Native Woodland Scheme Framework

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Overview

The following revised Native Woodland Scheme (NWS) Framework applies to both NWS Establishment (i.e. GPC9 and 10) _and_ NWS Conservation. Its purpose is to identify, at pre-application stage, the most appropriate native woodland type to promote onsite.

The NWS Forester (and the NWS Ecologist, under NWS Conservation) appraises the site in terms of its location, soil(*) and main habitats & vegetation, and matches it to one of five scenarios, named after the basic soil type:

➢ Scenario 1: Podzols *(Oak-Birch-Holly Woodland)*

➢ Scenario 2: Brown Podzolics *(Oak-Birch-Holly with Hazel Woodland)*

➢ Scenario 3: Brown Earths *(Oak-Ash-Hazel Woodland)*

➢ Scenario 4: Gleys *(Alder-Oak-Ash Woodland)*

➢ Scenario 5: Highly Modified Peat & Peaty Podzols *(Pioneer Birch Woodland)*

The framework then identifies the associated woodland type (as set out above, in brackets) and the relevant species mix & planting pattern to promote it, either through afforestation (under NWS Establishment), or restoration planting or reforestation (both under NWS Conservation).

(* For information on carrying out a walkover soil survey, see Annex 3 of the DAFM document *Native Woodland Establishment GPC9 & GPC10: Silvicultural Standards (September 2015)*.)

> **Important notes:**
>
> ➢ NWS Establishment and NWS Conservation must be applied for separately, using respective Form 1s.
>
> ➢ Any scenario selected must reflect the location and soil and the main habitats & vegetation (as described in the NWS Framework). Mismatch will result in the applications being returned for adjustment and resubmission.
>
> ➢ High biodiversity habitats that correspond to Annex I listed habitats (EU Habitats Directive (92/43/EEC) are not eligible under NWS Establishment.
>
> ➢ Downy birch forms part of several planting mixtures set out in the Framework. From 2019, the use of improved 'qualified' downy birch planting stock is required.
>
> ➢ Due to Ash Dieback Disease, ash is excluded from the NWS Framework.

The NWS Framework has been developed with input from Woodlands of Ireland and the National Parks & Wildlife Service, and will be kept under review. (Images by J.Cross, D.Little and DAFM.)

NWS Establishment: Instructions for the NWS Forester

1. Using the NWS Framework, assess the site in terms of its topographical location, soil, main habitats and vegetation. Compare this information with the descriptions given in the NWS Framework, and select which one of the five scenarios applies.

2. The framework gives a short description and image of the native woodland type associated with that scenario. This woodland type becomes the 'target' woodland to promote onsite, through afforestation.

3. The species mixture and planting pattern required to promote this woodland type are listed (other native species, including ground flora, will colonise naturally over time). Note, the species mixture and planting pattern _must be adhered to_ in order to be eligible for the corresponding GPC. (A tolerance of +/- 20% for each species percentage is acceptable. For example, under Scenario 1, 30% Sessile oak is prescribed, with an acceptable tolerance of 24% to 36%. Any shortfall in stocking must be compensated by increasing the percentage of other species within that mixture. Any variation beyond these tolerances must be agreed to in advance with DAFM, and must be consistent with promoting the relevant woodland type.)

4. Two or more scenarios may apply to different areas of the same NWS Establishment site. This will generate separate plots, each with its own planting mixture, planting pattern and corresponding GPC. Also, each native woodland scenario must be treated as a separate plot on the Form 1 Plot Table and Certified Species Map, even if the same GPC applies.

5. Note, all sites presented for NWS Establishment GPC 9 and 10 (covering Scenarios 1-5) must satisfy the criteria for Land Type 'Suitable Land: GPC 2-12', as set out in the DAFM document _Land Types for Afforestation_ (Oct. 2017).

6. Incorporate the relevant plot details, the Native Woodland Scenario and the corresponding GPC(s) (GPC9 or GPC10) into the Afforestation Form 1 (alongside other, non-native woodland GPC plots, if relevant).

NWS Conservation: Instructions for the NWS Ecologist & NWS Forester

1. Using the NWS Framework, assess the site in terms of its topographical location, soil, main habitats and vegetation. Compare this information with the descriptions given in the NWS Framework, and select which one of the five scenarios applies.

2. The framework gives a short description and image of the native woodland type associated with that scenario. This woodland type becomes the 'target' woodland to promote onsite, *via* the conservation and restoration of existing woodland or (potentially) the reforestation of the site with native species, following the clearfelling of a conifer plantation or stand of non-native broadleaves.

3. The species mixture and planting pattern appropriate for this woodland type are listed (other native species, including ground flora, will colonise naturally over time).

4. The framework then sets out the prescribed species mixture and planting pattern. Under NWS Conservation, these apply as follows:

   ➢ **For planting coupes 0.2 ha or greater (e.g. the reforestation of a clearfelled conifer site with native woodland):** Planting must adhere to the species mixture <u>and</u> planting pattern specified, as this represents a basic 'starter kit' for that woodland type. A tolerance of +/- 20% for each species percentage is acceptable, as per NWS Establishment (see above).

   ➢ **For all other types of planting (e.g. smaller coupe planting, group planting, understorey planting):** Planting must adhere to the species listed. However, the species mixture and planting pattern can be adjusted, depending on what is most appropriate at each planting location.

   ➢ In all cases where natural regeneration is being pursued, the focus must be on encouraging species listed under that scenario.

5. Two or more scenarios may apply to different areas of the same NWS Conservation site. This must be reflected in the NWS Conservation Form 1 and associated map.

6. Incorporate the identified scenario(s) into the corresponding sections of the NWS Conservation Form 1 and associated maps.

If...

Location: Upland valley sides & hillsides on free-draining slopes.

Soil: Podzols (acid, infertile soils), average pH c.4.5.

Main habitats & vegetation:

Greenfield containing bracken, bilberry, heathers & gorse, with *Molinia* grass on flushed sites.

Semi-natural woodland dominated by / hedgerows containing: sessile oak, downy birch, rowan & holly, with bilberry, ling heather & woodrush.

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Scenario 1: Podzols / Oak-Birch-Holly Woodland

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Most appropriate Major Native Woodland Type: QL Sessile oak–woodrush.

Predominant trees & shrubs: Sessile oak, downy birch, rowan & holly.

Predominant ground flora: Bilberry, ling heather, woodrush, hard fern, broad buckler-fern & honeysuckle.
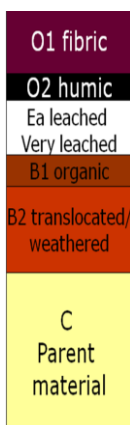
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Planting mixture: Sessile oak (30%) and Scots pine (30%), with Downy birch (15%), rowan (15%) and holly (10%).

Sessile oak planted in predominantly pure groups, with Downy birch (3%), holly (2%) & rowan (2%) scattered intimately throughout oak. Scots pine planted in small pure groups, focusing on parts of the plot with free-draining soil (if present) and away from any watercourses adjoining or crossing the plot. Remaining rowan (13%), Downy birch (12%) and holly (8%) planted as an intimate mixture in remaining areas of the plot.

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If NWS Establishment: GPC 9

A typical upland greenfield site (sandwiched between two sessile oak/downy birch-dominated native woods) where the soil type on the slope is predominantly podzols.

| O1 fibric |
| O2 humic |
| Ea leached Very leached |
| B1 organic |
| B2 translocated/ weathered |
| C Parent material |

A podzol profile with a topsoil comprising an acid, peaty, fibrous upper layer that overlies a leached, grey/white, infertile mineral layer. The subsoil is dark brown & iron-rich, with organic matter derived from the leached topsoil. The subsoil overlies the parent material from which the soil is derived.

QL Sessile oak–woodrush woodland, Derrycrag Nature Reserve, Co. Galway.

If…

Location: Uplands (especially in the east), on shale & base-rich glacial till & at the base of free-draining valley & hillside slopes.

Soil: Brown podzolics (acid, moderately fertile soils), average pH c.4.9.

Main habitats & vegetation:

Greenfield containing gorse, bracken, bramble, coarse grasses (e.g. Yorkshire fog), or improved grassland.

Semi-natural woodland dominated by / hedgerows containing: sessile oak, downy birch, ash, hazel, rowan & holly, with bramble, bluebell, violet, herb-Robert & wood avens.

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Scenario 2: Brown podzolics / Oak-Birch-Holly with Hazel Woodland

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Most appropriate Major Native Woodland Type: QL3 Bramble–hazel (subtype of QL Sessile oak–woodrush).

Predominant trees & shrubs: Sessile oak, downy birch, ash, hazel, rowan & holly.

Predominant ground flora: Bramble, ivy, broad buckler-fern, wood sorrel, bluebell, violet, woodrush & wood avens. Dwarf shrubs largely absent.

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Planting mixture: Sessile oak (50%), with hazel (15%) and downy birch (10%) scattered intimately throughout, and with wild cherry (5%) planted in groups of 5 to 10 trees. Scots pine (10%) planted in small pure groups on free-draining areas of the plot, particularly on slopes.

Minor species (10%) to comprise _at least two of the following_, positioned alongside planned woodland edges & glades: hawthorn, holly, rowan, crab apple.

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If NWS Establishment: GPC 9

Recently planted sessile oak/downy birch-dominated native woodland at the footslope of an upland landscape. Brown podzolic soils often occur at the foot slopes and/or where moderately base-rich till is a component of the soil parent material. Bluebell is present in the foreground.
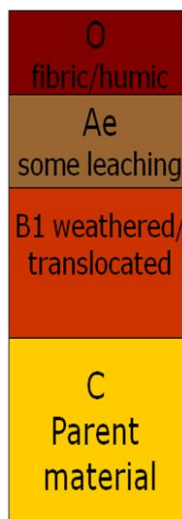
A brown podzolic profile with a topsoil comprising a thin, acid, peaty, upper layer overlying a yellow-brown lower topsoil layer, which in turn overlies a red-brown, iron-rich subsoil. Beneath the subsoil is the parent material from which the soil is derived.
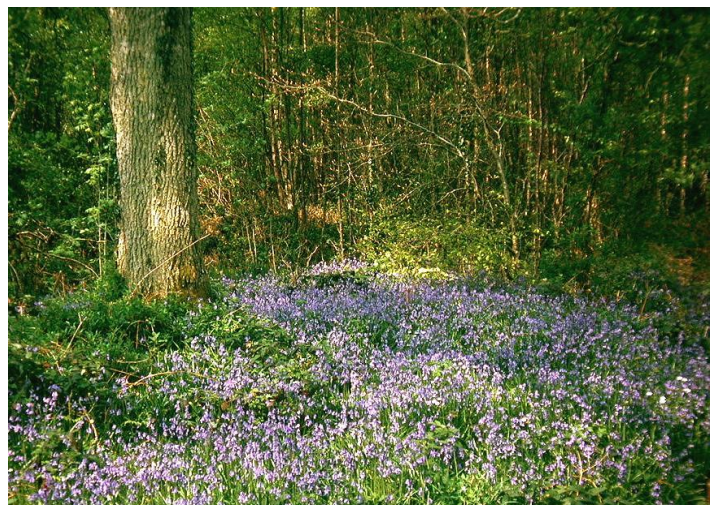
A good example of the QL3 Bramble–hazel woodland type, Co. Cavan.

If…

Location: Lowlands on calcareous soils.
Soil: (Acid) Brown earths, fertile, heavy/moist to light/dry. Average pH c. 5.9.
Main habitats & vegetation:
Greenfield typically improved or semi-improved grassland seeded with perennial rye-grass, often mixed with red clover.
Semi-natural woodland dominated by / hedgerows containing: ash, pedunculate oak, downy birch, rowan, hazel, hawthorn, holly, spindle & blackthorn. Field layer indicators include bramble, ivy, wood avens, wood sorrel, wood speedwell, wild arum, herb Robert & bluebell.

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Scenario 3: Brown earths / Oak-Ash-Hazel Woodland

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Most appropriate Major Native Woodland Type: FH Ash–ivy.
Predominant trees & shrubs: Ash, hazel, pedunculate oak, downy birch, elm, rowan, hawthorn, holly, spindle & blackthorn.
Predominant ground flora: Bramble, honeysuckle, ivy, wood avens, wood sorrel, wood speedwell, barren & true strawberry, wild arum, wood sanicle, bluebell, violet, wood brome & enchanter's nightshade.

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Planting mixture: Pedunculate oak (40%). Downy birch (20%), hazel (20%) & hawthorn (5%) scattered throughout. Wild cherry (5%), planted in groups of 5 to 10 trees.
Minor species (10%) to comprise _at least three of the following,_ positioned alongside planned woodland edges & glades: holly, spindle, rowan, crab apple & (on wetter areas of the plot) alder.

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If NWS Establishment: GPC 9

A typical lowland, semi-improved grassland site on limestone with a base-rich till comprising the soil parent material. This site at Ballyvary, Co. Mayo, was planted, predominantly with hazel & ash, to develop a new native woodland.
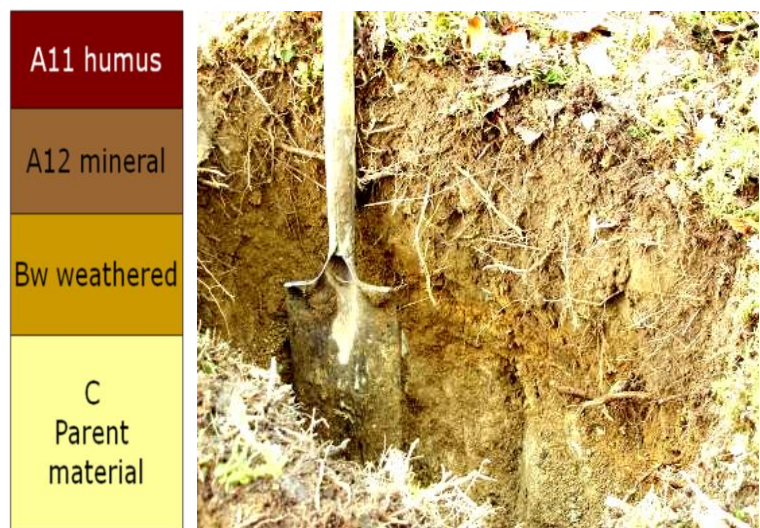
A brown earth profile with a well-structured & aerated brown, friable topsoil with well decomposed organic material. This fertile topsoil gradually diffuses into the yellow-brown subsoil (below the main rooting zone), which in turn overlies a light grey-brown calcareous parent material from which the soil is derived.

One of the finest examples of the FH Ash–ivy woodland type in Ireland, Charleville, Co. Offaly.

If…

Location: Drumlins, river valleys, lake shores & water-logged hollows.

Soil: Mineral & peaty gleys (very wet soils, generally fertile). Average pH c.5.9.

Main habitats & vegetation:
Wet, rushy grassland with yellow flag. Semi-natural woodland dominated by / hedgerows containing: alder, ash, grey willow, hazel, hawthorn, spindle & blackthorn. Field layer indicators include bramble, meadowsweet, creeping buttercup, remote sedge.

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Scenario 4: Gleys / Alder-Oak-Ash Woodland

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Most appropriate Major Native Woodland Type: AF Alder–meadowsweet.

Predominant trees & shrubs: Alder, grey willow & ash.

Predominant ground flora:
Meadowsweet, remote sedge, creeping buttercup, yellow flag & water mint.

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Planting mixture: Pure groups (30-40 trees) of alder (50%), grey willow (10%) & downy birch (10%). Groups interspersed alternately. Pedunculate oak (10%) on drier areas. Hawthorn (5%) scattered throughout.

Minor species (15%) to comprise _at least two of the following,_ positioned between the above pure groups: holly, hazel, guelder rose.

Note: The above interspersed group planting of major species is carried out to improve stability & robustness, & to prevent the development of an alder monoculture.

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If NWS Establishment: GPC10 applies (with required min. stocking 2,500 / ha)

A typical 'rushy' field with heavy, wet gley soils. These are sometimes semi-improved for pasture & are common in drumlin belts, low-lying, & poorly drained locations.

| A1g very moist |
| A2g wet |
| Bg saturated & mottled |
| Cx very compact Parent material |

A very poorly-drained 'dauby' gley soil profile with a clay-rich topsoil approx. 30 cm deep, which overlies a saturated & mottled, blue-grey & red-brown subsoil. The subsoil overlies a very compact parent material derived from glacial till.

A typical AF Alder–meadowsweet alluvial woodland on gley soil. Hazelwood, Co. Sligo.

SCENARIO 5: Highly Modified peat & peaty podzol (Pioneer birch woodland)

Note: As for Scenarios 1-4, Scenario 5 must satisfy the requirements for 'Suitable Land: GPC2-12', as set out in the document *Land Types for Afforestation* (Oct17). Also, designated & non-designated Annex I habitats are excluded from afforestation, as set out in the *Environmental Requirements for Afforestation*. Sites with species-rich plant communities may also be inappropriate for planting.

IF…

Location, soil, main habitats & vegetation:

A. Modified & improved, infertile upland acid brown earths & peaty podzols (often gleyed) (average pH c.4.0-4.5)

Extensively grazed upland & lowland grassland on leached, acidic soils. Grassland with sweet vernal-grass (*Anthoxanthum odoratum*), mat grass (*Nardus stricta*), bracken & gorse. Adjacent semi-natural woodland / hedgerows (if present) species-poor, dominated by downy birch & containing Scots pine, sessile oak (on dry sites), rowan, grey willow, silver birch, (hazel), holly & gorse, with bramble, honeysuckle, hard fern, bracken, mosses & liverworts.

These sites are generally above the upper reaches of Scenario 1.

Example of soil profile for Scenario 5A: A peaty podzol profile with a pronounced fibrous, peaty topsoil c.15 cm deep, underlain by a bleached, infertile & weathered mineral horizon, which in turn overlies a humic-iron deposition zone rich in humic-iron material derived from above.

Example of Scenario 5A: An upland, improved site that almost certainly produced potatoes during pre- & post-Famine times. Note the stone wall (mid-ground, right) & the ridge & furrows distinctive 'lazy bed' features.

Example of Scenario 5A: Grassland & bracken on peaty podzol, Co. Wicklow.

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OR…

B. Drained / improved peats / peaty gleys (moderately acid, average pH 5.0) in both upland (blanket bog) & lowland (raised bog) habitats

Extensively grazed upland & lowland grassland on acidic organic-rich soils, often fringing adjoining bog habitats. Grassland with sweet vernal-grass, mat grass, purple moor-grass, bracken & gorse. Adjacent semi-natural woodland / hedgerows (if present) are species-poor, dominated by downy birch & containing Scots pine, sessile oak (on dry sites), rowan, grey willow, silver birch, (hazel), holly & gorse, with bramble, honeysuckle, hard fern, bracken, mosses & liverworts.

Example of Scenario 5B: Rushy grassland on drained peat adjacent to raised bog in distance. Co. Roscommon.

Example of 5B: Upland heathy grassland (mid-ground) with gorse and bracken. Note birch woodland in background. Co. Kerry.

OR…

C Highly modified and drained fen peats (pH>6)

Fen pastures with purple moor-grass, or improved grassland reseeded with perennial rye-grass & clover mixtures, including soft rush.

Example of Scenario 5C: Improved grassland on drained fen peat. A highly modified fen that has been drained, resulting in the loss of its associated plant community & peat decomposition, creating nutrient release & subsidence.

Example of Scenario 5C: Improved rushy grassland on drained fen, Co. Westmeath.

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Scenario 5: Highly Modified Peat & Peaty Podzols / Pioneer Birch Woodland

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Most appropriate Major Native Woodland Type: BM Birch – purple moor-grass

Main trees, shrubs & ground vegetation that would naturally occur within this woodland type:

Downy birch, with some Scots pine, sessile oak, rowan, holly & occasional silver birch (with hazel & hawthorn on more fertile areas locally). Purple moor-grass, bramble, honeysuckle, hard fern, broad-buckler fern, bracken, mosses & liverworts.

On wetter parts: Grey willow & downy birch (& occasionally alder, in flushed areas). Purple moor-grass, rushes, sedges, meadowsweet, devil's-bit scabious & marsh thistle.

A typical upland 'pioneer' birch woodland that developed through natural regeneration. Holly & mountain ash are often associated with these woodlands.

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Required species mix & planting pattern:

Downy birch (45%) & rowan (10%) in pure groups. Scots pine (20%) & sessile oak (15%) also in pure groups, on free-draining areas (especially on slopes). Minor species (10%) to comprise *at least two of the following*, positioned between the above groups & at edges: holly, hawthorn & hazel (the latter two on more fertile locations, e.g. foot-slopes).

On wetter parts of the site: Downy birch (50%) & grey willow (30%), planted in pure groups. Minor species (20%) to comprise of *at least two of the following*, positioned between the above groups & at edges: rowan, hazel & alder, & (on lowland sites *only*) pedunculate oak.

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If NWS Establishment: GPC10 applies (with required minimal stocking 2,500 / ha)

Photos of established woodland equating to Scenario 5: Pioneer birch woodland, Co. Wicklow. On many sites, wood production may be a viable co-objective, under continuous cover forestry.

End