



Harvesting and using heather (*Calluna vulgaris*) seed

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See also the Technical Notes *Methods of collecting wild seed from native grasslands* and *Equipment for harvesting grassland wild flora and heather seed.*

Training courses are available to practitioners wishing to learn more about issues covered in this Technical Note. See the training section of the website. Special training and demonstration events can also be organised by request.

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Additional information, either text or images, which will enhance the usefulness of this technical note would be appreciated. Please email Flora locale using the above address.

Additional information on techniques and machinery for heathland restoration are available via English Nature's Heathland Programme Officer, tel: 01733 455050, Email via the link on: www.english-nature.org/heathlands/home.htm. English Nature is also collating technical information on upland heath restoration and this will be available in the future (this note will be updated as contacts and sources come on line).

Compiled by Sue Everett, Flora locale.

Genetic conservation issues

Heather growing in different places can look and behave differently:

- Different growth forms (e.g. prostrate, bushy, upright)
- Different times for flowering and seed production

Some sites may hold a heather seed bank – restoration may be possible using management to promote natural regeneration (without introducing seed).



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Most sites identified for restoration represent nationally and internationally important plant communities, usually on designated land and nature reserves. These may have been damaged by:

- Overgrazing
- Intense summer fires or too much winter burning
- Erosion (associated with over-grazing, fires and trampling from public access)
- ♦ Abandonment and incursion by scrub, grass and bracken
- Plantation forestry, subsequent removal of conifers leading to large areas of bare ground.

Matching donor and receptor sites

If the introduction of heather seed is necessary, the donor site should be chosen to match the characteristics of the receptor site as far as possible, i.e.

- In the same locality or region
- ◆ Ideally, lie at a similar altitude (although this is often not possible as many sites to be restored are at high altitude and heather has to be collected from lower areas)
- Have similar physical attributes.
- Collection is most effective from the building-mature phases
- Collection using specialist machinery is best from low altitude sites below about 500 metres (where heather plants produce greater quantities of viable seed).

Harvesting methods

Heather seed can be collected by:

- Forage harvesting (cut and collect)
- Cutting and baling
- ♦ Harvesting the seed only (e.g. using a brush harvester)
- Collecting litter from under mature plants.

Advantages of seed harvesting

- Minimum bulk and cleaner seed produced easier handling and reduced costs to receptor site
- Seed loss minimised
- Less impact on donor habitat
- Best approach for restoring large sites.

Advantages of forage harvesting or cutting and baling

- Uses standard, readily available agricultural equipment & local agricultural contractor
- Cuts the heather sward, often necessary for heathland management
- Heather brash put on donor site protects seeds and can aid germination, especially on bare ground.

When to collect seed

- ♦ Seed of *Calluna vulgaris* ripens by about mid-October and can be collected from then to the end of November (sometimes into December)
- ♦ Seed is ready when dark brown and loose, with (ideally) 10-15 seeds per capsule: sample a few capsules to check for the abundance of seed



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◆ The four *Erica* species that are native to the UK ripen at different times – ripening is also site and location-dependent.

Equipment for seed harvesting

Seed can be collected using:

- ♦ A variety of rear and side-mounted brush harvesters, tractor-trailed, ATV-trailed and pedestrian brush harvesters
- Turf-cleaning machines (including "Billy goats") have also been successfully used, e.g. "Litamisa".

Further details and technical specifications are available in the Flora locale Technical Note *Equipment for harvesting grassland wild flora and heather seed.*

Germination of seed

- Only a proportion of seed germinates the year after sowing
- Chemical methods for seed treatment can be used to break dormancy and maximise year 1 germination; this is a specialist area of work but a number of contractors have the facilities and resources available and have produced much better results with treated seed (than with untreated).

Methods of sowing cleaned and dried seed

- Spread using a forced air-applicator mounted on an ATV
- Conventional seed drill (for flat, very even lowland sites on mostly bare, prepared ground)
- ◆ A helicopter can be used for large-scale applications
- Manual sowing, hand-held fiddle or a push-along lawn-seeder, could be used for small areas.

Sowing rates

- ♦ 15-17 kg per hectare (may involve repeated applications over several years)
- Lower rates can be sufficient if establishment conditions are favourable

Ground preparation and establishment

Soil surface must be exposed by, e.g.

- Removing growing vegetation above-ground by flailing, spraying with herbicide, burning, forage-harvesting or heavy grazing
- Removing vegetation litter
- Creating bare ground by scarifying (e.g. chain harrowing) or grazing hard

Strong competitor vegetation (e.g. bracken, Purple Moor-grass) must be reduced, e.g. by applying herbicide followed by winter-burning (prior to spring sowing). This technique has been successfully used to eradicate *Molinia caerula* (Purple Moor-grass) in the Upper Derwent project, (reviewed in *Enact* Winter 2002); burning before weedkilling may work but has yet to be fully trialed.

Regrowing competitor vegetation must be reduced during the establishment phase by one or a combination of management actions:

- Topping
- Controlled grazing
- Weed wiping.



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Collecting and using heather litter

- Dry heather litter can be collected from under mature heather stands (10-15 years' old in uplands, 15-25 years on lowland heath)
- ♦ Litter is broadcast either by hand or by the use of mechanized spreaders.

Disadvantages

- ♦ The litter may contain seed of unwanted species, such as birches *Betula* spp.
- ♦ Litter is bulky; a large quantity must be collected and used
- Collection is labour intensive
- There may be a conservation issue and undesirable impact, especially if the donor site is in a different place to the restoration site.

Heather seedlings must be protected against grazing (this may require fencing on grazed common land, which can be difficult). Introducing grazing, particularly sheep-grazing, in the early years can seriously prejudice the outcome of a heathland or moorland restoration scheme.



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