

Soils – nature – climate – a safe operating space

(‘By leaves we live’ (Patrick Geddes))

Clive Mitchell



NatureScot

Scotland's Nature Agency
Buidheann Nàdair na h-Alba

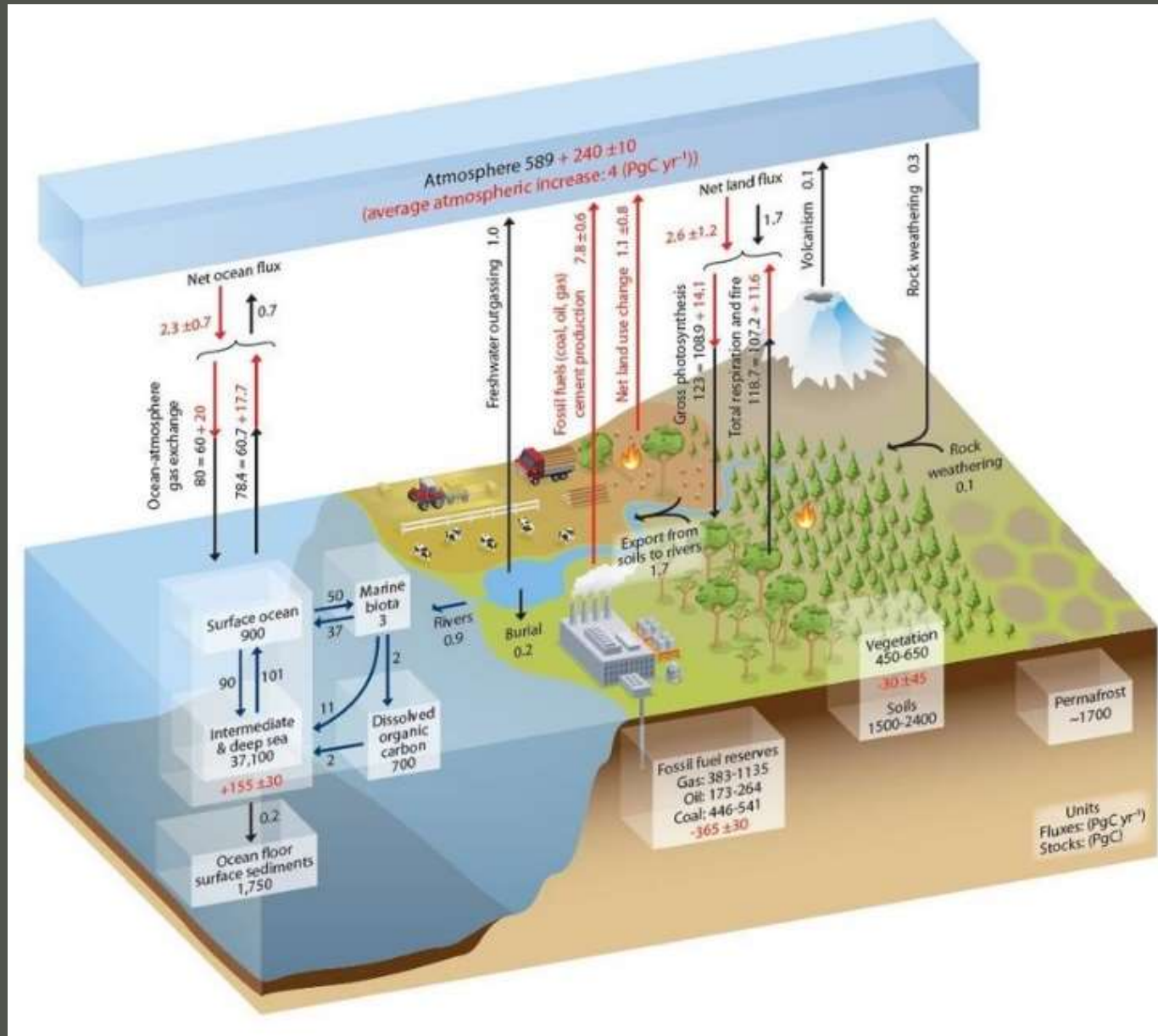
The Global Carbon Cycle

Climate change
=
short-circuiting of
the carbon cycle
through the
burning of fossil
fuels (about
70%) and land
use change
(about 30%)
(cumulative
emissions)

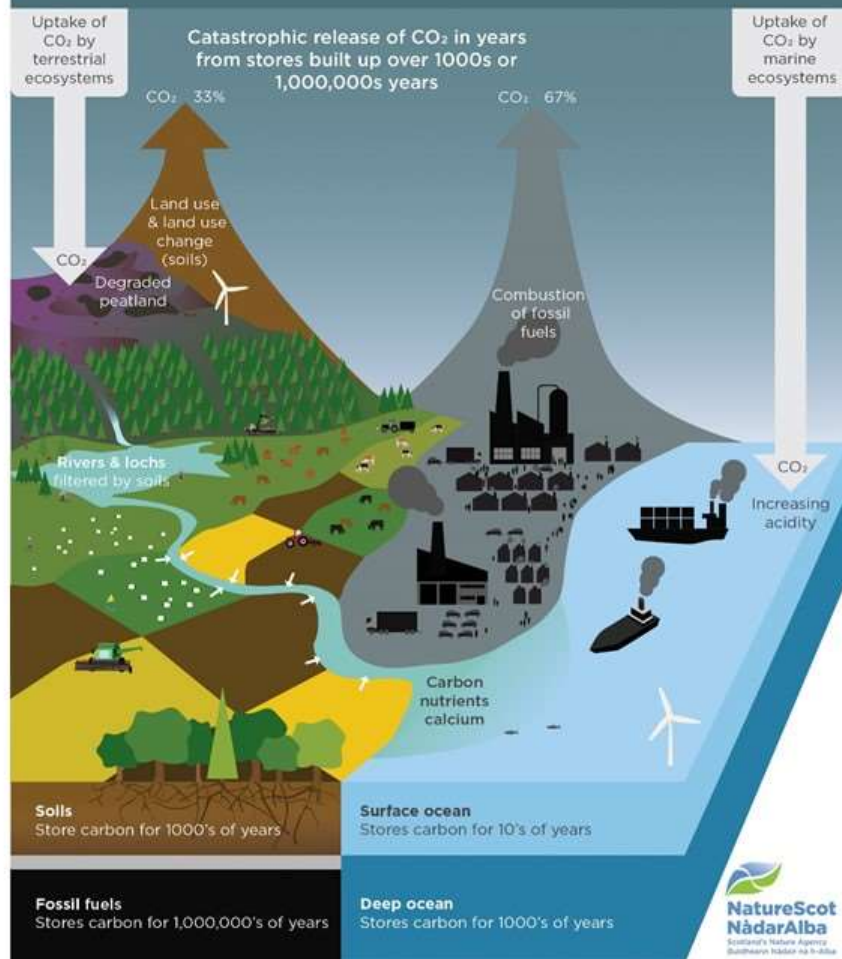


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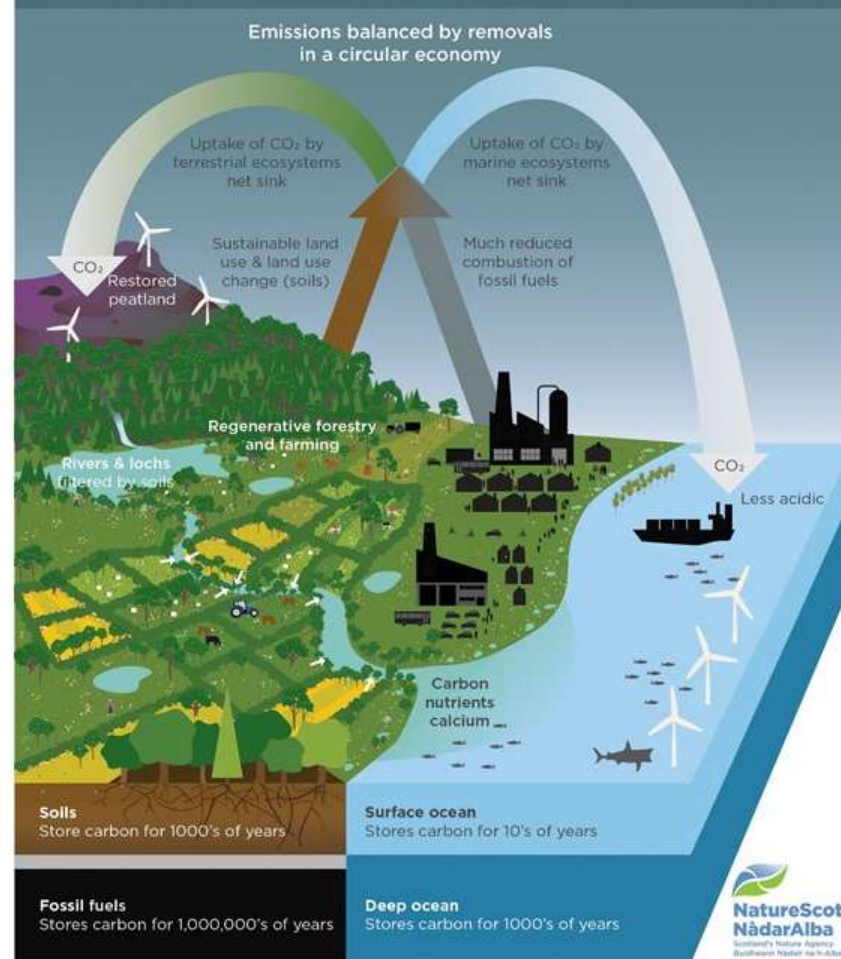
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Soils, nature and the climate emergency now



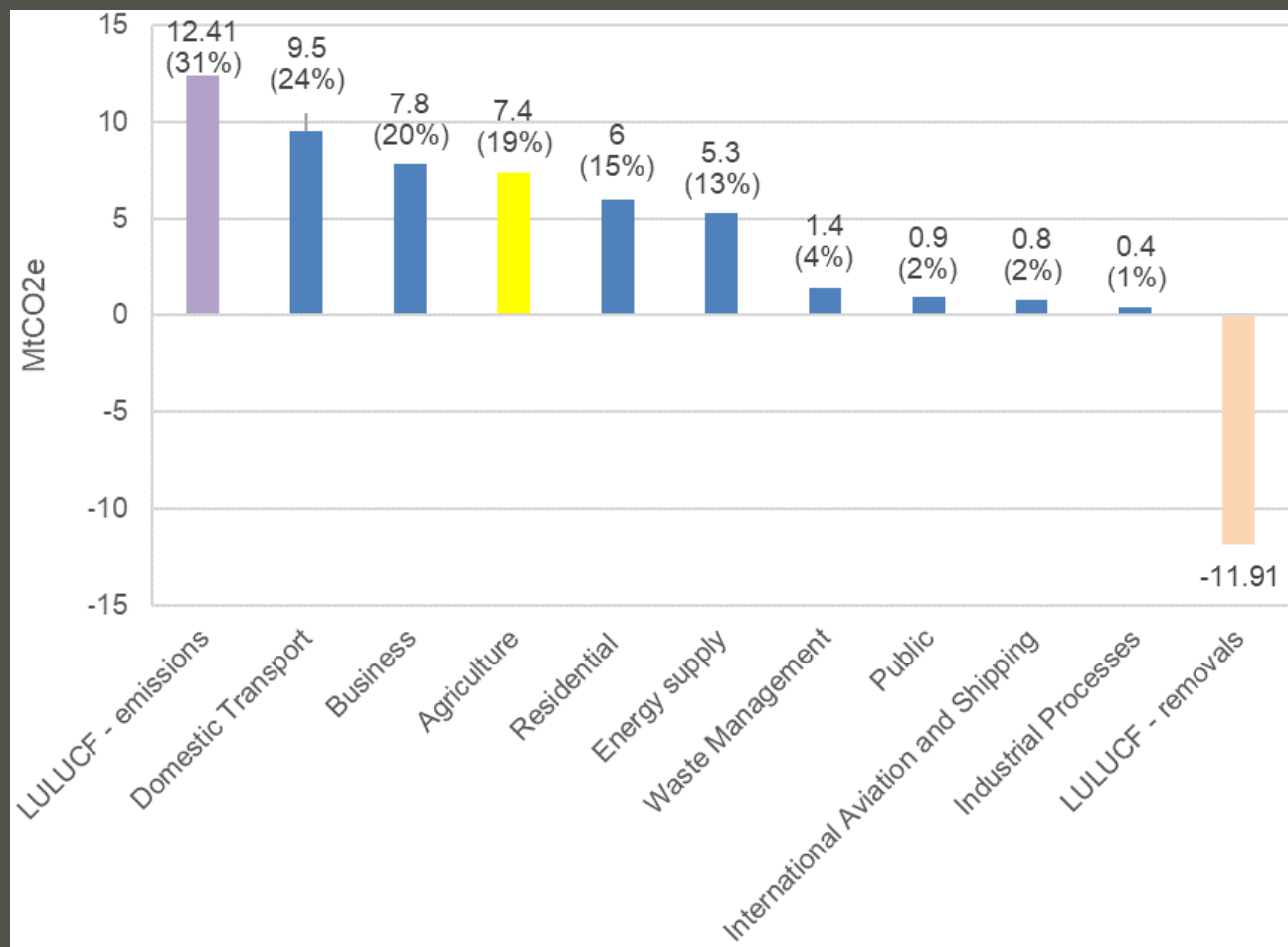
Soils, nature and climate in balance 2045



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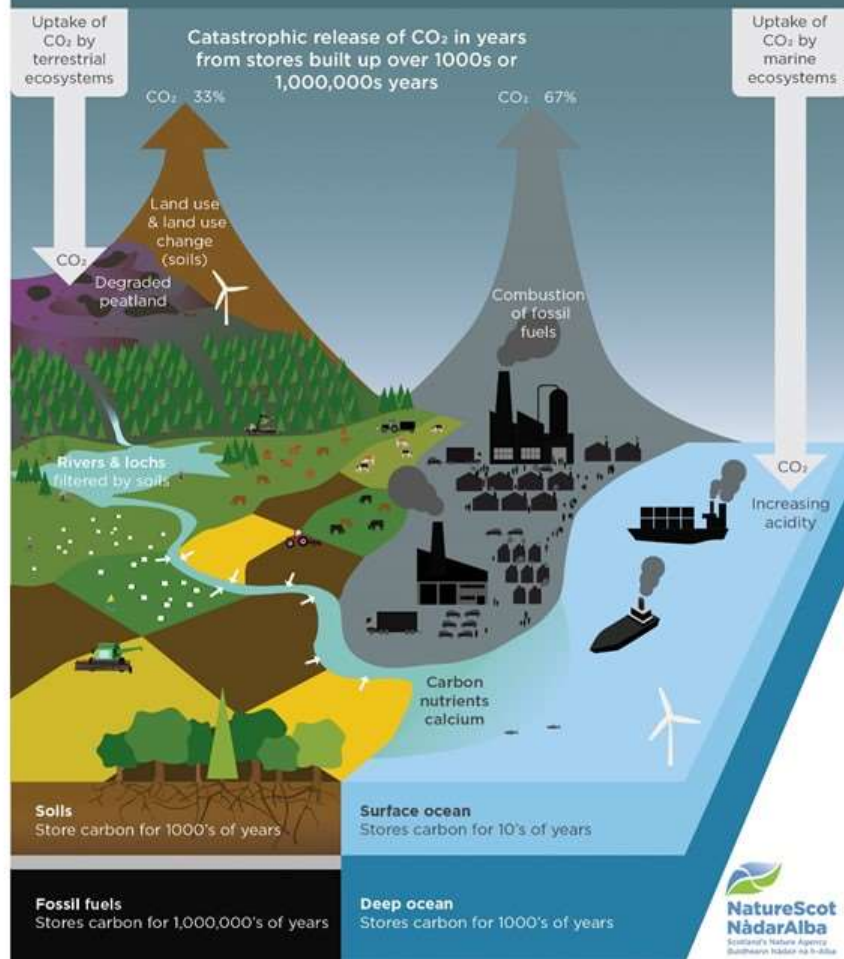
Scotland's GHG Emissions, 2020 (Total 40 MtCO₂e)



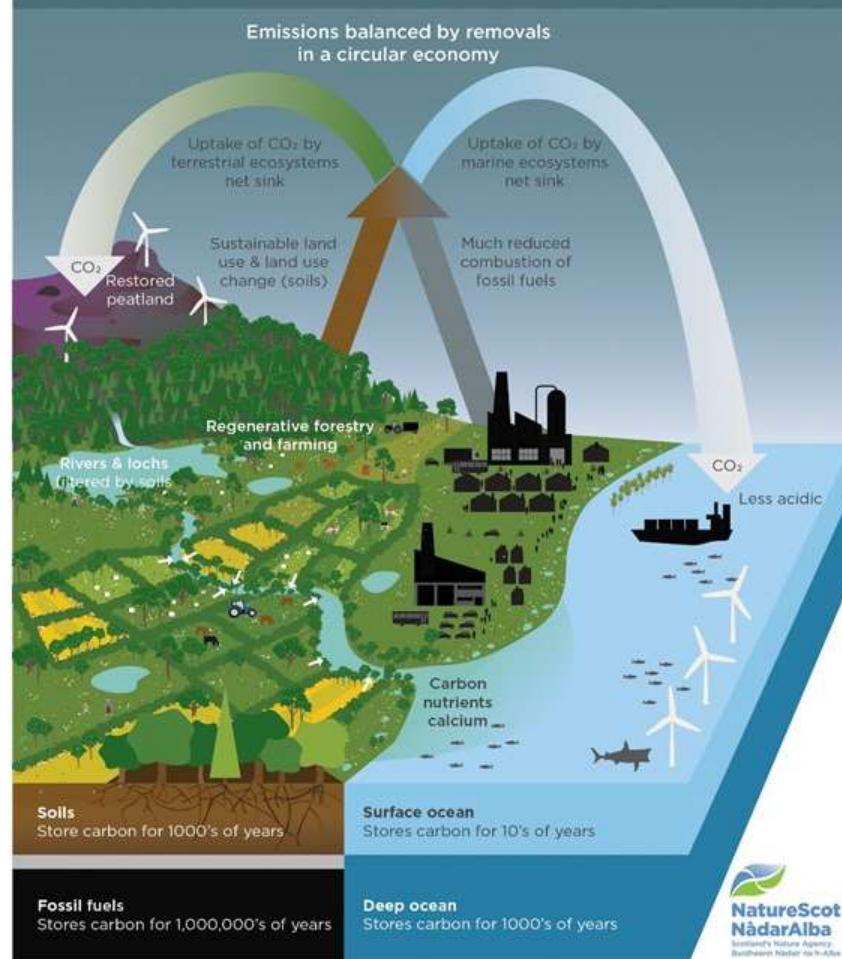
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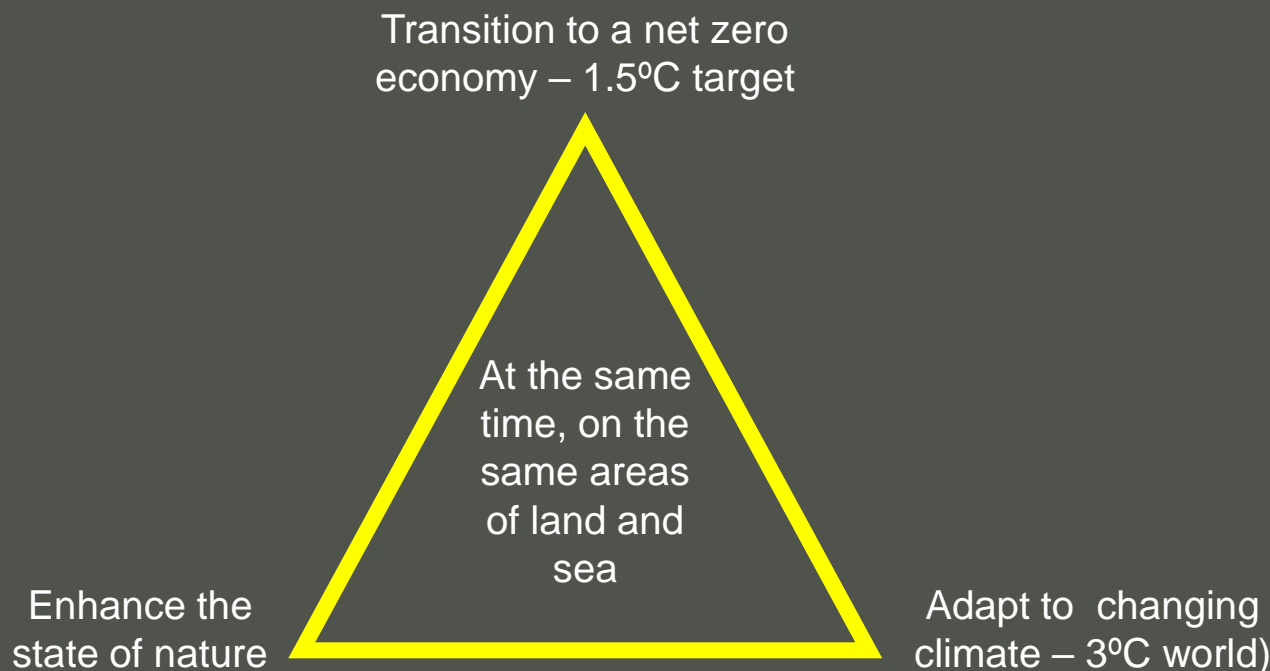
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The Nature-climate Crisis – a triple challenge

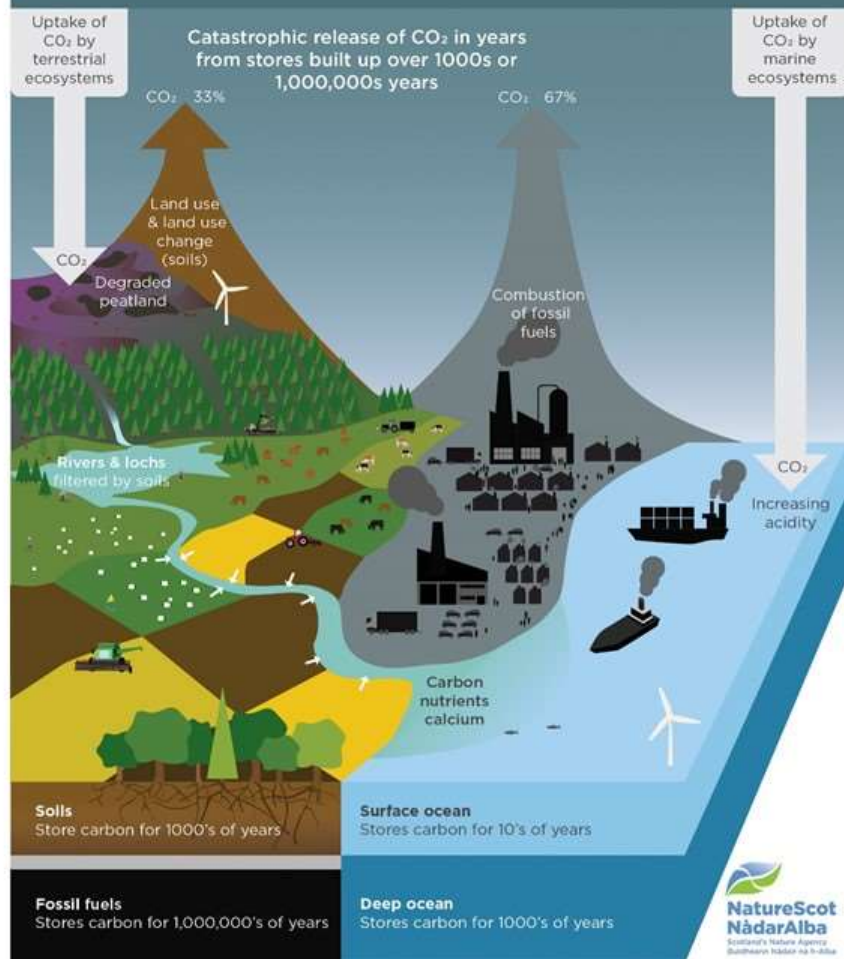


Scale of integration – how granular? E.g.

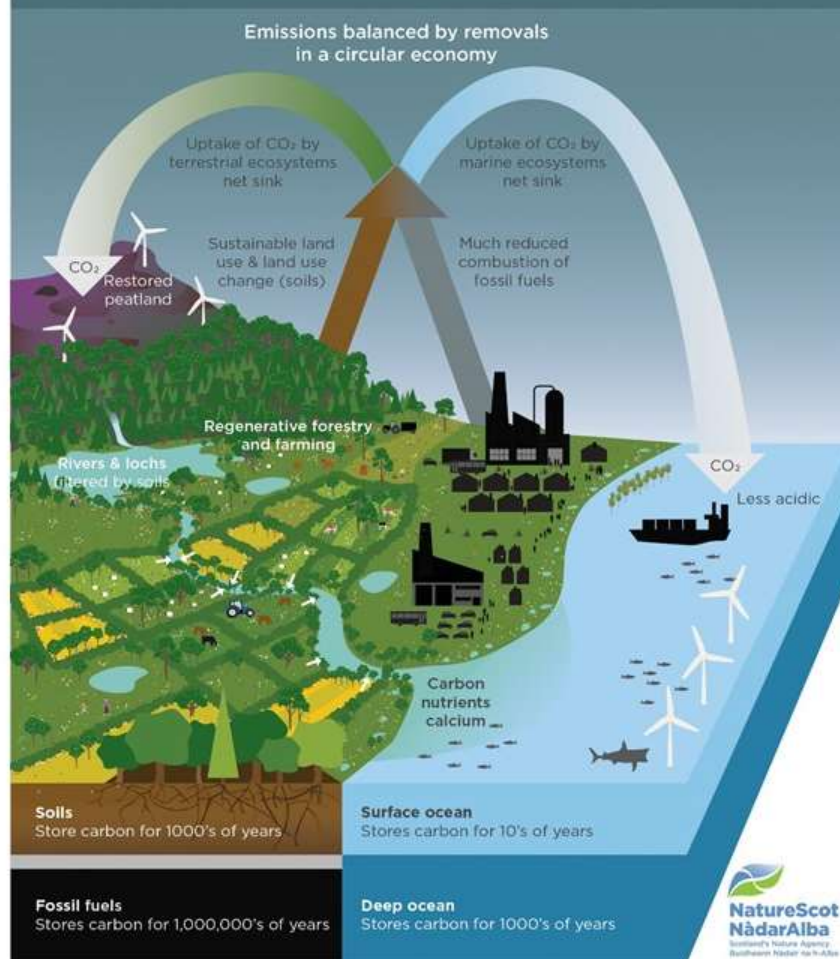
- 30-40% for nature in the field
- 30-40% across the farm
- 30-40% across the catchment

i.e. risks and risk management at all scales

Soils, nature and the climate emergency now



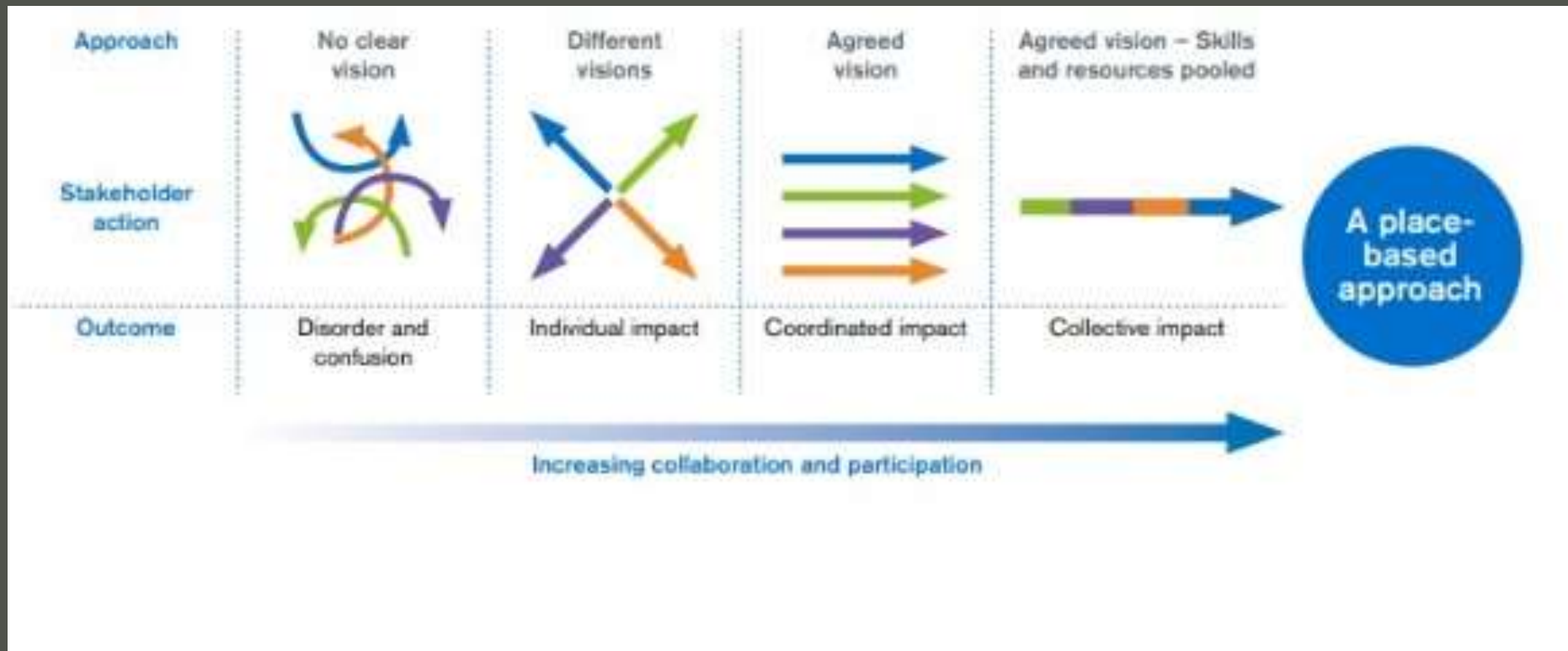
Soils, nature and climate in balance 2045



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The Place Principle – collaborating for shared outcomes



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Publicly-owned land [OFFICIAL - SENSITIVE]

This map shows land which is owned by public agencies of Government. Its purpose is to facilitate collaboration between agencies to invest in natural capital. It is not a complete dataset – it focusses on those agencies with larger rural land holdings with the greatest potential for investment in peatland, woodland and other aspects of natural capital. A more comprehensive map which includes land owned by other agencies and local Government will be produced in due course.

Land ownership:

- Yellow Crofting Agricultural Holdings 2022
- Blue Crown Estate Scotland
- Green Forestry and Land Scotland
- Red Ministry of Defence
- Purple NatureScot
- Light Green Scottish Water
- Orange Transport Scotland



- Phase 1 – map larger rural land holdings
- Phase 2 – identify hotspots
- Phase 3 – include wider public land, eg local authorities, NHS, HES etc

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Scale 1:250,000

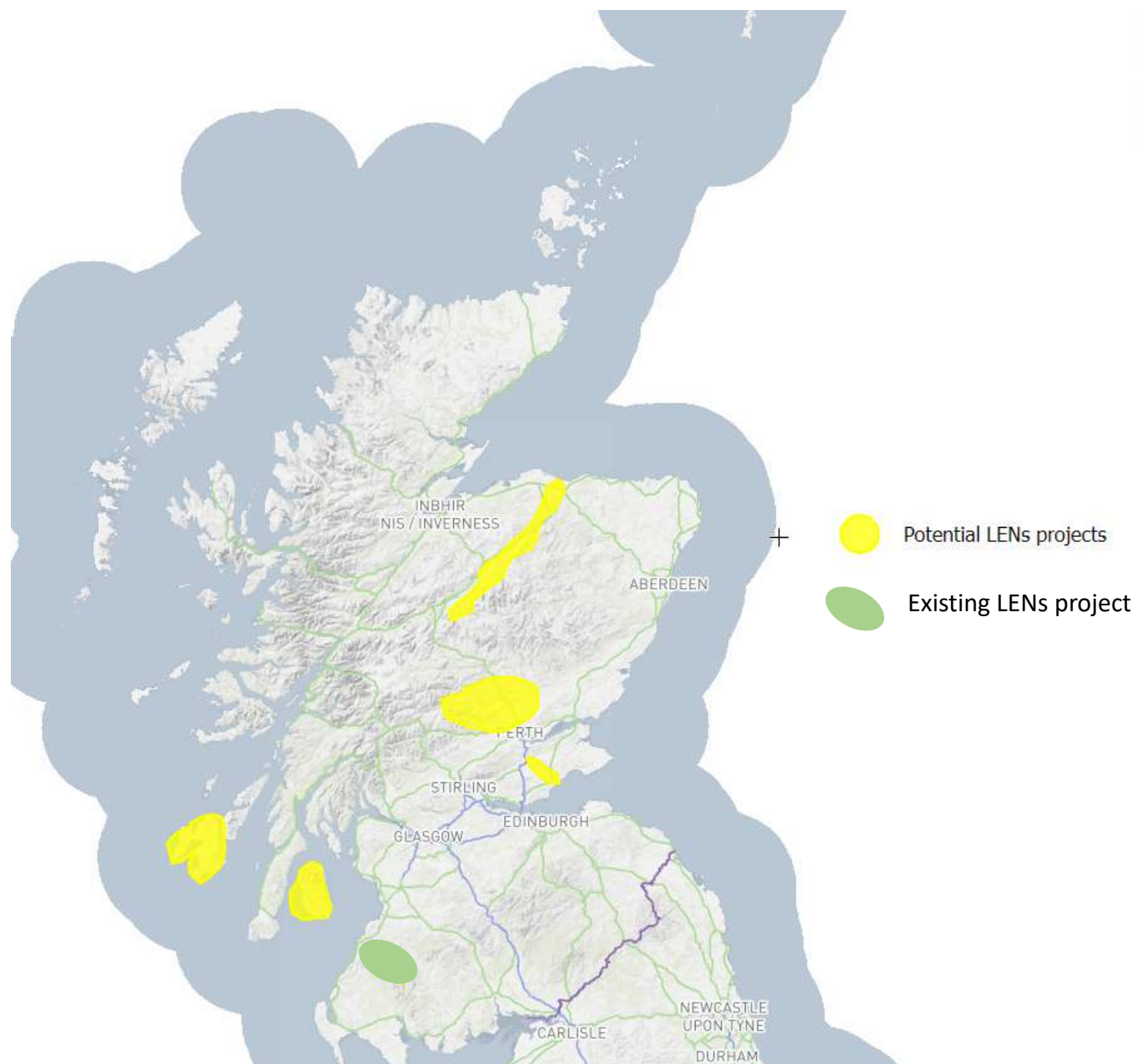
Scottish Government Geographic Information Service & Imagery Team, April 2022. 5/202006.



Scottish Government
Riaghaltas na h-Alba
gov.scot

What does landscape scale mean ?

And what examples are there of landscape scale approaches emerging ?



Future of the Hagshaw Energy Cluster...

Reinforcement of Volatile Proflands
Opportunities for peatland restoration and the delivery of other nature-based solutions in response to the challenges of a changing climate and the biodiversity crisis



Enhanced Environmental of Nature
Creating, enhancement and restoration of habitats to support key priority species in the cluster and enhance connectivity with other local habitats



Optimised and Diversified Renewable Energy Generation
Integration of other renewable energy technologies alongside wind energy development to diversify renewable energy generation and efficiency



Optimal Situated to Support Health and Wellbeing
Enhancing and new infrastructure for recreation and wellbeing in the wider of the cluster and neighbouring communities



Enriched Sustainable Growth
The construction and long-term maintenance of the existing and controlled wind energy development could be facilitated via shared construction and lay-down areas within a Renewable Energy Hub



A Strong Identity of Heritage, People and Place
Enhancement of existing and creation of new public spaces within settlements around the cluster, which respect the historic character and sense of place



An Ourselves Destination
Recreation and tourism hub facilities to promote and support local and regional visitors to the cluster, creating diversified business and employment opportunities

Enhanced Agricultural Practices
Practitioner and support for agri-environment schemes and exploration of new models such as agro-forestry to diversify income streams and provide carbon benefits



Enhanced Connectivity
Improved connectivity between communities, through the enhancement of existing and creation of new active travel and public transport links - and linking of existing long distance promoted trails such as the River Ayr Way and Clyde Valley Way



Reopening of Existing Infrastructure
Utilising and enhancing existing and future infrastructure to create safe and accessible links between communities, helping people connect and feel connected with their neighbours, whilst adding valuable opportunities for active recreation

Reopened Mineral Workings
Reflecting and celebrating the past landscape, industry and employment of coal mining which has shaped the communities and landscapes around the cluster, including the including the Spenside Geological Features - a Scottish Carbonaceous Research Park



The Hagshaw Energy Cluster

Note: this schematic plan identifies indicative areas of opportunity where potential benefits could be delivered, subject to further detailed survey and development.

Key

Key Settlements & Communities

Wind Farms outside of the Hagshaw Energy Cluster

Wind Farms within the Hagshaw Energy Cluster

Site of Specific Scientific Interest and Special Protection Area

Site of Specific Scientific Interest and Special Area of Conservation

Coniferous Forest

Broadleaved Woodland

Mixed Woodland

Ancient Woodland

Category 1 Peatland

Forestry and Land Scotland Sites

Water Courses / Water Bodies

Potential Nature Enhancement Opportunities

Opportunities for Peatland Restoration

Opportunities for Riparian Woodland Corridors

Ancient Woodland Network Enhancement

Black Grouse Habitat Enhancement

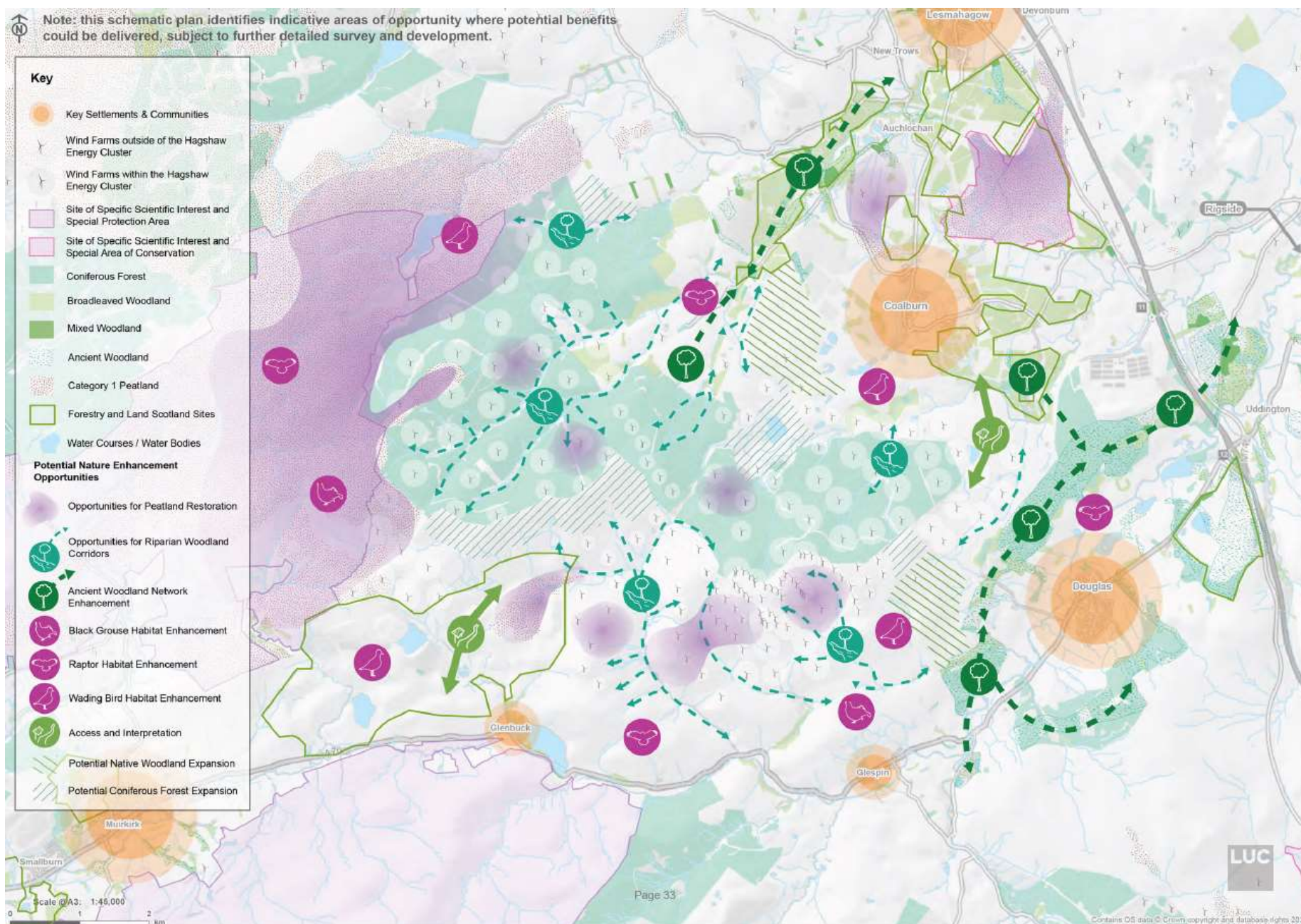
Raptor Habitat Enhancement

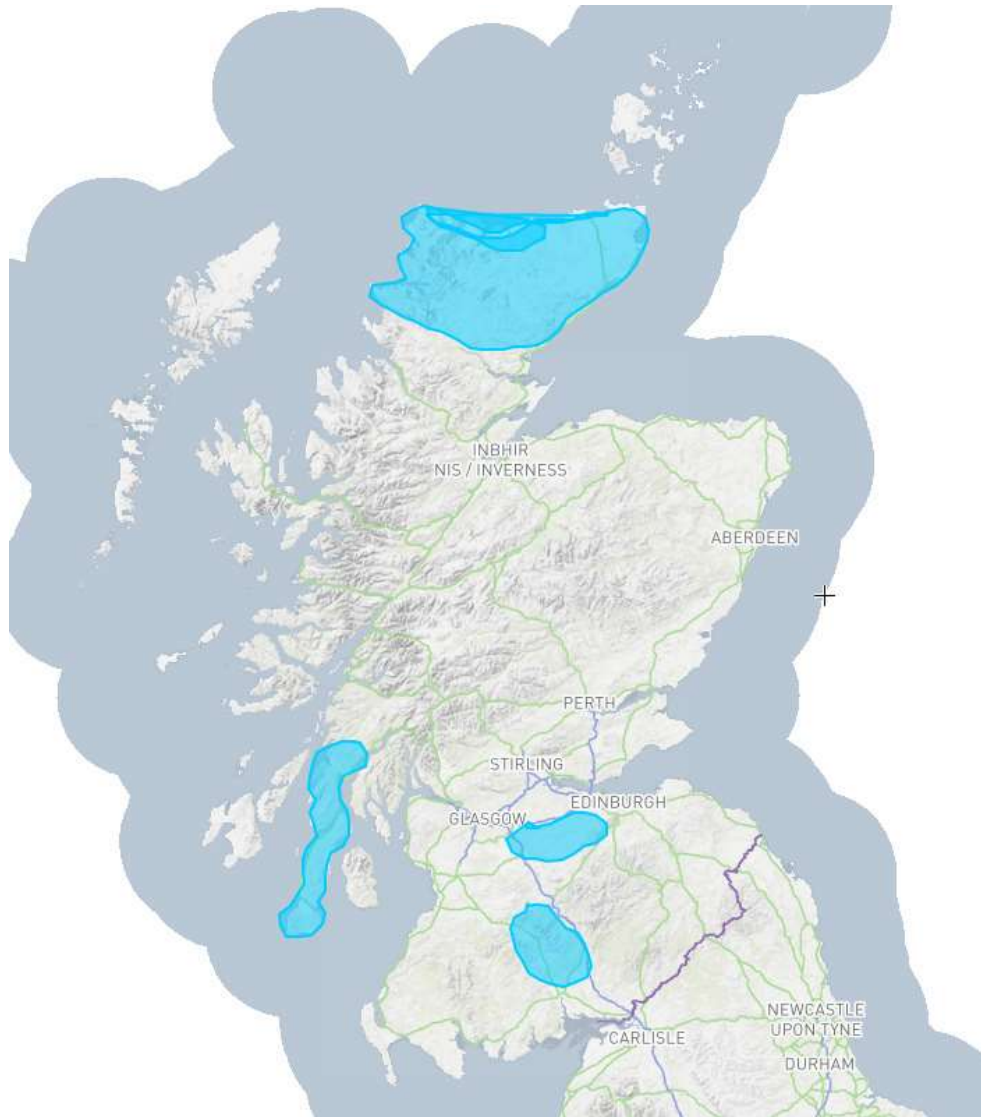
Wading Bird Habitat Enhancement

Access and Interpretation

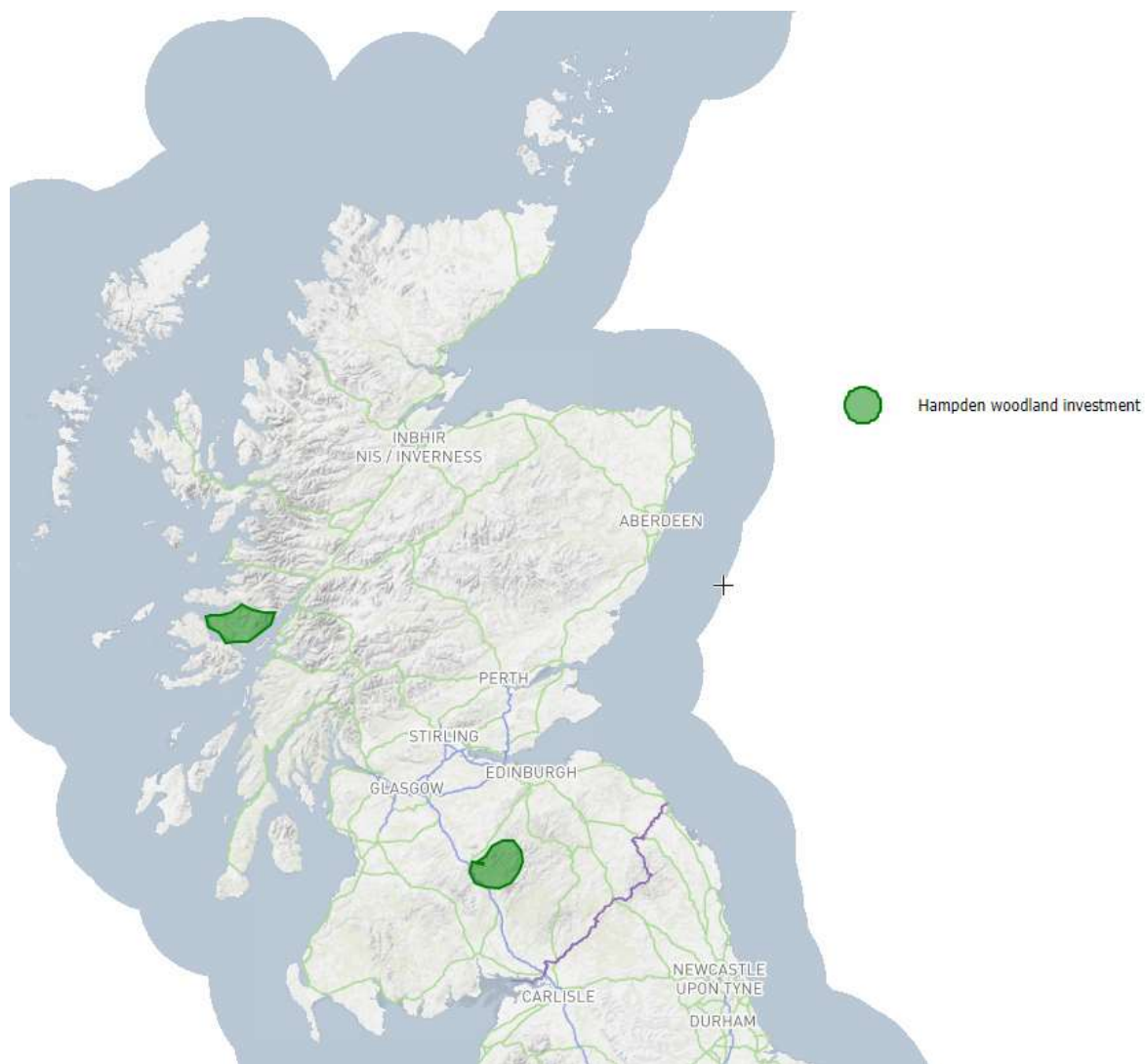
Potential Native Woodland Expansion

Potential Coniferous Forest Expansion





Potential wind farm development frameworks



Questions for discussion



- What role should local authorities have in this ?
- How do we steer investment to the right locations ?
- Are there good examples of joint working we can learn from ?
- Are we working and thinking at the right scale ?