

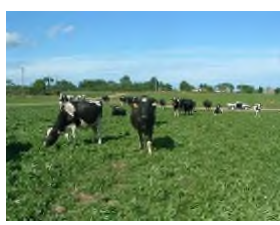
Innovative approaches for agri-environment schemes



John Finn

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Overview

1. Targeting
 - Spatial targeting: regions and part-farm
 - Matching farm heritage to appropriate measures
2. Design of agri-environment measures: evidence-based support for policy
 - Environmental objectives
 - Case study: biodiversity
 - Pilot projects
 - Improved design
3. Other alternatives
 - Outcome-based payments
 - Group proposals
4. Benefits of monitoring



What 'market forces' act on agri-environment schemes?


1. EU prioritisation of: water management, biodiversity, mitigation of climate change and renewable energy
2. Increasingly demanding environmental standards
3. Administrative simplicity versus environmental complexity
4. Requirement for environmental effectiveness and value-for-money (payment for environmental services)
5. Budget availability and budget competition
6. Supply by farmers, demand by society (responsive?)
7. *EU Court of Auditors: cross-compliance and verifiability (effectiveness report in 2010 – targeting and selection, monitoring)*
8. WTO accusations of disguised trade subsidy



Targeting: process of selection based on certain criteria


- Opposite of one-size-fits-all approach
- Strongly associated with value-for-money
- Focuses payments on priority objectives
- Focuses payments on farmland where greatest environmental benefit will be achieved



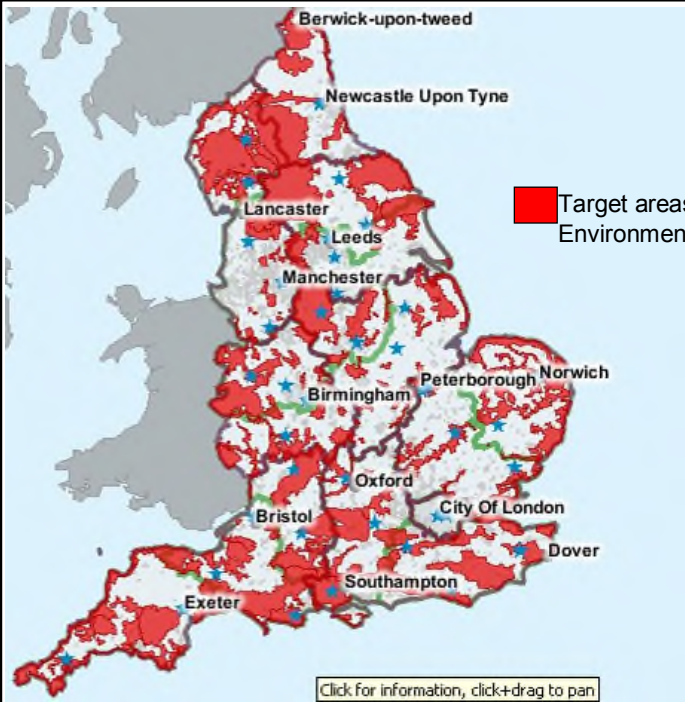


A map of England with major cities and regions labeled. The cities shown include Alnwick, Newcastle Upon Tyne, Sunderland, Carlisle, Durham, Middlesbrough, Whitehaven, Barrow-in-Furness, Lancaster, Blackpool, Manchester, Liverpool, Stoke-on-Trent, Sheffield, Leeds, York, Kingston upon Hull, Lincoln, Nottingham, Leicester, Peterborough, Norwich, Birmingham, Coventry, Worcester, Northampton, Cambridge, Milton Keynes, Luton, Colchester, Gloucester, Swindon, Oxford, Reading, London, Sevenoaks, Dover, Crawley, Brighton, Eastbourne, Portsmouth, Southampton, Winchester, Salisbury, Taunton, Exeter, Plymouth, Bournemouth, Dorset, and Bournemouth.


- Targeting in England: GIS-based online reference
- Higher Level Environmental Stewardship



AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY



A map of England with red shaded areas indicating target areas for Higher Level Environmental Stewardship. The red areas are concentrated in the central and southern regions, particularly around major cities and urban areas. A legend indicates that the red shaded areas are 'Target areas for Higher Level Environmental Stewardship'. Major cities labeled include Berwick-upon-tweed, Newcastle Upon Tyne, Lancaster, Leeds, Manchester, Birmingham, Peterborough, Norwich, Oxford, Bristol, City Of London, Dover, Exeter, and Southampton. A text box at the bottom of the map reads 'Click for information, click+drag to pan'.



AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

Priorities
 Named priority habitats
 3 arable bird species
 Rare arable plants
 Archaeology
 Landscapes
 Soil erosion (River Esk)
 Access
 Peatland (carbon storage)

www.naturalengland.org.uk
HLS Target Area Statement YH03
North York Moors Target Area

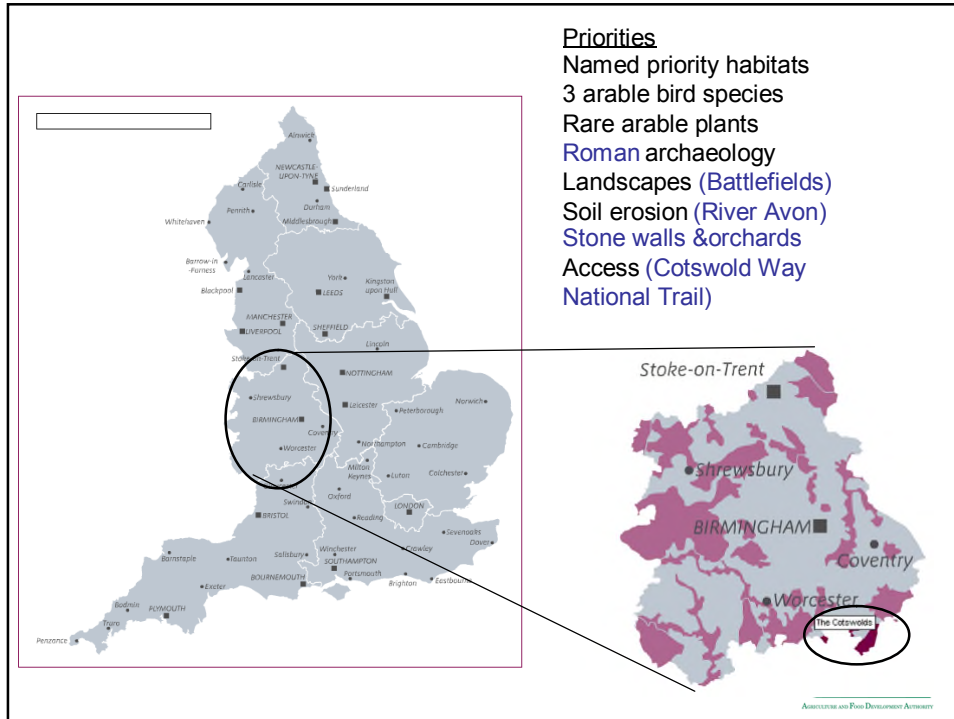
What do I need to do to get an agreement?
 Applications must perform ONE* or more of the following land management activities:

- Maintain/Restore/Create important areas of the following habitats: **heather moorland** (upland heathland), **blanket bog**, **moorland mosaics**, **enclosed rough grazing**, **old meadows & pastures**, **limestone grassland** of high wildlife value, **coastal habitats**, **wetland habitats** and **wood pasture**
- Provide habitat for the following range-restricted farmland birds:
 - Arable Birds:** Provision of nesting habitats, summer food and winter food wherever three or more of the following arable birds species occur – **lapwing (breeding)**, **grey partridge**, **yellow wagtail**, **tree sparrow**, **turtle dove** & **corn bunting** or (with strong supporting evidence) the holding is known to support an important regional breeding population for any of these species?
- Create suitable cultivated habitat in appropriate areas of arable farmland to encourage **rare arable plants**
- Positive management of **visible and below ground archaeological** and historic features that are assessed as a priority in the region such as the **prehistoric burial sites and settlements**?
- Protect, maintain and restore **historic landscapes and their features**, such as parkland where they are assessed as a priority in the region?
- Maintain or restore **historic buildings** that are assessed as a priority in the region?
- Implement land management practices and capital works to minimise soil erosion from **land at risk of generating diffuse pollution** within the catchment of the **River Esk**?
- Restore **characteristic field boundary patterns** and features associated with settlements and farmsteads, including traditional farm buildings, orchards, current and relic field systems
- Create new **permissive access** where there is identified demand or need in order to link people with places, enhance existing networks and/or provide opportunity to improve people's understanding of the farmed environment through **educational access**
- Protect and restore **degraded blanket bog** and other habitats on deep peat soils to reduce losses of carbon from nationally important carbon stores?

© Crown Copyright. All rights reserved. Natural England 100042023, 2009. TSN Area: 1431094

Why is the North York Moors Target Area a priority for Higher Level Stewardship (HLS) management?
 The North York Moors Target Area is important for its significant contribution to the following Higher Level Stewardship objectives: **Biodiversity, Landscapes, Resource Protection, Historic Environment and Access.**
 The North York Moors Target Area is largely within the North York Moors National Park, an area valued for its important landscape and access opportunities, but extends partly to the west within the Vale of Pickering. Within this area nationally important areas for biodiversity occur including large areas of upland heath, important areas of limestone grasslands and native broadleaved woodland are also present. This area is formally recognised for its international importance for breeding golden plover and merlin and is of significant historical importance with archaeological evidence dating back to prehistoric times including settlements and burial sites. Most importantly for resource protection, diffuse pollution from farming in this area is affecting the condition of vulnerable high value salmon spawning waters and habitats found in the River Esk. Finally the whole area is important for access and improvements through HLS could further promote the Cleveland Way.

V1.0



www.naturalengland.org.uk
HLS Target Area Statement SW04
The Cotswolds Target Area

landscapes defined by a prominent, west-facing scarp followed by the Cotswold Way National Trail with significant areas of CRO/W open access land and commons. The elevated plateau, known as the Wolds, dips south-east as a series of low ridges and river valleys. Within this target area nationally important areas for biodiversity occur including limestone grasslands. Important areas of wetlands, ancient semi-natural woodlands, species-rich hedgerows and wood-pasture are also present. The area, particularly towards the north, is also nationally important for its assemblage of arable farmland birds such as corn bunting, lapwing, grey partridge and yellow wagtail. The range of habitats supports other key wildlife species such as large blue and marsh fritillary butterflies along with rare plants associated with the limestone grasslands, also greater horseshoe bats are present. Resource protection issues occur particularly in the north of the area associated with diffuse pollution affecting valuable habitats in the River Avon catchment. The area also contains registered historic parklands, scheduled and undesignated prehistoric, Roman and medieval settlement features many surviving as earthworks including barrows, villa sites, historic buildings and upstanding ridge and furrow.

What do I need to do to get an agreement?
 Applications must perform ONE* or more of the following land management activities:

- Maintain/Restore/Create the most important areas for the following habitats: limestone grasslands, wetlands, wood-pasture, woodlands and ancient species-rich hedgerows
- Provide habitat for the following range restricted farmland birds:
 - Arable Birds:** Provision of nesting habitats, summer food and winter food wherever three or more of the following arable birds species occur – lapwing (breeding), grey partridge, yellow wagtail, tree sparrow, turtle dove & corn bunting or (with strong supporting evidence) the holding is known to support an important regional breeding population for any of these species*
- Create suitable cultivated habitat in appropriate areas of arable farmland to encourage rare arable plants
- Positive management of visible and below ground archaeological and historic features that are assessed as a priority in the region such as prehistoric settlements and cemeteries, Roman villas and farmsteads and medieval settlement features*
- Protect, maintain and restore historic landscapes and their features, such as the Registered Battlefields of Stow and Lansdown Hill, where they are assessed as a priority in the region*
- Maintain or restore historic buildings that are assessed as a priority in the region*
- Implement land management practices and capital works to minimise soil erosion from land at risk of generating diffuse pollution affecting the River Avon catchment*
- Maintain/restore characteristic landscape features such as the stone walls particularly associated with the wold tops, together with the walls and hedgerows in the valleys; also the small-scale, traditional orchards close to farms and settlements
- Create new permissive access where there is identified demand or need in order to link people with places, enhance existing networks and/or provide opportunity to improve people's understanding of the farmed environment through educational access, particularly where linking to Cotswold Way National Trail

© Crown Copyright. All rights reserved Natural England 100046223, 2008 Total Area 155,700ha

Why is the Cotswolds Target Area a priority for Higher Level Stewardship (HLS) management?
 The Cotswolds Target Area is important for its significant contribution to the following Higher Level Stewardship objectives: Biodiversity, Landscape, Historic Environment, Access, and Resource Protection.
 The Cotswolds Target Area includes a substantial part of the protected landscape falling within the Cotswolds Area of Outstanding Natural Beauty. The area contains the Jurassic limestone

V1.0

Targeting: process of selection based on certain criteria

Innovation: implementation of targeting:

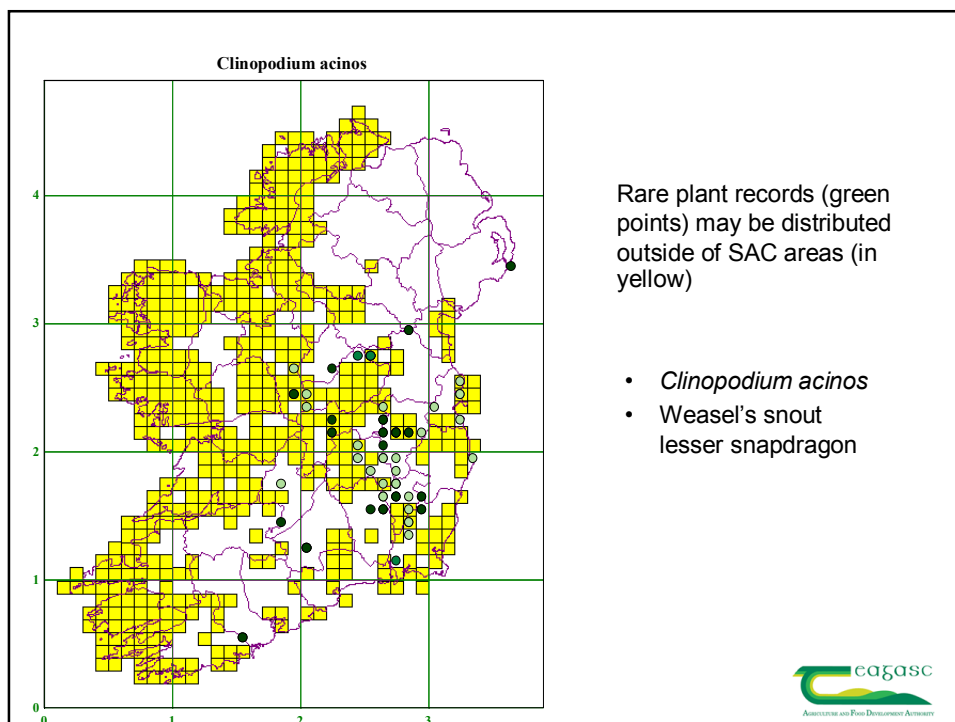
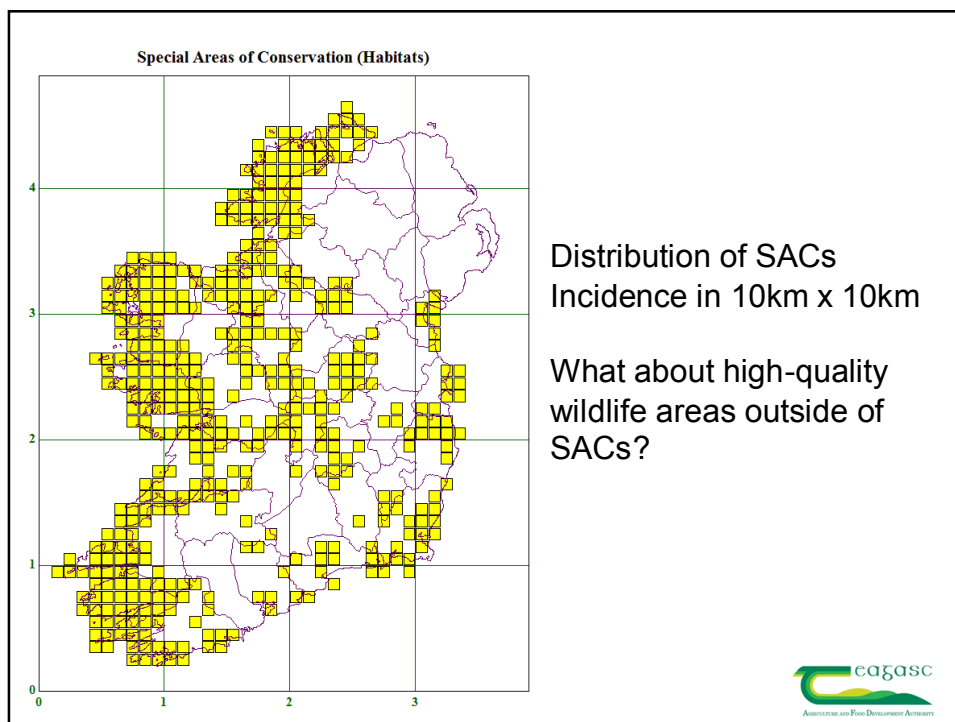
- Objectives (strongly prioritised)
- Budget quotas
- Regional differentiation and targets (as in English example)
- Ensuring match between farm features and measures that deliver greatest environmental benefit

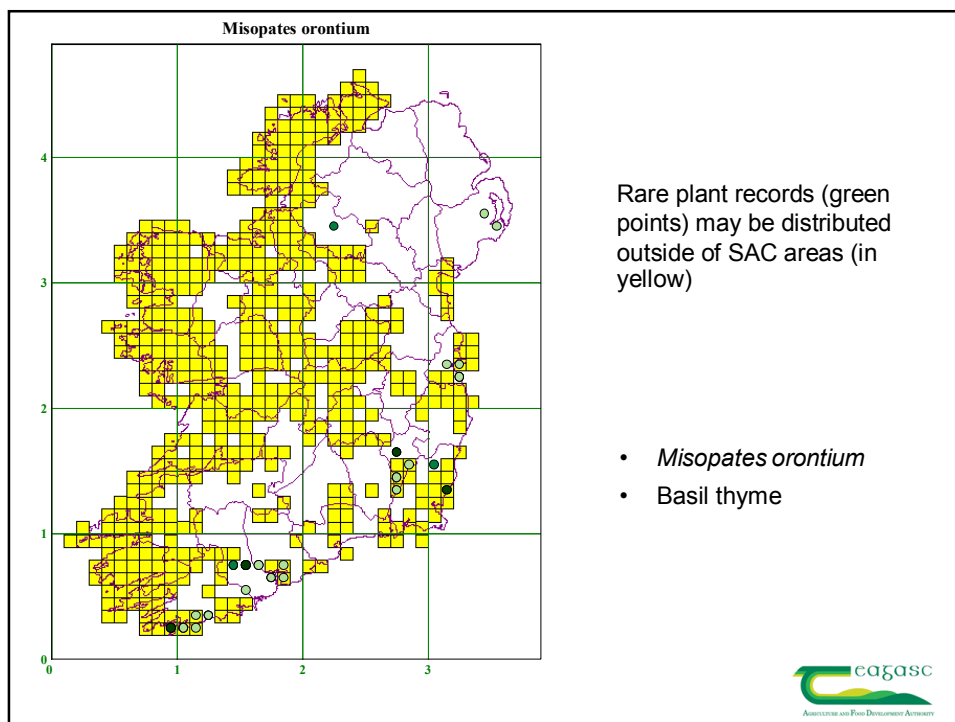
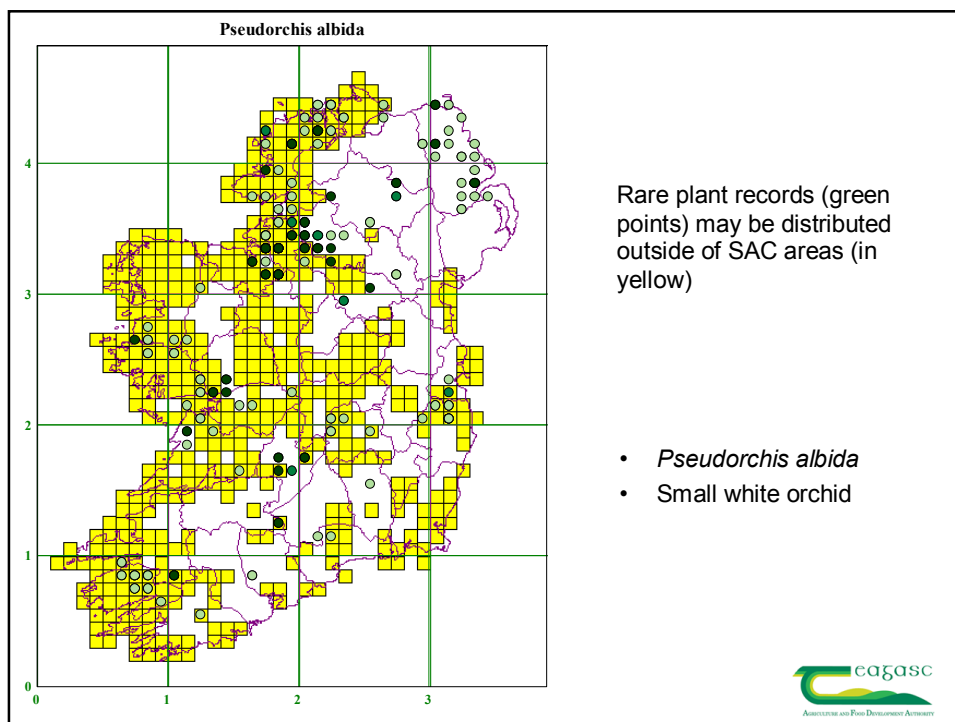


Innovative opportunities for targeting in Ireland?

- Already some targeting in REPS: Burren, riparian zones, Measure A, corncrake.
- What opportunities for further targeting?







Species diversity

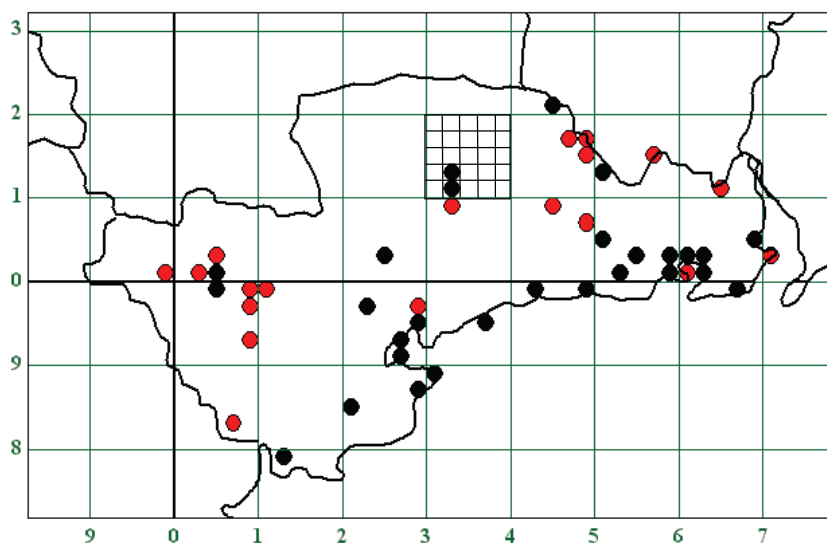
66 Flora Protection Order species with records from 1970 and later

- Of 531 sites, 411 coincide with 10km x 10km SAC
- about 25% - no overlap with SAC
- Can we use such data for targeted future measure for rare and threatened species?



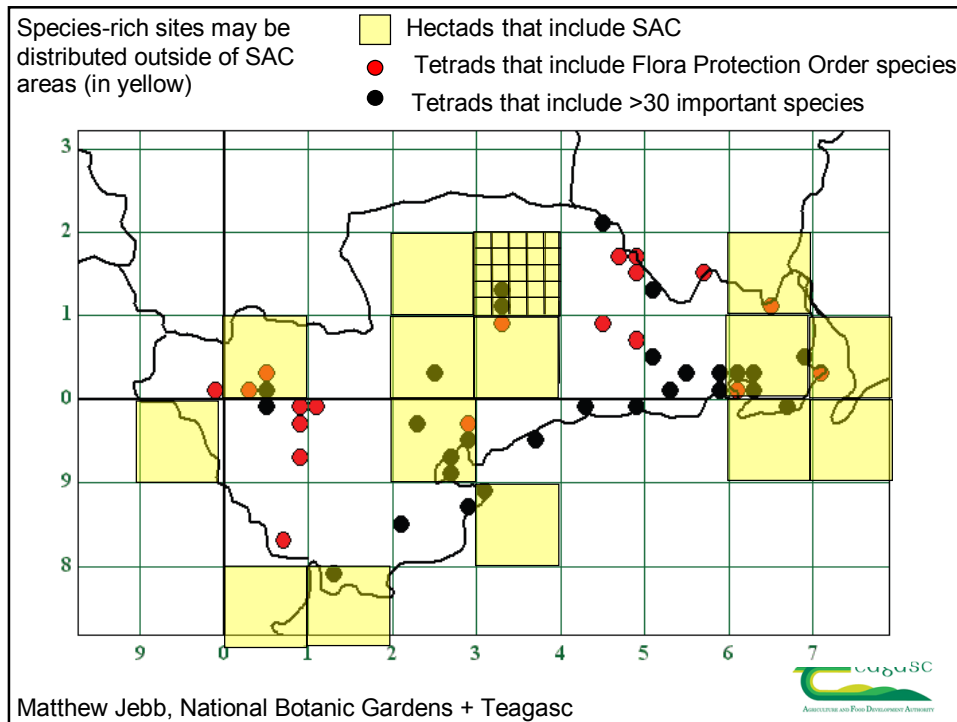
Based on full flora of Co. Waterford (2km x 2km) by Paul Green

- Tetrads that include Flora Protection Order species
- Tetrads that include >30 important species



Matthew Jebb, National Botanic Gardens + Teagasc





Habitat mapping in the Burren

Burren – multiple habitats of EU importance

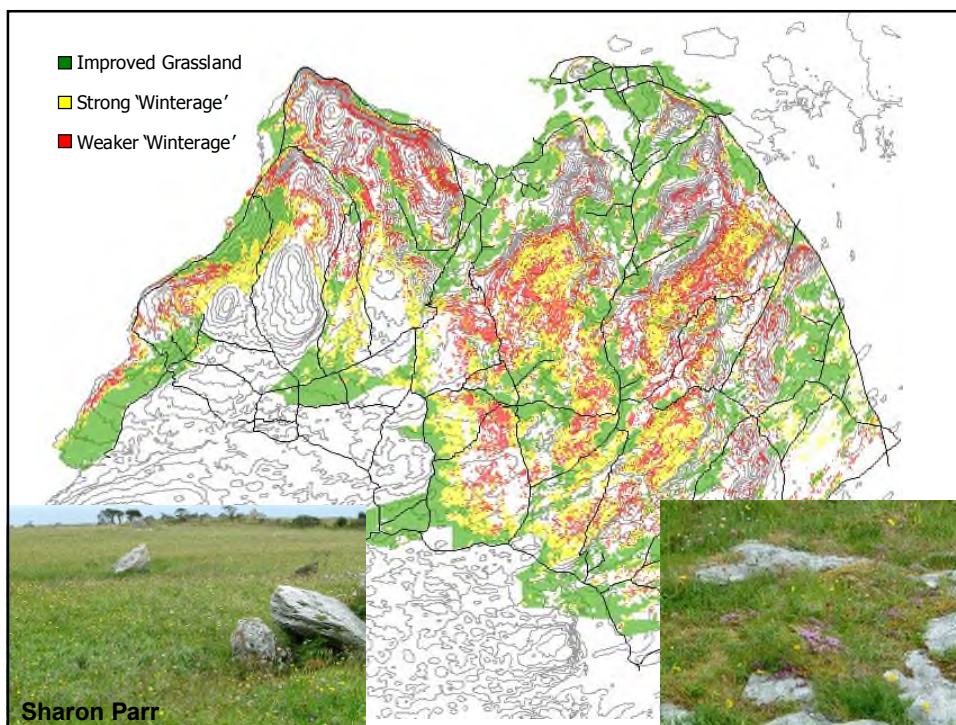
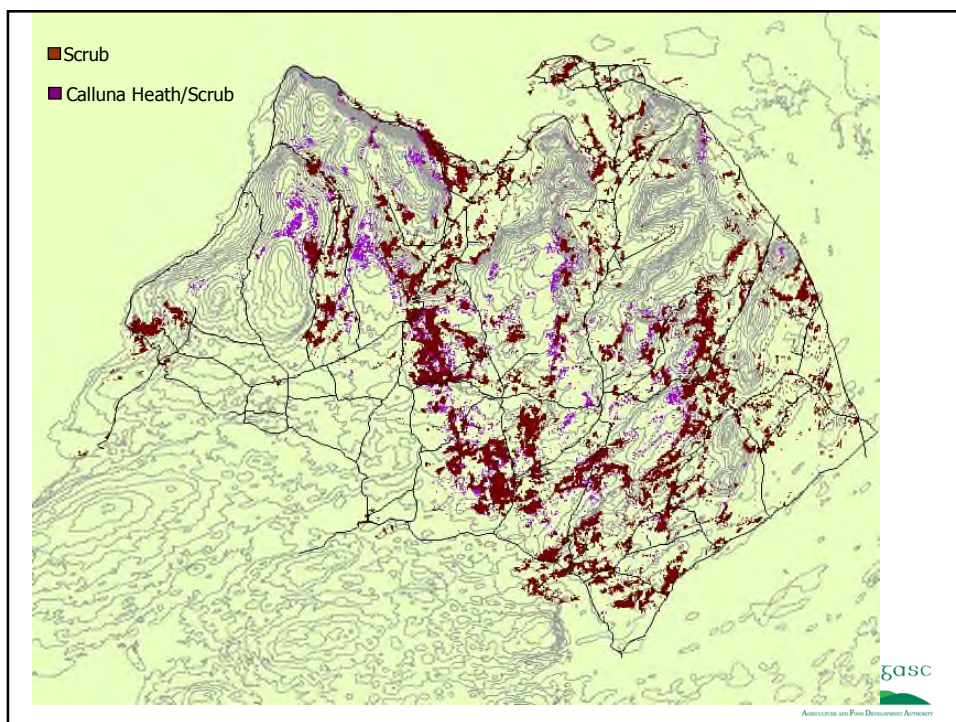
No habitat map

Too large for field-by-field mapping

(RSF project, Sharon Parr, Grace O'Donovan, J. Finn)

www.teagasc.ie/research/reports/environment/5190c/eopr5190c.asp





Innovation: Spatial targeting

- Targeting increases transaction costs – expect that these outweighed by environmental benefits
- Greater reliance on spatial datasets (GIS) and spatial implementation (knowledge-intensive)
BUT...Requires anticipation and lead-in times
- Inter-agency co-operation to maximise relevance and access to available data (State, semi-state, NGOs etc)
- Key issues:
 - Priority areas to halt biodiversity loss
 - Priority areas for water management



Innovation: design of effective agri-environment measures

NB Design stage – much more efficient than learning to improve via monitoring

- Differentiation and prioritisation of objectives
- Evidence-based measures (review, or new research)
- Pilot schemes (limited rollout in validation phase)
- Clear written descriptions of the evidence that supports a an objective being appropriately delivered by proposed measure
- Expert panels



Evidence-based design



Impact models – statement of how measures produce benefits

- Survey of 242 AE measures across Europe:
- >50% - 'common sense' (no evidence provided)
- one third - qualitative models
- less than one sixth – quantitative

(EU AE-Footprint project; Primdahl et al, submitted)

- EU ITAES project: use of **expert panels** (individuals with experience of scheme and relevant research) very effective in identifying problems – consider use in *ex ante* evaluation, especially for scientific validity.
- Experts justify their comments – help learn to improve



Effectiveness of new agri-environment schemes in providing foraging resources for bumblebees in intensively farmed landscapes

R.F. Pywell^{a,*}, E.A. Warman^a, L. Hulmes^a, S. Hulmes^a, P. Nuttall^a, T.H. Sparks^a, C.N.R. Critchley^b, A. Sherwood^b

^aNERC Centre for Ecology and Hydrology, Monks Wood, Abbots Ripton, Huntingdon, Cambs PE28 2LS, UK
^bADAS Consulting Ltd., ADAS Redesdale, Rochester, Otterburn, Northumberland NE19 1SB, UK

Biological Conservation 129 (2006) 192–206

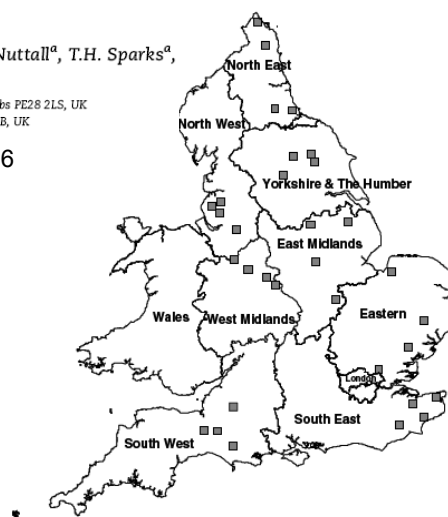
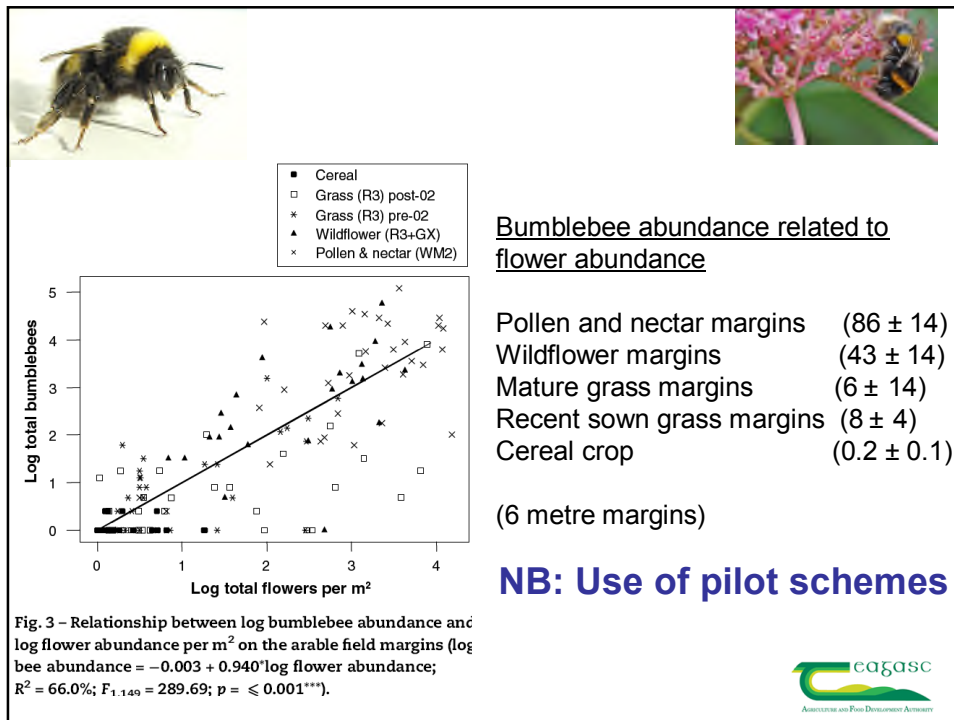


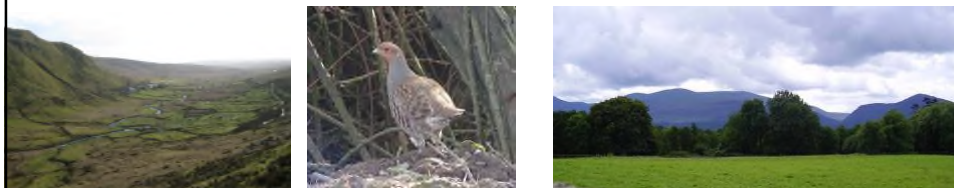
Fig. 1 – Location of the 32 10 x 10 km sample squares.





Differentiation & prioritisation of objectives

- Biodiversity can be differentiated:
 - - priority habitats on Natura 2000 sites;
 - - priority habitats outside of Natura 2000 sites;
 - - rare and threatened species in Red Data Books;
 - - other rare and threatened species;
 - - species in decline, but not yet rare or threatened;
 - - High Nature Value farmland;
 - - common farmland habitats;
 - - common farmland species;
 - - creation of farmland habitat to support named species;
 - - creation of common farmland habitats.



Differentiation and prioritisation

Prioritisation of different sub-objectives crucial:
 90:5:5 priority rating
 5:5:90 budget allocation

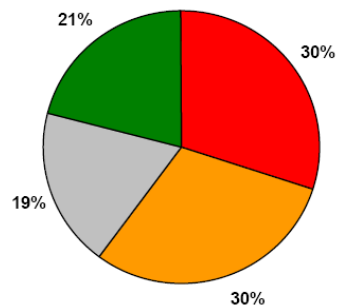
Main point: ensure biodiversity objectives in schemes aligned with national strategic objectives (National Biodiversity Plan, National Strategy for Plant Conservation etc.)

(Principle of differentiated, prioritised objectives applies to other environmental objectives also.)

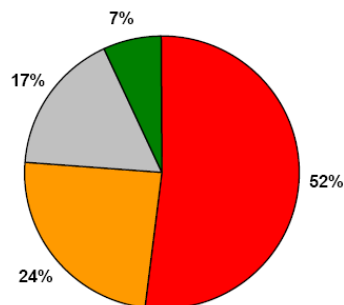


Protection of biodiversity within European agricultural systems is likely to remain a priority

Habitats types not associated with agriculture
 (497 assessments)



Habitats types associated with agriculture
 (204 assessments)



Drivers of innovation (biodiv.)

- Schemes will increasingly need to deliver on biodiversity objectives that may become more differentiated, and more demanding than in the past
- Headline objectives for biodiversity 2007-2013
 - Halting biodiversity loss (failed 2010 target)
 - Protection and maintenance of High-Nature-Value farmland and woodland.

Main implication:

- prioritised sub-objectives
- targeting



Innovation: design of effective agri-environment measures

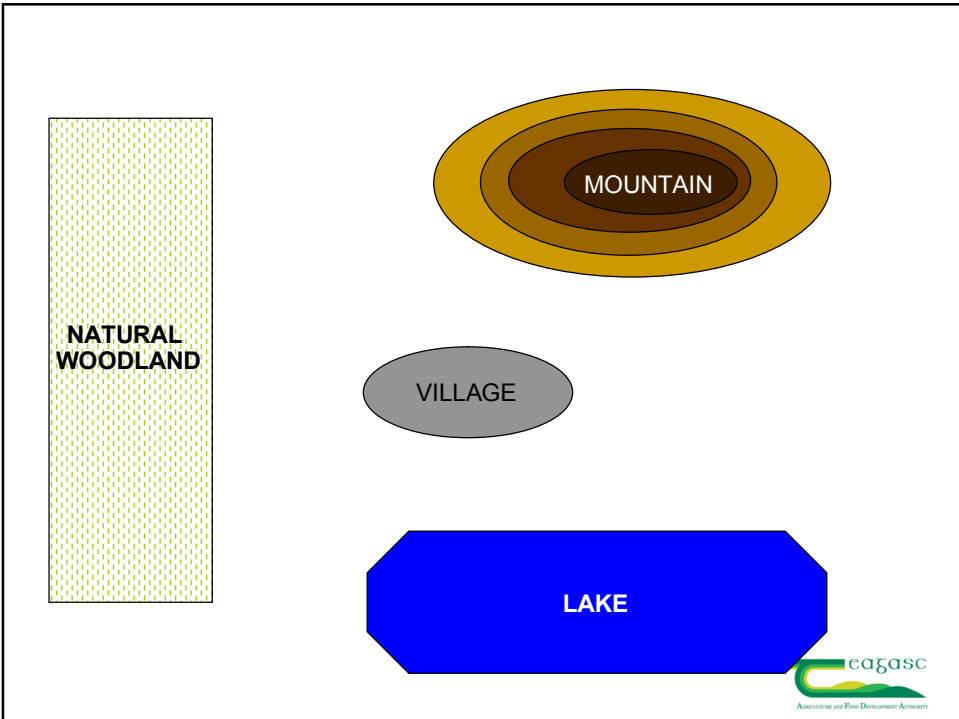
- Ensure scheme objectives are aligned with national priorities (wildlife, water, greenhouse gases, RE)
- Differentiation and prioritisation of objectives
- Evidence-based measures (review, or new research)
- Pilot schemes (limited rollout - validation phase)
- Clear written descriptions of evidence justifying an measure as appropriately to deliver an objective
- Use of expert panels



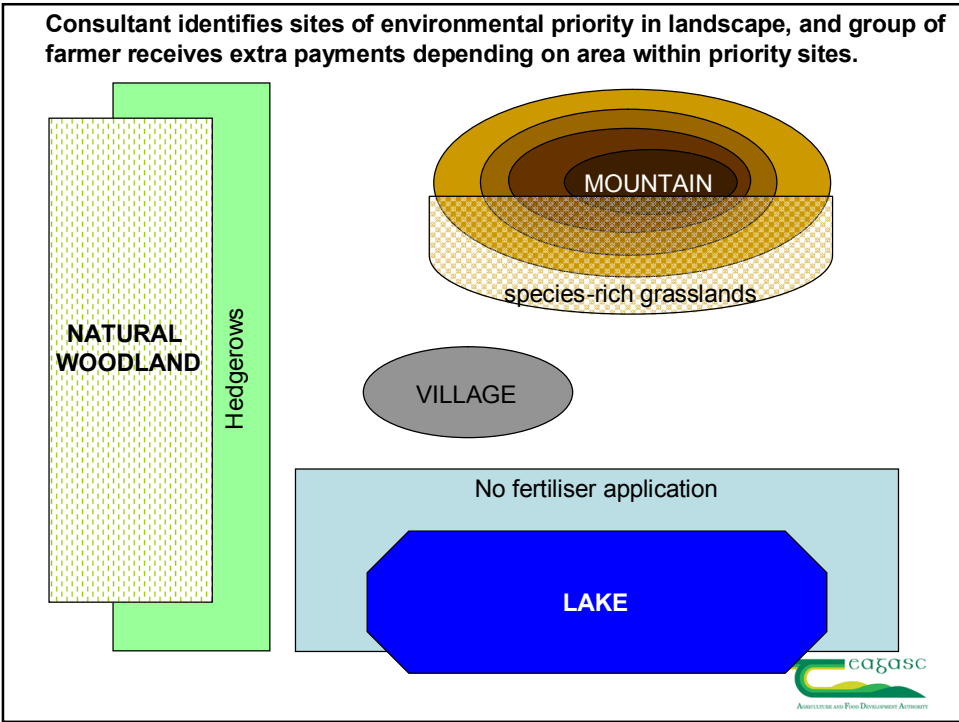
Group schemes & outcome-based payments


- Example from Switzerland
- Environmental services – a product desired by society, and more supply results in greater payment






Consultant identifies sites of environmental priority in landscape, and group of farmer receives extra payments depending on area within priority sites.





- Economy of scale for environmental services: additional payment for group proposal that identifies priorities at landscape scale
- + additional payment for quality (more species, more money)
- Paying for product (not for following rules)
- Intend more transfer of payments to outcome-based payments
- Targeted: measures applied only where the intended environmental benefit will be achieved.
- Very strong societal demand: townlands can pay for consultant



Journal of Applied Ecology 2006 43, 120-127

Effectiveness of the Swiss agri-environment scheme in promoting biodiversity

EVA KNOP^a, DAVID KLEIJN^a, FELIX HERZOG^a and BERNHARD SCHMID^a

Available online at www.sciencedirect.com

ScienceDirect

Agriculture, Ecosystems and Environment 125 (2008) 167-172

Agriculture Ecosystems & Environment

www.elsevier.com/locate/agre

A Swiss agri-environment scheme effectively enhances species richness for some taxa over time

Tobias Roth^{a,b,c,*}, Valentin Amrhein^{b,c}, Beatrice Peter^d, Darius Weber^a

ELSEVIER

Contents lists available at ScienceDirect

Agriculture, Ecosystems and Environment

journal homepage: www.elsevier.com/locate/agre



Sown wildflower areas to enhance spiders in arable fields

Martin H. Schmidt-Entling^a, Jolanda Döbeli

University of Bern, Community Ecology, Baltzerstr. 6, CH-3012 Bern, Switzerland

ELSEVIER

Mountain grassland biodiversity: Impact of site conditions versus management type

D. Kampmann^{a,b,*}, F. Herzog^a, Ph. Jeanneret^a, W. Konold^a, M. Peter^a, T. Walter^a, O. Wild^a, A. Lüscher^a

Available online at www.sciencedirect.com

ScienceDirect

Nature Conservation

www.elsevier.de/jnc

ELSEVIER

Loss of habitat specialists despite conservation management in fen remnants 1995–2006

Ariel Bergamini^{a,*}, Markus Peintinger^b, Sima Fakheran^b, Hossein Moradi^b, Bernhard Schmid^b, Jasmin Joshi^b

Available online at www.sciencedirect.com

ScienceDirect

Perspectives in Plant Ecology, Evolution and Systematics 11 (2009) 65-79

Perspectives in Plant Ecology, Evolution and Systematics

www.elsevier.de/ppes



Monitoring and REPS

- Less than 20 studies that have directly look at environmental impacts of REPS (since 1994)
- McCarthy report – commented on need to demonstrate value-for-money



Monitoring studies and REPS

Overall comments:

Most studies only look at a single measure or environmental issue, and lack of studies at national scale - prevents scheme-scale conclusions.

Distinct lack of studies that compare change over time.

Most studies (especially biodiversity) refer to earlier REPS schemes.

Relatively little attention to biodiversity - no studies of multiple new measures and options in REPS 3 & 4.



Monitoring projects and REPS

Looking to the future:

National-scale project to assessment priority measures (important objectives and/or high expenditure) estimated to cost about €3.5 million. ~12 people for 4 years sampling about 1500 farms.

Benefits of monitoring:

- Identify areas for improvement, and make corrections where needed
- Demonstrate effectiveness where it occurs
- Assure REPS farmers that their activities make a difference
- Society (taxpayers) - confidence in value-for-money

Overall, better ensures long-term justification for expenditure on payments for environmental benefits.



5. Increase consumer awareness and demand.

- Measure environmental benefits and communicate regularly, open days for public awareness and engagement,
- REPS brand
- Helps ensure future public support for REPS



Environmental Stewardship Update

Farming for a better environment

June 09 Issue 4

Farmers champion Environmental Stewardship at this year's Shows



Hugo James, an arable farmer from Dorset, speaks to fellow farmers at the Grasslands UK event on 7 May

Natural England's Chief Executive, Helen Phillips recently re-emphasised that agri-environment schemes must go hand in hand with viable commercial agriculture. Natural England knows that Environmental Stewardship (ES) is critical to making that partnership work for farm businesses.

We are taking this message out to farmers, and asking for feedback, at this year's agricultural trade shows. Grasslands UK and Beef Expo in May, and Cereals in June, have been a real success. The main attraction at our marquee proved to be the former champions who demonstrated how they make ES work for their farm business. They are passionate about ES and make great advocates when discussing the scheme with their peers.

For more news about the shows turn to page 3.

Pioneering project aims to turn around conditions for the 'Arable Six'



Farmers and conservationists joined forces to help increase the population of six nationally important arable bird species - grey partridge, lewis's bunting, yellow-legged green sparrow and corn bunting - at the launch of a pioneering project on 30 April. The initiative will help those species of birds, plants and mammals associated with arable farmland through implementation of wildlife-friendly land management practices using the Environmental Stewardship scheme.

Ian Boyd, one of the first farmers to join the project in the Cotswolds, said: "I am excited about the pioneering approach of the Farmland Bird Project and it should appeal to many other farmers in this area. It would be great to lead the country with a project of this kind."

[Click here](#) for more information. The South West Farmland Bird Initiative is one of several such projects that have recently started in different parts of England - good news for farmland birds and farming!

Also in this issue

- [AE Facts and figures](#)
- [Spotlight: ELS, cereals and UELs, HLS funding updates](#)
- [Focus on ES at Trade Shows](#)
- [South West Farmland Bird Initiative](#)
- [Notice Board](#)

ES Update is our regular newsletter for organisations which represent the interests of farmers and land managers, and others engaged in AE schemes. Through it we let you know about changes to schemes, provide you with facts and figures and highlight good practice, success stories and emerging challenges.



ASSOCIATION OF RURAL DEVELOPMENT AGENTS

One Million Children Outdoors Programme

Farmers help school kids get back to nature

Natural England is encouraging those farmers already involved in Educational Access visits to get even more school-age children out onto their farms, but also needs new farmers to consider the option and take advantage of the new funding that's available.

Farmers are key players in an ambitious new 3-year plan to bring more than a million school children into contact with the natural world. All visits include learning about food production and how farming works, and increasingly farms are being used as 'open air classrooms', with teachers able to cover many areas of the National Curriculum within a unique and inspiring environment.




People expect access to the countryside and urban green spaces for enjoyment as part of their civic rights and one of Defra's key outcomes is:

People enjoy, understand and care for the natural environment

Over 1 billion visits are made to the English countryside every year, involving a wide range of recreational opportunities, contributing approximately £11 billion to the rural economy. Research demonstrates the health and well-being benefits of regular exercise and benefits of access to open space.



ASSOCIATION OF RURAL DEVELOPMENT AGENTS

Conclusions

- Opportunities for innovation
 - Differentiation and prioritisation of objectives
 - Spatial targeting (HNV, rare species, local features)
 - Evidence-based measures
 - Use of expert panels to assist design and assessment
 - Research to ensure effectiveness of measures before implementation
 - Use of pilot schemes
 - Outcome based payments and group proposals
 - Potential for increased inter-agency co-operation to combine knowledge and resources to tackle combination of biodiversity, gaseous emissions, water & energy
- Knowledge gaps require time to be filled
 - Improved anticipation of information needs
- Monitoring
 - regulatory requirement, learning to improve, demonstrate benefits to society and farmers
 - investment in the future design and security of future budget



Acknowledgements

- Sharon Parr, Grace O'Donovan, David Bourke, Isabelle Kurz, Daire Ó'hUallacháin, Catherine Keena, Tim Hyde, Mark Gibson, Caitriona Carlin, Mike Gormally, Matthew Jebb (National Botanic Gardens).
- Research Stimulus Fund, Dept. of Agriculture, Fisheries and Food
- EU AE-Footprint project
- EU ITAES project

