Preliminary Ecological Appraisal

Central Park, Plymouth

Plymouth City Council

May 2017

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Executive summary

Introduction and approach
EAD Ecology was commissioned by Plymouth City Council (PCC) to undertake a Preliminary Ecological Appraisal (PEA) of land at Central Park, Plymouth (approximate central OS Grid Ref: SX473562; refer to Figure 1). The purpose of the PEA is to identify potential ecological constraints and opportunities associated with development of the site, inform potential development options and determine the scope of further ecological work required to support a planning application for the Masterplan Phase 1 area. An understanding of the preliminary ecological baseline of the site was derived through desk study, review of publicly-available information on the park, and site survey.

Preliminary ecological baseline
There are no statutory designated sites within the site boundary. Three European designated sites are present within 10km of the site comprising two Special Areas of Conservation (SACs) and one Special Protection Area (SPA). Eighteen statutory designated sites including eight Local Nature Reserves (LNRs) and ten Sites of Special Scientific Interest (SSSIs) are present within 5km.

One non-statutory designated site, a Plymouth Biodiversity Network Site (BNS) encompasses the site, and a further 11 BNSs lie within 1km. BNSs are considered to be of value as wildlife stepping stones or corridors.

The site comprised a variety of habitats. The northern and western areas of the park were generally dominated by species-poor amenity grassland, allotments and poor semi-improved grassland which were considered to be of low (Sub-Parish) ecological value; mature trees of higher ecological value were also present throughout this area. The eastern part of the park was more diverse, and included habitats of moderate (Parish) ecological value such as semi-natural broadleaved woodland, semi-improved neutral grassland and standing water. Other habitats included artificial habitats such as buildings and hard standing of negligible intrinsic ecological value.

The habitats within the site provided suitable habitat for a range of protected and notable species, including plants, invertebrates, amphibians, reptiles, birds and bats. Key species in relation to the masterplan options are the likely presence of slow-worm (legally protected and Priority species) in suitable habitats across the site and the possible presence of roosting bats (all legally protected, some also Priority species) in mature trees and buildings. Other notable species previously recorded within the site include: brown hairstreak butterfly (Priority species); a range of birds, including Priority species such as song thrush, house sparrow, bullfinch and dunnock; and, hedgehog (Priority species).

Constraints and opportunities (Masterplan Phase 1 area only)
The proposals for the Masterplan Phase 1 area have not been fixed but it is understood that they may include new tennis courts and football pitch, an events field, extended skate park, new café and sports hub. No over-riding ecological constraints to development were identified. No adverse effects on any statutory or non-statutory designated sites of nature conservation value are considered likely. The habitats in the likely 'footprint' of development options were generally of low ecological value and dominated by species-poor amenity grassland. The key habitat constraints relate to mature oak trees present within the western and central parts of the Masterplan Phase 1 area and the remnant Devon bank hedgerow; these were considered to be of Parish value and the proposed layout should seek to retain them as far as possible (refer to Figure 3). Key species constraints are considered to be the likely presence of slow-worms and nesting birds, as well as potential presence of roosting bats in mature trees and the pavilion building.

It is likely that potential impacts to such species could be avoided or mitigated through retention of mature trees where possible and implementation of standard mitigation measures such as appropriate timing of works (nesting birds) and habitat manipulation/supervised habitat clearance (slow-worm).

Further survey would be required in relation to roosting bats; it is recommended that involves the inspection of trees to determine if they are suitable for bats and bat roost survey of the pavilion (including building inspection and emergence/re-entry surveys).

Development proposals for the site could be designed to deliver 'biodiversity gain' including making a positive contribution to the function of the Plymouth Biodiversity Network Site. Enhancement measures could include habitat creation/enhancement including native tree/shrub/hedgerow planting, pond creation, wildflower seeding into retained grassland and provision of bird and bat habitat onto buildings and/or trees.

1 Introduction, background and approach

1.1 Introduction

1.1.1 EAD Ecology was commissioned by Plymouth City Council (PCC) to undertake a Preliminary Ecological Appraisal (PEA) of land at Central Park, Plymouth (approximate central OS Grid Ref: SX473562; refer to Figure 1).

1.1.2 The purpose of the PEA is to identify potential ecological constraints and opportunities associated with development of the site, inform potential development options and determine the scope of further ecological work required to support a planning application for the Masterplan Phase 1 area (refer to Figure 3).

1.2 Legislation and planning policy

Wildlife legislation

1.2.1 The following wildlife legislation is relevant to the proposed development:

- Conservation of Habitats and Species Regulations 2010 (as amended).
- Wildlife and Countryside Act 1981 (WCA, as amended).
- Countryside and Rights of Way Act 2000.
- Natural Environment and Rural Communities Act 2006.
- Protection of Badgers Act 1992.
- Hedgerow Regulations 1997 (as amended).

1.2.2 A summary of wildlife legislation is provided in Appendix 1.

National planning policy

1.2.3 The National Planning Policy Framework (NPPF; 2012) includes the Government's policy on the protection of biodiversity through the planning system. A summary of the relevant paragraphs of the NPPF is provided in Appendix 2.

Local planning policy

1.2.4 Within the Plymouth Core Strategy (2006-2021) the following policies are of relevance:

- Policy CS18: Plymouth Green Space
- Policy CS19: Wildlife

1.2.5 Within the emerging Plymouth and South West Devon Joint Local Plan (pre-submission version, March 2017), the following policies are off relevance to this report:

- Policy DEV28: Protecting and enhancing biodiversity and geological conservation
- Policy DEV30: Trees, woodlands and hedgerows

1.2.6 The Central Park Area Action Plan 2006-2021 (adopted 2008) was also reviewed. The following policies are relevant to the site:

- Proposal CP01: The Life Centre
- Proposal CP04: Park Enhancements
- Proposal CP05: Peverell Park Road, Outland Road Corner
- Proposal CP06: Pennycomequick

1.2.7 A summary of the relevant Local Planning Policies is provided in Appendix 3.

1.3 Approach

Ecological baseline

1.3.1 An understanding of the preliminary ecological baseline of the site was derived through desk study and site survey.

Desk Study

1.3.2 Biodiversity information was requested for a study area of 1km radius around the site boundary (extended to 4km for previous records of bats) from Devon Biodiversity Records Centre (DBRC), Devon Bat Group and relevant websites. Information requested included the location and details of the following:

- Designated sites of nature conservation value (statutory and non-statutory; extended to 10km for sites with international designations and 5km for sites with national designations using www.magic.gov.uk);
- Previous records of protected and/or notable species, including Species of Principal Importance for the Conservation of Biodiversity in England ('Priority species').

1.3.3 Information was also obtained from the following websites:

- www.magic.gov.uk - Information on protected sites;
- http://jncc.defra.gov.uk – information on protected sites, Priority Habitats and Species;
- https://www.gov.uk/government/organisations/natural-england - information on protected sites and standing advice;
- http://www.centralparkplymouth.org.uk/57-2/ - Friends of Central Park website; and,
- https://www.plymouth.gov.uk/findpark/centralpark - information on Central Park, Plymouth.

1.3.4 The data search was undertaken in March 2017. Records older than Year 2000 have been discounted unless considered of particular relevance (and referred to as historical records).

Site Survey

1.3.5 An Extended Phase 1 Habitat survey of the site was undertaken on 16 March 2017. The survey followed guidelines published by JNCC (2010) and Institute of Environmental Assessment (1995) and identified the main habitat types on the site and the presence/potential presence of protected and notable species. The results of the survey were detailed on a Phase 1 Habitat plan, with target notes used to identify specific features of ecological interest; refer to Figure 2. A botanical species list was recorded, although no attempt was made to record every plant species on the site; refer to Appendix 4.

Survey limitations

The Extended Phase 1 Habitat survey was undertaken at a sub-optimal time of year for botanical survey, and some of the plant species present within the site would not have been evident. Nevertheless, this is not considered to have significantly constrained the preliminary assessment of the ecological value of the habitats present.

2 Preliminary ecological baseline

2.1 Designated sites of conservation value

European designated sites

2.1.1 Three European designated sites are present within 10km of the site boundary; these are Plymouth Sound and Estuaries Special Area of Conservation (SAC), South Dartmoor Woods SAC and Tamar Estuaries Special Protection Area (SPA). The closest to the site is Plymouth Sound and Estuaries SAC, which lies approximately 1.6km south of the site at its nearest point, and comprises a network of habitats such as sea inlets, saltmarsh, mudflats and tidal rivers.

Nationally designated sites

2.1.2 Eighteen statutory designated sites are present within 5km of the site, comprising eight Local Nature Reserves (LNRs) and ten Sites of Special Scientific Interest (SSSIs); refer to Appendix 5. The closest non-geological SSSI is Plymouth Sound shores and cliffs SSSI, designated in part for its shore communities.

Non-statutory designated sites

2.1.3 There are 12 Plymouth Biodiversity Network Sites (BNS) within 1km of the site; refer to Appendix 5. One BNS encompasses the site; Biodiversity Network Sites are areas of semi-natural habitat which are considered likely to make a significant contribution to the overall movement/dispersal of species within the local landscape as wildlife 'stepping stones' or corridors.

2.2 Habitats within the site boundary

2.2.1 The majority of the site comprised amenity and semi-improved grassland (including wildflower meadow) with scattered trees of varying ages (refer to Figure 2 for Phase 1 habitat plan and accompanying target notes). There was a small area of semi-natural broadleaved woodland in the north of the site and a larger strip along the eastern edge. There were also small areas of plantation broadleaved woodland and plantation coniferous woodland within the site. Dense and scattered scrub (native and non-native) and areas of tall ruderals were recorded throughout the site. Several old hedge banks were also present. Allotments were present in the north and south of the site and there were some areas of hardstanding, disturbed ground and occasional buildings. A pond was recorded in the east of the site.

Allotments

2.2.2 Several allotment areas were recorded in the east and south of the site [TN 5].

Amenity *grassland*

2.2.3 The most widely recorded habitat within the site was regularly-mown amenity grassland [e.g. TNs 17, 37] dominated by perennial rye-grass, with white clover, cock's-foot, daisy and creeping buttercup. There were scattered broadleaved and coniferous trees throughout these areas. These trees comprised native and non-native species of a variety of ages.

Buildings

2.2.4 There were a number of buildings within the site. These included small buildings with low-negligible bat roost potential [TN 19 & 41], to larger, older stone buildings (Including Pound House) with moderate bat roost potential [TN 2, 3 & 4]. A dilapidated pavilion was recorded to the south-west of the site [TN 48] and was judged to have high bat roost potential.

Dense scrub

2.2.5 Patches of dense scrub were found throughout the site. The dominant species varied between these patches and included bramble and buddleia.

Ephemeral short perennial

2.2.6 Two areas in the centre of the site comprised disturbed ground, which were colonised by ephemeral / short perennial species such as ribwort plantain, dandelion sp. and bittercress sp. with scattered scrub and tall ruderals [TN 23 & 35].

Hardstanding

2.2.7 A car park was recorded by Pound House to the north of the site. There were also two children's play areas and a skate-park, both of which comprised hardstanding. Many tarmac and concrete paths ran through the site.

Hedgerow (species-poor)

2.2.8 Several old species-poor hedgerows were present throughout the site. Many of these contained mature standards of pedunculate oak and ash. Typical woody species recorded included ash, oak, blackthorn and hawthorn. Typical ground flora included lords and ladies, hart's-tongue fern, wood sage and red campion. Hedgerow is a Priority Habitat.

2.2.9 Three other species-poor hedgerows were recorded in the centre of the site. These comprised trimmed planted beech and hawthorn with no associated ditch or bank.

Hedgerow (Species-rich)

2.2.10 Several old species-rich hedgerows were recorded throughout the site. Many contain mature oak and ash standards. Typical woody species included oak, ash, elm, blackthorn, hawthorn, holly and hazel. Typical ground flora included hart's-tongue fern, lords and ladies, wood sage, wood false-brome, soft shield-fern, hedge bedstraw and red campion.

Introduced scrub

2.2.11 Several small patches of introduced scrub were found throughout the site. These comprised trimmed decorative bushes.

Orchard

2.2.12 A newly-planted orchard [TN 50] was recorded in the south of the site. Species comprised apple, pear and cherry varieties. Traditional orchard is a Priority Habitat.

Plantation broadleaved woodland

2.2.13 A small stand of plantation broadleaved woodland occurred to the east of the site [TN 46]; this woodland was relatively young, being estimated as 10-15 years old. Species included oak, field maple, ash, silver birch and willow sp. The ground flora was rank grassland, dominated by cock's-foot with occasional tall ruderals and bramble.

Plantation coniferous woodland

2.2.14 An area of mature conifers was found to the east of the site; there was no understorey and ground flora was very limited.

Plantation mixed woodland

2.2.15 A small area of plantation mixed woodland was found to the north of the site [TN1]. This comprised ornamental species, both native and non-native of mixed ages.

Semi-improved neutral grassland

2.2.16 A field in the centre of the site comprised slightly rank species-poor semi-improved grassland with recently planted native and non-native trees ('Family Tree' area) [TN 28]. This area has been planted in the past with bluebell, crocus and primrose. (Information gathered from: Jeremy Sabel, Natural Infrastructure Office, Plymouth City Council; Information board on site; and Plymouth City Council Website).

2.2.17 Two fields on the site were classified as semi-improved neutral grassland [TN 22& 30]. These areas were more herb-rich and had been seeded within the last five years with a wildflower meadow mix. (Information gathered from: Jeremy Sabel, Natural Infrastructure Office, Plymouth City Council; Information board on site; and Plymouth City Council Website). Grasses recorded here included perennial rye-grass, cock's-foot, Yorkshire fog, common bent and meadow foxtail. Herb species included common knapweed, pignut, chive, oxeye daisy, yellow rattle, red clover, common sorrel and common cat's-ear. Lowland meadow is a Priority Habitat.

2.2.18 A small area of rank semi-improved neutral grassland was recorded to the south of the site [TN 52]. This area appeared to have been left un-managed for several years and was dominated by cock's-foot, with meadow foxtail, perennial rye-grass, hogweed, broadleaved dock, cut-leaved cranesbill, chive and common knapweed.

Semi-natural broadleaved woodland

2.2.19 This habitat occurred in the south of the site [TN 53]. This area comprised a fairly open canopy of ash, oak and sycamore. The dense, scrubby understorey contained elder, field maple, holly and hawthorn. The ground-flora included bluebell and primrose; the presence of bluebell suggests the woodland is long-established.

2.2.20 This habitat also occurred in the east of the site [TN 27, 42 and 44]. This comprised mature trees of oak and ash, with some planted species. Some areas were devoid of understorey and had minimal ground flora. Some areas [TN 44] had a more diverse understorey of blackthorn, hawthorn, holly, field maple and wayfaring tree. Ground flora included species indicative of long-established/ancient woodland including bluebell, ramsons and pignut. Also present was chive, wood avens, soft shield-fern, hart's-tongue fern and honeysuckle. Broadleaved woodland is a Priority Habitat.

Standing water

2.2.21 A small pond (approx. 15m diameter) was recorded in the east of the site [TN 20]. This was semi-shaded by trees and shrubs. Some marginal vegetation was present including yellow iris. Standing water is a Priority Habitat.

2.3 Surrounding habitats

2.3.1 The site was surrounded by urban development on all sides.

2.4 Protected and notable species

Plants

Desk Study

2.4.1 Numerous notable plant species have been recorded within the 1km study area:

- 1 Priority Species (Plymouth pear)
- 1 Endangered species (Plymouth Pear);
- 1 Red Data Book species (fragrant evening primrose);
- 1 Nationally Scarce species (chives);
- 1 Devon Priority species (primrose);
- 10 Devon Notable species; and,
- 2 Devon Rarity species (dwarf elder and Plymouth pear).

Site survey

2.4.2 Chives (National Scarce), Bluebell (legally protected against sale-only) and primrose (a Devon BAP species) were recorded within the site.

Invasive Plant Species

Desk study

2.4.3 There are several records of Japanese knotweed, one record of wall cotoneaster and one record of rhododendron ponticum from the study area. These invasive plants are all listed on Schedule 9 of the Wildlife and Countryside Act (1981) making them an offence to plant or cause to grow in the wild.

Site survey

2.4.4 A cotoneaster species was recorded on site [TN 42]

Invertebrates

Desk Study

2.4.5 The following invertebrate species have been recorded within the study area:

- 10 Priority moth species (August thorn, buff ermine, dot moth, galium carpet, knotgrass, mullein wave, rustic, shaded broad-bar, small square-spot, white ermine);
- Brown hairstreak butterfly (Priority species).
- 1 Red Data Book species (Bloxworth snout);
- 1 Devon BAP Priority Species (great green bush cricket);
- 1 Nationally Notable species (Jersey tiger).

Site survey

2.4.6 The site provides suitable habitat for a range of invertebrates, including brown hairstreak (Priority species) and some of the Priority moth species previously recorded from the study area. Key habitats were the semi-natural broadleaved woodland, remnant hedgebanks and mature native trees (for moth species) and areas of unmanaged blackthorn scrub and hedgebanks (brown hairstreak). The intensively managed amenity grassland that comprised the majority of the site was of low value to invertebrates.

Amphibians

Desk Study

2.4.7 The site lies within a Devon great crested newt consultation zone. These are 5km buffers around existing or historical (post 1970) great crested newt records. There are no records of this species within the study area.

2.4.8 Common toad (a Priority Species), common frog, palmate newt and smooth newt have been recorded within the study area. All amphibians are legally protected to varying degrees: refer to Appendix 1.

Site survey

2.4.9 The pond [TN 20] also provides potentially suitable breeding habitat for amphibians. Woodland, scrub and grassland within the site provide suitable terrestrial habitat for amphibians. Due to the isolation of the site and urban context the presence of great crested newt was considered unlikely.

Reptiles

Desk Study

2.4.10 Common lizard and slow worm (both Priority Species and legally protected) have been recorded within the study area.

Site survey

2.4.11 Habitats within the site, particularly allotments, woodland edge, hedgerows and tussocky grass, provide suitable habitat for reptiles, and the presence of slow worm is assumed.

Birds

Desk Study

2.4.12 Numerous notable bird species have been recorded in the study area; those considered potentially relevant to the site are listed in Table 2.1. All breeding birds, their nests, eggs and young are legally protected; species listed on Schedule 1 of the WCA 1981 (as amended) receive additional protection; refer to Appendix 1.

Table 2.1 Notable bird records from the 2km study area

Common Name	UK Protection	Status
Black Redstart	WCA 1	Red
Black-headed Gull		Amber
Common Bullfinch	NERC 41	UKBAP (P); Amber
Dunnock		UKBAP (P); Amber
Firecrest	WCA 1	
Herring Gull		UKBAP (P); Red
House Martin		Amber
House Sparrow	NERC 41	UKBAP (P); Red
Kestrel		Amber
Mallard		Amber
Meadow Pipit		Amber
Peregrine	WCA 1; Annex 1	
Red Kite	WCA 1, 9; Annex 1	

Common Name	UK Protection	Status
Redwing	WCA 1	Red
Song Thrush		UKBAP (P); Red
Starling		UKBAP (P); Red
Swift		Amber
Tawny Owl		Amber
Willow Warbler		Amber

2.4.13 In addition to the above species, the 'Friends of Central Park' website lists mistle thrush (Red-listed) and tree sparrow (Red-listed and a Priority Species) as occurring at the site.

Site survey

2.4.14 The site provided suitable habitat for a range of declining bird species of conservation concern, including bullfinch, dunnock, house sparrow, starling and song thrush (all Priority species). Trees, woodland, scrub and buildings within the site provided suitable nesting habitat. These habitats and grassland also provided suitable foraging habitat. The presence of any specially protected birds (i.e. Schedule 1) as breeding species was considered unlikely.

Hazel dormouse

Desk Study

2.4.15 There are no records of hazel dormouse within the site boundary or within the 1km study area.

Site survey

2.4.16 The woodland within the site was sub-optimal for dormouse, and was isolated from any other areas of suitable habitat for this species. As a result, dormouse is considered unlikely to be present within the site.

Badger

Desk Study

2.4.17 There are no records of badger within the site boundary or within the 1km study area.

Site survey

2.4.18 No evidence of badger was found during the survey. The site provides suitable foraging habitat for badgers and also suitable habitat for setts.

Bats

Desk Study

2.4.19 There is an historical (1991) record of an unidentified bat roost in Pounds House within the site boundary [TN2]; there are also a number of records of foraging common and soprano pipistrelle bats from within the site. Bat records from within the 4km study area (including those from DBRC and Devon Bat Group) include:

- Common pipistrelle, Nathusius' Pipistrelle, Daubenton's, serotine, unidentified pipistrelle species, long-eared species and unidentified bat species (all are legally protected);
- Brown long-eared, barbastelle, lesser horseshoe, noctule, Leisler's and soprano pipistrelle (all legally protected and Priority Species) and;
- Greater horseshoe bat (legally protected, Priority Species and Devon BAP Priority Species).

Site survey

2.4.20 Buildings and mature trees within the site provided potential roosting sites for bats. Buildings noted as having moderate or high potential to support roosting bats were TNs 2, 3, 4, 31, 41 and 48. The remaining buildings appeared to have low or negligible potential, although a detailed assessment of each building was not carried out. Grassland, hedgerows, woodland, and scrub provided suitable foraging and commuting habitat for bats. However, the value of the site for foraging and commuting bats is limited by the urban setting and it is likely that predominantly common bat species use the site.

Otter

Desk Study

2.4.21 There are no records of otter within the site boundary or within the 1km study area.

Site survey

2.4.22 There was no suitable habitat within the site for otter.

Water vole

Desk Study

2.4.23 There are no records of water vole within the site boundary or within the 1km study area.

Site survey

2.4.24 There was no suitable habitat within the site for water vole.

Other mammals

Desk Study

2.4.25 There are records of hedgehog within the 1km study area; hedgehog is a Priority Species.

Site survey

2.4.26 The site provided suitable habitat for hedgehog which is assumed to be present.

3 Conclusions and recommendations

3.1 Overview (entire park)

3.1.1 The majority of park comprised intensively managed amenity grassland of low (Sub-Parish) ecological value; key habitats within the site (Parish or District ecological value) were:

- Hedgerows – including old Devon hedgebanks likely to be remnants of the field patterns prior to creation of the park (Priority habitat).
- Mature trees.
- Semi-improved neutral grassland – whilst this was recently established, the more species-rich areas are likely to be analogous to the Priority habitat 'lowland meadow'.
- Semi-natural broadleaved woodland – including in some sections a ground-flora indicative of long-established/ancient woodland (Priority habitat).
- Standing water (pond) (Priority habitat).

3.2 Potential ecological constraints and opportunities (Masterplan phase 1 area only)

3.2.1 The proposals for the Masterplan Phase 1 area (refer to Figure 3) have not been fixed but it is understood that they are likely to comprise new tennis courts and football pitch, an events field, extended skate park, new café and sports hub. No over-riding ecological constraints to the development were identified. No adverse effects on any statutory or non-statutory designated sites of nature conservation value are considered likely.

3.2.2 The habitats in the likely 'footprint' of development options were generally of low ecological value and dominated by species-poor amenity grassland of low ecological value. The key habitat constraints relate to mature oak trees present within the western and central parts of the Masterplan Phase 1 area and remnant Devon hedgebanks; these habitats were considered to be of Parish value and the proposed layout should seek to retain these as far as possible.

3.2.3 The key species constraints to the development are:

- the likely presence of slow-worms within less intensively managed grassland, tall ruderal, ephemeral/short perennial and scrub;
- the likely presence of nesting birds in trees, hedgerows, scrub and buildings (during the nesting season); and,
- potential presence of roosting bats in buildings and trees.

3.2.4 It is likely that potential impacts to such species could be avoided or mitigated through retention of mature trees and implementation of standard mitigation measures such as appropriate timing of works (nesting birds) and habitat manipulation/supervised habitat clearance (slow-worm). Further survey would be required in relation to roosting bats; it is recommended that involves the inspection of trees to determine if they are suitable for roosting bats and bat roost survey of the pavilion (including building inspection and emergence/re-entry surveys) (refer to 3.3 below).

3.2.5 Although the site lies within a Devon great crested newt consultation zone, there are no records of this species within 1km; furthermore, the pond within the park is located approximately 400m to the northeast of the site, and no further ponds were identified within 500m of the site using ordnance survey mapping and aerial photography. Taking into account the results of English

Nature 2004), great crested newts are therefore considered unlikely to be found within the Masterplan phase 1 area.

3.2.6 Development proposals for the site could be designed to deliver 'biodiversity gain' including making a positive contribution to the Plymouth BNS that overlaps the site by enhancing its value as a 'stepping stone' for species movement and dispersal; enhancement measures could include habitat creation/enhancement including native tree/shrub/hedgerow planting, pond creation, wildflower seeding into retained grassland, provision of bird and bat habitat onto buildings and/or trees, and green roofs or living walls on new buildings.

3.2.7 Ecological constraints and opportunities are summarised in Figure 4.

3.3 Recommended further surveys and consultation

Further surveys

3.3.1 Depending on the precise nature of the development proposals, further surveys are likely to be required in relation to roosting bats. It is recommended that any mature trees that would be affected (directly or indirectly e.g. through proposed new lighting) are inspected by an ecologist to determine if they contain any features that are suitable for roosting bats; if so further survey would be required, potentially including dusk emergence and dawn re-entry surveys in accordance with BCT Guidance (BCT 2016). As initial observations of the pavilion building (which it is understood would be demolished) indicate that this structure has moderate bat roost potential, a building inspection and dusk emergence and dawn re-entry surveys are recommended to confirm if a roost is present.

3.3.2 Given the likely nature of development proposals and likely implementation of mitigation measures, bat activity and reptile surveys are considered unlikely to be required.

3.3.3 Table 3.1 provides the recommended scope and timetable for the further (Phase 2) ecological surveys.

Table 3.1: Recommended Phase 2 ecological surveys

Survey	Scope / Methodology	Survey period
Bat roost survey of trees and buildings	Ground level assessment of any trees which could be directly or indirectly affected (e.g. by lighting) and inspection of pavilion building to establish potential to support roosting bats. Further survey of suitable trees which would be affected by the proposed development (directly or indirectly).	Ground level assessment anytime; further survey (dusk emergence; dawn re-entry) May-Sep.
Dusk and dawn emergence/re-entry survey of the pavilion Building	Initial observations of the pavilion building indicate that it has moderate[1] potential to support roosting bats. Thus, an internal and external inspection and one dusk emergence and a separate dawn re-entry survey should be undertaken to establish presence/likely absence of a roost[2]. If a roost was identified it is likely that further surveys would be required to confirm its status.	May-September with at least one survey between May and August

Bat roost potential grading[1] and recommended survey effort[2] in accordance with BCT (2016) guidance.

3.3.1 The above survey information would provide a complete ecological baseline for the site, against which the ecological impacts of the proposed development could be assessed. It is recommended that an Ecological Mitigation and Enhancement Strategy (EMES) be prepared to support any future planning application(s) for the site, in line with Plymouth City Council validation requirements; this should be carried out in accordance with CIEEM Guidelines (2016) and BS 42020.

3.3.2 A Construction Ecological Management Plan (CEcoMP) and Landscape and Ecological Management Plan (LEMP) could also be produced to demonstrate clearly how habitat and species mitigation and enhancement measures would be delivered during construction and operational phases respectively. These documents would either be included with the planning application or produced subsequently to satisfy relevant planning conditions.

Consultation

3.3.3 The proposed scope of the surveys and assessment would be agreed with Plymouth City Council and Natural England. Further consultation may also be required with the above parties to discuss any habitat and/or species-specific mitigation strategies during the development of the Masterplan.

4 References

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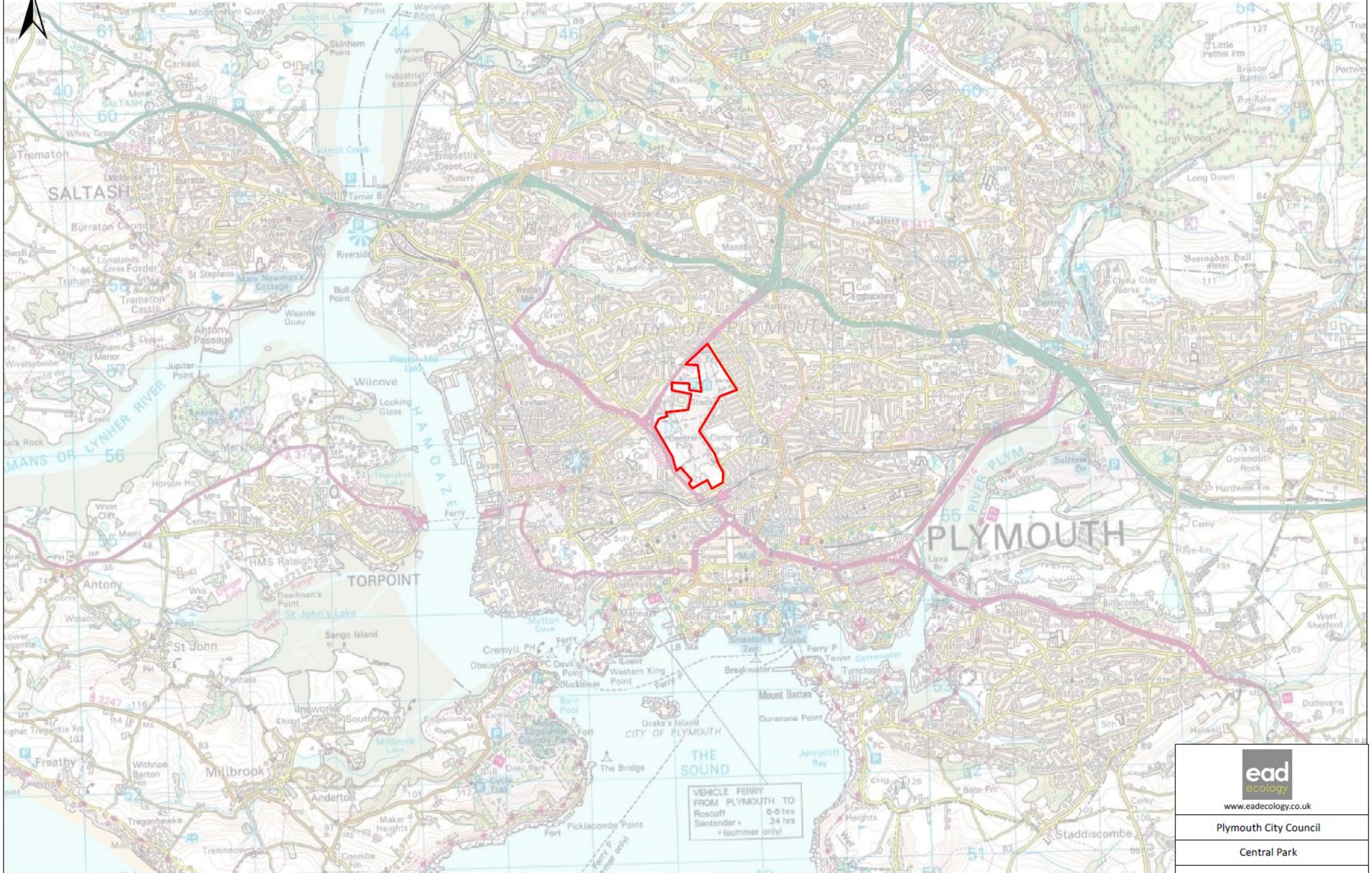
http://jncc.defra.gov.uk (Joint Nature Conservation Committee)

Figure 1: Site location plan

N



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www.eadecology.co.uk

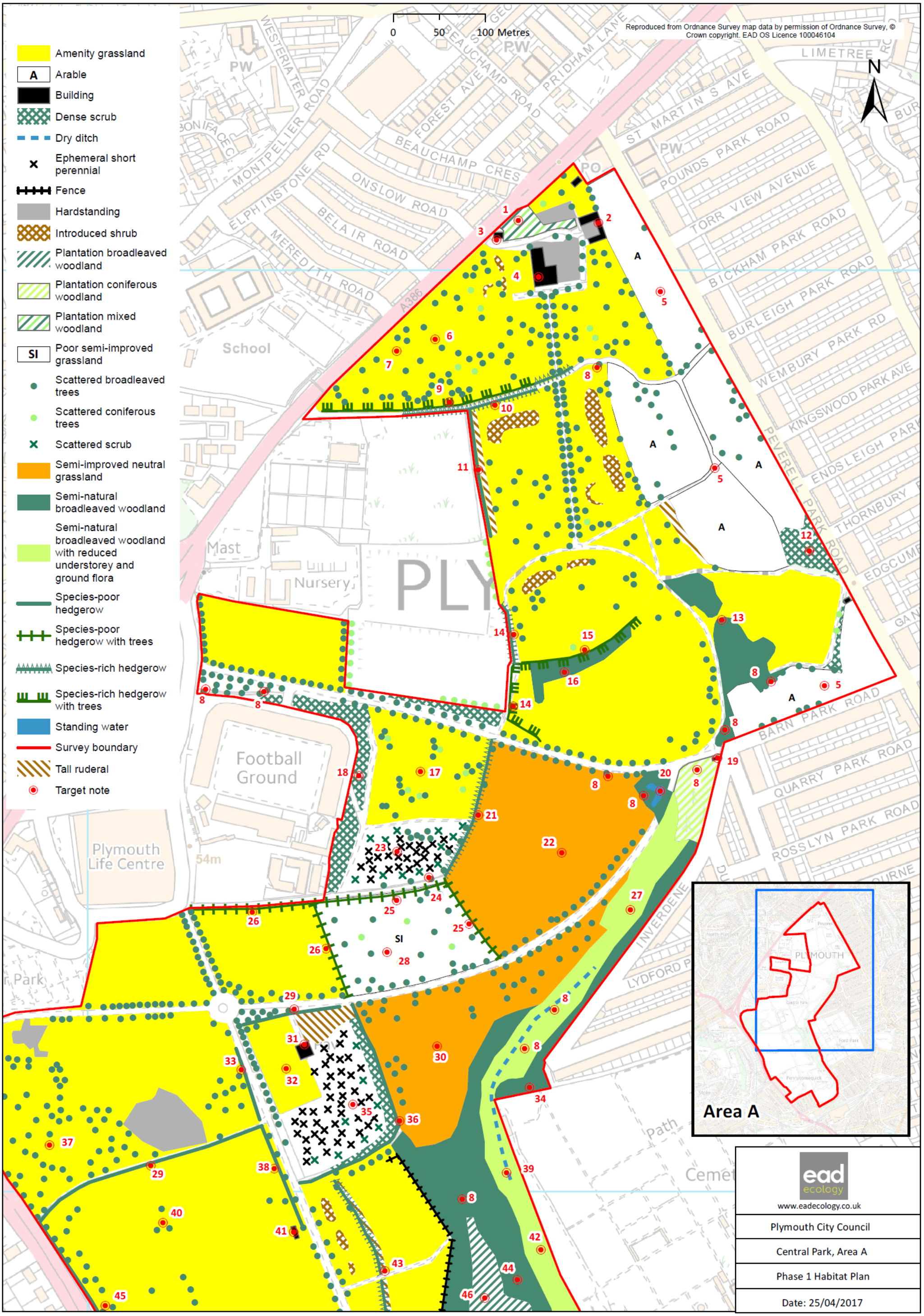
Plymouth City Council

Central Park

Site Location Plan

Date: 25/05/2017

Figure 2: Phase 1 habitat plan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Dry ditch
Ephemeral short perennial
Fence
Hardstanding
Introduced shrub
Plantation broadleaved woodland
Plantation coniferous woodland
Plantation mixed woodland
SI Poor semi-improved grassland
Scattered broadleaved trees
Scattered coniferous trees
Scattered scrub
Semi-improved neutral grassland
Semi-natural broadleaved woodland
Semi-natural broadleaved woodland with reduced understorey and ground flora
Species-poor hedgerow
Species-poor hedgerow with trees
Species-rich hedgerow
Species-rich hedgerow with trees
Standing water
Survey boundary
Tall ruderal
Target note
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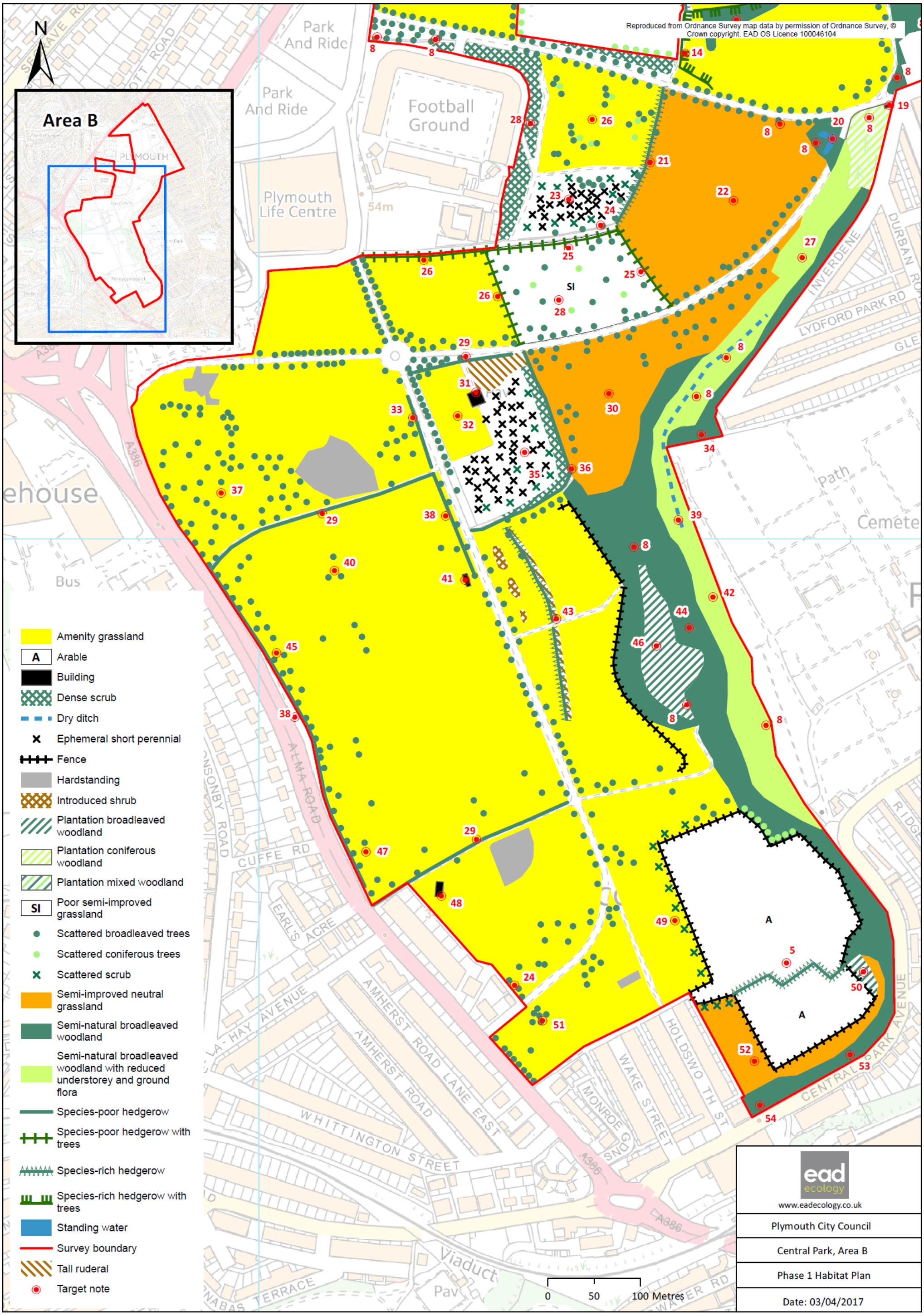
Area A
www.eadecology.co.uk
Plymouth City Council
Central Park, Area A
Phase 1 Habitat Plan
Date: 25/04/2017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Area B
PLYMOUTH
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Park And Ride
Park And Ride
Football Ground
Plymouth Life Centre
54m
SI
A
A386
ALMA ROAD
CUFFE RD
ANSONBY ROAD
EARL'S ACRE
LA-HAY AVENUE
AMHERST ROAD
AMHERST ROAD LANE EAST
WHITTINGTON STREET
MONROE GDNS
WAKE STREET
HOLDSWORTH ST
CENTRAL PARK AVENUE
LYDFORD PARK RD
INVERDENE
DURBAN RD
Path
Cemete
Viaduct
Amenity grassland
Arable
Building
Dense scrub
Dry ditch
Ephemeral short perennial
Fence
Hardstanding
Introduced shrub
Plantation broadleaved woodland
Plantation coniferous woodland
Plantation mixed woodland
Poor semi-improved grassland
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Semi-natural broadleaved woodland with reduced understorey and ground flora
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Species-poor hedgerow with trees
Species-rich hedgerow
Species-rich hedgerow with trees
Standing water
Survey boundary
Tall ruderal
Target note
0
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100 Metres
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Plymouth City Council
Central Park, Area B
Phase 1 Habitat Plan
Date: 03/04/2017

Target note number	Description
1	Planted mature ornamental trees, including native and non-native species.
2	Building, with bat-roost potential. Historical record of unidentified bat roost present.
3	House, moderate bat-roost potential.
4	Large residential property in generally good condition, moderate bat-roost potential.
5	Allotment gardens. Provide suitable reptile habitat.
6	Large dead tree, low-moderate bat potential.
7	Bank of rank grassland which included black knapweed found. Low reptile potential.
8	Mature oak with moderate bat-roost potential.
9	Old species-rich hedgerow with trees on hedge bank. Woody species included elder, hawthorn, blackthorn, oak, ash and holly. Ground flora included hart's-tongue fern, lords and ladies, wood false-brome and common polypody. Potential breeding habitat for brown hairstreak butterfly. Approximately 40m of newly-planted hedgerow present at eastern end.
10	Old species-rich hedgerow on hedge bank. Woody species included ash, oak, elder, hawthorn and blackthorn. Ground flora included lords-and ladies, wood sage, wood false-brome, hart's-tongue fern and soft shield-fern. Potential breeding habitat for brown hairstreak butterfly.
11	Large species-poor hedgerow on hedge bank with oak, elder, elm, hawthorn and sweet chestnut present. Ground flora included lords and ladies, soft shield-fern, hart's-tongue fern and red campion. Potential breeding habitat for brown hairstreak butterfly.
12	Small stand of semi-natural broadleaved woodland with a canopy of oak, willow and elder. Very dense/ scrubby understorey of buddleia, willow and elder. The ground flora was dominated by ivy, with bramble, nettle and lords-and-ladies. No ancient woodland indicators recorded.
13	Small area of semi-natural broadleaved woodland. Canopy dominated by oak, sycamore and willow with moderate bat-roost potential. The understorey included hawthorn, elder, elm and field maple, with the ground flora containing hart's-tongue fern, ivy, lords-and-ladies, wood false-brome, perforate St-john's wort and dog-rose. No ancient woodland indicators recorded.

	
14	Old species-rich hedgerow on hedge bank with mature oak and ash standards. Woody species included oak, ash, hazel, elder, holly, hawthorn and blackthorn. Ground flora included hart's-tongue fern, soft shield-fern, lords and ladies and wood false-brome. Potential breeding habitat for brown hairstreak butterfly.
15	Old species-rich hedgebank with beech, elder, hawthorn, blackthorn, elm and ash. Ground flora included wood sage, lords and ladies and wood false-brome. Potential breeding habitat for brown hairstreak butterfly.
16	Thin strip of remnant semi-natural broadleaved woodland with dominant sycamore with occasional oak and alder. Understorey contained hawthorn, elder and field maple. Ground-flora included locally abundant ivy and bramble with frequent lords-and-ladies and occasional hart's-tongue fern. Bordered by tall ruderals and some bramble scrub. No ancient woodland indicators recorded.
17	Amenity grassland with planted mature non-native trees and poplar species. Mature oak at eastern edge.

	
18	Dense buddleia scrub
19	Small building. Negligible bat-roost potential.
20	Pond measuring approximately 15m across. Semi-shaded by trees and shrubs. Some marginal vegetation including yellow iris. Good water quality. Suitable amphibian habitat.
21	Old species-rich hedgerow on hedge bank with mature ash and oak standards. Woody species included ash, elder, hazel, hawthorn, blackthorn, oak and holly. Ground flora includes hart's-tongue fern, lords and ladies and red campion. Potential breeding habitat for brown hairstreak butterfly.
22	Area of semi-improved neutral grassland. Species included abundant creeping buttercup and red clover, with frequent common bent, cock's-foot and ribwort plantain, occasional Yorkshire fog and perennial rye-grass. Common knapweed, yellow-rattle and cut-leaved cranesbill are locally frequent.

	
23	Disturbed ground re-colonised by ephemeral short perennial species and buddleia. Bordered by dense scrub with occasional immature broadleaves. 
24	Ash with moderate bat-roost potential.
25	Old species-poor hedgerow on hedge bank with mature ash standards. Woody species included elm, hawthorn, blackthorn and ash. Ground flora included lords and ladies, hart's-tongue fern, polypody and wood sage. Potential breeding habitat for brown hairstreak butterfly.

26	Old species-poor hedgerow on hedge bank with mature ash and oak standards. Woody species included ash, elder, blackthorn, and hawthorn. Ground flora included wood sage, wood false-brome, greater stitchwort, lords and ladies and hart's-tongue fern. Potential breeding habitat for brown hairstreak butterfly.
27	Semi-natural broadleaved woodland. Similar to target note 15 but with more introduced tree species and fewer mature trees. Very open / no understorey. Many of the trees had bat and bird boxes. 
28	'Family Tree' area. Species-poor semi-improved grassland with newly-planted mixed native and non-native trees. Suitable reptile habitat.
29	Species-poor planted hawthorn and beech hedge. Heavily managed with no associated ditch or bank.

	
30	Semi-improved neutral grassland. Appeared to be dominated by grasses with abundant cock's-foot and frequent perennial rye-grass, and Yorkshire fog. Broadleaved herb species included abundant creeping buttercup with locally frequent common knapweed, red clover, white clover, pignut, oxeye daisy and yellow-rattle. N.B. Other herbs are known to be seeded here (including field scabious, kidney vetch and viper's bugloss) but were not recorded as the survey was carried out before these species were visible. 

31	Pavilion, moderate bat-roost potential. 
32	Bowling green. Amenity grassland surrounded by ornamental non-native shrub.
33	Old species-poor hedgerow and associated hedge bank. Woody species included blackthorn, elm, hazel and ash. Ground flora included lords and ladies, lesser celandine, wood false-brome, hedge bedstraw and red campion. Potential breeding habitat for brown hairstreak butterfly. 

34	Mature sycamore with moderate-high bat-roost potential.
35	Area of disturbed ground colonised with grasses and ephemeral short perennial species. A small area of tall ruderal was present to the north, with dense bramble/ buddleia scrub to the east and south. Suitable reptile habitat. 
36	Old species-poor hedgerow and associated hedge bank with mature ash standard. Woody species included elder, elm, ash, blackthorn and hawthorn. Ground flora included lords and ladies, shiny-leaved cranesbill, wood false-brome, polypody and red campion. Potential breeding habitat for brown hairstreak butterfly.
37	Amenity grassland with scattered broadleaved trees (no understorey). Several mature oaks with moderate bat-roots potential. Bird boxes on some of the trees.

	
38	Planted non-native hedge.
39	Dry ditch ending in area of bare earth and disturbed ground with minimal vegetation including hemlock water-dropwort and yellow flag iris evident at the time of survey. 
40	Mature oak with dense ivy, moderate bat-roost potential.
41	Pitch and Putt kiosk. Modern building with negligible bat-roost potential.
42	Area of semi-natural broadleaved woodland similar to target note 15 but with little / no understorey and reduced woodland ground flora. Canopy dominated by oak and

	ash, some mature and with moderate bat-roost potential. No ancient woodland indicator species recorded. Cotoneaster species recorded. 
43	Old species-rich hedgerow on associated hedge bank with mature ash and oak standards. Woody species included oak, elm, blackthorn, hawthorn, elder, cherry sp., ash, willow and dog-rose. Ground flora included hart's-tongue fern, lords and ladies, hedge bedstraw. Potential breeding habitat for brown hairstreak butterfly.
44	Semi-natural broadleaved woodland with some planting. Occasional non-native species including rhododendron and cotoneaster species. The steeper sections of ground comprised a more dense and diverse understorey including blackthorn, hawthorn, holly, wayfaring tree, bramble and field maple. Ground- flora included chive, wood avens, soft shield-fern, harts-tongue fern and honeysuckle. Long-established/ ancient woodland indicator species included locally frequent bluebell, ramson's and pignut.

	
45	Mature broadleaf tree with dense ivy, moderate bat-roost potential.
46	Area of planted broadleaved trees approximately 10 years old. Species include oak, ash, silver birch, field maple and willow.
47	Mature ash with old wound located at 4m height on trunk. Moderate bat-roost potential.
48	Dilapidated pavilion, high bat-roost potential. 
49	Fence with bramble scrub and newly-planted blackthorn and hawthorn shrubs, bordering allotments. Suitable reptile habitat.

50	Central Park community orchard, newly planted (apples, pears and cherries)
51	Broadleaf tree with large wound on trunk, high bat-roost potential.
52	Rank grassland with areas of bramble scrub on southern edge. Suitable reptile habitat. 
53	Strip of semi-natural broadleaved woodland with fairly open canopy containing ash, oak and sycamore. The dense scrubby understorey contained elder, field maple, holly and hawthorn with bramble being locally dominant. The ground flora contained bluebell, which is indicative of long-established woodland. The area graded into more mature semi-natural broadleaved woodland to the north. Suitable breeding habitat for brown hairstreak butterfly.

	
54	Area of planted semi-mature horse chestnut with bramble scrub at edges.

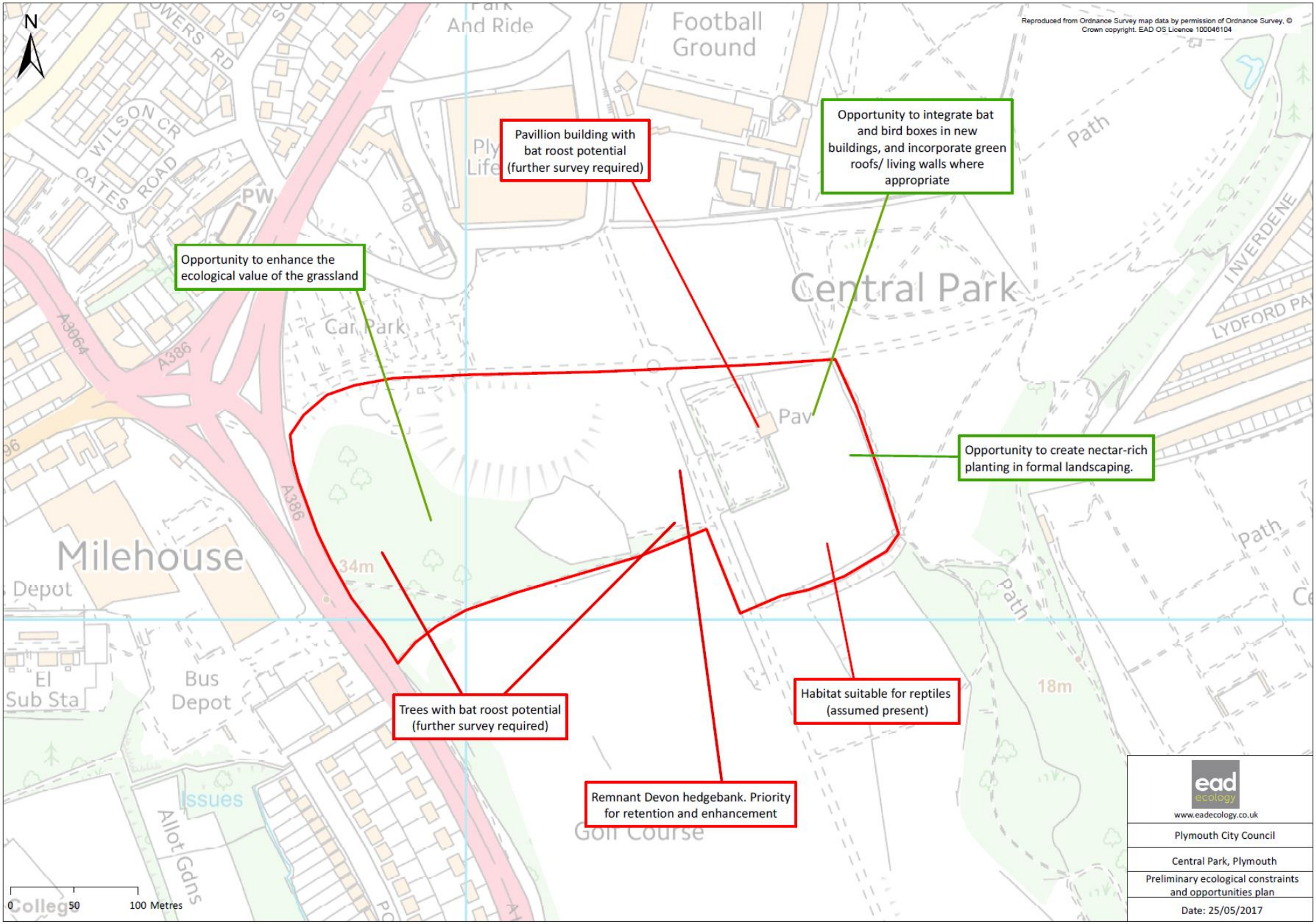
Figure 3: Location of Masterplan Phase 1 area

Published 2014

Central Park

PLYMOUTH CITY COUNCIL

Figure 4: Preliminary ecological Constraints and Opportunities plan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Pavillion building with bat roost potential (further survey required)
Opportunity to integrate bat and bird boxes in new buildings, and incorporate green roofs/ living walls where appropriate
Opportunity to enhance the ecological value of the grassland
Opportunity to create nectar-rich planting in formal landscaping.
Trees with bat roost potential (further survey required)
Habitat suitable for reptiles (assumed present)
Remnant Devon hedgebank. Priority for retention and enhancement
Central Park
Milehouse
Football Ground
Park And Ride
Car Park
Golf Course
Bus Depot
Allot Gdns
WILSON CR
OATES ROAD
A3064
A386
INVERDENE
LYDFORD PA
Path
34m
18m
0
50
100 Metres
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Plymouth City Council
Central Park, Plymouth
Preliminary ecological constraints and opportunities plan
Date: 25/05/2017

Appendix 1: Species legislation

Invertebrates

A number of UK invertebrates are protected by international and national legislation, including the EC Habitats Directive (1992) and the Wildlife and Countryside Act 1981 (as amended). In addition, numerous species are Priority Species.

Plants

All wild plants are protected against unauthorised removal or uprooting under Section 13 of the Wildlife and Countryside Act 1981 (as amended). Plants listed on Schedule 8 of the Act (e.g. stinking goosefoot, red helleborine, monkey orchid) are afforded additional protection against picking, uprooting, destruction and sale. Bluebell (*Hyacinthoides non-scripta*) is protected against sale only. Further species are also protected under the Conservation of Habitats and Species Regulations 2010 (as amended).

Notable plant species include those that are listed as:

- Nationally vulnerable – A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A-E for Vulnerable, and is therefore considered to be facing a high risk of extinction in the wild (Cheffings C M & Farrell L (Eds) (2005) *Species Status No. 7 – The Vascular Red Data List for Britain*, JNCC (online)
- Nationally scarce – species recorded in 16-100 hectads in Great Britain
- Nationally rare – species occurring in 15 or fewer hectads in Great Britain

Section 14 of the Wildlife and Countryside Act 1981 (as amended) prohibits the planting of certain invasive plant species in the wild, or otherwise causing them to grow there. Prohibited plants are listed on Part 2 of Schedule 9 and include Japanese knotweed, Himalayan balsam and giant hogweed.

Amphibians

There are seven native amphibian species present in Britain. These are afforded varying degrees of protection under national and European legislation. Great crested newts and their habitat are afforded full protection under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of Habitats and Species Regulations 2010 (as amended). Together, this legislation makes it illegal to:

- Deliberately capture, injure or kill a great crested newt.
- Damage or destroy any place used for shelter or protection, including resting or breeding places; or intentionally or recklessly obstruct access to such a place.
- Deliberately, intentionally or recklessly disturb great crested newts.

Great crested newt and common toad are Priority Species.

Reptiles

Slow-worm, viviparous/common lizard, adder and grass snake are protected under the Wildlife and Countryside Act 1981 (as amended) against intentional killing and injuring. These species are also Priority Species.

Birds

The bird breeding season generally lasts from March to early September for most species. All birds are protected under the Wildlife and Countryside Act (1981) (as amended) and the Countryside & Rights of Way (CRoW) Act 2000. This legislation makes it illegal, both intentionally and recklessly, to:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while it is being built or in use;
- take or destroy the eggs of any wild bird

Furthermore, birds listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) are protected against intentional or reckless disturbance whilst nest building and when at or near a nest containing eggs or young. Dependent young of Schedule 1 species are also protected against disturbance.

In addition to this legal protection, the leading governmental and non-governmental conservation organisations in the UK have reviewed the population status of the birds regularly found here and produced a list of birds of conservation concern. Of the 244 species assessed, 67 were placed on the Red List of high conservation concern, 96 on the Amber List of medium conservation concern and 81 on the Green List of low conservation concern:

- Red list species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery.
- Amber list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; and those with internationally important or localised populations.

Badgers

Badger (*Meles meles*) is a widespread and common species. However, they are legally protected under The Protection of Badgers Act 1992, due to animal welfare concerns. Under this legislation it is illegal to:

- Wilfully kill, injure, take, or cruelly ill-treat a badger, or attempt to do so.
- Intentionally or recklessly interfere with a sett by disturbing badgers whilst they are occupying a sett, damaging or destroying a sett, or obstructing access to it.

A badger sett is defined in the legislation as "*any structure or place, which displays signs indicating current use by a badger*".

Bats

There are 18 species of bats found in the UK, 17 of which are known to breed here. The conservation status of these species is summarised in the table below:

Common name	Scientific name	IUCN category	Priority Species
Greater horseshoe	*Rhinolophus ferrumequinum*	LC	Yes
Lesser horseshoe	*Rhinolophus hipposideros*	LC	Yes
Daubenton's	*Myotis daubentonii*	LC	No
Brandt's	*Myotis brandtii*	LC	No
Whiskered	*Myotis mystacinus*	LC	No
Natterer's	*Myotis nattereri*	LC	No
Bechstein's	*Myotis bechsteinii*	NT	Yes
Alcathoe bat	*Myotis alcathoe*	DD	No
Greater mouse-eared	*Myotis myotis*	LC	No
Common pipistrelle	*Pipistrellus pipistrellus*	LC	No
Soprano pipistrelle	*Pipistrellus pygmaeus*	LC	Yes
Nathusius's pipistrelle	*Pipistrellus nathusii*	LC	No

Common name	Scientific name	IUCN category	Priority Species
Serotine	*Eptesicus serotinus*	LC	No
Noctule	*Nyctalus noctula*	LC	Yes
Leisler's	*Nyctalus leisleri*	LC	No
Barbastelle	*Barbastellabarabastellus*	NT	Yes
Brown long-eared	*Plectorus auritus*	LC	Yes
Grey long-eared	*Plectorus austriacus*	LC	No

*IUCN categories: LC Least Concern, NT Near Threatened, DD Data Deficient

All bat species are afforded full protection under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended). Together, this legislation makes it illegal to:

- Deliberately capture, injure or kill a bat.
- Damage or destroy a bat roost; or intentionally or recklessly obstruct access to bat roosts.
- Deliberately, intentionally or recklessly disturb, a bat, including in particular any disturbance which is likely:
    - to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or
    - in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
    - to affect significantly the local distribution or abundance of the species to which they belong.

A bat roost is defined in the legislation as "*any structure or place which a bat uses for shelter or protection*". Roosts are protected whether or not bats are present at the time.

Otter

Otters (*Lutra lutra*) are fully protected under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of Habitats and Species Regulations 2010 (as amended). Together, this legislation makes it illegal to:

- Deliberately capture, injure or kill an otter
- Damage or destroy any structure or place used for shelter or protection by an otter; or intentionally or recklessly obstruct access to such a place.
- Deliberately, intentionally or recklessly disturb an otter whilst it is occupying a structure or place which it uses for shelter or protection.

Otter is listed as a Priority Species.

Water vole

Water vole are afforded full protection under the Wildlife and Countryside Act 1981 (as amended), which make it illegal to:

- Kill, injure or take a water vole.
- intentionally or recklessly destroy, damage or obstruct access to any structure or place that is used by a water vole for shelter or protection.
- intentionally or recklessly disturb a water vole whilst it is in a place used for shelter or protection.

Water vole is also a Priority Species.

Common/Hazel dormouse

The common dormouse is fully protected under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of Habitats and Species Regulations 2010 (as amended). Together, this legislation makes it illegal to:

- Deliberately capture, injure or kill a dormouse.
- Damage or destroy any structure or place used for shelter or protection by a dormouse; or intentionally or recklessly obstruct access to such a place.
- Deliberately, intentionally or recklessly disturb a dormouse whilst it is occupying a structure or place which it uses for shelter or protection.

The dormouse is a Priority Species.

Appendix 2: Relevant National Planning Policy

The National Planning Policy Framework (NPPF) includes the Government's policy on the protection of biodiversity through the planning system. Local plan policies and planning decisions should seek to minimise impacts on biodiversity and provide net gains in biodiversity where possible. Planning policies should promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations (e.g. Habitats and Species of Principal Importance) linked to national and local targets.

"When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

1 if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
2 proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;
3 development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
4 opportunities to incorporate biodiversity in and around developments should be encouraged;
5 planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including Ancient Woodland and the loss of aged or veteran trees found outside Ancient Woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss."

The NPPF establishes the need to identify a hierarchy of international, national and local wildlife sites through planning policy. However, it does not specifically address policy in relation to the protection of European Sites (such as Special Areas of Conservation) as these are dealt with separately through the process of Appropriate Assessment under the Conservation of Habitats and Species Regulations 2010 (as amended).

Planning Practice Guidance associated with the NPPF provides guidance on the practical implementation of the NPPF. The majority of the guidance relating to Ecology and Nature Conservation is set out in 'Planning Practice Guidance relating to the Natural Environment: Biodiversity, Ecosystem and Green Infrastructure' (DCLG, 2014).

Appendix 3: Relevant Local Planning Policy

Table A3.1. Relevant policies of the Plymouth Core Strategy (PCS: 2006-2021), Plymouth and South West Devon Joint Local Plan (Pre-submission, March 2017) and Devonport Area Action Plan (adopted 2007).

Policy	Content relevant to Ecology and Nature Conservation
Plymouth Core Strategy (2006-2021)	
CS18 – Plymouth's Green Space	The Council will protect and support a diverse and multi-functional network of green space and waterscape, through: 1. Identifying in the Site Allocations Development Plan Document and Area Action Plans a network of strategically and locally important Greenscape Areas. Development on or adjacent to these Greenscape Areas will not be permitted where it would result in unacceptable conflict with the function(s) or characteristics of that area. 2. Requiring development proposals to improve the quality and quantity of accessible green space, where appropriate. 3. Requiring development proposals to address local deficiencies in accessible green space, where appropriate. 4. Using its planning powers to safeguard important trees and hedgerows, and to secure provision for soft landscaping where appropriate as part of development.
CS19 – Wildlife	The Council will promote effective stewardship of the city's wildlife through: 1. Safeguarding national and international protected sites for nature conservation from inappropriate development. 2. Appropriate consideration being given to European and nationally protected and important species. 3. Maintaining a citywide network of local wildlife sites and wildlife corridors, links and stepping stones between areas of natural green space. 4. Ensuring that development retains, protects and enhances features of biological or geological interest, and provides for the appropriate management of these features. 5. Ensuring development seeks to produce a net gain in biodiversity by designing in wildlife, and ensuring any unavoidable impacts are appropriately mitigated for. 6. Supporting wildlife enhancements which contribute to the habitat restoration targets set out in the South West Nature Map and in National, Regional and Local Biodiversity Action Plans.
Policies of the Plymouth and South West Devon Joint Local Plan (Pre-submission, March 2017)	
DEV28 - Protecting and enhancing biodiversity and geological conservation	Development should support the conservation, enhancement and restoration of biodiversity and geodiversity across the Plan Area. Specific provisions are identified below: 1. Full account will be given in making planning decisions to the importance of any affected habitats and features, taking account of the hierarchy of protected sites: i. Internationally important sites including existing, candidate or proposed Special Protection Areas, Special Areas of Conservation and the North Devon Biosphere Reserve. ii. Nationally important sites including Sites of Special Scientific Interest, National Nature Reserves, Ancient Woodlands and Marine Conservation Zones.

Table A3.1. Relevant policies of the Plymouth Core Strategy (PCS: 2006-2021), Plymouth and South West Devon Joint Local Plan (Pre-submission, March 2017) and Devonport Area Action Plan (adopted 2007).

Policy	Content relevant to Ecology and Nature Conservation
	iii. Locally important sites including County Wildlife Sites, Local Nature Reserves, Regionally Important Geological Sites, and other priority habitats. iv. The ecological network of wildlife corridors and stepping stones that link the biodiversity areas detailed above, including areas identified for habitat restoration and creation. 2. Net gains in biodiversity will be sought from all major development proposals through the promotion, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of legally protected and priority species populations. Delivery of net gains in biodiversity should be designed to support the delivery of the identified biodiversity network that crosses the Plan Area and links the city of Plymouth to the countryside and coast, as well as the network within the city itself. The level of biodiversity net gain required will be proportionate to the type, scale and impact of development. Enhancements for wildlife within the built environment will be sought where appropriate from all scales of development. 3. Development which would be likely to directly or indirectly impact the biodiversity value of a site will not be permitted unless: i. The need for and the public interest benefits of the development outweigh the harm, including any harm to the integrity of the ecological network. ii. The impacts cannot be avoided through an alternative, less harmful location, design or form of development. iii. The development demonstrates that it has proactively tried to avoid impacts on biodiversity and geological interests through the design process prior to developing measures to mitigate or as a last resort to compensate for unavoidable impacts. iv. The favourable conservation status of legally protected species is maintained. v. Impacts upon species, habitats or geodiversity can be reduced to a level whereby they are not significant by appropriate mitigation or as a last resort, by compensation. vi. Potentially adverse effects can be fully mitigated and / or compensated in the case of European Protected Sites**.** 4. Development will provide for the long-term management of biodiversity features retained and enhanced within the site or for those features created off site to compensate for development impacts.
DEV30 – Trees, woodlands and hedgerows	Development that would result in the loss or deterioration of the quality of: • Ancient woodland, aged or veteran trees or impact on their immediate surroundings; • Other woodlands or high amenity trees including protected trees; • Important hedgerows including Devon hedgebanks; will not be permitted unless the need for, and benefits of, the development in that location clearly outweigh the loss and this can be demonstrated. Development should be designed so as to avoid the loss or deterioration of woodlands, trees or hedgerows. If the loss of trees, woodlands or hedgerows, cannot be avoided, new native and locally appropriate trees and hedgerows will

Table A3.1. Relevant policies of the Plymouth Core Strategy (PCS: 2006-2021), Plymouth and South West Devon Joint Local Plan (Pre-submission, March 2017) and Devonport Area Action Plan (adopted 2007).

Policy	Content relevant to Ecology and Nature Conservation
	be secured as mitigation to ensure they contribute to a 'net gain'. Mitigation should be delivered on site, but if this is not achievable, offsite compensation will be required to provide a net gain in canopy cover in line with local standards.
Policies of the Central Park Area Action Plan 2006 - 2021 (adopted 2008)	
Proposal CP 01 - The Life Centre	To develop integrated state-of-the-art leisure facilities in a single complex which are accessible and affordable, delivering economies of scale and links with health, arts, education and with Plymouth Argyle's Home Park Development. Uses within the Life Centre may include: • Facilities for dry indoor sports such as those currently in the Mayflower Recreation Centre including multi-use sports hall, indoor bowls, fitness aerobics suite, dance, climbing, and facilities for martial arts; • A 50m swimming pool together with a diving and children's pool; • An ice rink of sufficient size for ice hockey; • Health facilities which could provide: consultation rooms for sports injury, healthy eating advice, exercise referral, cardiac rehabilitation, health education / well man clinics, sexual health and general health checks; • Café, healthy eating outlets, public toilets, sports and leisure retailing together with communal and social areas; • An Environment Centre which includes demonstration gardens, interpretation of the bio-diversity and landscape features of the park, including information relating to allotments, a work station for the Council's Parks Service and the retailing of horticultural and garden products including an external plant sales area; • Employment uses in the form of Offices (providing in the region of 5,380 m2); • Storage facilities for events equipment. Development proposals should provide for: 1. A highly visible, high quality landmark building, clearly identifiable from surrounding highways and to people within the park as a focus for new recreational and leisure facilities. 2. A high quality, distinctive, integrated and sustainable solution to all designs, whether architecture, engineering or landscape. 3. Active frontages and elevations to link buildings with the wider park and their surroundings. 4. The re-interpretation of the original 1928 masterplan to provide a Social Centre for the park (a high

Table A3.1. Relevant policies of the Plymouth Core Strategy (PCS: 2006-2021), Plymouth and South West Devon Joint Local Plan (Pre-submission, March 2017) and Devonport Area Action Plan (adopted 2007).

Policy	Content relevant to Ecology and Nature Conservation
	quality public realm), offering a range of facilities, including public art, and the capability and flexibility to host a broad programme of events and performances. 5. High quality, distinctive, durable and sustainable paved surfaces. 6. The provision of new planting, including tree planting to enhance the Social Centre and setting of new buildings. 7. Innovative and distinctive solutions to the external lighting. 8. Provision of high quality, distinctive and co-ordinated park furniture including seating, litter bins, signage and bollards etc. 9. The replacement of existing junior sports pitches elsewhere in Central Park in the event the development effects this provision. An innovative and comprehensive plan for managing the transport and parking needs of the development, coordinated with the transport provisions of Proposals CP2 and CP3, including: i. Measures to mitigate the transport impacts of the development; ii. A comprehensive Smart Choices programme, to encourage the use of public transport, walking and cycling as the preferred method of travel to the development, including Travel Plans for staff and visitors; iii. On-site physical infrastructure to be in place to support sustainable transport choices, including safe walking and cycle links and secure cycle parking facilities; iv. Provision of car parking in accordance with the Council's Car Parking Strategy; v. On-site transport infrastructure to be designed as an integral part of the overall development. 11. The preparation of a Climate Change and Sustainability Statement which will demonstrate how progress will be made to achieving a zero carbon development. Any technical or financial impediments to such progress will need to be identified early by the developer, and they will be taken into account at the planning application stage. 12. Contributions to improving the wider park.
Policy CP 04 Park Enhancements	To deliver a comprehensive range of environmental improvements to Central Park in accordance with a Masterplan that will be prepared in consultation with local communities and users of the park. Measures will include: 1. Improvements to the landscape of the park, including its planting, its avenues, hedgerows and woodlands. 2. Enhancements of key views. 3. Provision of new park furniture. 4. Sensitive enhancement to the bio-diversity of the park, protecting and improving existing habitats and creating new habitats such as grasslands, hedgerows, woodlands and wetland habitats. 5. The development of sensitive and appropriate management regimes, which favour the most sustainable outcomes for improved bio-diversity.

Table A3.1. Relevant policies of the Plymouth Core Strategy (PCS: 2006-2021), Plymouth and South West Devon Joint Local Plan (Pre-submission, March 2017) and Devonport Area Action Plan (adopted 2007).

Policy	Content relevant to Ecology and Nature Conservation
	6. Providing a network of safe, direct, convenient and understandable pedestrian routes and cycleways linking the park and its facilities to the surrounding neighbourhoods and the City Centre. 7. Improvements to the surfaces of existing routes, addressing long standing land drainage problems and sensitive measures to improve the street lighting of the primary routes. 8. Providing series of distinctive, high quality, prominent park entrances that provide a sense of arrival befitting a premier city facility. 9. A system of distinctive and clear signage, and park interpretation, explaining the park's history, wildlife and key views and the provision of public art. 10. The provision of a few well-placed facilities which support the public's enjoyment of the park, including providing new and encouraging the use of existing buildings such as at Pounds House. New facilities would be limited and would combine uses such as cafes, public toilets, with new sports changing facilities. 11. The provision of a new events field, utilising and maintaining greenspace, providing appropriate access and being well serviced. 12. Improvements to allotments, including providing new as shown on the Proposals Map and improving the existing facilities as required such as new irrigation and boundary treatments. 13. Rationalising the Parks Depot on its current site to provide a more accessible Parks Service to the public. 14. The safeguarding of statutory playing fields for formal sports and educational purposes and the provision of new sports pitches and improvement to existing playing surfaces as required. 15. Improved children's play facilities and opportunities in accordance with the Plymouth Play Strategy.
Proposal CP 05 - **Peverell Park Road, Outland Road Corner**	To comprehensively redevelop this prominent corner site with a mixed use development including: • In the region of 26 homes including 5 built to "lifetime homes" standard; • In the region of 700 m2 of retail floor space; • New car parking to serve the new development and the existing local centre; • New public toilets. Development proposals should provide for: 1. Replacement retail accommodation for existing businesses at this location. 2. Building height of up to 4 storeys. 3. Minimum on-site parking provision to meet the needs of residents and local centre businesses. 4. A design solution to ensure access for cars and delivery vehicles that does not cause congestion on the surrounding highways. 5. The enhancement of the existing children's playground. 6. Safe and accessible pedestrian links to this corner of the park and to surrounding neighbourhoods.

Table A3.1. Relevant policies of the Plymouth Core Strategy (PCS: 2006-2021), Plymouth and South West Devon Joint Local Plan (Pre-submission, March 2017) and Devonport Area Action Plan (adopted 2007).

Policy	Content relevant to Ecology and Nature Conservation
	7. The replacement of allotment plots elsewhere in the park as a result of these proposals (as shown in Proposal CP3). 8. A quality public realm befitting of this important corner site. 9. Contributions to the delivery of park enhancements as set out in this AAP.
Proposal CP 06-Pennycomequick	To develop this site and improve the edge of city and the park with: • 97 residential dwellings of which 19 should be built to "lifetime homes" standard. Development proposals should provide for: 1. Building heights that are complementary to their specific context. a. 2 storeys along Jefferson Walk and returning south, fronting the park and overlooking the vacant and disused allotment site. b. 3 storeys along Alma Road with up to 4 storeys for focus buildings on corners, including 4 storeys for a new lodge building on the junction of Upper Knollys Terrace. 2. An arrangement of development which fronts the park and its associated peripheral new access road, providing road linkages to both Holdsworth Street and Wake Street and pedestrian linkages between the same and the park. 3. Reduced on-site parking given the site's proximity to the City Centre and public transport facilities. 4. For home owners at the end of Holdsworth Street and Wake Street, an arrangement which maintains their current access and their ability to maintain their properties. 5. An adapted layout for Swarthmore allotments that provides a replacement Trading Hut, car parking, retaining existing allotment plots. 6. The establishment of a safe and efficient new highway system to serve the new development. 7. Contributions to the delivery of park enhancements as set out in this AAP.

Appendix 4: Botanical species list

Scientific Name	Common Name
Trees	
Acer campestre	Field maple
Acer pseudoplatanus	Sycamore
Acer sp.	Maple sp.
Aesculus hippocastanum	Horse chestnut
Alnus glutinosa	Alder
Betula pendula	Silver birch
Castanea sativa	Sweet chestnut
Corylus avellana	Hazel
Crataegus monogyna	Hawthorn
Fagus sylvatica	Beech
Fraxinus excelsior	Ash
Larix deciduosa	Larch
Ilex aquifolium	English holly
Pinus sp.	Pine sp.
Prunus sp.	Cherry sp.
Prunus spinosa	Blackthorn
Quercus sp	Oak
Salix sp.	Willow sp.
Sambucus nigra	Elder
Ulmus sp	Elm sp.
Viburnum lantana	Wayfaring-tree
Shrubs	
Buddleja davidii	Buddleja
Crataegus monogyna	Hawthorn
Rubus idaeus	Raspberry
Rhododendron sp.	Rhododendron sp.
Rosa canina	Dog rose
Rosa sp.	Rose sp.
Rubus fruticosus agg.	Bramble/Blackberry
Sambucus nigra	Elder
Herbs	
Achillea millefolium	Yarrow
Allium schoenoprasum	Chives
Allium triquetrum	Three-cornered leek
Allium ursinum	Ramsons
Anthriscus sylvestris	Cow parsley
Arum maculatum	Lords-and-ladies
Bellis perennis	Common daisy
Centaurea nigra	Common knapweed
Cardamine sp.	Bittercress sp.
Cirsium vulgare	Spear thistle
Conopodium majus	Pignut
Crocus sp.	Crocus sp.
Ficaria verna	Lesser celandine
Galium aparine	Cleavers

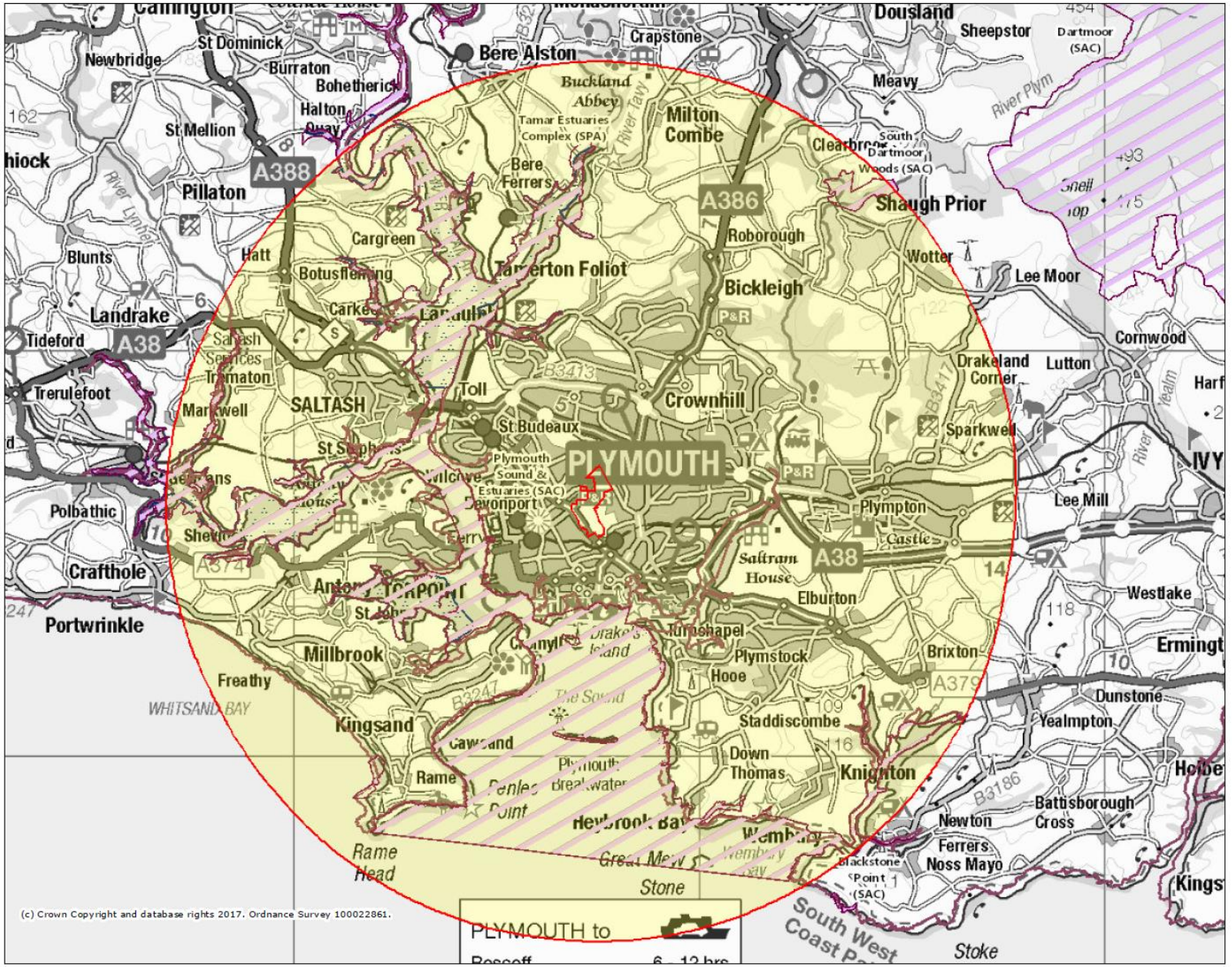
Scientific Name	Common Name
Galium mollugo	Hedge bedstraw
Geranium dissectum	Cut-leaved crane's-bill
Geranium lucidum	Shining cranesbill
Geranium robertianum	Herb-robert
Geum urbanum	Wood avens
Glechoma hederacea	Ground ivy
Hedera helix	Ivy
Heraculeum sphondylium	Hogweed
Hyacinthoides hispanica	Spanish bluebell
Hyacinthoides non-scripta	Common bluebell
Hypochaeris radicata	Common cat's-ear
Iris foetidissima	Stinking iris
Iris pseudacorus	Yellow Iris
Leucanthemum vulgare	Oxeye daisy
Lonicera periclymenum	Honeysuckle
Medicago lupulina	Black medick
Narcissus sp.	(Garden) Daffodil
Oenanthe crocata	Hemlock water dropwort
Oxalis sp.	Wood sorrel sp.
Petasites fragrans	Winter heliotrope
Plantago lanceolata	Ribwort plantain
Primula vulgaris	Primrose
Ranunculus ficaria	Lesser celandine
Ranunculus repens	Creeping buttercup
Rhinanthus minor	Yellow rattle
Rumex acetosa	Common sorrel
Rumex crispus	Curled dock
Rumex obtusifolius	Broad-leaved dock
Rumex sanguineus	Wood dock
Rumex sp.	Dock sp.
Scrophularia nodosa	Common figwort
Silene dioica	Red campion
Smyrnium olusatrum	Alexanders
Stellaria holostea	Greater stitchwort
Taraxacum agg.	Dandelion
Teucrium scorodonia	Wood sage
Trifolium pratense	Red clover
Trifolium repens	White clover
Umbilicus rupestris	Navelwort
Urtica dioica	Common nettle
Veronica chamaedrys	Germander speedwell
Vinca minor	Lesser periwinkle
Grasses, sedges and rushes	
Agrostis capillaris	Common bent
Alopecurus pratensis	Meadow foxtail
Brachypodium sylvaticum	Wood false-brome
Dactylis glomerata	Cock's-foot
Elymus repens	Common couch

Scientific Name	Common Name
Holcus lanatus	Yorkshire fog
Lolium perenne	Perennial rye-grass
Poa annua	Annual meadow grass
Poa trivialis	Rough meadow-grass
Ferns	
Asplenium scolopendrium	Hart's-tongue fern
Polypodium sp.	Polypody sp.
Polystichum setiferum	Soft shield fern

Appendix 5: Designated sites of nature conservation

MAGIC

Map of European Designated Sites Within 10km of Central Park



Legend

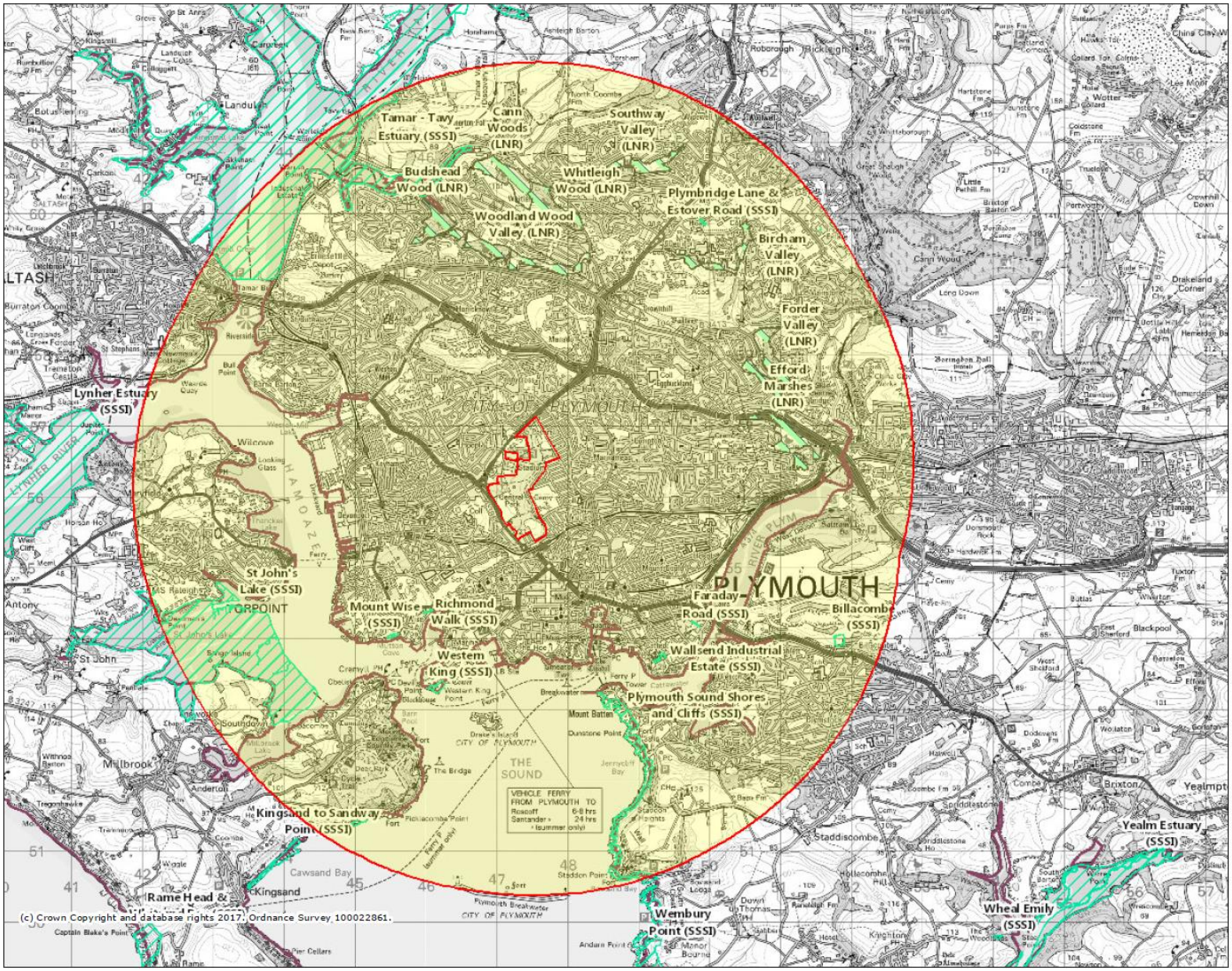
- Ramsar Sites (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

Projection = OSGB36
xmin = 224100
ymin = 44500
xmax = 271800
ymax = 68890

Map produced by MAGIC on 26 April, 2017.

MAGIC

Map of Nationally Designated Sites Within 5km of Central Park



Legend

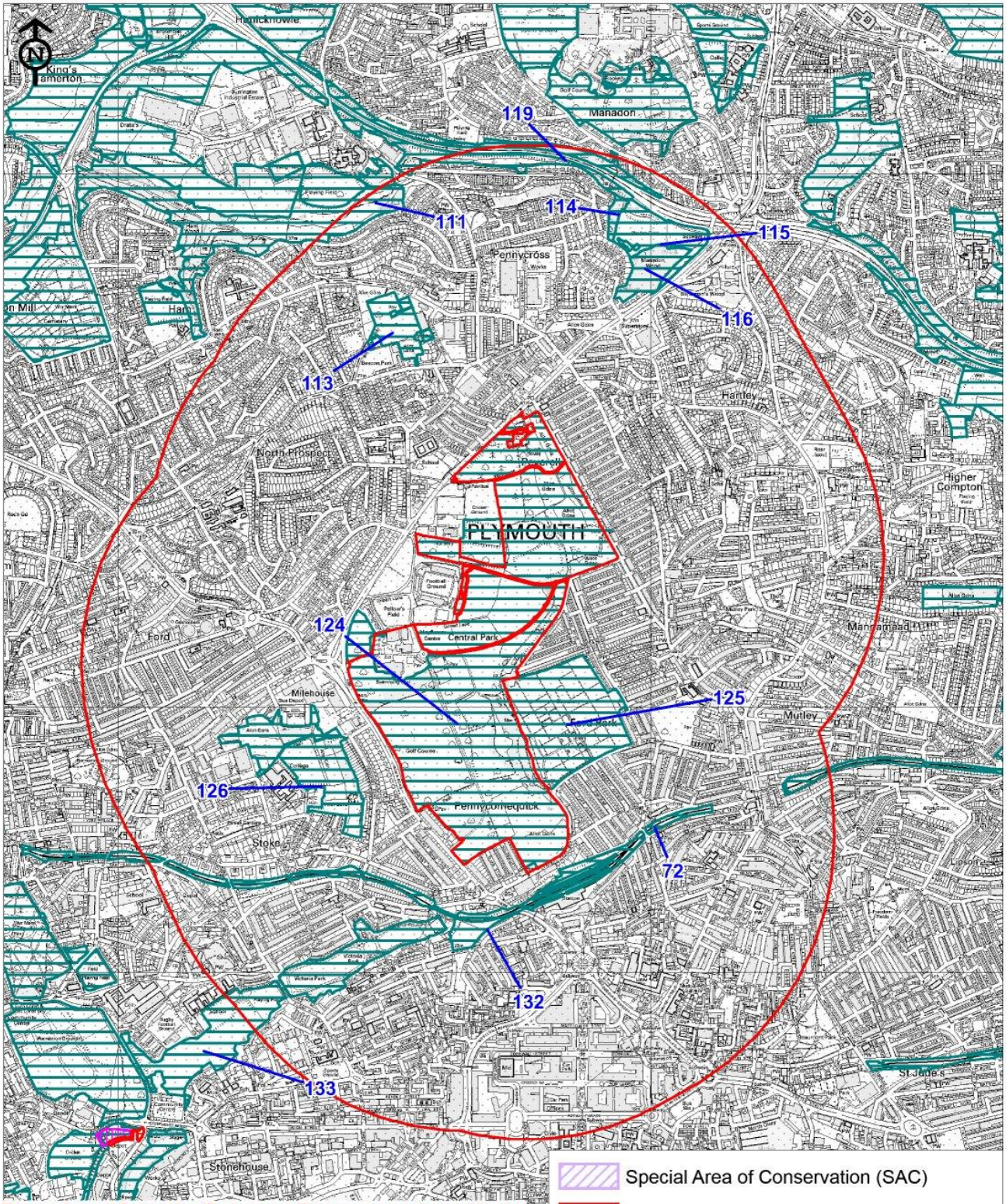
- Local Nature Reserves (England)
- National Nature Reserves (England)
- Sites of Special Scientific Interest (England)

Projection = OSGB36
xmin = 234900
ymin = 49520
xmax = 262400
ymax = 62800

Map produced by MAGIC on 26 April, 2017.

Statutory and non-statutory sites within 1km of Central Park (27/03/2017) Enq no. 8294

Devon Biodiversity Records Centre



Special Area of Conservation (SAC)

Site of Special Scientific Interest (SSSI)

County Wildlife Site (CWS)

Regionally Important Geological Site (RIGS)

Plymouth Biodiversity Network

Map Prepared by Devon Biodiversity Records Centre 2017

Table A5.1. Designated sites of nature conservation value within 1km of Central Park

Designation*	Location	Description
BNS	72	Railway line. Wildlife Corridor
BNS	111	Semi-natural broadleaved woodland. Non-statutory Site. Stepping Stone between two network sites
BNS	113	Cultivated/disturbed land - amenity grassland & allotments. Stepping Stone between two network sites
BNS	114	Dense scrub and tall herb vegetation. Stepping Stone between two network sites
BNS	115	Cultivated/disturbed land - amenity grassland & scrub. Stepping Stone between two network sites
BNS	116	Semi-natural broadleaved woodland. Stepping Stone between two network sites
BNS	119	Dense/continuous scrub, semi-natural broadleaved woodland & amenity grassland (road verge). Wildlife Corridor
BNS	124	Parkland/scattered trees - poor semi-improved & amenity grassland, & allotments. Stepping Stone between two network sites
BNS	125	Semi-improved neutral grassland. Stepping Stone between two network sites
BNS	126	Semi-natural broadleaved, coniferous & mixed woodland, scrub, amenity grassland & allotments
BNS	132	Poor semi-improved grassland & scrub. Buffering Wildlife Corridor (railway)
BNS	133	Wildlife Corridor

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