

## Heather Cutting Supplementary Information No. 2

### MACHINERY

#### 1 Toppers and Flails

- 1.1 These machines are mounted on, or towed behind, tractors, but the use of heavy machinery is precluded on steep or soft ground.
- 1.2 Tractors up to 100hp with dual wheels may be more stable on steep hillsides and avoid damage to soils, as ground pressure is very low. In extremely wet conditions, wide tracked machines have the lowest ground pressure, but very waterlogged and boggy areas **should** be avoided.

#### 2 Brush-Cutting Machinery

- 2.1 Smaller machines that use a mulching attachment are popular. These can be self-propelled or towed behind All Terrain Vehicles – these are low ground pressure vehicles and may be ‘Quads’, or be fitted with six or eight wheels or tracks.
- 2.2 These machines may be used for cutting firebreaks as part of muirburn operations, and they have been used to great effect on sensitive peatland water catchments.
- 2.3 Using these machines to cut longer heather or larger areas can be very slow, and they are easily damaged in transit between cutting locations.

#### 3 Choice of Cutting Method

- 3.1 When correctly-sharpened, blades give the cleanest cut and are most likely to encourage heather regeneration. Chains may make faster progress possible, but risk killing or uprooting woody plants.

#### 4 Hand Held Equipment

- 4.1 Hand-held brushcutters and swipes have obvious limitations of scale.

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## MANAGEMENT OF CUT MATERIAL

### 5 Disadvantages of leaving cut material to decompose on site include:

- 5.1 Thick windrows shade out plants preventing regrowth until they have decomposed.
- 5.2 Breaking up or mulching windrows to accelerate their decomposition is time consuming and costly.
- 5.3 Dense windrows and tracking may lead to the formation of water channels, which in time may cause soil erosion, particularly on steeper ground.
- 5.4 Decomposition of cut material may take a long time to release nutrients.
- 5.5 When cutting to create firebreaks, piles of cut material may dry out, becoming ineffective in preventing the spread of fire. Once dry, windrows of dead heather may burn with high intensity.

### 6 Advantages of leaving cut material on site can include:

- 6.1 Thin layers of sharp heather stick evenly spread on the ground can protect young regeneration from damage by grazing animals.
- 6.2 Piles of cut material can provide concealment and camouflage for grouse and wader chicks, although these may not last long before compacting.
- 6.3 Windrows can create microclimate protection for young heather plants, offering shelter from the wind.
- 6.4 Piles of mature heather stick can act as ramps to allow young grouse to access high shoots in older heather stands, and also to reach into mature blaeberry plants where invertebrates that are an important part of their diet can be found.
- 6.5 The slow rate of decomposition ensures that there is lower risk of pollution of watercourses from eutrophication.

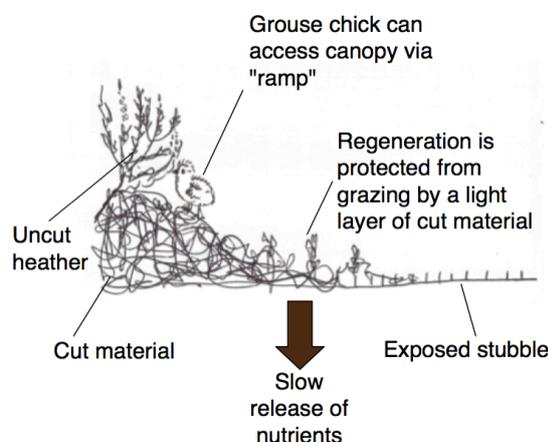


Figure 1: Grouse chick ramps

## **NARROW STRIP MATRIX**

### **7 Benefits**

- 7.1 Quicker vegetation regrowth after management due to shelter from wind.
- 7.2 Reduced chilling of young grouse chicks to allow more time foraging and less being brooded.
- 7.3 More insects for chicks. A warmer microclimate within cuts favours insects, while narrow cuts trap insects blown in from adjacent tall heather.
- 7.4 Evenly spread management is an advantage so that grouse territories are well distributed without local concentrations causing disease problems or predation honeypots.
- 7.5 An increase in the density of breeding pairs as a result of the greater length of edge habitat between young and mature heather. NSM cutting can produce 30 miles of “edge” per day – as much as 15 times more than in a day of traditional burning.

### **8 Features**

- 8.1 Single passes with a cutter are often insufficient to create a firebreak, and three or more passes are often required to create a robust firebreak with cutting alone. However, a single pass does create the possibility of stopping small-scale fires, which can be reinforced by additional cutting on the day of burning.
- 8.2 When conditions are suitable for burning, NSM provides firebreaks for a large number of fires, which are “ready to go”. As a result, burning can be easily integrated into NSM management.
- 8.3 Habitats can be designed using cutting to help protect moorland birds from predators. Muirburn may not be able to provide the same degree of control.
- 8.4 Specific grouse brood rearing habitats can be designed to reduce predation as well as to allow young birds to forage and grow in safety.
- 8.5 Narrow cuts allow chicks to escape quickly into tall heather or under windrows, which are only seconds away from their feeding places.

### **9 Different Cutting Layouts**

- 9.1 Different cutting layouts can be incorporated to achieve specific benefits.
- 9.2 “Radiator” cuts consist of several narrow cuts in close proximity through mature heather in an attempt to allow chicks access to the insect-rich understorey.

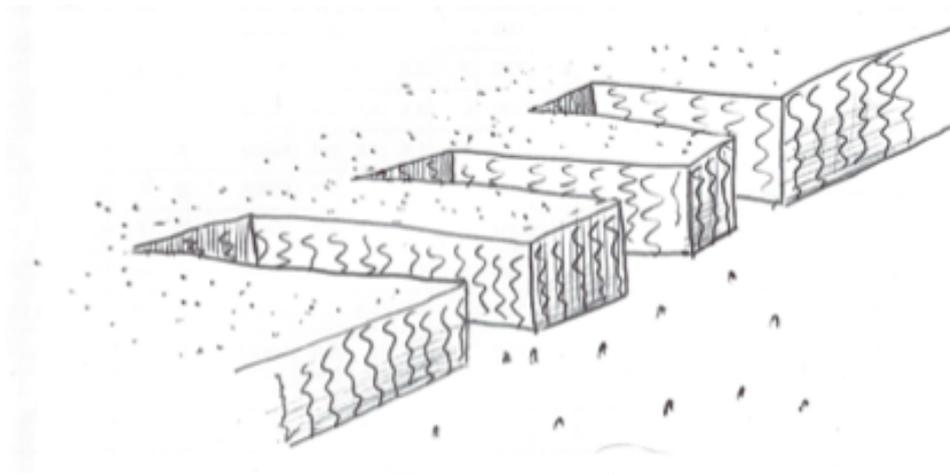


Figure 2: Radiator Cut

- 9.3 “Hurdle” cuts force low-flying raptor species, which can fly down the line of the NSM cuts, to reveal their positions during ambush attacks, providing prey with a chance to escape.

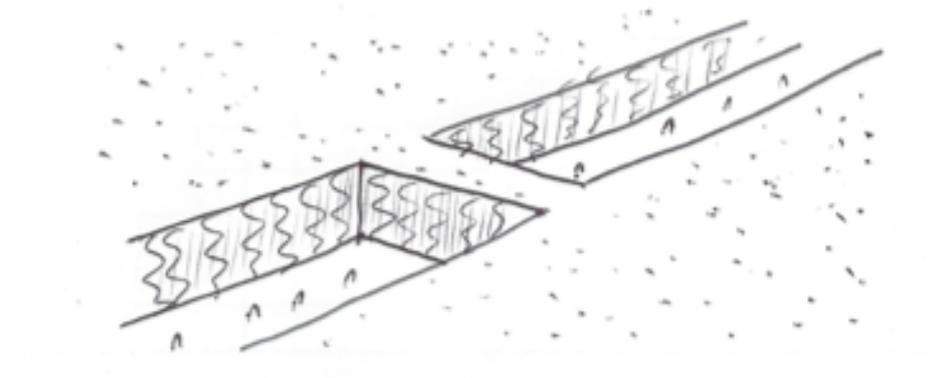


Figure 3: Hurdle Cut

- 9.4 “Lay-by” cuts provide chicks and young birds with shelter from wind and rain along otherwise straight fire edges.

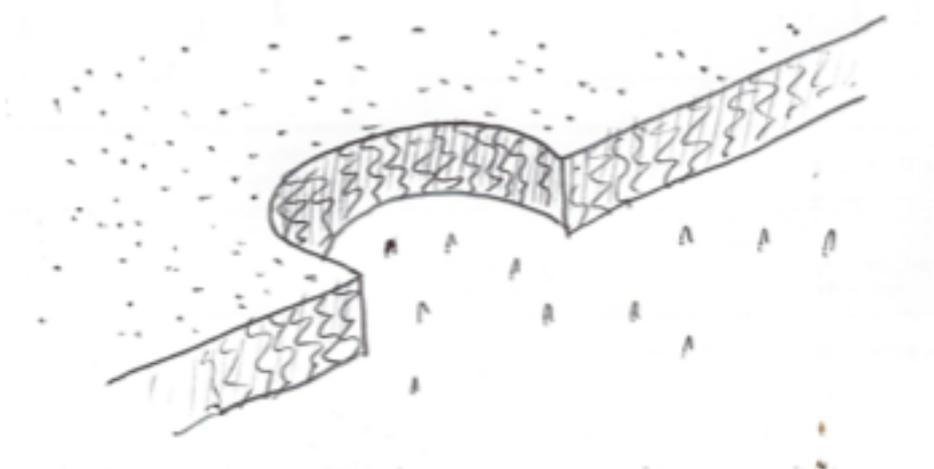


Figure 4: Lay-by cut

- 9.4.1 Cutting can allow runs to be established between fires and management features to facilitate easy, dry and tick-free movement for young birds and livestock. These runs can be useful sites for snaring.
- 9.4.2 In order to dilute the “magnet” effect of new heather growth it is better to increase the size of the areas cut or burnt.
- 9.4.3 Attempts to manage heather on too small a scale can be counter productive. Where thin cuts are put into tall heather, standing plants will soon fall into the cuts and erase them.

## **OTHER FEATURES**

### **10 Benefits for Other Species**

#### 10.1 Black Grouse.

- 10.1.1 Within commercial woodland livestock grazing and burning are often impractical for heather management. Cutting can be a practical solution for the need to control heather in such habitat for the benefit of black grouse.

#### 10.2 Capercaillie

- 10.2.1 Cutting heather is a standard management technique around sensitive, ancient, pine forests, considered as easier and cheaper than burning. However, RSPB studies demonstrate the value of fires put in and around capercaillie habitat, not only to produce valuable young heather and blaeberry plants, but also to encourage pine seedlings and forest expansion.

#### 10.3 Curlew

- 10.3.1 Cutting white grass and heather mixes in a larger-scale form of strip matrix has been shown to provide suitable breeding habitat for curlews and upland waders in the North of England.

### **11 Fire Control Design**

- 11.1.1 Short heather reduces the risk of large-scale wildfire and makes such fires easier to control. Cutting can perform a crucial role in restricting the spread of fire, both as part of a wider long-term land management plan and also as a proactive control measure in the event of a major fire.
- 11.1.2 A strip of four or more parallel cuts by a tractor at a right angle to the prevailing wind can catch and extinguish most fires, particularly when renewed frequently.

11.1.3 To what extent cutting can complement prescribed burning as a means of reducing the risk of damage from wildfire will depend on local characteristics and conditions.