

FIELD MARGINS: INTEGRATING AGRICULTURE AND CONSERVATION

BCPC Monograph No 58

Proceedings of a symposium organised by the British
Crop Protection Council in association with the British
Ecological Society and the Association of Applied Biologists
and held at the University of Warwick,
Coventry on 18-20 April 1994

Edited by: Nigel Boatman



BCPC Registered Office:
49 Downing Street
Farnham
Surrey GU9 7PH, UK.

Contents

Page

Preface.....	X
Symposium Programme Committee.....	XI
Acknowledgements.....	XII
Field Margin Terminology.....	XIII
Abbreviations.....	XIV

SESSION 1:

THE ROLE OF FIELD MARGINS IN THE LANDSCAPE

Field Margins - an historical perspective J CHAPMAN and J SHEAIL.....	3
The current status of field margins in the UK R G H BUNCE, C J BARR, D C HOWARD and C J HALLAM.....	13
Field margins - an agricultural perspective M B HELPS.....	21
The role of field margins in the landscape G L A FRY.....	31

SESSION 2:

FIELD MARGINS AS WILDLIFE HABITATS

Botanical diversity in British hedgerows R G H BUNCE, D C HOWARD, C J BARR, R C CUMMINS and D FRENCH.....	43
Botanical diversity in arable field margins P J WILSON.....	53
Arable field margins: factors affecting butterfly distribution and abundance J W DOVER.....	59
Field margins as habitats, refuges and barriers of variable permeability to Carabidae P C JEPSON.....	67
The importance of field margin attributes to birds K H LAKHANI.....	77
Field margins and small mammals T E TEW, I A TODD and D W MACDONALD.....	85
Field margins as habitats for game N J AEBISCHER, K A BLAKE and N D BOATMAN.....	95

Posters

The flora of field margins in relation to land use and boundary features J O MOUNTFORD, T PARISH and T H SPARKS.....	105
---	-----

The effects of field margins on butterfly movement G L A FRY and W J ROBSON.....	111
The influence of field boundary structure on heteropteran densities within adjacent cereal fields S J MOREBY.....	117
The distribution of <i>Empididae</i> (Diptera) in hedgerow network landscapes N MORVAN, Y R DELETTRE, P TREHEN, R BUREL and J BAUDRY.....	123
Nest site selection and territory distribution of yellowhammer (<i>Emberiza citrinella</i>) and whitethroat (<i>Sylvia communis</i>) in field margins C STOATE and J SZCZUR.....	129
Small mammal populations in hedgerows: the relationship with seed and berry production S M C POULTON.....	133
Modifications of field margins and other habitats in agricultural areas of Québec, Canada, and effects on plants and birds C BOUTIN, B JOBIN and J-L DESGRANGES.....	139

SESSION 3

MANAGEMENT OF FIELD MARGINS

Managing field margins for hoverflies R W J HARWOOD, J M HICKMAN, A MACLEOD, T N SHERRATT and S D WRATTEN.....	147
Field margin flora and fauna changes in response to grassland management practices J H McADAM, A C BELL and T HENRY.....	153
An economic analysis of farm hedgerow management D A SEMPLE, E C BISHOP and J MORRIS.....	161
Conservation and restoration of species rich ditch bank vegetation on modern dairy farms W TWISK, A J VAN STRIEN, M KRUK, H J DE GRAAF and W J TER KEURS.....	167
Vegetation patterns and changes in field boundaries and conservation headlands in Scottish arable fields D H K DAVIES and H M CARNEGIE.....	173
Boundary strips in cereal fields: dynamics of flora, weed ingress and implications for crop yield under different strip management regimes T P MILSOM, D TURLEY, P LANE, B WRIGHT, S J DONAGHY and P MOODIE.....	179
Large-scale field trials with conservation headlands in Sweden P A CHIVERTON.....	185
Adoption of conservation headlands to Finnish farming J HELENIUS.....	191
Cost-benefits of unsprayed crop edges in winter wheat, sugar beet and potatoes G R DE SNOO.....	197

Resource use of crops and weeds on extensively managed field margins R LÖSCH, D THOMAS, U KAIB and F PETERS.....	203
The impact of nitrogen fertilisers on field margin flora N D BOATMAN, L J REW, A J THEAKER and R J FROUD-WILLIAMS.....	209

Posters

<i>Phacelia tanacetifolia</i> flower strips as a component of integrated farming J M HOLLAND, S R THOMAS and S COURTS.....	215
Effects of unsprayed crop edges on farmland birds G R DE SNOO, R T J M DOBBELSTEIN and S KOELEWIJN	221
Factors influencing the plant species composition of hedges - implications for management in Environmentally Sensitive Areas C A HEGARTY, J H McADAM and A COOPER.....	227
Effects of mechanised cutting on the short term regrowth of hawthorn hedgerows D A SEMPLE, J DYSON and R J GODWIN.....	235
<i>Clematis vitalba</i> (Old Man's Beard) as a competitive "weed" in hedgerows and the effects of cutting regimes on its development C P BRITT.....	241
Management of ditches in arable fenland: mowing regimes for drainage and conservation T P MILSOM, A J SHERWOOD, S C ROSE, S R RUNHAM and S J TOWN.....	247
Managing field margins for the conservation of the arable flora P J WILSON.....	253
Comparison of five different boundary strips - interim report of first two years' study M J MAY, C EWIN, J MOTT, R PACK and C RUSSELL.....	259
The case for headland set-aside D L SPARKES, R K SCOTT and K W JAGGARD	265

SESSION 4:

RESTORATION AND CREATION OF FIELD MARGINS

Hedge planting: the implications of using alien rather than native genotypes A T JONES	273
The development and testing of HEGS, a methodology for the evaluation and grading of hedgerows R J TOFTS and D K CLEMENTS.....	277
Relationships between vegetation and site factors in uncropped wildlife strips in Breckland Environmentally Sensitive Area C N R CRITCHLEY.....	283
The role of wild flower seed mixtures in field margin restoration H SMITH, R E FEBER and D W MACDONALD.....	289

The effects of field margin restoration on the meadow brown butterfly (<i>Maniola jurtina</i>) R E FEBER, H SMITH and D W MACDONALD.....	295
Comparison of different management techniques for crop margins in relation to wild plants (weeds) and arthropods A B HALD.....	301
The effects of fluzafop-P-butyl and cutting treatments on the establishment of sown field margin strips E J P MARSHALL and M NOWAKOWSKI.....	307

Posters

Effects of management treatments on carabid communities of cereal field headlands A HAWTHORNE and M HASSALL.....	313
Habitat creation in large fields for natural pest regulation B J HART, W J MANLEY, T M LIMB and W P DAVIES.....	319
Plant distribution across arable field ecotones in the Netherlands W JOENJE and D KLEIJN.....	323
Preliminary findings from a study of sown and unsown management options for the restoration of perennial hedge-bottom vegetation F A DUNKLEY and N D BOATMAN.....	329
Establishing vegetation strips in contrasted European farm situations E J P MARSHALL, C F G THOMAS, W JOENJE, D KLEIJN, F BUREL and D LE COEUR.....	335
The effects of restoration strategies on the flora and fauna of overgrown hawthorn hedges and methods of repairing gaps in overmanaged hawthorn hedges T HENRY, A C BELL and J H McADAM.....	341
Problems with the re-establishment of thorn hedges in the Cambrian mountains Environmentally Sensitive Area J WILDIG, B GRIFFITHS and T MILSOM.....	347
The re-introduction of native aquatic plants into Fenland ditches S J TOWN and S R RUNHAM.....	351

SESSION 5:

POLITICAL ASPECTS

An overview of UK policy and grant schemes J DWYER.....	359
Field margins as a nature conservation objective in the Netherlands and Germany for nature conservation: policy, practice and innovative research TH C P MELMAN.....	367
Hedges - a farmer's view O P DOUBLEDAY, A CLARK and B McLAUGHLIN.....	377
Field margins: a microcosm of the wider political debate M BELL.....	385

Posters

An experiment with paying for conservation results concerning
ditch bank vegetation in the western peat district of the Netherlands
M KRUK, W TWISK, H J DE GRAAF and W J TER KEURS 397

European research network on field margin ecology
E J P MARSHALL, W JOENJE and F BUREL 403