

**SRDP** FARM ADVISORY SERVICE



 The European Agricultural Fund for Rural Development  
Europe investing in rural areas

 SAC  
SCOTLAND

 Scottish Government  
Riaghaltas na h-Alba  
gov.scot



# Hay











Scottish Government  
Riaghaltas na h-Alba  
gov.scot

# Agri-Environment



- Increased distribution of CAP payments to North & West Scotland
- Cross compliance – soils, water, wildlife to minimise environmental “externalities”
- Greening – to reduce biodiversity declines
- AECS – aims to integrate environmental management into EU CAP
- Biodiversity – Habitats Directive; Birds Directive EU, Bern Convention, International Convention on Biological Diversity
- Climate Change – International & Scottish obligations

Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## UK State of Nature Report Sept 2016



- 56% of UK species are in decline
- of 8,000 UK species assessed, 15% are threatened with extinction
- a by-product of changes in farming practices; climate change and development
  - in the move towards greater agricultural efficiency land becomes more uniform & has lost small scale features

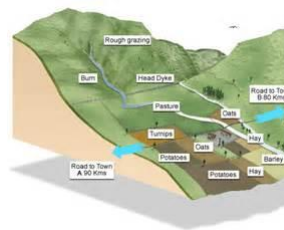


Scottish Government  
Riaghaltas na h-Alba  
gov.scot

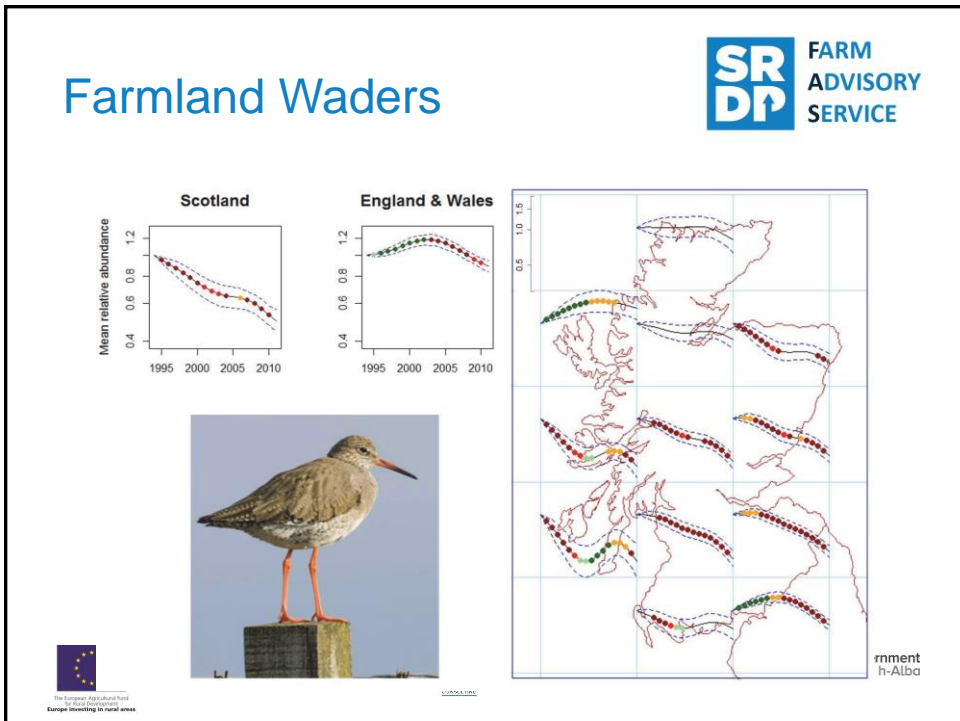
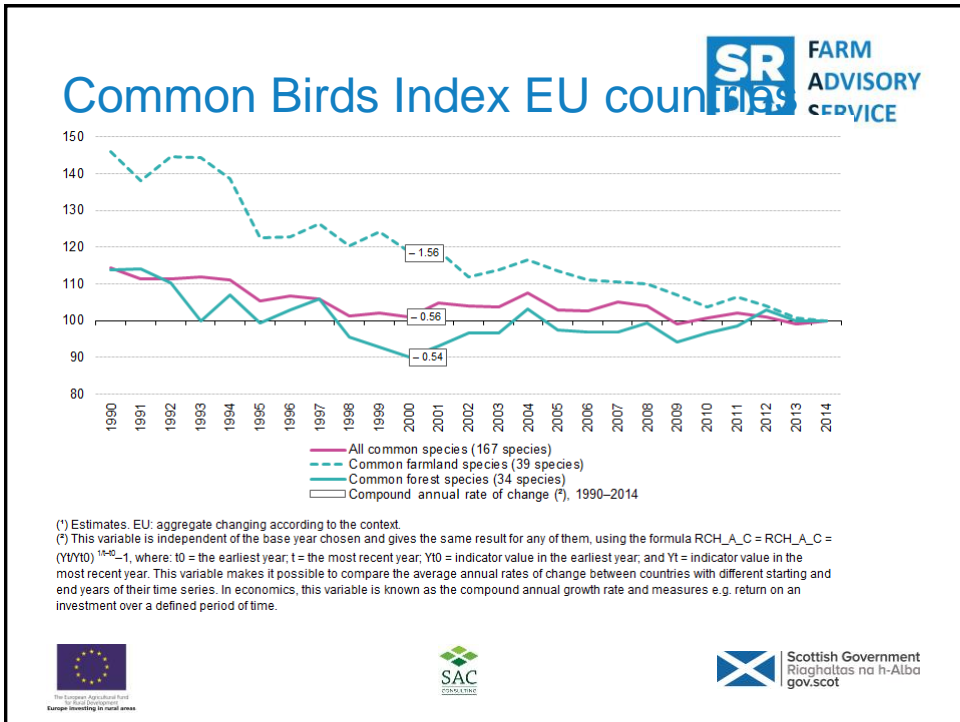
## “Small Scale Features”




- Cropping
- Hedges
- Ponds
- Rough areas
- Scrub
- Tree-lines
- Woods
- Banks




Scottish Government  
Riaghaltas na h-Alba  
gov.scot



## Species rich grasslands



- Pre 1998 losses of semi-natural grasslands were huge due to agricultural intensification and changes to farming systems
- Between 1998 and 2007 plant species diversity declined by 8% on enclosed grassland.
- Loss of associated wildflowers, butterflies, etc






The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas





SAC  
SCOTLAND

## Bees




- Honey bees declines
- Native bees (solitary bees, bumble bees) many have declined dramatically
- Habitat loss & chemicals
- Threats to crop pollination: £400m/yr (UK)






The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas




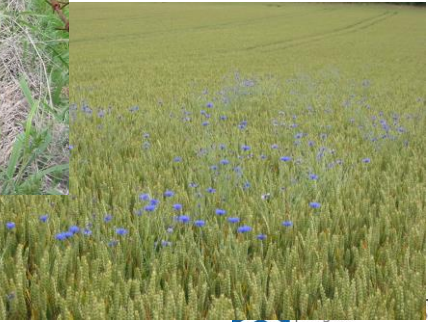



SAC  
SCOTLAND




Scottish Government  
Riaghaltas na h-Alba  
gov.scot




## Arable “Weeds” – herbicides & lack of crop rotations






## Butterflies & Moths



- Specialist butterflies have declined due to habitat losses & food plant declines
- Generalist butterflies are stable or have increased



Red Admiral



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Specialist Butterflies



- Small blue
- Kidney vetch
- Riverbanks, shingle

- Northern Brown Argus
- Rock rose
- Base rich soils

*Photographs from  
Butterfly Conservation*



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Hedges



- Blossom for nectar
- Shelter
- Wildflowers
- Litter layer for over-wintering insects



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

# Hedges



- Blossom for nectar
- Shelter
- Wildflowers
- Litter layer for over-wintering insects



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

# “What is Sustainable”



Scottish Government  
Riaghaltas na h-Alba  
gov.scot



## Sustainable Agriculture



- High Nature Value Farming (HNV) eg
- Low-intensity pasture systems
- Integrated farm management and organic agriculture
- Landscape and historical features such as natural floodplains, hedges, ditches and woods
- Priority habitats and associated wildlife eg peatlands



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Habitat Grazing Impacts



- All habitats require some grazing
- Grazing capacity varies with habitats
- Grazing varies with plant species, soils, grazing animals, season, growth
- Pressures of grazing vary over seasons as well as over years



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Signs of Under-grazing



- Tall vegetation
- Litter layer or moss
- Few small herbs and flowers
- Coarse grasses
- Weeds
- Shrub or tree regeneration



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Signs of Under-grazing



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

# Signs of Under-Grazing



The European Agricultural Fund for Rural Development  
Europe investing in rural areas

Scottish Government  
Riaghaltas na h-Alba  
gov.scot

# Signs of Over-Grazing



The European Agricultural Fund for Rural Development  
Europe investing in rural areas

Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Signs of Over-Grazing



- Very short sward
- Reduction or loss of herbs and flowering plants
- Selective grazing
- Mossy
  - Some habitats can at least partially recover, others cannot recover



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SPECIAL ADVISORY CENTRE



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Seasonal Grazing



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SPECIAL ADVISORY CENTRE



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

# Seasonal Grazing



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

# Removal of Grazing



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Cross Compliance



## Sustainable Farming



- Organic farms showed increased wildlife benefits, and most organic farms provide habitats as part of agri-environment schemes.



## Organic Farming Study findings



- Greater plant biodiversity
- More invertebrate biodiversity
  - Beetles, spiders, bees, and butterflies
- Enhanced soil life biodiversity
  - Soil microbial biomass, mycorrhizal abundance, more earthworms
- More birdlife biodiversity
  - Particularly invertebrate feeders
- Increased mammal biodiversity
  - Total bat activity significantly higher on organic farms



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Organic farming



- A legally defined production system
- **EU Regulation 834/2007**



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Organic Production



- Almost no pesticides are permitted (only natural products)
- Weeds – artificial chemicals are not permitted
- Limited choice of fungicides
  - Copper oxychloride for potato blight
- Soil nutrient management – “traditional”
  - Clover,
  - Muck and slurry
  - Lime, rock phosphate



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SPECIAL ADVISORY CENTRE



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Organic farm practices



- Requirement for a crop rotation
  - Mosaic of habitats to provide both food and cover
- More spring cropping with grass fields nearby
- No synthetic fertilisers – reliance on clover to fix N for fertility
- Lower stocking density overall
  - Less trampling



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas

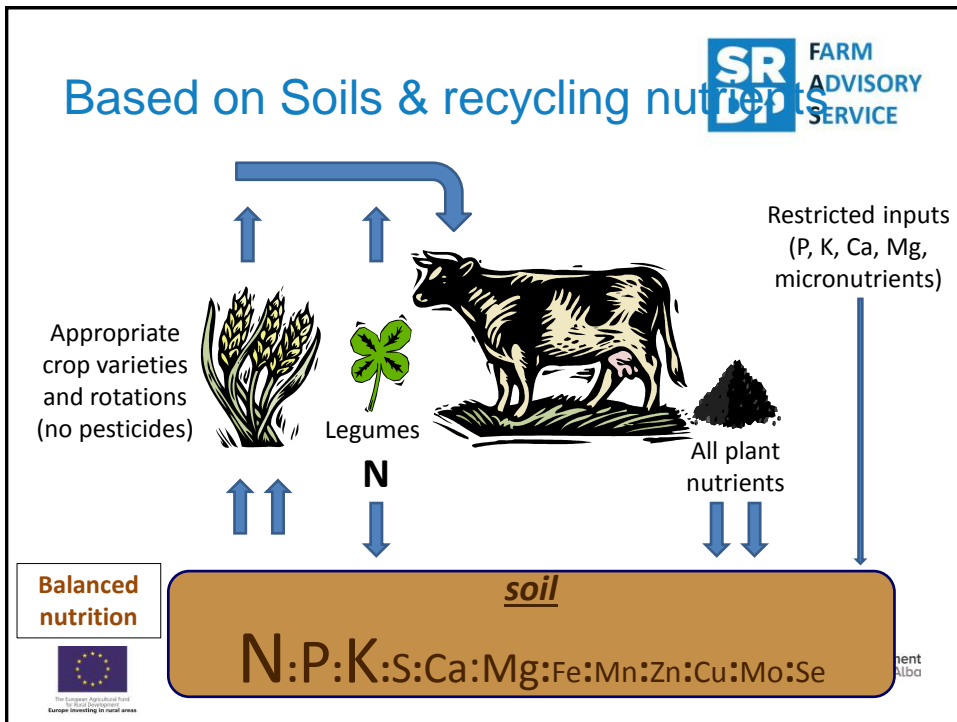


SAC  
SPECIAL ADVISORY CENTRE



Scottish Government  
Riaghaltas na h-Alba  
gov.scot





## Organic standards

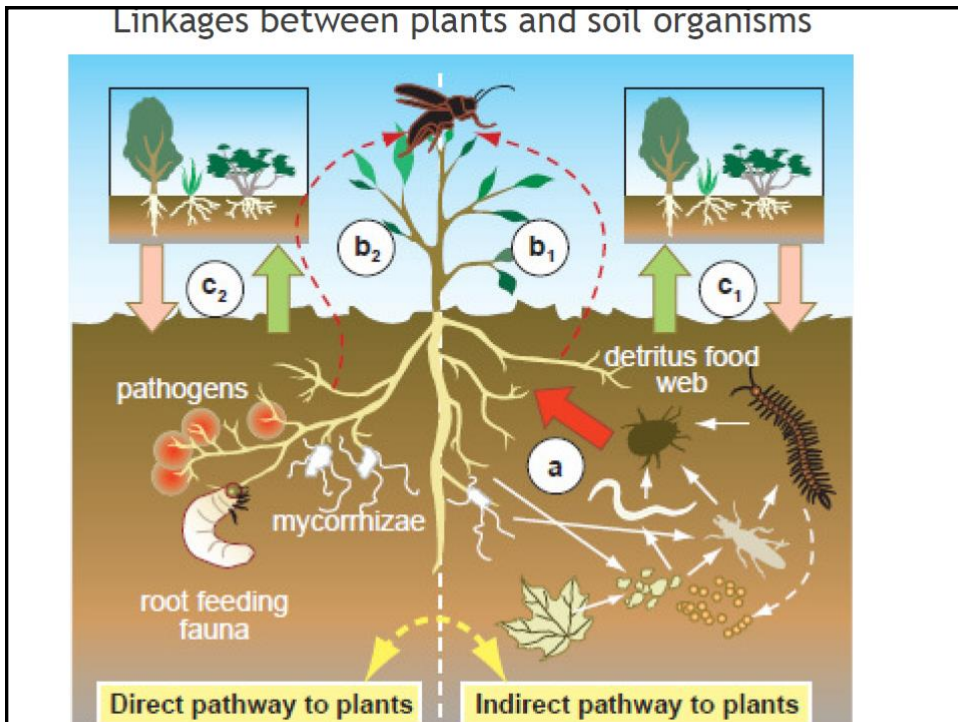
**SRDP** FARM ADVISORY SERVICE

- Requirement for biodiversity plans
- Encouragement of habitat management, e.g. hedges, species-rich grassland
- Encourage biodiversity and protect sensitive habitats and landscape features
- Maximise renewable resource use and recycling
- Emphasis on native breeds (genetic diversity)
- Minimise pollution and waste

Scottish Government  
Riaghaltas na h-Alba  
gov.scot

The European Agricultural Fund for Rural Development  
Europe investing in rural areas

**SAC**  
COMPLYING



## Soil



- 25% of all living organism live in the soil
- garden soils are richer than conventionally farmed soils: 1 teaspoon has millions of organisms
- Soil carbon is the second largest carbon store on earth
- “diminished capacity of soils to function and to provide goods & services”



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTTISH AGRICULTURAL COLLEGE



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Soil



- Soil structure - soil organic matter– historic losses through intensive management leading to erosion – loss of soils & peat into other systems eg aquatic
- Compaction – reduces activity of soil micro organisms and crop growth
- Chemicals disrupt life cycles of non target organisms eg beneficial plants, microbes & fungi  
eg glyphosate reduces grassland mycorrhiza both directly & indirectly
- Chemicals (pesticides, fertilisers) enter water and air etc



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Grasslands



- Grasslands play a major role in carbon sequestration
- Total carbon can be higher in forestry but the below ground can be greater in grasslands - the most stable carbon is below ground.
- Greater storage of carbon can be achieved through increasing nitrogen fixing legumes, which absorb rather than release carbon to the atmosphere; and by using deeper rooting plants
- Fungi increase with soil organic matter (carbon) - helps restore natural grasslands



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## SRDP 2014 – 2020 Priorities



- Enhancing the rural economy
- Supporting agricultural businesses
- Protecting and improving the natural environment
- Addressing the impact of climate change
- Supporting rural communities



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## AECS proposals



- Proposals prepared by advisers (mainly)
- One round of submissions per year – 31 March
- Must be attractive to farmers/crofters (income, capital items)
- Competitive so scoring sheet with points
- Address diffuse pollution
- Targeted wildlife & habitat management
- Collaborate across farms
- Organic Conversion & Maintenance



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## AECS Inbye popular options



- Wader grazed grassland
- Mown grassland
- Management / Creation of Species Rich Grassland
- Wetland
- Water margins in grass fields



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## National Priorities - Waders



- Proposals must benefit include curlew and / or lapwing.
- must undertake two capital items, in addition to management options
  - Creation of Wader Scrapes
  - Creation of Wetland
  - Cutting of Rush Pasture



## National Priorities - Waders



- Proposals must benefit include curlew and / or lapwing.
- must undertake a capital item, in addition to management options
  - Creation of Wader Scrapes
  - Creation of Wetland
  - Drain blocking
  - Cutting of Rush Pasture



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SPECIAL ADVISORY CENTRE

## Wader and Wildlife Mown Grassland



- £149.75 per ha per year
- 1 April -30 June rolling, harrowing, grazing, cutting restrictions.
- 1 April – 15 May no Lime, fertiliser, manure etc
- Must be mown in a bird friendly manner
- 2m margin must be left



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SPECIAL ADVISORY CENTRE

## Wader Grazed Grassland



EITHER do not graze between

- 1 April – 12 May
- 15 April – 26 May

OR do not graze at more than 1LU/ha between

- 15 March – 15 June
- do not harrow, roll, top between 15 March & 30 April
- do not apply lime, fertilisers, slurry or farmyard manure between 15 March & 15 May
- £80/ha/year



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Species rich Grassland



- Either identify & manage existing species rich grassland - £109.56/ha/year
- Or sow out a suitable species rich mix 15% wildflowers & 85% native grasses & manage accordingly - £284.80/ha/year
  - Capital payment - £754.42 for seed mix
- Implement an agreed grazing plan
- No fertiliser, lime, manure, herbicides etc, no poaching, supplementary feeding



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SCOTLAND



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Wetland Management



- £90.03/ha/year for wetland management
- £284.80/ha/year for wetland creation
  
- Implement an agreed grazing plan
- No fertiliser, lime, manure, herbicides etc, no poaching, supplementary feeding



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SPECIAL ADVISORY CENTRE



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

## Uplands priorities



- Peatlands - Moorland management
  - Drain blocking
  - Peatland Restoration (Climate change)
  
- Black grouse
  - Moorland management plan
  - Predator control
  
- Hen harrier



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



SAC  
SPECIAL ADVISORY CENTRE



Scottish Government  
Riaghaltas na h-Alba  
gov.scot




## Moorland Management


**SRDP FARM ADVISORY SERVICE**

- Livestock only - £3.60/ha/year
- Deer only - £1.24/ha/year
- Deer and livestock - £4.84/ha/year


Additional payments for:

- muirburn
- bracken management
- summer cattle grazing
- open-range deer management
- predator control for black grouse



 The European Agricultural Fund for Rural Development  
Europe investing in rural areas

 SAC

 Rìghdhalas na h-Alba  
gov.scot

## Blocking of hill drains/grips

**SRDP FARM ADVISORY SERVICE**

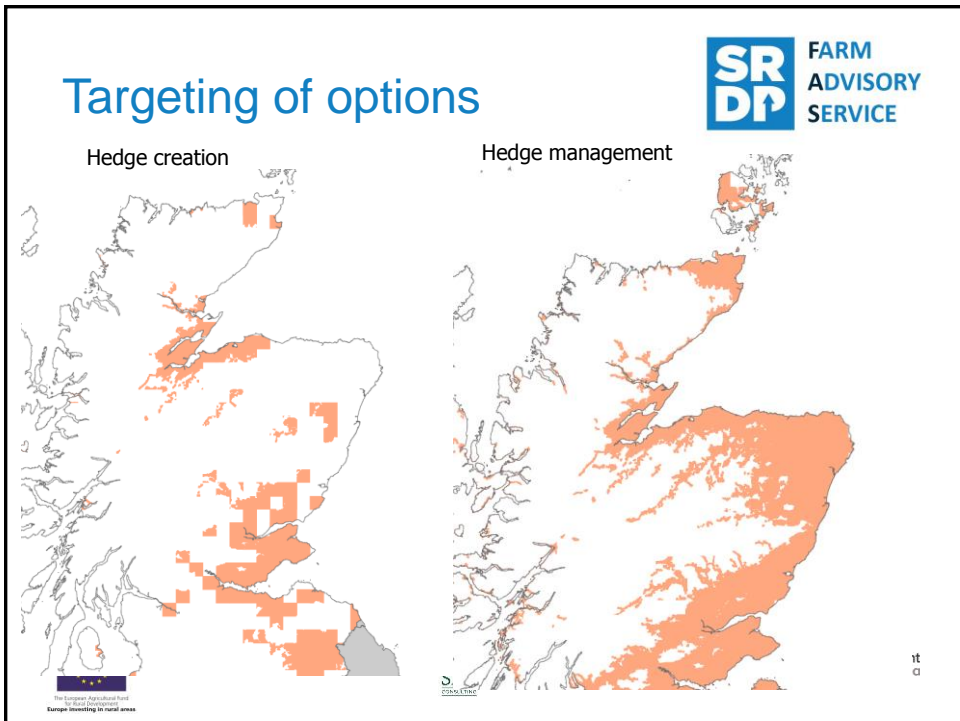
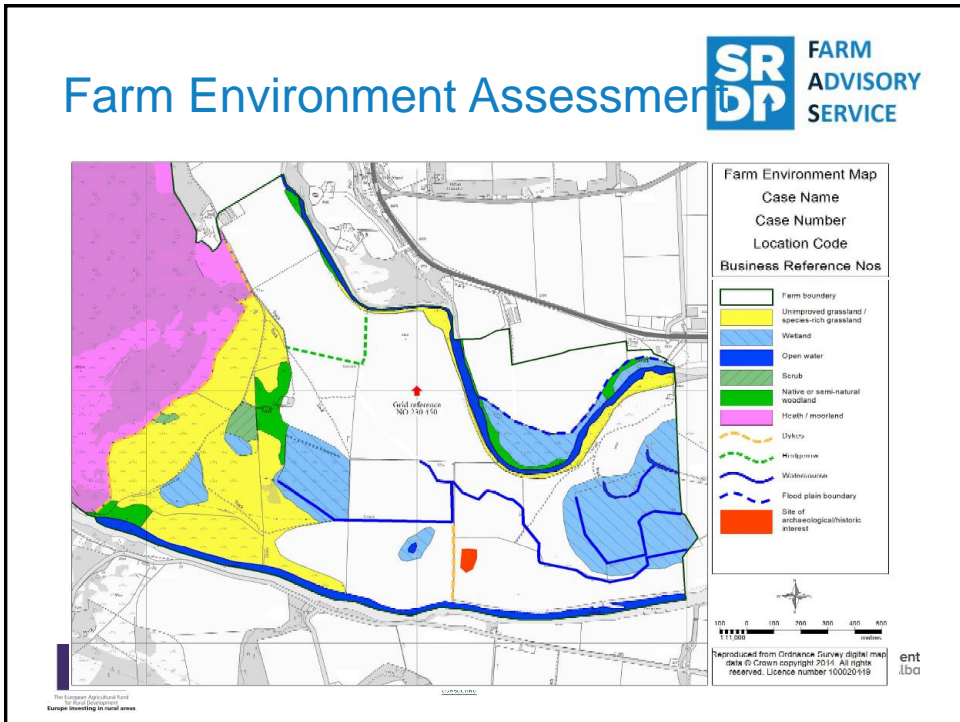


 The European Agricultural Fund for Rural Development  
Europe investing in rural areas


 SAC

 Google




 Scottish Government  
Rìghdhalas na h-Alba  
gov.scot




## Diffuse pollution & climate change

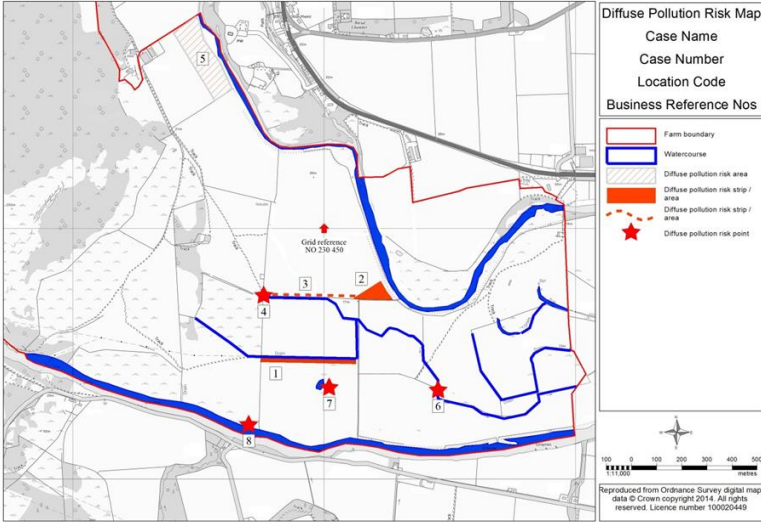


- Measures for addressing these score points
  
- Diffuse pollution audit...
- Funding for troughs, pipes, etc.
- Peatland restoration

## Farm Environment Assessment Diffuse Pollution Audit







**Diffuse Pollution Risk Map**

Case Name  
Case Number  
Location Code  
Business Reference Nos

- Farm boundary
- Watercourse
- Diffuse pollution risk area
- Diffuse pollution risk strip / area
- Diffuse pollution risk strip / area
- ★ Diffuse pollution risk point



Reproduced from Ordnance Survey digital map data © Crown copyright 2014. All rights reserved. Licence number 100020449



## Diffuse Pollution Assessment




GBR19 Breach  
GAEC 5 Breach




The European Agricultural Fund for Rural Development  
Europe investing in rural areas

## Water Margins





Margin must be  $\geq 3\text{m}$  wide if watercourse  $\leq 1.2\text{m}$  wide  
Margin must be  $\geq 6\text{m}$  wide if watercourse is  $> 1.2\text{m}$  wide



The European Agricultural Fund for Rural Development  
Europe investing in rural areas


# Water Margins



No payment on 2m GAEC strip

£5.50 per metre for stock fencing

£495.62/ha (arable fields)  
£123.42/ha (grass fields)



The European Agricultural Fund for Rural Development  
Europe investing in rural areas

# Thank You



The European Agricultural Fund for Rural Development  
Europe investing in rural areas



SCOTTISH AGRICULTURAL COLLECTIVE



Scottish Government  
Riaghaltas na h-Alba  
gov.scot