

CM4a: Arable reversion (including new or wider buffer strips) to zero-input grassland

This nature-based project option will revert whole or part fields from arable use (including maize growing) to zero-input grassland. It may also be used to create new or wider in-field cross-slope grass strips or edge-of-field buffer strips with a width of 6 metres or more. This option should be used for fields or areas of fields that regularly flood / get waterlogged or that experience surface runoff and soil erosion. Land already funded by any other scheme (such as ELS/HLS or Countryside Stewardship) is not eligible.

Length of Nature-based Project Agreement available

1st September 2021 until 31st March 2025 (3 ½ years)

Where to use this option

- Across whole or part fields, or to create new or wider in-field cross-slope grass strips or edge-of-field buffer strips with a width of 6 metres or more. This option may be used strategically across slopes and at the bottom of slopes to slow the flow of water and encourage water infiltration. The first 2 metres from the centre of a watercourse or field ditch (or for larger watercourses the first 1 metre from the top of the bank into the field) is *not* eligible for this option.
- Cultivated land that has been arable cropped (this can include maize) for the past 3 or more years.
- Land that is adjacent to a permanent watercourse (including ditches) or has high connectivity to a watercourse via a road, track or any other flow pathway.

Where this option cannot be used

- Do not use this option adjacent to SSSIs or other botanically valuable sites as identified on the Environmental Information Map.
- Do not use this option where evidence exists for rare arable plants / weeds.
- Do not use this option on fields / parcels/ strips that have already been taken out of arable production.

Requirements

Establish and manage plots according to the specification set out in the Nature-based Project Agreement relevant to each plot. This specification will be specific to each farm and location but will be based on the following:

Establishment:

- Assess whether there are any issues of soil compaction and, if necessary, plan appropriate timely cultivations such as subsoiling to resolve these before establishing the new sward.
- If there is a heavy weed burden, spray with a herbicide such as glyphosate before cultivation.
- Establish grass either:
 - Between 15th July and 30th September 2021, *or*
 - Between 15th March and 31st May 2022 (in this situation the plots should be cover cropped between September 2021 and March 2022 and the grass established after that)
- Autumn (August/September) is a suitable time to establish grass. If you have to establish in spring, then use a higher seed rate.
- Broadcast or drill seed into a firm, consolidated and clean seedbed and then roll or harrow to help ensure good seed to soil contact, retain moisture and reduce movement of slugs within the soil profile. Direct drilling into stubble is permitted as long as it results in an adequate level of grass establishment (i.e. approx. 80% groundcover by 1st December 2021).

Sow the species mix and seed rate specified in the Nature-based Project Agreement relevant to each plot. General requirements will be:

- Establish a mixed sward of traditional hay meadow grasses, plus legumes such as clover if desired. Wildflowers and herbs such as yarrow and plantain may also be included. Do not include any Italian or Westerwold ryegrass in the seed mix, or a high proportion of perennial ryegrass.

Cutting and topping:

- To control weeds and ensure that a dense sward that reduces runoff is established, in the first 12 months after establishment:
 - plots should be cut or topped regularly (at least *3 times*) during the growing season *and*
 - plots should be topped or grazed at least *once* during the winter.
- After the first 12 months and once established, cut the sward at least once each year after 1st July. Farmers are encouraged, but not required, to leave small refuge areas uncut (5% of plot area) to provide

overwintering habitat for invertebrates. All cuttings must be removed from the field (but not from buffer strips and in-field grass strips).

- Once established, plots should be mechanically topped, or grazed lightly with sheep each winter.
- Top or spot-spray any undesirable plants, such as nettles, bracken, injurious weeds or invasive non-native species as soon as practically possible to avoid them becoming established.

Inputs and management:

- Applications of organic manures and fertilisers are not permitted.
- Grazing by livestock is not permitted, except for light grazing by sheep between 1st November and 28th February inclusive. Supplementary feeding except by energy blocks is not permitted.
- Applications of lime are permitted.
- Pesticide applications are not permitted except for spot-spraying of injurious weeds.
- Maintain the leading edge of buffer strips, avoid gaps and prevent trafficking.

Returning the land to agricultural production at the end of the agreement:

- Terminate and cultivate the grass sward at a time of year when nutrient loss via leaching and/or surface runoff from the bare soil will be minimised (i.e. in spring / summer / early autumn, and when ground conditions are suitable).
- Establish the following crop as early in the autumn as possible:
- to ensure that the maximum amount of nutrient released by the grass sward is taken up by the following crop/s. This could involve using cover crops to retain nutrients in following winters.
- to provide maximum over-winter ground cover to reduce surface runoff.

Do Not

- Do not include any Italian or Westerwold ryegrass in the seed mix, or a high proportion of Perennial Ryegrass – for further details of suitable grass mixes please contact your scheme advisor.
- Do not use plots for vehicular access to other fields. Other than essential field operations, plots should never be driven on for access, turning at headlands or any other purpose.
- Do not apply any organic manures or inorganic fertilisers to the reverted area, or prior to its establishment.
- Do not use pesticides, except for herbicides to spot-treat or weed-wipe to control nettles, bracken, injurious weeds or invasive non-native species.
- Do not allow pesticides and fertiliser to drift into the margins and grassed down areas.
- Do not allow the soil P index to rise during the duration of the agreement.

- Do not graze at any time with any type of livestock, except for light grazing by sheep between 1st November and 28th February inclusive.
- Do not supplementary feed sheep except by energy blocks.
- After the first 12 months, do not cut before 1st July in any calendar year and avoid cutting when soil is wet to reduce soil damage and avoid disturbing ground nesting birds and their nests in the breeding season
- Once established, do not plough, cultivate or re-seed until the end of the term of the agreement.

Record keeping and claiming payment

Agreement holders will need to keep the following records and supply them with *the payment claim* each year. Payment will only be made upon satisfactory receipt of all of the following records:

- Photographs of the plots before establishment (*only required for first payment claim*).
- Photographs of each reverted area, from which the time and location of the photo can be identified (*submit annually*). The EnTrade app can be downloaded and may be used for this purpose.
- Invoices showing the seed mix used to establish the sward (*only required for first payment claim*).
- Soil analysis results (pH, P and K as a minimum) for the relevant fields dated within the past 3 years (*only required for first payment claim*).
- Farm and field information needed to run a phosphorus loss tool for the farm and calculate the reduction in phosphorus loss to water arising from this work. This will include farm data relating to livestock numbers, crop areas and fertiliser and manure inputs.
- Self-declaration that the terms of the Nature-based Project Agreement have been adhered to (*submit annually, key terms are listed above*).
- Successful applicants are required to sign a declaration *and submit it with each annual payment claim* confirming that:
 - reasonable precautions are taken to prevent nutrients and soil from the relevant field getting into watercourses or from being leached to groundwater to an extent that could cause pollution.
 - the relevant fields have not been
 - (i) the source of a recorded pollution incident which could have been prevented by the farmer taking reasonable precautions to prevent that pollution and/or
 - (ii) the subject of a warning, fine, prosecution or BPS deduction issued to the farmer by the Environment Agency or RPA for a breach of NVZ rules or Farming Rules for Water in the past 5 years.
- Agreement holders will need to keep the following records and supply them *on request*.

- Field operations at the field parcel level, including associated invoices

Additional Information

Championing the Farmed Environment: Advice on reverting arable land to grass - <https://www.cfeonline.org.uk/advice-training/arable-land-reverted-to-grass/>

Forest Research: Wildflower meadow creation and management in land regeneration - https://www.forestresearch.gov.uk/documents/2446/BPG_15.pdf

RSPB: <https://www.rspb.org.uk/our-work/conservation/conservation-and-sustainability/farming/advice/managing-habitats/hay-meadows/>

Save our Magnificent Meadows:

http://www.magnificentmeadows.org.uk/assets/pdfs/Hay_meadow_and_pasture_management.pdf



Hay meadow above Blagdon Lake



This option can also be used to create watercourse buffer strips in arable fields. Networks of grass buffer strips next to watercourses are a particular priority to protect them from soil, nutrient and pesticide run-off.

Photo credit: P. Thompson (GWCT)



This option can also be used to create in-field wildflower/grass strips in arable fields, like this 8m wide strip. The outer 2m on each side are sown with grass and the inner 4m sown with wildflower/herb mixes. Pictured in September 2020 after establishment in spring 2020 and after frequent and tight mowing through summer 2020 to suppress weeds. Strips run across slope with tramlines and are spaced every 100m to encourage beneficial insects into crop. Strips also include electricity poles to facilitate field operations.

Photo credit: John Martin.

General advice on establishing buffer strips

The buffer strip width table below provides guidelines only as width will be dependent on site conditions such as the nature and topography of the surrounding land. Wet, poorly drained soils and steep slopes (>10°) will require a wider buffer strip.

| Width of watercourse | Width of buffer strip |
|----------------------|-----------------------|
| Less than 1m | 6m buffer |
| 1-5m | 6-12m |
| 5-15m | 12-20m |
| 15m+ | 20m+ |

Adapted from:

https://www.aberdeenshire.gov.uk/media/8127/2015_09bufferstripsplanningadvice.pdf

Recommended watercourse buffer strip species choice for different slopes:

- Gentle (up to 3 degrees) - consider flower-rich margins if the soil phosphorus index is less than 2
- Moderate (3 to 7 degrees) - if there is any evidence of soil erosion and run-off, create a tussocky grass margin to intercept these; otherwise create a more diverse margin as described above for gentle slopes.
- Steep (more than 7 degrees) - create a tussocky grass margin with 10% cocksfoot or timothy grass and 90% other grasses.

Source: <https://www.cfeonline.org.uk/advice-training/grass-buffer-strips-next-to-a-watercourse-or-pond/>