Catchment vegetation revival workshop

Kinlochewe
26th April 2023

also
live-streamed

https://www.facebook.com/WRFT22

www.wrft.org.uk

Purpose of meeting

Land in Wester Ross has been managed for cattle, sheep and deer production; native and commercial woodlands; nature conservation, and more recently for peatland restoration.

Wild salmon do best in rivers which are relatively stable (not too much erosion and sediment movement) and fertile with trees along river banks, and spates which are not too severe.

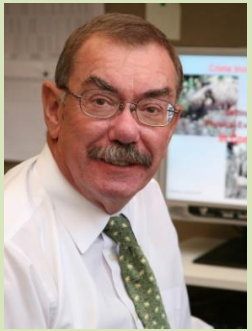
Governments have committed to responding to climate change and biodiversity targets and there are new funding streams to provide support, and to mitigate against flood risk.

Workshop aims to bring together people from different backgrounds to share knowledge and experience, **to learn from each other and be better able to respond to future challenges.**

What can be done in Wester Ross?

What are the shared objectives?

Wester Ross Fisheries Trust 2023



Chairman
Prof Dave Barclay

Administrator
Peter Jarosz

Admin assistant
Emma Watson

Graduate placement
Dr Shraveena Venkatesh

Tournaig trap
Ben Rushbrooke

Field assistant
Roger McLachlan

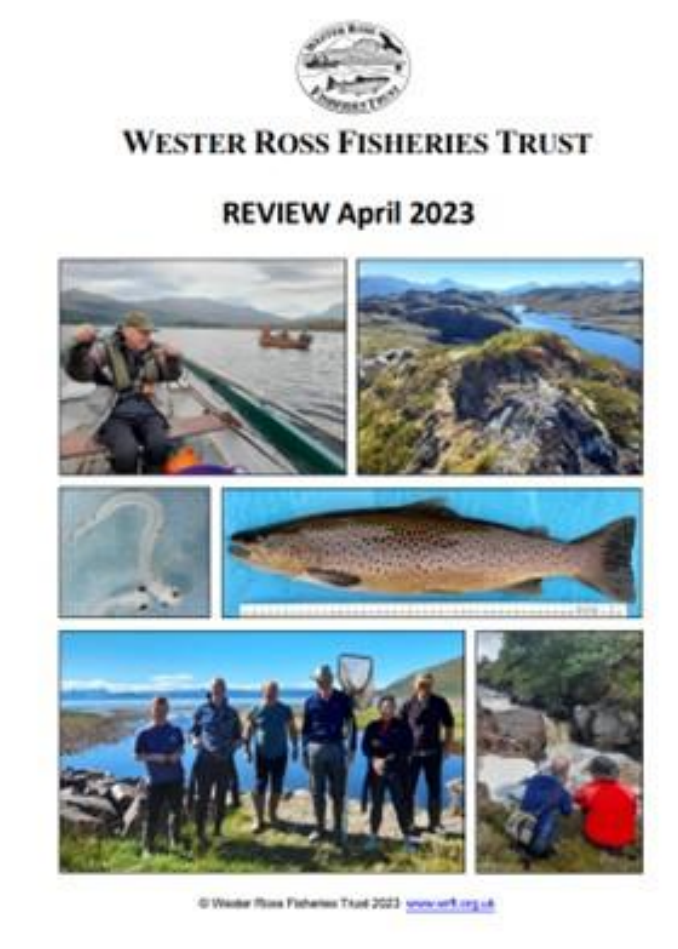
Research scientist
Dr Steve Kett
(Trustee)

Field assistant
(Trustee)
Alasdair MacDonald

Field assistant
(& Trustee)
Mark Williams

Biologist
Peter Cunningham

& lots of other helpers . . .



WRFT Review of 2021 – 2022

Rod catches

Adult salmon sampling

Juvenile fish surveys

Sea trout monitoring

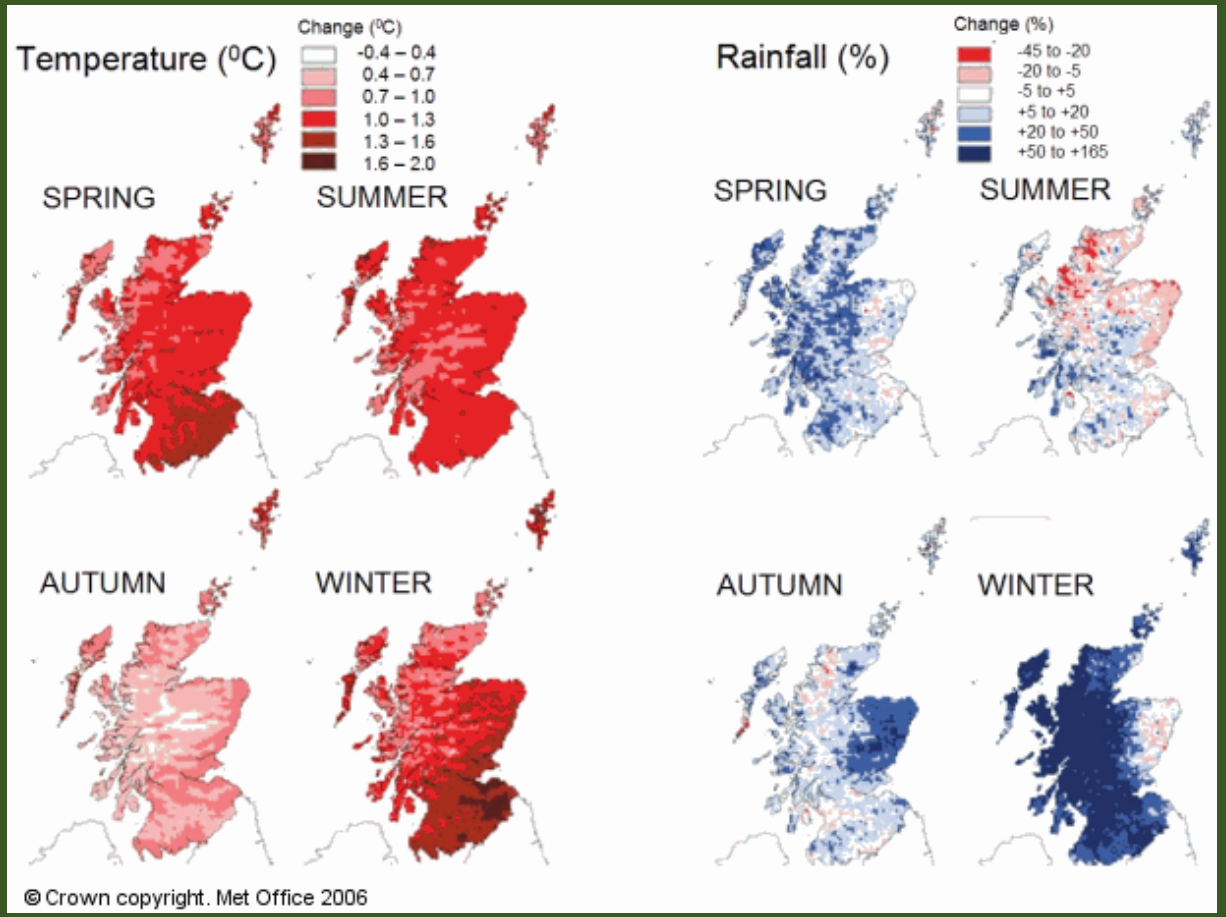
Salmon farm issues

WRASFB report

Projects:

- Coastal fyke net
- Herring
- Wester Ross MPA Discovery day
- Outreach
- Rhododendron ponticum control
- Rhidorroch River sediment

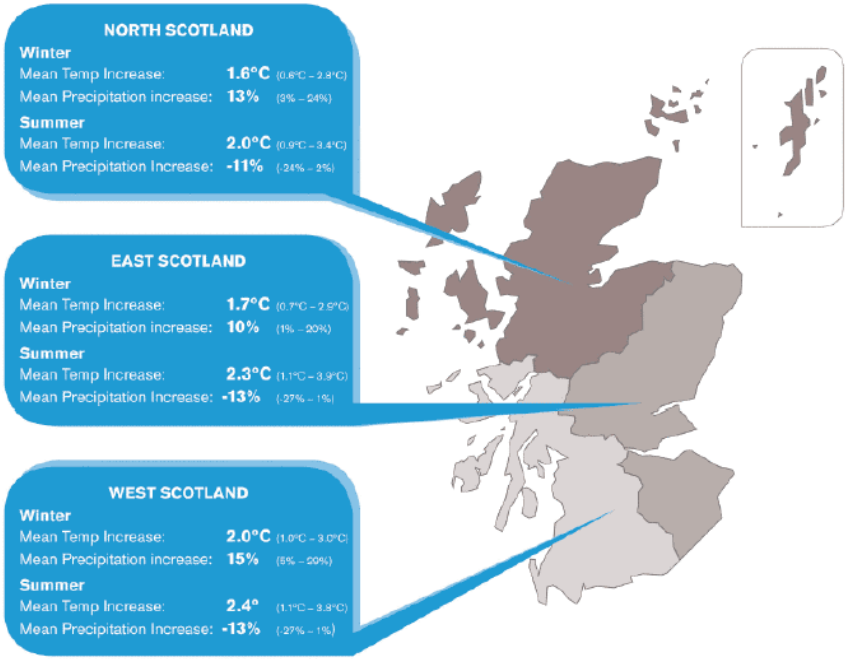
Changing weather patterns . . . . 1961 to 2004



https://www.forestresearch.gov.uk/research/climate-change-adaptation/climate-change-in-scotland/

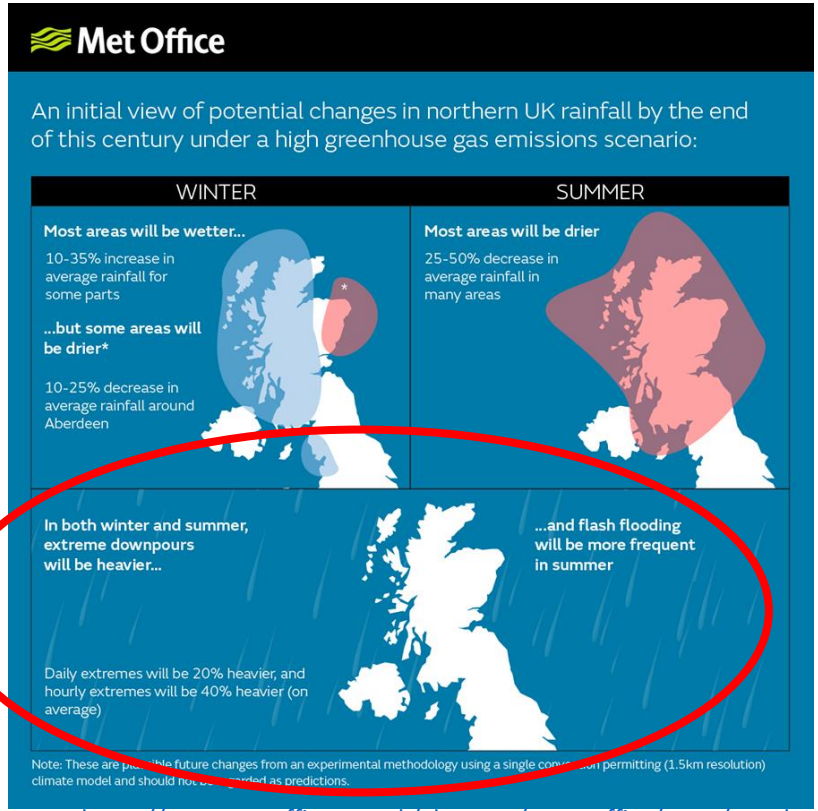
Changing weather patterns . . . predictions?

2050 (from 2009 levels)



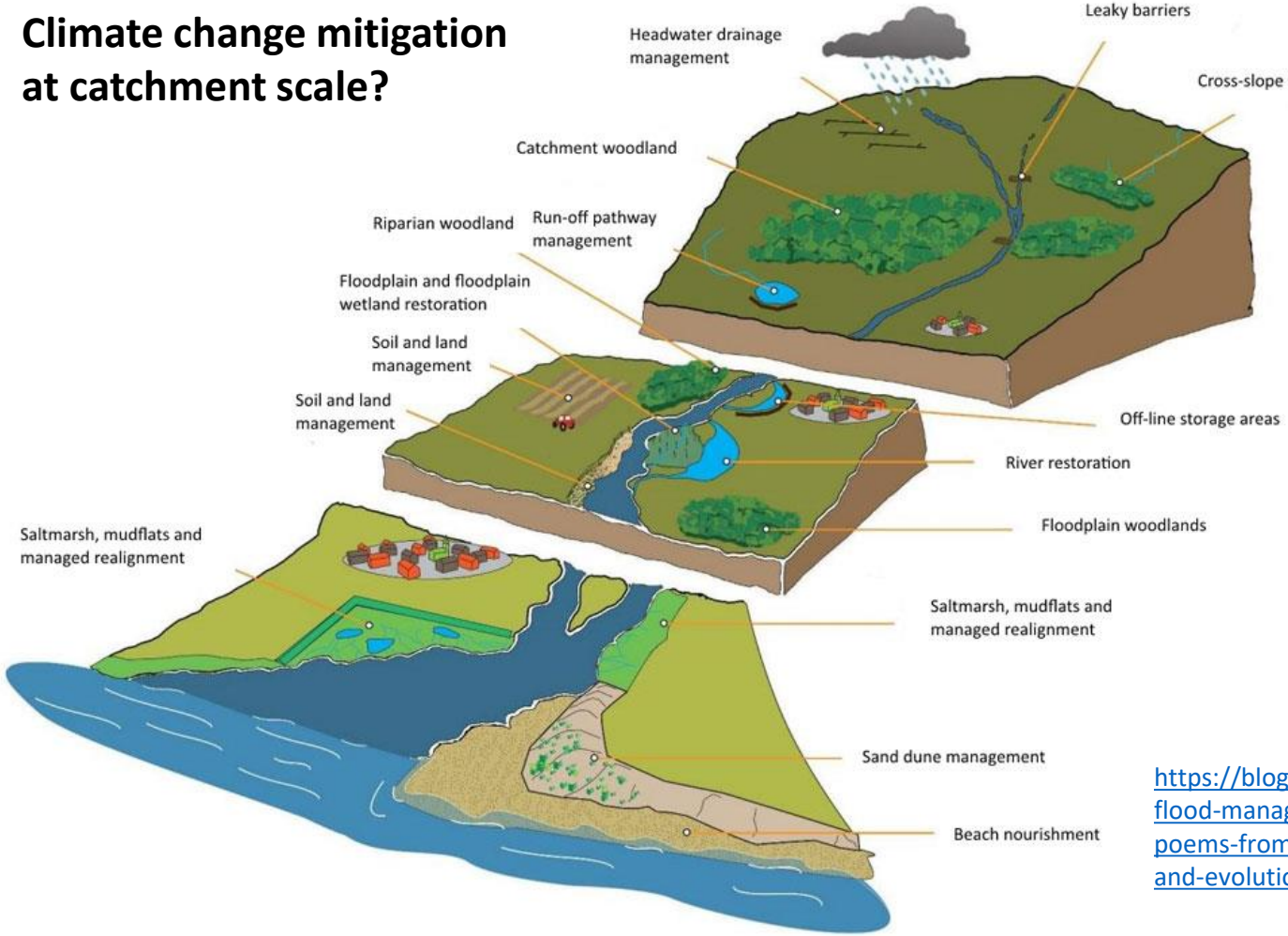
. . . .more flash floods anticipated

2100 (from 2014 levels)

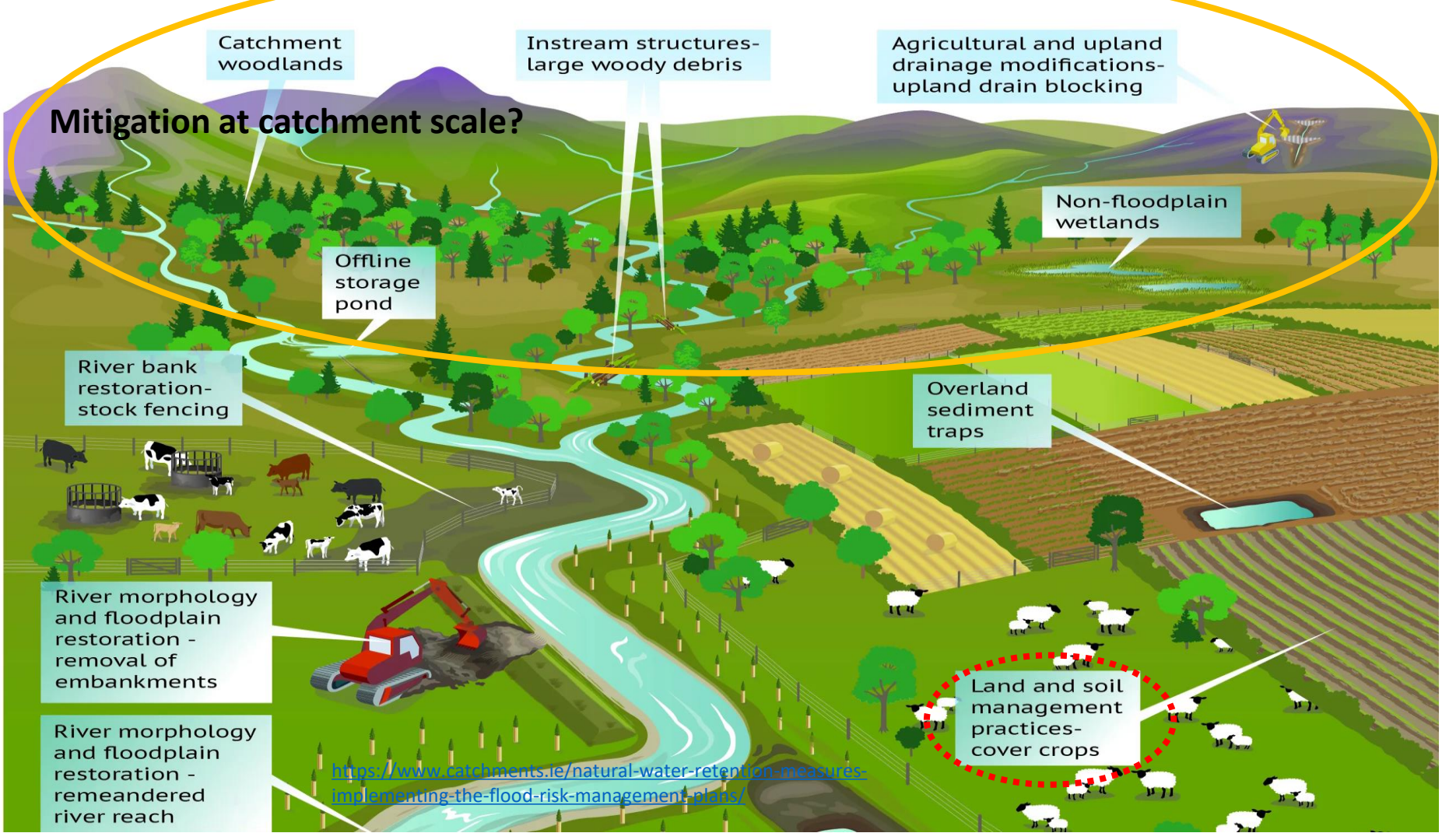


https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2018/rainfall-changes-for-northern-britain

Climate change mitigation at catchment scale?



https://blogs.ed.ac.uk/hdeak/2020/03/03/natural-flood-management-seminar-by-dr-ian-pattison-and-poems-from-the-course-topics-in-palaeobiology-and-evolution/


Mitigation at catchment scale?
Catchment woodlands
Instream structures- large woody debris
Agricultural and upland drainage modifications- upland drain blocking
Non-floodplain wetlands
Offline storage pond
River bank restoration- stock fencing
Overland sediment traps
River morphology and floodplain restoration - removal of embankments
River morphology and floodplain restoration - remeandered river reach
Land and soil management practices- cover crops
https://www.catchments.ie/natural-water-retention-measures-implementing-the-flood-risk-management-plans/

Catchment vegetation revival workshop (26th April 2023)
Programme

10.30	Introduction (up to here!)	Peter Cunningham (WRFT)
10.40	Review of field excursion on Beinn Eighe NNR	Dr Shraveena Venkatesh (WRFT)
11.00	Catchment vegetation and wild salmon	Peter Cunningham (WRFT)
11.20	Rough guide to deer stalking	Alasdair Macdonald (Dundonnell Estate)
11.40	Peatland restoration: routes to success	Colin Morrison (Angus Davidson Ltd.)
12.00	Affric Highlands & Riverwoods initiatives	Paul Greaves (Affric Highlands)
12.20	Ben Shieldaig & Glen Torridon partnerships	Malcolm Turner (The Woodland Trust)
12.40	Seeking ecological solutions . . .	James Merryweather (Auchtertyre Academy)

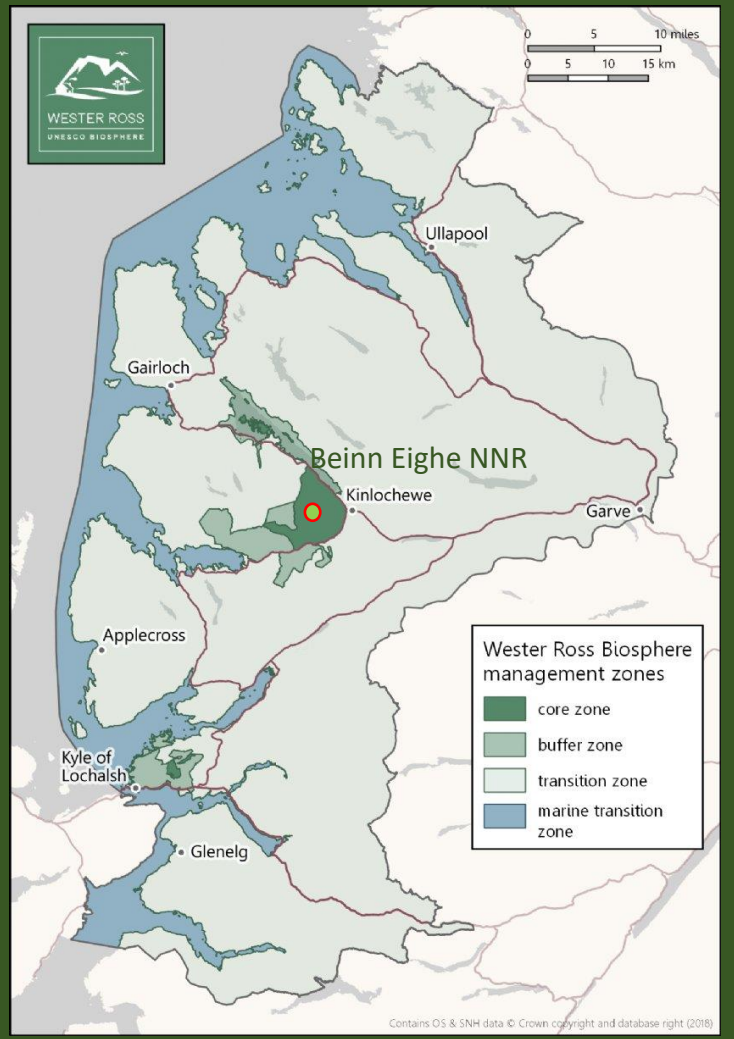
Lunch 1pm to 2pm

14.00	Group session . . . (everyone!)	
15.00	Reconvene and conclude	
~15.30	End of meeting	

Review of the Field Excursion at Beinn Eighe NNR on 25th April 2023 to look at hummocks & fertilised plots

Dr Shraveena Venkatesh

Nature Scot Graduate Trainee with Wester Ross Fisheries Trust




Aerial
‘Pony path’
our route on
25th April 2023
https://www.bing.com/maps/?cp=57.708549%7E-4.809265&lvl=9.0&style=a
Feedback
500 ft
200 m
Image courtesy of Ordnance Survey
back
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Many examples of hummocks can be seen by the Pony Path on Beinn Eighe NNR

Participants inspecting a hummock on Beinn Eighe NNR on 25th April 2023

Many examples of ‘hummocks’ can be seen by the Pony Path on Beinn Eighe NNR

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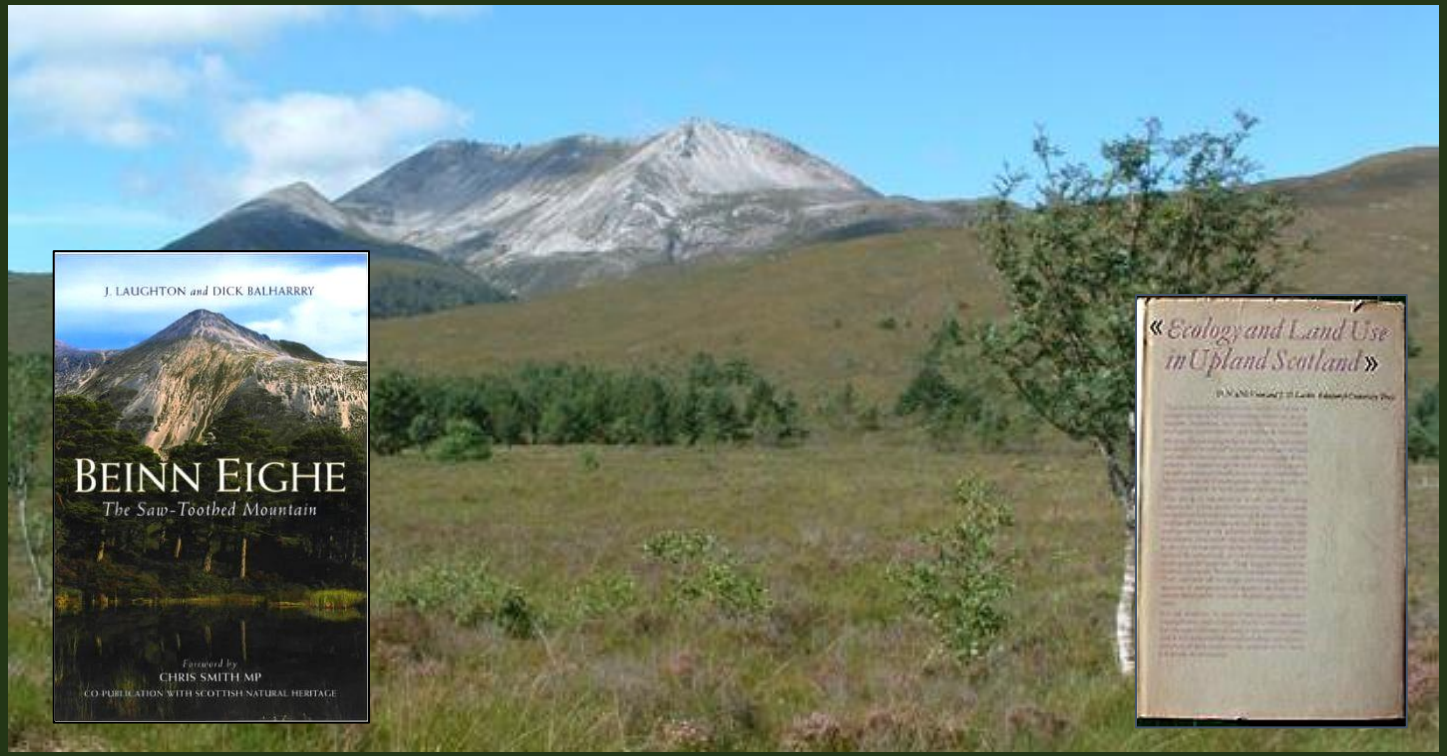
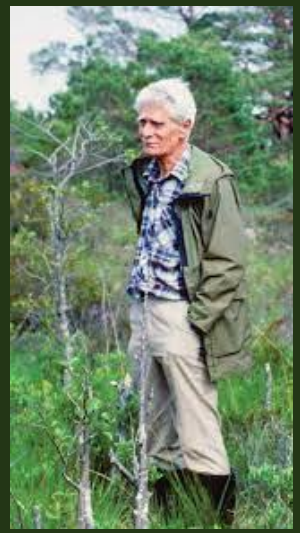
Participants inspecting a hummock on Beinn Eighe NNR on 25th April 2023

Biological productivity in Wester Ross is primarily limited by the availability of phosphorus (P) within the ecosystem

(refs: e.g. McVean's fertilisation trials at Beinn Eighe NNR)





https://www.britishecologicalsociety.org/wp-content/plugins/bm-bes/upload-downloader.php?upload_id=26804

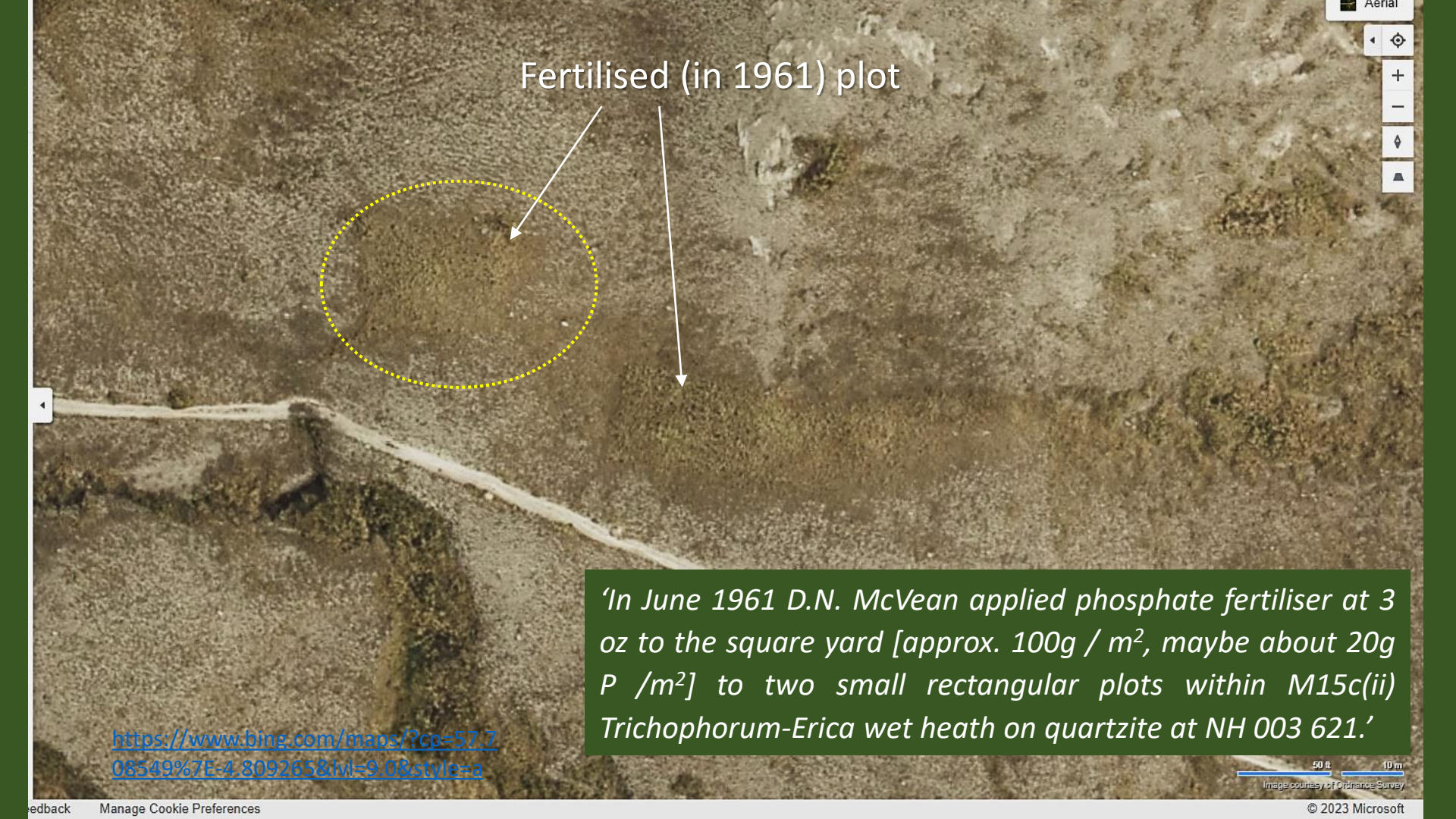
Phosphorus

Phosphorus is essential to all life forms, and is concentrated in the bones of vertebrate animals as phosphate.

Donald McVean carried out experiments at Beinn Eighe NNR to learn about how phosphate affects growth of plants in moorland habitats

Picture by Ben Rushbrooke

Assorted bones, Aultgrishan shore 3rd April 2016



'In June 1961 D.N. McVean applied phosphate fertiliser at 3 oz to the square yard [approx. 100g / m^2, maybe about 20g P /m^2] to two small rectangular plots within M15c(ii) Trichophorum-Erica wet heath on quartzite at NH 003 621.'

https://www.bing.com/maps/?cp=57.708549%7E-4.809265&lvl=9.0&style=a

Trials were carried out on Beinn Eighe NNR in 1961 to find out how to enhance soil fertility

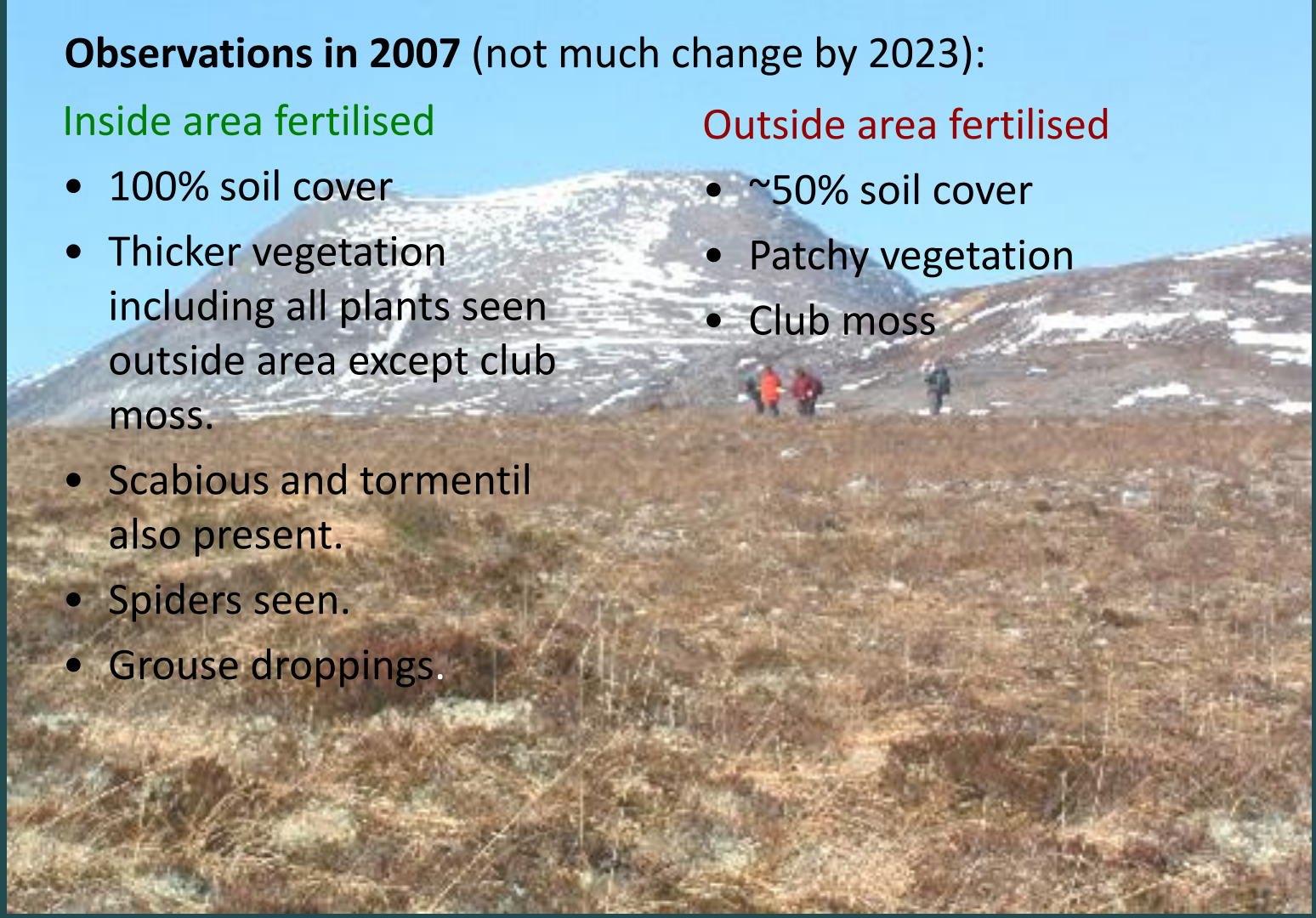
Observations in 2007 (not much change by 2023):

Inside area fertilised

- 100% soil cover
- Thicker vegetation including all plants seen outside area except club moss.
- Scabious and tormentil also present.
- Spiders seen.
- Grouse droppings.

Outside area fertilised

- ~50% soil cover
- Patchy vegetation
- Club moss



Donald McVean's Plots (photographs taken on 25th April 2023)

Unfertilised

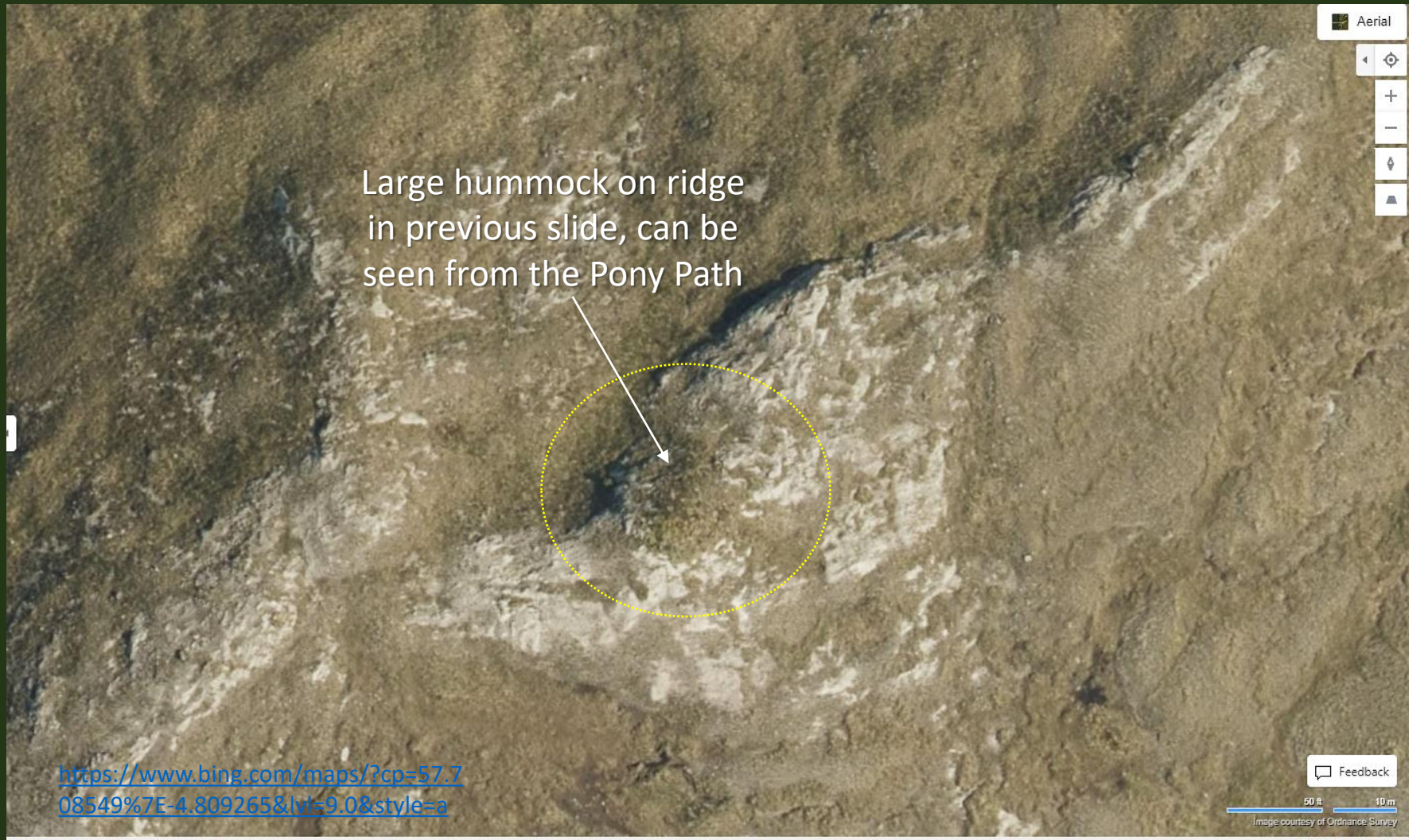
Fertilised

Neither are natural

but which is desirable?

Rocks and knolls in prominent positions have also been enriched with phosphate by birds and mammals forming large hummocks

Raptor perch in Beinn Eighe NNR



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View over one of McVean's fertilised plots on Beinn Eighe NNR to Slioch, taken on 25th April 2023 by Dr Shraveena Venkatesh