

*Your farm's future: Trees an option and opportunity?  
Why and how they can benefit your business  
Integrating Trees Network, Online, 26<sup>th</sup> November 2025*



# Integrating trees and woodlands onto a hill farm

Davy McCracken

*Deputy Head of School of Natural & Social Sciences: Knowledge Exchange & Innovation  
Head of Hill & Mountain Research Centre*



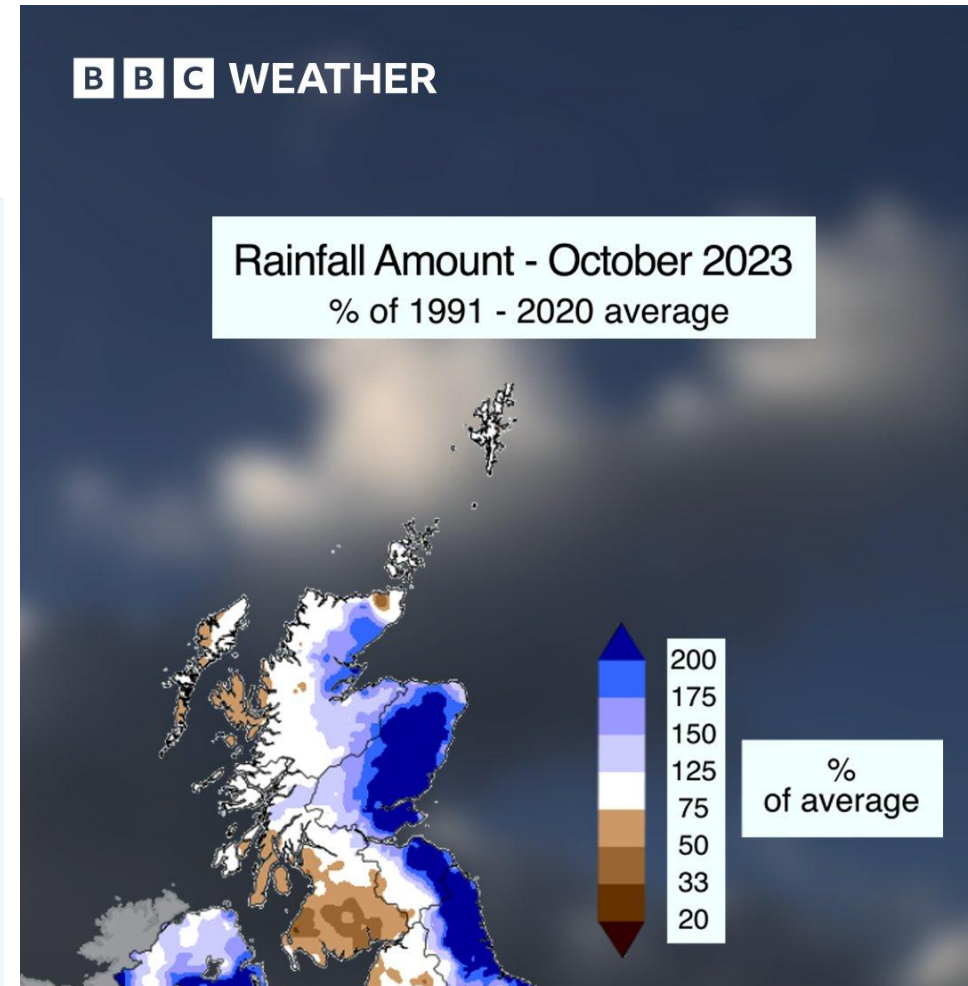
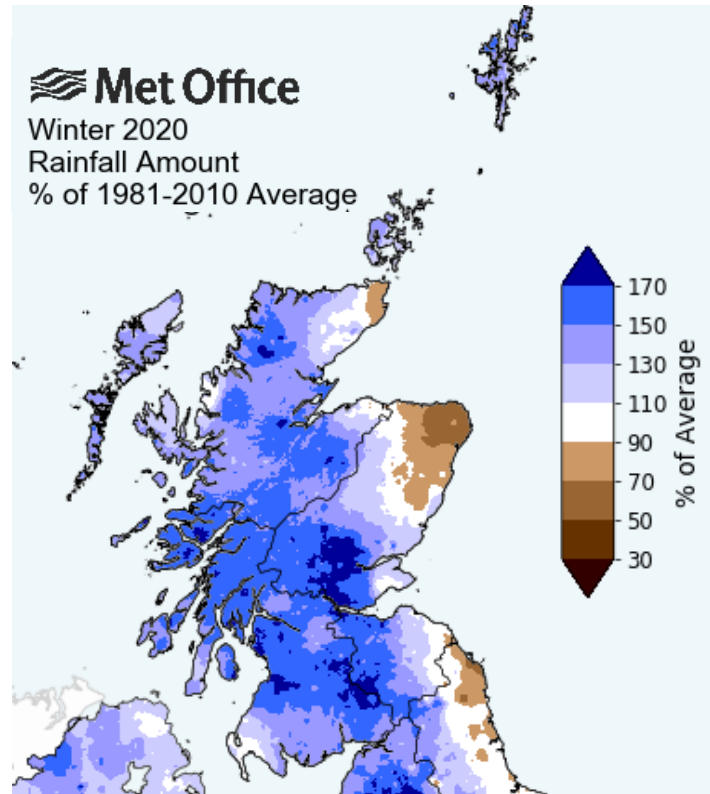
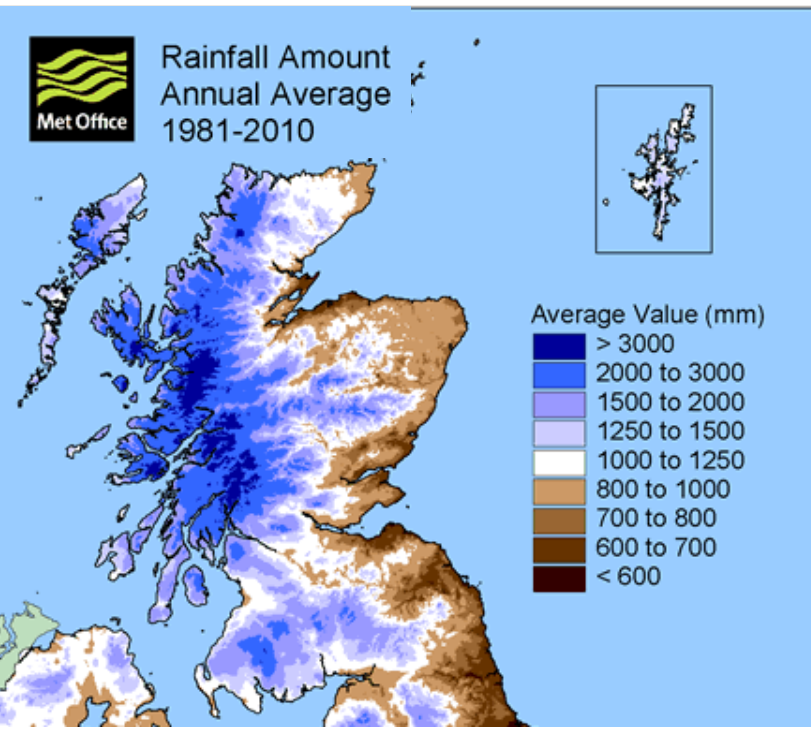
*Leading the way in Agriculture and Rural Research, Education and Consulting*

# Scottish weather is changing

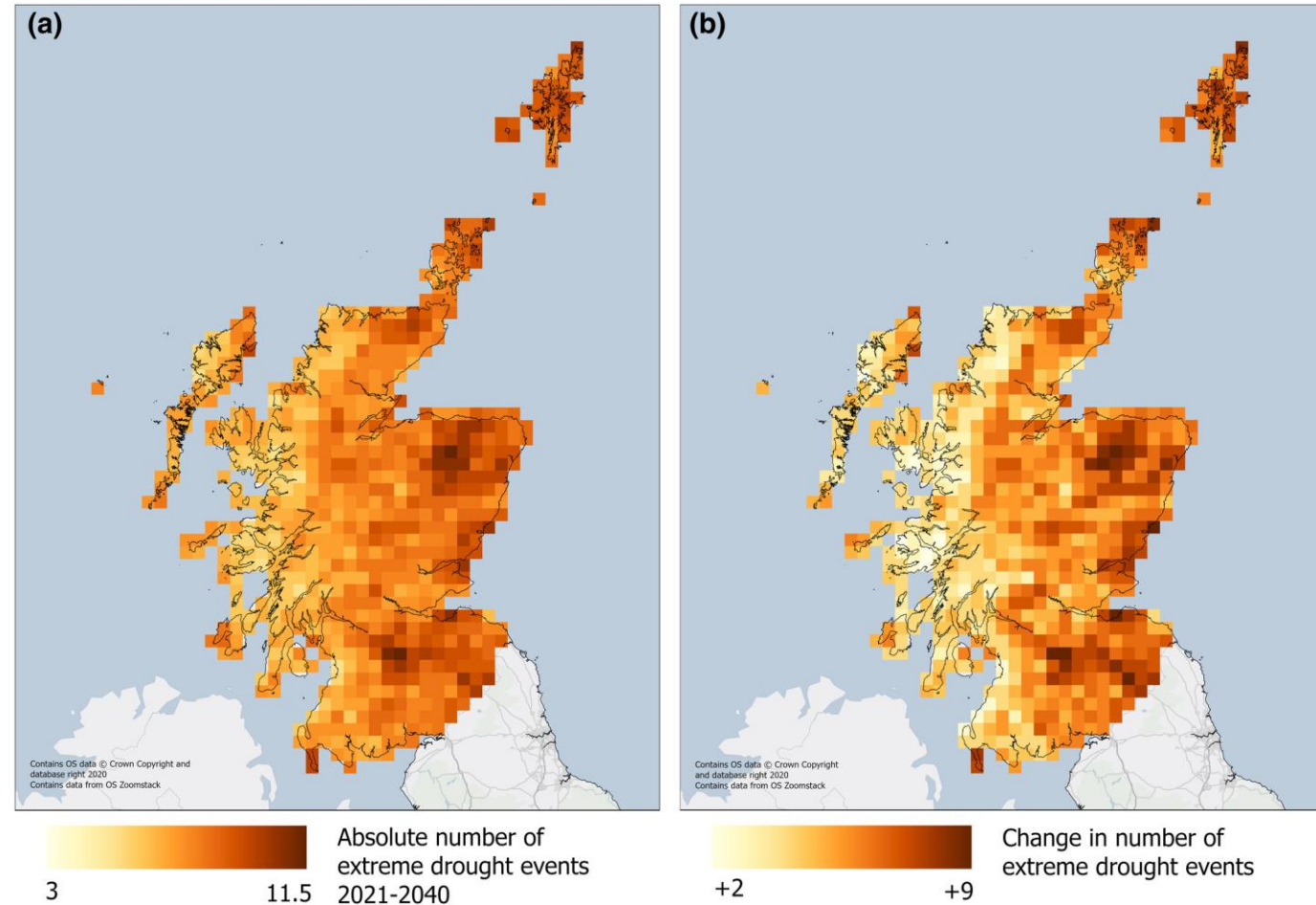
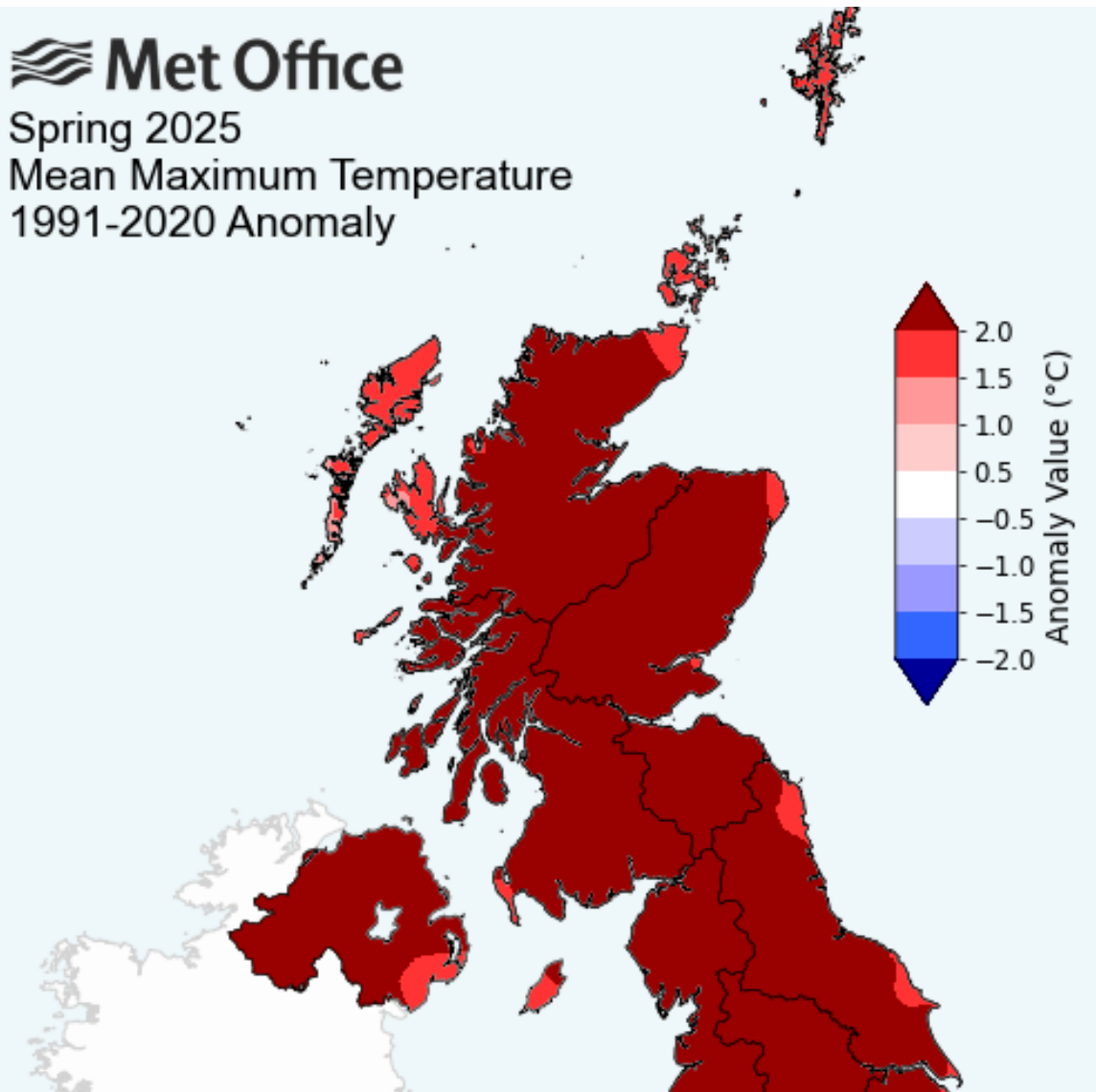
With more  **SRUC**  
extreme events

## Very wet

## And getting wetter



# Scottish weather is changing



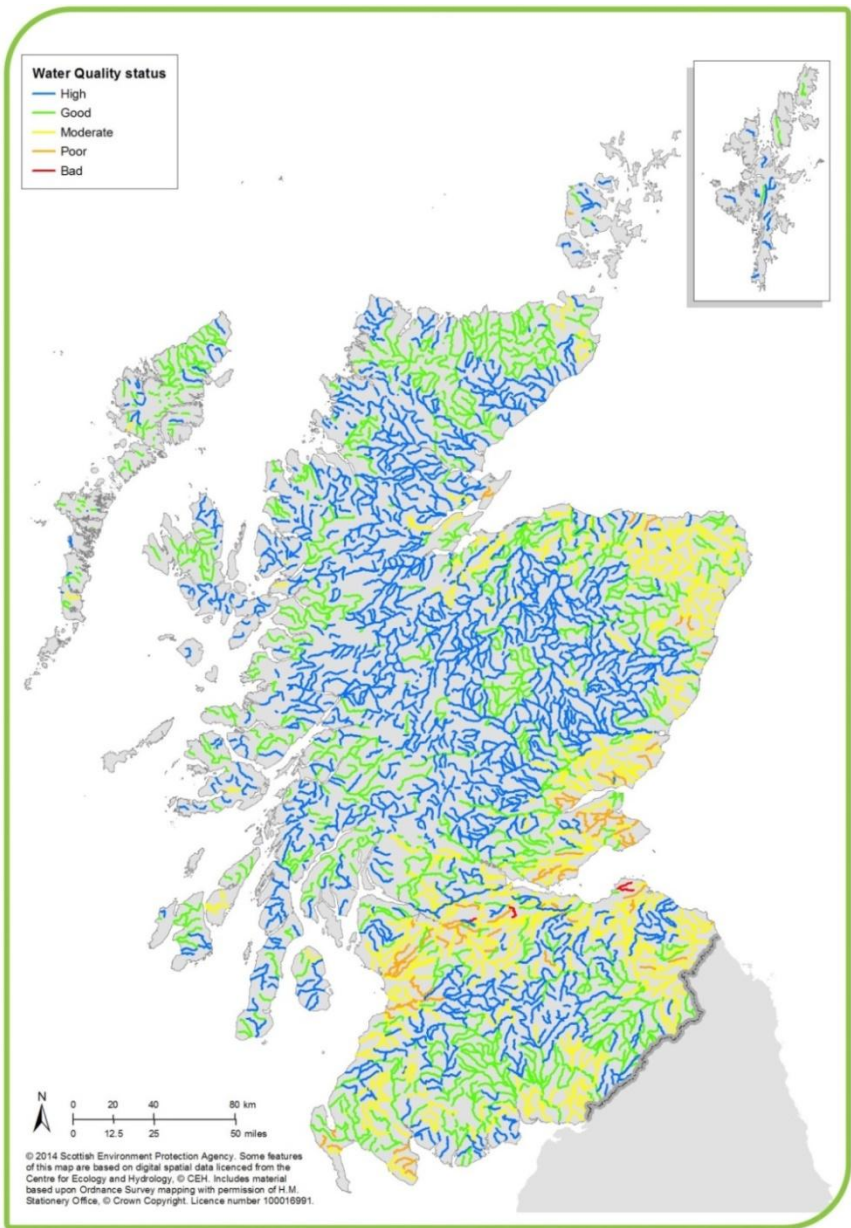
Projected increases in extreme drought frequency and duration by 2040 affect specialist habitats and species in Scotland

*Ecol Sol and Evidence*, Volume: 4, Issue: 3, First published: 03 August 2023, DOI: (10.1002/2688-8319.12256)

<https://besjournals.onlinelibrary.wiley.com/doi/full/10.1002/2688-8319.12256>



# Water Quality



# Water Quantity



**Traffic Scotland**   
@trafficscotland

#A9 not looking good!

Please drive slowly and safely  [twitter.com/whokens/status...](https://twitter.com/whokens/status...)

**Craig** @whokens  
@trafficscotland A9 between Perth and Stirling #StormDennis



87 3:57 PM - Feb 15, 2020

You are here: [Home](#) > [Environment](#) > [Water](#) > Flooding

## Flooding



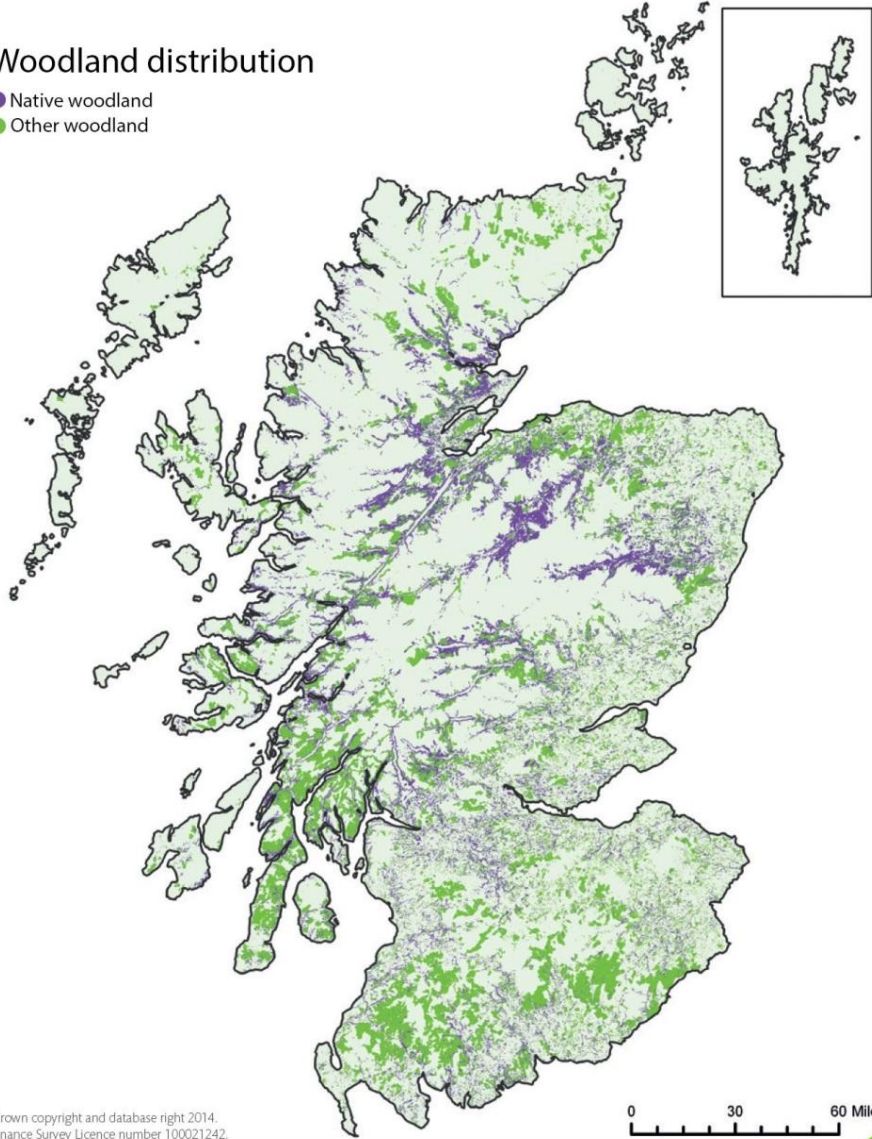
SEPA is Scotland's national flood forecasting, flood warning and strategic flood risk management authority.



# Opportunities

## Woodland distribution

- Native woodland
- Other woodland



Forestry Business

Forestry Strategy

Sustainable Forestry

Support & Regulations

Forests & the Environment

Forests & People

## Integrating Trees Network





# Benefits



advice@fas.scot Call 0300 323 0161

News

Events

Publications

About us

Newsletters



Livestock

Crops and soils

Environment

Rural Business

Advice & Grants

Problem Solver

FFBC

## Woodland Creation

There are many reasons why investing in woodland can help your farm business. The benefits include:

- Shelter for livestock and crops
- Biosecurity for livestock
- Improvements in biodiversity
- Reduction of diffuse pollution & bank stabilisation
- Cash inflow from timber crops
- Carbon sequestration
- Sports/leisure diversification

In this section, we have gathered the information you need to help get you started. Our podcast discusses the Top Ten questions our foresters get asked about woodland creation & management.

<https://www.fas.scot/crops-soils/farm-woodlands/woodland-creation/>

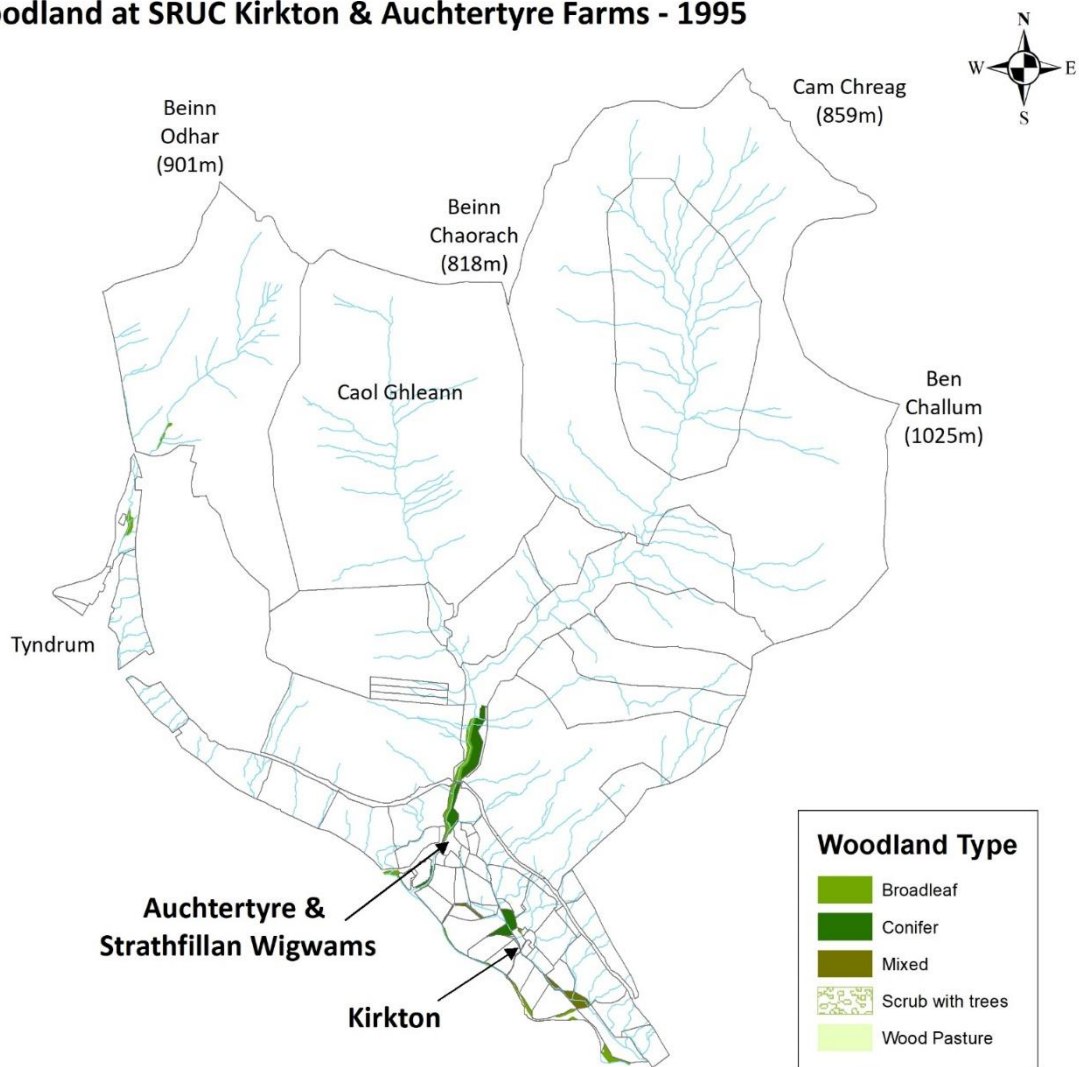


Farm Woodland Information Note: Accessing the Forestry Grant Scheme for Woodland Creation

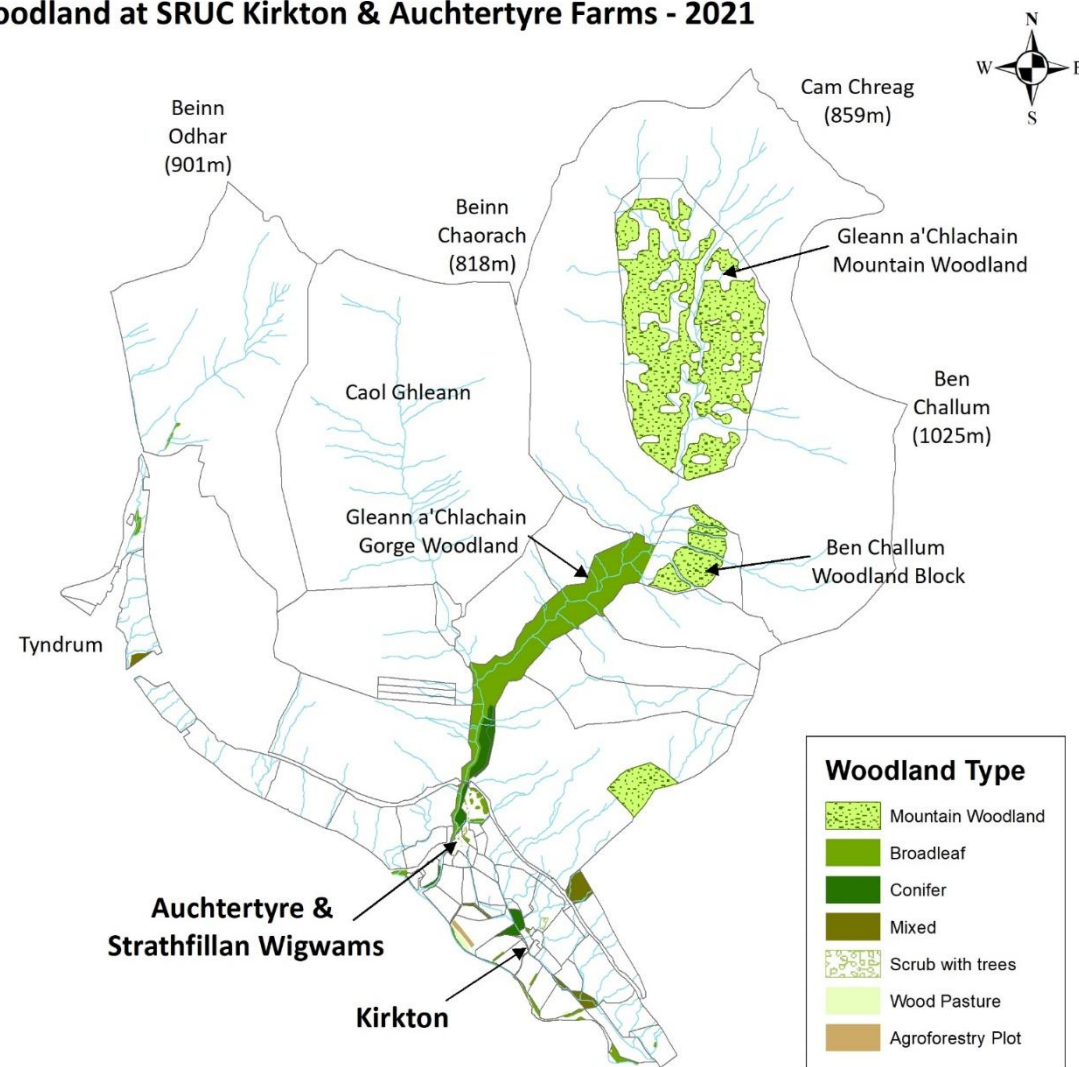
# Integrating trees and woodland into a hill farm



Woodland at SRUC Kirkton & Auchtertyre Farms - 1995



Woodland at SRUC Kirkton & Auchtertyre Farms - 2021





# Improving biodiversity on a hill farm: Scrub



Gorse scrub with scattered trees – Stock fenced as part of the Countryside Premium Scheme in 1997.



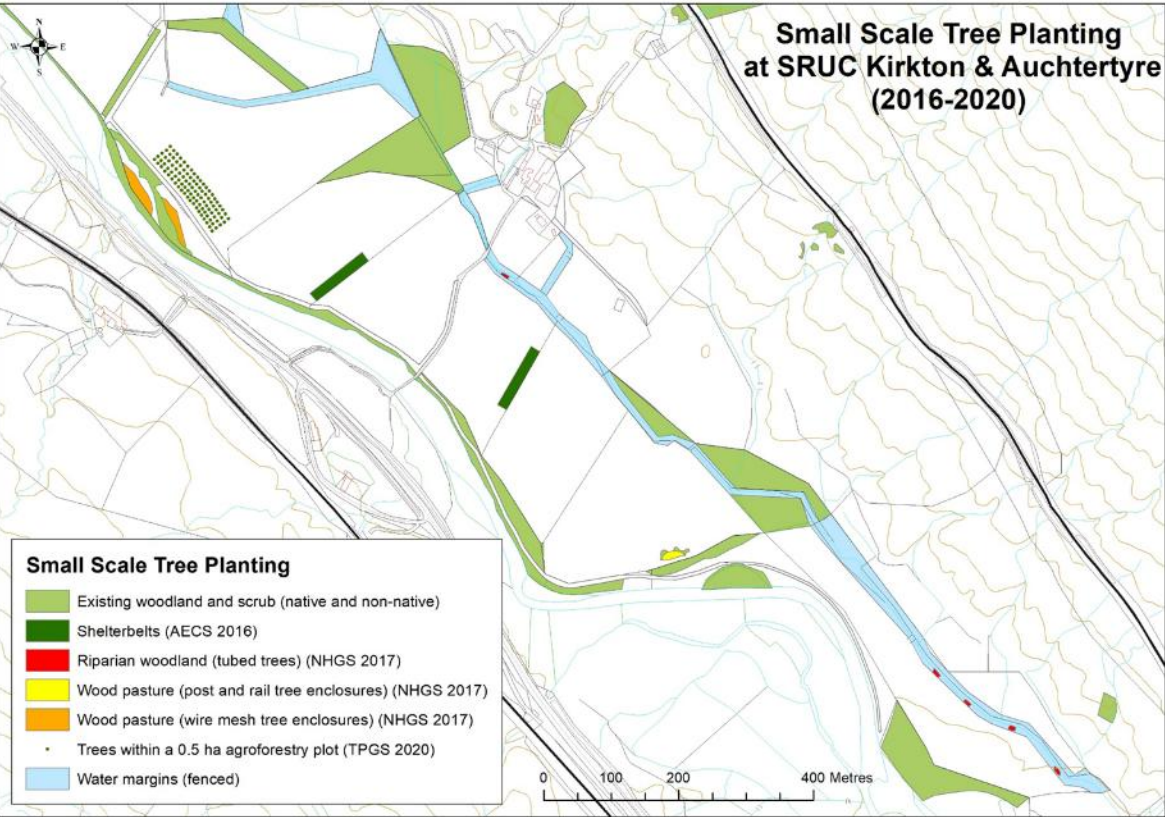


# Improving biodiversity on a hill farm: Scrub





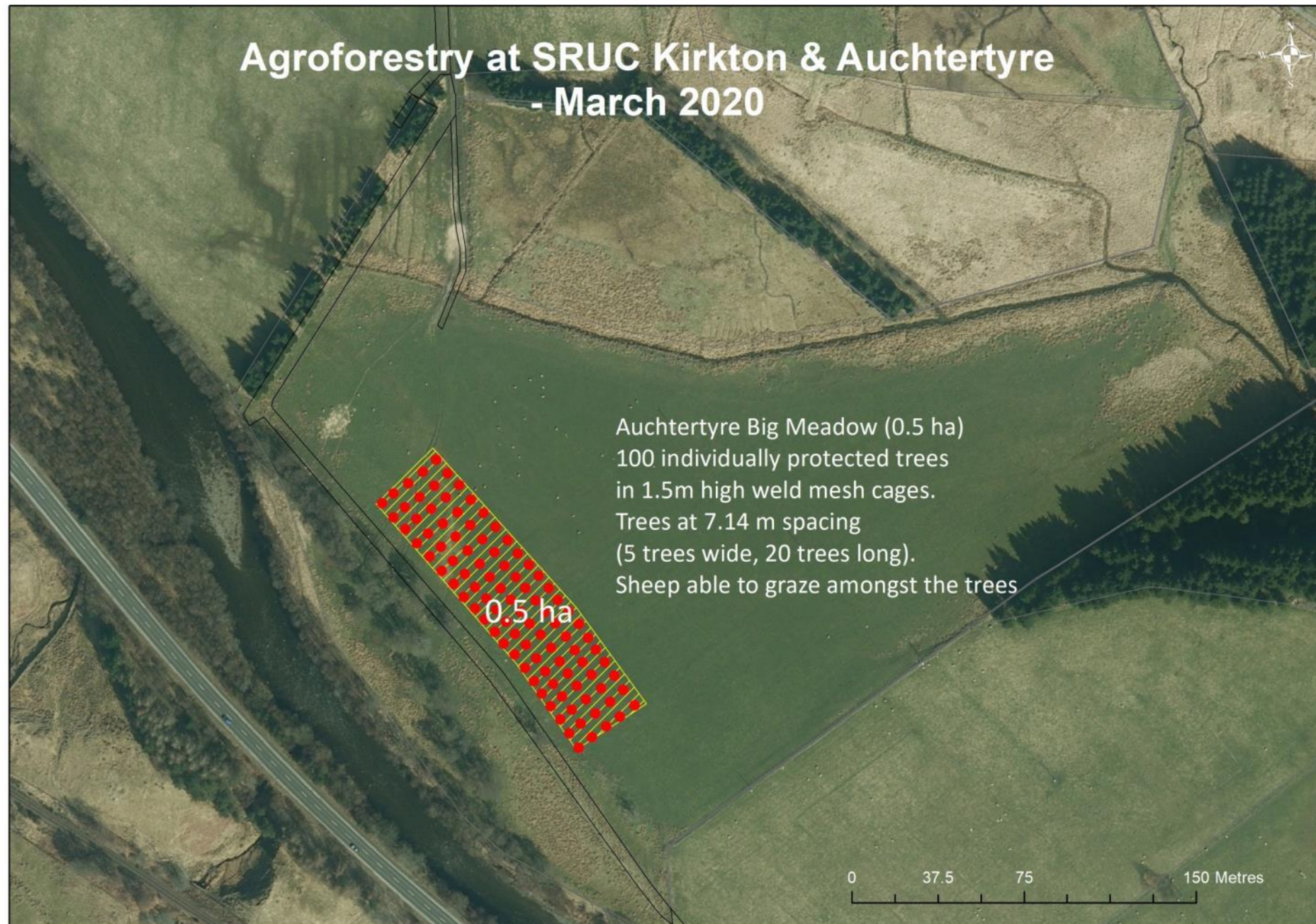
# Improving biodiversity on a hill farm: Inbye Woodland



© Crown Copyright/database right 2020. An Ordnance Survey/EDINA supplied service.









# Agroforestry at SRUC Kirkton & Auchtertyre - March 2020



## Tree Species

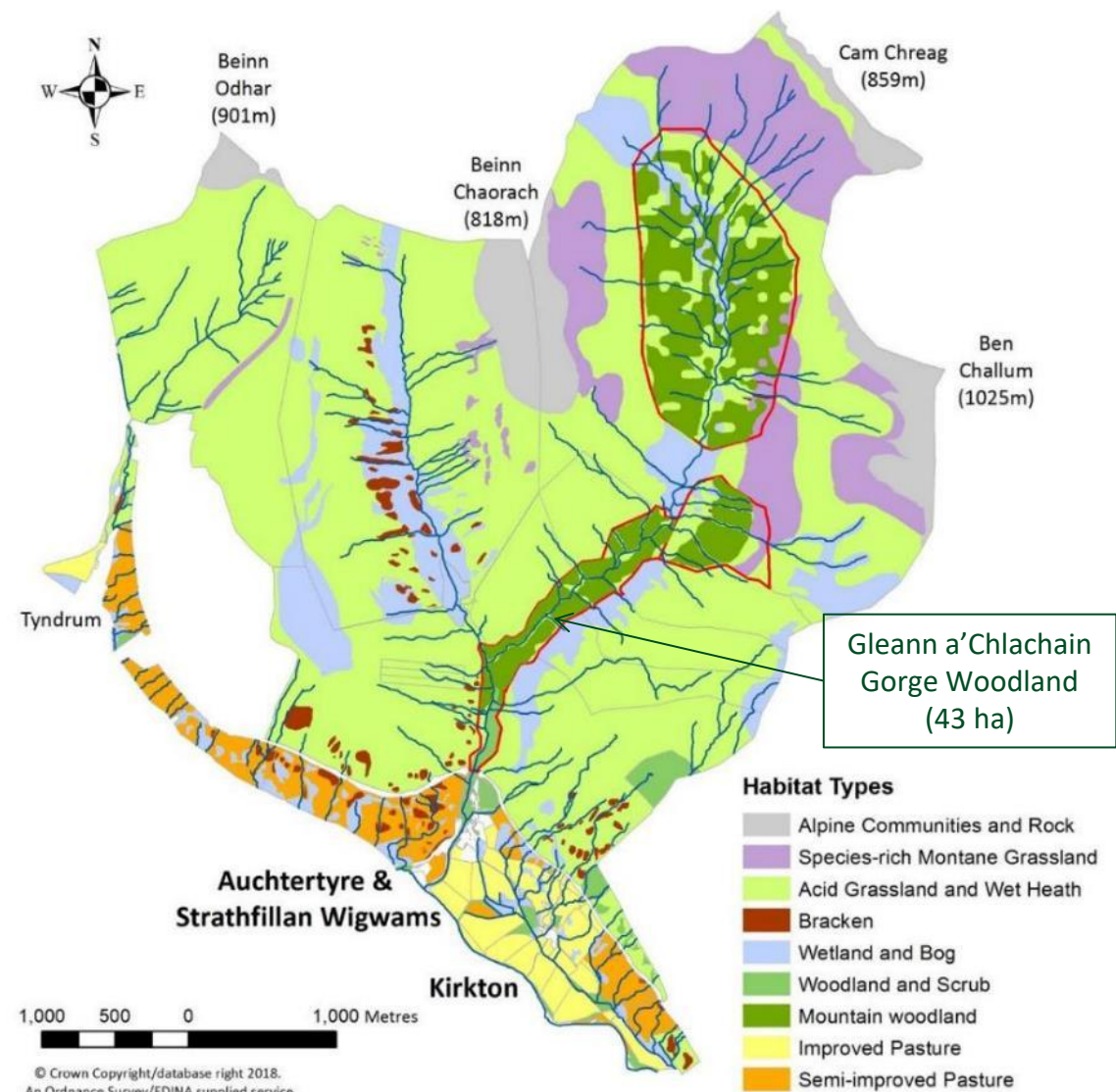
- Alder (*Alnus glutinosa*)
- Downy Birch (*Betula pubescens*)
- Oak (*Quercus robur*)
- Aspen (*populus tremula*)
- Gean (*Prunus avium*)
- Rowan (*Sorbus aucuparia*)

0 15 30 60 Metres





# Improving biodiversity on a hill farm: Mountain Woodland & Scrub





# Trees planted in the in the Allt Gleann a'Chlachain Gorge Woodland and Gleann a'Chlachain Mountain Woodlands (260 ha)

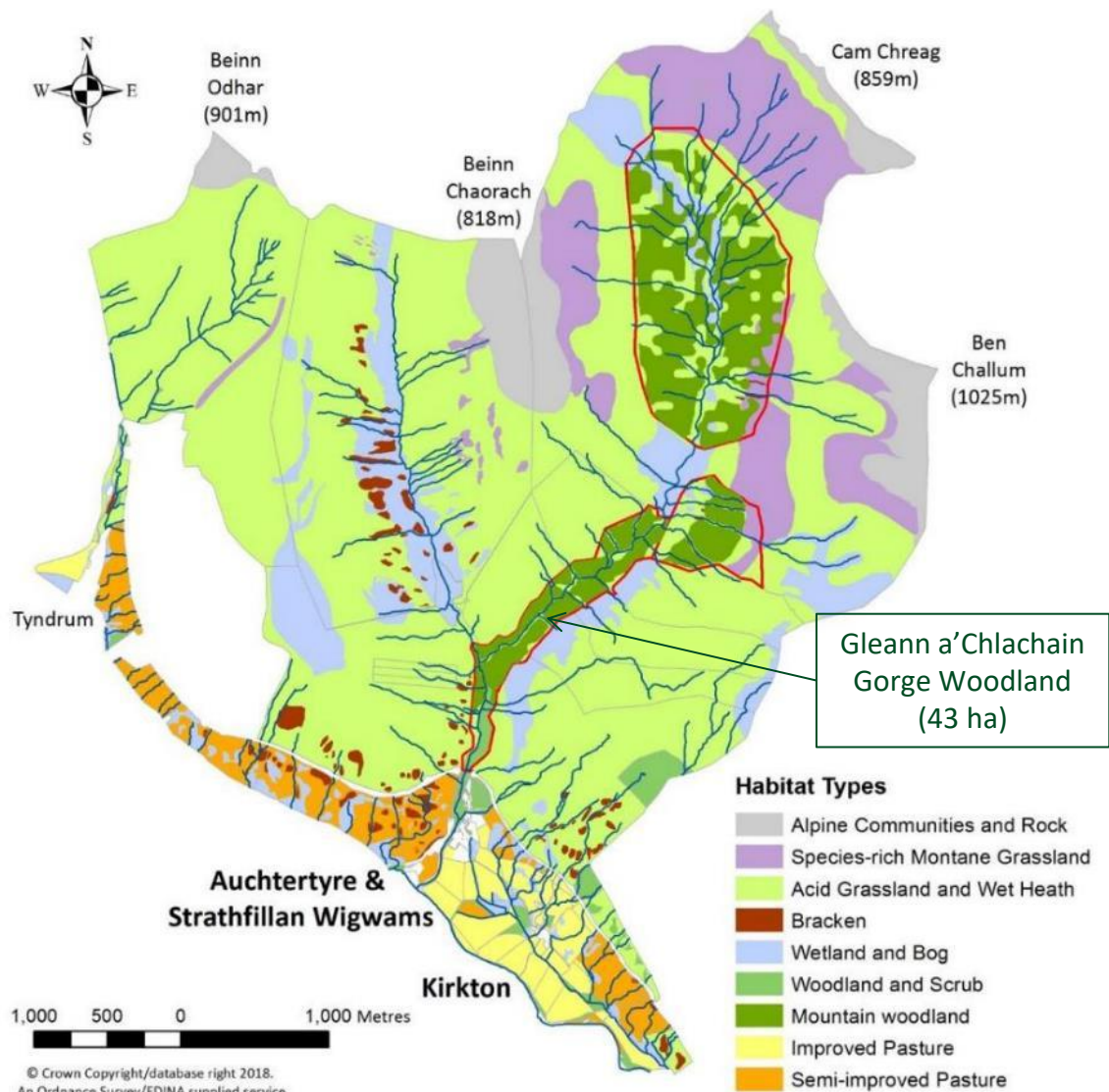


| Latin Name                | English Name       | Total          | Percentage  |
|---------------------------|--------------------|----------------|-------------|
| <i>Betula pubescens</i>   | Downy Birch        | 219710         | 45.35%      |
| <i>Betula pendula</i>     | Silver Birch       | 63505          | 13.11%      |
| <i>Pinus sylvestris</i>   | Scot's Pine        | 49300          | 10.18%      |
| <i>Alnus glutinosa</i>    | Common Alder       | 43765          | 9.03%       |
| <i>Sorbus aucuparia</i>   | Rowan              | 38110          | 7.87%       |
| <i>Salix cinerea</i>      | Grey Willow        | 23250          | 4.80%       |
| <i>Salix caprea</i>       | Goat Willow        | 17505          | 3.61%       |
| <i>Quercus petraea</i>    | Sessile Oak        | 8850           | 1.83%       |
| <i>Salix aurita</i>       | Eared Willow       | 6250           | 1.29%       |
| <i>Salix mysinifolia</i>  | Dark-leaved Willow | 5010           | 1.03%       |
| <i>Fraxinus excelsior</i> | Ash                | 4060           | 0.84%       |
| <i>Corylus avellana</i>   | Hazel              | 3300           | 0.68%       |
| <i>Populus tremula</i>    | Aspen              | 1110           | 0.23%       |
| <i>Salix lapponum</i>     | Downy Willow       | 750            | 0.15%       |
| <b>Total</b>              |                    | <b>484,475</b> | <b>100%</b> |



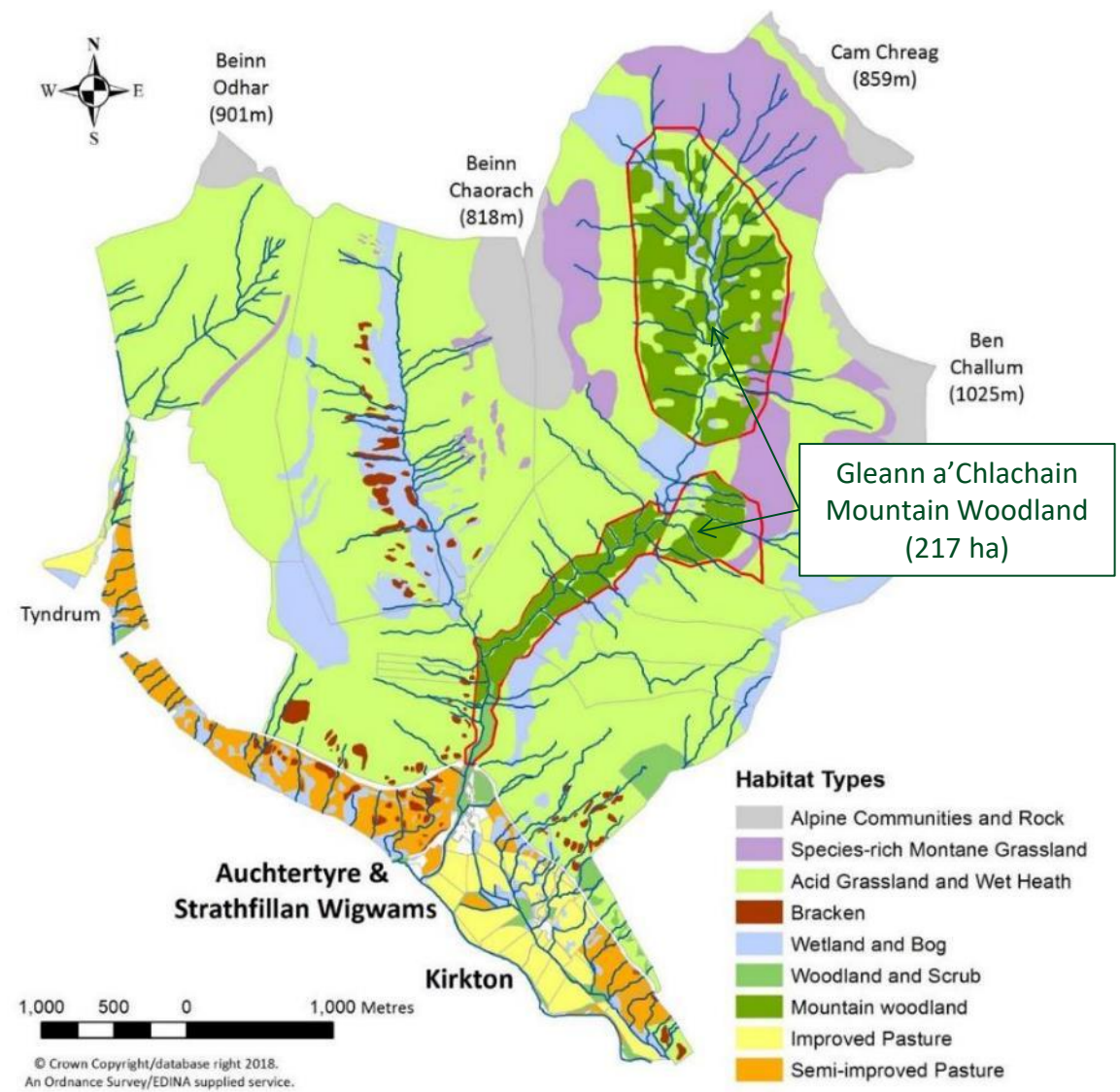


# Improving biodiversity on a hill farm: Mountain Woodland & Scrub



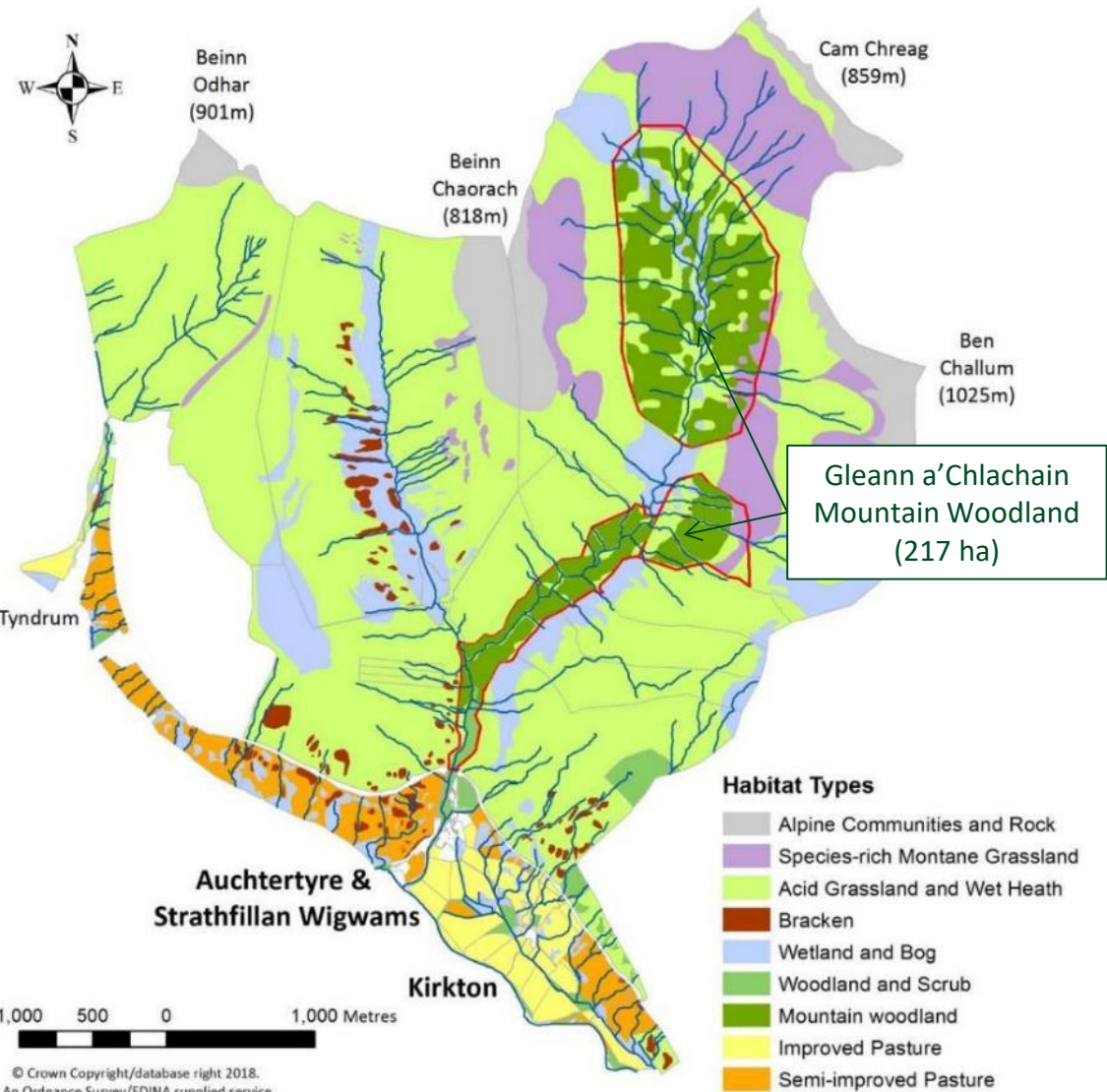


# Improving biodiversity on a hill farm: Mountain Woodland & Scrub





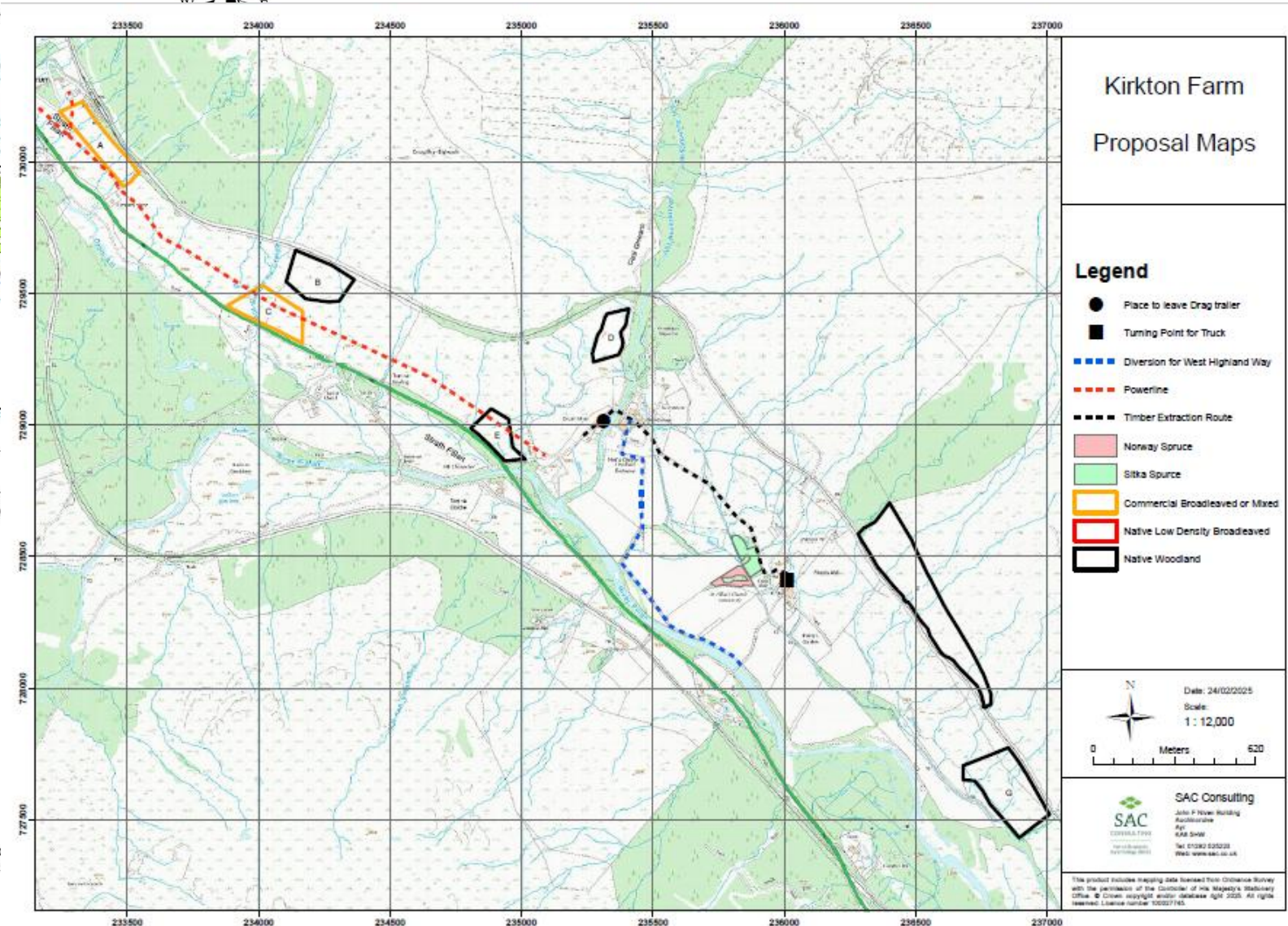
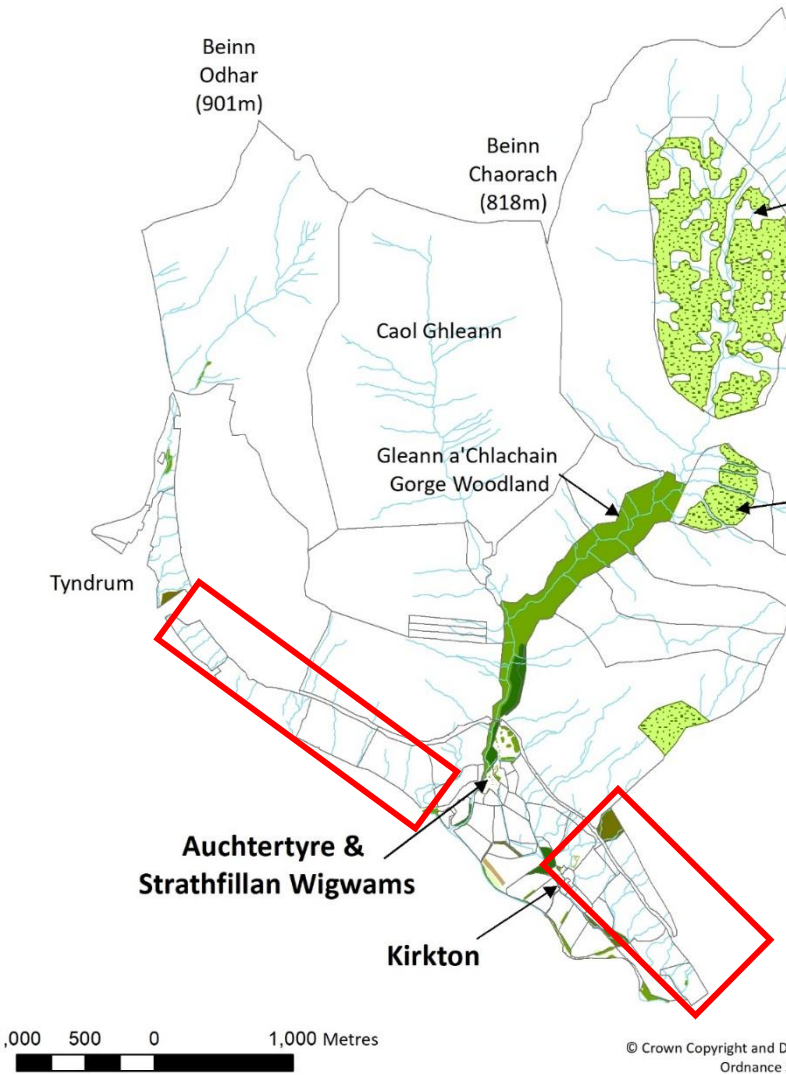
# Improving biodiversity on a hill farm: Mountain Woodland & Scrub





# What next?:

Woodland at SRUC Kirkton & Auchtertyre Farms - 2021

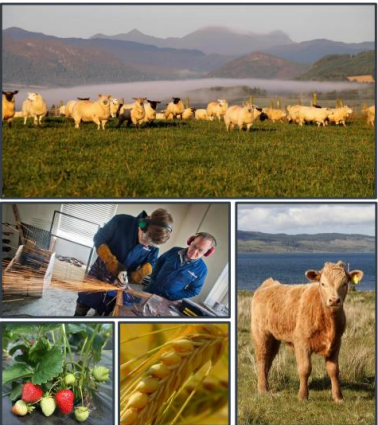




# Some final thoughts



Stability and Simplicity  
proposals for a rural funding  
transition period




Scottish Government  
Riaghaltas na h-Alba  
gov.scot

Climate & biodiversity  
emergencies  
+  
Brexit

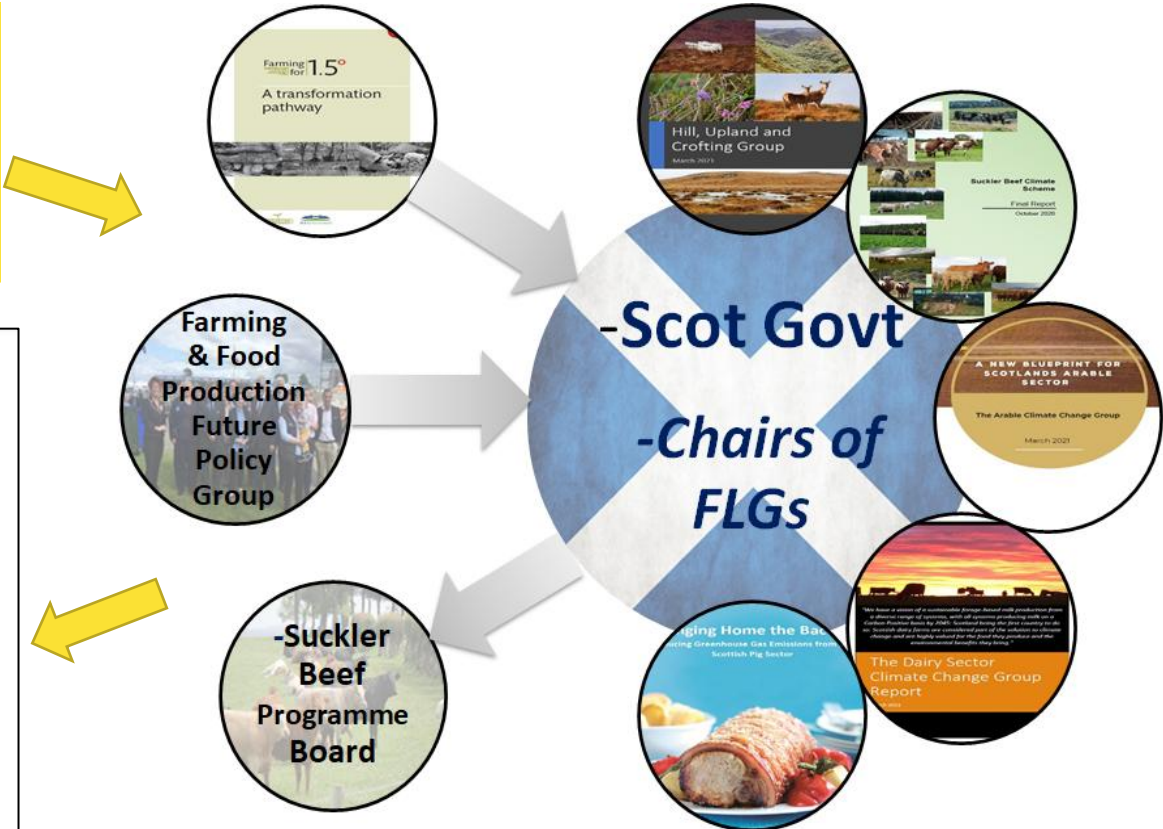
Agriculture Reform  
Implementation  
Oversight Board



NFU Scotland  
The Transition to Future (Conditional)  
Agricultural Support – NFU Scotland's Approach  
May 2021



This NFU Scotland policy document has been compiled by:  
Andrew Moxey (Pareto Consulting)  
Steven Thomson (SRUC)  
Jonnie Hall (NFU Scotland)



Working with industry

Thomson & Moxey 2021



# Some final thoughts



## THE AGROFORESTRY HANDBOOK

Agroforestry for the UK

<https://www.soilassociation.org/media/19141/the-agroforestry-handbook.pdf>

Figure 3: Examples of silvopastoral systems include



**A Wood pasture**

Extensive wood pasture systems with grazing cattle at Epping Forest in 2014

**B Parkland system**

Parkland system in Leicestershire in 2018



**C Individually fenced alder trees with sheep grazing**

Individually fenced nitrogen-fixing alder trees with sheep grazing at Henfaes in North Wales in 2012

**D Individually fenced trees and hay production**

Individually fenced trees combined with hay production near Louth Wood in Derbyshire in 2009

Photographs: ©Paul Burgess

Figure 5: Examples of silvoarable systems include



**A Silvoarable alley cropping**

Poplar with oilseed rape at Leeds University Farm, Yorkshire, 2003

**B Alley coppice**

An alley coppice system with wild cherry with willow short rotation coppice at Loughgall in Northern Ireland in 2016



**C Hazel coppice system at Wakelyns**

Planting of cereals between rows of hazel coppice at Wakelyns Agroforestry in Suffolk

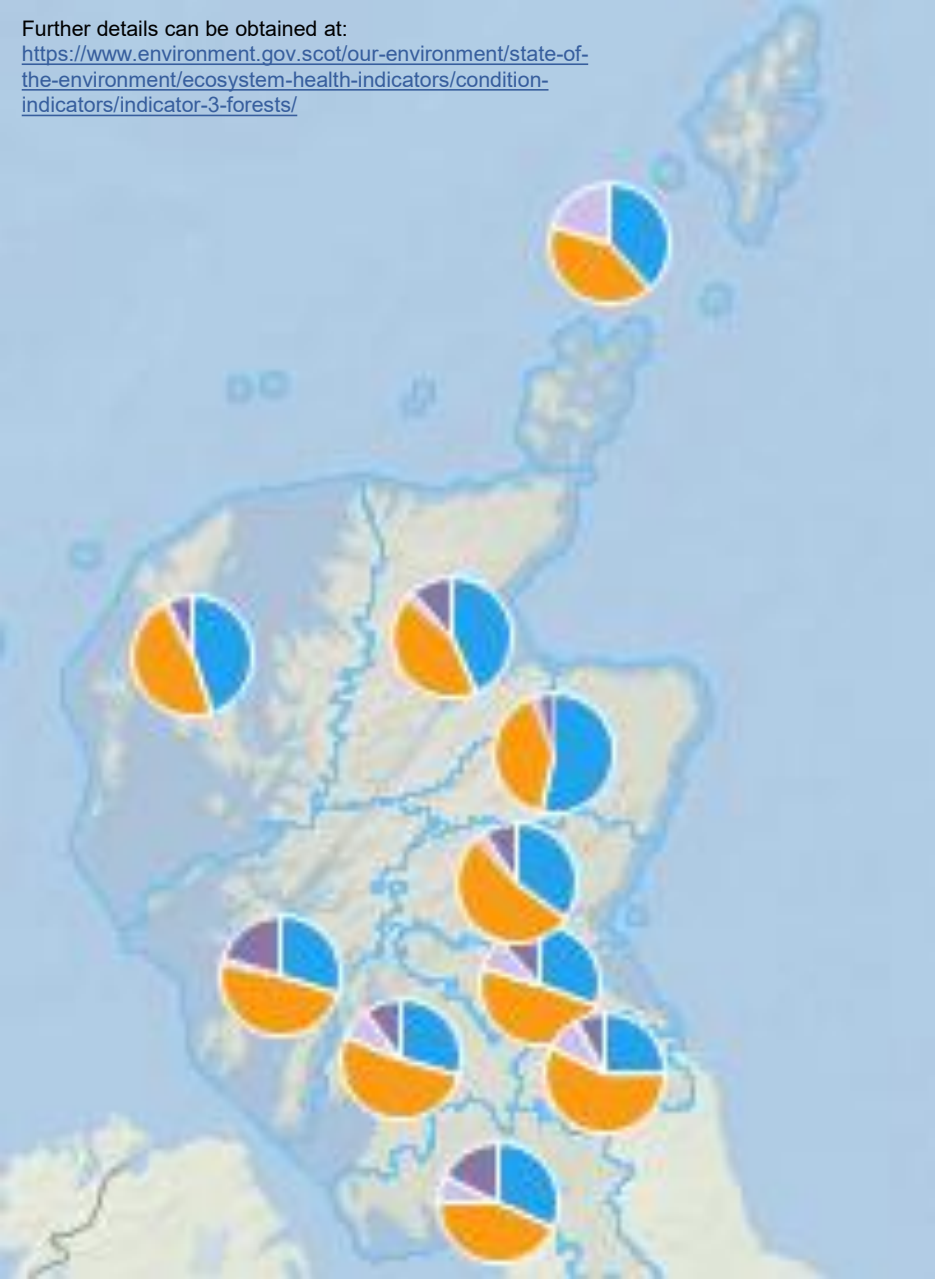
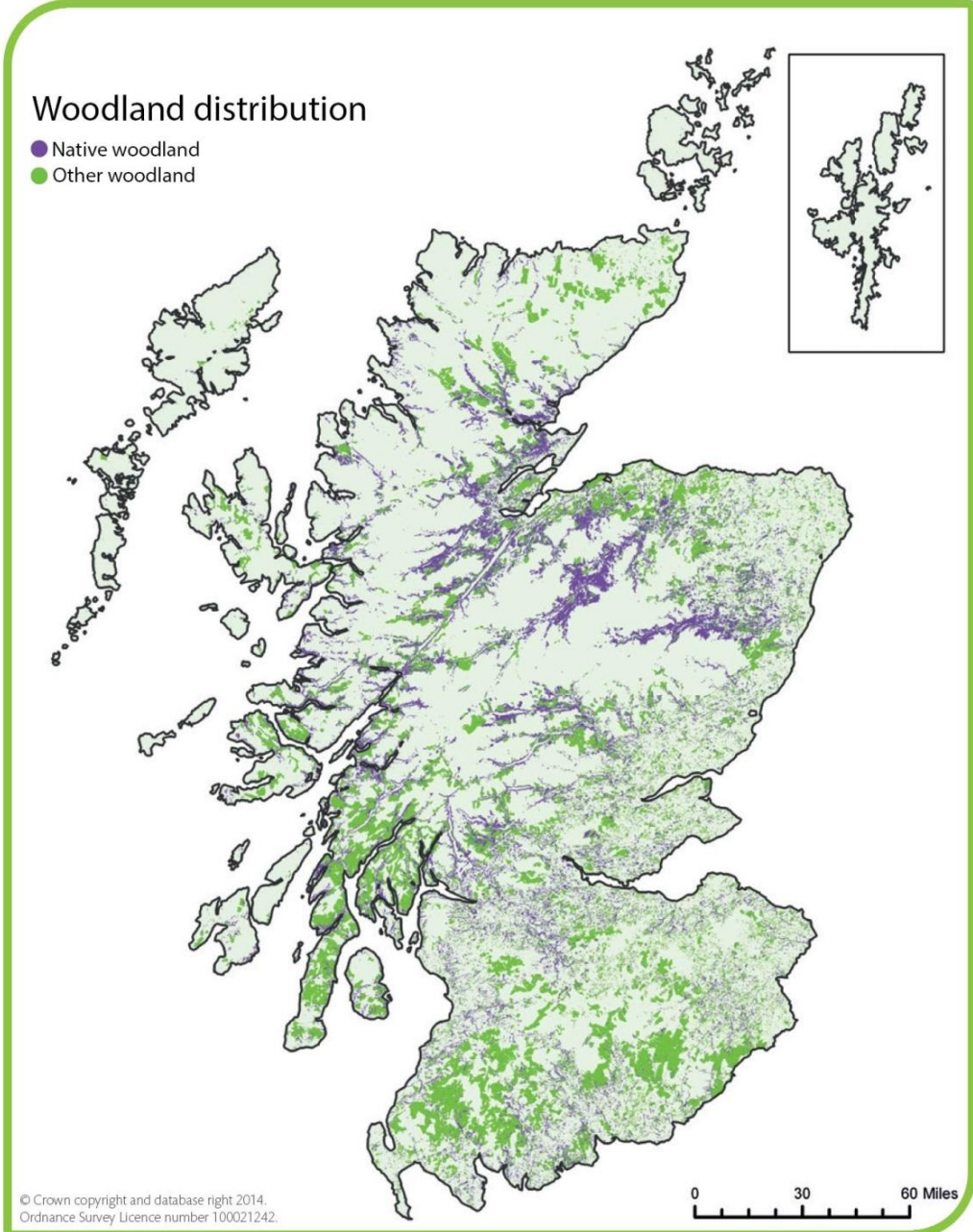
**D Alley cropping with vegetables**

Use of tree rows to provide shelter for vegetable production at Shillingford Organics in Devon in 2014

©Paul Burgess



# Some final thoughts



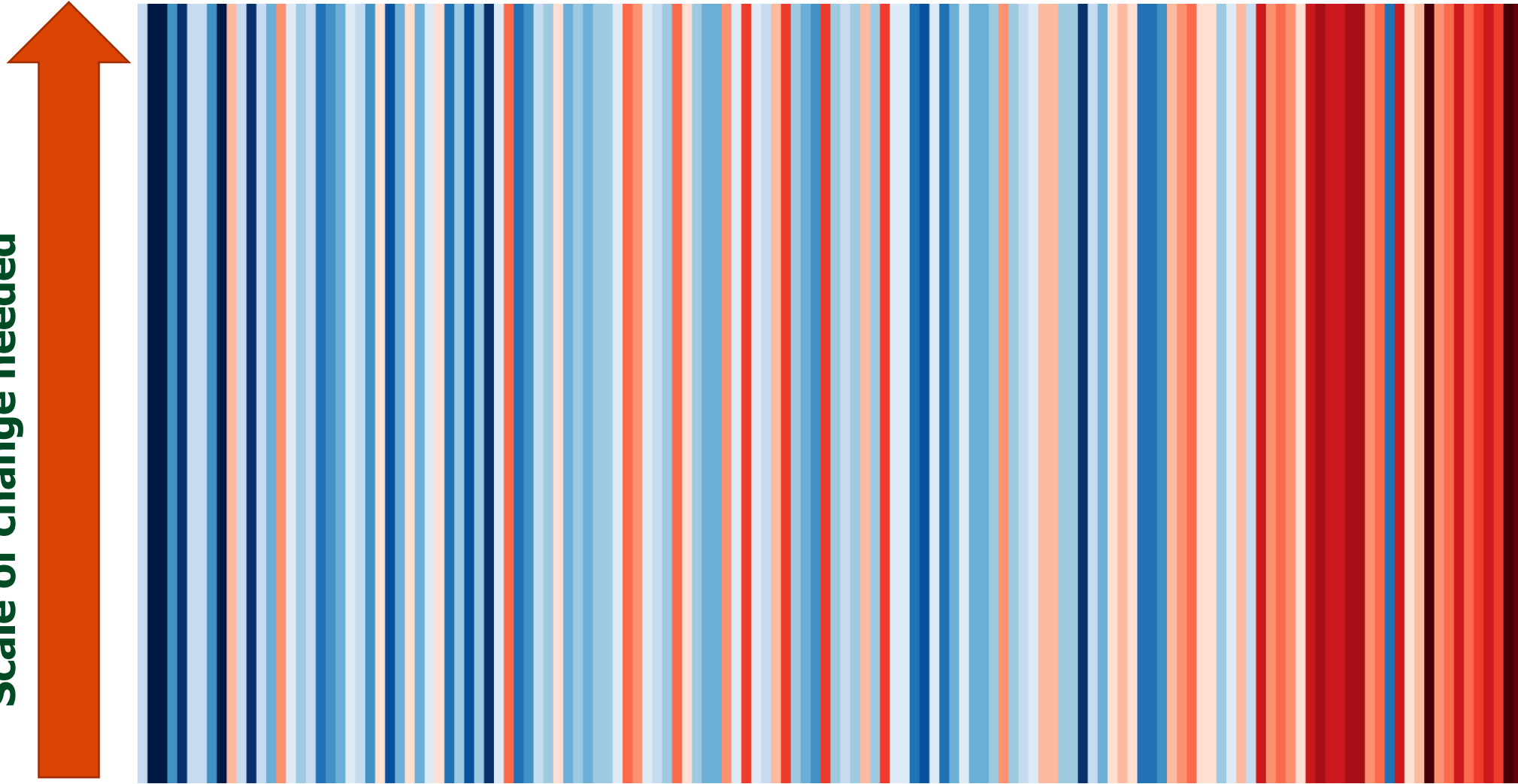
Woodland distribution and native condition (NWS 2014)



# Making your farm more resilient



Scale of change needed





# Making your farm more resilient

Scale of change needed





# More detailed background information available at:



Agri-Environment management at Kirkton & Auchtertyre farms



Podcast: <https://www.fas.scot/publication/the-benefits-of-agri-environment-management-at-kirkton-auchtertyre-farms/>

Farming for a Better Climate  
Climate change in agriculture and rewilding



Podcast: <https://audioboom.com/posts/7598101-climate-change-in-agriculture-rewilding>

The benefits of wader scrapes in an upland farm



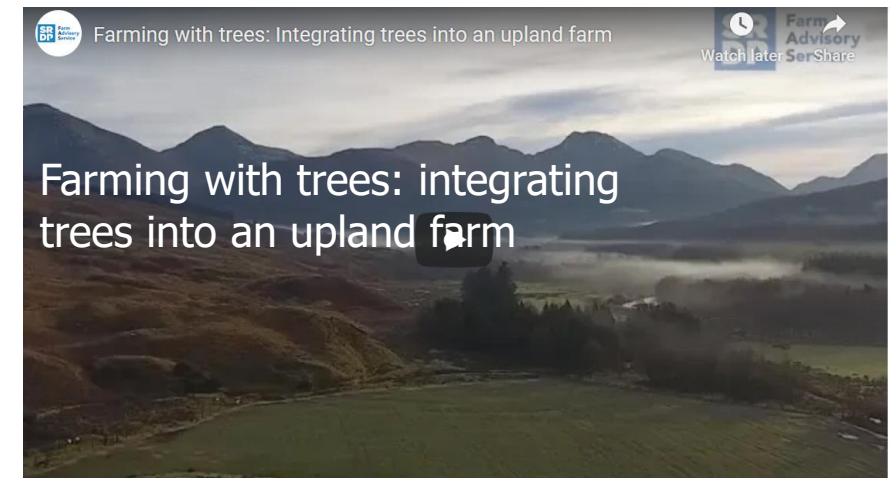
<https://youtu.be/S65y-u8tpQM>

The multiple benefits of water margins on an upland farm



<https://youtu.be/5LZV5OuUIzU>

Farming with trees: Integrating trees into an upland farm



<https://youtu.be/eelpplVvQ3c>



# Acknowledgements



SRUC receives research funding from the **Rural & Environment Science & Analytical Services Division** of the **Scottish Government** through their **2016–2021** and **2022–2027 Strategic Research Programmes**

Additional funders of research from 2016 onwards include:

- The **European Commission's H2020 Research & Innovation Programme**
- **Defra** under the **ERA-NET SusAn (Sustainable Animal Production) Programme**
- **Global Food Security's 'Resilience of the UK Food System Programme'**, with support from **BBSRC, ESRC, NERC** and **Scottish Government**.

