Westmorland & Furness Council

Contractor Guidance: Native Planting

Contents

1. Introduction

This guide is intended to be used by contractors employed by the council working on our land, or to be used by other organisations and contractors operating in Westmorland and Furness to **inspire more native and pollinator-friendly planting** around the area. The planting options have also been chosen for their presence in the local landscape and climate resilience, with suggestions for species given to suit different circumstances. With helpful tips on maintenance and considerations to be made when selecting tree, shrub or perennial plant species, we hope that you find this guide useful when designing planting schemes.

Enhancing our natural environment supports active, healthy, and happy lives; supports people in need and reduces inequalities; and leads to sustainable and inclusive economic growth[1]. The natural environment provides us with several **ecosystem services,** such as improved air quality, carbon capture, and flood mitigation, which are further enhanced through planting schemes.

Incorporating green infrastructure in urban planning has several economic and social benefits. Well-maintained green spaces encourage outdoor activity, contributing to people's physical and mental health, and increase property value[2]. Not only does greening enhance the aesthetic value of urban areas, but it also contributes to urban cooling; trees with good soil moisture reduce local temperatures by 2-8°C through shading and evapotranspiration. Economically, this leads to reduced cooling demands of buildings, providing energy savings. Green infrastructure also increases the lifespan of grey infrastructure, including slowing the rate of runoff and reducing the pressure on water systems. Therefore, investing in sufficient green infrastructure in the initial planning stages can lead to reduced maintenance costs down the line.

Enhancing habitats through planting maintains a sustainable landscape and access to green spaces; therefore, Westmorland and Furness Council are actively promoting tree and perennial planting. However, climate change has meant that we need to adapt our approach in planting schemes. Summer droughts; warmer, wetter winters; and more frequent extreme weather events, such as storms, severely impact our natural environment, including altering growing conditions for trees, shrubs, and perennial plants. Therefore, selecting species which are more **resilient to the impacts of climate change** is important to ensure the long-term sustainability of our ecosystems.

1.1. Trees and shrubs

The UK government has set a target to achieve carbon neutrality by 2050[3]; to achieve this, a legal target has been established to increase tree canopy cover from 14.5% to 16.5% between 2023 and 2050[4]. More locally, Westmorland and Furness are aiming to be **net zero by 2037**[5], and the Cumbria Local Nature Recovery Strategy1 (LNRS) has a priority to **'increase woodland and non-woodland tree cover in Cumbria by 10,000 ha by 2035, targeting the expansion of and improvement of connectivity between the existing network'.** Target areas and opportunities for offsite planting can be found on the Cumbria LNRS Habitat Map[6].

However, planting the correct tree in the correct location is imperative to ensure ecosystem stability, maximise benefits such as carbon sequestration and natural flood management, and avoid harm to existing habitats, landscapes, and wildlife. This is known as the **'Right Tree, Right Place'** principle[7]. One point to consider is if a tree is **native to the UK.** According to the Botanical Society of Britain and Ireland , 'A native plant is defined as either a plant that arrived naturally in Britain and Ireland since the end of the last glaciation (i.e. without the assistance of humans) or one that was already present (i.e. it persisted during the last Ice Age).'

Moreover, tree provenance, the geographic origin of seeds and cuttings used to grow new trees, is important to consider. Trees can be non-native but of UK provenance and may be considered suitable in planting schemes.

Long-term data on the impact of tree provenance in a changing climate is insufficient. Evidence suggests that trees sourced from distant provenances can be unsynchronised with local wildlife; for example, by flowering before local pollinators appear. Although these trees may be better adapted to a warmer climate, they do not always function as well with the rest of the ecosystem and may introduce pests and diseases[9]. Increasing native species in the UK is generally believed to help mitigate against climate change and help us to adapt to its unavoidable impacts[10]. Therefore, **native trees of UK provenance** are considered the best option for supporting local wildlife and avoiding tree diseases. Moreover, the Woodland Trust's recent State of the UK's Woods and Trees report[11] recommends that all saplings used for planting are **sourced and grown in the UK** to strengthen biosecurity. Given the uncertainty surrounding trees of international provenance and to align with the measure W1 of the LNRS, planting schemes should focus on climate-resilient, native species of UK provenance which are matched to the site characteristics and management objectives.

1.2. Perennials

A perennial is a plant that lives for more than two years. Although planting trees is at the forefront of the LNRS, the council are actively encouraging the planting of more perennial plants because of their many benefits. Perennial plants refer to those that live for more than one growing season, going dormant in the winter and returning the following year. Perennials are diverse and versatile, improving the aesthetic value of urban landscapes as well as being essential for pollinators, acting as **'stepping stones'** to connect our more urban areas to the surrounding landscape[12]. They also offer many ecosystem services such as soil stabilisation, soil carbon sequestration[13], water purification and regulation, and pest and pathogen population control[14]. Several native perennials of UK provenance are considered climate resilient because they exhibit traits such as deep or widespread roots to access water from deep soil layers, and their leaves have waxy, hairy, or glaucous surfaces to minimise evaporation[15], making them suitable for drought conditions.

Urban greening can help mitigate flooding by contributing to sustainable urban drainage systems (SuDs)[16]. Planting perennials also supports the council's **'Planting for Pollinator'** initiative, providing nectar sources for pollinating insects. Therefore, planting perennials should not be overlooked, especially in more urban environments.

However, given the changing climate, plants are flowering earlier[17], meaning that diverse planting schemes of perennials which provide for a longer flowering period will benefit pollinating insects. As the flowering season starts earlier and ends later, a mix of perennials that provide for year-round flowering will provide a continuous service to pollinators. In addition, a greater diversity of perennials supports a greater range of pollinator species. **Planting perennials with different shapes, colours, and sizes is essential,** as pollinating insects can be quite specific. For example, butterflies tend to prefer cluster-type flowers or those with umbel blooms (where numerous flower stalks radiate from a common point, creating an umbrella-like shape)[18]. Some plants favour wet conditions in the summer, whilst others soak up water in the winter. Planting a mixture of plants will improve water absorption throughout the year.

Although there is scope to include annuals and biennials in planting schemes, annuals and biennials need open soils in which to re-seed ever year or every two years . Therefore, the soils are disturbed regularly, which is both impractical in a planting scheme and creates opportunities for non-desirable species to get a footing (in the disturbed bare soil patches)[19]. Disturbing soils creates an increased risk of soil erosion (from wind, water and oxidation)[20], releasing carbon which exacerbates climate change[21]. Disturbing soils also disrupts the soil fungi[22], which ultimately weakens perennial/woody plants in the same planting scheme[23]. This is why perennial species are preferable as, depending on the species used, more plant cover can be maintained, and a perennial planting scheme requires substantially less soil disturbance[24]. This reduces the risk of undesirable species taking hold, maintaining a healthy soil biota which results in healthier plants, better drainage and a reduced risk of carbon release from the soil[25].

1.3. Sourcing and Biosecurity

Non-native tree pests and diseases have increased in the UK since the early 2000s, demonstrating the need to apply certain biosecurity measures. When purchasing trees, shrubs or plants, it is important to ensure that all are UK sourced and grown. Ideally, all should be **sourced as close to the planting site as possible** to reduce the carbon footprint. Moreover, it is important that species are not selected from nurseries with known disease prevalence. Ensure that you select the species based off the **scientific name,** as there is wide misuse and selling of incorrect species under common names. Finally, **peat-free sourcing** is vital as peatlands are important carbon sinks and essential for climate change mitigation.

Price varies significantly depending on the nursery, the size of the plant, and the number you are purchasing. Planting stock should be responsibly sourced through nurseries or suppliers that **adhere to national standards**, such as the Plant Health Management Standard[25].

Topsoil is another factor that must be considered in relation to biosecurity. Topsoil which is imported or moved to the planting site should adhere to the **BS 3882:2015**[26]. Compost used in planters should be **peat-free.**

This guidance begins by outlining key factors to consider before initiating any planting activities, followed by general management advice. It then provides two tables, the first listing suitable native and long-established tree and shrub species and the second focusing on perennials for planting across Westmorland & Furness, along with their key characteristics. Section 5 provides planting guidance by considering factors such as local wind exposure, soil type, drainage, shade, and future growth potential. The penultimate table presents species suitable for certain locations/purposes, including the benefits they provide. The final table lists species to avoid completely or that are unsuitable for certain locations and details the potential risks they may present.

Note: The list of perennials is not exhaustive because hundreds of species are suitable. Therefore, a select number have been suggested with different advantages.

2. Considerations

Unfortunately, there is no definitive answer to 'what species should I plant?' When selecting a tree species in a specific area, several variables must be considered:

- Purpose of planting (e.g. urban amenity improvements, agroforestry, hedgerow creation or woodland pasture, to reduce the risk of flooding, to develop woodland specifically for wildlife, to 'green-up urban areas and developments, natural flood management)
- Species already at site and in the surrounding landscape.
- Soil conditions (pH, nutrient availability, drainage capacity, compaction level, contamination) should be suitable for the proposed species
- Climate resilience (e.g. to drought, flooding, temperature change)
- Adaptability
- Pest/disease resistance (e.g. in an area known for deer grazing)
- Maintenance – is the site accessible if initial or longer-term maintenance is required?
- Provenance – even if native to the UK, is it native to Cumbria?

2.1. Trees/Shrubs

As a general guide, follow these principles when deciding which tree to plant and where[27]:

- Copy nature by planting trees already successful on or near the site.
- For a rural site, choose species in keeping with the existing woodland.
- In urban areas, options range from ornamental planting schemes to creating new 'natural' areas.
- Choose species for urban areas that are tolerant of atmospheric pollution and soil chemicals such as road salt.
- Consider the eventual height and spread of trees in relation to nearby roads, buildings, and overhead lines. Ensure that larger species are avoided in urban areas as they can create 'pollution canyons,' trapping pollution at ground level.
- Consider the impact of fruit fall, spiny leaves or species that release significant amounts of pollen in urban areas.
- Block planting of a single species (a monoculture) should be avoided, and a wide range of suitable species should be planted to increase both climate and disease resilience.
- Avoid the use of varieties of native tree species which are less valuable to wildlife e.g. red berried native rowan are of more value to birds than the lighter coloured berried varieties.




2.2. Perennials

Because there is such a diverse range of perennials, they can grow under a range of conditions; however, it is essential to select the right plant for the location. When planting perennials, several points should be considered[28]:

- Extend the planting season
- Ensure diversity in planting
- Ensure the area to be planted is free of perennial weeds before planting
- Planting in September or March is ideal; however, most container grown plants can be planted any time the soil is not frozen or waterlogged
- Plant in large blocks – at least 5 or more of one variety
- Avoid overbred varieties of species, which can produce less nectar than the parent species
- Single flower species are generally more accessible to pollinators than double flower species

3. General Management

3.1. Trees/Shrubs

Although specific species will benefit from bespoke management, several management techniques should be considered and implemented for all young trees in general[29].

a) Water larger standard trees

During dry periods, young standards planted in urban or rural areas can require 20 litres of water every other day. As the tree grows, it will adapt to natural conditions and so should not need watering. However, prolonged watering can cause roots to grow up towards the soil surface rather than down towards groundwater.

b) Weeding and mulching

In the first years, weeding is the most important step. Where trees are young and surrounding vegetation is competing with the tree's roots for water, removing this vegetation can help the tree. Keep the 1m diameter around the tree clear of weeds and grass for the first 2-3 years. Mulching can be helpful in controlling both competing weed growth and maintaining soil moisture immediately around the plant; this is especially relevant where bare earth is present at the planting location. Mulching can also be performed as a response to drought. Use bark chips or straw bales for an eco-friendly option, aiming to avoid chemical-based products where possible.

c) Firming up soil around trees

Where soil is cracked, ensure young trees are in contact with the soil to avoid damage to exposed roots and to reduce evaporation so that they can extend their root systems in search of water.

3.2. Perennials

a) Watering

Newly planted perennials should be watered regularly in the first year; however, most will only need watering during long dry spells after that. Groundcover perennials beneath trees and in dry soil may also benefit from watering during summer.

b) Feeding

Most perennials grown in borders generally don't require extra feeding. However, if your soil is particularly poor, you can apply a balanced organic fertiliser in the spring. Each year in spring, add a layer of garden compost or well-rotted manure as mulch to enrich the soil. For perennials grown in containers, use a general-purpose organic fertiliser throughout the growing season. Avoid the use of artificial fertiliser, which can disrupt fungal and bacterial communities necessary for soil and plant health.

c) Weeding

Perennials should be weeded regularly to ensure that weeds do not establish or scatter their seeds into places where they are not wanted. Garden compost can be used to mulch the border in spring to deter the germination of annual weeds. Using chemical weed control products should be avoided as they cause harm to the surrounding plants and insects that depend upon them.

d) Staking

Tall perennials generally need staking to ensure the stems and flowers remain upright. Staking also benefits plants with heavy flowers and those at windy sites. Supports should be set in the spring to ensure the plants grow up through them and hides them.

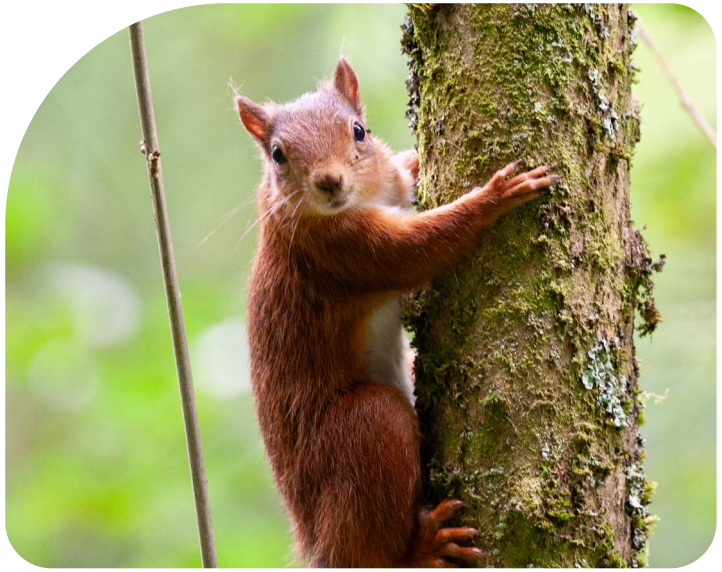
Photo Credit - Raise Cumbria

4. Suitable Species

4.1. Trees and Shrubs[30,31]

Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Potential Benefits
Alder *(Alnus glutinosa)*	Large deciduous, 25–35m, long-lived (250+ yrs); high water use	Wet/flood-prone areas, riparian edges, heavy soils	Riparian woodland, flood meadows, broadleaved woodland	Direct seeding or planting in moist soils; pioneer species	Susceptible to alder dieback	Supports 280+ insect species; stabilises banks; provides fish shelter
Alder Buckthorn *(Frangula alnus)*	Small (4-6m) shrub; potentially 150 + years	Range of soils, except very drought-prone and permanently waterlogged sites; moist, acidic soils	Open wooded habitats; damp glades	Pioneer species; spreads easily through suckering	Generally pest and disease free	Main food plant for brimstone butterfly; flowers valuable for bees; fruit important for birds (esp. thrushes)
Aspen *(Populus tremula)*	Quite large (20-25m); short-lived (100 yrs)	Versatile on range of sites (dry to slightly wet; nutrient poor to rich soils); often moist clay or sandy soils	Heathland, woodland, wet woodland, mixed scrub	Do not seed directly; supply of local provenance stock may be difficult; high growth rate (20-50 yrs to max. height); abundant root suckers, can damage drains and buildings	Protect from browsing; likely to have relatively high resilience to climate change	High potential to reduce nutrient leaching; good for flooding prone areas; support a very rare community of insects

Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Potential Benefits
Blackthorn *(Prunus spinosa)*	Spiny, densely branched; 5-6m; potential to live 50+ yrs	Base-rich, drier soils; other more neutral to acidic soils to some extent	Hedgerows, scrubland, woodland edges, and exposed fellsides	Requires maintaining more open wooded habitats and glade structures	Hardy; drought tolerant; cold tolerant	High importance for pollinators; fruits important for birds and small mammals; thorny cover provides habitat for birds
Crab Apple *(Malus sylvestris)*	Small (up to >10m); potential to live >150 yrs	Tolerates range of soil conditions and pH; best on richer, deeper soils	Open wooded habitats, hedgerows, scrubland, boggy areas; won't thrive in denser groves	Will establish best as component of open wooded habitats and more open grown trees in larger glades.	Susceptible to a variety of fungal infections and bacterial fireblight; expected to adapt well to climate change owing to drought tolerance; susceptible to dormancy following a warm winter	Very good for pollinators/insects; hosts mosses and lichen; fruits important for several animals
Dogwood *(Cornus sanguinea)*	Shrub (6-7m); potentially 60+ yrs	Well-drained more calcareous soil	Woodland edges; open wooded habitats; hedgerows; ornamental	Grows well in open or sunny areas	Browsing and fraying by deer can prevent good establishment; relatively drought tolerant	Leaves eaten by caterpillars of some moths; flowers good for insects; berries eaten by mammals and birds



Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Potential Benefits
Downy Birch *(Betula pubescens)*	Medium–large (20–25m); shallow roots; light-demanding	Damp, acidic or peaty soils; tolerant of wind	Upland valleys, wet grasslands	Bare-root whips Nov–Mar; fast early growth	Younger trees tolerate drought more than older trees	Good for early canopy, improves soil organic matter; important for red squirrels
Elder *(Sambucus nigra)*	Small (5-7m); short-lived (<70 years)	Highly fertile soils; open wooded habitats or open glades	Woodland edges, waste ground, near streams, urban areas	Coppices well	Robust species with few significant issues.	Supports variety of wildlife
Field Maple *(Acer campestre)*	Medium (12–15m); shallow roots	Neutral to calcareous soils; moderate exposure	Lowland mixed deciduous	Whip planting; coppices well	Moderate drought tolerance	Good autumn colour; supports invertebrates
Goat/White Willow *(Salix caprea)*	Large (15–25m); thirsty roots	Wet ground, reedbeds, floodplain	Riparian woodland	Cuttings or whips; fast-growing	Likely to be relatively resilient to climate change	Bank stabilisation; early pollinator resource

Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Potential Benefits
Guelder Rose *(Viburnum opulus)*	Fairly small shrub (up to 4m); potentially to 50+ yrs; can spread 2-5m	Neutral to calcareous soil; some slightly acidic soils on deeper, moist, brown earths	Open wooded habitats; glade edges;	Non-flowering bushes in shade; reproduction and seed production occurs more in open wooded habitats	Can be palatable to deer and rabbits; increasing drought may be an issue but unlikely in Cumbria	Berries remain into winter so important for small mammals; flowers especially attractive to hoverflies
Hawthorn *(Crataegus monogyna)*	Small tree/shrub (5–8m); thorny	Tolerates most soils; best in sun	Hedgerows, woodland edges	Whip or hedgerow planting	Few issues and likely to be fairly resilient to climate change	Pollinator blossom; dense nesting habitat
Hazel *(Corylus avellana)*	Small tree/shrub (4–6m)	Most soils except waterlogged	Mixed scrub, lowland woodland	Plant in groups for coppice potential	High herbivore impacts; moderate climate resilience	Nuts for wildlife; dense cover; important for red squirrels
Holly *(Ilex aquifolium)*	Up to 15+m; potentially 200+ yrs	Well-drained acidic to neutral soils	Oak and beech woodland; scrub; hedgerows;	Fairly slow growing; can regenerate within other scattered dense scrub or bushes; forms arbuscular mycorrhizas, and associated fungi may support colonisation and establishment	Sensitive to grazing and high herbivory; shade tolerant; no significant threats	Provides dense cover and good nesting for birds; leaf litter used by hedgehogs and small mammals for hibernation; flowers good for pollinators; leaves provide insect food; berries vital food-source for birds and small mammals in winter
Hornbeam *(Carpinus betulus)*	Large (25m+); long-lived (400 yrs +); shallow to moderate roots	Base-poor, fertile sandy or loam clays. Intolerant of infertile or exposed sites.	Mixed deciduous woodland, sheltered valleys	Slow growing; vulnerable to squirrels.	Shade tolerance; minimal to no pruning; high climate resilience; only moderately tolerant to drought	Supports 170+ species; retains brown leaves during winder to provide shelter, roosting, nesting, and foraging opportunities for birds

Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Potential Benefits
Pedunculate Oak *(Quercus robur)*	Large (25–30m+); very long-lived	Moist but well-drained soils; tolerant once established	Lowland mixed deciduous	Plant as whips or small cell-grown; slow growth	Protect from deer/ rabbits; formative pruning	Keystone species; supports 2,300+ species
Purging Buckthorn *(Rhamnus cathartica)*	Small tree (5-6m); potentially to 70+ yrs	Calcareous soils (esp. limestone or chalk); can occur on base-rich, wet soils, damp woods, and fens	Open wooded habitats; glade structures	Grows well in shade or sunlight	Relatively robust in face of climate change; dioecious, male and female trees required for seeds and future generation	Main food plant of brimstone butterfly; great for pollinators; valuable nesting site for birds
Rowan *(Sorbus aucuparia)*	Small-medium tree (10–15m); berries for birds	Light, acidic soils; tolerates exposure	Hedgerows, upland, urban greens	Bare-root planting in groups; fast to moderate growth	Very sensitive to browsing; high climate resilience	High wildlife value; cultural heritage; minimal root impact
Scots Pine *(Pinus sylvestris)*	Medium-large (20–25m); evergreen	Free-draining sandy/acidic soils; exposed sites	Upland edges, sandy soils	Plant as whips; prefers open sun	Monitor for pine weevil in restocks	Winter shelter; supports crossbills, red squirrels
Silver Birch *(Betula pendula)*	Medium-large (25m +); potentially 100-200 yrs;	Light, well-drained, acidic soils	Open wooded habitats; glade structures;	Fast growing; key pioneering species; often hybridizes with downy birch; regular mulching/ weed control; protection from browsing	Roots deep enough to avoid drought impacts	Improves soil quality; provides perfect conditions to support plant growth; food and habitat for 300+ insect species; habitat for hole-nesting birds; seeds eaten by several birds; important for red squirrels

Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Potential Benefits
Small-leaved Lime *(Tilia cordata)*	Medium-large (20–25m); long-lived	Well-drained, fertile soils; tolerates some shade	Parkland, avenues	Plant as whips or standards; slower to establish	High climate resilience; browsing animals and voles can impact significantly	Excellent for pollinators; shade tree
Spindle *(Euonymus europaeus)*	Small (5-6m); >60 yrs; relatively short-lived (100 yrs +)	Relatively free-draining calcareous soils overlying limestone or chalk; relatively base-rich geologies	Forests, hedges, scrub, and hedgerows	Forms arbuscular mycorrhizas, and associated fungi may support colonisation and establishment.	Fairly shade tolerant; can persist in denser groves; vulnerable to rabbits and other small mammals; high climate resilience	Leaves. fruits, and seeds support range of wildlife
Wild Cherry *(Prunus avium)*	Large tree (>25m); relatively short life (>100 yrs)	Deeper, rich, relatively moist soils; not waterlogged or frequently droughted. Range of soil pH	Mixed deciduous woodland, wood margins, parklands	Relatively fast growing; strong apical growth; weed control required	Likely to adapt to climate change	Important for pollinators; fruits eaten by birds; known foodplant for 80 insect species
Yew *(Taxus baccata)*	Medium (20m +); very long-lived (1000 yrs +); evergreen	Grows well over limestone, chalk, and base-rich igneous rock.	Broadleaved woodland	Very slow growing; shade tolerant but saplings can die in deep shade	Sensitive to browsing; needs protection from high herbivory; relatively climate resilient	Fruits and seeds important for several birds; supports fungi, lichen, and slime mould; important for red squirrels

4.2. Perennials [32.33]

Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Flowering Period	Potential Benefits
Betony *(Betonica officinalis)*	A rosette-forming, upright perennial to 60cm, with scalloped, wrinkled, veined, mid-green leaves to 12cm long, and dense terminal spikes of pink, white or reddish-purple flowers	Chalk, loam, or sand; well-drained; range of pHs	Wildlife gardens; wildflower meadows; city and courtyard gardens; coastal; flower borders and beds	Requires full sun or partial shade; grow in well-drained soil; protect from excessive wet	May be susceptible to slugs; generally disease-free	Summer; Autumn	Attracts bees, beneficial insects, butterflies/ moths, and other pollinators
Bloody crane's-bill *(Geranium sanguineum)*	Hardy, bushy, spreading, rhizomatous perennial to 20cm, with palm-shaped, narrowly lobed green leaves. Vivid magenta-pink flowers with darker veining appear from June through to August.	Chalk, clay, loam, sand; moist but well-drained or well-drained; range of pHs	Coastal; wildlife gardens; wildflower meadows; rock gardens; flower borders and beds; ground cover	Requires full sun or partial shade; propagate by seeds, basal cuttings, or division; low maintenance	May be susceptible to vine weevil, capsid bug, and sawflies; may be susceptive to downy mildews and powdery mildews	Summer	Favoured by a range of insects, including buff-tailed and white-tailed bumblebees

Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Flowering Period	Potential Benefits
Common Yarrow *(Achillea millefolium)*	Spreading native wildflower; narrow, aromatic, very finely divided leaves; flat heads of small, white, cream or pink flowers in summer; produces upright, unbranched flower stems to 80cm tall	Chalk, clay, loam, or sand; moist but well-drained or well-drained; range of pHs	Wild garden; rock garden; verges	Requires full sun; spreads rapidly and may be considered a nuisance by some; propagate by seed or division in spring	May be susceptible to aphids; may be susceptible to powdery mildews	Summer	Supports a variety of insects, including numerous beetles, flies, true bugs, butterflies and moths
Field Scabious *(Knautia arvensis)*	Clump-forming, deep-rooted perennial about 1.5m tall, with lax, softly bristly stems bearing simple or pinnately lobed, hairy green leaves, and lilac-blue flowerheads to 4cm across	Chalk, loam, or sand; well-drained; alkaline or neutral pHs.	Wildlife gardens; wildflower meadows; roadside verges; railway sides; ungrazed limestone grassland	Requires full sun; propagate by seed in pots in a cold frame or by basal cuttings in spring	May be susceptible to aphids; generally disease free	Summer; Aututmn	Attractive to bees; good for butterfly caterpillars; foodplant of narrow-bordered bee hawk-moth
Great Burnet *(Sanguisorba officinalis)*	A compact clump of pinnate leaves with rounded or oblong leaflets, and maroon flowers in dense, rounded or oval spikes in summer and early autumn; 1-1.5m height	Chalk, clay, loam, or sand; moist but well-drained; range of pHs	Prairie; wildflower meadows; wildlife gardens; flower borders and beds	Requires full sun or partial shade; usually needs support; propagate by seed in pots in a cold frame in spring or autumn; propagate by division in spring or autumn	Generally pest and disease free; rhizomes spread readily so may become a nuisance	Summer; Autumn	Good source of nectar for bees and hoverflies

Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Flowering Period	Potential Benefits
Oxeye daisy *(Leucanthemum vulgare)*	Rhizomatous perennial to 90cm tall, with clumps of dark green spoon-shaped basal leaves to 10cm long and shorter stem leaves. Solitary white, daisy-like flowerheads with yellow disk florets	Chalk, clay, loam, sand; moist but well-drained; range of pHs	Wildflower meadow; wildlife gardens; flower borders and beds; ground cover	Requires full sun or partial shade; may need support; propagate by seed or division	May be susceptible to aphids; may be susceptible to a leaf spot	Spring; Summer	Attractive to a range of pollinators, including patchwork leafcutter bee who uses petals to line its nest
Primrose *(Primula vulgaris)*	Evergreen or semi-evergreen perennial about 20 cm tall; tongue-shaped, deeply veined, bright green leaves; scented, usually primrose-yellow flowers 2.5-3.5cm across	Chalk, clay, loam, or sand; moist but well-drained; range of pHs	City or courtyard gardens; meadows; gardens; coastal; flower borders and beds	Sheltered position in full sun or partial shade; propagate by seed or root basal cuttings	May be susceptible to aphids, vine weevil, slugs, leaf and bud eelworms, leaf-mining flies, and glasshouse red spider mite. May be susceptible to a leaf spot and grey moulds	Spring	Great for pollinators

Species	Species Characteristics	Suitable Conditions	Suitable Habitats	Establishment	Threats/Resilience	Flowering Period	Potential Benefits
Purple loosestrife *(Lythrum salicaria)*	Robust herbaceous perennial; upright stems to 1.2m; clad in narrow, willowy leaves, and small vivid purplish-pink flowers 2cm wide in dense terminal spikes	Clay or loam with wide variety of pH; poorly drained soil	Gardens; meadows; flower borders and beds	Requires full sun; propagate by division in spring	May be susceptible to slugs and snails; generally disease free	Summer	Great for pollinators
Sweet Violet *(Viola odorata)*	Rhizomatous perennial forming a loose mat of heart-shaped leaves with fragrant violet or white flowers 2cm across	Chalk; clay; loam; sand; moist but well-drained	Wildflower gardens; wildflower meadows; flower borders or beds; underplanting of roses and shrubs	Requires full sun or partial shade; propagate by seed or division; low maintenance;	May be susceptible to slugs, snails, glasshouse red spider mite, and violet gall midge; may be susceptible to pansy leaf spot and powdery mildews	Winter; Spring	Early bloomers; excellent groundcover plants; essential source of nectar for pollinators
Yellow Iris *(Iris pseudacorus)*	Vigorous herbaceous perennial; forms extensive colonies to 1.5m in height, with waxy grey-green leaves and bright yellow flowers up to 10cm in width; falls with brown veining in the centre	Clay, loam; poorly-drained, acidic substrates	Wildflower meadows; wildlife gardens; wetlands; waterway and pond margins	Requires full sun or partial shade; thrives in margins of large ponds or streams	May be susceptible to slugs, snails, and thrips; may be susceptible to aphid borne viruses	Summer	Excellent nectar source for pollinators

5. Planting Guidance

Most native tree species are best planted between November and March while dormant. Perennials are best planted in autumn or spring and can be planted through division, cuttings, or seeds. Effective after-care is critical for species survival and long-term performance. Below are species-specific guidelines:

5.1. Trees and Shrubs

Species	Planting guidance	After-Care Focus	Long-term considerations
Alder	Establish well in moist, flood-prone sites. Avoid dry slopes.	Mulch and weed control; minimal pruning	Roots can spread near watercourses—allow space
Alder Buckthorn	Prefers damp, acidic soils; thrives in woodland edges and wet heaths. Avoid very dry, chalky sites.	Mulch to retain moisture; protect young plants from browsing.	Slow-growing, modest size—low structural risk; valuable for wildlife (e.g. brimstone butterflies).
Aspen	Prefers moist, fertile soils; suckers readily—allow space.	Monitor suckering; mulch to retain moisture	Forms clonal stands—allow room to spread
Blackthorn	Excellent for hedgerows; suckers readily, can spread.	Trim regularly if used as hedge	Can spread via suckers—contain if needed
Crab Apple	Thrives in full sun; good for pollinators.	Prune lightly to shape; water in dry spells	Moderate root system—suitable near gardens
Dogwood	Tolerates a wide range of soils; best in moist, well-drained sites. Colourful stems if coppiced.	Coppice or prune hard in spring to encourage stem colour; mulch to suppress weeds.	Spreads by suckers—may colonise; excellent for wildlife habitat.
Downy Birch	Use on wetter acidic soils; avoid dry, exposed chalky sites.	Protect from browsing; check tubes	Shorter-lived, good pioneer for wetter sites
Elder	Fast-growing; prune regularly to maintain shape.	Cut back old wood; encourage new shoots	Short lifespan—consider renewal every 20–30 years
Field Maple	Not suitable for acidic soils; water first year in dry spells.	Mulch annually; avoid compaction	Shallow roots—allow setback from hardscape
Goat/White Willow	Fast growth; plant away from drains and walls.	Pollard or coppice as needed	Avoid near pipes/walls—vigorous roots
Guelder Rose	Thrives in damp, fertile soils; avoid very dry or exposed sites.	Prune lightly after flowering; water during establishment.	Medium-sized shrub with spreading habit; berries for birds—minimal structural risk.

Species	Planting guidance	After-Care Focus	Long-term considerations
Hawthorn	Great for hedgerows; ensure full sun for good flowering.	Trim as hedge; allow blossom for pollinators	Good barrier plant; minimal root risk
Hazel	Plant in groups for coppicing; avoid prolonged waterlogging.	Regular coppicing if desired	Forms dense thickets—good for hedgerows
Holly	Tolerates shade and a variety of soils; avoid waterlogged sites.	Water in dry spells when young; prune lightly to shape.	Long-lived evergreen; dense form for hedges or screens—deep roots but low damage risk.
Hornbeam	Tolerates heavy clay; good for hedges or screens.	Prune in late winter; water first two summers	Good hedge or specimen—tolerates hard pruning
Pedunculate Oak	Requires protection from browsing; avoid marshy soils.	Protect from deer/rabbits; weed control essential	Very long-lived; avoid near foundations
Purging Buckthorn	Grows best on calcareous or neutral soils; tolerates hedgerows and scrub.	Light formative pruning if needed; keep base weed-free when young.	Spreading shrub/small tree; thorns may make it dense in hedges.
Rowan	Tolerates exposure; suitable for streets and uplands.	Minimal pruning; water first summer	Low root impact—suitable for urban verges
Scots Pine	Thrives in free-draining sites; avoid waterlogged lowlands.	Minimal maintenance; check stake early	Tall evergreen—may shade neighbours in future
Silver Birch	Prefers light, sandy or well-drained acidic soils; avoid very fertile clay soils.	Water in dry spells during establishment; minimal pruning.	Shallow-rooted—avoid close to paving/foundations; relatively short-lived compared to oak.
Small-leaved Lime	Slower to establish; mulch well to suppress grass.	Stake standards; mulch well	Large canopy—allow for future shade
Spindle	Best in calcareous soils; attractive autumn colour.	Mulch to establish; prune lightly	Compact root system—low structural risk
Wild Cherry	Needs full sun; prune in summer to avoid infection.	Prune in summer; mulch when young	Deep roots—generally low impact on structures
Yew	Tolerates shade; avoid waterlogged sites.	Water well during establishment; minimal pruning	Long-lived and slow-growing—safe near buildings

5.2. Perennials

Species	Planting guidance	After-Care Focus	Long-term considerations
Betony	Suited to grasslands and light shade; tolerates moderately fertile soils.	Remove spent flower spikes; divide clumps if congested.	Non-invasive, compact perennial—easy to manage in mixed plantings.
Bloody Crane's-bill	Grows well in sunny, free-draining soils; drought tolerant once established.	Light prune after flowering to encourage further blooms.	Low-growing, spreading perennial—excellent groundcover; non-invasive.
Common Yarrow	Thrives in poor, dry soils and full sun; drought tolerant.	Cut back after flowering to encourage fresh growth.	Hardy, spreads via rhizomes—useful groundcover, may need limiting.
Field Scabious	Thrives in sunny to partially shaded areas; prefers moderately fertile, moist, well-drained soil	Keep well-watered and thin out to 30-60cm intervals; regularly remove weeds.	Hardy, long-lasting, low maintenance; relatively drought tolerant
Great Burnet	Prefers damp, fertile soils; ideal for meadows or riverbanks.	Mulch to retain soil moisture; cut back in late autumn.	Long-lived perennial; clumps enlarge gradually, good for pollinators.
Ox-Eye Daisy	Prefers full sun to partial shade and well-drained soil; suitable for less fertile areas where other plants struggle	Keep well-watered until established; may need to stake taller stems; cut back after flowering in late summer	Low maintenance; very hardy and adaptable; good for pollinators.
Primrose	Best in partial shade with moist, humus-rich soils.	Water in dry spells; remove dead flowers to extend bloom.	Clump-forming perennial; slowly naturalises in woodlands and banks.
Purple Loosestrife	Plant in damp meadows, pond margins, or wetlands; prefers moist, fertile soils.	Keep soil consistently moist; deadhead to prolong flowering.	Can self-seed freely in wet ground; attractive to pollinators but may spread.
Sweet Violet	Prefers moist, shady conditions; thrives in woodland edges.	Water during dry spells; deadhead to prevent excessive self-seeding.	Spreads by runners and seed; forms naturalised carpets over time.
Yellow Iris	Plant in shallow water or wet soils around ponds and rivers.	Remove faded foliage; divide clumps every few years.	Vigorous spreader in wetlands—allow space, can dominate smaller ponds.

6. Site-Specific Tree/Shrub Planting

Certain tree/shrub species will be beneficial in different locations owing to their characteristics. This table recommends which species to plant when you have specific planting objectives or locations.

Site/Purpose - Security/Privacy
Species - Hawthorn, Blackthorn, Holly, Purging Buckthorn
Benefit - Have thorns or spines which benefit security by acting as a deterrent

Site/Purpose - Parks and Public Green Spaces
Species - Aspen, Silver Birch, Rowan, Wild Cherry, Small-leaved Lime
Benefit - Enhance visual appeal, provide shade and support pollinators and birds

Site/Purpose - Schools
Species - Field Maple, Hazel, Crab Apple
Benefit - Safe species with educational and biodiversity value

Site/Purpose - Roadside Verges and Car Parks
Species - Hornbeam, Downy Birch, Goat/White Willow
Benefit - Pollution tolerance, soil stabilisation, and screening

Site/Purpose - Biodiversity Corridors
Species - Alder, Alder Buckthorn, Guelder Rose, Yew, Scots Pine
Benefit - High ecological value, supports specialist species

Site/Purpose - Riparian Zones
Species - Alder, Goat/White Willow, Downy Birch, Alder Buckthorn
Benefit - Stabilise banks, control erosion, benefit soil structure

7. Species to Avoid or Restrict in Certain Locations

Some species present risks in certain settings and should be avoided or planted with caution.

7.1. Trees/Shrubs

Species	Hazard
Ash *(Fraxinus excelsior)*	Owing to the prevalence of ash die-back, planting of Ash is not recommended
Blackthorn and Hawthorn	Thorns hazardous in play areas
Sea Buckthorn *(Hippophae rhamnoides)*	Invasive in Cumbria so avoid completely. Out-competes and shades out smaller species
Crab Apple	Fruits can cause stomach ache; avoid planting near play areas
Large oaks	Avoid close to pavements and shallow utilities because of root damage risk
Sycamore *(Acer pseudoplatanus)*	Seeds linked to atypical myopathy in horses; avoid near paddocks. Extremely large and can outcompete native species, so avoid in Cumbria
Wild Cherry	Leaves can be toxic to livestock; avoid in grazed fields. Has suckers and surface roots which may disrupt paving or light structures, such as boundary walls
Willows and Aspen	Vigorous roots can damage drains and walls; keep at least 10m away from structures
Yew	Entire tree is highly toxic; avoid near areas with high public access (e.g. schools, parks, correctional facilities)
Juniper *(Juniperus communis)*	Although native, presence of Phytophthora austrocedri in parts of the UK, especially Cumbria, makes it high-risk. If using Juniper, it must be sourced from a nursery with confirmation that the disease is not present in its stock [28]
Hawthorn and Rowan	Fallen fruits make pavements slippery
Horse Chestnut *(Aesculus hippocastanum)*	Large leaves may make pavements slippery. Prone to several diseases and to summer branch drop
Oak and Beech	Cast dense shade and reach large dimensions; can shade windows and gardens
Alder and Purging Buckthorn	Harmful if eaten, especially to pets. Avoid near common dog walking areas
Small-leaved Lime	Can harbour an aphid that produces honeydew, which becomes slippery when rained on. Avoid near pavements and car parks.
Fruit-bearing species	Avoid near car parks or residential areas as berries can damage paintwork on cars

7.2. Perennials

Species	Hazard
Foxglove *(Digitalis purpurea)* and Hemlock *(Conium maculatum)*	Extremely toxic to humans so avoid near parks and play areas
Deadly Nightshade *(Atropa belladonna)*	Highly poisonous and often fatal if ingested. Avoid near parks and play areas as the berries look like cherries.
Common Ivy *(Hedera helix)*	Aggressive climber, damages trees and structures, difficult to control

NB: The Wildlife and Countryside Act 1981 (WCA) lists plant species that are banned from being planted or otherwise caused to grow in the wild, and these should never be included in planting schemes. A list is available at the following website: **https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales#list-of-invasive-plant-species**. There are also several plants which are considered invasives of the future and should be avoided which can be found here: **https://www.nonnativespecies.org/assets/Document-repository/Here_today_here_tomorrow_2010_summary.pdf**.

Several perennials are considered toxic and can be fatal if ingested. If in doubt about the safety of a perennial, please consult an ecologist.

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