

CONWY PARKS: **TIR PRINCE, TOWYN**

03

TIR PRINCE: INTRODUCTION

Tir Prince is located in the centre of Towyn, on the North Wales coast.

The nature reserve area to the south is our primary focus.

The threshold between the reserve and the playing fields to the west is also to be considered, along with how, and to what extent, the public can access the area in the future.

This could be managed seasonally, perhaps through guided tours. Local schools could also be involved, with opportunities to educate children about the wildlife that this area supports.

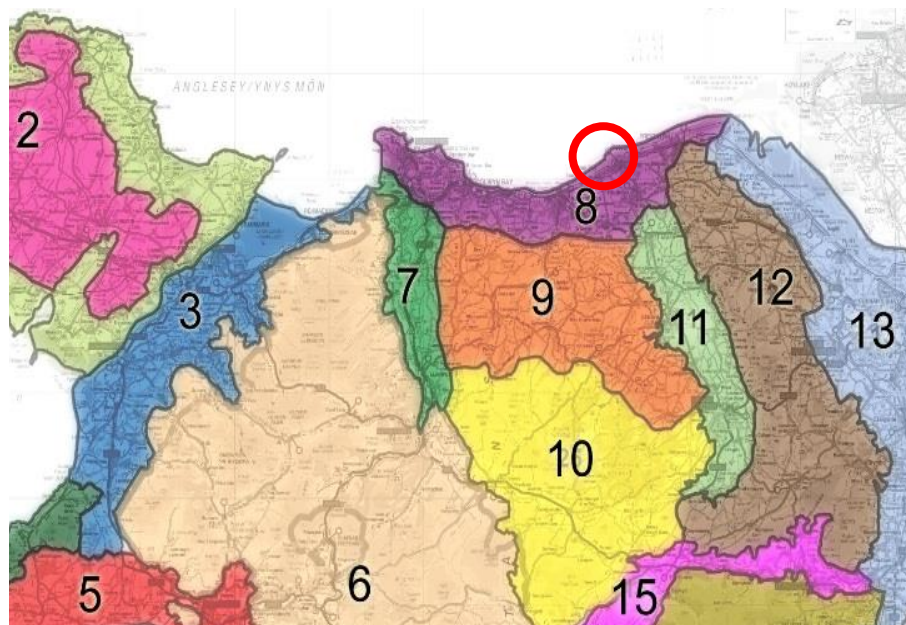


Site location (dashed area denotes the full extent of the park)



TIR PRINCE: NATIONAL LANDSCAPE CHARACTER

Towyn is located within the NLCA character area 'North Wales Coast' (08). This area is characterised by activity and bustle, though there are more quiet and tranquil areas, even in and amongst the sea-side developments. This area remains a gateway to Wales for visitors from England; to descend Rhualt Hill along the A55 Expressway and to pass the marble church at Bodelwyddan is to leave Merseyside and the Dee estuary behind, and to experience the beginnings of a distinctively Welsh landscape, with the Vale of Clwyd to the south and Eryri in distant prospect.



NLCA

Limestone hills back the northern coastline and hinterland for much of its length between the Great Orme and Point of Ayr. Their steep sides run close to the coast in the western half, where the development of seaside resorts and main transport links have squeezed into the limited available flat land, and started to spread up some hillsides.

The hills run back from the coast in the central section, allowing the broad Vale of Clwyd to reach the sea, flanked to the east by the distinctive line of the Clwydian Range of hills, and finally issuing its river between Rhyl and Towyn.

Much of the coastal strip has been developed for tourism, from planned Victorian seaside resorts, notably Llandudno, Colwyn Bay and Rhyl, through country hotels and sanatoria, to more recent and less formal sea-front developments, holiday camps and caravan parks.

Traditionally this was where the folk of the north west of England took their holiday, and although the nature of holidays has changed, the area is still known for its seaside holiday destinations and some, notably Llandudno and Colwyn Bay, appear to be surviving and adapting accordingly.

Geology shaping the landscape character

The soft, low-lying coastal fringe is constrained in width by steeply rising limestone hills inland. The hills draw back in the central section, opening into the Vale of Clwyd with its extensive coastal levels. The main river is the Clwyd, issuing between Rhyl and Towyn.

The most prominent rock today is Carboniferous limestone (350 million years old), deposited in shallow tropical seas. The stepped topography of the Great Orme and other areas reflect cyclical changes in deposition from marine to shoreline.

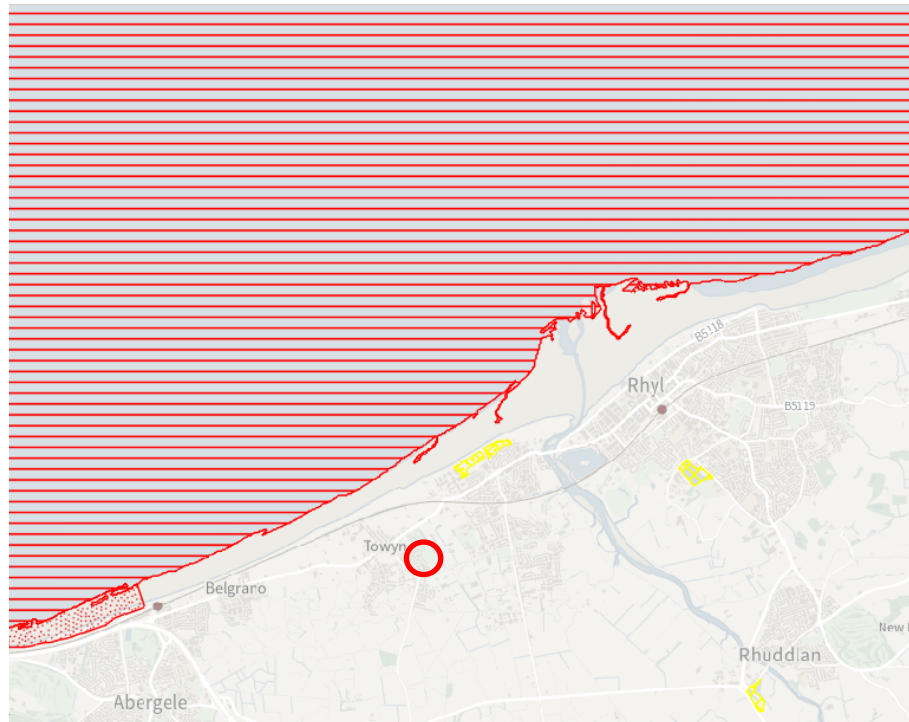
Till deposited during the final phase of glaciation reflects the meeting of ice-sheets from Snowdonia and the Irish Sea. The respective tills differ in character and join more or less parallel along the coast from Llandudno to Prestatyn, producing drumlin and meltwater features.

Key Landscape Characteristics extracted from the NCLA - 08 North Wales Coast

- The mouth of the Vale of Clwyd – a broad flat coastal plain centred on Rhyl, including the small estuary of the River Clwyd, including a network of medium scale pastoral fields of regular pattern, with ditches and, to a lesser extent mixed, managed hedgerows, and occasionally interspersed with small stands of mixed farm woodland.
- Seaside resort towns - urban development and arterial road and railway routes along coast, constricted in places by topography and rising hills. Much 19th century development with more recent suburbia. Some caravan parks and holiday camps between Llanddulas to Prestatyn coalesce settlements.
- Steep sided hill back drop to coastal towns - wooded, or exposed limestone and sheep pasture.
- A generally man-made coastal edge – promenades, sea walls, groynes, rock armour and other forms of protecting the coastal edge run for most of the length of the coastline.
- Ecological importance - Great Orme is ecologically important for its concentration of calcareous grassland, while elsewhere, there is a diversity of habitat types, including the coastal dunes at Gronant and remaining areas of coastal habitat such as sandbanks, marshland and tidal river flats.



TIR PRINCE: LANDSCAPE HABITATS



Ecology

The soils found within the low lying area of Towyn are wet brackish coastal flood meadows soils which are mostly drained. Shallow groundwater and marginal ditches to most fields mean that the water resource is vulnerable to pollution from nutrients, pesticides and wastes applied to the land.

NRW digital mapping portal classifies the broad habitat type (BAP) at Tir Prince, as priority habitat - coastal and floodplain grazing marsh.

The Phase 1 habitat classification within the mapping portal is - B4 improved grassland. Improved grasslands are those meadows and pastures which have been so affected by heavy grazing, drainage, or the application of herbicides, inorganic fertilisers, slurry or high doses or manure that they have lost many of the species which one could expect to find in an unimproved sward. They have only a very limited range of grasses and a few common forbs, mainly those demanding of nutrients and resistant to grazing.

Lolium perenne, *Cynosurus cristatus*, *Trifolium repens*, *Rumex acetosa*, *Taraxacum officinale*, *Bellis perennis*, *Ranunculus acris* and *Ranunculus bulbosus* are typical of improved grassland, while stands of dock *Rumex* species, common nettle *Urtica dioica* and thistles *Cirsium* species indicate local enrichment of the soil by grazing animals. The following signs usually indicate substantial improvement:-

- bright green, lush and even sward, dominated by grasses (though poaching causes unevenness);
- low diversity of forb species;
- more than 50% *Lolium perenne*, *Trifolium repens* and other agricultural species.

Fields which have been reseeded in the past and have since become somewhat more diverse are included in this category, but recently reseeded monoculture grassland such as rye grass leys, with or without clover, should be classified under cultivated land (J1). Most amenity grassland should also be classified under J1.

Designations

Proximity to the hills

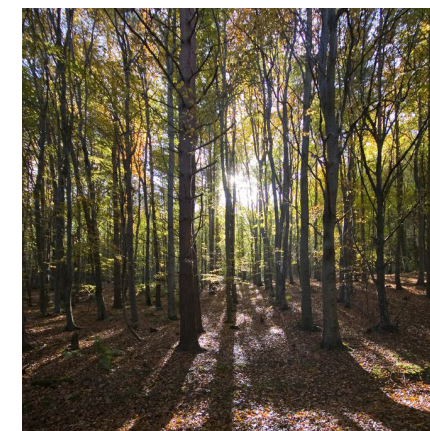
A number of Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA) and Special Areas of Conservation (SAC) lie in close proximity to Towyn. Some of these are of upland character such as Craig Fawr Nature Reserve and SSSI Coed Y Gopa, SSSI Llanddulas Limestone and Gwrych Castle Wood, all sited approx 6-8 km from Tir Prince are designated as such for their wooded slopes and limestone outcrops and ancient woodland flora.

To the east and also of upland character Gwydir Forest SAC AONB - Clwydian Range and Dee Valley frames the surrounding landscape and provides contrast to the low lying flood meadows of Towyn.

Proximity to the coast

The coastal and estuarine ecology of SPA Liverpool Bay, SSSI Treath Pensarn, and SAC, SPA, SSSI Dee Estuary lie to the north of Towyn and may present some significant links in terms of wading and breeding birds with the wetter areas of the Tir Prince site. The localised ecology found within Local Nature Reserve (LNR) Gronant Dunes, and LNR Kinmel dunes also present a rich and diverse ecological network.

Two ponds within the area, LNR Brickfields pond and LNR Rhuddlan Pond may host communities of nesting and migratory birds that could potentially also utilise the proposed ponds and scarps at Tir Prince.



TIR PRINCE: SITE FEATURES



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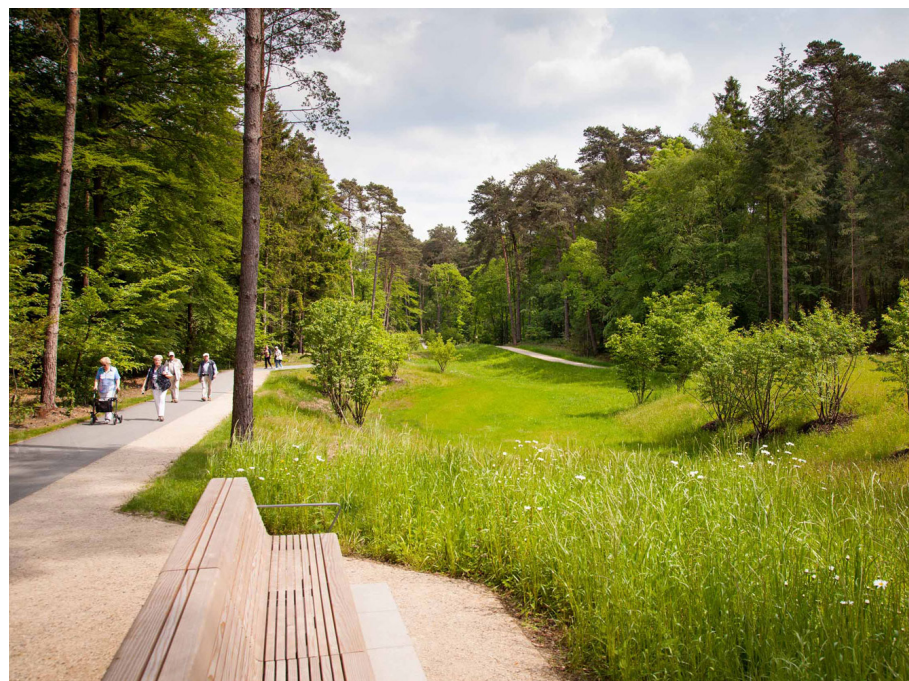
The land at Tir Prince is classed as wet brackish coastal flood meadow. It has a high-water table and is sited in large, open, low-lying fields, where the shape, size and location mimic naturally occurring depressions that fill with water in the winter.

These conditions enable it to support a variety of ponds at varying stages of the pond cycle. Small areas of woodland along the site boundary and rich species hedgerow also offer opportunities to strengthen and enhance these habitat types, widening the site's green buffer.

1. The pond to the north-west corner of the site.
2. Interpretation board at the entrance to the park (Llys Glyndwr).
3. The central path can be waterlogged in the middle.
4. One of the ditches to the north-east of the area, making it difficult for people to walk along this mown route.

TIR PRINCE: ASPIRATIONS

Plants and animals use a surprisingly wide range of habitats in ponds; and not all of them are immediately obvious. Access and interpretation of pond complexes help to identify some of the most important habitats in ponds and the ways they are used by pond wildlife. Providing a range of access opportunities across the site with a hierarchy of movement such as some areas of restricted access and some areas for grazing would help to nurture and enhance the site's ecology as well as its use by the community.



TIR PRINCE: ASPIRATIONS

Ponds of high wildlife value come in many different forms. Pond complexes made up of a range of pond types provide opportunities to support diverse communities of plants and animals, these may include larger ponds with depths that hold water all year round, smaller scrapes and ponds that dry up mid-summer that may support rare plants specifically adapted to drought, and shaded woodland ponds that may also dry up mid-summer and although they have less plants, they may be a very important habitat for invertebrates.



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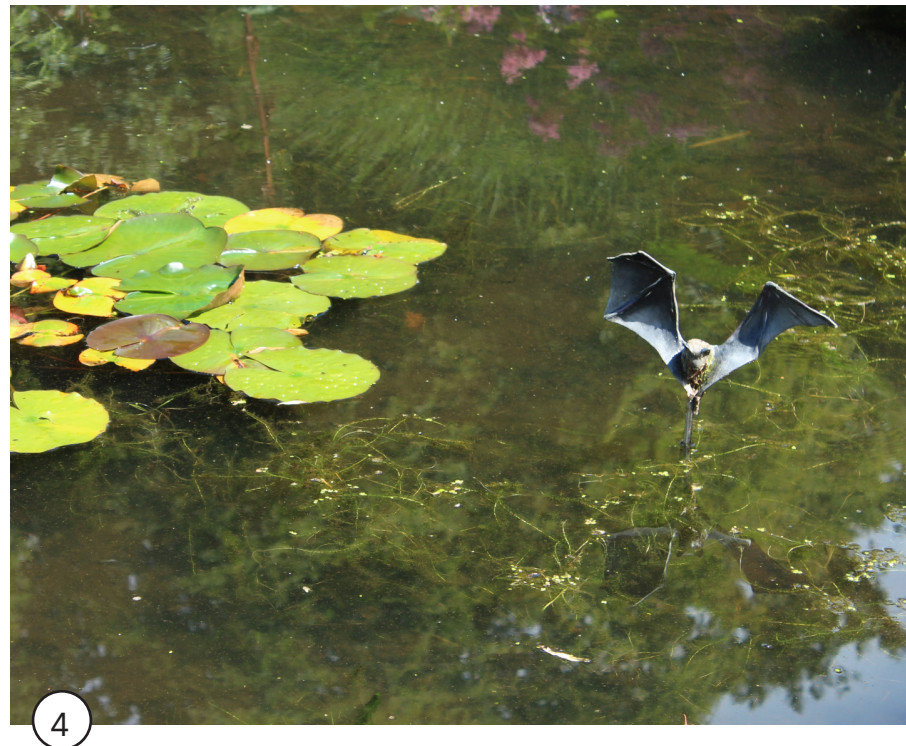


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1. Raised boardwalk across a pond allowing access to wetter habitat areas that may remain permanently wet all year round.
2. Ponds and scrapes with a range of depths and edge treatments. Planting close to the ponds to remain low such as scrub and shrub enabling growth of Tussock Sedges and the many rare aquatic invertebrates that live amongst them.
3. Shaded woodland ponds that have a variety of fallen trees, leaves and rotting wood providing habitat for a range of invertebrates and dragonfly species.
4. Shallow underwater plant mosaics create an underwater architecture which is an excellent habitat for many pond animals.
5. Drawdown areas of open scrapes providing feeding ground for many wading birds, and even small mammals like water shrews, catching insects trapped in the mud.

TIR PRINCE: ASPIRATIONS

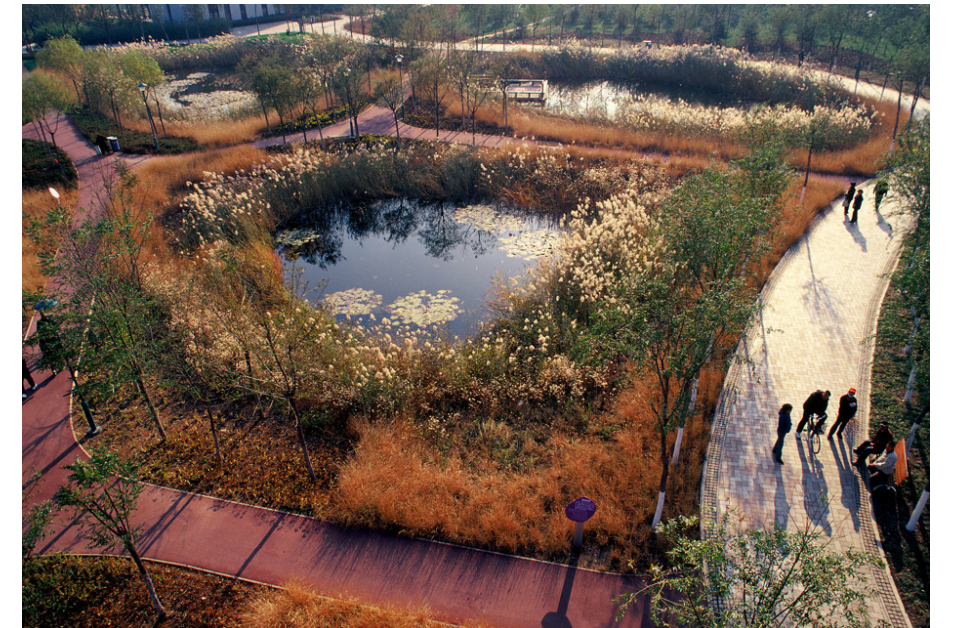
A variety of water depths, with very gently sloping margins providing conditions for a range of different plants and animals. An ever-changing drawdown zone is one of the most important areas of a pond and exceptionally rich habitat for plants, invertebrates, amphibians, birds and even small mammals. Areas of bare, sparsely-vegetated mud, for example, are an important substrate for annual wetland plants and trees and scrub at the edge of a pond can be beneficial to birds and mammals in many ways. Below are just some examples of the rich life that thrive within pond complexes.



1. Tiny pools at the edge of the main pond can sometimes be as valuable for animals as the pond itself, and grasses straggling out into the water from the bank can be one of the richest of all habitats in a pond, and an area much loved by newts.
2. Ponds are not necessarily isolated habitats – many pond animals, like damselflies, can fly at some stage in their life cycle and will move between different ponds or wetlands in an area.
3. Rotting trunks that fall into the water provide a favoured egg-laying site for dragonflies such as the Southern Hawker and the Brown Hawker.
4. Woodland ponds are a very important habitat for drinking and feeding bats.
5. Sallows (*Salix* spp.) growing out from the edges may form embayments which water birds use to define territories. Image shows common Redshank currently found on site.

“A **FIELD OF WATER** BETRAYS
THE SPIRIT THAT IS IN THE
AIR. IT IS CONTINUALLY
RECEIVING NEW LIFE AND
MOTION FROM ABOVE. IT
IS INTERMEDIATE IN ITS
**NATURE BETWEEN LAND
AND SKY.**”

-HENRY DAVID THOREAU



TIR PRINCE: EXISTING ECOLOGICAL FEATURES



Existing ponds are small and separated from each other, and clusters of trees are also dispersed throughout the site.

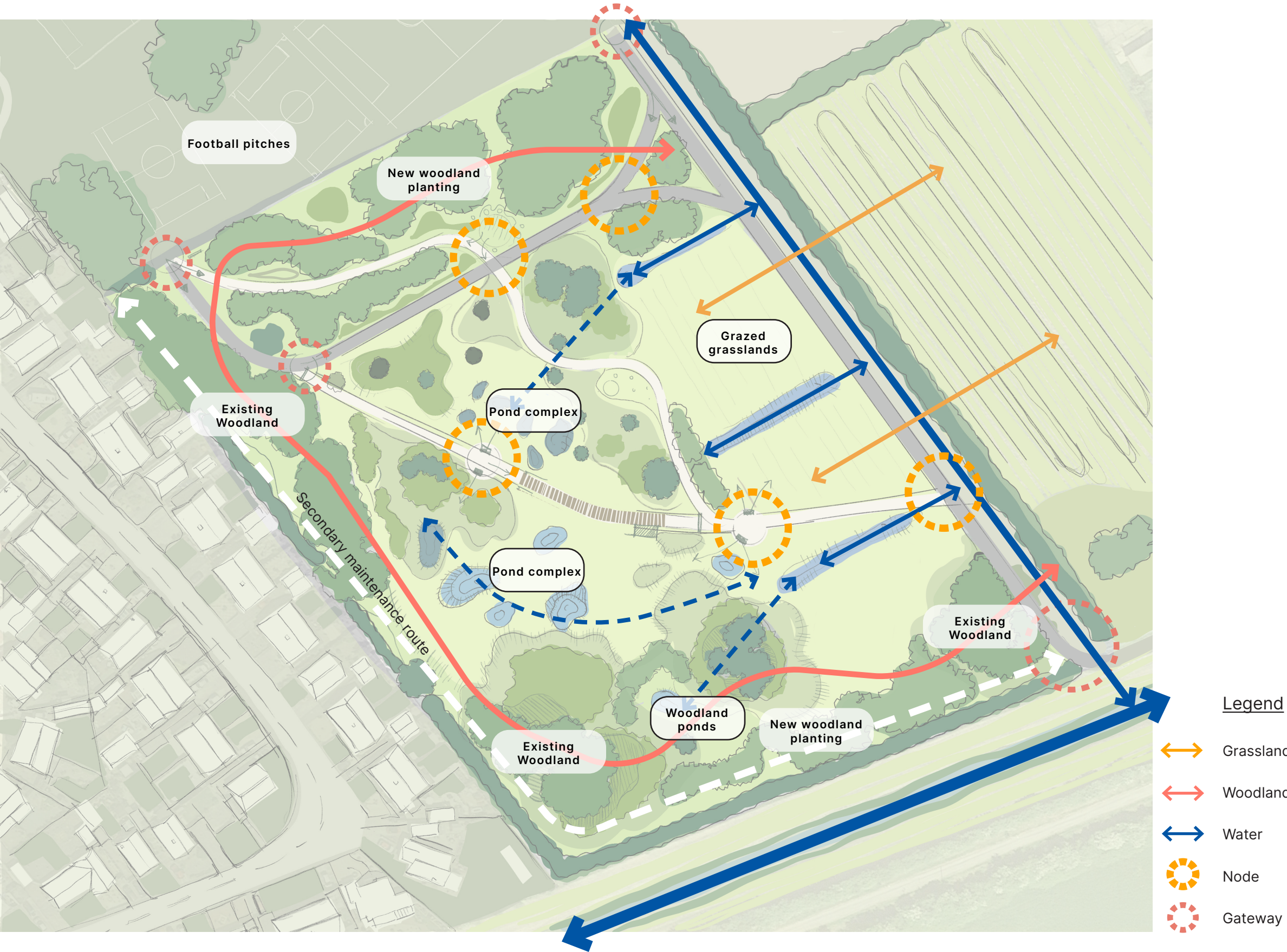
There are strong hedgerow buffers on the outskirts of the site (to the east and south) which flank the drainage ditches managed by Natural Resources Wales.

There is potential for making connections to these features, along with improvements to the grassland (and further connection to the field to the east).

Legend

- ↔ Grassland
- ↔ Woodland
- ↔ Water
- ⊙ Node
- ⊙ Gateway

TIR PRINCE: POTENTIAL ECOLOGICAL CONNECTIONS



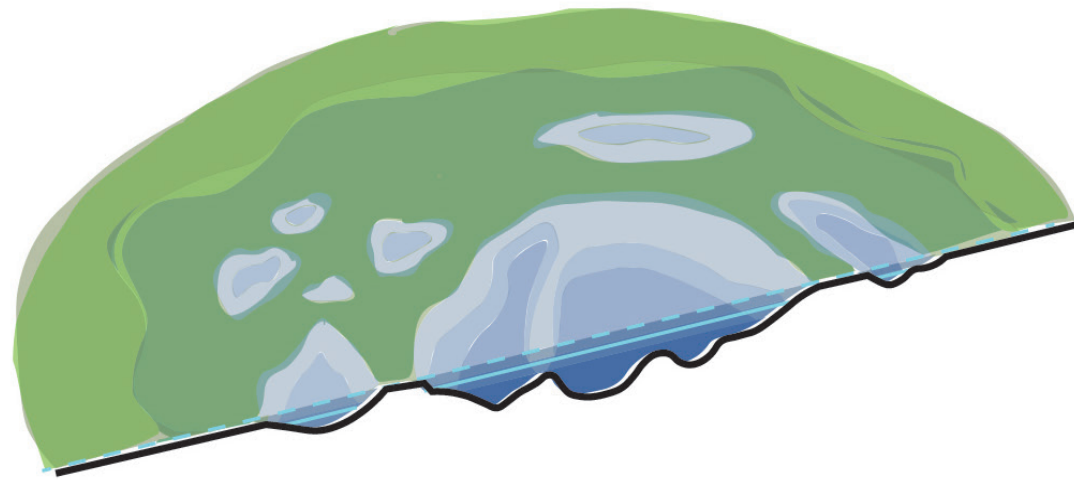
TIR PRINCE: SKETCH PLAN



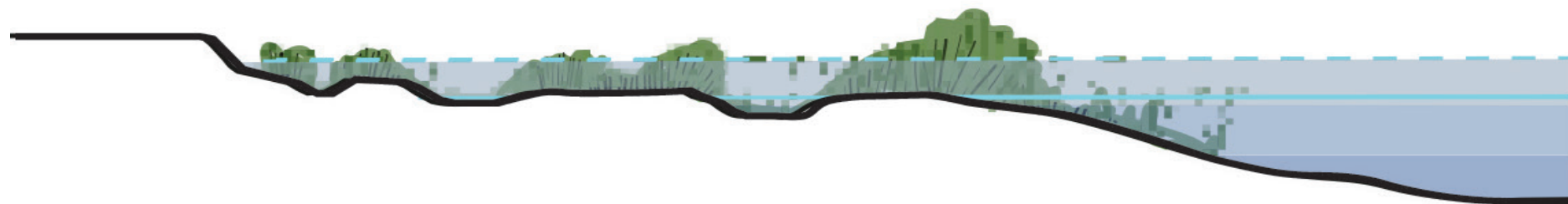
Proposed enhancements - please refer to the Pondscape Specification for technical details.

1. Species rich hedgerow along the southern and eastern boundary to enhance the connectivity of hedgerow around the sites boundary This will increase foraging opportunities for small mammals and invertebrates. Fruiting species such as hawthorn, blackthorn and holly will increase winter food for birds.
2. Plant additional woodland to the southern and northern areas of the site, within these new woodland plan open habitat such as a series of rides and glades a variety of microclimates that which support diverse marginal vegetation and are likely to be of value to invertebrates and foraging bats.
3. Introduce woodland ponds. Provide a area of shaded ponds to support a different selection of plants and species to those ponds within the open Grassland and scrub areas.
4. A complex of smaller ponds in close proximity to one another is more ecologically beneficial that a single larger water body. An additional 4 small wildlife ponds within the southern enclosure of a similar size to those that currently exist (c 6-8m x6-8m) with underwater bars and shoals to benefit aquatic plants.All pond slopes will be shallow, less than 1:5 (12°) and preferably less than 1:20 (3°).Scalloped edges to ponds with bays and wide and undulating draw down zones to maximise habitat niches with an aim to create broad areas of very shallow water 0-10cm deep. At their deepest ponds will be 30cm-45cm
5. Enlargement of 2 existing ponds within the southern enclosure by c50% including the removal of self-seeded willow and hawthorn trees within the existing pond basins maintain c 50% of existing pond basin vegetation (Soft Rush, Flag Iris)undisturbed.
6. Maintain a number of scrapes providing a diverse pond complex of pools that are seasonally wet . smaller scrapes and ponds that dry up mid-summer that may support rare plants specifically adapted to drought.
7. Open Grazing land to help manage the vegetation
8. Nodes that provide opportunity to interpret and engage with the rich ecological habitats.

TIR PRINCE: ILLUSTRATIVE SKETCH SECTIONS



A complex scrapes and small ponds



A variety of water depths, with very gently sloping margins providing conditions for a range of different plants and animals.



Excavated surfaces are left rough with hummocks and hollows on the bottom of the pond or Scrape

Pond and Scrape considerations:

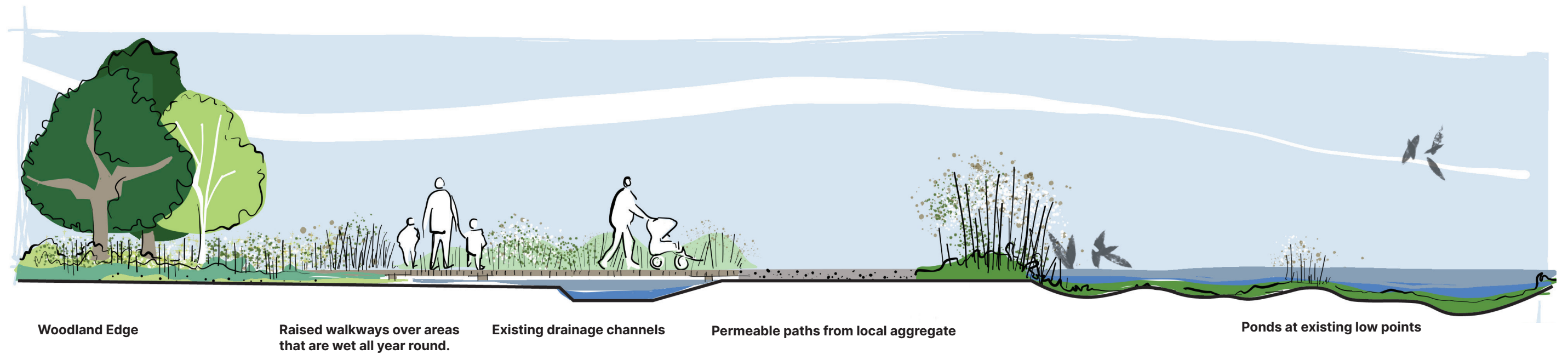
- Some pools that may be permanent, some temporary. A complex of smaller ponds in close proximity.
- A variety of water depths, with very gently sloping margins providing conditions for a range of different plants and animals.
- Excavated surfaces are left rough with hummocks and hollows on the bottom of the pond or Scrape and around the edge to allow very shallow water and small pools within the drawdown zone.
- Near smaller ponds plant shrubby species rather than tall trees, unless the intention is to create a shaded woodland pond.
- Avoid directly linking a pond or scrapes to streams, ditches or drains, because these bring in silt and pollutants.
- Avoid adding topsoil to a pond, its edges or the banks because this will reduce water quality.
- Avoid digging a pond too deep. There is little benefit in having more than 1 m of water.
- Retain existing scrapes on site, but adding in more and locating these close to ponds will help to create a diverse pond complex on site.

Specific guidance for the scrapes is noted below:

- Excavated surfaces should be left rough with at least 100 mm variation in height at the base of the scrape.
- Aim for a maximum water depth in the winter of 350 - 400 mm in the centre, with an average depth of about 250 mm.
- Scrape size and shape should relate to field size and boundary pattern. There is no minimum size.
- Several smaller scrapes rather than one large one will provide more feeding habitat.

Please note the sketch sections are illustrative only and should be adapted to suit the particular site following further ground surveys. The pond and scrape considerations are a general guide and may differ for each particular site.

TIR PRINCE: SKETCH SECTIONS



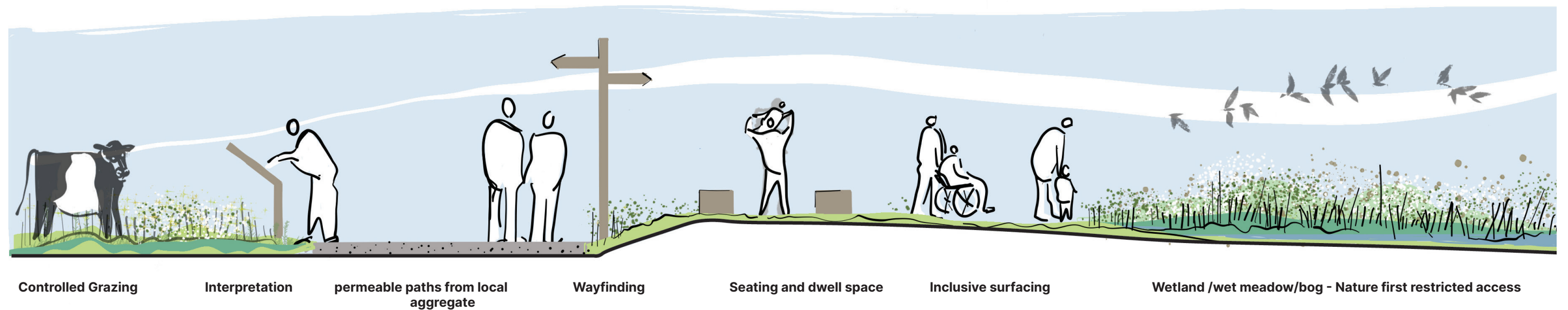
Further notes

Introduction of wetter areas within Tir Prince would require consultation with NRW to reduce any conflict with current flood alleviation infrastructure adjacent to site.

Any increased depths to the scrapes to provide more permanent ponds on site will need careful consideration of the spoil. New and un-natural mounds or banks should be avoided.

Scrapes should have an open character so tree and shrub planting as well as fencing should be kept to a minimum as it can deter open country birds.

TIR PRINCE: SKETCH SECTIONS



Grazing and Visitor Impact

The land around a pond is part of its catchment. Thus, the more intensively a catchment is managed, the more likely the pond is to be contaminated by pollutants. For this reason, the best land-use around a pond is usually non-intensive land such as un-fertilised grassland, heathland, bog, woodland or scrub. Interpretation can aid in helping the public to understand these pressures on the natural environment.

Light cattle grazing can diversify pond margins, but intensive grazing can cause significant environmental damage. However, if a pond is grazed by livestock or trampled by people, falling water levels will often expose a bare muddy or stony drawdown zone. The mixtures of bare ground and occasional plants here does provide an important habitat for a wide range of invertebrates.

Where pond margins are not grazed or trampled, the drawdown zone will often be dominated by tall rushes and sedges. These provide a habitat for terrestrial insects and birds that need dense cover. Leaf litter that accumulates at the base of tall plants is also an important habitat for many wetland insects.

TIR PRINCE: SKETCH VISUAL

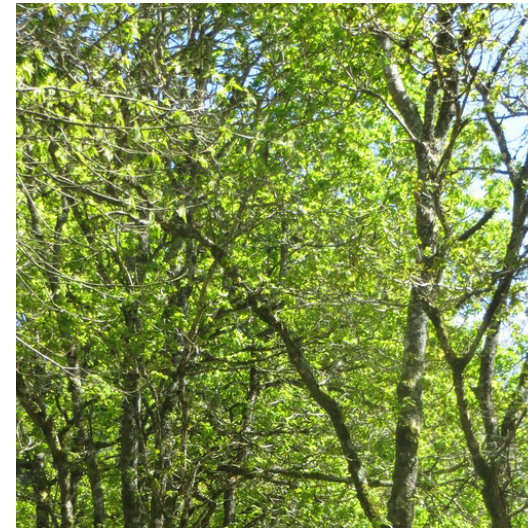


TIR PRINCE:

Species selected from Annex I habitats that are a primary reason and qualifying feature for selection as an SAC. All planting has been checked against the Botanical Society of Britain and Ireland's distribution mapping to check for naturally occurring presence of these species within Towyn.



Betula nigra



Quercus robur



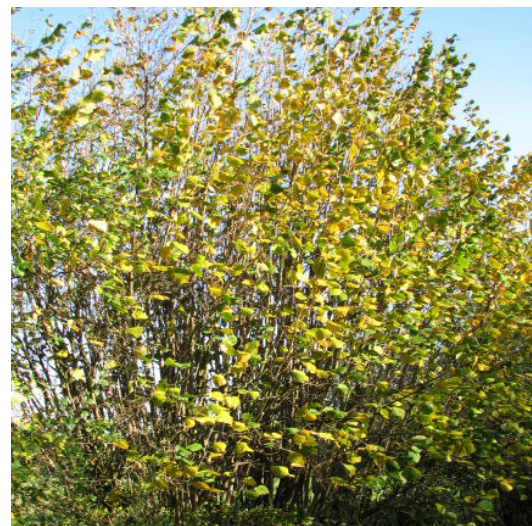
Corylus avellana



Crataegus monogyna



Salix alba



Corylus avellana



Quercus phellos



Carpinus betulus



Viburnum opulus



Salix caprea



Salix caprea

WOODLAND

Woodland to the southern and northern areas of the site, within these new woodland plan open habitat such as a series of rides and glades a variety of microclimates that which support diverse marginal vegetation and are likely to be of value to invertebrates and foraging bats. A combination of native and non native broadleaf species have been selected here for their tolerance in wet conditions and the potential for them to be coppiced to be controlled and managed at a relatively low cost.



Prunus spinosa

SPECIES RICH HEDGEROW

TIR PRINCE: WOODLAND AND MEADOW EDGES



Betula pubescens



Betula pendula



Dryopteris affinis



Angelica sylvestris



Leucanthemum vulgare



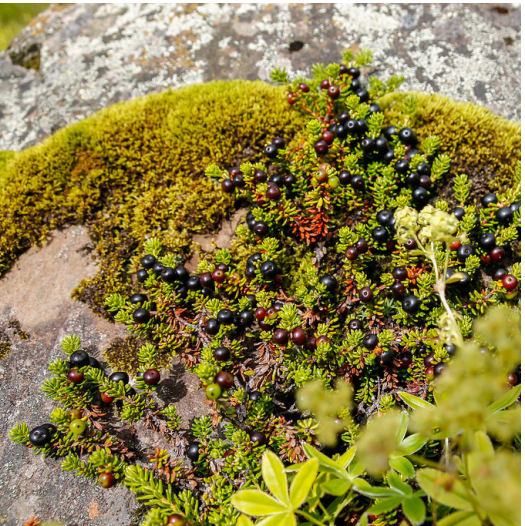
Dryopteris oreades



Hyacinthoides non-scripta



Anthoxanthum odoratum



Empetrum L. nigrum

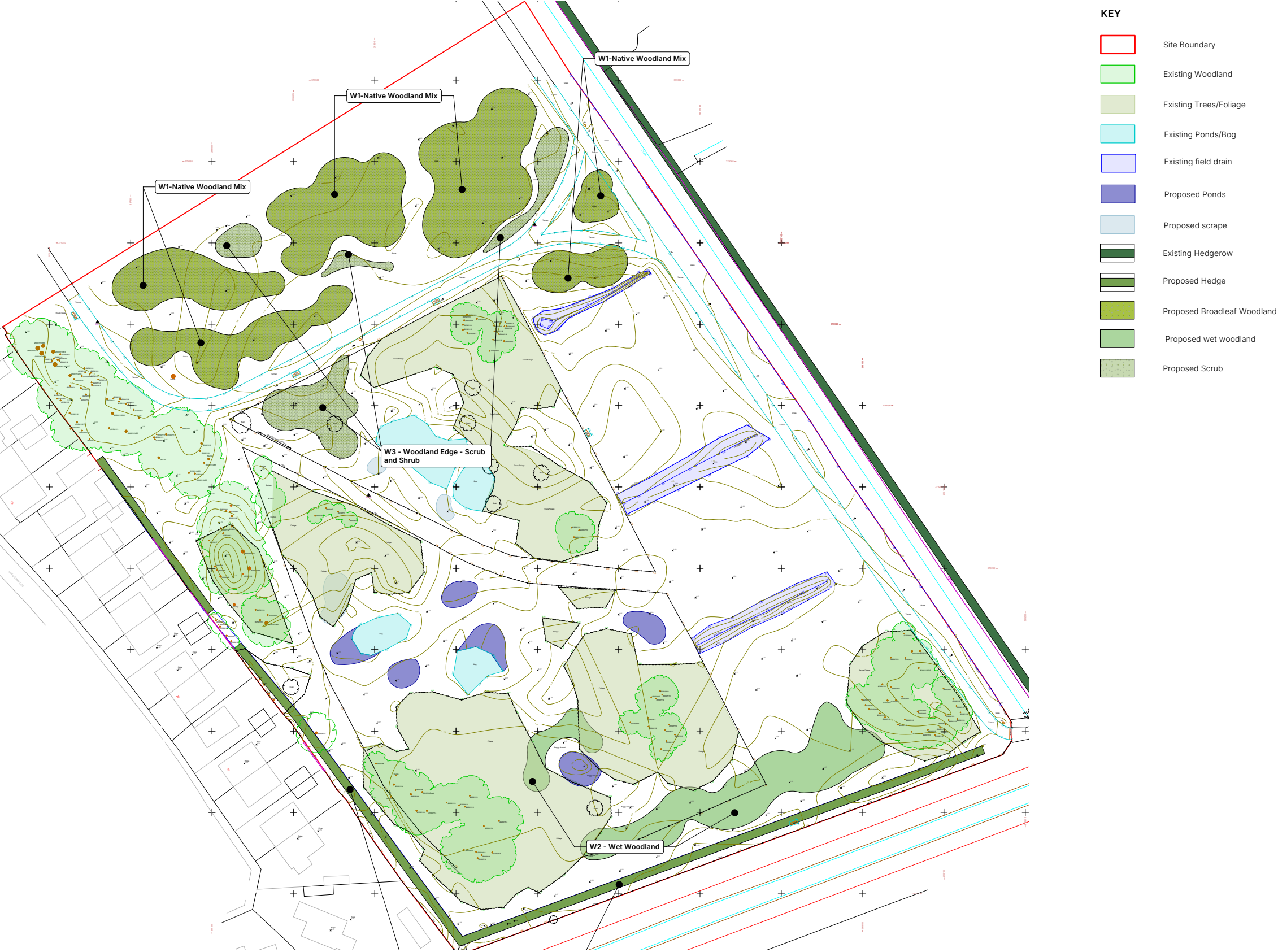
BIRCH WOODLAND EDGES AND SHADE

ACID GRASSLAND AND WILDFLOWERS



Agrostis capillaris - Common Bent

TIR PRINCE: CONCEPT PROPOSAL



TIR PRINCE: INDICATIVE PLANTING SCHEDULE

W1-Native Woodland Mix

Planting density guidance taken from woodland trusts woodland planting tree packs

Species	Specification	% Mix	Metres	Density per 2 metre sq	Total plants
QR - Quercus robur (Pendunculate Oak)	1+1 bare root, 80-100cm whip	20	266	2	532
TC- Tilia cordata (Small Leaved Lime)	1+1 bare root, 80-100cm whip	20	266	1	266
Bpub - Betula pubescens (Downy Birch)	1+1 bare root, 80-100cm whip	10	133	1	133
QRP - Quercus Phellos (Willow Oak)	1+1 bare root, 80-100cm whip	20	266	1	266
CB - Carpinus betulus (Common hornbeam)	1+1 bare root, 80-100cm whip	20	266	1	266
Bnig - Betula nigra (Black Birch)	1+1 bare root, 80-100cm whip	10	133	1	133
TOTAL	2660	100	1330		1596

W2-Wet Woodland Mix

Planting density guidance taken from woodland trusts woodland planting tree packs

Species	Specification	% Mix	Metres	Density per 2 metre sq	Total plants
AG - Alnus glutinosa (Alder)	300-350cm height, 10-12cm girth, RB	50	236.25	1	236.25
SA- Salix alba (White Willow)	300-350cm height, 10-12cm girth, RB	25	118.125	1	118.125
SC- Salix Caprea (Goat Willow)	300-350cm height, 10-12cm girth, RB	25	118.125	1	118.125
TOTAL	945	100	472.5		473

W3- Woodland Edge - Scrub and Shrub Mix

We would benefit from some ecological guidance on how densely to plant up the scub areas and associated maintenac

Species	Specification	% Mix	Metres	Density per metre sq	Total plants
Prunus spinosa (Blackthorn)	1+1 bare root, 40-60cm whip	20	114	2	228
Corylus avellana (Hazel)	1+1 bare root, 40-60cm whip	20	114	2	228
Crataegus monogyna (Comon Hawthorn)	1+1 bare root, 40-60cm whip	20	114	2	228
Acer Campestre (Field Maple)	1+1 bare root, 40-60cm whip	20	114	2	228
Viburnum opulus (guelder rose)	1+1 bare root, 40-60cm whip	20	114	2	228
Total m²:	571	100	571		1142

H1- Native Hedgerow with Trees - Species Rich Hedgerow Mix

To be planted in double staqgered row

Species	Specification	% Mix	Metres	Density per linear metre	Total plants
Crataegus laevigata (Common Hawthorn)	1+1 bare root, 40-60cm whip	20	55	6	329
Crataegus monogyna (Midland Hawthorn)	1+1 bare root, 40-60cm whip	20	55	6	329
Corylus avellana (Hazel)	1+1 bare root, 40-60cm whip	15	41	6	247
Acer Campestre (Field Maple)	1+1 bare root, 40-60cm whip	15	41	6	247
Prunus Spinosa (Blackthorn)	1+1 bare root, 40-60cm whip	15	41	6	247
Ilex Aquifolium (Holly)	1+1 bare root, 40-60cm whip	15	41	6	247
Total linear m:	274	100	274		1315



THANK YOU