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Wentworth Castle Gardens
Ecology Statement

1. Introduction

This ecology statement provides a narrative to support planning applications made by the National Trust for Wentworth Castle Gardens 2018. This statement outlines details of the ecology interest of key application areas, and details mitigation or methods of working aimed at minimising or avoiding negative impacts during construction.

2. Existing survey Information

Very little up-to-date survey information is available, although the site has been quite well recorded historically. The most detailed ecology information dates from 2003 (see below), of which the main habitats and species identified remain as current interest. Additionally:

- Part of the National Trust's interest at Wentworth Castle Gardens, including most of the garden area and deer Park) is designated as a Local Wildlife Site (22. Stainborough Park), and a Phase 1 survey and map is available for this, dated January 2011. The LWS has a significant grassland element, mainly semi-improved neutral and acid grassland, as well as broadleaved plantation, semi-natural broadleaved woodland and standing water/ponds. Species include ancient woodland indicator species, European hare, a rich herptile fauna, bats and UK BAP breeding birds. None of the planning application areas referred to in this ecology statement occur within the Local Wildlife Site boundaries, although they do pass along the boundary on two occasions.
- Great crested newt and bat interest have been identified as part of the LWS information; the estate is only one of eight sites in the district with breeding great crested newts and is of high regional value.
- Previous planning applications for works on the site have identified great crested newt presence (Keepers pond & Serpentine River), and it is acknowledged that the majority of the estate comprises rough pasture with moderate terrestrial habitat suitability, with areas of woodland, scrub and wetland providing high habitat suitability.
- A substantial ecology report was drafted in 2003 as part of the Restoration Plan for Wentworth Castle and Stainborough Park. This document pulled together much of the historic survey information for the site, and details current (2003) habitats and species present, and is still relevant today with little significant change; a summary is included below:

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- **Bats.** Altogether at least 7 different species of bat are known from the site including pipistrelle, brown long-eared, daubentons, leislers, noctule and whiskered species; Rockley Tramway tunnel in Broom Royd Wood to the south-west of the site is particularly well recorded. The Ecology survey from 2003 listed those structures known to have positive evidence of bat occupation; of particular relevance is that Serpentine Bridge was noted as "Still in very good condition with no gaps for bats", this is still the case Nov 2018 (pers. obs).
- **Badgers**. Previous planning applications have identified 15 badger setts across the whole estate in 2009. The LWS survey only identifies badger activity to the extreme west of the site, near Pine Lodge. The closest badger set to the main building area was a disused badger sett which was identified close to the conservatory, an area which was subsequently landscaped around 2012. No badger activity was noted in or near the planning application areas in November 2018
- **Reptiles & amphibians:** the site is thought to support three reptile species and four amphibian species which makes it important in a regional context, with four of these being Priority Species. The species are mostly dependent on the waterbodies and environs, as well as the lowland acid grassland.
- **Birds**: the site has a good bird population and is well recorded. The site is particularly well known for the presence of hawfinch, nuthatch & lesser spotted woodpecker, and for a heronry (3rd largest in Barnsley area). The woodland habitats are particularly good for birds. Buzzards were recorded during a site visit in 2017 (pers. Obs.).
- **Invertebrates**: the site has a good distribution of invertebrate species, with a particularly good population butterflies and moths, as well as dragonflies and damselflies, indicative of the wetland habitats present.
- **Fungi**: there is a moderately good fungal presence, including several species of waxcaps and related (CHEG fungi) which were found during a site visit in autumn 2017, and are mainly dependent on older unimproved grassland areas such as the parkland and acid grassland areas (mostly concurrent with the LWS boundary). There is a nationally rare piggyback rosegill fungus known from the site.
- **Woodland**; the property has a considerable woodland resource. Outside of the LWS to the SE of the site, Ivas Wood is identified as Ancient & Semi-Natural Woodland and Broom Royd Wood has some Ancient & Semi-Natural woodland and Ancient Replanted woodland (majority). There are quite large areas of young broadleaved woodland plantation to the South and South West of the site, which are now several years old and starting to develop good structure.

Most of the survey information relating to protected species is at least 4-6 years old, however the presence of protected species is a given for the

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majority of the site, there is assumed to be a general presence of species across the site, with certain habitats being of higher value than others. The potential presence of protected species is considered as part of method statements and ways of working proposed

The development works proposed are generally quite discreet and confined in area, and are of very short duration, which combined with method statements to define ways of working are considered to take account of any potential ecological impact; this approach has been taken with pre-planning advice from BMBC.

3. New survey information

The areas subject to planning application were subject to a walkover by the author on the 22/11/2018, with all areas covered by the planning application inspected in detail. The author has visited the entirety of the estate on more than one occasion and is familiar with the overall complexity of habitats on site. The areas are described below, and photographed in the Appendices.

4. Trench route inspection and grease trap installation

The route of the proposed trench was inspected on 22/11/2018. For ease of reference, the route has been divided into sections see the attached map Appendix A and photos in Appendix B.

Section A-B: this section is mown & "improved" amenity grassland lawn of low species diversity, part way along the route passes through a sparse & gappy holly hedge

Section B-C: this section is consolidated hard-core track centre with mown & "improved" amenity grassland lawn verges of low species diversity

Section C-D: this section is tarmac road with mown & "improved" amenity grassland lawn verge of low species diversity, with some areas under trees being bare soil/humus layer

Section D-E: this section starts as tarmac road with mown & "improved" amenity grassland lawn verge of low species diversity, then becomes a grassy woodland track, mown grassland of low species diversity, then becomes a woodland edge track with heavy layers of leaf mulch in parts

Section E-F: this section is consolidated hard-core track centre with mown & "improved" amenity grassland lawn verges of low species diversity, quite rough grassland grading into bramble & nettle further away from road

4.1 Trench route and grease trap, Likely adverse ecological impacts

The WAN trench route and grease trap passes through habitats of low ecological value. The main habitats that will be impacted are species-poor amenity grassland, hardcore track and tarmac road. The grasslands are

some of the lower quality habitats on site, and so overall impacts on habitats as a direct result of the trenching are considered to be low.

The WAN trench route passes a number of trees along the route. The impact of the trench on these trees is the subject of a separate Tree Impact Assessment, and it is generally assumed that the roots and crowns of retained trees will be protected throughout the development through the provision of adequate construction exclusion zones in accordance with the guidance given by BS5837:2012, and through methods of working including hand digging around tree roots. Please see Tree Impact Assessment for further details.

There are three trees along the route which are considered necessary for removal. These are a small sycamore and yew approximately 20cm DBH. These trees can be seen in trench section C-D photos, Appendix B. The trees are relatively young and have no veteran tree features, and have been assessed by the author as being of very low potential as bat habitat.
The third tree is a mature sycamore that has been badly damaged by fire. It is proposed that this tree be felled prior to the trenching works. Unfortunately the life expectance of the tree has been severely impacted. A bat assessment will need to be made in order to produce a risk assessment. This will be submitted for approval prior to commencement.

4.2 Species impacts

As with all trenching works, there is the possibility of animals becoming trapped in open trenches. These animals can include protected species such as great crested newts, as well as more common species such as frogs, toads and hedgehogs. There were no signs of badgers present in or near the trench route. The areas where the trench will run are mostly very short amenity grassland, which makes them of low suitability as great crested newt habitat, and combined with the plan time for the works to take place over winter makes potential impact on great crested newts overall low.

There is potential for impact on species using trees and scrub the cover, particularly birds. It is anticipated that work will take place outside of the bird nesting season, and so impacts are considered to be low for nesting birds.

There is potential for hibernating bats present in trees to be disturbed during the works. The works are likely to be very short duration, with the trenching happening ideally within one day, and so disturbance is likely to be minimal. Additionally, methods of working will require hand digging around the roots of large and veteran trees, and so noise and potential disturbance to bats will be minimised in these locations.

Overall, for WAN trench route, impacts may include:

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- potential loss of habitats of low value
- potential removal of broadleaved trees with low risk of supporting roosting bats.
- direct damage and disturbance to veteran trees during excavation or construction, including root damage and soil compaction
- impact on tree nesting birds, or roosting bats due to disturbance and/or loss of habitat
- risk of harm to herptiles or mammals through becoming trapped in any excavations that remain open overnight.
- risk of harm to species of conservation concern including common toad, brown hare and hedgehog during works on site.

4.3 WAN trench route and grease trap,Proposed Ecological Mitigation

- Trench excavation, cable laying and trench infilling should ideally all be done within the same day to prevent animals such as amphibians & hedgehogs being trapped in trenches overnight
- Any excavations left open overnight will have a means of escape constructed for mammals or amphibians that may become trapped, in the form of a ramp at least 300mm in width and angled no greater than 45°.
- Any trenches left open overnight will be inspected by a suitably qualified person to ensure that no animals have become trapped prior to infilling. Any trapped animals will be removed with advice from a suitably qualified ecologist.
- The roots and crowns of retained trees will be protected throughout the development through the provision of adequate construction exclusion zones in accordance with the guidance given by BS5837:2012, and through methods of working including hand digging around tree roots. (see separate Tree Impact Assessment).
- Hand digging of trenching around veteran and large trees will take place to minimise potential for disturbance to hibernating bats.
- all works relating to scrub, trees and woodland cutting or removal will be undertaken outside of the bird nesting season (March-August inclusive). If any works are undertaken during the bird nesting season, those areas of works will be inspected by suitably qualified ecologist beforehand to ensure that no active bird nests at present.
- If bats or great crested newts are found during works, works will stop in that area and the nominated suitably qualified ecologist will be contacted immediately. If it is necessary to move the animals for their safety, this will be undertaken by, or under direct instruction from, a licensed handler.

5 Wall repair

There is a short section of deteriorated & collapsed wall along section C-D. The wall is generally sound apart from the collapsed area, with intact mortar

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and few opportunities for roosting bats. The wall is covered with dense ivy, which provides opportunities for nesting & roosting birds. The collapsed area of wall was inspected internally on 22/11/2018, see photos Appendix C; the cavity was open and relatively discreet, with the boundaries of the cavity visible. Ivy stems and spiderwebs were present throughout the cavity, and the bat potential of the cavity was rated as low by the author.

5.1 Wall repair, proposed ecological mitigation

- All contractors will be informed of the potential presence of bats and will be made aware of the actions they are required to take if bats are found at any time during works on site. The contact numbers for the ecologist, Natural England (0845 6014523) and the Bat Advice Line (0345 1300228) will be left with the contractors on site.
- All structural work will be undertaken by hand, being aware that bats may be present beneath and between loose stones. All ivy removal will take place by hand.
- Apart from the main failure, minor pointing works, affecting gaps less than 30mm deep or 10mm wide, can be undertaken with care, first checking the cavity for the presence of a bat. Larger crevices may need to be checked by an ecologist prior to work commencing.
- All ivy to be removed from the wall should be done outside of the bird nesting season (March-August inclusive). If any works are undertaken during the bird nesting season, those areas of works will be inspected by suitably qualified ecologist beforehand to ensure that no active bird nests at present.
- If bats or great crested newts are found during works, works will stop in that area and a suitably qualified ecologist will be contacted immediately. If it is necessary to move the animals for their safety, this will be undertaken by, or under direct instruction from, a licensed handler.

6 Serpentine Bridge Repair

A short section of the balustrade on the south-eastern edge of the Serpentine Bridge has failed. Some broken elements of the balustrade have fallen onto the adjacent bank, and some into the Serpentine pond. The balustrade requires repair, which will involve cutting off of exposed reinforcing rods, drilling and insertion of new rods and replacement and cementing of balustrade elements. This work is likely to be of 1-2 weeks duration in ideal circumstances.

6.1 Serpentine Bridge Repair, Likely adverse ecological impacts

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The bridge itself is of relatively low ecological value; it lies on the North-eastern boundary of the LWS. In 2003 the Serpentine Bridge was noted as "Still in very good condition with no gaps for bats", this is still the case Nov 2018 (pers. obs). Photos are included showing the sides and underside of the bridge, with a representative photo of some of the mortar gaps which are sound and well mortared, both on the sides and the underside of the bridge. The risk to bats using the bridge is therefore assessed as low, with no specific mitigation proposed.

The bridge surface is improved, species poor, amenity grassland, slightly rough towards the edges with sparse nettles in areas. Some of the slopes to the side of the (raised) road approaching the bridge from the east appear less improved, although still grassy and relatively species poor, but have the potential to support more herb-rich areas; these were not examined in detail.

There was no evidence of badger activity on or near to the Serpentine Bridge on the site visit of 22/11/2018.

The bridge does however span the Serpentine "lake", which is known to support great crested newts. No specific surveys were carried out for great crested newts, as it was assumed that they are present within and around the waterbody at various times of years, and methods of working and mitigation are proposed accordingly. A method statement with respect to great crested newts has been drafted for the Serpentine Bridge, and mitigation for newts is therefore covered within that document, see Appendix E.

Apart from great crested newts, Serpentine Bridge repair ecological impacts may include:

- low potential for impact on bats
- potential damage to grassland habitats of low value due to construction traffic and storage of materials
- secondary impacts of grasslands of moderate value due to construction traffic and storage of materials

6.2 Serpentine Bridge Repair proposed ecological mitigation

- see separate method statement for great crested newts, Appendix E
- All contractors will be informed of the potential presence of bats and will be made aware of the actions they are required to take if bats are found at any time during works on site. The contact numbers for the ecologist, Natural England (0845 6014523) and the Bat Advice Line (0345 1300228) will be left with the contractors on site.
- Apart from the main balustrade failure, minor pointing works, affecting gaps less than 30mm deep or 10mm wide, can be undertaken with

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care, first checking the cavity for the presence of a bat. Larger crevices may need to be checked by an ecologist prior to work commencing.
- All vehicle access and storage of materials will take place on the raised, flat road surface only, no materials will be stored on the grassy slopes adjacent.

7 VRB Building

A small VRB building is planned to be constructed within the current car park area. The site was inspected on 22/11/2018. The site where the building is proposed to be constructed is shown in photos in Appendix E. The proposed site is short, mown amenity grassland of low species diversity, being comprised of grasses including Yorkshire fog, ryegrass and red fescue and no herb interest. Adjacent to the grassy area is car park hardstanding. There are 3 young hornbeam trees within the area which are due to be removed, these are very small with DBH of only a few centimetres and very low bat risk. Adjacent to the south of the site is a medium-sized sycamore, with few veteran features and of low bat risk. Adjacent to the North of the site is a medium-sized yew tree, with few veteran features and of low bat risk.

7.1 VRB Building, Likely adverse ecological impacts

- potential damage to grassland habitats of low value due to construction traffic and storage of materials
- loss of young trees of low bird interest and low bat interest
- low chance of disturbance to bats using adjacent trees
- compaction of soil and damage to trees of medium-size

7.2 VRB Building, proposed ecological mitigation

The impact on habitats and species using the proposed site for the VRB is low

- All vehicle access and storage of materials during construction will take place on the flat hardstanding surface only, no materials will be stored on the grassy areas or under trees
- all works relating to scrub, trees and woodland will be undertaken outside of the bird nesting season (March-August inclusive). If any works are undertaken during the bird nesting season, those areas of works will be inspected by suitably qualified ecologist beforehand to ensure that no active bird nests at present.
- Exclusion areas shall be maintained around all trees to be retained to prevent damage by construction traffic and damage to root areas

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