

ENCLOSED FARMLAND

DEFINITION

With the exception of the large semi-natural habitats such as Braunton Burrows within the core area, the majority of the area covered by the Biosphere Reserve is predominantly a rural landscape dominated by agriculture. Farming has produced the main features of the Biosphere Reserve's countryside, such as the network of thick hedgerows surrounding fields that are in permanent pasturage or arable production.

Much of the biodiversity interest on farmland is to be found in arable field margins, unimproved grasslands, ponds and species-rich hedgerows. Species-rich hedgerows and the wet acid grasslands of the Culm measures are dealt with in separate habitat action plans, so this action plan focuses on the margins of arable fields, ponds and species-rich neutral grasslands. These align with three of the priority habitats in the UK Biodiversity Action Plan – 'Arable Field Margins' (previously called 'Cereal Field Margins'), 'Ponds' and 'Lowland Meadows'.

The term "Arable Field Margin" refers to strips of land lying between the crop and the field boundary, and extending for a limited distance into the crop, which can be managed to create conditions which benefit key farmland species. These margins provide nesting and feeding sites for game birds and some passerines. Many species of butterflies, grasshoppers and beneficial insects are associated with such sites. Even more dependent on cereal margins are the rare arable flowers. Arable wild flowers are of conservation concern because of enormous national declines in their distribution and abundance. Overall, some 300 species of plants can occur in arable fields.

Current knowledge about the wildlife benefits of suitably managed arable margins, suggests that this is largely limited to cereal crops. However, there are wildlife benefits associated with other arable crops such as root crops. And it may well be that other crop margins will be seen to yield similar benefits for biodiversity. Cereal fields represent about 70% of the arable land in the Biosphere Reserve.

Ponds are a traditional feature of the rural landscape. They were created for a wide variety of reasons ranging from stock watering places as well as fish ponds on big estates. Different types of ponds support different kinds of wildlife, so in addition to retaining ponds it is also important to retain variation in ponds types.

Enclosed Farmland



Of the many habitats that owe their existence largely to the way mankind has managed the land, few are more attractive than unimproved neutral grasslands. These are meadows and pastures that occur on soils which are neutral, and which have not been subject to any degree of agricultural intensification e.g. fertiliser input and herbicide and insecticide use. These grasslands generally support a diverse flora and, as a result, a rich associated community of insect life which in turn provides food sources for a wide range of small mammals and birds. The few surviving traditional hay-meadows are more visually striking, but purely grazed pastures can be equally rich.

DISTRIBUTION

Agricultural Census Data for 2007 suggests that of the 178, 728ha of farmed land within the Biosphere Reserve, roughly 10% (18,463 ha) of this land is under arable crops (excluding maize). The total area under cereals is 15, 011 ha. Assuming an average 6m margin, this would provide some 430ha of cereal margin habitat – probably more, since this estimate is based on the national average field size of 12ha. Clearly this is a significant biodiversity resource.

A unique feature within the Biosphere Reserve is Braunton “Great Field” which is a hedgeless tract of arable land, some 146 ha in extent, lying between Braunton village on the west and the reclaimed marshlands of the River Taw. The Great Field is divided into some 200 strips varying in size from 0.3 ha to 2.4 ha and was originally cultivated under an “Open Field” system. It dates back to at least 1324, being mentioned in the ‘Calendar of Close Rolls’ 1323-7. It is thought to be much older and probably results from a major reorganisation of Braunton’s agriculture initiated by Glastonbury Abbey during a fairly brief period when the Abbey had the manor during the tenth century. There is also good reason to suppose that there were many other open field systems in other parts of northern Devon. Although modern agricultural practices have led to the widespread replacement of semi natural plant communities by commercially important and cultivated species, various features of the farmed landscape remain of vital importance to Biosphere Reserve’s wildlife interest.

Unimproved neutral grasslands are a product of traditional farming practices over centuries, but survive only where the land is unimproved, having received little or no inputs of artificial fertilisers or herbicides, nor having been re-seeded, nor ploughed in recent years. Today the vast majority of grassland in Biosphere Reserve area has been ‘improved’ by these means. What was once an abundant habitat in the area is now very restricted, and what remains continues to be lost or degraded.

Most neutral grasslands in the Biosphere Reserve persist as small pockets situated on steep hillside slopes or within small valleys, where conversion to higher-grade pasture or other use has been impractical.

In the past all farms would have had ponds for stock to drink from. Currently there is no record of how many of these still remain.

Enclosed Farmland

LOCATIONS

Current distribution data for ponds and unimproved neutral grasslands is poor. Ordnance survey maps show historic locations for some ponds. The majority of unimproved neutral grasslands occur in small fragments or in mosaics with other habitat types such as Culm Grassland.

Arable land, by its nature tends to be within the more fertile areas of the Biosphere Reserve.

CHARACTERISTIC WILDLIFE

Mammals: brown hare, bats

Birds: skylark, grey partridge, barn owl, green woodpecker

Reptiles: adder, grass snake, common lizard

Amphibians: frogs, common toad, newts

Invertebrates: dark green fritillary, dingy skipper, wood white, aquatic invertebrates

Vascular plants: corn buttercup, vetches, poppies (arable field margins), black knapweed, betony, creeping cinquefoil, rough hawkbit, pignut, meadow vetchling, orchids, yellow rattle (Unimproved neutral grasslands), eyebright, tormentil, heath bedstraw, devil's bit scabious, common milkwort, lousewort, trailing St John's-wort (unimproved dry acid grassland).

THREATS

Arable farming now commonly incorporates a number of standard measures aimed at greater efficiency, and which lead inevitably to a decline in wildlife value.

- The use of herbicides to ensure a weed-free monoculture has not only affected arable plants directly, but also birds (such as linnet and turtle dove) that rely on them as a source of seeds. Similarly summer use of insecticides can drastically reduce the invertebrates available for the feeding of young birds.

- The shift to winter cropping has resulted in the associated loss of winter stubbles, and this has been linked to the decline in numbers of several farmland birds.
- The reduction in the undersown area is also associated with the shift to winter cropping. Undersown crops are important for overwintering invertebrates, such as sawflies, which are a vital food source for some birds (including grey partridge).

Water quality is critical for all pond types and unpolluted ponds have the best wildlife. Ponds have declined in number due to drainage and reclamation, but also through neglect, leading to the natural process of silting up.

Many of Biosphere Reserve's unimproved neutral grasslands occur on relatively dry land and some have been lost to more intensive management, whilst others have been lost due to lack of management and subsequent scrub encroachment.

SITE STATUS

There are two Site of Special Scientific Interest, based on Lowland Meadow sub-category of unimproved neutral grassland

Bradiford Valley SSSI (2.54 ha in Favourable Condition)

Chapel Hill SSSI (0.22 ha Unfavourable Recovering Condition)

Also, Beckland Valley, within Marsland to Clovelly SSSI

There are a number of County Wildlife Sites that contain unimproved neutral grasslands (listed as "unimproved neutral grassland", "unimproved grassland" or "species-rich grassland").

Peppercombe Valley (SS32/026)

Gammaton Reservoir (SS42/093)

South Harepath (SS51/079)

Langtree Common (SS41/056)

Stowford Moor (SS41/016)

Thorne Moor (N) (SS41/057)

Venn Farm (SS31/075)

Linton Hills and Putshole, Whiteway & Henstridge Woods (SS21/031)

Meshaw Moor (SS71/102)

Great Torrington Commons (SS41/014)

Enclosed Farmland

CURRENT ACTION

Arable field margins ponds and unimproved neutral grasslands are targeted in Environmental Stewardship. Arable field margins are also being managed in some areas, either voluntarily or with Government support, as 'grass wildlife strips' or undersown conservation headlands.

Environmental Stewardship Scheme has the greatest potential to influence the management of associated enclosed farmland habitats. It will be important that funds are effectively targeted within the Biosphere Reserve area to ensure that these habitats are conserved.

Devon Wildlife Trust's Working Wetlands Project will contribute to delivery of actions for ponds and unimproved neutral grassland where these habitats occur within the project's 3 priority areas and are within Culm Grassland habitat mosaics/systems.



LINKS TO OTHER BIODIVERSITY ACTION PLANS

	UK BAP	SW BAP	Devon BAP	Exmoor BAP
Habitat Action Plans	Arable Field Margins Lowland Meadows Ponds Lowland dry acid grassland	Arable Farmland Species Rich Hedges Unimproved neutral grassland	Flower-rich Meadows and Pastures Parkland and wood pasture Species-rich hedges	Neutral Grassland
Species Action Plans	Purple ramping-fumitory, Pennyroyal Grey Partridge Greater horseshoe bat, Skylark, Common linnet		Brown hare Barn owl Curlew Greater horseshoe bat	Ballerina waxcap

OBJECTIVES

1 To quantify and classify biodiversity-rich farmland.

Targets

- To accurately establish the location, extent and quality of unimproved neutral grassland within the Biosphere Reserve
- To accurately establish the location, extent and quality of ponds within the Biosphere Reserve

2 To maintain and improve the biodiversity of Arable Field Margins.

Targets⁴

- *To create 150 ha of Arable Field Margins within the next 5 years*

3 To maintain, restore and where appropriate recreate unimproved neutral grassland.

Targets - maintenance

- No absolute loss of larger grassland sites (>1 ha)
- No net loss of smaller grassland sites (<1ha)
- Ensure all remaining unimproved neutral grassland sites greater than 0.5 hectares in size are secured under sustainable management regimes, which perpetuate the species they support

Targets⁴ – restoration

- *75 ha of unimproved neutral grassland restored from degraded or semi-improved land by 2015*

Targets⁴ – recreation

- *10 ha of unimproved neutral grassland recreated in appropriate locations by 2015*

4 To foster greater understanding of biodiversity potential by landowners and managers of farmland.

Targets

- *Access and interpretation facilities established and promoted on a Nature Reserve*

⁴targets derived SW Nature Map – see Annex 1 attached

	ACTION	TARGET	LEAD DELIVERER	PARTNERS	Obj. No.
A	Policy and Legislation				
1	Ensure that Agri-Environment Scheme support is available for extensively managed agricultural land.	Ongoing	NE	FWAG, DWT	2,3
2	Examine use of Section 106 Agreements / planning conditions and management agreements to safeguard and enhance biodiversity.	Ongoing	TDC, NDC	DCC	2,3
3	Ensure unimproved neutral grasslands are recognised in the planning framework for the ecosystem services they provide and as a positive element for rural economic development.	County Wildlife Sites identified and protected	NDC, TDC, DCC,		2
4	Provide relevant organisations (Grasslands Trust, Natural England) with data on the loss of unimproved neutral grasslands to monitor effectiveness of the Environmental Impact Assessment Regulations 2006.	Co-ordinate an annual report to the Grassland Trust and NE.	DWT, NE		1
B	Site Safeguard and Management				
1	Encourage inclusion of arable field margins in agri-environment agreements	150 ha maintained in new agreements by 2015	NE	DWT , FWAG, NDABS	2
2	Encourage inclusion of existing / potential species-rich neutral grassland in agri-environment agreements.	250 ha maintained within new agri-environment schemes by 2015	NE	DWT , FWAG, NDABS	3

	ACTION	TARGET	LEAD DELIVERER	PARTNERS	Obj. No.
3	Expand the network of grassland sites by targeting restoration in priority areas with the emphasis on linking and buffering existing sites.	2 hectares of unimproved neutral grassland to be recreated per year.	NE	DWT, FWAG, NDABS	3
4	Target help and advice to enclosed farmland SSSIs	All SSSI enclosed farmland in favourable condition by 2015	NE		2
C Advisory					
1	Ensure that specific and prioritised management advice is offered to farmers with priority species / habitats	County Wildlife Site owners to be offered management advice	FWAG, DWT NDABS,	NE	2,3
2	Promote 'Best Practice' through case studies and coordinated demonstrations.	One Best Practice event to be held by 2011	NDABS	NE, FWAG, DWT	4
D Research and Monitoring					
1	Re-survey County Wildlife Sites containing Lowland Meadow habitat and update inventory	Survey completed by 2013	DBRC	NDC, TDC	1
2	Survey for new grassland sites and monitor the condition of existing sites. Make results available for key partners	By 2013	DBRC, DWT	NE, TDC, NDC, NDABS	1

	ACTION	TARGET	LEAD DELIVERER	PARTNERS	Obj. No.
3	Survey associated wildlife-rich habitats to inform strategic decision making on the reconnection of key semi-natural vegetation communities.	18 Parish Biodiversity Audits drafted by 2011	DWT, DCC		1,4
E Communication and Publicity					
1	Raise awareness of the importance of arable margins for wildlife.	Organise one public event by 2013	FWAG	DWT	4
2	Communicate biodiversity objectives and initiatives to landowners/farmers through newsletters.	Regular newsletters to owners of unimproved neutral grasslands within Culm sites	DWT	FWAG, NE	4
3	Increase public awareness of the value of unimproved neutral grasslands through interpretation, open days, publications, articles and other appropriate media.	Organise one public event by 2012	DWT	NDABS	4