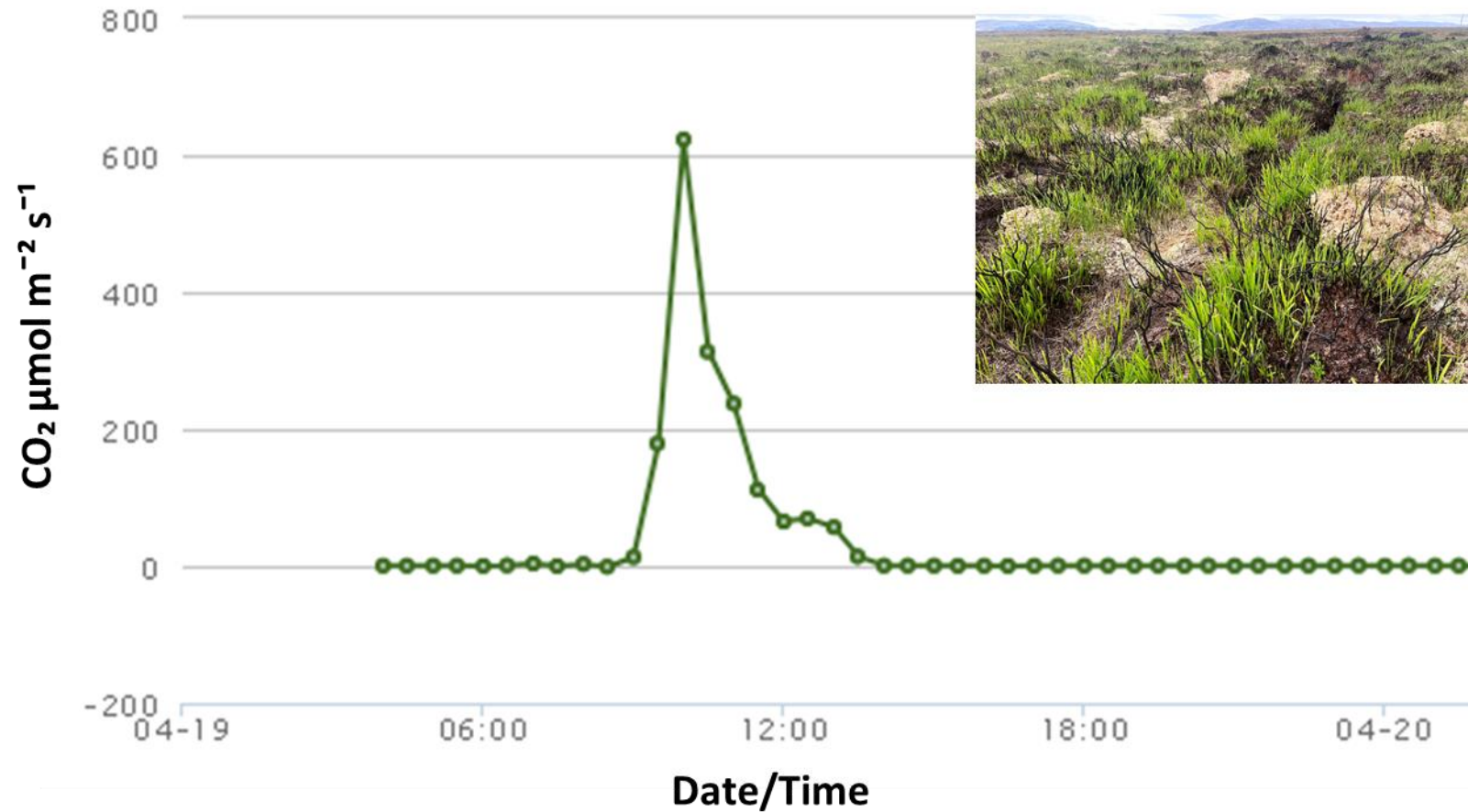
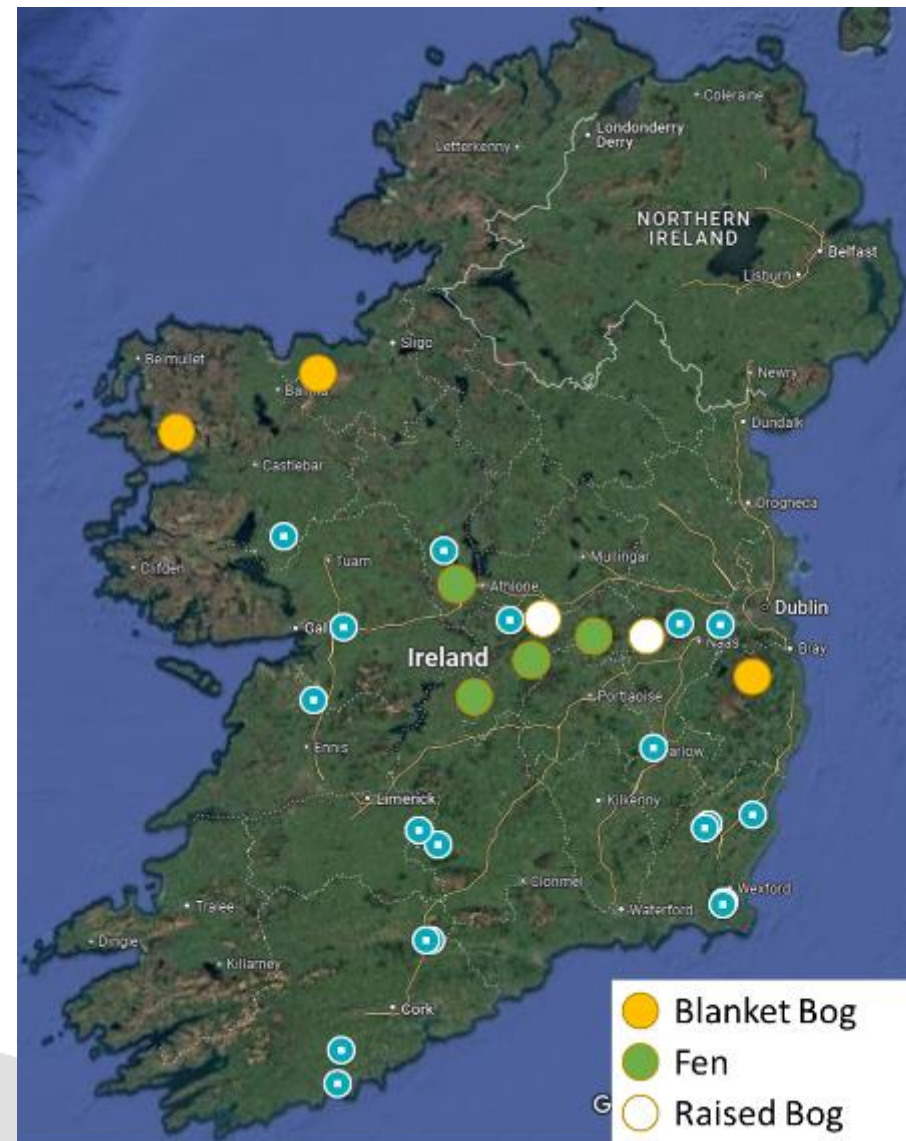
- Head of Climate Centre – previously head of Environment Soils & Land-use Dept. Johnstown Castle
- Co-ordinate agricultural climate and biodiversity research & innovation across Teagasc
- Accelerate technological development & implementation to reduce greenhouse gas emissions and enhance biodiversity
- Support & facilitate the Irish agriculture sector to meet its commitments in reducing greenhouse gas emissions & restoring biodiversity
- Manage the National Agricultural Soil Carbon Observatory



National Agricultural Soil Carbon Observatory



National Agricultural Soil Carbon Observatory - a



Land-use, Land-use Change and Forestry Greenhouse gas emissions

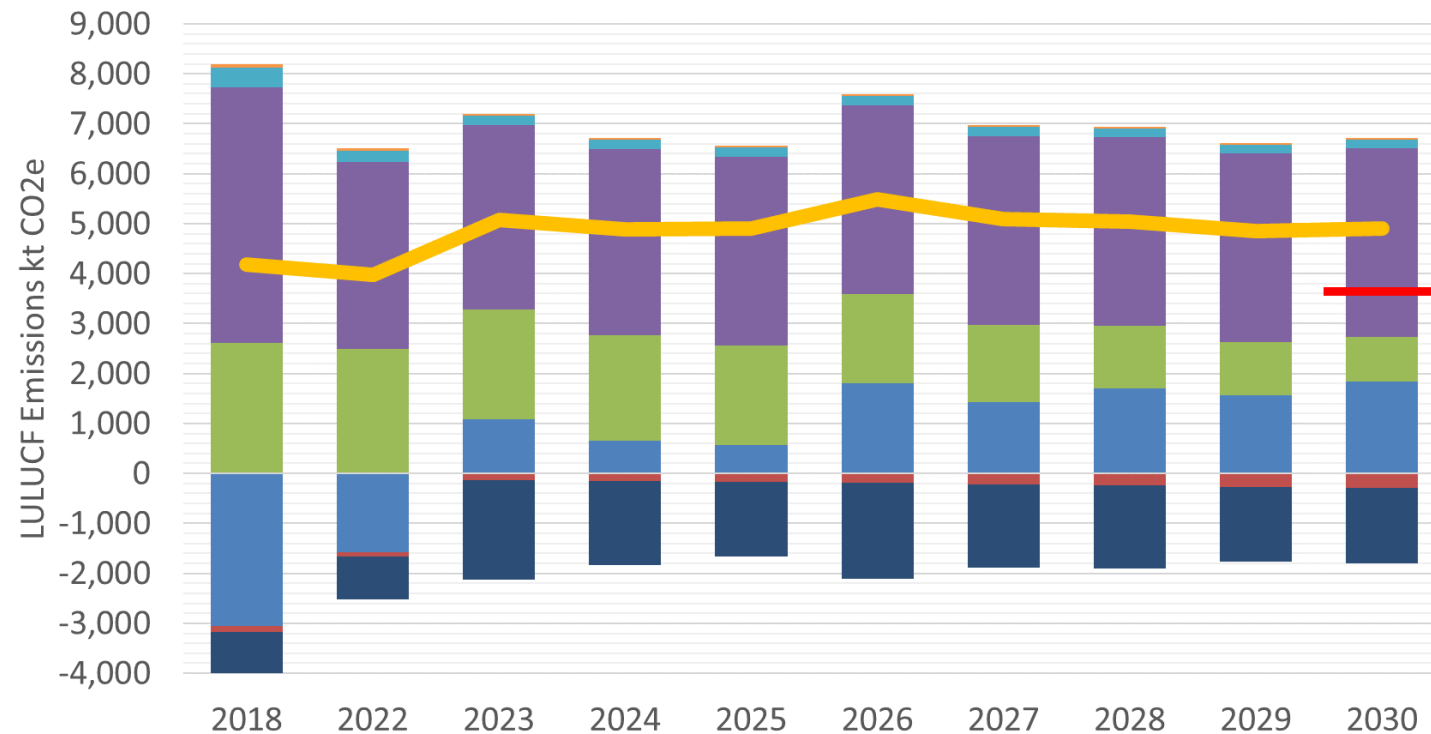


Chart shows Land-use Greenhouse Gas emissions 2018, 2022 and projected emissions 2023 to 2030 with additional measures



Emissions below zero are carbon sinks which declining and above zero are carbon emissions



Orange line are the net emissions and red line indicates the 2030 reduction target

Forest land

Cropland

Grassland

Wetlands

Settlements

Other land

Harvested wood products

Total

Source: EPA (2024). [Ireland's Greenhouse Gas Emissions Projections 2023-2050](#).



Actions to protect carbon

- Identify areas with high carbon
- Use the ACRES peatland score card
- Results based schemes
- Develop farm action plan
- Consider actions to increase carbon
 - Turbery
 - Over-grazing & under-grazing
 - Drained peats
 - Restore land that is eroded/degraded
 - Manage existing forestry – Teagasc forestry advisory service

ACRES Peatland SCORECARD TIP SHEET

TIPS

Determine the best path to assess the field. This will often be a 'W' path but make sure to cover all vegetation types present i.e. bog, wet/dry heath and slopes, hummocks, hollows where possible.

Do not just follow access tracks or paths as this gives a biased view of the field's condition.

Observe the wider area during the 'W' walk to estimate the overall grazing level and cover of bracken, scrub and invasive species. Aerial photographs may also be helpful for estimating cover of scrub and bracken.

Stop regularly to part the vegetation to estimate the moss cover, assess the vegetation structure and check for weed species or scrub seedlings.

Note any comments or management actions which may be useful to the CP team in the section provided in the app.

Not all positive indicators will be in flower at the same time, look for leaves as well as flowers.

Positive indicators may occur throughout, in clumps or sparsely (e.g. sundews).

Do not spend excessive amounts of time in one area or nice hummocks/corners as this isn't representative and is not the protocol that will be followed during an inspection.

A2 Cover of mosses, lichens & liverworts

Cover of mosses and lichens can vary significantly. Pick several small representative areas to estimate cover and apply the average of these to the entire field where appropriate.

Low: <10% cover across the field. Mosses, liverworts and lichens are present in very small numbers in the field.

Moderate: 10-30% cover of mosses, lichens and liverworts across the field.

High: 30%+ cover of mosses, lichens and liverworts across the field.

B1 Hydrological Integrity (Carbon Capture)

Good hydrological integrity (with the water table at, or close to, the surface) is essential for supporting a healthy functioning peatland with continued peat formation.

Drainage can lead to erosion of peat and the release of carbon.

Significantly altered: Widespread free-flowing drains impacting >20% of field. Evidence of subsidence, collapse, cracking of adjacent peat, increased rate of run-off and reduced water table.

Moderately altered: Free-flowing, unvegetated drains present and impacting <20% of field. Abundance of peatland species which favour drier conditions i.e. Ling heather, Tussock grasses and Gorse.

Slightly altered: Some drains present but these are well vegetated and partially impeded i.e. neither free-flowing or abundant. Limited effect on field. Some sphagnum species present.

Moderately intact: Surface largely intact/stable. Some evidence of historic disturbance. Well vegetated drains with impeded flows. Vegetation/hydrology is largely stabilised/recovered.

Intact Bog/Heath: No evidence of past drainage/disturbance across fields. Site exhibits a high water table with active peat formation.

A3 Vegetation Structure

A peatland with good vegetation structure will have a well-developed shrub, sedge / herb and moss layer. The shrub layer should not be uniform in structure and should have shrubs at various growth stages.

Over-grazed:

Uniformly low vegetation height with poor structure. Little / no heather present on bog / wet heaths. Often lacking moss, sedge / herb or shrub layers.

Under-grazed:

Rank sward. Purple moor grass / mat grass / senescent heather dominant. High litter cover. Thatch forming.

Moderate (Over-grazed):

>25% of field has low, uniform vegetation height (although not throughout).

Moderate (Under-grazed):

>25% rank vegetation although not throughout. Degenerate heather or dense purple moor-grass present.

Good:

Abundant grass and sedges. Hummocks / hollows / pools present on bogs. All stages of heather growth present on heaths. Mix of bog / heath vegetation throughout. Moss, sedge / herb and shrub layers all present.



Good peatland / heathland structure with all three vegetation layers present

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ACRES
Agri-Environmental Schemes

As Rann Talamhainle,
Dia agus Meas
Treasa de Agairt,
Feid agus na Maoin



WILD ATLANTIC
NATURE LIFE



PEATLAND
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