

Rhôs pasture

1. A Definition

'Rhôs' is a Welsh word which means 'a wet, often heathy grazing pasture'. Such wet pastures are - or were - so much a part of the Welsh landscape to deserve their own name, but in the south west too, especially across northern Devon and north east Cornwall, up onto the sides of the moors, they were once a common sight, most commonly referred to as 'moors'. Nationally, however, the word Rhôs has come to be used to describe this type of unimproved pasture, which is found in several areas up and down the Atlantic-influenced western seaboard of Britain and north-west Europe.

Rhôs pasture is a very special and distinguishing part of Devon's natural landscape. It is defined by wetness - the marriage of a damp climate, mild southerly conditions and saturated, ill-draining acid soils. Where those conditions combine with low-intensity grazing they produce the characteristic mixture of wet heath, rush pasture, fen meadow, mire and scrub, alive with colour and movement in summer, windswept and inhospitable in winter.

There are three main concentrations of Rhôs pasture in Devon. Over the Carboniferous shales and sandstones (known historically as 'Culm Measures') of mid and north-west Devon and north-east Cornwall the habitat is known as 'Culm Grassland' and occurs as isolated collections of small fields between thick hedges or as larger expanses of common grazing; on the edges of Dartmoor Rhôs pasture occurs within enclosed valley systems; and on the Blackdown Hills the same vegetation occurs in places around the spring line where streams rise.



2. Why an Action Plan?

Rhôs pasture is arguably Devon's most important habitat, in the sense that the County contains a particularly large proportion of the UK resource (estimated as 80% of the extent of the habitat in England, or 8% of that in the UK as a whole), and the County's Rhôs pasture sites support some of Devon's most threatened species.

Rhôs pasture has been a priority for conservation attention for some years, and the efforts of several bodies have succeeded in securing a large number of remaining examples of the habitat in protective management. The Culm Grasslands in particular have been the focus of a concerted and often innovative conservation strategy which has achieved much. Indeed, the use of term 'Culm' has become synonymous with the area of outcrop of Carboniferous shales and sandstones of mid and north-west Devon where this habitat is well developed.

However Rhôs pasture remains vulnerable, needing further protection and sympathetic management. Given its intimate connection with the fate of livestock farming, and the need for the predominantly isolated examples of the habitat to be made more sustainable by expansion and connection, there is a clear need for a strategic plan for the habitat into the next century.

Rhôs pasture is one of the key habitats given most detailed treatment in the UK Biodiversity Steering Group Report, and the costed Action Plan (in the UKBAP it is called 'purple moor-grass and rush pasture') set out in that document is intended to give a strategic lead to Rhôs conservation nationwide. It is especially important that Rhôs pasture conservation in Devon, both in terms of past experience and future needs, is a prominent part of that national framework, and a Devon Biodiversity Action Plan for the habitat can provide the means to achieve this.

3. Characteristic wildlife

Rhôs pasture is characterised most particularly by purple moor grass, the tussocky deciduous grass which gives Rhôs its distinctive pale brown colour in winter, and for which it is sometimes locally known as the 'white lands' (e.g. Whiteleigh Meadow - white meadow). On most Rhôs sites this grass shares prominence with rushes, particularly sharp-flowered rush, together with patches of willow and birch scrub.

Amongst this vegetation Rhôs pasture supports a wide variety of colourful plants, such as meadow thistle, devil's-bit scabious, heath spotted orchid, bog asphodel, creeping willow, meadowsweet, greater bird's-foot trefoil, water mint and a variety of sedges. Less common are plants like round-leaved sundew, pale butterwort and lesser butterfly orchid. Bog mosses are

also frequent and open pools support marsh St John's-wort, bogbean, marsh pennywort, bog pondweed and other aquatic plants.

This rich variety of flowering plants supports an equally rich insect fauna. Butterflies are especially prominent, with species like marbled white and small pearl-bordered fritillary being quite common, despite their scarcity in the countryside as a whole. Dragonflies and damselflies are frequent, with keeled skimmer and golden-ringed dragonfly being especially prominent.

Typical birds of Rhôs pasture include breeding and wintering snipe, barn owl and short-eared owl, reed bunting, willow tit, grasshopper warbler and woodcock. Common countryside animals like fox and deer find particular shelter on Rhôs pasture, while many sites are closely associated with watercourses supporting otter populations. The scrubby margins of many sites support dormice.

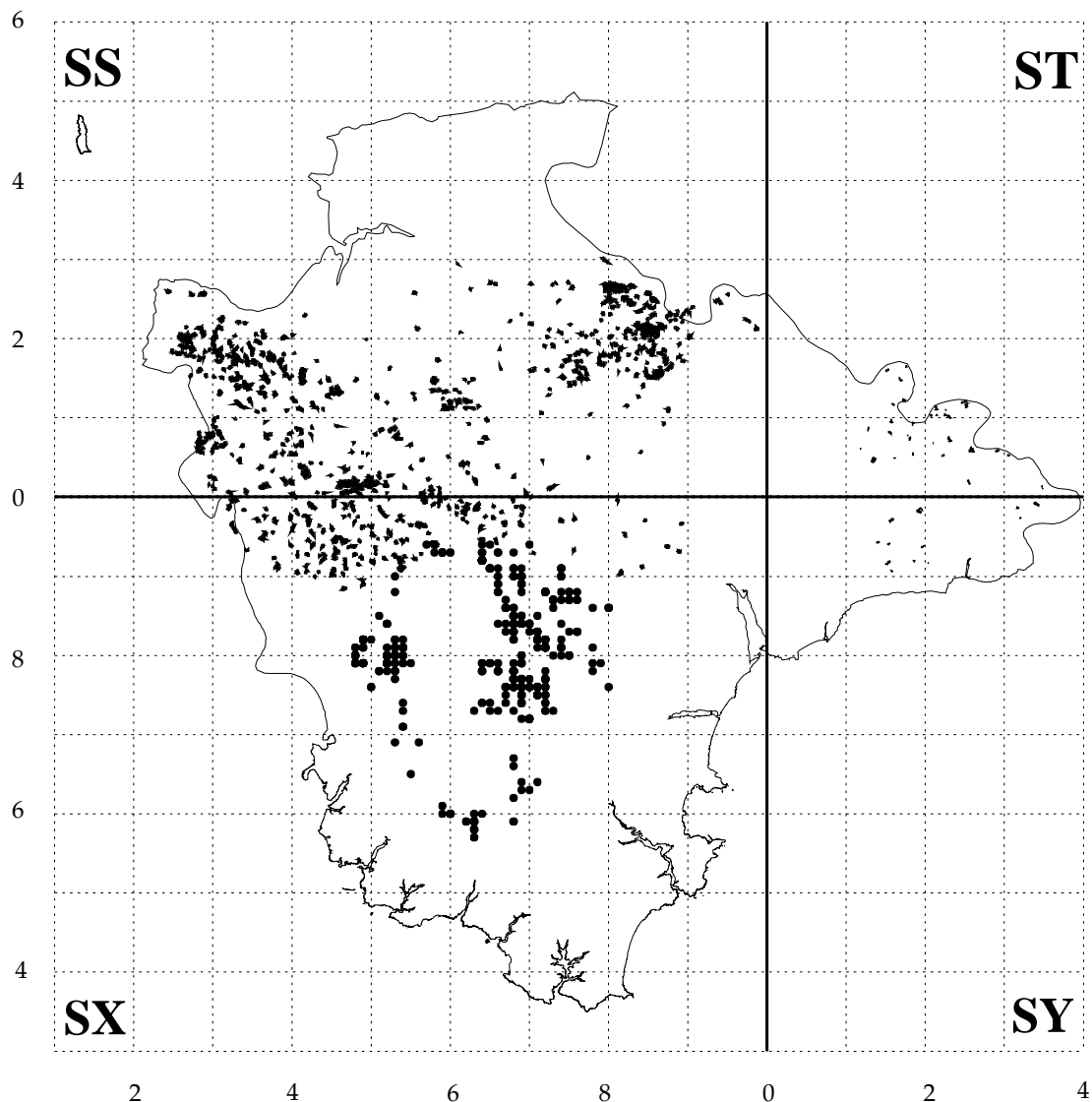
4. Special species

The following species of conservation concern are associated with Rhôs pasture in Devon. Species marked (p) are 'Species of Principal Importance in England' (NERC Act, S.41).



- **Mammals**: Dormouse (p), otter (p)
- **Birds**: Curlew (p), barn owl, snipe, reed bunting (p)
- **Butterflies**: Marsh fritillary (p), brown hairstreak (p), small pearl-bordered fritillary (p)
- **Moths**: Narrow-bordered bee hawk-moth (p), double line
- **Snails**: Mud snail *Lymnaea glabra* (p)
- **Other invertebrates**: Southern damselfly (p), keeled skimmer, raft spider, and a number of nationally notable or rare flies, planthoppers and beetles, including at least two Red Data Book species.
- **Vascular plants**: Wavy-leaved St John's-wort, whorled caraway, cranberry, lesser butterfly orchid (p)
- **Bryophytes**: *Climacium dendroides*, *Tricocolea toncentella*, *Breutelia chrysocoma*

5. Rhôs pasture distribution in Devon



10 Km square grid showing main areas of Rhôs Pasture

(Data supplied by Devon Biodiversity Records Centre, Dartmoor National Park Authority. Not updated since the 1998 version)

6. Current extent (1998)

Devon contains three major concentrations of Rhôs pasture: some 4000 hectares are documented over the Carboniferous 'Culm' of mid and north-west Devon, amongst over 530 sites; about 1100 hectares occur on Dartmoor, amongst some 380 sites; and approximately 300 hectares are known on the Blackdown Hills, amongst some 90 sites.

The total UK resource of all Rhôs pasture in England, Wales, Scotland and Northern Ireland is estimated as amounting to 56,000 hectares (in the UK Biodiversity Steering Group Report), though this figure should perhaps be

treated with caution given that survey work has not been as extensive in some areas as it has in Devon.

Internationally, the extent of Rhôs pasture is poorly documented, but significant areas are known to occur in the Republic of Ireland and the western seaboard of Brittany, north-west Spain, Portugal and Normandy.

7. Current problems for Rhôs pasture in Devon (1998)

Agricultural improvements: More than 80% of the loss of Rhôs pasture on the 'Culm' between 1984 and 1991 was due to agricultural improvement of land by drainage, ploughing, reseeding and fertiliser application. Further losses to the same cause continue though the rate of loss has slowed substantially.

Low market prices for finished beef animals and falling milk prices, coupled with high land prices and input costs have provided an overwhelming pressure on Devon's farmers to intensify grassland management. This pressure to intensify has been supported historically by CAP price support, although this has been mitigated since 1992 by the introduction of sheep and suckler cow headage payments, linked to quotas and by an extensification top-up paid on the suckler cow and beef payments where stocking levels are below a prescribed level.

Until March 1996, a demand for more slowly matured beef provided economic support to extensive systems. However, following the BSE crisis, all beef animals have to be finished under 30 months old, undermining the viability of extensive grazing systems.

Afforestation: Some 3% of Rhôs pasture on the 'Culm' was lost to afforestation during the 1980s, though considerably more succumbed to forestry in previous decades, with most of the large plantations of north west Devon having been originally established on this type of vegetation. Today, afforestation, possibly funded under the Woodland Grant Scheme, together with tree planting along streams and rivers to stabilise banks as part of fisheries management practice, may still lead to a loss of Rhôs pasture, though the Forestry Authority's policy is not knowingly to grant aid such damaging afforestation.

Abandonment and neglect: Where grazing has ceased or is insufficient, rank areas of Rhôs pasture become scrubbed up and succeed to woodland. This has caused the almost irretrievable loss of a number of sites, with many others having partially deteriorated.

Management inappropriate for conservation objectives: Rhôs pasture may be burned too often, overgrazed, grazed at the wrong time of year or for too long a period. Livestock also graze selectively, with sheep, ponies

and some types of cattle only choosing more palatable parts of the sward which are left at a uniformly short height, leaving rank and rushy areas ungrazed. Within these short swards a wider variety of plants may thrive, but invertebrates lose valuable winter shelter and nectar sources.

Fragmentation and isolation of sites: The above factors mean that most Rhôs pasture sites are separated and surrounded by improved agricultural land or forestry, often making their continued management by traditional means impractical, and preventing free movement and colonisation by less mobile species.

Pond creation: The poorly drained ground on which Rhôs pasture occurs is well-suited to the establishment of fishing lakes for commercial or recreational purposes, and a number of sites have been lost to this change.

Mineral workings and waste disposal: On the 'Culm' there has been a loss of sites to tipping and extraction, for example at Woolladon (tipping) and Ash Moor (extraction licence) at Merton. Although few working mineral extraction sites now remain on the 'Culm', the poorly draining mudrock- dominated bedrock and clay-rich soils and superficial deposits can be suitable for the establishment of landfill sites. West of Exeter, a number of small valleys on the Culm have been lost to such operations.

8. Recent changes in extent (1998)

Rhôs pasture is one of the few habitats in Devon for which comparative survey information has been produced to demonstrate losses over a given period. The survey of Culm Grassland carried out by DWT in the early 1990s indicated that between 1984 and 1991, some 65% of the Culm Grassland area present in 1984 and outside of protected areas was lost. 80% of this loss was due to agricultural improvement, the rest due to afforestation, neglect or development.

Survey work by Dartmoor National Park Authority has shown that on Dartmoor, a 2% loss of sites occurred between 1984 and 1995, with a further 17% down-graded due to agricultural improvements and 8% down-graded due to scrub encroachment.

9. Current site protection (1998)

The 'Culm': 26 sites containing Rhôs pasture, covering 1081 hectares, are Sites of Special Scientific Interest. One of these, Dunsdon Farm, is a National Nature Reserve. 8 of these SSSIs are proposed as a Special Area of Conservation, notified for '*Molinia* (purple moor grass) meadows' which are listed on Annex 1 of the EC Habitats Directive. 6 Culm Grassland sites are now DWT Nature Reserves, covering some 200 hectares.

Dartmoor: Rhôs pasture is represented by small areas within 5 SSSIs on Dartmoor. 44 sites covering 318 hectares are covered by management agreements within DNPA.

Blackdowns Hills: 4 SSSIs on the Devon Blackdown Hills largely or partly comprise Rhôs pasture: Hense Moor, Ashculm Turbary, Southey and Gotleigh Moor and Blackdown & Sampford Commons. Two Devon Wildlife Trust Nature Reserves on the Blackdowns comprise Rhôs pasture.

10. Biodiversity planning context

National BAP Context

Habitat of principal importance in England (NERC Act, S.41):

- Purple moor-grass and rush pastures

Current national BAP targets can be viewed on the [Biodiversity Action Reporting System](#) (BARS).

Regional Plan Context

Regional targets for priority BAP habitats can be found on the website of [Biodiversity South West](#).

Associated Action Plans within the Devon BAP:

- Lowland Heath
- Periglacial landscapes
- Hedgerows
- Alder/willow wet woodland
- Otter
- Dormouse
- Barn owl
- Curlew
- Marsh fritillary
- Southern damselfly

11. Biodiversity objectives and targets for Rhôs pasture in Devon

Please note: objectives and targets have not yet been reviewed.

Objective 1

To ensure there is no further loss of Rhôs pasture within its three major zones in Devon.

Targets:

- No absolute loss of larger Rhôs pasture sites on the Culm, Dartmoor or Blackdowns.
- No net loss of smaller Rhôs pasture sites in these areas (but no loss of *any* SSSI site).

Objective 2

To ensure all remaining Rhôs pasture sites greater than 0.5 hectares in size are secured under sustainable management regimes, which perpetuate the species they support.

Targets:

- Stewardship or equivalent scheme to remain available and targeted on Culm Grassland throughout period of this Plan.
- Management agreements through DNP and/or ESA to remain available and targeted on Dartmoor Rhôs pasture throughout period of this Plan.
- Management agreements through ESA, Stewardship or equivalent to remain available, tailored & targeted on Blackdowns Rhôs pasture throughout period of this Plan.
- Resourcing and staffing for advisory services to be available in these three areas throughout period of this Plan.
- 80% of the combined total area of documented Rhôs pasture on the Culm, Dartmoor and Blackdowns to be entered into protective management schemes by 2005.

Objective 3

To expand the area of Rhôs pasture habitat by appropriate means, in order to buffer, link and expand existing sites.

Targets:

- A strategic prioritisation of land for Rhôs pasture restoration to be produced for areas of Carboniferous shale and sandstone outcrop in mid and north-west Devon by end of 1999, focusing especially on the Torridge/Tamar headwaters Prime Biodiversity Area.
- Appropriate strategic assessment made of potential for Rhôs pasture restoration on Dartmoor and Blackdowns by end of 1999, and target set for 2010.
- 200 hectares of degraded or semi-improved land on appropriate sites identified on the Culm, restored to a state comparable with unimproved Rhôs, by 2010.
- 50 hectares (or as amended by strategic assessment) of degraded or semi-improved land on Dartmoor, on appropriate sites, restored to a state comparable with unimproved Rhôs pasture, by 2010.
- 50 hectares (or as amended by strategic assessment) of Rhôs pasture restored on appropriate sites on the Blackdowns by 2010.

Objective 4

To establish positive links between the sustainable management of Rhôs pasture and the economic diversification of the areas in which it occurs, and to foster greater public awareness and enjoyment of this habitat and its wildlife.

Targets:

- Green Tourism Network pilot projects established on the Culm and Dartmoor by 2000.
- Access and interpretation facilities, fully promoted, established on all Rhôs pasture Nature Reserves on the Culm, Dartmoor and Blackdowns by 2001.

12. Wider benefits from pursuing these objectives

The pursuit of the objectives and targets set out in this plan will not only benefit the biodiversity of Rhôs pasture. Conservation has wider benefits and advantages for society, by providing a resource which is the basis of many aspects of the local economy, and by adding to the quality of life of the people of Devon in ways which are beyond financial measure. Thus enhancing the interests of biodiversity will also enhance the interests of society as a whole.

Rhôs pasture has tended to be regarded as a block to economic progress in the countryside, and in terms of the accepted definition of productive dairy and beef farming this is perhaps true. However, the combined effects of the recent misfortune of the beef industry following the BSE scare, Foot and Mouth disease in 2001, and the prospect of CAP reform highlights the need for the areas of Devon which depend upon these industries to seek ways of diversifying their economic activities. When regarded in the context of new opportunities for income generation in the countryside, Rhôs pasture and other habitats begin to appear less as a restriction on progress, and more as a positive opportunity. Rhôs pasture offers such positive potential in two ways:

- The diversity of wildlife which Rhôs pasture supports (barn owls, butterflies, otters, etc.) is a source of great interest to many people who choose to visit Devon on holiday. However, experiencing that wildlife requires access to sites, guidance as to what to look for and how to see it, and facilities for staying within the area. Thus if carefully packaged and marketed, Rhôs pasture offers the basis for sustainable green tourism, linked to farm accommodation and other services, as an alternative source of rural income.
- The growing public demand for high quality, healthily produced meat, reared organically or through relatively extensive production systems, makes Rhôs pasture a greater potential asset for marketing such high quality product. The fact that meat has been reared on Rhôs pasture could be used as a valuable selling point (brand name could be 'Rhôs Beef!'), commanding a substantial premium, and thus its retention and possible expansion within the farm holding begins to make real economic sense.

13. Priority or indicative actions for Rhôs pasture in Devon

Action	Key Partners
1. Ensure that all current, and any new sites found in future, are properly managed by Rhôs pasture owners and tenants. Preferably by management agreements through WES, agri-environment schemes and other funding sources.	Defra; DWT; FWAG; DNPA; NE
2. Where possible expand the network of Rhôs pasture sites by targeting restoration in priority areas with an emphasis on linking and buffering existing Rhôs pasture.	Defra; DWT; DNPA; FWAG; NE
3. Ensure Rhôs pasture is recognised in county and regional strategies, forestry plans, development (including fishing lakes), Local Development Frameworks and initiatives for rural economic development as a valuable wildlife resource and as a positive element for future economic diversification.	GOSW; DCC; CA; Defra; FA; NE; DWT; LAs; SWF
4. Provide advise to landowners and tenants on Rhôs pasture and its management (including funding sources) through face to face contact, newsletters, written management information, farm events and reports on other pilot initiatives (e.g. green tourism).	Defra; DWT; FWAG; DNPA; NE
5. Survey for new Rhôs pasture sites and monitor the condition of existing sites. Make the results available to key partners.	Defra; NE; DNPA; DWT; DBRC
6. Promote research on Rhôs pasture sites including integrated farming systems, environmental buffering of water courses, effects of different management regimes and restoration techniques.	Defra; NE; DNPA; DWT; BDS; IGER; BC; Universities
7. Increase public awareness of the value of Rhôs pastures as key wildlife sites by using interpretation, open days, publications, articles and other appropriate media.	DWT; CCMS; DNPA; NE; NFU; CLA; LAs

Rhôs Pasture Action Plan Champion: Devon Wildlife Trust

Abbreviations used in text and table

BC	Butterfly Conservation (Devon Branch)
BDS	British Dragonfly Society (Devon Branch)
CA	Countryside Agency
CCMS	Coast and Countryside Management Services of Local Authorities
CLA	Country Land & Business Association
DBRC	Devon Biodiversity Records Centre
DEFRA	Department of Environment Food and Rural Affairs
DNPA	Dartmoor National Park Authority
DWT	Devon Wildlife Trust
EA	Environment Agency
FA	Forestry Authority
FWAG	Farming & Wildlife Advisory Group
GOSW	Government Office South West
HCS	Heritage Coast Services
IGER	Institute of Grassland and Environmental Research
LAs	Local Authorities
NE	Natural England
NFU	National Farmers Union
NPAs	National Park Authorities

