

Opening up the sward without grazing animals Extracts from Nibblers online discussion group

Dear All,

Can anyone help Nigel Goodman with this problem?

Thanks
Claire
Claire Weaver, GAP Co-ordinator, The GAP Office

I am keen to facilitate more species into the meadows here which were traditional sheep pastures amidst a lot of other such fields, They have been under the the ESA scheme for several years a but I don't see any real growth in number of species as the sward is still thick DEFRA take the view that a hay meadow should be grazed after its cut, August-October, ideally with cattle, to remove the residue and open the sward.

In my experience here in the past when I rented out the land the grazing didn't have any sward-opening effect. I have the DEFRA leaflets on how to improve the sward, creating bare patches equal to about 50-% of the land or plus or plants- but all have grazing.

I don't have animals would have to bring in from a local farm
Is there a stock free alternative?

Regards
Nigel

Nigel Goodman
Tegg_s Nose Farm

Which species are you expecting in your meadows and where will they come from?
My experience of pasture that has been converted to meadow is that it stays species-poor even if the structure is good.

The sward-opening effect of grazing post-hay cutting is subtle and creating large patches of bare ground sounds like an invitation for weeds unless you are going to cover the ground with species-rich hay (which I understand works quite well as a way of adding species).

Mowing is not as good as grazing as it creates a more even effect but is a way of maintaining what diversity you have and to prevent colonisation by scrub.. It is important to remove the cuttings.

Jacqui Ogden
English Nature

Hi -

I agree with what Jacqui says -- both pasture and meadow do seem to remain species-poor for a long time, even under suitable management. I think this is

because for recolonisation you need suitable seed sites, and available seed sources, both at the same time. For example, in my survey of the Itchen valley a couple of years ago, I found several nicely-grazed fields with very small, sharp-edged patches of diverse vegetation scattered through them. These appeared to be what the sprayer had missed many years before -- perhaps decades. The rest of these fields were very species-poor. (This is the real threat of thistles -- they make people spray their land!)

There was an article recently in British Wildlife (October 2003, pp 37 to 44) about strewing green hay as a way of introducing diversity. The idea is to collect grass as it is cut, and spread it out (quite thinly) on the receptor site immediately -- the same day. This allows seed to ripen and fall in the right place. Strewing dry hay apparently tends to give you mainly grasses, as other seeds have fallen on the donor site or been threshed out by the tedding.

I'd certainly advise aftermath grazing if possible, but if it really isn't, and if the sward is very closed, slight scarification with a chain harrow might do the trick, opening up small bare areas for the seeds -- they can't grow on their own from the top of the thatch down to the soil. I agree that the DEFRA 50% bare areas sounds enormously too much -- a recipe for thistles and ragwort, which also love bare areas (or is this a typo for 5%..?).

We are trying some small experimental patches of green hay at the moment. The main practical difficulty I found was coordinating collection with the particular day the hay was cut -- it was not until later that I realised that as it's being cut and carried green, I could have mown our small amount myself with a scythe at any time without waiting for the fickle weather... We bagged it in half-ton sand bags, which are easy to drag and lift if not too full, and can be transported in a trailer. I'll let you know how it goes. Larger amounts could be done with agricultural machinery -- for example, gathered with a forage harvester and perhaps spread with a muck spreader (it mustn't be left to heat though). With luck one might get some inverts too.

A method which I haven't done is translocating turf plugs. I intend to try this... What I'd thought of is to use a hollow cutter (perhaps 2 cm diameter) to cut many plugs (hundreds?) from a donor site, then plug these into similar holes in the receptor site. Or perhaps on a larger scale use a turf aerator (as found on golf courses for sports turf) to cut and gather plugs, which could be spread on the receptor site and rolled in when the soil is damp. I'd do it in the autumn before the ground got too wet, or in the spring before it dried out too much. Has anyone any experience of this? It ought to be good for grazed grassland which doesn't flower much, and for species which don't like the green hay method (the BW article gives lists of what grows and what doesn't).

Richard

Assuming the fields are now used for hay and not grazed, I would recommend cutting as late as possible, and as low as possible, with all material removed (as in normal hay making). Mid to end of August would help. This then is your window - sow seed all over the site before the grasses regrow. Then cut again, as short as possible without taking out the new seedlings, in the end of March or beginning of April before the bird breeding season starts up here and before the annuals like yellow rattle get going, and remove all the material.

Use as much yellow rattle as you can to act as a stopper on grass growth - indeed you can do this in 2 stages, and introduce yellow rattle first, let it spread and build up a large population, and then

add the other species - depends on whether you are collecting the seed yourself, or using bought or a hay field collected mix. Remember, if you use seed collected from a hay field then there will be lots more grasses in the seed you are sowing to add more to your existing grasses! I have also sprayed off the whole field in mid August, harrowed and added

just broad-leaved seed in September, and then left until mid July before grazing (I am trying to diversify a pasture in this case). The grasses re-established themselves.

Hope this helps

Penny Anderson

For and on Behalf of
PENNY ANDERSON ASSOCIATES LTD

Penny Anderson
Managing Director

Just a nagging concern of mine here which is that any meadow, no matter how rich in spp it is, would seem to be somehow less real if it did not form part of a functioning livestock system. It seems a pity to go to such lengths to restore the ecological value of grasslands if at the same time we lose their cultural significance entirely. So to me it's worrying when aftermath grazing is no longer considered possible or appropriate because it probably signifies the first step towards a severance of the links with living agricultural systems. And the spp composition of mown-only meadows is unlikely to be as rich as ones that are grazed; coarse grasses like *Arrhenatherum* are likely to become dominant in the absence of grazing, even though the cutting is done on a regular annual basis.

I have seen similar compositional changes to the ones Penny advocates happen repeatedly and without reference to any management prescription on various meadows that I manage here in Cumbria. The hay rattle simply follows the cattle round because they are outwintered on meadows where they are fed hay containing its seed.

The system for feeding the cattle is simple and straightforward, throwing the flaps out as widely as possible each day and on a new area of the field. The cattle eat up the bulk of the material allowing the seed to drop out onto the ground where the trampling creates sufficient gaps to allow it to establish. If the damage becomes too severe you move the animals onto a new field for a week or two to allow the sward to recover. Or you reduce the stocking rate and keep them on for longer. Depending on the size of the cattle you can keep 1 or 2 per acre on a well drained field for the whole winter if you wanted to. During this time you are likely to have fed them about the same number of bales that the land had cropped the previous summer and restored the manurial value at no extra expense or hassle (other than that of outwintering compared with housing your stock).

We started with a tiny patch of hay rattle in 1993 that had just appeared in one corner of one meadow by chance and having taken several years to spread throughout that field then began to export itself into adjoining meadows and beyond. It has now established thriving populations in meadows that I have several miles away from the original one.

I agree with Penny that leaving the sward for a late cut initially is a good idea as the resulting sward/stubble will be thinner than after an earlier cut. However, if you are planning to strew hay it is not wise to use late cut hay exclusively, as this will probably contain a higher proportion of grass seeds than hay cut in early to mid-July, say. This adds weight to the suggestion of using a two-stage process, sowing yellow rattle first and strewing hay or sowing seed the following year or later. Remember, yellow rattle has a chilling requirement for germination so needs to be sown in autumn for spring germination - hence the value of cutting the following March-early April to aid its establishment.

If you are strewing hay it makes sense to use both early (July) and late (August-September) cut hay, as this will provide a better cross-section of species, i.e. both early- and late-shedding species.

Whatever the approach, I think it is wise not to expect immediate results! You will probably have to repeat oversowing or hay strewing over two or more years. It is always useful to graze the aftermath, probably more heavily in the establishment phase than thereafter. In the absence of grazing, mechanical scarification is definitely worthwhile in autumn, both during establishment and in subsequent years for maintenance, preferably following a second cut. This not only creates niches for germination of the sown seeds but in subsequent years it generates a cycle of germination from, and replenishment of, the soil seed bank. It works well in my wildflower garden, anyway!

Francis

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