

A strategy for the creation of
biodiverse meadow grassland in
arable areas throughout the UK at
minimal cost to the public purse

July 10th 2003

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Summary

The long-term decline of meadow grassland throughout the UK over the last fifty years has led to a loss of one of the most biodiverse farmland ecosystems. Meadows now have little economic or practical rationale in modern farming systems and some commentators suggest that their recreation could take as long as half a century.

Attempts to stem the decline through arable to grassland reversion schemes have been only marginally successful. These have reached the point where farmers are reluctant to commit additional land for fear of a number of factors.

The introduction of set aside in 1993 has allowed arable land to be diverted to alternate uses that have included the sowing of permanent green cover crops. However, the rules governing the use of set aside have restricted the amount of biodiversity that can be created.

Ongoing trial work with set aside and reverted arable land shows that significant biodiversity can be realised in grassland provided that it is managed appropriately.

The Mid Term Review of the CAP offers scope for a fresh look at the rules governing the use of set aside and one that specifically provides for the development of strategy for the restoration of biodiverse meadow grassland in arable areas throughout the UK.

The strategy provides for the creation of a widespread matrix of biodiverse meadow grassland at no additional cost to the public purse. Significant other gains are identified.

Recommendations

Create a new management option for the use of set aside. The "biodiverse meadow" option will allow farmers to cut hay and graze their set aside, subject to restrictions.

Provide farmers with points under the broad and shallow scheme for the maintenance of the "biodiverse meadow" option for longer than five years, thus encouraging its permanence.

Analysis:

Introduction:

Meadow grassland is grassland that is shut to livestock in the spring months before cutting for hay in late June or July. Such grassland tends to be species rich and supports diverse flora and fauna.

Since the commencement of the modern agricultural revolution in the 1950's meadows have been in decline and today relatively little meadow grassland remains.

The analysis considers the decline of meadows and defines a strategy for their restoration.

The Decline of Meadows:

The reasons for this decline of meadows can be broadly summarised as follows:

- **Costs of production:** with the globalisation of agricultural products over the past four decades, UK farmers have been forced to seek new ways of maintaining profitability in a competitive market place. This has led to a treadmill of restructuring within the industry with farming units becoming fewer, larger, more specialised and of higher output. Hay making is a costly, time-consuming operation that cannot pay its way in modern farming systems.
- **Feed quality:** in the first instance hay is neither as palatable as silage nor of such high feed quality. As a result dry matter intakes by farm livestock are simply insufficient to support the required levels of production of meat and milk. Secondly, hay is a risky crop to produce. The single cut can be spoiled by rain, or in some years ruined completely leaving the farmer with substantial production losses and additional ongoing costs for bought in conserved fodder. In a market place where the consistency of finished animals matters and where margins are thin, hay as a conserved fodder is seen as a risk too far.
- **Climatic preference:** there has been a gradual drift of pastoral farming towards the west where summer rainfall is higher and grass can be produced more reliably.

The Consequences of Decline:

The loss of hay meadows to arable production or more intensive grassland systems has led to a loss in farmland biodiversity and reduced the aesthetic appeal of the countryside at large. More specifically:

- Displacement of hay making by arable production systems leads to a complete change of habitat in individual fields and ultimately compromises the wider mosaic of habitats that exist throughout the countryside. If this has been coupled with the loss of livestock from the farm, then the additional biodiversity inherent to livestock systems is also lost.

- Displacement of hay making by grassland for silage leads to the use of shorter-term grass leys that respond to high inputs of fertiliser. These produce vigorous swards consisting of just a few species of grass that are too dense to encourage their use by ground nesting birds. The early and regular cutting of these leys for the production of quality silage can start from the beginning of May making these habitats unsafe for wildlife. Sward diversity in leys cut for silage is low and since few plants have time to set seed between cuts, it remains so until the sward is reseeded.
- Where haymaking is practised it tends to be done so on a more intensive basis where it has an economic rationale as part of another farm enterprise, for example a livery yard. Such hay making systems provide worthwhile biodiversity but not to the extent of that found in more extensive meadows.

By contrast with modern hay and silage making systems, traditional meadow grassland that is rarely fertilised is rich in biodiversity and because of the late cutting regime, a safe habitat for ground nesting birds and other wildlife.

Recreating Biodiverse Meadows:

While recent publications have suggested that the recreation of biodiverse meadows could take as long as half a century, work from the ground suggests otherwise.

Trials over the last eight years have illustrated that:

- Non-rotational set aside can become species rich biodiverse grassland.
- The greatest diversity occurs where soil fertility is naturally low.
- Species diversity grows rapidly from about year five provided that tall light demanding grasses do not dominate.
- Biodiversity gain is seen across a wide range of plants, insects and birds.
- In reverted arable land yet higher levels of biodiversity have been achieved where the swards have been intensively grazed outside the April to July period.

Other farmers report similar experiences, all of which suggests that good quality biodiverse meadow grassland could be recreated in less than a decade - providing there is a rationale for its existence and the right management is practised.

A Strategy for Recreation

Given the decline that we have detailed above and the reasons for it, there appears at first sight no good economic or practical reason for the recreation of extensive biodiverse meadow grassland. Furthermore farmers would probably see specific schemes for the recreation of such grassland as carrying political risks. This might include the perception that

the land will become mapped for public access, the support mechanism changed or that it will become subject to EIA regulations and its future use restricted. These concerns were borne out in recent survey for the South Downs ESA that showed that there was little farmer interest in reverting additional arable land to grassland under existing schemes. Excessive risks, rules, regulations and general uncertainty have stifled interest in grassland recreation.

However, the recreation of biodiverse meadow grassland could be achieved, if it became a preferable to an existing land management activity and provided that the farmer was able to maintain long term management flexibility. In this respect there is considerable scope.

Arable farms are currently forced to set-aside 10% of their arable area. Set-aside can be permanent or rotational around the farm and may exist as bare ground through to a range of cover or industrial crops. The use of the land for grazing is restricted and relatively little set-aside ends up supporting permanent flora and fauna - but it could.

A Solution

The decoupling of production from subsidy under The Mid Term Review provides the opportunity for thorough revision of the rules governing set-aside so that this can be actively managed for biodiversity. A new "biodiverse meadow" option should be included under the rules. To make this worthwhile the following should apply:

- Farmers cannot graze the land between the end of March and the 15th July.
- A cut of hay must be taken after 15th July each year except where a derogation is obtained.
- The crop can only be grown if it remains in the field for a minimum of five years. After this period the farmer retains the right to withdraw and revert to an alternate management option.
- Fertiliser cannot be applied unless a derogation is obtained – such derogation to permit only small applications of P and K.
- The farmer has flexibility to graze the land with his or other farm livestock as a management tool to encourage biodiversity.
- If the meadow remains in the ground for longer than five years the farmer will receive additional points under the "broad and shallow scheme" thus encouraging its permanence.

Superficially this might appear to be generous to farmers in the use of set-aside, but it isn't. The absence of applied fertiliser coupled with the regular cut of hay will quickly impoverish the ground creating the ideal conditions for biodiverse grassland.

The Farmer's Gain

The financial gain of this regime over and above the management of conventional set aside will ultimately be small. However, the cutting of hay

will provide some purpose to set aside land and farmers are likely to respond to the opportunity. The following gains are likely:

- The small cut of hay and the possibility of a grazing return may make the costs incurred in fencing and the provision of water worth carrying.
- The crop will not encroach on existing arable land and so farmers will not see their existing fixed cost structure carried through less arable acres.
- The hay crop may spawn diversified businesses (for example livery) or “assist” with the marketing and development of other rural enterprises (for example holiday lets).
- The crop satisfies the farmer’s desire to grow something rather than nothing. Farmers will quickly respond to the challenge of growing herb rich meadow hay by doing it well.
- The land will be classed as set aside so farmers will retain management flexibility for the future.

The Public Gain

Public gain will be seen in a number of ways, namely:

- Hay crops that impoverish set-aside will lead to biodiverse grassland that is a safe home to a wide range of flora and fauna. This will satisfy criteria from The Mid Term Review that farmland must be kept in both good agricultural and environmental condition.
- The cutting of hay will lead to the greater control of ragwort and thistles in permanent set-aside where such hay is destined for use by a livestock enterprise.
- Larger areas of set-aside for grazing may encourage small livestock enterprises amongst farmers or allow conservation graziers to establish in areas where none previously existed.
- Hay is a labour intensive crop and this will provide rural employment.
- The use of set-aside for this purpose encourages the return of grassland and grazing to the eastern arable areas of the country where it will have the greatest impact for landscape enhancement and biodiversity gain.
- The benefits of using set-aside for this purpose will be magnified because a matrix of similarly structured habitats will be created that are no longer isolated or so small as to provide little environmental gain.
- It is unlikely that there will be any cheaper way of gaining so much biodiversity. In short this represents an opportunity of exceptional value to the public purse.