

## Bracken Control Guidance

Scotland's Moorland Forum is preparing a range of guidance, through the Moorland Management Best Practice (MMBP) project, that provides practitioners, working in upland and moorland areas, with a source of information that reflects good practice and establishes a standard for accepted management techniques.

Information that is available elsewhere has not been duplicated, but a reference to it is included.

All the documents should be seen as representing evolving guidance. The aim is to review the documents at least annually so that they reflect the latest information.

Practices in this guidance, which are backed up by legislation and/or regulation, contain the word '**MUST**' in bold, letters. Failure to adopt these practices could lead to prosecution.

Parts of the guidance contain the word '**should**' in bold, lowercase letters. The actions identified in this way are not covered by legislation but land managers are expected to follow these parts of the guidance, as they represent sound, acceptable practices.

This guidance was produced on behalf of the Bracken Control Group. The author, Simon Thorp, coordinates the activity of the Bracken Control Group and currently this includes liaising with the authorities to obtain an Emergency Authorisation to allow Asulam, the main chemical agent, to be available to control bracken.

The members of the MMBP Steering Group are available from the [MMBP website](#), and the members of Scotland's Moorland Forum are listed on the [Forum's website](#).

The Moorland Management Best Practice Steering Group will welcome comments on the information contained in this guidance or proposals for change or improvement. This guidance will be reviewed at least every 12 months and any revisions will be recorded below.

### Revision Table

Date	Details

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## 1 Introduction

Bracken is the UK's most common fern and grows in dense stands on heathland, moorland, hillsides and in woodland. It is a large fern that favours dry, acid soils and spreads by underground rhizomes. Unlike many ferns, bracken dies back in winter, leaving brown, withered fronds that pepper the landscape. In the spring, the tightly curled fronds (crosiers) appear, grow and unfurl.

It is an ancient plant that it is claimed has survived and changed little since the time of the dinosaurs. It is present on all continents, except Antarctica. Bracken provides habitat for nesting birds; cover for birds, mammals, amphibians and reptiles; fritillary butterflies live in habitats dominated by bracken and it is one of the food plants of the caterpillars of a range of moths.

However, the ability of bracken to dominate other vegetation can be problematic to ensuring a mosaic of different habitats exists. There is little dispute that there is a need to ensure bracken is controlled such that it does not present an extensive monoculture.

Sheep ticks *Ixodes Ricinus* can be found in bracken litter and the population and range of ticks is thought to be increasing, along with the impact ticks can have on humans, livestock and wildlife through the range of tick-borne diseases.

The Bracken Control Group promotes the control of bracken by any means and it has responsibility for maintaining the regulatory framework that permits the use of Asulam, the main chemical control agent.

## 2 Bracken Control Techniques

Techniques range from physical treatments - such as trampling by stock, hand pulling, bruising, crushing, cutting – to chemical control by hand-held equipment or by helicopter.

All techniques have an impact and the choice will depend on the nature of the ground, the size of the problem and the aspirations of the owners and managers of the land.

It is important to recognise that most of the activity of the plant takes place below ground in the rhizomes<sup>1</sup>, and the target for any treatment is the buds on the rhizomes that will form the bracken plants in following years.

Chemical treatment achieves an attack on the rhizomes by using a systemic herbicide that is translocated into the rhizomes.

As a result of the structure of the plant, it is not possible to achieve total clearance after one application of herbicide. Some of the buds on the rhizomes will survive initial treatment and appear in following years. To maintain a high level of clearance it is essential that follow-up treatment of areas of regeneration takes place after primary treatment.

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<sup>1</sup> A rhizome is the 'root' of the bracken plant. It is a continuously growing horizontal underground stem which puts out lateral shoots and adventitious roots at intervals.

To achieve maximum impact, the timing of the control treatment, is important. The best time to apply a chemical treatment is in the period between full extension of the bracken crossers and the start of senescence, when the bracken starts to turn yellow.

To have any effects on the rhizomes and achieve a level of control, physical treatments of the bracken will need to be carried out at least three times each season for up to five years.

Physical treatments work by breaking the supply of nutrients from the above ground plant back into the rhizomes. As a result of repeated treatments, the vigour of the rhizomes is reduced until eventually they die.

### **3 Asulam**

Asulam has two key features: it offers selective control of bracken with little or no impact on non-target species, and it is authorised for aerial application.

Aerial application is the most effective technique for controlling large areas of bracken and the only technique where the access by ground-based equipment is difficult or impossible, such as on steep hillsides or on broken ground.

In 2011, a decision was made by the EU that the information available to demonstrate the safe use of Asulam, was insufficient to justify registration under the latest EU regulations.

Following the EU decision, a use-up period was allowed for 2012, and from 2013, the availability of Asulam has been maintained by annual Emergency Authorisations.

### **4 Registration of Asulam**

The initial application for the registration of asulam under the latest EU regulations was submitted in 2013, but this is a slow process. A decision about registration is unlikely to be made until later in 2020, at the earliest.

As the UK will adopt all the EU regulations relating to the use of herbicides, in the short term, there is unlikely to be any changes to the regulations that affect the use of Asulam.

Asulam is the active ingredient, and if the application is successful, it will apply to Asulam only. A further application is required to register the product that uses the active ingredient, in this case, Asulox. This could take a further two years.

### **5 Tick-borne Diseases**

Ticks survive well off their hosts in beds of bracken litter and are able to use the bracken plant as a ladder to reach hosts for a blood meal. There may therefore be a link between bracken and Tick-Borne Diseases.

Recently, Tick-Borne Encephalitis (TBE) has been identified in the UK; humans can also be affected by Lyme Disease.

See the [Bracken Briefings](#) – No 5 & 6

## 6 Current Situation

The draft [Emergency Authorisation approval for 2020](#) includes some additional restrictions:

- The approval will cover application by helicopter only, and therefore it will not be possible to use hand-held or ground-based equipment to apply Asulam,
- The buffer zone against surface water bodies will be increased from 50m to 90m, and
- Requirements to provide more records of use.

The Bracken Control Group has contacted landowners and managers throughout the UK to inform them of the new restrictions and to enquire if responders share the BCG's concerns about these restrictions. See the [Briefing and Questionnaire](#) that has been circulated.

## 7 Conclusions

There is a need for investment to develop new, more effective & safer bracken control techniques, but there is a risk that investment will not be forthcoming while uncertainty remains about the availability of Asulam.

It is important that the bracken control industry works closely with governments and public health organisations.

## 8 Feedback

A feedback form to capture views about the contents of this guidance is available on the [MMBP website](#).

## 9 Further Guidance

It is possible that the regime for the use of Asulam may change. Information will be placed on the [Bracken Control Group's website](#), there is a Newsletter sign up option on the [Updates page](#), and anyone responding to the [Briefing & Questionnaire](#) will be offered the opportunity to sign up to receive updates from the BCG.

A series of short briefings is being developed to provide more detail about the current situation in bite-sized chunks. See the [Bracken Briefings](#) page on the website.