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- **Conservation Pays? Reconciling environmental benefits with profitable grassland systems. Ed. John Frame**
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Farmers' Attitudes, Perceptions and the Management of Field Boundary Vegetation on Farmland.

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ABSTRACT

Boundary vegetation is an important resource for farmland wildlife, for biodiversity and as a landscape component. However, the management of such areas has been generally neglected over recent years. This paper draws on the findings from two studies of farmers' and others' perceptions of field boundary management, to suggest ways of ameliorating this. The studies used complementary techniques - a detailed questionnaire survey and in-depth interviews. Management of field boundaries varied, depending on the way farmers perceived and valued them and on a range of external influences. While commercial aspects generally dominated field boundary management, both farmers, professionals and the wider public also appreciated hedgerows as landscape or countryside features. The study suggests it may be useful to build on or influence these attitudes to maintain or enhance the conservation value of field boundary vegetation.

INTRODUCTION

Field boundaries are important as landscape features and for the maintenance of biodiversity. This importance has been recognised in recent legislation (Department of the Environment, 1997) and farmland birds, many of which base their breeding territories on hedges are one of the sustainability indicators suggested by the Department for Environment, Transport and the Regions (1999). However, hedgerow length and farmland bird numbers both declined considerably between 1947 and 1985 (Fuller *et al*, 1995). Hedgerow structure and associated vegetation have also changed.

The cultural value of boundary features has been relatively unrecognised by policymakers and researchers in the UK (Oreszczyn and Lane, 2000). Legislative criteria for hedgerows refer mostly to measurable physical and ecological features. Government attempts to influence land managers' actions relating to hedgerows seem primarily to be based on a model of "economic rationality", despite research evidence that this may be inadequate (Beedell and Rehman, 2000). This economic model may also lead to an evaluation of hedgerows that does not accurately reflect public values.

This study used contrasting methodologies to examine the ways the attitudes of farmers and the wider public relate to management of field boundary vegetation.

FARMERS ATTITUDES AND FIELD BOUNDARY MANAGEMENT

Farmers in the 1980s saw hedgerow conservation as expensive and time-consuming and irrelevant or inimical to business efficiency (Carr and Tait, 1991). Westmacott and Worthington (1997) did report farmers becoming more receptive to conservation and landscape, especially in response to economic incentives, but improved management of hedgerows can conflict with other agronomic requirements. Farmers may also be unaware

of what is appropriate management. Their attitudes to field boundary management are likely to be influenced both by advisors and associates and also by their non-agricultural interests, such as fox hunting or gamebird management (Boatman *et al* 1992).

Forty-seven predominantly arable farmers in Wiltshire/Dorset took part in a postal questionnaire survey of their farming operations, attitudes, general interests and factors influencing their management decisions (Stoate, 2001). Principle components analysis was used to identify broad interest groupings among the respondents. The correlations between management practices and these categories and other specific features of the farm system were then examined.

Management practices were divided into positive and negative behaviours in terms of habitat management for one target species, whitethroat, *Sylvia communis*. Table 1 indicates that many positive behaviours were already common.

Table 1. Positive and negative behaviours found in the survey.

<i>Positive behaviours</i>	<i>% showing these</i>
Fertiliser distributors designed to minimise misplacement	91
Insecticides used only when thresholds exceeded	95
Minimising spray drift	66
Reduced insecticide use in field headlands	24
Reduced use of herbicides in field headlands	9
<i>Negative behaviours</i>	
Oscillating spout fertiliser distributors	9
Herbicides applied to field boundary vegetation	25

Generating income was the most important consideration for 92% of the farmers. However, ‘enjoying the countryside’ ‘investing capital’ and ‘livestock’ equalled ‘generating income’ in importance for 38%, 26% and 40% of farmers respectively.

The first three categories identified by principle components analysis accounted for 47% of the variation in the sample. The three components were interpreted as:

1. an interest in “cultural capital”, including rural social life, enjoying the countryside, investing capital for the future and walking or riding (20% of variation)
2. “progressiveness”; this included using the latest equipment and methods, such as integrated crop management (15% of variation)
3. “game and landscape”, including wild and reared game management and landscape improvement (13 % of variation)

The “game and landscape” category was associated with a perception of the positive value of herbaceous field boundary vegetation to gamebirds, songbirds and beneficial invertebrates and this influenced their field boundary management decisions. This interest category also correlated with a perception that brambles and perennial grasses were desirable components of field boundaries.

Farmers with high scores for their wildlife conservation interest were more likely to reduce fertiliser misplacement and insecticide use in field headlands and to avoid direct use of herbicides in field boundaries than those with low scores. They were also more tolerant of bramble, nettle and umbellifers in boundaries. All farmers thought perennial grasses desirable and annual grasses and cleavers undesirable in boundary vegetation. There were common misconceptions about the management of boundary vegetation and the potential benefits of herbaceous strips. Increased use of the latter would be consistent with “progressiveness”, and could be supported by positive advice.

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Agrochemical company advisors and independent advisors had significantly more influence on farmers' crop management decisions than all other potential influences, while magazines, game and wildlife advisors, gamekeepers and immediate family had the greatest influence over hedge management decisions.

The influence of magazines and local residents was associated with reduced hedge cutting frequency. Farmers most influenced by independent advisors (not agrochemical company advisors) were more likely to spray field boundary vegetation.

ATTITUDES OF FARMERS AND THE WIDER PUBLIC

Oreszczyn (1999) used Grounded Theory methodology (Glaser and Strauss, 1967) in collecting qualitative data through lengthy, in-depth semi-structured interviews with a small sample of farmers, rural landscape professionals and members of the general public. These data were supplemented by a discussion group and wider survey of 70 public respondents. Secondary data were collected from existing publications and participant observation at hedgerow events. The data were analysed using the qualitative research software NUD*IST (Quality Solutions and Research Pty Ltd, 1997). This gave both an in-depth and a wider view of hedgerows for each group. This theory building approach allows deeper exploration of peoples' meanings and beliefs than more formally structured methods.

Contrary to general impressions, the work showed the three groups shared many views and concepts. Five shared and linked concepts related to hedgerows as:-

1. *Part of national identity*. The patchwork effect that identifies "England".
2. *Part of a common heritage*, linking history and childhood memories.
3. *Part of landscape character*, providing diverse rather than boring, landscapes.
4. *Ephemeral and changing*, providing a link to the seasons.
5. *Contributing to a sense of place*.

Despite many similarities, there were also clear differences. For example, in seeing hedges as:-

1. *A sign of care*. To farmers, neat and tidy hedges showed care for their farms, but the wider public saw this as a lack of care for wildlife.

2. *Wildlife habitats*. All groups valued this aspect, but professionals related it specifically to biodiversity while the wider public's interest was visual and aesthetic.

3. *Containing native species*. Professionals strongly favoured native species in hedgerows, the rest were less concerned (except for *Chamaecyparis leylandii*!)

4 *Part of homes and gardens*. Professionals saw hedgerows in relation to the wider countryside but local or garden hedges were as important to the public and some farmers.

A central theme was the way in which the public did not separate out different aspects of hedgerow value in the way that farmers and professionals did. The public viewed hedgerows as a whole and their relationship with them encompassed many unquantifiable qualities. Another key theme was trust. Farmers felt strongly that they should be trusted to care for the land, but their understanding of care differed from the professionals.

DISCUSSION

The two studies offered complementary perspectives on the topic. While quantitative surveys can reveal the extent of defined attitudes on a given topic, the theory building approach gives more depth to such attitudes and can reveal a wider range of aspects which may influence management decisions.

Attitudes, perceptions and management of field boundaries

The relationships between attitudes, management decisions and the state of field boundaries are complex, and the “ideal” management will involve compromise. Although generating income was the major interest for farmers, both studies indicated their wider interest in the farming environment, despite the potential conflicts of value involved.

Both studies found that management of boundary vegetation was influenced both by formal factors and more informal ones such as family or magazines. Actions to support the latter may be more effective than working only through formal sources of advice. The studies also show that appreciation of hedgerows is widespread amongst those who can influence their management, and all groups show both what may be termed “rational” and “emotional” responses to them. The emotional aspects showed more commonality between the groups than did the more rational ones. Despite the often prevailing view that management should be based solely on the rational and measurable, management advice should at least be consistent with more emotional aspects such as the “cultural capital” or “progressiveness” interest categories among farmers.

Both studies reveal that to improve farmland boundaries there is a need also to consider the differences in worldviews among farmers and between them and the other stakeholders in the landscape. Conventional models of technology transfer may not be appropriate, and participative methods involving other stakeholders may be needed (Ison and Russell, 2000). The commonality of emotional views revealed by the theory building research offers a focus on which to build. A change of attitude among both expert advisors and policy makers may be required to enable this fully to occur.

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