

**Extended Preliminary Ecological Assessment
and
Statement on Biodiversity Net Gain
and Biodiversity Gain Plan and
Condition Assessments
(accompanies a Statutory Biodiversity Metric Calculation
Tool)**

**FOR TUBING EXPERIENCE PROJECT
ZIP WORLD
HEATON PARK
MANCHESTER**

BY

**DAVE BENTLEY ENTOMOLOGICAL AND ECOLOGICAL
SERVICES**

Additional contents in dark blue

1 INTRODUCTION

- 1.1 A sloping area of mature Broad-leaved Plantation Woodland [which is a Priority Habitat on Natural England's Priority habitat Inventory \(as is most mappable woodland\)](#) within the grounds and activity area of Zip World, Heaton Park, Manchester (SD 829 045) was surveyed to the CIEEM Guidelines for Preliminary Ecological Appraisals Second Edition 2017 and for Biodiversity Net Gain by Dave Bentley Entomology and Ecology Services on 3rd June 2024. This is an extended version of a PEA. [A PEA asks questions and the Extended PEA answers the questions](#). Zip World is in the woodland to the immediate south of Heaton Park Reservoir. The whole site is owned by Manchester City council and leased to Zip World.
- 1.2 The project is to create a tubing experience in this sloping area which is currently bisected by Zip World's circular ground walkway - in summary, a tubing experience consists of a ground-based netting upon which riders sit in a large inner-tube and ride a tubing slide to the bottom of the slope. It is suitable for all ages, but will be particularly attractive for children. The location has been identified to maximise the natural topography on the site and to minimise the impact on trees within the woodland. An image of a tubing experience is shown at the end of this report.
- 1.3 The project site starts immediately adjacent to Zip World's outdoor picnic tables and seating. 5m to the south of the project site beyond the site fence is a park footpath. 37m from the project site to the south east is the Heaton Park Waste Management facility. Woodland edge habitat will still occupy much of the project area after completion. A plan is supplied at the end of this report:
- 1.4 BNG User Guide: "Interpreting biodiversity metric tool outputs. The biodiversity metric compares the relative biodiversity worth of a site pre-intervention and post-intervention. The quality and reliability of outputs will depend on the quality of the inputs. You should use the biodiversity metric and its outputs along with ecological expertise to provide the evidence to inform plans and decisions." In other words one should not be a slave to the metric, as it is our servant. Some passages from The Statutory Biodiversity Metric User Guide July '24 are included at the end. These are the BNG metric calculations from the 06/03/2025 Metric completion (Version 1):

On-site baseline	0.96 Habitat Units
On-site post intervention	0.32 Habitat Units
On-site net change	-0.64 Habitat Units or -66.41 % net change
Deficit	0.73 Habitats Units (the important figure)

The applicant will purchase 0.73 Habitat Units from a Habitat Bank, and/or with agreement of the LPA implement a series of woodland improvements (such as Invasive Non-native Species eradication, improved habitat, bird and bat boxres, tree planting in applicable areas and improved woodland hedging) within their blue line land) enhancement works, until the Metric gives a balance in excess of the net gain requirements. The Habitat Units will need to replace the two lost trees with a suitable number to clear the tree deficit.

Whilst tubing projects are probably uncommon in BNG consideration, there have been many solar farms which are somewhat similar. The solar panels sit on posts and overhang grassland,

and in those projects there is the loss of habitat to the posts and the degradation or otherwise of habitat under the panels.

1.5 This is what will be created and this is what will be lost or degraded:

a) Measurements

The actual landtake of the proposal is 966.354 square metres, with 154 square metres of that being soil path that is being returned to woodland. This leaves a footprint of 812.345 square metres. All of the development will be elevated to some degree so that degraded woodland will continue below 521.374 square metres of slide and platform, and 266.725 square metres will be bare soil (most likely a mossy carpet). 24.255 square metres will be a permanent loss for support posts.

All of the measurements have been taken by the ecologist scaling from the Zipworld plan, using the plan measurements (i.e. as if the site was flat). The pdf was increased to 235% so that 1cm on the plan equalled 1m in reality. The lengths and widths were measured with a ruler. The number of the two types of posts was counted from the plan. In reality as this is a sloping site the on the ground measurements will be a little different.

b) Working area

The proposal will have minimal impact on the surrounding woodland as the project will be hand built using carry on tools, with no driven machinery. The aim is for disturbed working areas to be so minimally disturbed that woodland recovers immediately so that the slides can be as they are intended: a fun activity in woodland. Thus there will be no calculation of a temporary loss and a recovery provided. The woodland achieves a score of 30 out of 39 in the BNG Woodland Condition Assessment (see end of report) so it is at the high end of Moderate Condition.

c) Start platform

The start platform consists of an elevated platform, two steps and linking walkways between, so there will be degraded woodland floor beneath, thus:

Start platform	3.6m x 10m	= 36 square metres
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Steps and walkway	1.6m x 8.7m	= 13.92 square metres
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Joining walkway	0.5m x 2.1m	= 1.05 square metres
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Total start area		= 50.97 square metres
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This is supported by 27 posts x 0.165m diameter = 0.021 square metres each

= 0.567 square metres total size LOSS

The start platform therefore removes 0.567 square metres of woodland and degrades by covering the balance which is = 50.949 square metres DEGRADATION

d) Return platform

The return platform consists of a low-level platform and two storage areas, leaving bare soil beneath:

Return platform	9m x 4m	= 36 square metres
Smaller Storage	2.2m x 1.5m	= 3.3 square metres
Larger Storage	1.4m x 4.4m	= 6.16 square metres
Total return area		= 45.46 square metres
This is supported by 12 square posts of sides 0.3m		= 0.09 square metres each
		= 1.08 square metres total size LOSS

The Return platform therefore removes 3.6 square metres of woodland and changes to bare soil by covering the balance which is

		= 44.38 square metres BARE SOIL
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e) The three slides and landing platform

These are sloping but a plan measurement has been scaled from the plans. The slides are elevated 0.3 to 0.4m above the ground, so there will be degraded woodland floor beneath. Slide 3 north is 78.1m long by 2m wide = 156.2 square metres

Slide 2 middle 83.5m long by 2m wide = 167 square metres

Slide 1 south is 92.6m long by 2m wide = 185 square metres

Total slide area	= 508.20 square metres
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This is supported by 170 square posts of sides 0.3m = 0.09 square metres each

	= 15.3 square metres total size LOSS
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The three slides therefore remove 15.3 square metres of woodland and degrades by covering the balance which is

	= 492.9 square metres DEGRADATION
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Moderated figure due to landing platform	= 470.425 square metres DEGRADATION
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The **landing platform** is under the ends of the slides

This is supported by 18 posts x 0.165m diameter = 0.021 square metres each

	= 0.378 square metres total size LOSS
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The landing platform section, which is low to the ground, covering bare soil, has measurements of:

5m by 1.45m	= 7.25 square metres
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5m by 1.45m	= 7.25 square metres
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5.5m by 1.45m	= 7.975 square metres
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Total platform area	= 22.475 square metres = BARE SOIL
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Now given the above area lies beneath the ends of the slides we can moderate and remove this figure from the DEGRADATION figure. This is done above.

f) Mechanical lift

This is sloping but a plan measurement has been scaled from the plans. The lift is elevated above ground not exceeding 0.25m.

Main run is 86.6m long by 2m wide = 173.2 square metres

Link north is 11m long by 2m wide = 22 square metres

Link mid/south is 5.8m long by 2m wide = 11.6 square metres

Total mechanical lift area = 206.8 square metres

This is supported by 77 square posts of sides 0.3m = 0.09 square metres each

= 6.93 square metres total size LOSS

The mechanical lift therefore removes 6.93 square metres of woodland and changes to bare soil by covering the balance which is = 199.87 square metres BARE SOIL

g) Tree loss

One Sycamore was felled in advance of the project in 2023 height 12+m and a DBH of 36cm making this a Medium Tree. Sycamore is an archaeophyte species, BNG condition assessment Good (this is not an arboriculture term). LOSS

One Elder bush lying prone under the felled Sycamore has a DBH of 18cm a Small Tree. It would have a Good BNG condition assessment. LOSS

Another tree, an Ash, has been left as a monolith and is not a loss for BNG purposes.

h) Bare soil footpath

This is to be closed as it will be crossed by the slides and this will return 154 square metres of bare soil to woodland floor.

1.6 David Bentley conducted the survey. He has been in conservation since 1983 and has been a professional ecologist since 1993. Steven Higginbottom conducted the bird survey and is a mature, talented and lifelong bird recorder.

1.7 The CIEEM Guidelines are explicit in what is required to be assessed and provided:

- * A Habitat Survey Map.
- * A desk study. In this case the NBN Atlas and iRecord were consulted.
- * An assessment of the possible presence and likely importance of the following:
 - Plants
 - Fungi
 - Terrestrial and aquatic invertebrates
 - Fish (where relevant, based on an assessment of any watercourses and water bodies)

present);

- Amphibians (including both breeding and terrestrial habitat)
- Reptiles
- Breeding, wintering and migratory birds
- Bats (including potential roost sites, and foraging and commuting habitats/features)
- Other protected or priority mammal species, as relevant.
- * Mapping of any stands of non-native invasive plant species
- * Recording of any incidental sightings of priority or protected species, or field signs of such species.
- * Box 1 of the PEA Guidelines discusses Protected and Priority Species information and this is stated to include Protected and Section 41 Priority Species and Priority Habitats and also Red Data listed taxa and indeed Nationally Scarce taxa, as well as Birds of Conservation Concern Red and Amber listed taxa. The JNCC Taxon List names the plethora of higher plants, bryophytes, fungi and wild animals, including invertebrates that are considered scarce.

2 METHODS

- 2.1 The survey morning was early (from 6am) on 3rd June 2024. The site opened early to allow Dave Bentley Ecologist and Steven Higginbottom Birder appropriate access well before the public visitors appeared at Zip World. All equipment and PPE was cleaned beforehand to meet biosecurity needs.
- 2.2 There was a slight breeze, the morning was overcast but dry with no more than a few spots of rain. Sunrise 04.44am. Weather. Overcast, Perception 6am till 8am 0mm. 8am till 9am 0.10mm. Humidity 98%. Wind North westerly 7mph increasing to 9mph.
- 2.3 The project site was appraised and divided into vegetation stands. Plants were examined and noted to DAFOR rating. Trees and young saplings were examined. Moss and Fungus samples were collected for examination under a microscope.
- 2.4 The invertebrate assessment was extended to include the use of a canvas net bag which was swept throughout the vegetation, the samples being potted in alcohol and identified under the microscope. Some invertebrates were located by direct observation.
- 2.5 The wider site was examined within the boundary fence and also outside it where the tree top trail extends beyond the fence and over the brook which issues from nearby Heaton Park Reservoir.

3 DESK STUDY

- 3.1 The GMLRC SBI map was checked and it was confirmed this woodland is not a Site of Biological Importance. However [the wood is shown](#) on MAGIC Map and on Natural England's Priority Habitats Inventory online mapping system as Priority Habitat Inventory Deciduous Woodland. The brook from Heaton Park Reservoir runs 25m from the project site and watercourses are regarded as Priority Habitats.
- 3.2 A search of NBN Atlas and iRecord revealed no records for the site itself.
- 3.3 However in the locality **mammals** recorded in Heaton Park are Badger (Badgers Act), Hedgehog (Section 41, Red Data Vulnerable), Mole, Red Fox, Wood Mouse, Brown Rat, Shrew, Rabbit (alien naturalised) and Grey Squirrel (invasive alien).
- 3.4 IRecord has records of **amphibians** - Smooth Newt, Common Frog and Common Toad (Section 41 Priority Species). Dave Bentley surveyed Heaton Park Reservoir on 12/06/2004 and recorded ordinary Newt eggs, a Smooth Newt adult and Common Toad in the water. Dave Bentley surveyed all the watercourses and ponds in Heaton Park for GMEU (and Manchester CC) in 1998 and located Common Toad, Common Frog and Smooth Newt. Zip World staff have confirmed that Common Toad (Priority Species) has been found in terrestrial habitat within the perimeter fence.
- 3.5 The terrestrial/ woodland birds recorded (with their statuses) at Heaton Park are:
- iRecord:** Swift (Red), Jackdaw, Magpie, Carrion Crow, Jay, Woodpigeon (Amber), Collared Dove, Rock Dove, Sparrowhawk (Amber), Buzzard, Red Kite (Protected), Tawny Owl (Amber), Goldfinch, Chaffinch, Blue Tit, Great Tit, Coal Tit, Long-tailed Tit, Robin, Song Thrush (Section 41, Amber), Mistle Thrush (Red), Starling (Section 41, Red), Blackbird, Redwing (Protected, Amber), House Sparrow (Section 41, Red), Dunnock (Section 41, Amber), Wren (Amber), Tree Creeper, Pied Wagtail, Chiffchaff, Lesser Redpoll (Section 41, Red), Great Spotted Woodpecker,
- Additional species on NBN Atlas:** House Martin (Red), Sand Martin, Swallow, Red-rumped Swallow, Raven, Rook (Amber), Stock Dove (Amber), Harris' Hawk (alien), Kestrel (Amber), Bullfinch (Section 41, Amber), Greenfinch (Red), Brambling (Protected), Common Linnet (Section 41, Red), Common Redpoll (Red), Reed Bunting (Section 41, Amber), Yellowhammer (Section 41, Red), Siskin, Marsh Tit (Section 41, Red), Nuthatch, Tree Sparrow (Section 41, Red), Woodcock (Red), Kingfisher (Protected), Green Woodpecker, Lesser Spotted Woodpecker (Red), Blackcap, Garden Warbler, Willow Warbler (Amber), Goldcrest, Tree Pipit (Section 41, Red), Meadow Pipit (Amber), Rock Pipit, Grey Wagtail (Amber), White Wagtail (Vagrant), Yellow Wagtail (Section 41, Red), Skylark (Section 41, Red), Fieldfare (Protected, Red), Common Redstart (Amber), Whinchat (Red), Wheatear (Amber), Ring-necked Parakeet (alien).
- 3.5 There is no point listing the water and waterside birds found on NBN and iRecord that will not occur in this woodland habitat. Several of the above species are grassland /reedbed species so equally will not be found in woodland in Heaton Park.
- 3.6 BoCC 5 Red List are species with severe population/range declines. BoCC 5 Amber List are species with moderate population/range declines. [Section 41 refers to Priority Species.](#)

- 3.7 A variety of common garden butterflies and well-recorded insects are recorded.

4 RESULTS OF FIELD SURVEY

- 4.1 A Habitat Survey Map is appended below.
- 4.2 31 higher plant and 11 bryophyte species were recorded. All of the species are common in England and Greater Manchester. Five of the species are alien species and one of these, Himalayan Balsam, is a Schedule 9 Alien Invasive species. The species lists is given in the table below. The species lists are given below (D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare, V = Very, L = Locally):
- 4.3 The project area is currently bisected twice by a woodland path and thus three areas were studied for botany. The eastern highest portion, the middle and biggest portion, and the lower portion, also fairly sizeable.
- 4.4 **The Eastern Higher Section** will become sandwiched between the buildings and the tallest part of the tubing ramp, but may not otherwise be much affected:

Bramble	A
Wood Avens	O
Meadow Buttercup	R
Broad-leaved Willowherb	R
Cleavers	O
Creeping Buttercup	O
Herb Robert	LO
Nettle	O
Wavy Bittercress	VLO
Rough Meadowgrass	R
Smooth Meadowgrass	R
Himalayan Balsam (Alien)	O-F (actively being pulled by site staff)
Spanish Bluebell (Alien)	O
<i>Brachythecium rutabulum</i>	F
<i>Kindbergia praelonga</i>	F
Sycamore sapling (Alien)	1
Hawthorn sapling	1
Wild Cherry whip	1
Holly small bush	1
Elder small bush	1

Bordered by Ash trees, Beech trees, Sycamore and Hawthorn outside the proposal area.

- 4.5 **The Middle Section** is between the two sections of path and is shown on the plans to host the highest part of the tubing ramp as well as most of descending run of the experience.

Bramble	F
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Wood Avens	O
Creeping Buttercup	O
Meadow Buttercup	R
Broad Buckler Fern	O
Lady Fern	R
Soft Rush	R
Broad-leaved Willowherb	VLO
Short-fruited Willowherb	VLO
Nettle	F
Smooth Meadow-grass	R
Holly sapling	1
Hawthorn sapling	1
English Oak sapling	1
Sycamore sapling (Alien)	1
Norway Maple (Alien)	2
Elder (prone tree 18cm dbh)	1
Spanish Bluebell (Alien)	VO
Himalayan Balsam (Alien)	O-F ((actively being pulled by site staff)
<i>Brachythecium rutabulum</i>	F
<i>Kindbergia praelonga</i>	F

At the west end there is an area of impeded drainage just before the path [where is there is](#) a rich little habitat. There will be waterlogging in winter as this [is](#) the surface collection of water moving downslope. NB after the path the slope is dry with water moving through the soil rather than at the surface.

Creeping Buttercup	LF
Bittersweet	LO
Enchanter's Nightshade	LO

Bordered by Silver Birch trees, Ash trees, Beech trees, Sycamore and Hawthorn outside the proposal area.

- 4.6 **The Western Lower Section downslope of the path** the experience will end in a canopy to finish the experience, where parents can wait, with connecting paths. The existing path is of course being diverted into this new path system. Note the existing path is simply a soil path indicated with an informal natural log edge in places. There is a little waterlogging at the foot of the slope, on bare ground.

Enchanter's Nightshade	LA
Wood Avens	F
Rough Meadowgrass	LO
Lady Fern	R
Pendulous Sedge	LO
Meadow Buttercup	R
Soft Rush	O
Creeping Buttercup	O-F
Bramble	F
Broad-leaved Willowherb	R

Nettle	OLF
Spanish Bluebell (Alien)	O
Himalayan Balsam (Alien)	F
Hawthorn sapling	O
Grey Willow sapling	R
Snowberry (alien)	LF

There are mature Beech and Silver Birch in this area

- 4.7 **Bryophytes.** Tentative DAFOR given for all area. *Polytrichastrum formosum* vlf, *Atrichum undulatum* (ovlf), *Brachythecium rutabulum* (f), *Hypnum cf cupressiforme* (olf), *Kindbergia praelonga* (f), *Bryum capillare* (ovlf), *Mnium hornum* (vlf), *Dicranella heteromalla* (lo), *Lophocolea heterophylla* (ovlf), *Metzgeria furcata* (ovlf), *Pellia epiphylla* (vlf). [There will be others not noticed or in the canopy.](#)
- 4.8 A walk around the **rest of the fenced Zip World woodland** revealed other damp and open areas replete with Buttercups, some bare areas under shading Beech and a marshy seepage line north of the pedestrian gate to the stream area. Other plants located include Creeping Soft-grass, Ivy, Yellow Pimpernel, Field Horsetail, Great Willowherb, Rosebay Willowherb and native Bluebell. Note the Bluebell determinations in this survey were based on leaf width and number and arrangement of developing seed pods. Along the western boundary fence just inside the side grows a patch of Pale Willowherb – it grows in damp, shady places and is our regions least common Willowherb. In the south west corner of the site is another patch of Snowberry and that is an invasive alien, though not on the Schedule 9 list.
- 4.9 **Just outside the Zip World's southern boundary** next to the parkland path is a clearing of bramble and tall herb looking very much the same habitat as the one in the project site.
- 4.10 **Fungi:** The best survey period for woodland fungi is the autumn so this cannot be a complete list. However the following common species were recorded on logs and stumps Turkey Tails *Trametes versicolor*, Bleeding Oak Crust *Stereum gausaptum*, Artist's Bracket or similar *Ganoderma sp* and King Aldred's Cakes *Daldinia concentrica*. Dog Vomit Slime Mould *Fuligo septica* was found just outside the boundary fence on a large stump by the stream. Bootlace of Honey Fungus *Armillaria mellea* found on dead log. The site staff report Chicken of the Woods *Laetiporus sulphureus*. This area of the fenced site contains more logs than the other areas given it is a clearing in the wood.
- 4.11 **Invertebrates:** This was a very short sweep net session but it shows we have a damp woodland clearing and fallen trees habitat invertebrate community in this damp woodland clearing with fallen trees. The following were recorded:

Molluscs: Slugs *Arion rufus*, *Arion subfuscus*, *Arion fasciatus*, Smooth Glass Snail *Aegopinella nitidula*.

Bugs: *Philaenus spumarius* Common "Frogspit" Froghopper, the Creeping Buttercup Leafhopper *Eupteryx vittata* (3rd Greater Manchester record - found on a wide range of flowering plants, often in meadows and open woods, including Buttercup, Ground-ivy, Mint and Plantains. Prefers damp conditions – Naturespot), *Anthocoris nemorum* common Two-

spotted Flower Bug, *Stenodoma calcarata* and Fern Bugs *Monalocoris filicis* and *Bryocoris pteridis*. *Grypocoris stysi* lives in woods on Nettles and umbellifers. A yellow Mirid nymph unknown also found.

Beetles: *Cantharis nigricans* a common Soldier Beetle of Hedges, wood edge and flower meadows, liking umbellifers. *Hydrothassa marginella* the fairly Common Yellow-edged Creeping Buttercup Beetle, Raspberry Beetle *Byturus tomentosus* a fairly common beetle of Raspberries and Blackberries, and *Byturus ochraceus* a beetle strongly associated with Wood Avens Beetle whose known range in the NW does not extend much further north than Manchester. The last three beetles were all found on flowering Creeping Buttercup. The common Rove Beetle *Stenus impressus* was found – its habitats include woods and marshes. The common Black & Red Click Beetle *Athous haemorrhoidalis* lives in hedges, tall herbs and meadows so favours this clearing habitat. The smaller Click Beetle *Agriotes pallidulus* lives in grassland with trees and shrubs, again a wood edge/clearing dweller. The common weevil *Leiosoma deflexum* resembles a tiny Blackberry fruit but lives on Buttercups. The common weevil *Strophosoma melanogrammum* and is associated with Oak and Hazel fruit and the ground layer. The common fungus beetle *Octotemnus glabriculus* seems attracted to both Turkey Tails and Chicken of the Woods.

Butterflies and Moths. It is not known which Butterfly species use this woodland clearing but there are likely to be several common species such as the Speckled Wood Butterfly and many moth species.

Sawfly caterpillars species unknown.

Centipedes, Millipedes, Woodlice *Tachypodoiulus niger*, Common Striped Woodlouse.

Spiders and Harvestmen *Enoplognatha ovata*, *Paidiscura pallens*, *Metellina menzei*, *Neriene peltata*, *Mitopus morio*.

Tinies: Springtail *Dicyrtomina ornata*, Large Nettle Weevil *Microlophium carnosum* and Mites *Galumnidae*.

True Flies –Scarce Pufftail Hoverfly *Sphegina verecunda*, a fly of damp woods probably needing fallen trees and wetland vegetation – there are just 9 NW England for the Scarce Pufftail with three Greater Manchester records, this record, one in Philips Park Prestwich and the other in Cotteril Clough by Manchester Airport and the Hoverfly is considered widespread but localised. Considering Hoverflies are the best recorded of flies this record is a notable one.

The common Craneflies noted were *Phylidorea ferruginea* (mostly a fly of ponds and ditches) and *Ormosia cf hederæ* (damaged sample - if correct likes damp woodlands).

The less well-studied flies area Picture-winged Flies *Opomyza germinationis*, *Lauxaniidae* *Meiosimyza rorida*, Long-legged Flies *Dolichopodidae*, the probably fairly common Dance Fly *Rhamphomyia nigripennis* (this is just the 3rd Greater Manchester record)(it seems to favour umbellifers in a variety of habitats), Lesser Dung Flies *Sphaeroceridae*, Grass Flies *Chloropidae*, Fungus Gnats *Sciaridae* and *Mycetophilidae* and *Chironomus* midges.

- 4.6 **Fish and amphibians:** there are no waterbodies on site and no amphibians were found under debris. However we know that Smooth Newt and Common Toads breed within Heaton Park Reservoir which lies 200m to the north. Common Toad, a Priority Species, has been found in the Zip World grounds by site staff. Whilst the stream from Heaton Park Reservoir runs nearby and watercourses are a Priority Habitat there is no need for any further ecological consideration in that respect in relation to this project.
- 4.7 **Reptiles:** Nothing seen under logs and the habitat structure is wrong. Reptiles (other than dumped Terrapins) are virtually unknown in Bury District and Heaton Park (and are unconfirmed where such vague records exist).
- 4.8 **Breeding, wintering and migratory birds:** List of birds recorded during the survey by Steven Higginbottom:
- Wren (Amber)** 3 territories 1 West, 1 Northeast and 1 in project site.
 - Robin** 3 Territories 1 Northwest, 1 South, 1 in project site with 2 Robins bringing food feeding young.
 - Great Tit** 2 foraging inside project site flying to and from South side and in rest of Zip World.
 - Blackcap** 3 territories 1 Northwest, 1 Northeast, 1 Southeast.
 - Jay** Feeding recently fledged North to Northwest just inside boundary fence and outside.
 - Mallards** (Amber) just outside North of boundary fence near Brook.
 - Tawny Owl** (Amber) just outside North boundary fence.
 - Woodpigeons** (Amber) in tree canopy.
 - Blackbirds** 1 North, 2 West feeding young just outside boundary fence. 3 birds foraging inside boundary fence.
 - Ringed-necked Parakeets** (alien) in tree canopy in and outside boundary fence.
 - Magpies** 4 West.
 - Goldcrest** 2 singing , 1 West 1 South.
 - Nuthatch** 1 West 1 Northeast.
 - Tree Creeper** 1 West 2 Northeast
 - Blue Tits** foraging in and around Zip World.
 - Carrion Crow** tree canopy.
 - Dunnock** (Section 41 Amber) foraging North
 - Chaffinch** 2 1 North 1 Northeast both singing.
 - Mistle Thrush** (Red) North
 - Stock Dove** (Amber) 2 in tree canopy.
 - Song Thrush** (Section 41 Amber) singing Northwest.

Summary of recorded bird interest

The shrub area (with prone dead tree trunks) in the tubing experience proposal site has Robins feeding young. Wren has it as part of its territory so potentially could have a nest in or near by. Wrens build several nests then the female chooses which one to use. Therefore there could be nests present but not used. Blue tit and Great Tit seen foraging in the shrub area as well as the rest of the area. The site may be too disturbed by Zip World activities to be of much value to nesting birds and this site is directly adjacent the picnic area.

4.9 **Bats:** There are no trees or structures in the project site that could be used by hibernating or roosting Bats, although large trees fringe the site and there is no intention to disturb these trees. The insects that rise above this site of an evening will be part of the local Bat population's feeding resource. The plot is part of the local feeding mosaic available to Bats.

4.10 **Mammals:** During the survey visit the presence of Badgers was ruled out as there were no signs within the fenced Zip World area. Grey Squirrels were seen. Rabbits were seen on the roadway outside and site staff confirmed they come in the fenced area. The fence is secure at the base and the only apparent openings are beneath the double entrance gate and the rear pedestrian gate. Mammals such as Fox and Hedgehog might slip in these areas.

The NBN Atlas records Hedgehogs in Heaton Park. **Hedgehogs are a Red Data Near Threatened Section 41 Priority Species** of Principal Importance and the Local Planning authority has a legal Biodiversity Duty to seek to conserve the species. Voles, Shrews, Wood Mouse and Brown Rat may occur.

When the fencing is replaced (part of a separate scheme) it is vital to include (e.g. in the gates) a gap small enough for mammals to squeeze in and out but to exclude the youths who vandalise the site.

4.11 **Himalayan Balsam is a Schedule 9 alien invasive** plant species which is being managed by site staff. It is throughout the project area and some has been pulled so cannot be mapped. Contractors working on the scheme need to have biosecurity precautions in place to ensure no Himalayan Balsam seeds leave the site, and no other invasive aliens arrive on dirty boots and machines.

4.12 **Spanish Bluebell** can hybridise with native Bluebell so it is best to dig out the bulbs and burn the plant and its seed pods. This will need repeating.

4.13 It is important to dig out and burn the **alien invasive Snowberry**. This will need repeating. [NB Snowberry is cited by Natural England in the BNG Condition Assessment Form notes as an invasive alien.](#)

5 DEVELOPMENT CONSTRAINTS

5.1 The site and Zip World woodland is UKhab W1f7 Other Lowland Mixed Deciduous Woodland. It is not a natural English woodland given the presence of Beech. It has already been identified by Natural England as a Priority Habitat and thus its conservation is required by the Local Authority as planning authority and site owner.

5.2 If the site is to be developed for the project then there needs to be a solution for Biodiversity Net Gain. This largely includes the loss and deterioration of the woodland clearing habitat, and also some more shaded woodland floor. There is a planned impact on one tree of "small size Good Condition" - a prone Elder tree pushed over by a falling large tree. [This second tree a Sycamore Medium Tree Good Condition was felled in advance for the project so has a BNG cost too.](#) Whilst a sort of degraded woodland floor habitat may continue to exist under the tubing experience slide and other structures netting we need to accept that the impact area

needs a BNG solution. The full BNG metric needs to be used as this is a Priority habitat. Some of this is discussed from 5.6 onwards.

- 5.3 A suitable planning condition needs to be applied in relation to clearing any of the vegetation on site or the logs and tree bases in respect of nesting birds. Birds do not just nest in trees and shrubs.
- 5.4 Clearing the site also poses a potential danger to Hedgehogs. Therefore a suitable search must be designed by an ecologist in order to ensure the site is cleared with full regards to the safety of Priority Species Hedgehogs (and amphibians including Priority Species Common Toad) immediately prior to or alongside the clearance outlined above.
- 5.5 There is no reason to remove any of the hand-scraped surface off site. The logs and tree bases, habitat for nesting birds, fungi and mosses, can be placed elsewhere on site (not in any flush, seepage area or buttercup hollow), preferably where there is sunlight reaching the woodland floor in the summer months. This may mean taking it to the northern part of the site. Ferns and sedges could be moved by spade and wheelbarrow.
- 5.6 In order to improve the condition of the woodland within the fenced area the following should be removed – Sycamore seedlings and young trees removed, Norway Maple saplings removed, Scots Pines saplings removed, Snowberry scrub removed and attacked until regrowth ceases, Spanish Bluebells removed and new plants appearing removed, Himalayan Balsam removed and similarly fought.
- 5.7 It may be appropriate to create a barrier of mixed native and thorny shrubs (not Blackthorn which suckers) inside the boundary fence once the new fencing from the other scheme is in place. [Given new hedges are not required to compensate for the loss of woodland then mixed woodland edges can perhaps be created.](#)
- 5.8 Planting [abundant](#) native woodland wildflowers which grow and flower before canopies open should improve the condition of this woodland.
- 5.9 Given there are seepage lines in the north of the site the diversity of the woodland habitat could be improved with the addition of a woodland pond.
- 5.10 At the far west of Zip World, beyond the barrier fence and stream but in the vicinity of the treetop trail there are alien Rhododendrons. An agreement should be sought to secure their removal (outside the bird breeding season).
- 5.11 The Pale Willowherb by the western boundary fence should be translocated out of danger from the fence renewal project so a safe damp, shady spot.
- 5.12 [Given the presence in site soil of the seeds of Himalayan Balsam and Spanish/Hybrid Bluebells staff and contractors need to be briefed about biosecurity.](#)

6 STATEMENT OF MITIGATION HIERARCHY, BIODIVERSITY NET GAIN AND BIODIVERSITY GAIN PLAN

6.1 The proposal is to develop a tubing experience in Priority Habitat Broad-leaved Plantation Woodland. The actual landtake of the proposal is 966.354 square metres, with 154 square metres of that being soil path that is being returned to woodland. This leaves a footprint of 812.345 square metres of Woodland being impacted. All of the development will be elevated to some degree so that degraded woodland will continue below 521.374 square metres of slide and platform, and 266.725 square metres will be bare soil (most likely a mossy carpet). 24.255 square metres will be a permanent loss for support posts. There has been the loss of one tree, a Sycamore, a Medium tree in Good Condition, and an Elder a Small Tree in Good Condition. The biodiversity is described above. There is a potential risk to protected nesting birds and Priority Species Hedgehogs and Priority Species Toad.

6.2 The GMCA document of Mitigation Hierarchy Feb 2024 states this is to 1) avoid 2) mitigate 3) compensate - plus avoid damaging connectivity, achieve net-gain and make appropriate provision of the habitats connected to the development:

6.3 It is not possible to avoid without scrapping the development. The project is in and under an existing woodland leisure facility.

6.4 To mitigate the impact on woodland ecology the LPA may condition what is set out in this Ecology Report.

6.5 To compensate we have BNG options. These are the BNG metric calculations from the 06/03/2025 Metric completion (Version 1):

On-site baseline	0.96 Habitat Units
On-site post intervention	0.32 Habitat Units
On-site net change	-0.64 Habitat Units or -66.41 % net change
Deficit	0.73 Habitats Units (the important figure)

6.6 **The applicant will purchase 0.73 Habitat Units from a Habitat Bank, and/or with agreement of the LPA implement a series of woodland improvements (such as Invasive Non-native Species eradication, improved habitat, bird and bat boxes, tree planting in applicable areas and improved woodland hedging) within their blue line land) enhancement works, until the Metric gives a balance in excess of the net gain requirements. The Habitat Units will need to replace the two lost trees with a suitable number to clear the tree deficit.**

6.7 This statement is in line with <https://www.gov.uk/guidance/biodiversity-net-gain>:
“The Biodiversity Gain Hierarchy and its effect for the purpose of the statutory framework for biodiversity net gain is set out in Articles 37A and 37D of the Town and Country Planning (Development Management Procedure) (England) Order 2015. This hierarchy (which does not apply to irreplaceable habitats) sets out a list of priority actions:

first, in relation to onsite habitats which have a medium, high and very high distinctiveness (a score of four or more according to the statutory biodiversity metric), the avoidance of adverse

then, in relation to all onsite habitats which are adversely affected by the development, the adverse effect should be compensated by prioritising in order, where possible, the enhancement of existing onsite habitats, creation of new onsite habitats, allocation of registered offsite gains and finally the purchase of biodiversity credits (THERE ARE NO OTHER HABITATS OTHER THEN WOODLAND, BUT WE WILL COMPENSATE ALL IMPACTS (SEE PARA 6.6)).

[illegible]

Habitats within the project (above)



Eastern Upper Section (above)



Eastern Upper Section (above)



Path dividing Eastern Upper Section and Middle Section, showing Middle Section (above)



Middle Section (above)



Middle Section, typical of this woodland clearing showing tree base and fallen trunks (above)



Path diving Western Lower Section and Middle Section (above)



Lower Western Section also showing one of two Snowberry patches centre rear (above).



Western Lower Section (North part) Bare ground below the shading canopy (above)



Western Lower Section from beyond the stream (showing Rhododendrons and Balsam (above))



The single tree, an Elder dbh 18cm, requiring removal (above)(Middle Section)



Pale Willowherb by boundary fence (above)

Condition Sheet: WOODLAND Habitat Type				
UK Habitat Classification (UKHab) Habitat Types				
Woodland and forest - Lowland beech and yew woodland Woodland and forest - Lowland mixed deciduous woodland Woodland and forest - Native pine woodlands Woodland and forest - Other coniferous woodland Woodland and forest - Other Scot's pine woodland Woodland and forest - Other woodland; broadleaved Woodland and forest - Other woodland; mixed Woodland and forest - Upland birchwoods Woodland and forest - Upland mixed ashwoods Woodland and forest - Upland oakwood Woodland and forest - Wet woodland				
Habitat Description				
Plantation Broad-leaved woodland				
ukhab – UK Habitat Classification	-	-	-	-
This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here:				
Woodland Wildlife Toolkit (sylva.org.uk)				-

IMPORTANT: This biodiversity metric woodland condition assessment must be used to assess woodland being input into the biodiversity metric. The outputs of this condition assessment are not equivalent to, nor are they comparable with the scores from the EWBG condition assessment, because the EWBG assessment has been adapted for the biodiversity metric, including the removal of EWBG Indicator 7 (Proportion of favourable land cover around woodland) and Indicator 14 (Size of woodland), and minor changes to other indicators.						
Condition Assessment Criteria						
Indicat		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicat or	Notes (such as justification)
A	Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	3	mature and saplings
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in less than 40% of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3	No grazing/ browsing
C	Invasive plant species	No invasive species ³ present in woodland.	<i>Rhododendron ponticum</i> <i>laurel</i> <i>Prunus laurocerasus</i> not present, and other invasive species ³ <10% cover.	<i>Rhododendron</i> or cherry laurel present, or other invasive species ³ ≥10% cover.	2	Snowberry and Sycamore with Norway Maple. Himalayan Balsam is pulled by the staff.
D	Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	3	Hawthorn, Wild Cherry, Holly, Elder, English Oak, Grey Willow, Beech, Ash, Birch
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	3	Mosly native Beech and Ash, though Beech not locally native
F	Open space with in woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	1	Overall woodland bigger than 10 hectares. Canopy largely complete.

G	Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 – 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	2	Large trees and young trees.
H	Tree health	Tree mortality 10% or less, no pests or diseases and no crown dieback ⁹ .	11% to 25% tree mortality and or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	3	It is managed so disease is reduced
I	Vegetation and ground flora	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	2	Not an ancient woodland but general woodland flora present
J	Woodland vertical structure	Three or more storeys across all survey plots, or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	2	Large and small
K	Veteran trees	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² Per hectare.	No veteran trees ¹² present in woodland.	1	Some mature beech but disregarded as this is a plantation.
L	Amount of deadwood	50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities ¹³ .	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	3	Lots of logs around
M	Woodland disturbance	No nutrient enrichment or damaged ground evident ¹⁴ .	Less than 1 hectare in total of nutrient enrichment across woodland area, and or less than 20% of woodland area has damaged ground ¹⁴ .	1 hectare or more of nutrient enrichment, and or 20% or more of woodland area has damaged ground ¹⁴ .	2	Some nettles which are a sign of enrichment
Total Score (out of a possible 39) 30						
Condition Assessment Result				Condition Assessment Score		Result Achieved
Total score >32 (33 to 39)				Good (3)		Moderate

Total score 26 to 32			Moderate (2)	
Total score <26 (13 to 25)			Poor (1)	
Suggested enhancement interventions to improve condition score				
Adding locally native trees and encouraging a more diverse age range. Removal of Snowberry, Norway Maple, Sycamore.				
Footnotes				
Footnotes below refer to the EWBG woodland condition assessment details: EWBG (No date). <i>Assessing your Woodland's Condition</i> [online]. Available from:				
Woodland Wildlife Toolkit (sylva.org.uk)				-
The woodland condition assessment survey methodology is outlined in the EWBG toolkit. However the criteria on this sheet are those specific to the Statutory Biodiversity Metric and must be used when assessing woodland condition.				
Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch <i>Betula</i> sp., cherry <i>Prunus</i> sp. or <i>Sorbus</i> sp.: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). For birch, cherry or <i>Sorbus</i> species; 0 - 20 years = Young; 21 - 60 years =Intermediate; >60 years = Old. A recognisable age-class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age-class' of young trees. Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed. Footnote 3 - See EWBG method INDICATOR 3 for more information. Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly. Check for the presence of all plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), particularly the following invasive non-native species: American skunk cabbage <i>Lysichiton americanus</i>; Himalayan balsam <i>Impatiens glandulifera</i>; Japanese knotweed <i>Reynoutria japonica</i>; cherry laurel <i>Prunus laurocerasus</i>; shallon <i>Gaultheria shallon</i>; snowberry <i>Symphoricarpos albus</i>; variegated yellow archangel <i>Lamium galeobdolon subsp. argentatum</i>; rhododendron <i>ponticum</i>; and tree-of-heaven <i>Ailanthus altissima</i>. Footnote 4 - See EWBG method INDICATOR 4 and Table 2 for more information. The number of different native tree or shrub species including young trees and shrubs. A list of commonly found native tree and shrub species is provided in Table 2. Not all species listed are native to all parts of the UK. Note a list of commonly found non-native tree species are also included and should be recorded if present. Footnote 5 - See EWBG method INDICATOR 5 and for more information. The abundance of native tree species in upper (>5 m) and understorey (up to 5 m) layers including young trees and shrubs.				

Footnote 6 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (for example, glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (for example, tarmac, buildings, rivers). Area is at least 10 m wide with less than 20% covered by shrubs or trees.

Footnote 7 – Given the increased ratio of edge habitat to woodland where the woodland is <10ha.

Footnote 8 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, but the regeneration indicator gathers additional information by considering regeneration potential - if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 9 - See EWBG method INDICATOR 9 for more information and Table 3 for a list of diseases and pests and their risk level.

Footnote 10 - See EWBG method INDICATOR 10 directing to NVC key for more information. The 'UKHab to NVC translation table' in the UK Habitat Classification resources may also be useful to assess this.

Footnote 11 – This criterion looks at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer. There might be no storeys where the woodland has been felled. See EWBG INDICATOR 11 for more information.

Footnote 12 - See EWBG method INDICATOR 12 for more information. See gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/612222/Keepers_of_time_-_ancient_and_native_woodland_and_trees_policy_in_England.pdf)

and:

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/612222/Keepers_of_time_-_ancient_and_native_woodland_and_trees_policy_in_England.pdf)

EWBG INDICATOR 12 is the relevant indicator.

Footnote 13 – See EWBG method INDICATOR 13 for more information. This includes logs, large dead branches on the forest floor and stumps (<1 m tall) >20 cm diameter at narrowest point and >50 cm long. Also includes standing dead trees (>1 m tall) and also deadwood on standing live trees. Diameter is measured at the narrowest point on the stem. Minimum diameter of 20 cm.

Footnote 14 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery, animal poaching or litter.

It is not possible to deal with Condition Assessments for a bare soil path, or Condition Assessments for the bare soil that will evolve below the low structures as the Condition Assessment sheets are not relevant. We have elected for Fairly Poor Condition as there will be woodland mosses and low ferns there in the future.

There are no Condition Assessments for degraded woodland under structures. The Woodland Condition Assessments only allow Good and Moderate (as present) and Poor, so we have to choose Poor Condition.