

# 1 Approach

## 1.1 Rationale and scope

### 1.1.1 Rationale

Scrub as a habitat has received little attention from British nature conservationists. The Nature Conservation Review (Ratcliffe 1977) contains a section on calcareous scrub and refers, in passing, to scrub on heathland, and to upland and montane scrub. The guidelines for selection of biological SSSIs briefly mention scrub in the sections on woodland, grassland, heathland, fen, uplands, birds and butterflies, but scrub is not dealt with as a habitat in its own right. Few SSSIs have been designated for their scrub interest. The UK Biodiversity Action Plan neglects scrub almost completely as a habitat (only woolly willow *Salix lanata* and juniper *Juniperus communis* have Species Action Plans). It is more normal in conservation circles for scrub, especially on calcareous grassland and lowland heathland, to be seen as a problem that must be managed, typically by clearance.

The situation is different on the continent, where scrub and its related ecotones are more valued. Several habitats occurring in Britain are listed in Annex I of the EU Habitats and Species Directive. Scrub is recognised to have considerable nature conservation value, both in its own right and as a habitat for flora and fauna. This is as true of the edge habitats as of sites with habitat mosaics of woodland and heathland or grassland.

Many priority species in the UK Biodiversity Action Plan depend on scrub. In a recent analysis, around 10% of the 460 terrestrial BAP Priority Species were considered to be associated with scrub habitats. It is likely that the actual figure is higher than this, as the needs of many of the species are not known in detail.

Several Species Action Plans refer to species' needs for scrub, including the bullfinch, linnet, turtle dove and red-backed shrike. Other Priority Species, for which SAPs have yet to be published, which require scrub include black grouse, *Cryptocephalus coryli* (a leaf beetle), the banded mining bee *Andiron gravida*, lunar yellow underwing *Noctua orbona* and white-lined snout *Schrankia taenialis*.

Scrub is an integral part of grassland and heathland Priority Habitats. The lowland calcareous grassland Habitat Action Plan notes the contribution to local biodiversity of the grassland-scrub interface by providing shelter for invertebrates and edge conditions suitable for species such as bloody cranesbill *Geranium sanguinum*. As a part of a mosaic, scrub contributes to the nature conservation importance of several sites notified for their woodland interest, e.g. several SSSIs in the Peak District notified for their woodland or grassland interest.

In this review we show that scrub is an under-researched and undervalued resource that requires immediate action to identify and enhance its conservation value.

### 1.1.2 Objectives

The objectives of the work were as follows:

- to produce a report assessing current knowledge of scrub classification, distribution, ecology, management and conservation status in Britain,
- to determine priorities for scrub conservation and recommendations for future research.

### 1.1.3 Scope

The following areas were identified for inclusion in the review:

Definition:

- Definition of scrub.
- Overview and description of different types of scrub found in Britain.
- Floristics, structure, classification of scrub for conservation purposes.
- Current classifications and their limitations.

Context:

- Distribution and abundance of scrub types in Britain.
- Current protection, and coverage of scrub and scrub species by national and international conventions and directives.
- The value of scrub for species of importance to nature conservation.
- Consideration of the characteristics of the British resource in relation to European habitats.

Ecology:

- Scrub dynamics.
- Successional relationships, seral and climax scrub.
- Identification of valuable scrub.
- Mycorrhizal associations with scrub species.
- Ecological linkages between habitats and species of conservation interest.

Management:

- Review of current scrub management guidelines including practical techniques, and identification methods for improving the scrub habitat for BAP species and others of importance for nature conservation.
- Stock management.
- Review of agri-environment scheme prescriptions.

Recommendations:

- What basic research/survey is needed.
- What changes in policy are needed.
- What additions to nature conservation schedules, directives etc might be needed.

The report generally follows the structure defined by the five broad areas given above.

## **1.2 Sources of information**

Information from a range of sources was used during the compilation of this review. Some of the most useful information was gathered from unpublished sources, via questionnaires and discussions at an expert workshop.

### **1.2.1 Literature and data**

Published literature on scrub was identified using electronic databases (e.g. CAB Abstracts, BIDS) and existing reviews. Information was sourced to international journals, specialist publications and published reports. Specialist libraries (e.g. English Nature regional office libraries) were used to identify and access unpublished reports held by English Nature (EN), Scottish Natural Heritage (SNH) and Countryside Council for Wales (CCW).

Data on the distribution of scrub on all Sites of Special Scientific Interest in England, Scotland and Wales where scrub is a feature were extracted from databases held by EN, SNH and CCW respectively. These data were used to produce scrub distribution maps (Chapter 3). The maps for Scotland and Wales have a quantitative element, showing the area of scrub on each SSSI, in addition to information on distribution.

The Countryside Information System, which predicts the occurrence of scrub in 1km squares based on its occurrence in similar squares, was accessed to produce maps of the general pattern of distribution of scrub in Britain as a whole (Chapter 3).

Information on grant aid for scrub conservation was accessed through agri-environment scheme literature available from the Ministry of Agriculture, Fisheries and Food, the Forestry Commission, and through discussions with EN, CCW and SNH.

### **1.2.2 Consultation**

Many British and European specialists were consulted both formally and informally during this project. A draft version of the review was widely circulated to staff working on scrub-related issues for EN, SNH and CCW. The comments received were invaluable in shaping this final report.

### **1.2.3 Surveys of land managers, specialists and advisors**

Two questionnaires were used to survey the opinions of professionals involved in scrub conservation and management in Britain. The first questionnaire was targeted at land managers and other conservation practitioners, and aimed to assess attitudes towards scrub and the management techniques employed to maintain, control or remove scrub (Chapter 5). The questionnaire was distributed throughout England, Scotland and Wales to people with responsibility for land management. Analysis of responses gives a clear picture of the guidance needed by land managers to maximise the conservation benefits of work carried out on scrub. There is an inevitable bias in responses towards factors relevant to management of lowland, seral scrub, because this widespread habitat is the type of scrub that conservation land managers most frequently encounter.

The second questionnaire was used to identify strengths and weaknesses in agri-environmental policies relevant to scrub conservation in Britain, and was targeted at individuals involved in providing advice or awarding grants at a county or regional level (Chapter 6). Sixty seven individuals responded (more than half of the recipients), providing valuable insights into the uses and drawbacks of schemes funding scrub management. Although questionnaires were sent to many individuals throughout Britain, the majority of respondents were based in England, and had most

experience of lowland, seral scrub. This reflects the greater density of conservation professionals working in England, and to some extent the recent changes in agri-environment regulations in Wales.

### **1.2.4 Survey of GIS professionals**

The lack of availability and accessibility of data on the distribution and extent of different scrub types was raised several times at the expert workshop and on questionnaire returns. The use of Geographical Information Systems (GIS) for scrub conservation was investigated in a study area where information on scrub distribution was known to be available on GIS.

All organisations within the Chilterns Area of Outstanding Natural Beauty (AONB) using a GIS were contacted, and completed a telephone questionnaire (Chapter 3). Individuals were asked about their current and anticipated use of GIS to store, manipulate and analyse information on scrub.

### **1.2.5 Expert workshop**

An expert workshop was held in Peterborough on 5th November 1999 to survey the opinion of 'key players' involved in scrub conservation in Britain (Appendix 1.1). Discussions focussed on scrub classification, management and research, and on the implications of existing policy for scrub conservation. The ideas discussed have been integrated throughout the text of this review, and form the core of the recommendations proposed in Chapter 6.

### **1.2.6 Synthesis**

All information gathered during the writing of this report was assessed and emerging patterns identified during the final stages of this contract. Many key points relevant to scrub conservation were repeatedly raised through different channels. For example, the need for a single handbook guiding managers on best practice for scrub management was identified by responses to both the land management and the policy questionnaires, and highlighted during several sessions of the expert workshop. Research needs and constraints to successful management were derived from a combination of the above sources (literature, questionnaires, workshop) and prioritised in Chapter 6 (Recommendations).