

HIGH PARK BIODIVERSITY SURVEY

PROGRESS REPORT 2019

The survey of the biodiversity in High Park, part of Blenheim Park near Woodstock in Oxfordshire, went into its third year in February 2019 and ran until August 2019. From 1 August we could only make visits along the road through High Park and a margin of 5 meters on either side. Several groups, but not all, took this up with positive but limited results. During the period February-July 2019 field visits were made by participants in this project as listed in the document 'Biodiversity Survey of High Park, Blenheim Palace, Oxon' with permission from the managers of Blenheim Park. In this report, we are presenting the results of 2019 in a summarised form, the complete data are stored in Excel files held by participants as well as the Project Leader, Aljos Farjon based at the Royal Botanic Gardens, Kew. These data will in due course be shared with Blenheim Palace and with TVERC. Reporting here will be accumulative in terms of numbers of species found, but with special mention of some interesting species discovered in 2019. For several groups, e.g. beetles and spiders, many specimens were sampled that await identification; these are not included in this report.

History and landscape

Alison and Tosh Moller, helped by Aljos, continued field surveys and archive searches (mainly Alison) in High Park and its immediate surroundings. We are grateful for the assistance received from Dr Alexa Frost, archivist at Blenheim Palace, in particular for showing us rare and often fragile documents. A detailed report has been compiled in draft by Alison and Tosh, which will form Chapter 1 in the planned book on High Park's biodiversity.

Ancient and veteran oaks

After completing the surveys of ancient and veteran oaks larger than 5 m girth in 2018, we made a start to analyse the data. Aljos has drafted a chapter on the ancient oaks for the book on High Park we are planning. In 2019 we found and recorded stumps of large old oaks in the long plantation and in the palace vista. These give us a date within 5 years of felling (no saws were used) around 1950. We are looking at ways to estimate how long a big dead oak would last before it has completely decomposed and these stumps give us a benchmark age of 65 years as a minimum.

Other trees (including oaks)

Tosh and Alison Moller, with help from Aljos Farjon, completed the survey of the oaks planted by the 9th Duke. Two further phases of oak planting occurred later, these trees are mostly damaged by the grey squirrels, which must have been abundant. We will not record or map these, but merely indicate where most of them are on a map. Aljos has observed self-seeded young oaks in several places, especially in the south of High Park and on the slope above the Evenlode valley in the west. An attempt will be made in 2020 to get estimates of numbers of these, to obtain insights into potential for natural regeneration that was present at least in the recent past. Some other trees, such as Field maple and Wych elm, are also regenerating and of interest to get estimates of.

Vascular plants

The botanical survey, conducted mainly by David Morris and Aljos Farjon, but also including the grassland survey of June 2015 by TVERC, has so far found 269 vascular plant taxa (ferns, conifers and flowering plants). Included are adventives and some but not all planted trees. It seems we are nearing a complete list of the plants of High Park. In summer 2019 David (with some help from Aljos) investigated a number of 50x50m plots (and within these 2-3 small plots) in order to understand the

various vegetation types present. Some plots remained for 2020 due to closure of the site from August. We also investigated a 250x10m transect across the evident bracken/bramble transition. This transition was followed and put on a map. We are still missing some early spring plants that we expected to be there, so this needs confirmation in an early walk, if possible with more people (eyes).

Bryophytes

It is considered by the specialists that the survey of mosses and liverworts in High Park is complete, we do not find more than 67 species. It appears that High Park is not particularly rich in mosses and most are common species for woodlands.

Fungi

Three visits were made by the mycologists, fewer than in previous years, and one was confined to the 5 m road margins we were only allowed in autumn 2019. The total of fungal species now stands at 479. The additions in 2019 are mostly common species. Perhaps the most notable fungus in 2019 was my discovery of a Giant puffball, *Calvatia gigantea*, on a grassy track in the southern part of High Park. This fungus was not expected to occur here by the mycologists, but it was so large and obvious that I had no difficulty noting it (and taking a picture to be sure). Another fungus I found was *Riopa metamorphosa*, a saprotrophic species associated with ancient oaks. This was confirmed (and also found) by the mycologist Martyn Ainsworth.

Lichens

The lichenologists visited High Park on two consecutive days, 19th and 20th June 2019. They made detailed records on several ancient and veteran oaks, which resulted in new records of notable species previously found on the site. In addition, they found two species new to the British list: *Lecanora hypoptoides* on lignum of a fallen hulk, and *Rinodina furfuracea* on a young mature ash. An addition to the notables list was *Rinodina exigua*, correctly known from the UK only from a couple of other sites in England (e.g. Moccas). *Buellia hyperbolica* and *Biatora veteranorum* are both listed as Vulnerable (VU) on the IUCN Red List; they have also been found in previous years of this survey. These and other species confirm the importance of High Park as a monitoring site for improving air quality. The total number of species at the end of 2019 was 224.

Molluscs

In 2019 visits were made six times, between 20 March and 30 October. The two visits in September and October were limited to the strips of 5m along the road. The total of mollusc species now stands at 80, with one or two undetermined to the level of species. Species added in 2019 are *Euconulus alderi*, *Tandonia sowerbyi* and *Oxychilus draparnaudi*; the last two species are synanthropic. Another find of *Testacella* was successfully grown on and both findings have been assigned to *Testacella haliotidea*. While many species are now sufficiently recorded (total records amount to 915) to produce distribution maps, there remain species where more records would be useful and the ancient woodland indicator slugs have not been found yet. There is the possibility that at least one more *Vertigo* species is present.

Arachnids

Bill Parker has made three visits to High Park in the summer of 2019. The spider records are now building up, with 36 species so far recorded. However, more than 100 specimens sampled still await ID, requiring detailed microscopic observation. There are no scarce species in this list. The majority

are widespread although some have restricted distribution e.g. *Philodromus albidus*. It was nice to see *Pardosa saltans* turning up so commonly; this is a species which is to be expected in deciduous woodland, but was only separated from *Pardosa lugubris* at the end of the 1980s. For spiders in particular, there is a need to make some visits in the autumn or we will miss many species.

Diptera

Peter Chandler was able to make a few visits this year, one was on the day of the BENHS visit (see below) and another in the autumn working alongside the road through High Park. The total species now stand at 352, of which 109 are saproxylic. These include 96 species of fungus gnats, of which 62 are saproxylic. *Neoempheria striata* is the third British record and Peter has included an account of it in a fungus gnat newsletter to go out with the next Dipterists Bulletin. Graham Collins has identified *Syrphus nitidifrons*, recorded by Jovita Kaunang. This was added to the British list from Dorset in 2010, probably a recent arrival in this country, and has since been recorded from just six scattered records. Flies found by others are now reported or sent to Peter more often than previously. This 'bycatch' reporting is very important and I am pleased that a routine is now emerging to do this.

Hemiptera

Graham Collins and Jovita Kauna have now recorded 54 species of 'true bugs' (Hemiptera) in High Park, Blenheim. So far, these are considered to be the more common species to be expected in this habitat.

Hymenoptera

The total number of species recorded and identified by the end of 2019 was 157, up from 130 in 2018. Bees were up by 11 to 75 species, wasps up by 6 to 51 and Sawflies up by 5 to 31. The top result is probably *Heriades truncorum* (netted from *Senecio*). This is probably still a rare bee around here but may now be expanding its range, perhaps due to a warming climate? Almost all records so far are from the southeast of England.

Lepidoptera

Butterflies now total 21 species. An exciting observation occurred on 9th July when the Purple Emperor (*Apatura iris*) was seen with two adults flying between the oaks canopy and the food plant Goat Willow (*Salix caprea*). We now have the two 'oak butterflies' (the other being Purple Hairstreak *Favonius quercus*) confirmed for High Park. The Purple Emperor is limited to large oak woods and very elusive, usually spotted only in very low numbers.

Moths, led by Martin Corley, with Marc Botham, Martin Townsend and Peter Hall joining or doing separate surveys, have again been trapped with several lights, on 8 visits from February to September (not March and May). The total number of species now stands at 591, 74 species were found for the first time in 2019. Other methods, such as wine ropes, were used to attract species less easily trapped with lights. Of the 'new' species found in 2019, 8 are notable, such as *Cydia strobilella* of which the last Oxfordshire record was between 1914 and 1929 and *Cochylidia rupicola* of which there is only one previous record, from Sydlings Copse (Wick Copse) near Beckley. *Lithophane semibrunnea* has become very scarce in Oxfordshire in recent years, with no records since 2009 until this one from High Park. High Park is a rich site for moths and the numbers will undoubtedly rise again in 2020, thanks to the capital work by these specialists.

BENHS visit

On Saturday 15 June the British Entomological and Natural History Society (BENHS) visited High Park with 18 participants (including Aljos to guide them around) led by the well-known entomologist Keith Alexander. This gathering of various specialists can yield good results as was indeed the case. Most people specialised in beetles and we concentrated on those living with oaks. An exciting find towards the end of the tour was the pseudo-scorpion *Dendrochernes cyrneus* in the rotting wood of a recently fallen oak. This tiny relative of spiders has scorpion claws but no sting and lives exclusively in the old hollowing oaks. Keith collected all the data and afterwards I passed these on to the relevant groups to be added to their spreadsheets. We are grateful to management for admitting a larger group to survey for one day.

Coleoptera

In 2019 Ivan Wright, helped by some others, continued with traps hung up in or on ancient and veteran oaks, adding 102 species of beetle to the list and bringing the grand total of species found in High Park to 468. Ben Pollard also set up his own traps, including one underground at the base of an ancient oak. Around 25% of the 2019 additions are saproxylic beetles, indicating the success of our efforts to emphasize this group of beetles in the surveys. There are several rarities again, most notably *Malthodes crassicornis*, a beetle only recorded from c. 20 locations, mostly in southern England. *Agrilus sulcicollis*, the European oak-borer, may be a first record for Oxfordshire; it is known from c. 10 locations in the southeast of England. Other notable finds are *Mordellistena neuwaldeggiana*, *Mycetochara humeralis* and *Tomoxia bucephala*. All these are saproxylics (wood-boring) associated with the ancient oaks. Ben still has many samples awaiting ID, with assistance from the Oxford Museum and its collections.

Other invertebrates

Graham Collins and Jovita Kaunang have taken up responsibility for those invertebrates not included in any of the groups established for the High Park Biodiversity Survey. Obviously, they cannot take on *all* other invertebrates so recordings will be more or less incidental, as they happen to be found walking the site. Their efforts will also yield specimens in established groups and such records will be sent to the specialist in those groups who has taken on to compile and maintain the spreadsheet of records. Conversely, by-catch not belonging to any group is to be reported to Graham. The list to end 2019 comprises 30 species, of which 7 species are dragonflies or damselflies (Odonata) which I have added to that list.

Amphibians & reptiles

From March to the end of July we worked with the reptile mats located, or relocated, throughout High Park. At the end of that month they had to be taken up and Aljos relocated 10 of them to the 5 meter wide strips along the road we were permitted to investigate in the autumn. There were good results in spring and summer, demonstrating that both Slow worms and Grass snakes are more widespread and common than thought earlier. This year we also found Common frogs for the first time, but not under the mats. In August the mats along the road were checked a few times but yielded no observations of amphibians and reptiles. Small mammals also seem to hide under these refugia and if identified, were reported to the mammal group. Thus far we have recorded 7 species of amphibians and reptiles.

Birds

Anthony Cheke came in as a new bird recorder in early 2019 and has made regular visits through the year, from August onward only along the permitted road. We now have 54 species recorded as seen

in High Park, some only as 'passers-by' but many with territories or nests. Peregrine falcons may have a territory here as a pair was seen on two occasions. Ian Lewington made some early morning visits, adding to the list of birds that are nesting in High Park. Aquatic birds on the lake were also noted, as some of these may use the shore line on the High Park side.

Bats

Keith Cohen has not been able to find time in 2019 to do further bat surveys. Bat boxes of various kinds were attached to trees in two locations by a group who surveys all of Blenheim Park and I was informed by Keith that we will share the recordings from these boxes in due course.

Deer

There are 3 species of deer in High Park: Fallow Deer (*Dama dama*), Reeve's Muntjac (*Muntiacus reevesi*) and Roe Deer (*Capreolus capreolus*). The Fallow deer are most numerous, sometimes coming through in large herds. Muntjac and Roe Deer are also common, but not gregarious. All are known to wander in and out of High Park and thus are not strictly resident.

Other mammals

No mammal traps were used in High Park in 2019 due to time constraints and so the only records are casuals, mostly found under the reptile mats. Small mammals are very quick to run and so are not easy to identify in this way. No species were added in 2019 and the total of 'other' mammals remains at 9 (total of mammals 19).

Total of species found so far

We have now completed three of the four years of the High Park Biodiversity Survey. In all three years we have had full access from February to July but (very) limited access from August to December. This has so far caused a reduction of potential records, possibly in the order of 20%, because many organisms will only be found between August and November. Despite these limitations, we have already recorded a total of **2,908** species of fungi, plants and animals in High Park. In a meeting with management in January 2020 it was agreed to arrange access on specified days for the period August-November (two days per month) in an attempt to catch up on missed species.

References

- Farjon, A. (2017). Ancient oaks in the English landscape. Kew Publishing, Royal Botanic Gardens, Kew.
- Harding, P.T. & T. Wall (2000). Moccas: an English deer park. English Nature, Peterborough.

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Kew, 13 February 2020