

Habitat creation bibliography: all habitats

ADAS. 1994. *Hedgerow Establishment*. 4pp (leaflet).

Leaflet providing general advice to farmers on hedgerow establishment. The subject matter includes ground preparation, when to plant, choice of species, planting patterns and use of plastic mulching. There are useful illustrations showing the recommended spacing of plants and a specification for rabbit-proof fencing. There is also a section on hedgerow trees, including how to establish these in existing hedges. (*Useful leaflet suitable for direct distribution to farmers, although more detailed guidance on what species to plant in particular localities would be useful*).

ADAS. 1994. *Management of Arable Field Margins*. 4pp (leaflet).

Leaflet detailing how cultivation, spraying and fertiliser application can contribute to arable field margin weed problems, and suggesting changes in agricultural practice which can reduce the problem at the same time as benefiting wildlife. Contains sections on perennial grass and herb boundary strips (covering ground preparation, choice of seed mixture, sowing methods and subsequent management), beetle banks, conservation headlands, and fallow strips for arable weed species. (*Useful leaflet suitable for direct distribution to farmers. More detailed information on species to plant would be required by farmers wishing to establish boundary strips*).

Amey Roadstone Corporation. (undated). *Wildlife on Man-Made Wetlands*. Proceedings of Symposium at ARC Wildfowl Centre, Great Linford. 223pp.

Collection of papers on the value of man-made wetlands for wildlife conservation, with the emphasis on waterfowl populations. Contains detailed case studies of several gravel pit sites within the UK. (*More up-to-date, accessible and comprehensive information is available in other publications, particularly Andrews and Kinsman (1990)*).

Andrews, J. 1993. The Reality and Management of Wildlife Corridors. *British Wildlife*, 5 (1), 1-8.

Article examining the role of wildlife corridors, including a consideration of what types of wildlife may depend on corridors for colonisation and dispersal. Tentative conclusions are drawn on what makes an effective wildlife corridor, and a series of recommendations are made on the siting, design and management of new corridors. (*General background article on wildlife corridors*).

Andrews, J. and Kinsman, D. 1990. *Gravel Pit Restoration for Wildlife: A Practical Manual*. R.S.P.B./Tarmac Quarry Products. 184pp.

Comprehensive publication dealing with the creation and management of wildlife habitats after the extraction of sand and gravel deposits. The benefits of planning for wildlife conservation at the outset of the extraction process are stressed throughout the manual. The main text is divided into three parts: Part I gives the operational background to the sand and gravel industry in the UK, and summarizes the planning context, current restoration practice and the wildlife value of gravel pits. Part II covers the determination of conservation priorities, and includes detailed sections on the ecological requirements of invertebrates, fish, reptiles, amphibians, birds and mammals. Key pointers to habitat creation and management are given for each species group. Part III consists of detailed prescriptions for habitat creation and management, covering features such as exposure, water depth, soils, islands, aquatic and marginal vegetation, wildflower grasslands, and woodland, scrub and hedgerows. Contains summary tables of the habitat requirements of different wildlife groups, and recommendations for species of wetland plants, wild flowers and trees and shrubs which could be introduced to newly restored sites. (*Highly recommended. Although aimed exclusively at gravel pits, much of the general information and prescriptions will be of use to anyone planning wetland creation schemes*).

Andrews, J. and Rebane, M. 1994. *Farming and Wildlife: A Practical Management Handbook*. R.S.P.B., Sandy. 358pp.

Handbook providing guidance on the management, restoration and creation of wildlife habitats on farmland in the UK. The first chapter deals with surveying the wildlife interest of farms and making wildlife management decisions. The remaining chapters cover the major wildlife habitats found on farms (arable land, pasture and meadow, lowland heath, hill and rough grazing, machair, farm woodland, hedgerows, farm trees and scrub, waterbodies and other wetlands, farm buildings and walls). For each habitat there are sections on wildlife requirements and effects of farm management, options for conservation management, prescriptions for the

management, enhancement and creation of the habitat, references and further reading, and case studies of the implementation of wildlife conservation on farms. Also included are key features on selected species and numerous tables summarizing aspects of wildlife assessment and conservation management. (*Although the sections on habitat creation are relatively brief, this is nonetheless an invaluable source of information for those undertaking or advising on habitat creation on farmland*).

Andrews, J. and Ward, D. 1991. The Management and Creation of Reedbeds. *British Wildlife*, 3 (2), 81-91.

The emphasis of this article is on the management and creation of reedbeds for rare birds including the bittern, marsh harrier, bearded tit, Cetti's warbler and Savi's warbler. Topics covered include locations for new reedbeds, reed growth and successional processes, hydrological management, cutting regimes and scrub control, and the design of new reedbeds and establishment of vegetation. Contains a useful table summarising the habitat and management requirements of reedbed birds. (*Good general introduction to reedbeds and reedbed wildlife*).

Armstrong, P.H. 1973. Changes in the Land Use of the Suffolk Sandlings: A Study in the Disintegration of an Ecosystem. *Geography*, 58, 1-8.

Article documenting the decline of heathland in east Suffolk, and explaining the effects of the reduction in sheep grazing, and technological and economic changes in arable farming, in hastening this decline. (*Source of general background information on heathland loss and fragmentation*).

Ash, H.J., Bennett, R. and Scott, R. 1992. *Flowers in the Grass*. English Nature, Peterborough. 68pp.

Report of a research project on the creation and management of wild flower grasslands in urban areas, carried out for the NCC by the Groundwork Trust in association with Knowsley Metropolitan Borough Council. Contains detailed information on site choice, reduction of soil fertility, ground preparation and seeding, management and monitoring. Recommendations for the management of existing grassland sites are also included. The appendices include a list of native grass and herb species suitable for planting in different soil types. (*Although written primarily for urban sites, contains much information which will be of value for any grassland creation project*).

Axell, H. and Hosking, E. 1977. *Minsmere: Portrait of a Bird Reserve*. Hutchinson, London. 256pp.

An account of the development of the RSPB bird reserve at Minsmere. The section on the construction of the scrape contains information relevant to wetland creation. (*Useful background information on one of the early wetland success stories, though more recent publications should be consulted to obtain detailed practical guidance on techniques of wetland creation*).

Baines, C. and Smart, J. 1984. *A Guide to Habitat Creation*. Greater London Council Ecology Handbook No. 2. GLC, London. 44pp.

General guide to the creation and management of wildlife habitats in an urban context. Grasslands, woodlands, wetlands and wastelands are each covered in separate chapters. Appendices include a list of suppliers of native wild flower seed from British sources, and a general list of plant species suitable for establishment in newly-created habitats. (*Good general guide, though more detailed and recent publications are now available for each of the habitats covered*).

Barr, C., Howard, D., Bunce, R., Gillespie, M. and Hallam, C. 1991. *Changes in Hedgerows in Britain Between 1984 and 1990*. THE Report to Department of the Environment. Institute of Terrestrial Ecology, Grange-over-Sands. 14pp.

A technical report summarising the changes in hedgerows between 1984 and 1990, based on the analysis of data from "Countryside Survey 1990". The report provides estimates of the extent of hedge loss, hedge gain and changes in hedge management in England, Scotland and Wales over the six year period, and describes the methods used to derive these estimates. (*Too technical to be of general appeal - only useful for those interested in learning more about how estimates of hedge loss are arrived at*).

Beckett, K. and Beckett, G. 1979. *Planting Native Trees and Shrubs*. Jarrold. 64pp.

Comprehensive guide to 60 species of native trees and shrubs. Introductory sections give advice on planting and aftercare, and for each species there are details of propagation methods, natural habitat and a list of other species with which it is commonly found. Also included are distribution maps for each species. (*Good general guide to Britain's native tree and shrub species*).

Biggs, J., Corfield, A., Walker, D., Whitfield, M. and Williams, P. 1994. New Approaches to Pond Management. *British Wildlife*, 5, 273-287.

Article providing guidance, based on the work of Pond Action, on how existing pond management techniques could be improved. The need to retain ponds at all stages of succession and a variety of water depths is stressed, as is the need to manage ponds gradually over a period of years rather than in a single, disruptive action.

Contains guidelines on appropriate management of shallow, temporary and silty ponds, trees around ponds, marginal and aquatic vegetation, and grazing of pond margins. (*Good summary article which will be of value to those planning future management of newly created ponds*).

Boatman, N. (Ed). 1994. *Field Margins: Integrating Agriculture and Conservation*. Proceedings of symposium organised by the British Crop Protection Council in association with the British Ecological Society and Association of Applied Biologists, University of Warwick, April 1994. BCPC Monograph No. 58. BCPC, Farnham. 404pp.

Contains sections on the role of field margins in the landscape, field margins as wildlife habitats, management of field margins, and restoration and creation of field margins. (*Information is more readily accessible from other sources*).

Botanical Society of the British Isles. 1995. *Wild Flower Plants and Seeds*. BSBI, London.

Leaflet cautioning against uncontrolled establishment of wild flowers in the British countryside, but providing advice on how to obtain seed for "wild" gardens. Provides a list of common plants suitable for sowing on different soil types, and a list of suppliers selling wild flower seed from native British sources. (*List of seed sources may be useful if seed cannot be obtained from semi-natural sites local to proposed habitat creation schemes*).

Bradshaw, A.D. and Chadwick, M.J. 1980. *The Restoration of Land*. Blackwell, London. 317pp.

British Crop Protection Council. (Undated). *The Management of Cereal Field Margins*. BCPC, Farnham. 6pp.

Leaflet detailing options for the management of field margins. The introduction explains the terminology of field margins, and is followed by separate sections on the boundary, boundary strip and crop margin. Contains information on hedge and ditch management, bare ground and sown boundary strips, conservation headlands and fertiliser/pesticide usage. (*Good general leaflet - though lacks detailed prescriptions for habitat creation/enhancement*).

British Trust for Conservation Volunteers. 1991. *Trees and Aftercare. A Practical Handbook*. BTCV, Wallingford. 160pp.

Contains sections on planting in urban and rural locations, planting design, seed collection, planting and early care, and aftercare and maintenance. (*Contains much information of use for those undertaking woodland habitat creation*).

British Trust for Conservation Volunteers. 1996. *Pond Conservation and Management*. BTCV, Wallingford. 12pp.

Leaflet presenting general principles and approaches to managing ponds for wildlife, much of it based on recent work by Pond Action, and highlighting the importance of managing ponds in a sensitive way and retaining a wide diversity of pond types. Topics dealt with include site survey and evaluation, wildlife value of different habitats within a pond, management of pond plants, silt control, drying out of ponds, management of adjacent land, trees and shading, timing of works and health and safety considerations. (*Lacks specific information on pond creation, but nevertheless useful as an introduction to pond management*).

Brooks, A. 1980. *Woodlands. A Practical Handbook*. British Trust for Conservation Volunteers, Wallingford. 173pp.

Comprehensive guide to woodland conservation and management. Contains general sections on woodland structure and succession, as well as detailed information on tree planting, including choice of species, supply and propagation, site preparation, planting design, planting methods and post-planting care. (*Useful source of practical advice on woodland conservation and management*).

Brooks, A. 1981. *Waterways and Wetlands. A Practical Conservation Handbook*. British Trust for Conservation Volunteers, Wallingford. 186pp.

Comprehensive guide to the conservation management of wetland habitats. The ecological and management principles of wetland conservation are outlined, followed by detailed sections on the creation of new ponds (including the use of artificial liners), rehabilitation of existing water bodies, regulation of water levels through the use of dams, weirs and sluices, bank stabilisation techniques, drainage systems, and control of aquatic and marginal vegetation. (*Very useful for practical aspects of wetland management, though the date of publication means that some of the recent advances in our understanding of wetland management for wildlife are not covered. Section on pond creation will be of value, especially to those considering the use of artificial liners*).

Brooks, A. 1988. *Hedging. A Practical Conservation Handbook*. British Trust for Conservation Volunteers, Wallingford. 120pp.

Contains sections on planting and early care of hedges, trimming, laying, banking and turfing. (*Good source of practical advice on establishment and management of hedges*).

Buckley, G.P. (Ed). 1989. *Biological Habitat Reconstruction*. Belhaven Press, London. 363pp.

Technical publication containing contributions from a wide range of authors with an interest in habitat reconstruction. The book aims to discuss the assumptions and ecological principles behind habitat reconstruction, a term used to embrace habitat creation, habitat transplantation and habitat enhancement/diversification. Section 5 of the book deals specifically with habitat creation (papers include creating habitats on farmland and the feasibility of woodland reconstruction), although much of the information in other sections of the book is also relevant. (*Contains much useful information, particularly on the philosophy and principles of habitat creation, but likely to be of limited practical use for those planning and implementing habitat creation schemes*).

Chadwick, L. 1982. *In Search of Heathland*. Dobson, London and Durham. 217pp.

General text on the social and natural history of heathland in southern Britain, though mainly concentrating on the Sandlings heaths of east Suffolk and in particular a study area adjacent to the author's home. The history and natural history of heathland in Suffolk are covered in Parts I and II respectively. Part III describes visits to heathland areas in Norfolk, Surrey, Dorset, Cornwall and the New Forest. (*Good general account of heathlands. Contains data on loss and fragmentation of heathland*).

Clarke, J. (Ed). 1992. *Set-aside*. Proceedings of a symposium organised by the British Crop Protection Council. Cambridge University, September 1992. BCPC Monograph No. 50. BCPC, Farnham. 283pp.

(*Too technical to be of general use. Information on enhancing set-aside for wildlife is more readily accessible in other publications*).

Countryside Commission/English Nature/Suffolk Coast and Heaths Project. (Undated). *Farming to Conserve the Suffolk Coast and Heaths. A Guide to Grants and Advice*. 12pp.

Booklet prepared primarily for farmers and land managers in the Suffolk Coast and Heaths AONB (and adjacent areas). Contains guidance on how to conserve and enhance the landscape and wildlife of the area, and lists the main sources of grants available to assist in this process. Three main landscape areas are recognised (sandlings, valley floodplains and valley slopes), for which conservation aims, including habitat creation, are listed. There are brief sections on how to achieve these aims, and on selection of priority sites for implementation. Contact addresses for further advice are included. (*Although specific to Suffolk, this booklet has a format which could readily be adapted for use in other parts of England*).

Countryside Commission/Forestry Commission. 1996. *Woodland Creation: Needs and Opportunities in the English Countryside*. Joint CoCo/FC discussion paper. 20pp.

Discussion paper aimed at developing the debate on the proposals of the 1995 Government White Paper, Rural England, which set a target of doubling England's woodland cover over the next 50 years. Paper addresses a number of issues including why new woods are needed, what types of woodland are needed and where new woodlands should be sited. Contains opportunities maps identifying areas with potential for creation of woodland on agricultural land, and the potential for new woodland in English Nature's different Natural Areas. (*Only relevant to those interested in national woodland strategy*).

Countryside Council for Wales. 1996. *Hedgerow Management and Renovation. A Guide for Land Managers in the Hedgerow Renovation Scheme*. CCW, Bangor. 8pp.

Booklet focusing mainly on hedgerow management (including laying, coppicing and trimming), but also containing useful sections on the planting and aftercare of new hedges. (*Although produced for distribution in Wales, much of the content will be equally useful to land managers in England*).

Crofts, A. 1994. *How to Create and Care for Wildflower Meadows*. Royal Society for Nature Conservation, Lincoln. 11pp.

Booklet providing detailed practical advice on how to create wildflower meadows. Subjects covered include consideration of the options for grassland creation, sources of grant aid, choice of site, seedbed preparation and sowing techniques, weed control, choice of seed mix, and methods of aftercare. Includes lists of grass and herb species suitable for sowing on different soil types. The appendices include the names of wildflower seed suppliers and other useful addresses. (*Excellent publication summarising the available information on wildflower grassland creation. Highly recommended*).

Crofts, A. and Jefferson, R.G. (Eds). 1994. *The Lowland Grassland Management Handbook*. English Nature/Royal Society for Nature Conservation.

Provides comprehensive guidance on all aspects of the conservation management of lowland grassland sites. (*Valuable source of information on methods of long-term management for newly-created grassland*).

Department of Transport and others. 1992. *The Wildflower Handbook. Design Manual for Roads and Bridges, Vol. 10; Environmental design.* HMSO, London.

Manual providing advice on the creation of wild flower swards along motorways and trunk roads. Contains chapters on site evaluation, choice of seed mix, site preparation and sowing, other techniques for vegetation establishment (e.g. use of hay bales and container grown plants), management and monitoring. The appendix includes fact sheets detailing the morphology, site preference and seed characteristics of 64 wild flower species. *(Although produced specifically for road schemes, much of the information will be applicable to other types of grassland creation project).*

Devon Hedge Group. (Undated). *Hedge Cutting: How to Cut Costs and Benefit the Environment.* Devon Hedge Group.

Leaflet detailing recommended hedge cutting methods, and explaining the environmental benefits of the management prescriptions given. Deals solely with established hedgerows, and contains no information on the creation of new hedges. The leaflet also puts forward an economic argument for adopting less frequent hedge maintenance. *(Useful for farmers interested in implementing "wildlife-friendly" management of their hedges).*

Dodds, G.W., Appleby, M.J. and Evans, A.D. 1995. *A Management Guide to Birds of Lowland Farmland.* Royal Society for the Protection of Birds. Sandy. 64pp.

Contains details of the ecology of 12 farmland birds, and guidelines on how to encourage them. Contains sections on agricultural practices, set-aside, flower-rich margins, pesticides, grassland management, hedges, tree management, wetland management, weeds, scrub and buildings. *(Useful for farmers and landowners who wish to implement management practices to benefit birds).*

Dowdeswell, W.H. 1987. *Hedgerows and Verges.* Allen and Unwin, London. 190pp.

General text serving as a good introduction to these habitats. Topics covered include the origin and diversity of hedges as well as extensive sections on the ecology of hedgerow fauna and flora. The final three chapters (Hedgerows under Threat, Problems of Conservation and What Future?) have most relevance to habitat restoration, and include information on the rates of hedgerow loss and a consideration of the perceived benefits and disadvantages of hedges. *(Useful as an introductory text, although the date of this publication means that some of the more recent initiatives in agricultural practices and incentives are not included).*

Ecological Parks Trust. 1981. *New Life for Old Space: A Guide to Handbooks and Leaflets Covering the Principles and Methods of Converting Small Urban Sites into Nature Areas in Britain.* Ecological Parks Trust, London. 7pp.

Lists publications/leaflets covering urban wasteland projects, design principles, woodland creation, creation of herb-rich swards, pond creation and attracting fauna. *(Many of the information sources listed have been superseded by more recent publications. The strong urban bias reduces its applicability to habitat creation on agricultural land).*

English Nature. 1993. *English Nature's National Lowland Heathland Programme.* English Nature, Peterborough. 6pp.

Booklet providing general information on heathland in England, including its distribution and conservation importance and the need for continuing management. The aims of the National Lowland Heathland Programme are also set out.

English Nature. 1994. *Managing Lowland Heaths for Wildlife.* English Nature, Peterborough.

Single A3 sheet providing a brief introduction to heathland. The leaflet describes the wildlife value of heathland and outlines the types of management activities needed to maintain the habitat. *(Useful for landowners as a first introduction to heathland management).*

English Nature. 1996. *English Woodland and Nature Conservation.* English Nature, Peterborough. 8pp.

Booklet describing the extent, distribution and origin of woodland in England, and outlining the wildlife conservation value of the various woodland types. Other topics covered include options for managing woodland, threats to woodland conservation, and a consideration of the main opportunities which exist for woodland conservation. Contains a list of organisations which can be contacted for further information. *(Useful general booklet for distribution to farmers/land managers, even though woodland creation is only touched on).*

English Nature. 1996. *Managing Ponds for Wildlife.* English Nature, Peterborough. 24pp.

Booklet setting out the main principles of pond management for wildlife conservation, and emphasizing the need to retain a whole range of pond types (in terms of size, depth, permanence, successional stage etc) if we are to maintain our existing diversity of freshwater wildlife. Topics covered include features which enhance the wildlife value of ponds, survey and assessment, general pond management, management of pond plants and adjacent trees, management of silt and water depth, ponds of particular conservation interest, pollution prevention, and timing of management work. A list of appropriate plant species for transfer to new ponds is also included. *(Booklet deals specifically with pond management, though much of the information included will be of value to anyone planning the construction of new pond(s)).*

Environment Agency. (Undated). *Understanding Buffer Strips: An Information Booklet*. The Environment Agency, Bristol. 12pp.

Booklet explaining the various terms used to describe buffers, before concentrating on riparian buffer strips and how they can be used to reduce diffuse pollution (e.g. sediment, pesticides and fertilisers) from agriculture. Topics covered include a review of research on how buffer strips work, and a consideration of factors to take into account to ensure that buffers are established in appropriate locations. The opportunity for buffer strips to have multiple functions (e.g. wildlife corridors, beetle banks, boundary strips etc) is also discussed. (*Useful for distribution to riparian landowners - though contains little practical advice on how to establish buffers*).

Environmental Advisory Unit. 1988. *Heathland Restoration: A Handbook of Techniques*. British Gas, Southampton. 160pp.

A detailed review of techniques available for the restoration of heathland areas affected by quarrying, pipeline installation, erosion and other factors. Introductory sections describe the main types of heathland and give a brief overview of heathland soils. Subsequent chapters review the types of disturbance affecting heathland and moorland, provide details of the main restoration techniques (turfing, use of seed/litter, topsoiling, transplanting etc), and give guidance on initial aftercare and long-term management. (*Concentrates on the restoration of existing heathland sites rather than the creation of new areas of heathland, but contains much useful information applicable to new habitat creation projects*).

Evans, C., Marrs, R. and Welch, G. 1993. The Restoration of Heathland on Arable Farmland at Minsmere RSPB Nature Reserve. *RSPB Conservation Review*, 7, 80-84.

Case study of the attempt by the RSPB to restore 158 ha of arable land at Minsmere to heathland and acid grassland. The paper highlights the differences in soil fertility and pH between the arable land and existing areas of nearby heathland, and describes the techniques being used to alter the soil chemistry to enable re-establishment of heathland vegetation. (*Useful summary of the work carried out at this high profile site*).

Farming and Wildlife Advisory Group. (Undated). *Arable Farming and Set-aside*. FWAG, Kenilworth. 14pp.

Booklet outlining the opportunities for enhancing habitats on arable farmland for wildlife, with particular reference to set-aside land. Contains management recommendations for the full range of habitats found on arable farms, as well as suggestions on fertilisers, pesticides, spraying techniques etc. (*Good source of general information on improving the value of farmland habitats for wildlife*).

Farming and Wildlife Advisory Group. (Undated). *Ditches, Rivers and Streams*. FWAG, Kenilworth. (Booklet).

Farming and Wildlife Advisory Group. (Undated). *Farming and Field Margins*. FWAG, Kenilworth. 10pp.

Booklet summarising the value of field margins for wildlife, and providing recommendations on how to manage them to maximise their benefit to wildlife. Subjects covered include natural regeneration of margins, sowing margins with grasses/wild flowers, protection of margins from pesticide and fertiliser contamination, and retention of an ungrazed strip in pastures.

Farming and Wildlife Advisory Group. (Undated). *Farming and Pesticides*. FWAG, Kenilworth. 16pp.

Booklet providing guidance on how the responsible use of pesticides can minimise the damaging effects on wildlife. Topics covered include pesticides and the environment, how to minimise the use of sprays, spraying techniques and choice of product.

Farming and Wildlife Advisory Group. (Undated). *Fertilisers and the Environment*. FWAG, Kenilworth. 12pp.

Booklet providing guidance on how to help prevent damage to the environment and wildlife from the use of artificial fertilisers and manures. Contains sections on vulnerable farmland habitats, and methods of minimising nutrient losses.

Farming and Wildlife Advisory Group. (Undated). *Guidelines for Environmentally Responsible Farming*. FWAG, Kenilworth. 12pp.

A series of guidelines aimed at achieving a whole-farm approach to conservation. Topics covered include fertiliser and pesticide use, and the management of typical farmland wildlife habitats (*hedges, woodlands, watercourses, wetlands and grasslands*).

Farming and Wildlife Advisory Group. (Undated). *Hedges and Field Boundaries*. FWAG, Kenilworth. 12pp.

Booklet summarising the value of field boundaries for wildlife and providing recommendations on their management and establishment. Includes information on hedges, grass strips, fences, walls, ditches and other watercourses.

Farming and Wildlife Advisory Group. (Undated). *Ponds and Wetlands*. FWAG, Kenilworth. (Booklet).

Farming and Wildlife Advisory Group. (Undated). *Trees, Woodlands and Scrub*. FWAG, Kenilworth. (Booklet).

Farming and Wildlife Advisory Group. 1996. *Creating Wildflower Swards*. FWAG, Kenilworth.

Technical Information Sheet concentrating on the practical aspects of establishing wild flower swards. Covers where to create swards, species choice, establishment methods (timing, choice of bare seedbed or sowing/ planting into existing swards) and aftercare in the first season of establishment and in subsequent years. (*Good basic leaflet, though lacks specific information on suitable species to plant - instead concentrates on which species to avoid*).

Farming and Wildlife Advisory Group. 1996. *Field Margin Management*. FWAG, Kenilworth.

Technical Information Sheet defining the various components of field margins (boundary, boundary strip and crop margin) and explaining how past agricultural intensification has decreased their value to wildlife. Most of the leaflet deals with boundary strips, including the options for their establishment and a consideration of their benefits to farming and wildlife. (*Leaflet should be read in conjunction with other FWAG technical information sheets on boundary strips*).

Farming and Wildlife Advisory Group. 1996. *Hedgerow Trees*. FWAG, Kenilworth.

Technical Information Leaflet explaining the importance of hedgerow trees for wildlife, and providing guidance on the planting of new trees. Includes sections on where to plant, which species to plant, and management (pruning/pollarding).

Farming and Wildlife Advisory Group. 1996. *Natural Regeneration and Boundary Strips*. FWAG, Kenilworth.

Technical Information Sheet detailing the role of vegetated boundary strips in controlling weed growth, and explaining how they can be created through natural regeneration of fallow field margins. Topics covered include the advantages of using natural regeneration, consideration of situations where this method is appropriate, as well as management guidelines for the period following establishment and in subsequent years. (*Leaflet best read in conjunction with other FWAG technical information on boundary strips/expanded field margins*).

Farming and Wildlife Advisory Group. 1996. *Planting New Hedges*. FWAG, Kenilworth.

Technical Information Sheet giving concise, practical guidance on the establishment of new hedgerows using native species. Topics covered include species selection, planting methods (timing, spacing, mulching etc), weed control and protective fencing. (*Useful for direct distribution to farmers*).

Farming and Wildlife Advisory Group. 1996. *Sown Boundary Strips*. FWAG, Kenilworth.

Technical Information Sheet explaining the rationale for sowing boundary strips in arable field margins to reduce weed problems, and providing practical guidelines on how best to establish and manage them. Identifies priority sites for boundary strips to benefit wildlife, and contains some general advice on which wild grasses and herbs are suitable for inclusion in seed mixtures. (*Suitable for distribution to farmers, but lacks information on when to sow and any specific mention of the benefits of boundary strips for wildlife. Should be read in conjunction with other FWAG technical information sheets on field boundaries*).

Farming and Wildlife Advisory Group. 1996. *Tree Planting*. FWAG, Kenilworth.

Technical Information Sheet on the planting of copses, woods and hedgerow/parkland trees. Covers planting design, species choice, ground preparation, handling of stock and planting techniques, protection from grazing and weed control.

Farming and Wildlife Advisory Group. 1996. *Using Native Material*. FWAG, Kenilworth.

Technical Information Sheet highlighting the need not only to use native species of trees, shrubs and wild flowers when undertaking new planting projects, but also to ensure that the seed/plants are derived from native stock, preferably from the local area. Lists reasons for using native material, and suggests natural regeneration should be the preferred option wherever possible. (*Useful as background information when considering habitat creation projects*).

Farrell, I. 1993. *Lowland Heathland: The Extent of Habitat Change*. English Nature Science No. 12. English Nature, Peterborough. 71pp.

A 1987 Nature Conservancy Council report, updated by English Nature in 1992. The report contains introductory sections on the distribution, origin and history of heathland in lowland Britain. The main part of the text documents historical changes in the extent of the main heathland districts, including Breckland, the Suffolk Sandlings, the Surrey heaths, Hampshire, the Dorset heaths and the Lizard. Contains summary tables of the areas of heathland in each district, and map sequences showing the progressive fragmentation of

heathland sites over time. Also included is a brief summary of the status of British heathland in a European context, and a table outlining current threats to heathland. (*Key source of information summarising the current extent of heathland, as well as past losses and fragmentation*).

Ferris-Kaan, R. (Ed). 1995. *The Ecology of Woodland Creation*. John Wiley and Sons, Chichester. 244pp.

A collection of papers covering different aspects of woodland creation, including planning and design, the use of vegetation classification systems as an aid to woodland creation, planting versus natural regeneration, and the introduction of plants to the field layer. (*Probably too technical to be of direct use to those undertaking woodland habitat creation projects*).

Firbank, L.G., Arnold, H.R., Eversham, B.C., Mountford, J.O., Radford, G.L., Telfer, M.G., Treweek, J.R., Webb, N.R.C. and Wells, T.C.E. 1993. *Managing Set-aside Land for Wildlife*. ITE Research Publication No. 7. HMSO, London. 146pp.

Report detailing management recommendations for set-aside land which will benefit wildlife. Introductory sections consider the conservation priorities on set-aside farmland as well as the potential for wildlife enhancement. These are followed by a series of management options for rotational set-aside (e.g. management for arable weeds and birds), non-rotational set-aside (e.g. enhanced field margins, natural regeneration) and longer-term restoration on set-aside land (e.g. creation of calcareous grassland and heathland). (*Good appraisal of the various options for set-aside, though partly out of date due to changes in the set-aside regulations*).

FitzGerald, C., Martin, M. and Auld, M. 1985. *The Sandlings Project. Report of the Sandlings Project 1983-1985*. The Sandlings Group. 49pp.

Report describing the work of the Sandlings Project to restore heathland sites in east Suffolk during the period 1983-1985. Topics covered include the history of the sandlings heathland, the loss and fragmentation of heathland sites, the establishment and organisation of the project group, and details of the management work undertaken. (*Deals with management and restoration of existing heathland rather than the creation of new sites, though some of the restoration techniques described are applicable to habitat creation schemes*).

Free, A. and Kitson, M.T. 1992. *Heathland Habitat Creation*. Proceedings of the Seminar on Heathland Habitat Creation, Sizewell Power Station, January 1992. Suffolk Wildlife Trust/Nuclear Electric. 78pp.

Proceedings of a seminar aimed at pooling existing information on heathland re-creation projects, and reviewing the practicalities and techniques available. The 10 papers deal primarily with sites in East Anglia, although the methodologies discussed are likely to be applicable to many areas of Britain. The majority of papers relate to the creation of heathland on arable land, and address topics such as how to reduce soil fertility and successfully establish vegetation.

Game Conservancy Trust. (Undated). *Beetle Banks - Helping Nature to Control Pests*. The Game Conservancy Trust, Fordingbridge.

A leaflet, aimed at farmers, explaining the rationale for mid-field refuges and giving clear instructions on how to construct them and establish a grass sward. Guidelines for their on-going management are also given. (*Suitable for direct distribution to farmers*).

Game Conservancy Trust. (Undated). *The Management of Field Margins and Conservation Headlands*. The Game Conservancy Trust, Fordingbridge.

A concise leaflet, aimed at farmers, explaining the wildlife value of conservation headlands and field boundaries and giving clear recommendations on how best to manage these areas for wildlife. Recommendations for pesticide use on cereal headlands are also included. (*Suitable for direct distribution to farmers*).

Game Conservancy Trust. 1995. *Guidelines for the Management of Field Margins*. Farmland Ecology Unit Factsheet No. 2. The Game Conservancy Trust, Fordingbridge. 16pp.

Document detailing the Game Conservancy Trust's recommendations for the management of field margins (boundary, boundary strip and crop margin). Topics covered include conservation headlands, hedgerows, grass strips and beetle banks. Contains detailed information on the types of pesticides permitted on conservation headlands and grass strips. (*Concise summary document. Although aimed primarily at gamebirds, many of the recommendations will benefit other wildlife groups*).

Game Conservancy Trust. 1996. *Game, Set-aside and Match. Your Guide to Set-aside for Game in 1996*. Farmland Ecology Factsheet No.3. The Game Conservancy, Fordingbridge. 12pp.

Factsheet summarising the Game Conservancy's recommendations for managing set-aside for gamebirds. The recommendations are divided into those for rotational set-aside, flexible/guaranteed set-aside, woodland and

other options. Topics covered include natural regeneration, winter cover crops, brood-rearing cover and sown cereal mixtures. (*Good summary of the main options available to improve set-aside for game and, indirectly, other wildlife. Some of the information is likely to become rapidly out of date due to changing set-aside regulations*).

Game Conservancy Trust, Royal Society for the Protection of Birds and English Nature. 1996. *Proposal for an Arable Incentive Scheme*. Unpublished report to MAFF. 23pp.

A series of recommendations for management prescriptions which could be implemented as an "Arable Incentive Scheme" to increase the biodiversity of arable land. Contains introductory sections documenting the decline in the flora and fauna of arable land, as well as the likely reasons for this decline, followed by summaries of the prescriptions. These are divided into extensive cereal options (spring cereal undersown with grass/legume mix, stubble left over winter, conservation headlands) and unharvested crop options (cover crops, grass margins, beetle banks).

Gibson, C.W.D. 1995. *Creating Chalk Grasslands on Former Arable Land: A Review*. Report to Blue Circle Industries by Bioscan. Blue Circle/Bioscan/English Nature. 39pp.

A review of existing knowledge on the restoration of species-rich calcareous grassland on arable farmland, with an emphasis on natural successional processes. Topics covered include the origin of calcareous grassland, changes in arable land (particularly the increased usage of inorganic fertilisers), natural succession from arable to calcareous grassland, and techniques for restoration/re-creation (soil treatment, grazing, cutting, seeding, weed control etc). The advantages and disadvantages of each technique are discussed, and some recent re-creation projects are listed. (*A useful overview of techniques, although the practicalities of grassland creation are better covered in other publications*).

Giles, N. 1992. *Wildlife after Gravel: Twenty Years of Practical Research*. The Game Conservancy Trust/ARC Limited. 129pp.

Based on the experience gained from the creation and management of the wildfowl reserve at Great Linford. Contains habitat management guidance for specific bird groups (wildfowl, waders etc) and for maintaining a diverse wildlife community.

Gimingham, C.H. 1972. *Ecology of Heathlands*. Chapman and Hall, London. 266pp.

Gimingham, C.H. 1992. *The Lowland Heathland Management Handbook*. English Nature Science No. 8. English Nature, Peterborough. 201pp.

Comprehensive guide to the management of lowland heathland where wildlife conservation is the primary objective. Contains detailed information on types of heathland vegetation, requirements for and objectives of management, management techniques (cutting and mowing, burning, grazing, control of unwanted species), the management requirements of particular species, monitoring of heathland sites and heathland restoration. There are also case studies outlining the management practices at ten sites throughout the U.K. The bibliography contains a comprehensive list of references on heathland management. (*Covers similar ground, but in much more detail, to the lowland heathland management booklet*).

Hamilton, E. 1985. *Tree Planting*. The Woodland Trust, Grantham. 16pp.

Booklet produced by the Woodland Trust to provide general information and advice to anyone planning a tree planting project on open ground. Topics covered include sources of grants and advice, where to plant trees, choice of species to plant, project planning, and preparation, planting and aftercare. Also included is a table listing native tree and shrub species and their natural range. (*Good general booklet on tree planting, but contains some information, for example on rates of grant aid, which is badly out of date*).

Hawke, C.J. and Jose, P.V. 1996. *Reedbed Management for Commercial and Wildlife Interests*. RSPB, Sandy. 212pp.

A practical guide to the techniques of reedbed management, rehabilitation and creation. The introduction includes a resume of the wildlife importance of reedbeds. The main text is divided into four parts. Part one highlights the importance of planning in reedbed management and creation (e.g. site evaluation, identification of factors influencing decisions), and Part 2 describes rehabilitation and management techniques. Part 3 covers the creation of reedbeds on arable land, disused land, or land with little or no existing wildlife value. There is detailed consideration of engineering operations (e.g. land forming and construction of water control and drainage systems) as well as the establishment of new areas of reed growth through natural expansion, seeding, and planting of rhizomes and stem cuttings. The use of reed beds in the treatment of effluents is also covered. Part four comprises 17 case studies detailing examples of reedbed management and creation techniques in the UK. Also included is a list of organisations to contact for further information. (*Essential reading for anyone considering creating new areas of reedbed*).

Hill, M.O. et al. 1993. *The Role of Corridors, Stepping Stones and Islands for Species Conservation in a Changing Climate*. English Nature Research Report No. 75. English Nature, Peterborough. 112pp.

A review of species dispersal along corridors, within the context of the potential future changes in Britain's climate as a result of global warming. The report considers the migration, dispersal, invasion and vulnerability of organisms in Britain, the use of GIS to identify corridor locations, and the need for monitoring to assess the value of corridors for wildlife. (*Useful as background information only*).

Hillier, S.H., Walton, D.W.H. and Wells, D.A. (Eds). 1990. *Calcareous Grasslands: Ecology and Management*. Proceedings of British Ecological Society/Nature Conservancy Council Symposium. Bluntisham Books, Huntingdon. 193pp.

A diverse collection of scientific papers on the ecology and management of calcareous grassland. The Proceedings are arranged into sections covering the distinctive features of calcareous grassland, the maintenance and manipulation of species diversity, management for individual species and reserve management. The latter section contains two papers relating to the establishment of chalk grassland on arable land. (*Of very limited value in habitat creation projects. More comprehensive and accessible information is available in other publications*).

Jefferson, R.G. and Robertson, H.J. 1996. *Lowland Grassland: Wildlife Value and Conservation Status*. English Nature Research Report No. 169. English Nature, Peterborough. 67pp.

A compendium of information on the distribution, extent and conservation status of lowland grassland and associated species in England. The report contains sections on the types and total extent of lowland grassland, loss and fragmentation of acid, neutral and calcareous grassland, species conservation interest, conservation status of grasslands, non-statutory conservation priorities and incentive schemes. Also included is a bibliography of key references on grassland issues. (*Useful as a source of information on loss and fragmentation of lowland grassland*).

Kirby, K. 1992. Ancient Woodland: A Re-creatable Resource? *Tree News*, Summer 1992. 3pp.

Article detailing the nature conservation importance of ancient, semi-natural woodland, before going on to consider the extent to which newly created woodlands can be made to mimic conditions within ancient woods. Topics discussed include the siting of new woods, ground preparation (nutrient reduction, modification of topography etc), selection of tree and shrub species, planting densities and patterns, introduction and establishment of ground flora, and the need for continuing management. Contains a table of simple species mixes of trees, shrubs and ground flora for new woods on different soil types. (*Good background information for anyone wanting to create new woodlands with greater wildlife interest than the average farm woodland*).

Kirby, K. 1995. *Rebuilding the English Countryside: Habitat Fragmentation and Wildlife Corridors as Issues in Practical Conservation*. English Nature Science No. 10. English Nature, Peterborough. 39pp.

Report, largely resulting from the discussions of English Nature's Habitat Fragmentation Group, considering the possible effects of fragmentation on wildlife in the English countryside. Contains a number of tentative conclusions on where best to direct effort to prevent loss of species as a result of fragmentation and to restore lost ground for wildlife. The relative merits of extending existing habitats, creating linear features (wildlife corridors), and "stepping stones" of new habitat in particular situations are also considered. (*Technical report - useful for those interested in the theoretical aspects of habitat fragmentation*).

Lack, P. 1992. *Birds on Lowland Farms*. HMSO, London. 140pp.

Publication arising from a collaboration between the BTO, JNCC and MAFF, and using the Common Birds Census as the main data source. The book aims to describe the ecological requirements of birds on farms, to indicate the factors influencing their distribution and abundance, to explain the effects of different management practices on birds and to demonstrate how management can be modified to improve the habitat for birds. Whilst the emphasis is on the management of existing habitats, there are also recommendations for the creation of areas of new habitat specifically to benefit birds. There are separate chapters for each of the main farmland habitats (e.g. hedges, woodlands, field margins, fields and crops etc). (*The information on habitat creation is concise but probably lacks sufficient detail to plan a project without reference to other sources. The management recommendations will be of value in assessing the future management requirements of newly-established habitat creation schemes*).

Lewis, G. and Williams G. 1984. *Rivers and Wildlife Handbook*. RSPB/RSNC. Sandy/Lincoln. 295pp.

Jointly produced by the Royal Society for the Protection of Birds and the Royal Society for Nature Conservation, this handbook has now been updated and expanded by these organisations, together with the National Rivers Authority, and published as the New Rivers and Wildlife Handbook, edited by Ward, Holmes and Jose. (*Probably best to refer just to the New Rivers and Wildlife Handbook*).

- Luscombe, G. and Scott, R. 1994. *Wildflowers Work: A Technical Guide to Creating and Managing Wildflower Landscapes*. Landlife, Liverpool. 30pp.
- Gives guidance on all aspects of creating wildflower landscapes, including reducing soil fertility, choice of seed mix and sowing methods. (*Aimed primarily at urban sites, but much of the information will be relevant to all grassland creation schemes*).
- Michael, N. 1996a. *The Lowland Heathland Management Booklet, Version 2.0*. English Nature Science No.11. English Nature, Peterborough. 40pp.
- A concise guide, aimed at non-specialists, to the objectives and techniques of managing lowland heath for nature conservation. Contains sections on the types of lowland heath in England, heather management, control of invasive plant species, grazing management, management for fauna and the management of specific heathland types. There is also a short section on the restoration and re-creation of dry heath. (*Valuable reference for anyone involved in the on-going management of newly created areas of heathland*).
- Michael, N. 1996b. *Lowland Heathland: Wildlife Value and Conservation Status*. English Nature Research Report No. 188. English Nature, Peterborough. 13pp.
- Report produced as part of English Nature's National Lowland Heathland Programme, providing a compendium of information on the distribution, extent and conservation status of lowland heathland in England. Contains information on heathland on National Nature Reserves, the extent of different types of heathland in each county and the proportion designated as SSSI, as well as monitoring guidelines for lowland heathland sites. (*Good source of summary statistics on England's heathland resource*).
- Michael, N. 1996c. *How to Select Land Which is Suitable for the Re-creation of Lowland Heathland. A Guidance Note for Conservation Advisors and Landowners*. English Nature, Peterborough. 4pp.
- Leaflet in which the main feature is a flowchart for choosing land which is most likely to be easily converted back to lowland heathland. Also included are brief notes on the importance of heathland for wildlife, reasons for re-creating heathland and methods of heathland re-creation, as well as sources of further information. (*Flowchart will be particularly useful for identifying sites for heathland creation*).
- Ministry of Agriculture, Fisheries and Food. 1992. *The Farm Woodland Premium Scheme; Rules and Procedures*. MAFF, London. 26pp.
- Booklet outlining the rules, procedures and levels of payment of the FWPS, a scheme designed to encourage the creation of new woodlands on agricultural land (*primarily arable land and improved grasslands*).
- Ministry of Agriculture, Fisheries and Food. 1993. *Environmentally Sensitive Areas Information Pack*. MAFF, London. 20pp. plus 22 leaflets.
- Booklet explaining the rationale behind the introduction of the ESA scheme, and describing the types of wildlife habitat, landscape and historic features which the scheme seeks to conserve or create. The booklet includes a brief description of each of the 22 current ESA areas in England. The leaflets (one for each ESA) contain a map and more detailed description of each ESA. (*Only of use for farmers with land within ESA areas. No details of financial incentives available - separate packs are tailored to each ESA*).
- Ministry of Agriculture, Fisheries and Food. 1996. *Conservation Grants for Farmers*. MAFF, London. 15pp.
- Booklet listing the main national schemes and grants available for conservation and provision of public access on farms in England. Covers grants provided by MAFF, English Heritage, English Nature and the Forestry Authority. A brief summary of each scheme is provided, together with details of current payment rates. Addresses of MAFF Regional Service Centres and an order form for further information are included. (*Very useful as a quick reference to the various options for grant aid*).
- Ministry of Agriculture, Fisheries and Food. 1996. *The Countryside Stewardship Scheme: Information for Farmers and Land Managers*. MAFF, London.
- Leaflet giving a brief overview of the aims and objectives of the Countryside Stewardship grant scheme, including a summary of the types of work that can be carried out under the scheme and the current payment rates. (*Useful as a general introduction to the scheme. More detailed information is available in the application pack*).
- National Rivers Authority. 1993. *Ponds and Conservation: A Rough Guide to Pond Restoration, Creation and Management*. NRA, Northumbria and Yorkshire Region. 54pp.
- Provides guidelines on how to maximise the wildlife conservation value of existing and newly created ponds, ranging from small pools of water to ponds several hectares in area. Contains detailed information on planning

a new pond (including siting, water supply and legal aspects), designing ponds and wetland complexes, and construction of natural and artificially lined ponds. Other sections cover pond management and restoration, and ponds for particular uses/faunal groups such as fishing, dragonflies or amphibians. Also included are sources of grants, information and advice on pond construction, and lists of plant species suitable for introduction to new ponds. (*Excellent publication for anyone giving advice on pond creation*).

Nature Conservancy Council. 1989. *Management Options for Expanded Field Margins*. NCC, Peterborough. (Leaflet). 4pp.

Introductory leaflet covering the four main options for expanded field margins - conservation headlands, fallow margins, grass boundary strips and hedgerows. The benefits to wildlife (and farming) of each option are explained, and brief guidance is given on how to establish and manage each of these features. (*Concise, clear guide to the available options*).

Nature Conservancy Council. 1989. *The Conservation of Cornfield Flowers*. Nature Conservancy Council, Peterborough. 16pp.

Booklet documenting how changes in agricultural practice have led to the decline in cornfield flowers, and outlining management practices (e.g. creation of conservation headlands) which can be adopted to help conserve this group of plants. Contains lists of rare and declining species of wild flower characteristic of cultivated land. (*Excellent background information on cornfield plants. Details of the creation and management of conservation headlands are dealt with better in more recent publications*).

Newbold, C., Honnor, J. and Buckley, K. 1989. *Nature Conservation and the Management of Drainage Channels*. Nature Conservancy Council/Association of Drainage Authorities. 108pp.

Open University. 1992. *Practical Conservation: Water and Wetlands*. Open University. 116pp.

Contains guidance on managing water quantity and quality, selection of sites for pond creation, and design and construction of ponds and wetlands.

Osborne, P. 1989. *The Management of Set-aside Land for Birds: A Practical Guide*. Royal Society for the Protection of Birds, Sandy. 34pp.

Parker, D.M. 1995. *Habitat Creation - A Critical Guide*. English Nature Science No. 21. English Nature, Peterborough. 190pp.

Report examining the potential and actual problems of habitat creation in Britain, and presenting guidance on best practice in the planning, construction and management of habitat creation projects. The report draws on information obtained from a survey and review of 150 habitat creation projects throughout the UK. A general chapter on habitat creation planning is followed by chapters on grassland, woodland and scrub, heathland and moorland, peatlands and urban sites. Within each chapter there are sections on semi-natural habitat types, initial site survey and planning, preparation of a project plan and the setting of objectives, methods of habitat creation, and monitoring and long-term management. The report includes 26 case studies of habitat creation projects in the UK. (*Essential reading for anyone undertaking or advising on any significant habitat creation project*).

Penny Anderson Associates. 1993. *Roads and Nature Conservation: Guidance on Impacts, Mitigation and Enhancement*. Report for English Nature. English Nature, Peterborough. 80pp.

Document outlining the main impacts of road schemes on wildlife, and providing guidance on the most appropriate measures to mitigate these impacts. Includes some data on the loss and fragmentation of semi-natural habitats. Section 9 covers habitat creation, and addresses key issues including selection of habitat type, sowing versus natural regeneration, soil type, species selection, ground preparation and management. There are brief sections on creation of woodland, grassland, heathland and wetland habitats, and on habitat creation for butterflies and amphibians. Guideline costs for habitat creation are also given. (*Although written in relation to road schemes, much of the information given will be of value to habitat creation schemes on agricultural land*).

Peterken, G.F. 1993. *Woodland Conservation and Management*. 2nd Edition. Chapman and Hall, London. 374pp.

Peterken, G.F. and Allison, I.I. 1989. *Woods, Trees and Hedges: A Review of Changes in the British Countryside*. Focus on Nature Conservation No. 22. Nature Conservancy Council, Peterborough. 65pp.

Report providing detailed information on the losses of woodland and hedges in different regions of Britain. (*Excellent source of background information on habitat loss*).

Pollard, E., Hooper, M.D. and Moore, N.W. 1974. *Hedges*. Collins New Naturalist No. 58. Collins, London. 256pp.

Rackham, O. 1976 (revised 1990). *Trees and Woodlands in the British Landscape*. J.M.Dent, London. 234pp.

Treatise detailing the historical ecology of Britain's woodland and hedgerows (as well as the trees of meadows, commons and parks) from pre-history to the present day. The final chapter reviews recent developments in the conservation of ancient woodland and considers prospects for the future. (*Excellent account of the historical, landscape and wildlife importance of our woodland resource*).

Rackham, O. 1986. *The History of the Countryside*. J.M.Dent and Sons Ltd., London. 445pp.

Detailed historical ecology of the British countryside. The emphasis is on woodland and trees, though a number of other habitats are also covered, including heaths, moors, grassland, ponds, marshes, fens and rivers. (*Excellent introduction to wildlife habitats in a historical context*).

Rodwell, J.S. and Patterson, G.S. 1994. Creating New Native Woodlands. *Forestry Commission Bulletin* No. 112. HMSO, London. 74pp.

A comprehensive guide to the creation and management of new areas of woodland made up of communities of native tree and shrub species appropriate to the site. The booklet is divided into four main sections: Section 1 describes the main types of semi-natural woodland in Britain and how they are influenced by climate, soils and management. Section 2 provides general guidance on methods for the design and early management of new native woodlands (e.g. species choice, planting patterns, ground preparation, use of herbicides). Sections 3 and 4 present detailed design prescriptions for new woodlands modelled on the main NVC woodland types in Britain. The prescriptions include lists of recommended trees and shrubs, as well as lists of ground flora species to encourage. (*Essential reference source for creating new woodlands which attempt to mimic semi-natural woodland communities*).

Royal Society for the Protection of Birds. 1994. *Farming and Wildlife: Arable Land*. RSPB, Sandy. (Leaflet).

Leaflet summarising chapter 2 of *Farming and Wildlife: A Practical Management Handbook*. Topics covered include the importance of arable land for wildlife, the effects of fertiliser and pesticide use on wildlife, and recommended management practices (e.g. best practice for pesticide and fertiliser use) to benefit wildlife on arable land. There are additional sections on how to manage field margins, conservation headlands and rotational set-aside for wildlife, and details of the various incentive schemes available. (*Good, concise document which gets the main points across effectively - suitable for direct distribution to farmers*).

Royal Society for the Protection of Birds. 1994. *Farming and Wildlife: Farm Woods*. RSPB, Sandy. (Leaflet).

Leaflet summarising chapter 7 of *Farming and Wildlife: A Practical Management Handbook*. Although dealing primarily with existing woodlands, much of the information contained would be useful for those considering the planting of new areas of woodland. Topics covered include the importance of farm woods for wildlife, and management practices to benefit wildlife. There is also a list of key points for establishing new woodlands, and details of the various incentive schemes available. (*Document suitable for direct distribution to farmers, but contains only limited information on woodland creation*).

Royal Society for the Protection of Birds. 1994. *Farming and Wildlife: Hedgerows, Farm Trees and Scrub*. RSPB, Sandy. (Leaflet).

Leaflet summarising chapter 4 of *Farming and Wildlife: A Practical Management Handbook*. Mainly deals with the management of existing trees, hedges and scrub, but contains a useful resume of the wildlife value of these features. Outlines a few key points to consider when planting new hedges and hedgerow trees. (*Good general document suitable for direct distribution to farmers, but contains little information on creation of new areas of habitat*).

Royal Society for the Protection of Birds. 1994. *Farming and Wildlife: Lowland Heaths*. RSPB, Sandy. (Leaflet).

Leaflet summarising chapter 4 of *Farming and Wildlife: A Practical Management Handbook*. A brief account of the importance of lowland heath for wildlife is followed by recommendations for conservation management. A section outlining the main options for re-creation of heathland for wildlife is also included, as well as potential sources of financial incentives. (*Good, concise document which gets the main points across effectively - suitable for direct distribution to farmers*).

Royal Society for the Protection of Birds. 1994. *Farming and Wildlife: Pastures and Meadows*. RSPB, Sandy. (Leaflet).

Leaflet summarising chapter 3 of *Farming and Wildlife: A Practical Management Handbook*. Topics covered include the importance of grasslands for wildlife, the effects of grazing and mowing on plant variety and sward structure, and key recommendations for the management of these habitats for wildlife. The leaflet includes a short section outlining the main options for creating new grasslands, and lists the main sources of financial incentives. (*Suitable for direct distribution to farmers - though much more information would be required by anyone seriously considering grassland creation*).

Royal Society for the Protection of Birds. 1994. *Farming and Wildlife: Waterbodies and other Wetlands*. RSPB, Sandy. (Leaflet).

Leaflet summarising chapter 9 of *Farming and Wildlife: A Practical Management Handbook*. The importance of wetlands and waterbodies for wildlife is outlined, followed by key management recommendations for maximising the wildlife potential of ponds, ditches, rivers and streams, wet grassland, reedbeds and other wetland habitats. Treatment of habitat creation is restricted to a brief mention of some of the features which might be re-created. (*Despite the lack of information specifically on habitat creation, a good general leaflet suitable for distribution to farmers*).

Royal Society for the Protection of Birds. 1995. *Farmland Bird Information*. RSPB, Sandy.

Information pack published by the RSPB, sponsored by MAFF, and supported by the GCT, BTO and FWAG. The pack comprises management guidelines for skylark, grey partridge, corn bunting, reed bunting, linnet and tree sparrow (one A4 sheet for each species). Basic factual information is given for each species (including the extent of population decline), as well as recommendations for management practices to encourage their presence on farms. (*These sheets would be very useful to distribute to farmers*).

Royal Society for the Protection of Birds, English Nature and Institute of Terrestrial Ecology. (In Press). *The Wet Grassland Guide: Managing Floodplain and Coastal Wet Grassland for Wildlife*. RSPB, Sandy.

A new management guide due for publication in late 1997. Section 4.5 deals with the establishment of wet grassland. Topics covered include natural regeneration, species reintroduction, use of container-grown plants and seeding. The section on seeding provides guidance on site preparation, sources of seed and seed collection, seed mixtures and sowing rates, as well as sowing times and the use of nurse crops. Recommendations for aftercare management are given, and there are two case studies describing practical examples of wet grassland creation. (*Valuable source of reference for anyone contemplating creation or restoration of wet grasslands*).

Smith, H., Feber, R.E., Johnson, P.J., McCallum, K., Plesner Jensen, S., Younes, M. and Macdonald, D.W. 1993. *The Conservation of Arable Field Margins*. English Nature Science No. 18. English Nature, Peterborough. 455pp.

Detailed research report describing the results of experiments on the management of arable field margins. The objectives of the experiments were to determine practical ways of restoring the wildlife conservation interest of field boundaries whilst addressing the problem of weed control. One experiment involved the establishment of 2m wide margins, and the other the establishment of wider margins. Vegetation on the margins was established by natural regeneration or sowing with grasses/wild flowers, and a variety of cutting regimes were introduced. Monitoring was carried out to determine the effects of the different treatments on vegetation, butterflies, other invertebrate groups and small mammals. The results of the study provide a basis for designing field margin management strategies which can increase the species richness of plant and animal communities whilst allowing adequate weed control. (*Contains a wealth of valuable information, but likely to be too detailed and inaccessible to be of use to those actively involved in habitat creation schemes*).

Soutar, R.G. and Peterken, G.F. 1989. Regional Lists of Native Trees and Shrubs for use in Afforestation Schemes. *Arboricultural Journal*, 13, 33-43.

Paper giving lists of native tree and shrub species suitable for planting in 10 zones dividing England, Scotland and Wales. Aimed primarily at assisting those planting new areas of woodland under the Woodland Grant Scheme. Contains a useful table matching site conditions with species. (*Useful aid to species selection for woodland habitat creation schemes*).

Spellerberg, I.F. and Gaywood, M. 1993. *Linear Features: Linear Habitats and Wildlife Corridors*. English Nature Research Report No. 60. English Nature, Peterborough. 74pp.

A review of the literature on linear features, including an appraisal of their characteristics, with an emphasis on urban environments. The report summarises the effects of habitat reduction and fragmentation on wildlife, and considers the functions of linear features from ecological, environmental and landscape perspectives. There is also a section on the planning and management of linear features, and an extensive bibliography. (*Background information only - not of practical use in habitat creation schemes*).

Treweek, J.R. et al. 1991. *Wetland Restoration: Techniques for an Integrated Approach*. FTF/MAFF. 92pp.

Investigates the scope for creating, re-creating and rehabilitating wetland habitats that have been under intensive agricultural management, with a view to improving their nature conservation value. Assesses the practicality of attaining wildlife objectives from a hydrological and socio-economic perspective. Provides guidance on technical aspects of water level management, and on grazing, mowing, and other aspects of management.

Tubbs, C.R. 1985. *The Decline and Present Status of the English Lowland Heaths and their Vertebrates*. Focus on Nature Conservation No. 11. Nature Conservancy Council, Peterborough. 20pp.

Report detailing the chronology and extent of loss of lowland heathland in England and the causes of this decline. Data on the status of vertebrates associated with heathland (birds and herpetofauna) is also included. (*More up-to-date information is available in more recent publications on heathland*).

Ward, D., Holmes, N. and José, P. (Eds). 1994. *The New Rivers and Wildlife Handbook*. RSPB/NRA/RSNC. RSPB, Sandy. 426pp.

Jointly produced by the Royal Society for the Protection of Birds, the National Rivers Authority and the Royal Society for Nature Conservation, this handbook is intended as a practical guide to river management techniques which integrate the requirements of flood defence, wildlife and other river interests. Although ostensibly dealing with the management and restoration of existing riverine features, the handbook contains much valuable information on techniques for the creation of new wetland wildlife habitat, both within the river channel (e.g. shallow margins, bays) and in the adjacent floodplain (e.g. washlands and by-pass channels). There are also sections on the establishment and management of aquatic and bankside vegetation (including wild flowers and trees and shrubs), covering planting techniques and recommended species for particular areas of the country. In addition, numerous case studies are included to demonstrate the practical application of the techniques described. The book also contains sections on river processes and biology, and survey methods for river wildlife. (*Essential reference source for anyone considering habitat creation within or adjacent to watercourses*).

Webb, N.R. 1986. *Heathlands*. Collins New Naturalist No.72. Collins, London. 223pp.

General text on the heathlands of southern Britain, providing a good introduction to the subject and describing much of the recent work on the ecology of heathland. Topics covered include the influence of soil, climate and geology, the effects of human activity on the development of heathland, and the characteristics of different heathland areas throughout Britain. In addition there are extensive sections on the flora and fauna of heathland. Chapters 4, 5 and 12 contain useful statistics on the extent of loss and fragmentation of the habitat. Chapter 12 contains a brief review of techniques for the restoration/re-creation of heathland. (*Excellent as an introduction to the habitat*).

Webb, N.R. 1990. Changes on the Heathlands of Dorset, England, between 1978 and 1987. *Biological Conservation*, 51, 273-286.

Paper presenting the results of heathland surveys in Dorset. In the nine year period between surveys the area of heathland decreased by 5%, mainly due to conversion to farmland and development. (*Useful source of information on recent heathland habitat loss*).

Wells, T.C.E., Bell, S. and Frost, A. 1981. *Creating Attractive Grasslands Using Native Plant Species*. Nature Conservancy Council, Shrewsbury. 34pp.

Report providing guidance, based on research carried out by the Institute of Terrestrial Ecology, on the creation of new areas of grassland using native species of grasses and herbs. There are separate sections on seed collection (collection methods, when to collect), post-harvest handling of seed, seed germination, propagation of plants for seed production, seed mixtures and sowing (including recommended mixtures for heavy clay, chalk and limestone and alluvial soils) and management of sown areas. (*Excellent reference, particularly for those wishing to sow seed gathered from local sources*).

Wells, T.C.E., Cox, R. and Frost, A. 1989. *The Establishment and Management of Wildflower Meadows*. Focus on Nature Conservation No.21. Nature Conservancy Council, Peterborough. 27pp.

A summary of research carried out by the Institute of Terrestrial Ecology into the establishment of wild flower meadows. The report is divided into four parts: Section 1 reviews the loss of semi-natural grasslands as a result of habitat destruction and management changes. Section 2 provides guidelines on the establishment of new grasslands on previously arable land, covering topics such as seed availability, composition of seed mixtures, use of hay seed, sowing and aftercare management. Sections 3 and 4 deal with diversifying existing swards using slot-seeding and planting-out of pot grown plants. Lists of recommended grass and herb species for sowing in different soil types are included in the appendix. (*The section on establishment of new grasslands on arable land is particularly useful*).

Wells, T.C.E., Frost, A. and Bell, S. 1986. *Wild Flower Grasslands from Crop Grown Seed and Hay Bales*. Focus on Nature Conservation, No. 15. Nature Conservancy Council, Peterborough. 32pp.

Report summarizing some of the research carried out by the Institute of Terrestrial Ecology on the establishment of new grasslands with native plant species. Section 1 gives the results of experiments on the propagation of wild flower species for seed production. Section 2 presents an analysis of the seed content of hay bales from semi-natural grasslands, and the results of trials to establish new grasslands using seed from this source. Section

3 reviews the establishment success of grassland trial plots on clay, chalk and alluvial soils sown with appropriate seed mixes. (*Good source of information, particularly on seed collection/propagation, but of less practical use in habitat creation projects than some other publications*).

Williams, P., Biggs, J., Corfield, A., Fox, G., Walker, D. and Whitfield, M. 1997. Designing New Ponds for Wildlife. *British Wildlife*, 8, 137-150.

Concise article outlining the principles behind the design and location of new wildlife ponds. Topics covered include sources of water and the need for good water quality, strategic locations for ponds, the desirability of linking new ponds to existing wetland habitats and creating wetland complexes, the importance of features such as bare mud, the drawdown zone and microtopographical variations, phasing of pond design/creation, natural colonisation of new sites as opposed to planting, and initial management of new pond sites. Includes a useful table of pond design features for specific plant and animal groups, together with source references. (*Highly recommended for anyone designing new wildlife ponds or advising others on pond design*).

Williamson, D.R. 1992. *Establishing Farm Woodlands*. Forestry Commission Handbook 8. HMSO, London. 42pp.

Contains practical guidance, based on three years of trials on farms in southern England, on establishing woodlands on fertile arable and improved grassland sites. Includes sections on tree planting opportunities on farms, where to plant, soils and other factors affecting establishment, management during the establishment phase and weed and vegetation control. There is also a short section on establishing woodland for conservation. (*This booklet is not aimed at the creation of semi-natural woodlands and so is less useful than some other publications. Despite this, much of the information, particularly the section on soil and site factors, will be of value in the planning of woodland creation schemes for conservation*).

Wilson, R. 1979. *The Hedgerow Book*. David and Charles, Newton Abbot. 204pp.

A general account which includes sections on the origin and dating of hedges, but which concentrates mainly on individual animal and plant species characteristic of the habitat. (*Good general introduction to hedges and hedgerow wildlife*).

Woodrow, W., Symes, N. and Auld, M. 1996. *RSPB Dorset Heathland Project, 1989-1995. A Management Case Study*. RSPB, Sandy. 94pp.

Report describing the work of the RSPB Dorset Heathland Project between 1989 and 1995. The project was aimed primarily at increasing the area of sustainable open heath, and was targeted so as to maximise the reduction in fragmentation of heathland sites. Topics covered by the report include a review of heathlands in the area, the requirements of key species, establishment and planning of the project, techniques for heathland management, and site survey and monitoring. Also included are case studies for selected sites. (*Deals with restoration and management rather than heathland creation*).