

Section 4 Optional Habitats – Background Information and Management Requirements

Section 4 outlines the management requirements for the optional habitats, which are voluntary. If chosen, the management requirements, highlighted in green must be followed.

If there are no farm habitats then at least one optional habitat must be undertaken.

Field boundary restoration

Grass margins

Bird breeding, feeding and nesting sites

Arable

Traditional orchard restoration



1. Field boundary restoration

(i) Hedge regeneration and planting

Well-managed hedges provide food and shelter for wildlife, a barrier to livestock, help stop the spread of disease, provide shelter to livestock, are an important part of our landscape and define the boundaries of the farm. However many are in poor condition due to neglect, over-management or damage by livestock. A positive programme for hedge restoration and regeneration by laying, coppicing with interplanting in the gaps or hedge replanting offers the opportunity to improve the value of hedges. The length of hedge regeneration to be carried out each year is agreed at the time of the farm audit and will be noted on the farm management map.



Recently laid hedge

Aim: to maintain the structure, landscape patterns and biodiversity of field boundaries in the countryside through the implementation of a five-year field boundary management plan through the regeneration and planting of mixed species native hedges.

Biodiversity objectives: the option contributes to the Northern Ireland Biodiversity Action Plan targets for ancient and/or species-rich hedgerows, the Irish hare and yellowhammer. Within Northern Ireland species-rich hedgerows are important for a number of UK Priority Species identified as part of the UK Biodiversity Action Plan programme. These include red squirrel, common

pipistrelle, soprano pipistrelle, reed bunting, spotted flycatcher, tree sparrow, bullfinch, song thrush and purple rampion fumitory. In addition a number of Priority Species will benefit. These include whitethroat, linnet and barn owl.



Newly planted hedge

Management requirements

- All hedge regeneration **must** follow the exact line and contours of the original field boundary. Existing earth/stone banks **must** never be removed to provide a site for a new hedge. Mechanical aids such as diggers or excavators **must** not be used to straighten, level or remove existing field boundaries or habitats.
- Newly planted or regenerated hedgerow species **must** be successfully established along the field boundary. Action **must** be taken to ensure plants are not grazed by livestock and/or rabbits and hares, or suffer from competition from weeds/grasses.
- All dead plants **must** be replaced at the end of the first year.
- When planting a new hedge a mixture of hedgerow species must be planted along the length of the hedgerow. Plant at least five native woody species throughout each 30 metre length of hedge, using a recommended mixture consisting of 75% hawthorn to 25% other species such as blackthorn, hazel, holly, dog rose, whin, beech, guelder rose and willow. Ensure that a mix of species is planted along the full length of the hedge.
- Single species hedges, for example, beech or hawthorn, are not acceptable. No ornamental species are acceptable for grant aid and these should never be planted in the open countryside.
- When planting a new hedge, a double, staggered row (Figure 6), must be planted with 250-300mm (10-12”) between plants and 300mm (12”) between rows. This works out at approximately eight plants per metre. A single row is acceptable if planting up short gaps (less than 2m) in an existing hedge, provided the plants are spaced at 15cm (6”) apart. A double row should be planted where gaps are more than 2m.
- Hedgerow trees (in the form of whips) must be planted along the length of a newly planted hedge, placed about 10-15m apart, avoiding regular spacing of the trees.
- Grass and weeds must be controlled in a newly planted hedge (see below for details on different control methods).
- A newly regenerated/planted hedge must be protected from grazing livestock and rabbits. It is recommended that the fences should be at least 2m apart, each fence being 1m away from the centre of the hedge. Refer to Appendix 5 for further details on field boundary fencing.
- The stems of hedges suitable for coppicing must be cut down to about 15cm (6”) above the ground along the full length of the hedge and any gaps replanted. A single row is acceptable if planting up short gaps (less

than 2m) in an existing hedge, provided the plants are spaced at 15cm (6”) apart. A double row should be planted where gaps are more than two metres.

- The stems of hedges suitable for laying must be laid over along the full length of the hedge (see below for hedge laying details) and any gaps replanted. A single row is acceptable if planting up short gaps (less than 2m) in an existing hedge, provided the plants are spaced at 15cm (6”) apart. A double row should be planted where gaps are more than 2m.
- Plant gaps in the coppiced/laid hedge with a mixture of species including hawthorn, holly, hazel, beech, blackthorn, guelder rose and dog rose. When planting short gaps (less two metres) of a predominantly hawthorn hedge, more than 50% of the new hedge plants should be species other than hawthorn. For longer gaps, follow the guidelines in the hedge planting section below. Include native trees at intervals of 10 – 15m, avoiding regular spacing.

Further advice

When planting a new hedge **never**:

- Remove existing earth/stone bank;
- Plant a hedge where hedges did not previously exist;
- Plant a hedge in upland areas dominated by earth/sod banks with only an occasional shrub or tree;
- Plant a hedge along existing stone walls;
- Remove a stone wall and replace with a hedge.

Approval will not be given for fencing on the outer (road) side of restored field boundaries that run alongside public roads. Fencing will only be approved on the field side of such hedges. Approval must be sought from DRD Roads Service before new fences are erected alongside roadways. Replacement fences must follow the line of existing fences. Roads Service can be contacted on (028) 9054 0540.

Written consent must be obtained from Environment and Heritage Service (EHS), Department of Environment (DOE) before any works are carried out within an ASSI or along an ASSI boundary. It is the responsibility of the agreement holder to obtain this consent. The EHS contact telephone number for further information is (028) 9054 6595.

Hedge laying

- Hedge laying is best suited to hedges with stems around 5 -15cm in diameter and 2.5 - 3m high. However it is possible to lay thicker stems.
- All hedge laying must be carried out during the winter months (October to February), but not during periods of hard frost.
- If necessary face the hedge on both sides with a mechanical hedge trimmer or billhook/slasher. Leave the tops of the hawthorn bushy so that they will form an effective barrier when laid.
- Cut between half to three-quarters of the way through the main stems at 3-10cm (1-4") above ground level and lay over the stems at an angle of about 30 degrees, always working in the same direction. Always lay the stems uphill. Take care not to break the bark on the underside when laying the stems.
- Cut stems may be held in position using stakes as required. This helps to stabilise the hedge.

Hedge coppicing

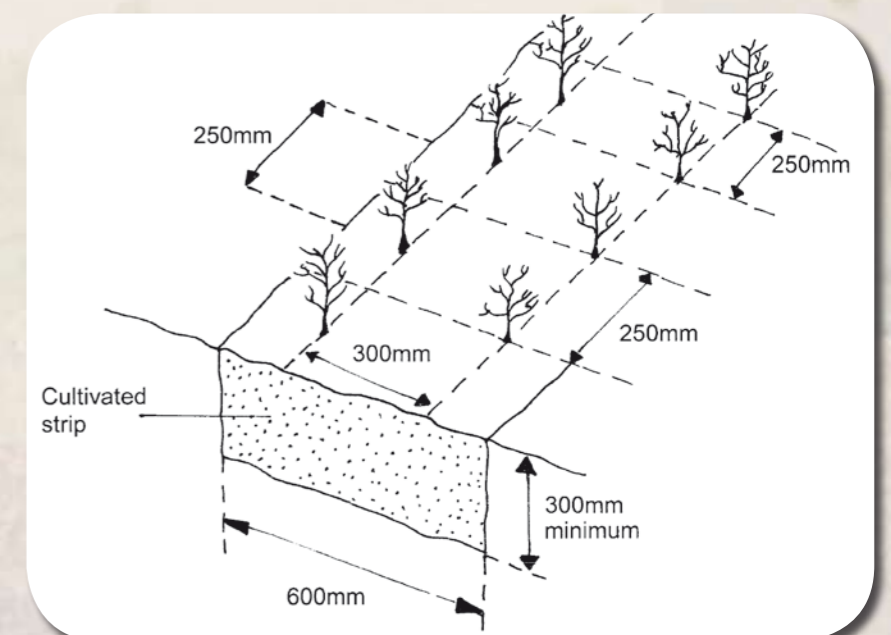
- Hawthorn and blackthorn will readily produce shoots from cut stems. Hedges can be regenerated by cutting down to ground level (coppicing).
- Cut the hedge to within 10cm (4") of ground level. Cut at a slope to shed rain.
- Coppice in the dormant season, but not after 28/29 February.

Hedge planting

- Careful site preparation is essential. On grassy sites, spray off a one metre wide strip with glyphosate about four weeks before planting. Dig or cultivate a trench 300mm deep and 600mm wide. Alternatively, spray off a 1m wide strip with glyphosate, plough two furrows back to back and plant on the ridge that is formed. When planting on a bank, plant at the base of the bank to avoid the plants suffering from drought.
- Avoid planting on waterlogged or very exposed sites and always ensure the site has sufficient topsoil. Where a new hedge is to be planted on the site of an old hedge, add some well rotted farmyard manure into the bottom of the trench.
- Suitable hedgerow species include hawthorn, blackthorn, hazel, holly, gorse (whin), willow, beech and dog rose. Suitable tree species include

oak, rowan, whitebeam, birch, alder, willow, crab apple and wild cherry. Do not plant beech, horse chestnut, lime or sycamore as hedgerow trees these will shade out the hedge.

- Hedging plants should have a minimum root collar diameter (measured at the base of the stem) of 6 mm, a minimum height of 40-60cm with a healthy fibrous root system. Hedging plants may be either bare-rooted or cell grown.
- Plant hedges during periods of mild, dry weather between October and March. Avoid planting in very wet or frosty weather.
- Hedging plants will dry out and die very quickly if the roots are exposed to wind. If there is any delay between purchase and planting, bury the roots of the plants in moist soil. Never store the plants in water.
- When planting, work the soil in and around the roots carefully and firm the plants into the ground at the same depth as they were in the nursery (marked by a ring around the bark). Plants should be planted in a double staggered row with 250mm between plants and 300mm between rows (Figure 6).
- Prune newly planted hedge plants to 10 - 15cm (4" to 6") immediately after planting to encourage buds to break from the base and produce thick dense growth (except holly, beech or hedgerow trees).
- Plants grown from seed collected locally within Northern Ireland are better adapted to our climate and soil conditions.
- Hedges must be fenced off from livestock and rabbits. To ensure cattle cannot reach over and graze the hedge, it is recommended that a minimum width of 2m should be left between fence lines. Where rabbits or hares are a problem, rabbit-proof netting wire will be needed. Refer to Appendix 5 for further details on field boundary fencing.
- Water thoroughly in prolonged periods of dry weather during the first summer after planting.

Figure 6: Hedge planting

Weed Control

Newly planted hedges will suffer severe damage or complete destruction if weeds are not properly controlled during the first few years after planting.

Weed control can be achieved using black polythene sheeting, mulches, residual herbicides or hand weeding. Of the three, polythene sheeting gives by far the most reliable results.

Black polythene sheeting

Where practical, the most satisfactory method of weed control is achieved by using 200-gauge black polythene sheeting. A one metre wide strip is ideal. It is best laid after planting thorn quicks and other species that can be coppiced, but before planting hedgerow trees and species such as holly and beech.

After planting at the recommended spacing, use secateurs to prune hawthorn, blackthorn, hazel, guelder rose and dog rose at 10 - 15cm above ground level. Cut at a steep angle, preferably a few millimetres above a bud.

Lay the polythene over the pruned stems and push downwards – the stems will pierce the polythene. Place some loose gravel here and there to hold the polythene in place until planting is completed.

Plant hedgerow trees plus holly and beech by making two short cuts in the polythene in the shape of an 'X' and folding back the flaps of polythene. Dig a suitable hole in the exposed soil, plant the tree whip or holly/beech and replace the flaps.

Finally cover the polythene completely with 30 - 40mm of loose gravel or other heavy inert material.

Polythene put in place in this manner will give good weed control provided weeds and particularly creeping grasses are not allowed to spread across the polythene from the sides. Sites should be closely inspected several times each year for the first three or four years and any weed problem dealt with immediately.

Mulches

Mulches help to conserve moisture and suppress annual weed growth. However they do not suppress perennial weeds such as thistles or docks and are thus ineffective where these weeds are a problem. An example of a suitable mulching material is bark chips.

Ideally, spray the area to be planted with glyphosate two to four weeks before planting. The sprayed area and the mulch must extend 300mm beyond the width of the hedge along both sides. Organic mulches must be 10-15cm (4-6") deep to prevent weed germination, but the mulch must not be allowed to smother the stems of the hedge plants. Apply the mulch as soon as possible after planting.

Herbicides

Herbicides approved for use along hedges are available in either liquid or granular form. Granular types are particularly easy to apply, there is no risk of drift and spray equipment is not needed. Liquid herbicides can be applied using a knapsack sprayer. Herbicides suitable for use in hedges include:

Propyzamide - Available in granular or liquid form as 'Kerb'. It is only effective in cold weather and should be applied before the end of December in lowland and the end of January in upland areas. 'Kerb' is the only herbicide recommended for use in the first year after planting. It should not be used more than once in any nine month period.

Glyphosate - Weeds must be actively growing with adequate green leaf area for effective control. Always use a guard fitted to the sprayer. Extreme caution must be used to ensure spray drift does not make contact with the leaves of the hedge.

Dichlobenil - in the granular form, known as 'Casoron G', may be applied from November to March to control weeds such as grass, docks, nettle, bracken and thistle. Casoron G should only be applied to hedgerows, which have been established for two years or more.

Always read the label carefully before using any of these herbicides and follow manufacturer's instructions.

(ii) Restoration of dry stone walls

Dry stone walls are an important component of the landscape. While many dry stone walls have been well maintained and remain effective stockproof barriers, others are now in need of rebuilding.

Aim: to maintain the structure, landscape patterns and biodiversity of field boundaries in the countryside through the implementation of a five year field boundary management plan through the restoration of dry stone walls.

Management requirements

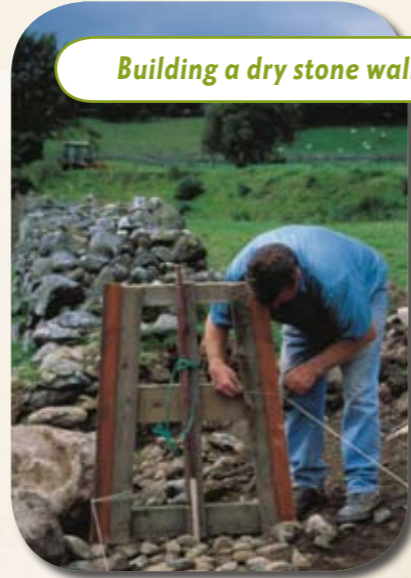
- The removal of dry stone walls is not permitted unless approved in writing by DARD.
- All stone wall restoration must follow the exact line and contours of the original field boundary.
- Dry stone walls must be built in accordance with the best standards, traditions and designs of the district and to a standard judged acceptable by DARD.
- Rebuilt walls must not exceed the traditional height for such features in the locality (unless the agreement of DARD is obtained in writing). Wall height must not exceed 1.5m (5 feet) measured from ground level.
- Land reclamation to obtain stone is not permitted.
- Stones used for restoring dry stone walls must be sourced from within the farm.
- Fencing along or on top of stone walls may be permitted to help maintain the restored wall.

Further advice

Small gaps in dry stone walls should be repaired as soon as they develop.

(iii) Reinstatement of sod banks

Earthen banks or sod banks, as they are locally known, form the basis of boundaries mainly on the higher areas of Northern Ireland where hedgerows could not grow. These banks now often contain an interesting vegetation, and on some farms, they may be the only surviving areas of semi-natural grasslands.

Building a dry stone wall

The banks generally contain a core of stones cleared from the land with a covering layer of sod derived from the adjacent ditch. The ratio of sod to stone and construction techniques vary, but when reinstating banks they should be constructed as per a cross section of the existing sod bank, using both stone and sod from the immediate area (Figure 7). New sod banks are not eligible for grant.

In most cases the core of the bank will be made of local stone, then a layer of sod lifted from the associated ditch should be placed over the stone to give a similar shape as the existing bank allowing some leeway for shrinkage. Cattle or sheep may need to be excluded from the area using an electric fence until the sods have knitted together.

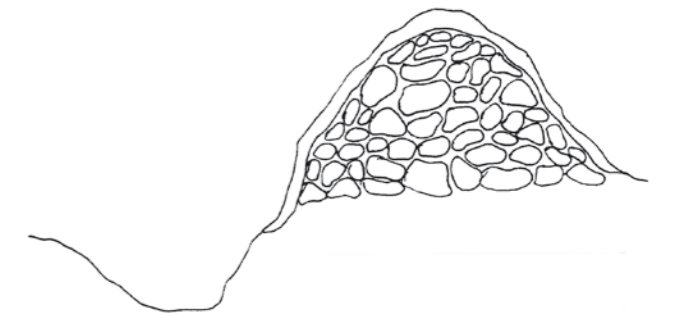
Aim: to maintain the structure, landscape patterns and biodiversity of field boundaries in the countryside through the implementation of a five year field boundary management plan through the reinstatement of sod banks.

Management requirements

- The removal of sod banks is not permitted unless approved in writing by DARD.
- All sod bank reinstatement must follow the exact line and contours of the original field boundary.
- Sod banks must be built in accordance with the best standards, traditions and designs of the district, based on the diagram below, and to a standard judged acceptable by DARD.
- Reinstated sod banks must not exceed the traditional height for such features in the locality.
- Land reclamation to obtain stone is not permitted.

Figure 7:
Cross-section of a traditional earthen bank

Stones from the surrounding fields make up the bank, followed by a layer of soil, and the sods are placed on the constructed bank with grass side up.



2. Grass margins

(i) Ungrazed grass margins

An ungrazed grass margin is a strip of land, a minimum width of 2m, from which livestock are excluded. A margin can extend from the edge of:

- a) a hedge, stone wall, woodland, designated Area of Special Scientific Interest or to provide a corridor between two existing wildlife areas
OR (b) from the edge of a watercourse, which can be either a lake, river or stream, but must be at least 1m in width and have running water for the greater part of the year.



Ungrazed grass margin

Margins alongside stone wall or hedgerow field boundaries may be up to a maximum of 6m wide; stone walls or hedges must either not require restoration, or, if they

require restoration, they must be entered under the field boundary restoration option.

All other ungrazed grass margins, alongside watercourses more than 1m wide, woodlands or ASSI, may be up to a maximum of 25m wide. No more than 1ha or 5% of the total grass area (whichever is greater) may be entered as ungrazed grass margin. Total grass area is unimproved grassland plus improved grassland, excluding land used for arable crops or arable options. The minimum area is 0.01ha in any one field.

Aim: to provide additional habitat and food source for a range of farmland birds and mammals, and to reduce nutrient runoff from farmland if they extend from the edge of a watercourse.

Biodiversity objectives: this option contributes to the Northern Ireland Biodiversity Action plan targets for the Irish hare. The Northern Ireland Priority Species - linnet, tree sparrow, barn owl, bats and invertebrates will also benefit.

Management requirements

- Margins must be created on improved/arable land or unimproved grassland only.

- Margins must have a minimum width of 2m and a maximum width of 25m.
- Grass on ungrazed grass margins must be cut and removed once in three years, cutting to take place after 15 July.
- If cutting/mowing, the cut vegetation should be disposed of in a manner which does not harm the environment.
- The margin must not be grazed.
- Margins are permanent and must be retained in the same field(s) for the duration of the scheme agreement.
- No cultivation, fertilisation, liming, ploughing, reseeded, cutting silage and/or hay, or application of herbicides, pesticides or any other material is permitted.
- The area must not be used for regular access, supplementary feeding sites or for the storage of round bale hay or silage.
- It is possible to combine the field boundary restoration of hedgerows with an ungrazed grass margin.

Further advice

Margins should not be situated on habitat such as grassland with wild flowers, heather moorland or woodland. Noxious weeds such as thistles and ragwort may be controlled with herbicides, applied using a weed wiper or spot sprayer. Margin fences and positioning of gates for access should be sited to permit grass management.

Written consent must be obtained from Environment and Heritage Service (EHS), Department of Environment (DOE) before any works are carried out within an ASSI or along an ASSI boundary. It is the responsibility of the agreement holder to obtain this consent. The EHS contact telephone number for further information is (028) 9054 6595.

(ii) Ungrazed grass margins planted with native trees

An ungrazed grass margin planted with native trees is a strip of land, a minimum width of 2m, which is ungrazed and planted with native broad-leaf trees and shrubs. There are two options for creating ungrazed grass margins planted with native broad-leaf trees. Firstly, they can extend from the edge of a hedge, stone wall, woodland, designated Area of Special Scientific Interest or they can be planted in a field corner, on a steep slope, or to provide a corridor



Field corner planted trees

between two existing wildlife areas. Secondly, they can extend from the edge of a watercourse. The watercourse beside the margin can be either a lake, river or stream, but must be at least one metre in width and have running water at all times.

Aims: to increase the area of new native broad-leaf woodland, provide wildlife corridors and areas free from disturbance for a range of wildlife and contribute to the landscape character of the countryside.

Biodiversity objectives: to contribute to the Northern Ireland Biodiversity Action Plan targets for the Irish hare. The Northern Ireland Priority Species - tree sparrow, the barn owl, bats and invertebrates - will also benefit.

Management requirements

- Margins must be created on improved/arable land or unimproved grassland only.
- The minimum width of the planted area must be 2m and each area planted must be 0.2 hectares or less. The maximum area that can be planted on each farm is 1 hectare, or 5% of the eligible area, whichever is the least.
- The margin must not be grazed.
- Sites planted with trees are permanent and must be retained in the same field(s) for the duration of the scheme agreement.
- 90% of the trees/shrubs planted must be native broad-leaved/conifer species (see Table 3 for suitable species).
- The planted area must include 30% shrub species.
- Plant at least five different species of native broad-leaved/conifer trees or shrubs in any one place.
- Plant larger trees, such as oak, at 3m apart. Smaller trees such as birch, willow and alder must be spaced 2m apart and low growing shrubs 1m apart.
- Trees must be staked and guards erected (except on beech and holly). Guards should be removed when the trees are well established.

- Ornamental species such as Castlewella gold and Leylandii must not be planted.
- Dead trees must be replaced. Care must be taken to ensure successful establishment of the trees. This will require control of weeds/grass around the newly planted trees for 2-3 years (see Further advice).
- No cultivation, reclamation, infilling, dumping, fertilisation, drainage or application of lime, herbicide, pesticide, sheep dip or other material is permitted.
- The area must not be used for regular access, supplementary feeding sites, or for the storage of big bale hay or silage.

Further advice

Trees should not be planted on any habitat, above the natural tree line, near roadsides, at lane and road junctions where the line of vision could be obstructed, within 10m from overhead power lines, close to buildings or where they will interfere with future farm development.

The area to be planted should contain 70% tree species such as ash, oak, birch, alder, Scots pine, wild cherry and crab apple and 30% shrubs such as hazel, holly, guelder rose, blackthorn, hawthorn, gorse (whin), dog rose and willow.

Prior to planting grass sites, spot spray patches, one metre in diameter, with glyphosate 3-4 weeks before planting. Plant individual trees in the centre of these areas, taking care to firm the soil around the tree. Guards should be used for all broad-leaved species with the exception of beech and low growing shrubs. Plant trees between early November and mid-March, but not when the soil is frozen or waterlogged. To avoid the risk of fireblight, only buy planting material known to be from either a fireblight free zone or an officially designated buffer zone. Native stock will be better adapted to our climatic conditions.

Bare-rooted feathered 'whips' or cell grown plants should be planted and have advantages over larger 'standards'. When planting care should be taken so that the bare roots do not dry out. Keep the whips in a bag or in loose soil until you are ready to plant.

Table 3 gives a guide to selecting tree species for a range of sites. Take into account soil type, drainage, exposure and look at the trees growing in the surrounding location.

Table 3: Suitable tree species for planting

Site	Suitable Species	Comments
Wet sites	Alder	Stabilises stream banks
	Birch	Intolerant of shade
	Willow	Grows from cuttings
	Guelder rose	
Dry sites	Crab apple	Unsuitable for shade
	Oak	Excellent for wildlife
	Scots pine	Native conifer
Exposed sites	Birch	Suitable for poorly drained peat
	Rowan	Tolerates thin, acid soils
Lowland sites	Scots pine	
	Birch	
	Rowan	
	Wild cherry	
	Crab apple	
	Blackthorn Hawthorn	Low growing shrubs provide shelter
Coastal sites	Hazel	
	Whin	
	Blackthorn	All are good for steep banks
Winter shelter for wildlife	Scots pine	
	Holly	
	Gorse (whin)	All retain leaves/needles over winter
Red squirrel areas	Scots pine	
	Hawthorn	
	Birch	
	Rowan	
	Ash	
	Willow	
	Alder	All are small seeded trees and shrubs
	Guelder rose Dog rose	
Upland sites	Rowan	
	Birch	
	Blackthorn	All are hardy species
Screening buildings	Birch	
	Rowan	
	Scots pine	
	Hawthorn Hazel	Include shrub species

For successful planting follow these guidelines.

- Keep the tree roots moist at all times.
- Make the planting holes big enough for the roots. Excessively long roots may be trimmed prior to planting.
- Plant trees at the same depth at which they were growing in the nursery, shown by a lighter soil mark on the stem close to the roots.
- Plant trees with the stems upright.
- Firm the soil around the plants by treading it well with your heel.
- On normal soils dig holes/pits for planting or cut an L- or T-shaped notch in the ground where the tree is to be planted.
- On wet sites planting on mounds or ridges will give the tree extra height above the wet soil and is useful on poorly drained soils. However there is the danger of the mound drying out thereby putting the tree at risk. Mounds have the added advantage that they may reduce weed competition in the first year.
- The soil in compacted areas should be loosened prior to planting. Ripping or deep subsoiling may be necessary.
- Do not plant in straight rows.
- Plant trees/shrubs at a spacing of 1m-3m. This will provide quick canopy closure. See Table 4 for the approximate number of trees to plant in an area.

Table 4: Number of trees to plant in an area

Spacing (metres)	Approximate trees/shrubs per hectare	Approximate trees/shrubs per 0.2ha
3	1,111	220
2.5	1,600	320
2	2,500	500
1.5	4,400	880
1	10,000	2000

Weeds and grass should be controlled, in an area of about 1m diameter, around the trees for 2-3 years after planting by hand weeding, polythene, squares cut from old silo covers or old carpet, or using a 10-15cm mulch such

as bark or lawn clippings or with herbicides approved for use on young trees. Mowing or scything grass around the trees is not recommended as it will stimulate grass growth.

If using herbicides such as glyphosate or paraquat, extreme care must be taken not to allow the spray on to leaves. Propyzamide, in a liquid or granular form known as 'Kerb' is effective if applied before winter/spring frosts but it cannot be used more than once in a nine-month period. Dichlobenil, in the granular form, known as 'Casoron G', may be applied from November to March to control weeds such as grass, docks, nettle, bracken and thistle. Casoron G should not be applied to trees which have not been established for two years or more. Always read the product label carefully and follow the manufacturer's instructions and use the appropriate protective clothing. Further advice on how to plant trees and on weed control can be obtained from the on-line Countryside Management publication 'Trees' available at www.ruralni.gov.uk. Noxious weeds such as thistles and ragwort may be controlled with herbicides, applied using a weed wiper or spot sprayer.

3. Bird breeding, feeding and nesting sites

(i) Lapwing breeding sites

Lapwing (or peewit) sites are fields of improved or unimproved grassland with at least one breeding pair of lapwing. These sites are likely to be prone to winter flooding or will occur next to areas of wet grassland. Lapwing will nest on sites with a low, closely grazed sward in early spring and where there is damp ground for adults and chicks to feed. Sites with nesting lapwing and other breeding waders (curlew, snipe, redshank) will be classed as breeding wader sites.



Lapwing

Aim: this option aims to maintain and increase the breeding success of lapwing nesting on improved and unimproved grassland by providing suitable breeding, nesting and feeding conditions through the implementation of a positive grazing regime.

Biodiversity objectives: this option contributes to the proposed Northern Ireland Biodiversity Action Plan targets for lapwing.

Management requirements

- Graze during the winter or early spring to produce a short sward 3cm (1 inch) by mid March.
- From 1 April to 15 June stocking density must not exceed 0.75LU/ha to produce a sward height of between 3 and 12cm (1 and 5").
- If taking a silage crop from lapwing sites, the fields must not be closed up until 1 July.
- Cattle must not be released directly on to lapwing sites after being wintered indoors. Cattle must be outside for at least one week before being put on to lapwing breeding sites.
- Field operations are not permitted between 1 April and 30 June.
- Do not apply any organic or inorganic fertiliser or lime between 1 February and 30 June. When using farmyard manure, do not apply between 1 April and 30 June.
- Rush control must be carried out where rushes cover more than one third of the area. Rushes must be controlled by cutting between 15 July and 15 March retaining 10% uncut. Herbicide control is not permitted. See Appendix 6 for further information on the control of rushes. If ground conditions do not permit rush cutting contact Countryside Management Branch for further advice*.
- No cultivation, reseeding, reclamation, infilling, dumping, drainage or application of lime, herbicide, pesticide, sheep dip or any other material is permitted.
- Installation of new drainage systems is not permitted.
- Supplementary feeding sites require the written permission of DARD and their location should be marked on the scheme management map.
- The spread of scrub/trees must be controlled.
- New tree or hedge planting, or fencing on or next to breeding sites, requires written permission from DARD's Countryside Management Branch (see Annexe 9 for contact details).
- No poaching.

**Prior written approval must be obtained from DARD if you wish to use any method of rush control other than cutting.*

Further advice

Water levels in sheughs and drains should be maintained as close as possible to bank height during the period 1 March to 30 June to create damp ground if this is within the farmer's control.

Noxious weeds such as thistles and ragwort may be controlled by cutting between 15 July and 15 March or with herbicides, applied using a spot sprayer only.

Existing drainage systems can be maintained but not widened, deepened or extended.

(ii) Winter feeding sites for swans and geese

Winter feeding sites for swans and geese are fields of improved grassland, winter cereals or winter oilseed rape that are regularly used for grazing, by a minimum of 25 migratory swans and/or geese per hectare, during the period October to March. Only migratory swans and geese (whooper swans, Bewick's swans, Greenland white-fronted geese, pale-bellied Brent geese and migratory greylag geese) can be included in the count.

Whooper swans

Aims: to safeguard and enhance the suitability of wintering swan and geese feeding sites through appropriate agricultural practices.

Biodiversity objectives: this option will contribute to the Northern Ireland Biodiversity Action Plan for the pale-bellied Brent goose.

Management requirements**Improved grassland sites**

- No grazing is permitted from 1 October to 31 March – there are no grazing restrictions from 1 April to 30 September.
- Sward height must be between 5cm and 10cm by 1 October each year.
- Pesticides cannot be applied between 1 October and 31 March.
- Slurry, farmyard manure, lime or other organic manure must not be applied between 15 September and 31 March.
- No poaching.

Winter cereals/oilseed rape sites

- Winter cereal or oilseed rape must be established in autumn by normal cultivation practices.
- Cultivation and sowing of winter cereals and winter oilseed rape must be completed before 1 October. In exceptional weather conditions exceptions will require the written approval of DARD.
- Pesticides (with the exception of Barley Yellow Dwarf Virus insecticides and residual herbicides) and growth promoters must not be applied between sowing the autumn crop and 31 March.

All sites

- Cultivations, ploughing, rolling, drainage or reseeded is not permitted between 1 October to 31 March.
- The use of bird scarers or other equipment to disturb feeding swans and geese is not permitted between 1 October and 31 March.
- New tree or hedge planting and fencing are only permitted with the written permission of DARD.

Further advice

If grassland has suffered extensive poaching and grazing damage caused by grazing swans/geese, the damaged area may be re-seeded after 31 March.

Slug pellets may be applied to winter cereals and winter oilseed rape sites only with prior written permission from DARD.

4. Arable

(i) Retention of winter stubble

Stubbles of cereals or oilseed rape are eligible where straw is removed as soon as practicable after harvest and the stubble retained until 15 February the following year.



Winter stubble

Aim: to increase the diversity of habitats and species within farming systems. The option is designed to benefit farmland birds that feed on grain, left behind after harvest, and weed seeds. Weeds of arable land, many of which have declined over recent decades, should also benefit.

Biodiversity objectives: this option contributes to the Northern Ireland Biodiversity Action Plan targets for the Irish hare, chough and yellowhammer. The proposed Northern Ireland Biodiversity Action Plans for cereal field margins and the Northern Ireland Priority Species skylark, linnet and twite, will also benefit.

Management requirements

- Must not be sited on land used to fulfil set-aside requirements.
- Stubble must be retained until 15 February after harvesting.
- The crop must not be undersown with a grass or grass/legume mixture.

- Straw must be removed after harvest.
- Pre- and post-harvest application of non-selective herbicides such as glyphosate is prohibited.
- Pesticides, fertiliser, slurry, farmyard manure, sewage sludge, lime or other materials must not be applied to stubble from harvest to the following 15 February.
- Straw or stubble must not be burnt.
- The area entered for retention of winter stubble must be present each year.

Further advice

Provided the minimum area is maintained each year this option can move from field to field within the normal crop rotation. The straw may be baled before removal. The stubble may be lightly grazed and supplementary feeding sites established, provided there is no poaching. Retention of winter stubbles option may be carried out on whole crop silage.

(ii) Conservation cereal

Conservation cereals are cereals on which the use of pesticides is restricted with the aim of allowing a greater range of broad-leaved weeds in the crop. They are established as a whole field or as a field margin.

Aim: to increase the diversity of habitats and species within farming systems. The option is designed to benefit weeds of arable land, many of which have declined over recent decades, invertebrates and farmland birds that feed on invertebrates and weed seeds.



Knotgrass, chickweed and red dead-nettle growing in a conservation cereal

Biodiversity objectives: this option contributes to the Northern Ireland Biodiversity Action Plan targets for the Irish hare, chough and yellowhammer. The Northern Ireland Priority Species – twite, skylark, reed bunting, tree sparrow and linnet – will also benefit.

Management requirements

- Must not be sited on land used to fulfil set-aside requirements.
- Conservation cereal must not be harvested as whole crop silage.
- Conservation cereal must not be undersown with grass and/or grass/legume mixture.
- Herbicides must not be applied to the growing crop, except for:
 - approved wild oat herbicides (but those, such as isoproturon, that also control broad-leaved weeds must not be used);
 - approved herbicides containing amidosulfuron as the sole active ingredient which are permitted for control of cleavers;
- Spray application records must be kept if using these products.
- Application of molluscicides or nematicides is not permitted.
- Insecticides must not be applied after 15 March.
- Remove straw after harvest. Burning of straw/stubbles is not permitted
- Where grown as a margin, the option must be established as a margin, between 6 and 12 metres wide, alongside field edges. The minimum length of conservation cereal margins per field is shown in Table 5.

Table 5: Minimum length of conservation cereal margins per field

Field size (ha)	Minimum percentage of field perimeter as conservation cereal margins
0-5.99	50%
6-10	67%
More than 10	100%

Further advice

If lapwing normally nest in your fields, establish the crop preferably before 20 April, and complete all establishment operations within ten days. This should allow lapwing to nest successfully.

Conservation cereal may be established as a margin of between 6 and 12 metres wide or as the whole field on winter or spring cereals. Whole fields on which the conservation cereal option is used may also qualify for payment

through the Retention of Winter Stubble option. Provided the minimum area is maintained this option can move from field to field within the normal arable rotation. Fungicides and plant growth regulators may be applied to the growing crop.

(iii) Wild bird cover

Wild bird cover is a spring sown crop mixture, sown on improved or arable ground, which is left unharvested to provide food for farmland birds.

Aim: to provide food, primarily during winter, in the form of crop and weed seeds for farmland birds. Wild bird cover will also provide summer food for chicks and adult birds in the form of weed seeds and invertebrates. Arable weeds, many of which have declined in recent decades, and invertebrates are also likely to benefit from this option.

Biodiversity objectives: the option contributes to the Northern Ireland Biodiversity Action Plan targets for the Irish hare, chough and yellowhammer. The Northern Ireland Priority Species skylark, reed bunting, linnet and tree sparrow will also benefit.

Management requirements

- Must not be sited on land used to fulfil set-aside requirements.
- Wild bird cover must be sown on improved or arable ground only.
- Individual plots must be at least 0.20ha, with a minimum width of 6m. Total area of wild bird cover in a single field or in adjacent fields must not exceed 2ha.
- On arable cropping farms with machinery for cultivating and sowing, or where wild bird cover has been grown successfully in the past two years, up to 2ha or 10% of the farm (whichever is the greater) may be wild bird cover, with a maximum of 8ha in one agreement.
- On other farms a maximum of 2ha may be initially entered as wild bird cover, with an option to increase the area after two years up to 10% of the farm, with a maximum of 8ha in one agreement.



A wild bird cover crop of cereals and linseed sited next to a hedge can provide a valuable winter feeding habitat for a range of farmland birds

- If more than 2ha of wild bird cover is to be grown, then plots must be split up over the farm.
- Under-sowing is not permitted.
- Sow seed between 1 March and 31 May.
- Two-year mixes must contain kale and at least one from the following: quinoa, spring barley, spring oats, spring wheat, spring triticale and linseed.
- One-year mixes must contain a spring cereal (oats, barley, triticale) and one from the following: quinoa, oilseed rape, linseed and mustard.
- Wild bird cover must be retained from establishment to 1 March the following year.
- No cultivations are permitted from establishment to 1 March the following year.
- Glyphosate and fertiliser can be applied during establishment but pesticides must not be applied to the growing crop.
- Grazing is not permitted except between 1 March and establishment.
- Siting of supplementary feeding sites, drinking troughs, temporary silage clamps and storage of big bale hay or silage is not permitted.
- Crops that fail to establish successfully or, in the case of two-year mixes, that have a very low kale population in the spring following establishment, must be re-sown.
- The area should not be used for access, turning or storage.

Further advice

Location

Wild bird cover should be sited next to thick hedges where possible. If there are no hedges, sites should be preferably next to woodland or scrub. Plots of around one hectare are most beneficial, as they hold seed for longer into the winter. Plots may be kept in the same place or rotated.

Avoid using mixtures containing brassicas near commercial orchards or beehives.

Establishment

Good establishment is critical to the success of wild bird cover. Soil testing should be carried out and lime applied where necessary. The optimum pH for

most crops is 6.5 but some crops (oats, linseed, triticale) can tolerate more acid soils. Glyphosate may be used before cultivation to control grass weeds, especially where wild bird cover follows permanent grassland or stubbles containing couch grass (scutch grass). The sterile seedbed technique to control broad-leaved weeds is recommended, as herbicide application is not permitted after sowing. Low weed levels, provided they do not prevent crop establishment, are beneficial. Weeds such as redshank and fat hen attract insects, which birds use for feeding chicks, and also provide an important seed source. Inorganic fertilisers and organic manures may be applied to the seedbed in accordance with crop requirements. Two-thirds of normal rates should suffice as the aim is to create a more open crop which increases access to fallen seeds for birds.

Sowing wild bird cover

Sow between 1 March and 31 May. Drilling is the preferred sowing method as seeds are placed at the correct depth. However if a drill is not suitable or available acceptable results can still be achieved, with care, by broadcasting.

Surface sown seeds are at risk of being eaten by birds and rodents while deeply sown seeds may have insufficient energy reserves for successful emergence of seedlings. Small seeds require shallower sowing than larger seeds.

Careful seedbed preparation helps control sowing depth and ensures good seed/soil contact. In fluffy, unconsolidated seedbeds rolling prior to sowing can reduce the risk of deep planting.

A seed drill is best suited to sowing mixtures where the seed is of a similar size, for example, kale and quinoa. Seed may be mixed in the drill if it is not already pre-mixed.

The following methods can be used where the mixture comprises seed of different sizes (for example, cereals and brassicas):

- drilling one component and broadcasting the next or
- drilling one component and over-drilling or
- cross drilling the next.

All ingredients should be sown on the same day in case poor weather delays sowing of the remaining ingredients.

Where seed is broadcast, harrowing after sowing can help to cover seed, but care should be taken to avoid burying small seeds too deeply. Rolling after broadcasting can help ensure good seed/soil contact, and may be all that is needed after broadcasting small seeds. A fertiliser spreader can be used to broadcast the seed if it is mixed with a bulking agent such as fertiliser or sand. If broadcasting, increase seed rates by between one third (for smaller seeds) and a half (for larger seeds).

Re-establishing wild bird cover

Use a flail type topper or conventional topper to pulverise stems and clear brash before ploughing. If carried out by early March removing the vegetation will allow birds access to fallen seed and may also allow the use of the stale seedbed technique for weed control.

Wild bird cover mixes

Wild bird cover can be made up of a mix that is sown every year or a mix that is sown every other year. Recommended seed rates are lower than those for commercial crop production as a more open crop increases access to fallen seeds and weeds for birds.

One-year mixes must contain a spring cereal (oats, barley, wheat, triticale) and at least one from the following: quinoa, oilseed rape*, linseed, mustard*. An example of a one-year mix is oats and linseed. This mix is a good option on heavier, acid soils. Note that these rates are for drilled seed, increase seed rate by one third to a half if broadcasting.

Oats and linseed: 60 kg/ha of oats and 25 kg/ha of linseed

**Do not include brassicas (oilseed rape, mustard etc.) if using the one-year mix as a break crop between kale mixes.*

Two-year mixes must contain kale and at least one from the following: quinoa, barley, oats, wheat, triticale, and linseed. Kale must be included because it is the only crop that seeds in the second year. The other component of the mix provides seed in the first year. Examples of two-year mixes are given below. Note that these rates are for drilled seed, increase seed rate by one third to a half if broadcasting:

- Kale and quinoa: 2.5 kg/ha of kale and 5 kg/ha of quinoa
- Kale and cereal (oats, barley, wheat, triticale): 2.5 kg/ha of kale and 60 kg/ha of cereal

Crops for wild bird cover mixes can be purchased as straights or as a branded mixture. In branded mixtures it is important that at least two of the species in any mixture are suitable for Northern Ireland growing conditions. The following crop species are discouraged: sunflowers, red clover, peas, maize, buckwheat, millet, sorghum, artichokes, canary grass, beans and fodder beet. These either do not reliably set seed in Northern Ireland or do not provide the right type of seed for farmland birds.

Making up mixes from straights

The sowing rates in Table 6 can be used when making up mixes. For example, for mixes with two crop types the sowing rate should be halved, if three crop types are sown each one should be sown at a third of the usual rate. However, use at least 2.5 kg/ha kale in two-year mixes, as kale will be the sole seed source in year two. Rates are lower than commercial crop rates to create a more open crop.

Table 6: Sowing rates for wild bird cover crops

Species	Sowing rate * kg/ha (kg/acre)	Optimum pH range	Sowing depth (cm)
Kale	5.0 (2)	6.5 - 7.0	1 - 1.5
Oilseed rape	7.5 (3)	6.0 - 6.5	1 - 1.5
Mustard	12 (5)	6.0 - 6.5	1 - 1.5
Quinoa	10 (4.5)	6.0 - 6.5	2 - 3
Spring Triticale	125 (50)	5.5 - 6.5	2 - 3
Spring Oats	125 (50)	5.5 - 6.5	2 - 3
Spring Barley	125 (50)	6.0 - 6.5	2 - 3
Spring Wheat	125 (50)	6.0 - 6.5	2 - 3
Spring Linseed	60 (25)	5.5 - 6.5	2 - 3

** Sowing rate given for drilled seed. Increase seed rate by one third to a half if broadcasting.*

Advantages/disadvantages of different crop types

Kale attracts a wide variety of birds but requires a pH of over 6.5 and is prone to club root if sown too frequently in the same place. If planting, check soil pH, and leave a gap of three years between kale crops to prevent club root. The kale

variety “Caledonian” offers greater resistance to club root where brassicas are grown more often than one year in four. Thousand-headed kale is more winter hardy and better suited to northern areas. Maris Kestrel is a short variety more resistant to lodging.

Quinoa is related to fat hen. It produces a large amount of nutritious seed and is good for a wide range of birds.

Oats, triticale and linseed are more tolerant of acid soils (pH down to 5.5).

Triticale is less liable to rabbit damage than other cereals, and the stiff straw stands throughout the winter. Ensure that spring triticale varieties are used for spring sowings.

Barley is more suited to lighter soils.

Recent research has shown that different birds prefer different crop species. Using this information, crops can be grown to benefit certain bird species as indicated in Table 7.

Table 7: Crops preferred by bird species

Bird species	Crop preference
Yellowhammer	Cereal Kale Linseed Oilseed rape
Skylark	Kale Linseed
Tree sparrow	Kale Oilseed rape Quinoa Mustard Cereal
Linnet	Linseed Oilseed rape Mustard Kale
Reed bunting	Oilseed rape Kale Quinoa

(iv) Undersown cereals

Undersown cereals are spring cereals, established after 15 February, which are undersown with a grass and clover ley mixture containing at least 10% clover by weight.

Aim: to increase the diversity of habitats and species within farming systems and provide additional habitat for a range of farmland birds, invertebrates and plants.

Biodiversity objectives: this option contributes to the Northern Ireland Biodiversity Action Plan targets for the Irish hare, chough, lapwing and yellowhammer. The Northern Ireland Priority Species - skylark, reed bunting and tree sparrow – will also benefit.

Management requirements

- Must not be sited on land used to fulfil set-aside requirements.
- The cereal crop must not be established before 15 February.
- The cereal seed rate must be at least 100kg/ha.
- The cereal crop must not be harvested for 14 weeks after sowing and not before 1 August.
- The crop must be undersown with a grass and clover ley mixture containing at least 10% clover by weight. The ley must be retained until at least 15 July the following year after the crop is harvested.
- Only herbicides approved for use on cereals undersown with grass and clover may be used.
- Fertilisers, organic manures and lime applications are permitted to meet crop requirements.
- No cultivation or rolling is permitted following establishment.
- The application of insecticides, molluscicides or nematicides is not permitted.

Further advice

If lapwing normally nest in your fields, establish the crop preferably before 20 April, and complete all establishment operations within ten days. This should allow lapwing to nest successfully.

4

To ensure a successful reseed select an early cereal variety with a short stiff straw and sow at approximately three-quarters of the normal seed rate. This will reduce competition with the grass and reduce lodging risk.

Herbicides, fungicides and growth regulators are permitted. However, ensure that products used are approved for use on newly sown grass and clover mixtures.

The undersown cereals option may be carried out on whole crop cereals.



A cereal field with rough grass margin

(v) Rough grass margins

A rough grass field margin is a strip of land, sown with a recommended grass seed mixture (Figure 8), at least 2m wide around arable fields in which cereal, oilseed or protein crops have been planted.

Aim: to provide habitat for over-wintering invertebrates, some of which prey on pests of cereals, and to provide nesting and forage sites for birds and mammals.

Biodiversity objectives: this option contributes to the Northern Ireland Biodiversity Action Plan targets for the Irish hare and yellowhammer. The Northern Ireland Priority Species barn owl, tree sparrow, twite and ground beetles will also benefit.

Management requirements

- Must not be sited on land used to fulfil set-aside requirements.
- A mixture of non-cultivated grass species must be sown (see Figure 8). Grasses must be sown at a rate of 20kg/ha. Cocksfoot must form no more than 15% (maximum 2kg/ha) of the mixture.
- Margins must be established on at least 50% of the field perimeter.
- Minimum area of 1000m² (0.10ha) and between 2 and 12 metres wide.

4

- Must be retained for at least three years and preferably five years. If the rough grass field margin is removed, a new margin equivalent in size must be established elsewhere on the farm for the remainder of the period.
- Must be mown at least three times between 15 July and 30 September during the year following sowing to encourage tillering and minimise weed development. Thereafter may be mown no more often than one year in three (between 15 July and 30 September) to prevent scrub development.
- No grazing, cultivation, ploughing, drainage, reseeding, fertilisers, slurry, farmyard manure, sewage sludge, lime or application of pesticides or herbicides is permitted after establishment.
- Rough grass field margins must not be used for supplementary feeding sites, drinking troughs, temporary silage clamps or storage of materials including big bale hay and silage.
- Rough grass field margins must not be used as a headland, roadway, regular access route or as a farm lane.

Further advice

Rough grass field margins should be sited adjacent to a hedge, scrub, woodland or watercourse for maximum wildlife benefit. Herbicides may be used to control noxious weeds by the use of a weed wiper or spot spray.

Figure 8: Grass species suitable for use in rough grass margins

Cocksfoot	Red fescue
Common bent	Rough stalk meadow grass
Creeping bent	Smooth meadow grass
Creeping fescue	Sheep's fescue
Crested dog's tail	Sweet vernal grass
Meadow foxtail	Yorkshire fog

(vi) Lapwing fallow plots

Lapwing will nest in fields of spring cereals or potatoes, especially if there is damp, grazing land nearby for chick feeding. A fallow plot is an area left fallow, from when it is created in the spring (or in the previous autumn) until 31 July. Fallow plots allow lapwing to nest without disturbance. Large, open arable fields with nesting lapwing are eligible. The option can be introduced as whole or part fields or as plots within fields.

Aims: to maintain and increase the breeding success of lapwing nesting on arable farmland by providing suitable breeding, nesting and feeding conditions.

Biodiversity objectives: this option contributes to the Northern Ireland Biodiversity Action Plan targets for the lapwing, yellowhammer, chough and Irish hare. The Northern Ireland Priority Species - reed bunting, tree sparrow and linnet - will also benefit.

Management requirements

- Must not be sited on land used to fulfil set-aside requirements.
- The minimum fallow plot size is 1 ha and the maximum is 2 ha.
- The fallow plot must be in place by 20 March.
- Following cultivation, no operations (further cultivation, rolling, cutting, grazing, spraying, pesticides, farmyard manure, sewage sludge, fertiliser/ lime application or drainage) are permitted on the fallow plot.
- The fallow plot must be kept in place until 31 July.
- Fallow plots must not be used for access, turning, storage of materials or any other activity.

Further advice

Fallow plots are best created by cultivations between 15 February and 20 March, or during the previous autumn if spring cultivations are not possible. Severe infestations of annual grass weeds may be controlled by the use of glyphosate before cultivation. Control of serious infestations of grass or noxious weeds on the fallow plot may be permitted in exceptional circumstances and requires the written permission of DARD.

5. Traditional orchard restoration

Areas of unimproved and improved grassland suitable for planting with native fruit varieties.

Aims: The option offers the opportunity to conserve local history, ensure the survival of old fruit varieties and enhance the visual and historical value of the landscape.

Biodiversity objectives: to reintroduce biodiversity in a practical manner and maintain genetic resource, which may help in the future development of new varieties or play a part in strengthening the disease-resistant properties of modern varieties.

Management requirements

- Fruit trees must be from the approved list of varieties given in Table 8.
- Plant bare-rooted trees at a minimum spacing of seven metres spacing during the dormant season (November to March).
- Grafted trees must be grown on standard or half-standard rootstock (M106 or M111). Dwarfing varieties are not eligible.
- At least three different varieties of apple trees must be planted. No variety should comprise more than half the total number of trees in the orchard. Intersperse different varieties and types of tree to assist cross-pollination.
- The orchard may be grazed with sheep or mown. Mowing before July is not permitted. Sheep grazing is only permitted if the newly planted fruit trees are protected with suitable guards (see Figure 9). Do not graze with cattle.
- A one-metre diameter area around newly planted trees must be kept weed-free for 3-4 years.
- Inorganic/organic fertiliser or lime must not be broadcast between the trees.
- Cultivation, ploughing, re-seeding, rolling or chain harrowing is not permitted.



Young apple tree

- Application of insecticides or fungicides is not permitted. Noxious weeds such as thistles and ragwort may be controlled with herbicides, applied using a weed wiper or spot sprayer.
- Supplementary feeding sites, temporary silage clamps or storage areas for big bale silage or hay are not permitted.
- Trees that do not survive must be replaced.

Further advice

The ideal site is a south-facing gentle slope with deep soil, open to the sun with shelter from prevailing wind and low frost occurrence. The soil should be reasonably deep and slightly acid (pH 6.5). Shallow, alkaline or waterlogged soils are unsuitable, as are sites exposed to sea-laden salt breezes. Exposed sites will require protection in the form of a high hedge.

Choose varieties traditionally grown in the same area as indicated in the list in Table 8. When planting, avoid digging an excessively large 'tree pit', which can create a drainage sump, particularly in clay soils. This can result in roots sitting in water and cause tree death.

For successful pit planting:

- strip excess grass from the site;
- dig a hole just large enough to hold the entire root system;
- place the sods, grass downwards, at the bottom of the hole;
- drive a suitable stake into the bottom of the hole;
- carefully place the tree roots in the hole;
- replace the soil, using the best soil around the roots, gently shaking the tree to ensure the soil is well settled around the root system;
- trample the soil firmly around the tree;
- tie the tree to the stake with a suitable tree tie.

When grazing an orchard, mature sheep are preferable, as lambs are more likely to eat the bark of the fruit trees.

A 1m diameter area around newly planted trees should be kept weed-free for 3-4 years. Use polythene with fine gravel or quarry waste, a mulch of organic matter or a mulch mat.

Inorganic/organic fertiliser or lime must not be broadcast throughout the orchard. However, well-rotted farmyard manure may be applied around each tree. Fertiliser applied around the base of the tree can also be beneficial, particularly in the second year after planting. Lime may be applied in a similar manner but restrict applications to one year in four. Avoid over-liming.

Guarding young trees

If sheep are to be grazed in the orchard, some protection is required around the tree. The guard illustrated below can be used for trees from maiden up to standard size.

Figure 9: Sheep-proof guard for orchard trees

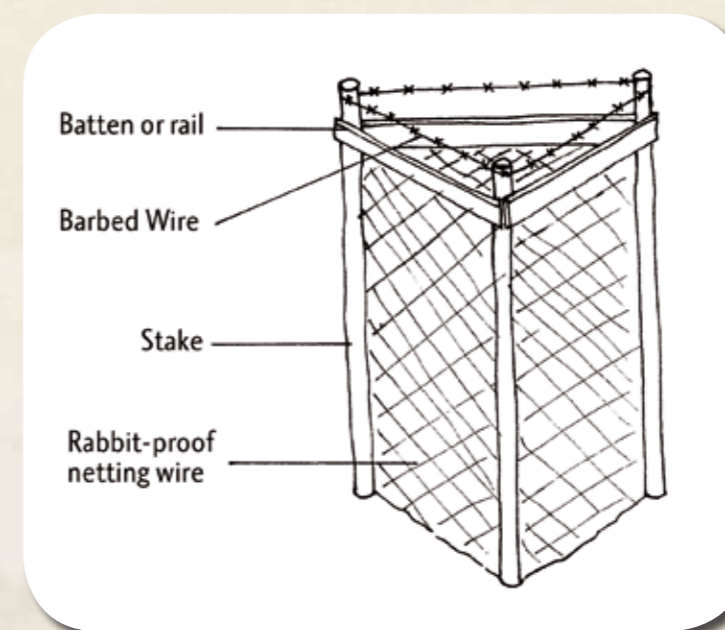


Table 8: Traditional orchard tree varieties

Varieties of fruit approved for use under agri-environment schemes for Recreation of traditional orchards option.

Variety	Area found	Type
April queen	Ireland (c1908)	Eating
Ard cairn russet	Co Cork (c1890)	Culinary
Ballyfatten	North of Ireland (c 1800)	Eating
Barnhill pippin	Northern Ireland (c1934)	Eating
Ballyvaughan cooker	Ireland	Dual
Ballyvaughan seedling	Ireland	Eating
Bloody butcher	Ireland (c1950)	Culinary
Crown crofton	Ireland (c1950)	Eating
Cavan wine	Cavan	Culinary
Clearheart	Ireland (c1950)	Dual
Davy apple	Ireland (c1950)	Eating
Dockney	Northern Ireland - Armagh (c1941)	Culinary
Ecklinville seedling	Ecklinville (before 1800)	Culinary
Eight square	Co Monaghan	Eating
Gibbons russet	Cork (c1897)	Eating/cider
Golden russet	Ireland	Eating
Golden royal	Ireland (c1950)	Eating
Greasy pippin	Tyrone and Fermanagh (c1950)	Eating
Irish peach	Co Sligo (c1820)	Eating
Keegan's crab	Armagh	Eating
Kemp	Probably Northern Ireland - Armagh (c1837)	Eating
Kerry pippin	Co Kerry (c1802)	Eating
Kilkenny permain	Co Kilkenny (c1831)	Eating
Kill apple	Ireland (c1950)	Eating
Lady's finger	Co Offaly and Monaghan (c1951)	Eating
Martin's seedling	NI - Antrim	Culinary
Munster tulip	Munster (c1950)	Eating
Peche melba	Co Kilkenny (before 1930)	Eating
Red brandy	Kilkenny	Eating
Reid's seedling	Richill, Co Armagh (c1880)	Eating
Ross nonpareil	Ireland (before 1802)	Culinary
Sam Young/Irish russet	Ireland (before 1818)	Eating
Scarlet crofton	Sligo	Eating
Sheep's snout	Ireland	Dual
Sovereign	Armagh	Eating
Strippy	Co Armagh (c1949)	Eating
Summer John	Fermanagh	Eating
Thompson's apple	Tyrone and Monaghan (c1950)	Eating

Variety	Area found	Type
Uncle John's cooker	Kilkenny	Culinary
Widow's friend	Armagh	Eating
Winston coloured sport	Loughgall (c1950)	Eating
Yellow pitcher	Ireland (c1951)	Eating

Rare or unusual apple cultivars grown in Ireland but not of Irish origin include

Gascoyne scarlet

Gladstone

Lord Derby

Northern greening

Golden noble

Norfolk royal

Red Gascoyne scarlet

Ribstons pippin

Table 9: Other varieties of traditional fruit

Pear	Cherry	Plum
Conference	Morello	Victoria
		Damson
		Young river
		Green gauge
		Horse

Acknowledgement: Above lists generated by J W Choiseul (1997) Faculty of General Agriculture University College, Dublin.

Sources of trees/varieties in the above lists:

The Irish Seed Savers,

Capparoe

Scarrif

Co Clare

Telephone: (00353) 6192 1866

Website: www.irishseedsavers.ie

Future Forests

Kealkill

Bantry

Co Cork

Telephone: (00353) 2766176

Website: www.futureforests.net