Ecology Notes

The following is a summary of concerns on the Ecological Impact Assessment report submitted in respect to the development proposal at Golden Hay, Dumbleton (ref 23/00569/FUL). These have been complied by Anne Goodenough, a Professor of Applied Ecology at the University of Gloucestershire.

Anne teaches Ecological Impact Assessment, Biodiversity Net Gain, and Wildlife Conservation at University level, and is also a Chartered Biologist who has published almost 100 peer-reviewed academic articles including multiple outputs on surveying legally protected species in development contexts.

The observations made below are, to the best of Anne's knowledge and belief, entirely factual and have been compiled as an information resource for other local residents that might be interested in the ecology of the area.

Bats

The Ecological Impact Assessment (EcIA) concludes that there are no bat roosts on site as there are no structures that could support these. However, this fact is used to dismiss potential bat interest at the site. This is not in accordance with Bat Conservation Trust (BCT) Guidelines and is surprising given that all 17 UK bat species are legally protected by the Wildlife and Countryside Act 1981 (as amended) as well as the EC Habitats Directive (92/43/EEC) and European Protected Species licensing framework, which were transposed into domestic law by the European Union (Withdrawal) Act 2018.

The Developer/Consultant has not undertaken any passive acoustic monitoring, nor even an entry-level dusk Activity Survey, to ascertain the value of the site for foraging as per BCT development guidelines. Lack of any acoustic surveys is especially surprising given that the Ecological Report notes the presence of a known Lesser Horseshoe roost 0.72 km to the SSW (aka Dumbleton Hall) which have a Core Sustenance Zone of 4 km. High quality feeding sites within this area should be identified and managed sensitively for this species, which is one of the UK's rarest bats that is highly sensitive to disturbance. Moreover, the potential for roosts immediately adjacent to the site has not been considered, despite a tree line on the eastern border of the site and old houses with outbuildings adjoining the site to the south. Discussion with a neighbour in 2022 led to observation of a pipistrelle maternity roost in the roof of a property <10 m from the proposed development site.

In September 2022, motivated by the previous (withdrawn) application, four community-led dusk activity transects by members of Dumbleton Conservation Society were undertaken, with identification of bats taking place in real time using a heterodyne detector. Surveys commenced at sunset. Overall survey effort was 12 surveyor hours. In total, five of the UK's 17 breeding bat species were detected, with all species being encountered on at least 50% of surveys. Other than Brown Long-eared, which were restricted to the tree line on the Eastern boundary of the site, all bats were free flying over the proposed development site. Both Pipistrelle and Leisler's were actively feeding, with the Pipistrelles emitting numerous feeding buzzes.

Species Vernacular	**Species Scientific**	**4 Sept**	**11 Sept**	**18 Sept**	**25 Sep**
Common Pipistrelle	*Pipistrellus pipistrellus*	Yes	Yes	Yes	Yes
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Yes		Yes	
Noctule	*Nyctalus noctule*		Yes	Possible	
Leisler's	*Nyctalus leisleri*	Yes	Yes	Yes	
Brown Long-eared	*Plecotus auratus*	Yes	Yes	Yes	Yes

Based on the above tabulated data, independent research was conducted in April 2023 using used passive acoustic devices (Anabat Express units, Titley Scientific) deployed around the edge of the proposed development site and oriented towards it. These units recorded ultrasonic echolocation calls for subsequent analysis. Data were collected for five nights in each of four locations (five nights per location) in line with Bat Conservation Trust guidelines.

Across the 20 recording nights, there were 2,409 bat pass recordings. This is an average of over 120 bat passes per night, a very high activity level. It should be noted that recorded activity is likely to be an underestimate as the work was done at the very start of the survey season, well before the seasonal peak in June-August. Interestingly, these recordings showed that at least 11 of the 17 bat species breeding in the UK are using the proposed development site, which makes the site extremely important in terms of bat species richness. This suggests this greenfield site is vital for foraging of multiple species (technically termed a multi-species "Core Sustenance Zone"), including Lesser Horseshoe. All recordings have been retained.

Species	**Bat pass recordings over 20 nights in April 2023**	**Number of locations where species was found (out of 4)**
Common Pipistrelle	958	4
Soprano Pipistrelle	647	4
Noctule	473	4
Whiskered and/or Brandt's*	82	4
Daubenton's	75	4
Leisler's	55	4
Brown Long-eared	37	4
Lesser Horseshoe	35	4
Barbastelle	34	3
Natterer's	7	3
Serotine	6	3

* it is not possible to split closely-related Brandt's & Whiskered bats based on sound recordings; capture under licence and/or DNA analysis needed

As noted above, all bats are legally protected in the UK under the Wildlife and Countryside Act and under EU legislation that has been subsumed into national legislation post-Brexit. This means that all bat species detected here are important, especially given the high levels of activity observed. However, some species are rare (regionally, nationally, or internationally), whilst others have very specific habitat requirements and are only found in specific locations. It was, therefore, especially interesting to record:

Barbastelle	Near Threatened globally (International Union for Conservation of Nature) AND rare in a UK context so a UK conservation priority species (Biodiversity Action Plan listed).
Brown Long-eared	Specialist forager on tree lines and woodland edges.
Leisler's	Rare in the UK and Bat Conservation Trust advises special care should be taken of wooded areas where the species is present.

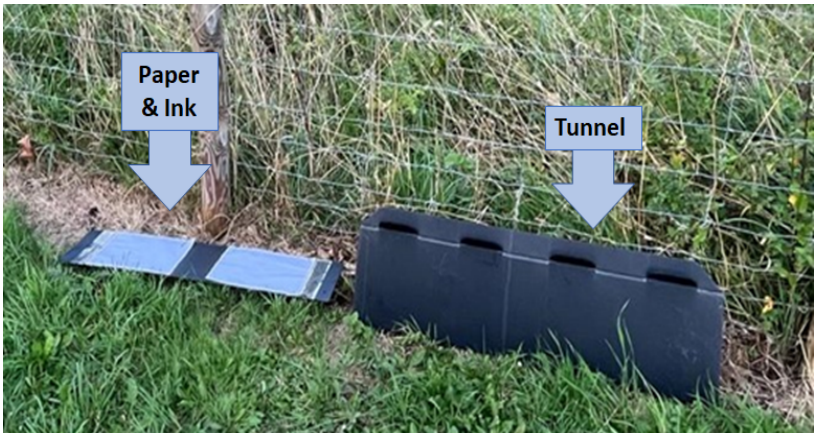
Lesser Horseshoe	One of the UK's rarest bats and still declining. UK conservation priority species (Biodiversity Action Plan listed). There is an active roost at Dumbleton Hall the open ground around the village is vital for foraging (technically a Core Sustenance Zone). Highly sensitive to disturbance. Bat Conservation Trust advises that "sensitive management of their foraging area is very important".
Noctule	UK conservation priority species (Biodiversity Action Plan listed).

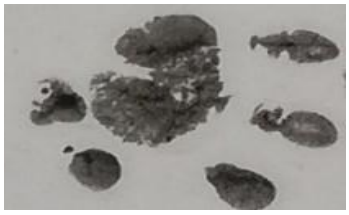
Summary: The number of species and the high level of foraging activity at the proposed development site make this site extremely valuable for a vulnerable and highly protected taxonomic group. It is extremely disappointing that not even a basic bat activity survey was undertaken by the authors of the Ecological Report: "absence of evidence" is not "evidence of absence".

Hedgehogs

The Ecology Report states Hedgehogs, legally protected under Schedule 5 of the Wildlife and Countryside Act, are recorded within 280 m of the site but then, incomprehensibly, makes no further mention of this species. Numerous residents that have gardens backing onto the site have photographic evidence of hedgehogs in their gardens (some dated and geotagged). There are multiple records of injured hedgehogs to Vale Wildlife Hospital within the last two years from within 100 m of the site (one hit by a vehicle, one caught with a strimmer and one stuck in a fence) suggesting the local population is already at substantial risk from anthropogenic activity.

To collect primary data, hedgehog footprint tunnels (Wildcare, Longborough, Glos) were deployed in September 2022 for 5-7 nights by members of Dumbleton Conservation Society. These were deployed in six gardens of properties immediately backing onto the proposed development site, one property to the North (Golden Hay), two properties to the West (Main Street) and three properties to the South (Silver Hay / Dumbleton Village Club). Black paint powder mixed with vegetable oil was used as the tracking medium and cat kibble was used as bait. All six tunnels were positive for hedgehog footprints during the survey. The three properties where paper was changed at least one mid survey were positive for hedgehog on all occasions. All footprint papers have been labeled, filed, and retained for independent inspection as necessary.





Summary: It is surprising and disappointing that no consideration has been given to the potential for hedgehogs to be present on site, despite the nearby desk study record. Even a very basic field study, such as the one conducted by Dumbleton Conservation Society, found evidence of hedgehogs in 100% of locations searched.

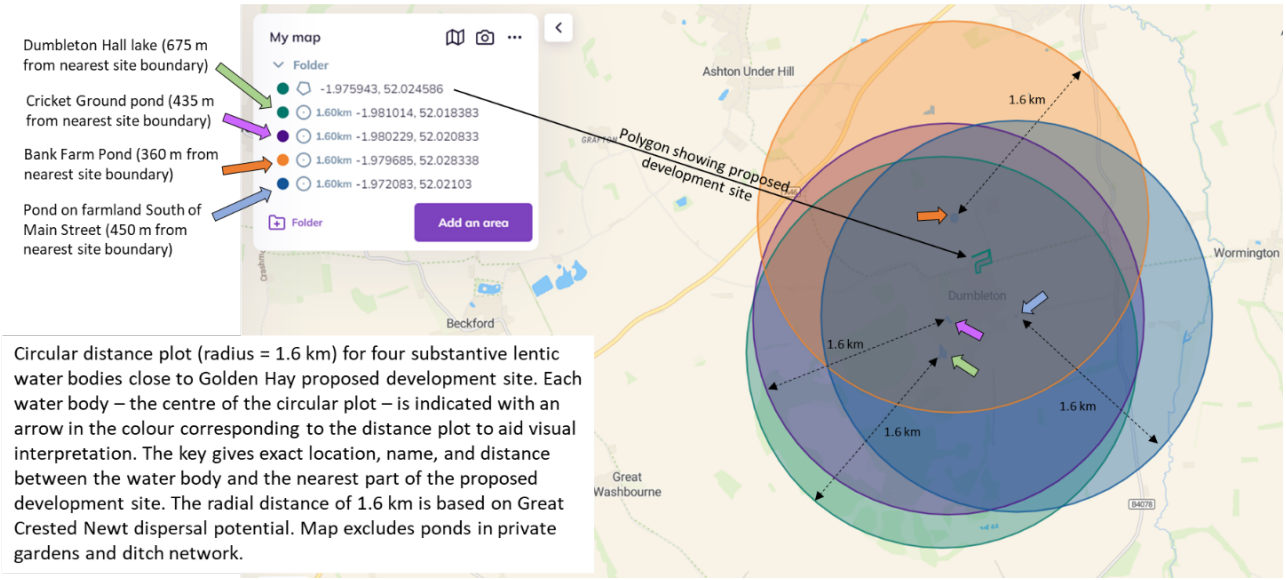
Amphibians

There has been no formal surveying for amphibians, most notably Great Crested Newts (GCN), which are legally protected under the Wildlife and Countryside Act 1981 (as amended). This is despite the fact the site with within NatureSpace Partner's red zone (i.e. highly suitable habitat – the most important). The EcIA dismisses the potential for presence on site, without any surveying, given the distance to nearest pond being > 250 m and the nearest ditch being dry. The formal response to the Ecology Report states "I accept the conclusion in the report that it is unlikely that GCN would be present on site due to the lack of ponds within 250m" but there are multiple issues:

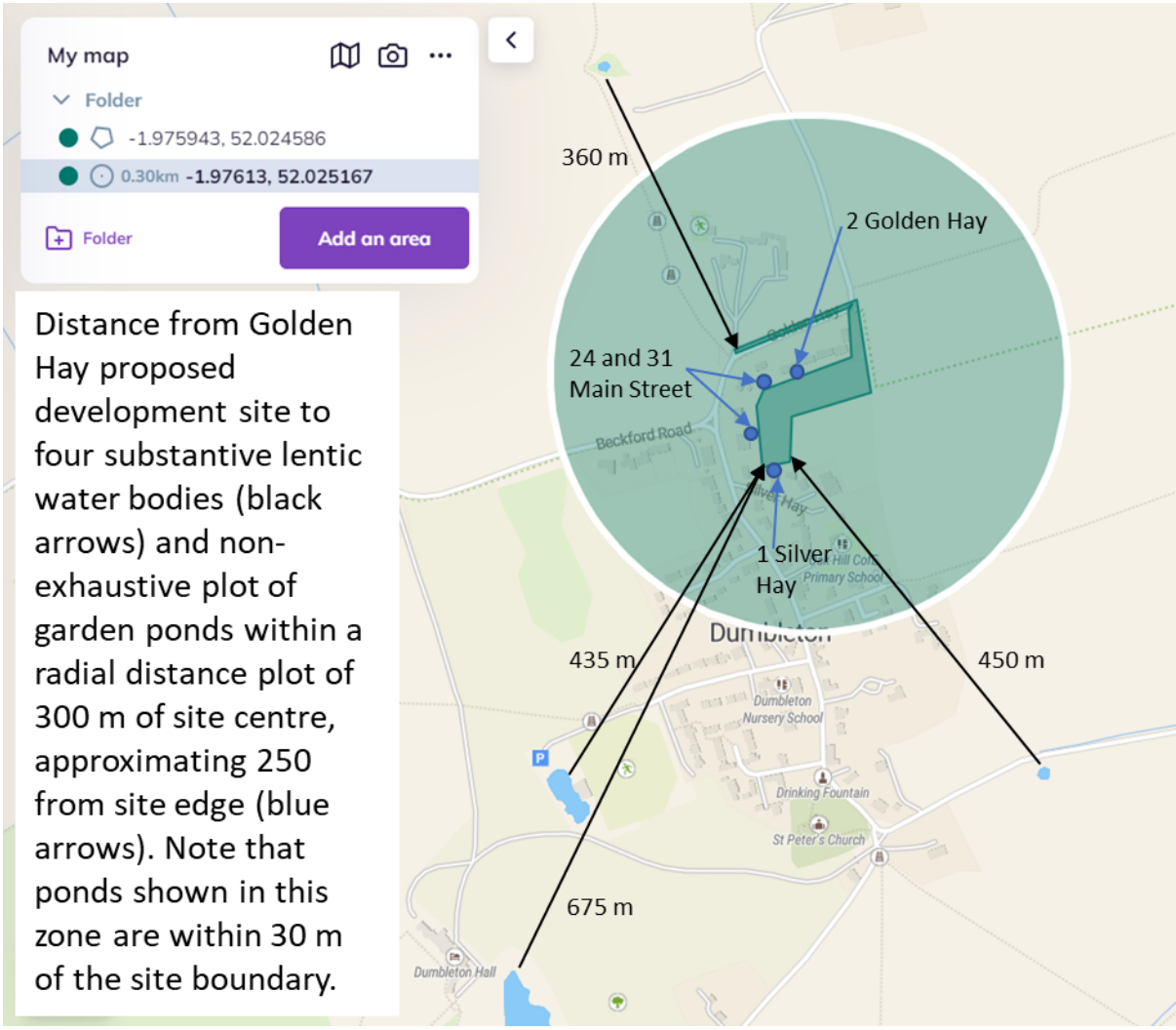
A. Great Crested Newts can move up to 1.6 km and there are found substantial bodies of water within 1.6 km in the wider countryside and thus within GCN dispersal range.

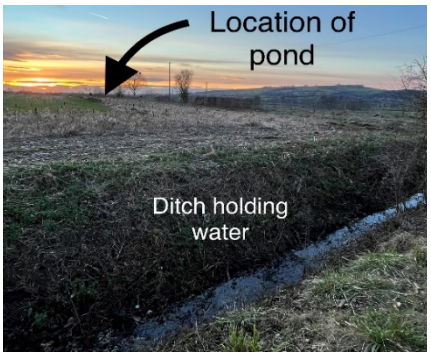
B. There are known garden ponds within 250 m including five within 30 m of the site boundary. Great Crested Newts are known to use garden ponds and two of the householders of these properties have reported newts within their ponds (species unknown).

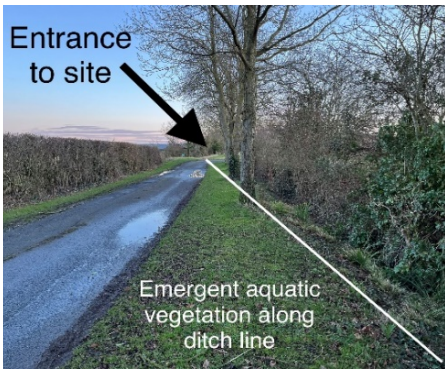
C. The nearest pond in the wider countryside is linked almost continuously to the site by a ditch which, although reported as dry during the single ecological visit in May 2020 during a prolonged drought and when temperatures on the day of the spring visit were 24 degrees, actually holds water continually except in prolonged drought conditions.



Circular distance plot (radius = 1.6 km) for four substantive lentic water bodies close to Golden Hay proposed development site. Each water body – the centre of the circular plot – is indicated with an arrow in the colour corresponding to the distance plot to aid visual interpretation. The key gives exact location, name, and distance between the water body and the nearest part of the proposed development site. The radial distance of 1.6 km is based on Great Crested Newt dispersal potential. Map excludes ponds in private gardens and ditch network.







Ditch providing almost-continuous link between potential Great Crested Newt pond (not surveyed) and the proposed development site. Photos taken 19 Feb 2022 showing water within the ditch and emergent aquatic vegetation showing current wet conditions are typical.

Summary: a Great Crested Newt Habitat Suitability Analysis should be performed to include consideration of ditch connectivity from known substantial waterbodies in the wider countryside within 1.6 km (actually within 0.7 km). Garden ponds immediately adjacent to the site should be surveyed using primary ecological censusing.

Birds

Several species of birds that have the highest level (Schedule 1) legal protection under the Wildlife and Countryside Act hunt over this area, including Red Kite and Barn Owl. Moreover, as noted in the Ecological Report, ground-nesting farmland birds such as Skylark and Yellowhammer (both priority species, both legally protected) occur locally. What the report does not state, possibly due to incomplete information being available to the consultants, is that the current management of the site, that is hay cut with aftermath grazing, is the ideal habitat for legally protected species listed on the UK conservation priority (former BAP) list.

Biodiversity Net Gain

There is no detailed plan for Biodiversity Net Gain (BNG) within the proposals, despite it now being a legal requirement to show at least 10% net improvement to biodiversity as a result of the development. No details of the relevant metric, nor workings, have been shown. When asked a direct question at the Parish Council planning meeting on Wednesday 16 February 2022 with respect to the original (withdrawn) proposal, the Developer's representative acknowledged the need for BNG at 10% and said this would be "addressed in the landscaping" with each plant species being chosen "for a particular reason" such as "supporting a specific species". No ecologically-robust details were given as per BNG national guidance (e.g. CIEEM https://cieem.net/i-am/current-projects/biodiversity-net-gain/) and the specific BPG calculation metric was not articulated.

It is also notable that if primary ecological surveys for protected species had been carried out, as would be expected given incontrovertible – and disclosed – evidence of local roosts (bats), records (hedgehogs) and a national metric on site suitability (newts), the baseline ecological conditions would be considerably higher. This in turn would make the BNG 10% requirement harder to meet. There is no accusation implied in this purely factual statement.

Local Wildlife Site application

Local (aka Key) Wildlife Sites are sites that have been independently assessed by a country-level selection panel and assessed as being of county-level importance. Such sites are the best examples of sites for specific habitats or species in the county where loss would have a profound and irreversible ecological impact. The system occurs across the UK, although there are some county-level differences in nomenclature. The Gloucestershire LWS process is encapsulated in a 107 page document plus appendices running to a further 100 pages plus. The requirements for listing a site are extensive, rigorous and robust. Crucially, LWS within planning, offering a degree of protection during the planning process which can protect LWS from avoidable harm. The Gloucestershire system has been agreed, ratified and supported by Tewkesbury Borough Council.

Based on the results from passive acoustic surveying undertaken for bats in April 2023 (which were analysed in May and June 2023), an application has been made to the Local Wildlife Site Selection Panel to formally assess the site for possible listing. This application was made on 12 July 2023 at 18:08 after informal discussion with two members of the selection panel (one from Gloucestershire Wildlife Trust and one from the Gloucestershire Ecological Advisory Group) regarding due process and to obtain the relevant documents. The application has been made under Criterion 4 "Rare or Exceptional Feature" Part A "the species present are rare, either in an international, national, or county context". It is noted in the LWS guidance that LWS designation is not usually a suitable approach for roosts in domestic dwellings, but designation of associated habitat can be suitable to aid protection and management.

The specifics of the application relate to the site being a key foraging area for a diverse assemblage of bats – including those that are rare in a national context (Leisler's; Lesser Horseshoe), UK priority species (Barbastelle; Noctule), or Near Threatened internationally (Barbastelle) – and the very high activity levels recorded. The bat-

specific data has been cross-referenced with thresholds in Table S3 of the LWS documentation. The known long-term roost site of Lesser Horseshoe at Dumbleton Hall (0.7 km from the site) is noted. The application contends that loss of a local and well-used (and thus likely high quality) foraging area would negatively affect the local population and thus, potentially, the viability of this roost and those of other species in the local area.