

12-J Summary Management Prescriptions

12-J.1 Floodplain Grassland and Fen

F29 and land to south

Objective

12-J.1.1 Mosaic of S26 Greater Pond-sedge (*Carex riparia*) swamp, MG10 Yorkshire Fog Soft-Rush Pasture and MG9 Yorkshire Fog-Tufted Hair-grass (*Deschampsia cespitosa*) grassland.

Rational

12-J.1.2 These habitats are present on F29. The vegetation can be moved during construction to create similar habitats with a bowl-shaped landform with a zonation of:

Edge		wet centre
MG10	MG10	S26

Construction and Management

- Lower levels of field to south of F29 to bowl-shaped landform with mean summer water level at 150mm below surface at edge, 50mm above surface at centre, prior to construction of the road.
- As F29 is cleared, vegetation from it can be salvaged and spread on the prepared area.
- Monitor vegetation development in the year following excavation and spreading, when it may be necessary to spot treat excessive amounts of notifiable weeds in the drier areas with EA and NE consent.
- Introduce grazing at approximately 2 cattle/ha for 12 weeks in April-September on the basis of NE advice.
- Monitor and treat notifiable weeds as necessary.

Key Species

- Cuckoo Flower (*Cardamine pratensis*)
- Yellow Flag (*Iris pseudacorus*)
- Meadowsweet (*Filipendula ulmaria*)
- Meadow Buttercup (*Ranunculus acris*)
- Water Horsetail (*Equisetum fluviatile*)
- Marsh Horsetail (*Equisetum palustre*)

F19 and F32 South of Road

Objective

12-J.1.3 The preferred objective would be to get about 50% of the area as inundation grassland MG13 Creeping Bent (*Agrostis stolonifera*)-Marsh Foxtail (*Alopecurus geniculatus*) on the lower ground and MG10 Yorkshire Fog Soft-Rush Pasture on the higher ground. The former can be achieved by enlarging the areas shown as ponds on the plan. These areas would be under water for much of the winter and periodically during the summer.

Construction and Management

- Construction of a bowl shaped area similar to the above, removing the existing sward and all but a very thin layer of topsoil, so that the outer edges would be 150mm above mean summer water level and the central inundation areas would be more or less at mean water level
- Allow vegetation to establish naturally, monitoring development over the first three years, when it may be necessary to spot treat excessive amounts of notifiable weeds in the drier areas with EA and NE consent.
- Introduce grazing at approximately 2 cattle/ha for 12 weeks in April-September on the basis of NE advice.
- Monitor and treat notifiable weeds as necessary.

Key Species

- Lesser spearwort (*Ranunculus flammula*)
- Flote grass (*Glyceria fluitans*)
- Celery-leaved buttercup (*Ranunculus sceleratus*)
- Tubular Water-Dropwort (*Oenanthe fistulosa*)

The Borrow Pit and the Land around It

Objectives

12-J.1.4 Develop rush pasture and tall-herb fen around the edges of the pit.

12-J.1.5 Zonation from open water communities such as A5 Hornwort (*Ceratophyllum demersum*) and A9 Broad-leaved Pondweed (*Potamogeton natans*) to tall herb fen such as S4 and S5 to reedbed dominated by Common Reed (*Phragmites australis*).

Rationale

12-J.1.6 This is an opportunity to create an extensive area of fen and open shallow water on the same principles as gravel pit restoration.

Construction and Management

- Reinststate margins with subsoil not topsoil. Cultivate to remove compaction but leave un-seeded.
- Grazing the unaffected grassland in the southeast at approximately 2 cattle/ha for 12 weeks in April-September on the basis of NE advice while the adjacent sward is establishing.
- Monitor establishment and when there is sufficient growth top, removing all arisings and continue topping until a sward that can be grazed is established. Introduce grazing on the same basis as the undisturbed areas when this has happened.
- The preferred method of establishment for the wetland communities would be to create the right profile and let natural succession take place, although some marginal vegetation can be introduced from clearance elsewhere. In doing this a track that would be robust enough to support and excavator would be constructed around the edge of the lake to permit cyclical clearance.
- Monitor vegetation establishment and when the communities are fully established. Dredge about 10% of the edge from the submerged communities to the edge of the reedbed, leaving the dredged vegetation in heaps at the edge of the reedbed. These areas will develop a short-lived plant community of interest

Key species

- Bladderwort (*Utricularia vulgaris*)
- Water and Marsh Horsetails (*Equisetum fluviatile*, *E. palustre*)
- Fine-leaved Water-dropwort (*Oenanthe aquatica*)
- Common Skullcap (*Scutellaria galericulata*)
- Arrowhead (*Sagittaria saggitifolia*)

Low Ground Southwest of Decoy Pond Wood

Objective

12-J.1.7 MG10 Yorkshire Fog Soft Rush grassland.

Rationale

12-J.1.8 This is low-lying land contiguous with similar habitat within the SSSI.

Management

12-J.1.9 There is no need for any capital works in this area. If the right grazing regime can be implemented then rush pasture will develop naturally. The starting point would be approximately 2 cattle/ha for 12 weeks in April-September

12-J.2 Species-rich Neutral Grassland

Objective

12-J.2.1 Tall species-rich neutral grassland approximating to the NVC MG5 Common Knapweed - Crested Dog's-tail community

Rationale

12-J.2.2 The two areas of this habitat that will be lost have fairly low frequency of grasses and a high frequency of mid to late season flowering plants which support a good range of invertebrates.

Construction and Management

- In the summer prior to the start of work, forage harvest G6 and the west part of G13 and store the material gathered under suitable conditions for use in seeding.
- Since the area to be sown is greater than the harvested area, it will need to be bulked-up with seed from similar vegetation in the locality obtained through the High Weald Meadows project, which will be able to advise on volumes required and sowing rates
- Areas for sowing will be reinstated with nutrient-poor subsoil similar to the soil present at G6 and G13 tripped to 450mm deep and cultivated to a tilth.
- The harvested material will be spread and lightly harrowed-in in late summer/early autumn.
- A topping cut should be made in the following spring, followed by a cut in September, removing all arisings. This should be repeated biennially.
- When the sward has developed sufficiently, introduce sheep grazing at no greater than 0.5LU/ha in spring and early summer, adjusting the grazing regime as necessary to ensure good late summer flowering of broadleaved species.

Key Species

- Common Knapweed
- Dyer's Greenweed (*Genista tinctoria*)
- Bird's-foot Trefoil (*Lotus corniculatus*)

12-J.3 Mesotrophic Grassland, Scrub, Scrub Woodland and Shaws

Objective

12-J.3.1 To create mosaics of species-rich grassland, mixed scrub and scrub woodland with varied structure. The grassland will correspond roughly with the NVC communities MG5 and MG1. Within the scrub and scrub woodland, native trees and shrubs that are found in the locality will be used, but it is not intended that any particular NVC community should be a target.

Rationale

12-J.3.2 Tree and shrub planting is necessary to screen the road and to maintain links for bats, Dormice and other species. Mosaics of the types proposed will achieve these benefits and will provide a net biodiversity gain over the arable and improved grassland habitats that they will replace.

Construction and Management

- The areas concerned will be reinstated with subsoil ripped to 600mm deep in areas of tree planting and 450mm deep elsewhere.
- Grassland areas will be worked to a tilth and sown with seed derived from neutral grassland in the area through the High Weald Meadows Project. The seeding rate will be as advised by the project.
- Scrub will be developed by planting, generally using small stock at 1.5m centres and keeping the ground underneath weed free for three years, but also by fencing off small areas to let scrub develop naturally.
- Trees will be planted at 3m centres within the scrub matrix.
- As much of the grassland as possible will be managed by grazing, but in small areas or where there is a potential conflict between people and stock a mowing only regime will be necessary. This will generally be a single late summer cut, removing all arisings.
- Grazing should generally be about 0.5LU/ha between April and September, varying the rate according to the way that the grassland develops and ensuring that on average at least 20% of the grassland is tussocky. This will lie mainly where the grassland and scrub meet and will require cutting at 3-4 year intervals to maintain variety of structure.
- Scrub, the edges of scrub woodland and shaws will be managed with scalloped edges cut on a 5-10 year cycle to maintain variety of structure.
- Areas planted with trees will be managed by normal silvicultural thinning to give an open high forest structure

12-J.4 Woodland Management

12-J.4.1 Only a very small area of ancient woodland will be lost but there are ancient woodlands which require management for landscape purposes and this can be combined with management to increase biodiversity. Most woods within

the study area are ancient and semi-natural and are connected to each other by shaws and hedgerows.

Objective

12-J.4.2 To return woodlands to active management based on standard conservation methods.

Rationale

12-J.4.3 The woodlands were managed by coppicing and other traditional practices and this has been one of the main reasons for their high biodiversity.

W8

- Maintain the wet flush which runs through the wood and manage the central area for Alder.
- Thin throughout in favour of well-formed Ash or Alder to provide long term landscape screening and allow a shrub layer to grow up.
- Improve access to the woodland by clearing fallen and hung-up trees, clearing all lop and top but leaving all dead wood in situ.
- Coppice on a 10-year rotation of no more than 25% of the area at any one time.
- Create a softer margin to the woodland by thinning birch and coppicing Hazel, Hawthorn and other shrubs at the edge on a short cycle.

W18 – Decoy Pond Wood

- Remove mature Sycamore and treat to prevent re-growth.
- Maintain aquatic marginal vegetation at approximately its present extent by removal of up to one third per year and disposing of arisings off-site.
- Thin other standards in favour of Pedunculate Oak.
- Coppice Hazel and other shrubs on the “flat” areas on a 10-year cycle.
- Willow on wet edges to be controlled by pollarding.
- New planting on the north managed to create a soft edge leading down to the pond.

Railway Abutment

12-J.4.4 The main reason for managing this area is for landscape purposes; however some of the following nature conservation measures would be compatible with this.

- Create small south-facing glades in the mid-lower slopes with soft edges for invertebrates.

- Develop an uneven age canopy structure of mature species for landscape objectives, and maintain a distinct understorey layer in the more open areas through coppicing.
- At the foot of the abutment, adjacent to Powdermill Stream, establish and maintain a soft edge through thinning of the canopy trees at the edge by twenty-five percent cutting back scrub in scallops on a five year rotation, following Forestry Commission guidance on ride management.

Little Bog

12-J.4.5 The principal reason for retaining the tree cover on this area is for landscape purposes. Where it is feasible to reduce the tree cover without affecting the screen this should be done since it will allow a richer tall herb fen community to develop.

- Ensure that the water levels within the site are unaffected by changes to adjacent land use.
- Create clearings within the principle given above and lightly thin the Alder where trees need to be retained.
- Monitor vegetation and cut herbaceous vegetation in late summer where it begins to show signs of dominance by coarse species removing all arisings.
- Approximately every eight years create pockets of open, lower areas of no more than 10% of the area either by manually digging out the roots herbaceous plants or by winching out the roots of trees that are not of landscape significance.
- Maintain the open character of the south edge by clearance of one quarter of the fen vegetation every other year ensuring that the Tussock Sedge is not disturbed.

12-J.5 Ditches and Streams

Objective

12-J.5.1 To ensure that new ditches and existing ditches brought into active management have a structure and water levels that will support a wide range of the species characteristic of valley. For higher plants to ensure that each ditch has at least five of the species on Palmer's list of aquatic plants (Appendix 11-3C Ditches and Streams).

Rationale

12-J.5.2 Many of the existing ditches are species poor because they have narrow steep profiles and low water levels. The biodiversity of the area as a whole can be improved by bringing ditches within the Scheme into good condition.

Construction and Management

- Excavate new ditches so that there is a wide shallow edge and gently sloping sides.

- As existing ditches are cleared, excavate to the same profile as the above.
- Keep summer water levels in the ditches at between 100 and 200 mm below that of the adjacent fields.
- Ensure easy access to at least 50% of ditch edges for cattle grazing.
- Cut Common Reed, Reed Canary-grass, Reed Sweet-grass and other vigorous marginal species rotationally every 3-4 years. Short sections should be left uncut on both sides of the bank to aid re-colonisation.
- As ditches become choked with vegetation and species richness declines, which will generally be at between 5 and 10 years clear all vegetation on alternate sides leaving undisturbed sections between cleared sections of approximately 20m ensuring that excavation is to the profile described above.
- Spread cleared material on the adjacent fields no more than 5m from the ditch.

12-J.6 Hedgerows

Objective

12-J.6.1 To provide hedgerows with varied vertical and horizontal structure and species composition typical of the locality which sustain the habitat network shown on Figure 11.4 and which ensure the continuity of feeding and movement corridors for bats and Dormice.

Rationale

12-J.6.2 The hedgerow network is a significant feature of the area. New hedges and the management of existing hedges will mitigate the severance and habitat loss resulting from the Scheme.

Construction and Management

- Reinforcement of existing hedges will be treated case-by-case. In some instances it may only be necessary to fence off sections and cut to ground level allowing the coppiced shrubs to grow up, while ensuring that potential standards are selected and safeguarded. Planting within existing hedges will not be carried out because of root competition. Instead a new hedge will be planted alongside so that the mature hedge will be more like the shaws typical of the area.
- The prescription for planting hedges is given in the Landscape Chapter of the ES.
- Management will generally be cutting to an A-shaped section cutting sides in alternate years and varying cutting height.

- Care must be taken to avoid damage to standard trees and while these will not require the formative pruning necessary for formal landscapes, it will be essential to monitor them and carry out pruning as necessary to ensure well-formed mature trees.