



Biodiversity
Enhancement
Recommendation

Client: [REDACTED]

Asset: [REDACTED]

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1. Introduction

This Biodiversity Enhancement Recommendation outlines a focused strategy for restoring ecological function in the area of interest. The recommendation is biome specific and hyper-local. Plant palettes are drawn exclusively from native, non-invasive species which have been scientifically recorded within a 5 km radius of the site centre. This provenance-led approach maximises establishment success, aligns with local soil and climatic conditions, and supports the fauna that already occur in the surrounding landscape.

The site itself is characterised by formerly agricultural land converted roughly five years ago into a logistics hub, with buildings and access roads dividing 42.96 hectares and leaving 11.67 hectares available for enhancement. This configuration creates extensive edges, fragmented green spaces, and hydrological run-off pathways—challenges that also present clear opportunities. Strategic planting and water-sensitive design can rebuild habitat structure, reconnect patches, slow and clean surface water, soften visual and acoustic impacts, and create resilient green corridors that function alongside operational areas.

2. Area of interest



0 100 200 m



Scale 1:10000

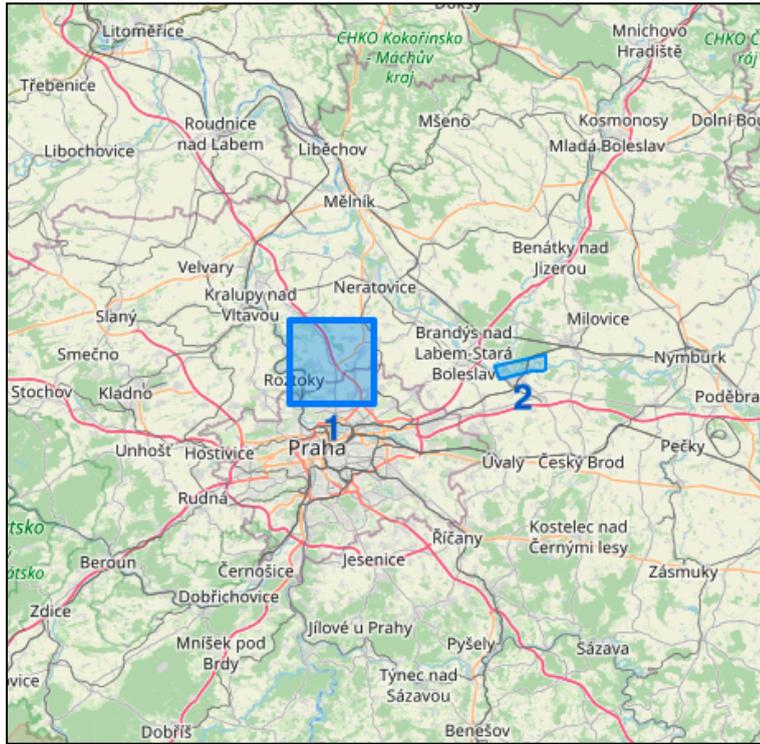
Location: Zdiby, Czechia
GPS: 50.179230.14.446746

Total site area: 42.95 ha
Total greenspace: 11.67 ha
Greenspace available for enhancement: 11.67 ha

- AOI boundary 
- Greenspace 
- Buildings 
- Sealed surfaces 

3. Record search results

Search map:



Search areas:

1. 10000 ha area centered at the area of interest
2. 1000 ha approx 25km west of the area of interest (reference ecosystem for wetland species)

Biodiversity records retrieved:

Total plant species	679
Total wildflower meadow species	114
Total woodland species	285
Total pond and swale species	181
Species listed as invasive in Czechia (GRIIS)	27

IUCN rare and endangered species within 5km of the AOI:

- European Ash (*Fraxinus excelsior*)
- Meadow Gagea (*Gagea pratensis*)

4. Ecological approach

This recommendation proposes a rich mosaic of woodlands, wildflower meadows, ponds and swales. Woodland blocks and belts will provide shelter, shade, and foraging for birds, bats, and small mammals while buffering noise and wind. Species-rich meadows will deliver abundant nectar and pollen from spring to late autumn, supporting pollinators and other invertebrates, and producing winter seed for finches. Ponds will create breeding and foraging habitat for amphibians, dragonflies, and wading birds, while acting as biodiversity “nodes.” Swales will intercept and filter runoff, increase infiltration, and link the ponds and planted areas as linear wetland corridors.

Across all habitat types, species selection has been guided by the objective of maximising local fauna support—larval host plants, fruit and seed resources, dense cover for roosting and hibernation, and suitable substrates for nesting and refuge. The sections that follow set out site analysis, species lists, planting plans, and adaptive management regimes to deliver measurable, enduring biodiversity gains in this specific landscape.

5. Wildflower meadows

This is a recommendation for creating new biodiverse wildflower meadows at the area of interest. The land has been under grass for several years, so the approach focuses on diversifying an existing sward and building resilient structure over time. The ecological objectives are to provide a long flowering season, nectar and pollen for insects, seed for birds, cover for invertebrates and small mammals, and larval host plants for butterflies and moths. The meadows will also store carbon in soils and roots, slow surface water through roughness, and improve visual amenity. A varied palette across sunny, shady and damp niches will support bees, hoverflies, butterflies, ground beetles and seed-eaters through all seasons. With low-input management (cut-and-collect) and periodic gap creation, the plant community should mature into a stable mosaic with high wildlife value.

Plant selections

Sunny open areas

- **Bird's-foot Trefoil** (*Lotus corniculatus*) – A top forage plant for bumblebees and a larval host for common blue butterflies; easy from seed and widely available; low, non-competitive habit fits mixed meadows.
- **Field Scabious** (*Knautia arvensis*) – Long-season nectar “platform” loved by butterflies; deep-rooted and drought-tolerant, blending well with fine grasses.
- **Greater Knapweed** (*Centaurea scabiosa*) – Robust flower heads for bees and seed for finches; reliable, hardy and compatible with mid-tall meadow structure.
- **Lady's Bedstraw** (*Galium verum*) – Fragrant, honey-rich flowers; forms fine mats that suppress gaps without smothering neighbours; easy to source.
- **Meadow Crane's-bill** (*Geranium pratense*) – Early–mid summer colour and good beetle cover; tough perennial that copes with mown establishment.
- **Oregano** (*Origanum vulgare*) – Masses of nectar in late summer, extending season; thrives on lean soils; simple to plant as plugs.
- **Meadow Clary** (*Salvia pratensis*) – Architectural spikes for long-tongued bees; durable, drought-tolerant and low maintenance.
- **Yarrow** (*Achillea millefolium*) – Very adaptable nectar source and ground-knitting foliage; useful for resilience and easy to establish.

- **Bladder Champion** (*Silene vulgaris*) – Night-scented, aiding moths; modest growth helps balance taller perennials; good availability.

Shady areas

- **Bugle** (*Ajuga reptans*) – Early nectar in partial shade; stoloniferous but controllable, ideal for green edges and paths.
- **Betony** (*Stachys officinalis*) – Reliable in light shade with bee-friendly spikes; steady grower that coexists well with grasses.
- **Common Dog-violet** (*Viola riviniana*) – Larval food for fritillaries and early nectar; neat habit, easy to tuck into shady margins.
- **Nettle-leaved Bellflower** (*Campanula trachelium*) – Tall, bell-flower nectar in woodland edge shade; resilient and long-lived.
- **Wild Strawberry** (*Fragaria vesca*) – Fruit for birds and cover for invertebrates; low-growing, binds thin soils on banks.
- **Meadow Saxifrage** (*Saxifraga granulata*) – Delicate spring flowers in semi-shade; bulbs/offsets establish readily with minimal care.

Damp low-lying areas

- **Cuckooflower** (*Cardamine pratensis*) – Early nectar for orange-tip butterflies; thrives in moist hollows and tolerates periodic wetting.
- **Tufted Hairgrass** (*Deschampsia cespitosa*) – Structure and shelter in wet pockets; clump-forming and long-lived, good for perching insects.
- **Hairy Sedge** (*Carex hirta*) – Matrix plant for damp edges; stabilises soil and offers seed for invertebrates; easy division planting.
- **Common Self-heal** (*Prunella vulgaris*) – Long flowering in moist turf; responds well to mowing regimes and fills small gaps.

Design principles

Design the meadow as a mosaic rather than a uniform carpet. Alternate taller “islands” (knapweed, field scabious, meadow crane’s-bill) with shorter nectar lawns (yarrow, self-heal, birds-foot trefoil) to create structural variety for different fauna. Use gentle gradients—both in elevation and shade—to drive species turnover: slightly raised, free-draining ridges for clary and oregano; shallow swales and depressions for sedge, tufted hairgrass and cuckooflower.

Edges should be intentional. Transition bands along paths and boundaries can be managed as shorter swards with early flowers (bugle, wild strawberry, meadow saxifrage) to concentrate spring nectar where people pass. Meandering paths, 1.5–2 m wide, allow access and light trampling that helps keep gaps open for low rosettes. Avoid straight lines; sinuous edges increase ecotone length, boosting pollinator traffic.

Distribute bulbs and rhizomatous species in drifts of 1–3 m² to read as natural patches, repeating them at intervals to tie the whole together. Mix fine grasses lightly within wildflower blocks to provide support, but preserve open soil pockets for self-seeding. Place taller clumps to break wind and create warm, sheltered “lee” zones for insects. Finally, plan for renewal: mark small zones for periodic disturbance (scarifying strips or small scrapes) so short-lived species can re-enter the cycle.

Establishment and maintenance

Year 0 – 3

Reduce fertility and competition by removing thatch with a close cut, then scalp or harrow 50–70% of the surface to expose at least 30% bare soil. On compacted areas, shallow rip or spike to 10–15 cm to improve infiltration; avoid importing topsoil. Broadcast a flower-led seed mix at 3–5 g/m² onto prepared ground in early autumn or spring, followed by trampling or rolling for soil contact. Reinforce key species as plugs at 5–7 plants/m² in sunny cores (lower to 3–4/m² for taller knapweeds and scabious); set damp-zone sedge and tufted hairgrass in clusters at 40–60 cm spacing. Protect from heavy footfall with temporary pathing and from grazing by simple low fencing if necessary. Water only to secure first-season establishment during prolonged droughts. Cut new growth to 40–60 mm whenever it reaches 100–120 mm in the first season, collecting arisings to lower nutrients and reveal light to seedlings.

Year 3 – 30

Move to an annual hay-cut and collect in late July–August, timed after peak flowering and seed-set for knapweeds and scabious; follow with an autumn/early-spring tidy cut if regrowth is lush. Maintain a 10–20% rotation of “disturbance strips” each year: scarify or lightly scrape small patches to create fresh germination gaps for yarrow, self-heal and trefoils. Thin out overly dominant tall clumps by lifting and splitting after cutting; relocate divisions to under-stocked patches. Keep damp hollows uncut until later in the season if cuckooflower is still active, then cut and remove once seed has fallen. Hand-rogue or spot-treat problem weeds early before seeding; focus on docks, thistles or any invasive grasses that shade out forbs. Never use fertilisers or irrigation. Refresh with small top-ups of seed or plugs every 5–7 years to maintain diversity and extend flowering into late summer with oregano and meadow clary.

Risks and remediations

Nutrient-rich legacy soils can favour coarse grasses and reduce floral diversity; mitigate by cutting and removing all arisings, and by creating annual scarified patches to keep open ground. Soil compaction from past landscaping may cause ponding or poor establishment; address with shallow decompaction and by designing micro-topography that directs water to damp-tolerant plantings. Drought in early summers can check seedlings; schedule sowing for autumn or spring and prioritise plug planting for key species, with targeted watering only during extended dry spells. Wind-blown or pre-existing weeds may colonise disturbed ground; implement early monitoring and swift removal before seed-set. Trampling pressure along desire lines can create bare scars; formalise paths and manage edges as short-flowering strips. Finally, gradual dominance by a few tall species can occur; prevent by periodic division, rotational disturbance, and occasional reseedling to rebalance the mosaic.

6. Woodlands

This is a recommendation for creating new biodiverse woodlands at the area of interest. The land is currently a re-landscaped grass sward, so the approach should build woodland structure in gentle stages: first fast, light-tolerant pioneers to condition soils and provide shelter, then longer-lived framework trees and a shade-tolerant field and ground layer. Ecological objectives include a resilient native canopy, a rich shrub belt for nesting and berries, and a varied herb layer for nectar, early spring forage, and invertebrate habitat. The resulting woodland should offer food through most of the year (catkins, nectar, berries, nuts), deadwood and leaf-litter niches, and connected cover for small mammals, birds, amphibians, and pollinators. Over time, patchy light levels, fallen wood, and a varied edge will support fungi, decomposers, and a wider web of species.

Plant selections

Canopy layer

- **Sessile Oak** (*Quercus petraea*) – Keystone for acorns, lichens, and invertebrates; widely available and long-lived; suits gradual, successional establishment from grass.
- **Silver Birch** (*Betula pendula*) – Quick pioneer that improves soil and shelters slower species; easy to establish and readily sourced.
- **Rowan** (*Sorbus aucuparia*) – Heavy berry crop for birds; tolerant of poorer soils and compact sites; modest stature aids structural diversity.
- **Bird Cherry** (*Prunus padus*) – Early blossom for pollinators and cherries for birds; copes with variable moisture; good as a mid-canopy filler.
- **Goat Willow** (*Salix caprea*) – Very early catkins for insects; fast to establish on open grass; useful as a nurse tree in the first decade.
- **European Hornbeam** (*Carpinus betulus*) – Durable framework tree once shade develops; tough, wind-firm, and easy to source for long-term structure.

Shrub layer

- **Common Hazel** (*Corylus avellana*) – Nuts for fauna and excellent coppice potential; establishes readily in groups and along edges.

- **Midland Hawthorn** (*Crataegus laevigata*) – Flowers and haws for insects and birds; dense cover; tolerant and low-maintenance.
- **Guelder Rose** (*Viburnum opulus*) – Nectar-rich flowers and autumn berries; thrives in half-light and damp hollows; easy to plant.
- **Common Dogwood** (*Cornus sanguinea*) – Good edge shrub with nectar and winter stems; copes with a range of soils; readily available.
- **European Spindle** (*Euonymus europaeus*) – Late nectar and striking fruits for birds; adds colour and structure; straightforward to grow.
- **Wayfaring Tree** (*Viburnum lantana*) – Robust, drought-tolerant shrub for sunny edges; berries support birds; minimal care once established.

Herbaceous layer

- **Wood Anemone** (*Anemone nemorosa*) – Early spring nectar; spreads slowly by rhizomes to signal maturing woodland conditions.
- **Common Primrose** (*Primula vulgaris*) – Very early flowers for pollinators; simple to plug-plant on the grassy edge.
- **Sweet Woodruff** (*Galium odoratum*) – Aromatic shade-tolerant groundcover; neat, low care, and helps suppress weeds.
- **Bugle** (*Ajuga reptans*) – Early-to-mid spring nectar and good groundcover; knits soil on young banks and rides.
- **Common Dog-violet** (*Viola riviniana*) – Larval food for fritillaries; copes with partial shade; easy from plugs.
- **Wild Garlic** (*Allium ursinum*) – Spring foliage and flowers for insects; spreads gently in moist shade; helps occupy bare soil.
- **Lady Fern** (*Athyrium filix-femina*) – Adds vertical structure in dappled shade; quickly establishes from divisions.
- **Tufted Vetch** (*Vicia cracca*) – Nitrogen-fixing climber for glades and edges; supports pollinators and improves soil.

Design principles

A biodiverse woodland benefits from a mosaic rather than a uniform block. Aim to vary light, moisture, and structure across the area. Create broad edges with a gentle gradient from grass to shrubs to taller trees; this yields more flowers, berries, and nesting niches than a sharp boundary. Within the interior, retain small glades and scalloped clearings that capture sun and extend flowering time. Lightly undulate the ground where feasible—low hummocks and shallow hollows—so that leaf litter, moisture, and temperature vary across short distances, supporting fungi, amphibians, and invertebrates.

Hydrological variation is valuable. Keep damp hollows and seasonal flushes open to light, favouring willows at the margins and moisture-tolerant herbs within. Dry ridges can hold birch and rowan, while more sheltered, fertile patches suit oak and hornbeam over time. Rides and sinuous paths should be aligned to maximise south-facing edges; these warm microclimates help spring pollinators and fruiting shrubs. Plant in clumps and drifting groups rather than even spacing, mixing pioneers with slower framework species so shelter and shade develop naturally.

Successional establishment is key: allow early, light-tolerant species to condition soils and create litter before introducing shade-demanding herbs and longer-lived trees. Retain standing and fallen deadwood throughout the design to seed fungi and detritivores, and to anchor the woodland's nutrient cycle.

Establishment and maintenance

Year 0 – 3

Preparation should reduce sward competition without heavy soil disturbance. Where feasible, scalp narrow 1–1.2 m spots or strips to expose mineral soil, then plant pioneers first (silver birch, goat willow, rowan, bird cherry) at roughly 1,600 trees per hectare (≈ 2.5 m spacing) in clumps of 5–9 to mimic natural colonisation. Add 400–600 shrubs per hectare in blocks along edges and ride margins, favouring hazel and hawthorn as shelterbelts. Use 50–75 cm mulch rings (composted woodchip) at 5–8 cm depth, kept clear of stems. Install 0.6–1.2 m shelters or guards appropriate to local browsing pressure, with firm stakes and vents. Water only during extended dry spells in the first two summers (1–2 buckets per tree per event). Replace failures annually in winter, maintaining a mixed pioneer presence to create early shade and litter.

Year 3 – 10

With shelter developing, infill plant the longer-term framework (sessile oak, hornbeam) into the lee of pioneer clumps at ~200–300 stems per hectare, targeting microsites with accumulating leaf litter. Extend the shrub belt with guelder rose, spindle, dogwood, and wayfaring tree to thicken edges and rides. Begin establishing the herb layer once partial shade and a modest litter layer are present: install plugs of primrose, dog-violet, bugle, and sweet woodruff in late autumn or early spring; set wild garlic bulbs/clumps into moist, shaded microsites; place rhizomes of wood anemone and divisions of lady fern into humus-rich pockets. Lightly top-up woodchip around young trees as it thins, but keep collars clear. Create microhabitats: stack brush into low dead hedges along edges, build several log piles on shaded soil, and retain any standing dead stems for cavity nesters and fungi. Spot-weed as needed; avoid broad soil disturbance.

Year 10 – 30

Begin shaping the structure. Where pioneers (goat willow, silver birch) over-shade the field layer or suppress oak and hornbeam, selectively thin or ring-bark a fraction to open small gaps; retain some as standing deadwood. Establish a light coppice cycle for hazel (e.g., 7–12 years) to maintain nuts, regenerate stems, and keep dappled light on the ground flora. Along warm, south-facing edges, periodically lay or trim hawthorn and dogwood to refresh dense cover while preserving flowering and berrying. Refresh log stacks every 5–8 years and leave coarse woody debris where it falls. If berries are under-represented, under-plant additional guelder rose or rowan in new gaps. Consider installing nest boxes for hole-nesting birds and bats once a semi-closed canopy exists, and small mammal or amphibian refuges near damp hollows. Continue light touch: maintain glades and ride scallops by occasional small-scale felling, always favouring a patchwork of light and shade.

Risks and remediations

Grass and ruderal competition can check young plants; mitigate with pre-planting spot preparation and sustained mulch rings, topped up as they thin. Browsing by deer or rabbits may suppress leaders; use appropriate guards and check/adjust annually. Wind-throw in early years is possible on exposed ground; plant in clumps, stake guards firmly, and choose wind-firm species (birch, hornbeam) as shelter. Drought stress may occur on shallow soils; prioritise planting during cool, moist months, water only during prolonged dry spells, and maintain mulch. Over-shading could reduce herb diversity; plan for small-gap creation and periodic coppice of hazel and selective thinning of pioneers. Disease risk is reduced by mixed species and age structure; avoid single-species blocks. Finally, inappropriate disturbance (vehicles, heavy machinery) can compact soils; confine access to dry periods and established routes to protect the developing woodland fabric.

7. Ponds, swales and riparian zones

This is a recommendation for creating new biodiverse ponds, swales and riparian zones at the area of interest. The landscape has been re-graded and rested under grass, which offers a clean slate for wetland creation. The objectives are to hold and slow clean water, build layered habitat from open water to damp woodland edge, and support amphibians, invertebrates, birds and small mammals with abundant food and cover. The proposed mix balances easy-to-source, robust natives that establish quickly with a few structural species for long-term resilience. Together, the features will provide nectar from spring to late autumn, seed and foliage for herbivores, egg-laying and refuge sites for dragonflies and amphibians, and root systems that bind banks and filter sediments. Connectivity between ponds, swales and adjacent green areas will let wildlife move safely and help populations persist.

Plant selections

Limnetic zones

- **Bogbean** (*Menyanthes trifoliata*) – Floating leaves shade water, reducing algae; early nectar supports bees; rhizomes root in shallow shelves and are straightforward to plant.
- **Celery-leaved Buttercup** (*Ranunculus sceleratus*) – Fast annual that colonises new shallows; flowers feed early pollinators; thrives in nutrient-poor, recently dug edges.
- **Common Reed** (*Phragmites australis*) – Tall emergent for structure, nesting cover and water filtration; use in restrained patches for easy management and high wildlife value.
- **Cyperus Sedge** (*Carex pseudocyperus*) – Graceful tussocks in 10–30 cm water; dense roots trap silt and provide fish/amphibian refuge; readily available and tough.
- **Marsh Marigold** (*Caltha palustris*) – Spring flowers for pollinators; clumps stabilise shelves; establishes reliably from plugs in shallow margins.

Littoral zones

- **Purple Loosestrife** (*Lythrum salicaria*) – Long flowering season for bees and butterflies; upright form adds height and perching; easy to establish in damp

soils.

- **Yellow Loosestrife** (*Lysimachia vulgaris*) – Spreads gently to knit margins; flowers support specialist bees; copes with fluctuating water levels.
- **Meadowsweet** (*Filipendula ulmaria*) – Summer nectar clouds and larval food; deep roots bind swale sides; tolerant and low-maintenance once set.
- **Marsh Woundwort** (*Stachys palustris*) – Sturdy spikes with rich nectar; rhizomes quickly green bare ground; good in periodically wet swales.
- **Hard Rush** (*Juncus inflexus*) – Tussocky matrix for cover and nest sites; fine roots filter runoff; very resilient, minimal care.
- **Common Rush** (*Juncus effusus*) – Fills gaps, slows water and traps silt; provides amphibian refuge; thrives across damp gradients.
- **Creeping Jenny** (*Lysimachia nummularia*) – Evergreen mat that armours soft edges, reducing erosion; bright flowers for pollinators; excellent groundcover.
- **Silverweed** (*Potentilla anserina*) – Silvery, low foliage stabilises strandlines; nectar/pollen resource; easy from divisions in moist sand/silt.

Riparian zones

- **Guelder Rose** (*Viburnum opulus*) – Berries for birds, spring flowers for insects; shallow roots stabilise banks; compact shrub for edge structure.
- **Black Alder** (*Alnus glutinosa*) – Nitrogen-fixing canopy that toughens wet ground; catkins feed birds/invertebrates; coppice-friendly for long-term control.
- **Purple Willow** (*Salix purpurea*) – Flexible stems for live staking; early pollen for insects; roots bind bends and damp hollows.
- **Lady Fern** (*Athyrium filix-femina*) – Understory cover in moist shade; fronds shelter amphibians; reliable in humus-rich riparian soils.
- **Wild Angelica** (*Angelica sylvestris*) – Umbels draw diverse pollinators; seeds for birds; self-sows lightly to sustain populations.
- **Great Burnet** (*Sanguisorba officinalis*) – Late nectar prolongs season; deep roots stabilise swales; suits periodically wet meadows.
- **Cuckooflower** (*Cardamine pratensis*) – Early nectar and larval food for orange-tip butterflies; prefers damp grass; easy from plugs.

Design principles

Design should create a connected wetland mosaic rather than isolated features. Place ponds so that the distance between water and swales is short and traversable, with hedges or rough grass strips acting as movement corridors. Use and exaggerate existing low spots and gentle gradients to make shelves and bays, avoiding geometric shapes. A varied shore with promontories, inlets and scalloped edges increases edge length (where most wildlife action occurs). Within ponds, build micro-topography: broad shelves at 0–20 cm for emergents, pockets at 30–60 cm for cooler summer refuges, and a small deeper sump (90–120 cm) to maintain water through droughts. Create at least one sunny, wind-sheltered aspect per pond for basking insects, and one north-facing, gently sloped edge for amphibian egress.

Hydrology should prioritise clean water. Prefer gravity-fed roof runoff, overflows from rain gardens and clean field drains. Intercept and settle first-flush sediments in shallow forebays before water enters main ponds. Avoid inputs from roads, parking areas or livestock yards that carry hydrocarbons, salts or high nutrients; where unavoidable, pass through vegetated swales and sediment traps first. Provide discreet overflows that spill to rough grass or a secondary basin to spread high-flow events and reduce scour. Keep groundwater interactions in mind: if seasonal highs are expected, allow space for water level movement rather than hard edging. Finally, plan for continuity: include narrow causeways or stepping-stone pools at 50–150 m intervals to link wet habitats across the site and to neighbouring green spaces.

Establishment and maintenance recommendations

Year 0 – 3

Groundworks benefit from a “clean start.” Strip nutrient-rich topsoil from the pond footprint and immediate surrounds (ideally 150–300 mm) to reduce eutrophication and favour wetland specialists. Shape shelves and micro-bays with smooth transitions; incorporate a small deep sump. Where soils are cohesive and hold water, unlined ponds are suitable; where permeability is high, consider a compacted clay core or a natural liner such as puddled clay. If these are impractical, a synthetic liner (e.g., EPDM) can be used, protected with geotextile above and below and covered with 150 mm of subsoil/sand to prevent UV and puncture damage. Fill initially with harvested rainwater where possible. Place woody species (black alder, purple willow, guelder rose) no closer than 3–5 m from the water’s edge to minimise leaf loading and shading; use live willow stakes on erodible outer bends only. Plant emergents and marginals in small, repeated groups (5–9 plugs at 30–45 cm spacing) for rapid cover and easy weeding lines. Add a few clump-forming tussocks (rushes, sedges) to act as silt traps by inlets. Keep 30–40% of shoreline unplanted for natural colonisation and amphibian basking.

During the first two growing seasons, hand-weed rank grasses and any aggressive ruderals before they seed; spot-mow swales high (8–10 cm) two or three times in year one, reducing to one late-summer cut by year three. Never use fertilisers. Monitor water clarity; if algae bloom, add temporary shading using coir rolls rather than chemical treatments. Top up only with clean water sources.

Year 3 – 10

Shift to light, regular care. Cut swales and damp meadows once annually in late summer after seed-set; remove arisings to keep nutrients low. Every 2–4 years, thin small patches of common reed and purple loosestrife, leaving adjacent patches intact for continuity. Coppice or pollard black alder and purple willow on a 5–7-year cycle to retain light and reduce leaf fall into ponds. Excavate accumulated silt from forebays when capacity halves; export material away from open water. Maintain at least 60% sunny edge. Control any encroaching great willowherb by late spring pulling before flowering.

Year 10 – 30

Undertake rotational “reset” works in mosaic. Desilt one third of the wetted perimeter per decade, never the whole pond at once. Refresh marginal shelves locally where trampling or wave action has lowered banks, re-planting rush and sedge clumps. Continue cyclical coppice of alder and willow to sustain a varied age structure and open glades. If vegetation closes over, selectively thin shrubs to re-open sightlines and warm edges. Review hydrology after extreme events and restore forebay function or overflow armour as needed. Keep nutrient inputs very low by maintaining grass buffer strips around all inflows.

Risks and remediations

Nutrient enrichment is the main risk, leading to algal blooms and coarse grass domination. This is mitigated by topsoil removal at construction, sourcing clean water, exporting cuttings, and using forebays and vegetated swales to trap sediments. Over-shading and leaf loading from trees close to the shoreline can reduce oxygen and plant diversity; maintain a 3–5 m setback and cyclical coppicing of alder and willow. Single-species dominance (e.g., common reed) can reduce habitat variety; thin in small patches and keep a mosaic of open water and varied margins. Drought may lower levels in dry summers; include a deep sump and design for fluctuation rather than constant topping-up. Invasive look-alikes may arrive from surrounding areas; early detection through seasonal walk-overs and prompt removal prevents establishment. Finally, public safety and bank stability are addressed by gentle slopes, dense marginal planting and clear overflows that dissipate peak flows without scouring.

8. Methodology and citations

This recommendation was produced using biodiversity occurrence records retrieved from the Global Biodiversity Information Facility ([GBIF](#)). The records were cross-referenced against the World Checklist of Vascular Plants and the Global Register of Introduced and Invasive Species to verify their nativity and non-invasiveness. The resulting species were matched against habitat constraints of the site and ranked according to their ease of establishment, provision of ecosystem services to native fauna, and relative availability, and sorted into guilds for each solution.

The guilds were then analysed using a Large Language Model trained on ecological restoration best-practice. The resulting recommendations were then vetted by a fully qualified ecologist before being signed off for inclusion in this document.

Citations:

Govaerts R (ed.). 2024. WCVP: World Checklist of Vascular Plants. Facilitated by the Royal Botanic Gardens, Kew. [WWW document] URL <http://sftp.kew.org/pub/data-repositories/WCVP/>

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