



Preliminary Roost Assessment & Phase II Bat Surveys

Sparkes Marina, Hayling Island

Ecosupport Ltd
K4 Keppel,
Daedalus Park,
Lee-on-the-Solent
PO13 9FX

info@ecosupport.co.uk

VAT: 228 4314 18



Report	Preliminary Roost Assessment & Phase II Bat Survey
Site Name	Sparkes Marina, Hayling Island
Author(s)	Darla Brown BSc (Hons)
Checked by	Darrelle Moffat BES (Hons) PGCert ACIEEM
Client	MDL Marinas
Date of Issue	August 2025
Status	<i>Final</i>

Table of Contents

Executive Summary.....	3
1.0 INTRODUCTION	4
1.1 Brief.....	4
1.2 Aims	4
1.3 Site Description & Location.....	4
1.4 Development Proposals.....	4
2.0 RELEVANT LEGISLATION & POLICY	5
2.1 Legislation.....	5
2.1.1 The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019.....	5
2.1.2 The Wildlife and Countryside Act (1981) (as amended)	5
2.1.3 The Countryside and Rights of Way Act (2000).....	5
2.1.4 Natural Environment and Rural Communities Act (2006).....	6
2.1.5 The Environment Act (2021)	6
2.2 Policy	6
2.2.1 National Planning Policy	6
2.2.2 Local – Havant Borough Council.....	8
3.0 METHODOLOGY	9
3.1 Preliminary Roost Assessment	9
3.2.3 Phase II Emergence Surveys	10
3.3 Limitations	15
4.0 RESULTS	16
4.1 Preliminary Roost Assessment	16
4.2 Phase II Emergence Surveys.....	21
5.0 EVALUATION, IMPACTS & RECOMMENDATIONS	22
5.1 Summary & Evaluation of Results	22
5.1.1 Foraging and Commuting	22
5.1.2 Roosting.....	22
5.1.3 Mitigation / Enhancements.....	22
5.1.3.1 Minimisation of Disturbance to Nocturnal Wildlife.....	22
5.1.3.2 Bat Boxes / Bricks	23
6.0 REFERENCES	24
Appendix A – Nightfox Whisker Specifications	25

Executive Summary

Ecosupport Ltd was instructed by MDL Marinas to undertake a Preliminary Roost Assessment (PRA) of Sparkes Marina, Hayling Island, to identify any potentially important ecological features that may be affected by the proposed works. As part of this assessment, B1 on site was identified as holding low potential to support roosting bats and as a result one subsequent Phase II bat survey was undertaken.

Ecosupport Ltd undertook one Phase II bat survey in July 2025. During the survey, a total of three Common Pipistrelle passes were noted Heard Not Seen (HNS) foraging across the site, however, there were **no emergences** and B1 is not considered to be used by roosting bats. The results of the survey and required mitigation and enhancement measures are outlined within this report.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was instructed to carry out a Preliminary Roost Assessment and subsequent bat emergence survey at Sparkes Marina, Hayling Island (hereafter referred to as 'the site').

1.2 Aims

The aim of the surveys was to confirm the presence/likely absence of roosting bats within the building.

NB If the development does not take place within 18 months¹ of this report then the findings may need to be updated.

1.3 Site Description & Location

The site comprises a marina and associated buildings at Sparkes Marina, Wittering Road, Hayling Island, Hampshire, PO11 9SR (centred on OS grid reference SZ 74690 98966) (**Fig 1**). The site is encompassed by the Emsworth Channel (also designated as Chichester and Langstone Harbours SPA & Ramsar, Solent Maritime SAC, and Chichester Harbour SSSI) to the north, east, and west, with access off Wittering Road to the south, adjacent to Boatyard Patch SINC. The wider environ, to the south, is urban, with the site situated at the far east of Hayling Island.

Figure 1. Aerial image of the site with approximate redline boundary provided (Google Earth, 2025).



1.4 Development Proposals

The proposals at this stage entail regeneration of the existing marina and erection of circa 9 No dwellings.

¹ <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

2.0 RELEVANT LEGISLATION & POLICY

2.1 Legislation

2.1.1 *The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019*

The Conservation of Habitats and Species Regulations 2017 transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

The Conservation of Habitats and Species Regulations 2019 (EU Exit) makes changes to the three existing instruments which transpose the Habitats and Wild Birds Directives so that they continue to work (are operable) upon the UK's exit from the European Union (EU). These include The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017. This instrument also amends section 27 of the Wildlife and Countryside Act 1981 to ensure existing protections continue. The intention is to ensure habitat and species protection and standards as set out under the Nature Directives are implemented in the same way or an equivalent way when the UK exits the EU.

In order for activities that would be likely to result in a breach of species protection under the regulations to legally take place, a European Protected Species (EPS) licence must first be obtained from Natural England.

2.1.2 *The Wildlife and Countryside Act (1981) (as amended)*

This is the primary piece of legislation by which biodiversity is protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly, this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

The Wildlife & Countryside Act (1981) states that it is an offence to 'plant or otherwise cause to grow in the wild' any plant listed in Schedule 9 part II of the Act. This list over 30 plants including Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Parrot's Feather (*Myriophyllum aquaticum*).

2.1.3 *The Countryside and Rights of Way Act (2000)*

This Act strengthens the Wildlife & Countryside Act by the addition of "reckless" offences in certain circumstances, such as where there is the likelihood of protected species being

present. The Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

2.1.4 Natural Environment and Rural Communities Act (2006)

The Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies have due regard to the conservation of biodiversity. This means that Planning authorities must consider biodiversity when planning or undertaking activities. Section 41 of the Act lists species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the *UK Post – 2010 Biodiversity Framework*.

2.1.5 The Environment Act (2021)

The Environment Act 2021 is the UK's new legislation for environmental protection in the UK, which includes protection of water quality, clean air, and biodiversity among other key protections. This Act provides the government power to set targets to reach long-term aims relating to the environment, which will be periodically reviewed and updated. This legislation also establishes a new environmental watchdog organisation, the Office for Environmental Protection (OEP), which will hold the government accountable on environmental issues.

Part 6 of The Environment Act relates to nature and biodiversity. This section makes provision for biodiversity net gain to be a condition of planning permission in England and a requirement for nationally significant infrastructure projects. Biodiversity net gain will require maintenance for a period of at least 30 years after the completion of enhancement works to be achieved.

The legislation also includes updates to existing environmental legislation, such as the NERC Act 2006, to strengthen biodiversity enhancement rather than just conservation and includes a requirement for local, or relevant, authorities to publish biodiversity reports. Further, The Environment Act places a requirement on responsible authorities to prepare local nature recovery strategies, which will outline nature conservation sites and priorities and opportunities for recovering or enhancing biodiversity within the local area. Within England, the legislation also provides Natural England with the power to publish 'species conservation strategies' and 'protected site strategies' to identify activities that may affect a species or site's status and outline their opinions on measures that would be appropriate to avoid, mitigate or compensate any adverse impacts.

2.2 Policy

2.2.1 National Planning Policy

The National Planning Policy Framework (NPPF) (2024) sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced.

Chapter 15 'Conserving and enhancing the natural environment' states that planning policies and decisions should contribute to and enhance the natural and local environment

by protecting and enhancing sites of biodiversity, the wider benefits from natural capital and ecosystem services, minimising impacts on and minimising impacts on and providing net gains for biodiversity including by incorporating features which support priority or threatened species such as swifts, bats and hedgehogs.

The NPPF states that plans should distinguish between the hierarchy of international, national and locally designated sites and land should be allocated with the least environmental or amenity value and take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure for the enhancement of natural capital at a catchment or landscape scale.

To protect and enhance biodiversity, plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species and identify and pursue opportunities for securing measurable net gains for biodiversity.

The NPPF states determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity 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;
- b) development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists;
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

Potential SPAs and possible SACs, listed or proposed Ramsar sites and sites required as compensatory measures for the previous should be given the same protection as habitats sites.

2.2.2 Local – Havant Borough Council

Under the Havant Borough Council adopted Local Plan: Core Strategy, part of the 'Vision for Havant Borough in 2026' is to protect and enhance biodiversity. Policy 'CS11: Protecting and Enhancing the Special Environment and Heritage of Havant Borough' states that planning permission will only be granted when development protects and where possible enhances the borough's statutory and non-statutory designated habitats and features of biological interest. and features of biological interest and prevents the fragmentation of existing habitats.

The strategy states that protection and enhancement will be achieved by appropriate adaptation and mitigation measures. It also has particular regard for nature conservation designations with international designations given the highest regard and supports an ongoing programme of surveys of habitats and species and designations of SINCs.

The proposed Local Plan 2036 was withdrawn during the Examination and therefore the above Local Plan will remain in place until a new Havant Borough Local Plan is adopted.

Furthermore, Policy 'DM24: Recreational Disturbance to Special Protected Areas (SPAs) from Residential Development' outlined within the Havant Borough Local Plan (Allocations) (2014), states that planning permission will be granted for residential developments that avoid or mitigate a likely significant effect on the SPAs, caused by recreational disturbance through the in-combination effect of net additional dwellings (via a financial contribution, and /or package of measures to avoid or mitigate adverse impacts upon the SPAs).

3.0 METHODOLOGY

3.1 Preliminary Roost Assessment

An external preliminary roost assessment was undertaken in May 2025, by Grace Roberts, Assistant Project Ecologist with Ecosupport Ltd. Due to limited internal access, it was recommended that an update assessment, including full internal access, was undertaken (Ecosupport, 2025).

An updated and internal assessment was made of the suitability of the building to support roosting bats based on the presence of any Potential Roost Features. This involved the use of 8 x 42 close focus binoculars and a high-powered torch (where required) for a more detailed inspection of any features. The survey conformed to current best practice guidance as described *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th Edition, Collins, J. (ed) 2023) and was carried out by Darla Brown BSc (Hons), Project Ecologist with Ecosupport Ltd., on the 23rd July 2025 (NE class level 2 bat licence 2025-80060-SCI-CL18).

Table 1. Guidelines for assessing the potential suitability of a built structure for roosting bats (reproduced from BCT (Collins (ed) 2023).

Suitability	Description of Roosting Habitats
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ² and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats ³).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ² and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ² and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g., maternity or classic cool/stable hibernation site.
<p>² For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.</p> <p>³ Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2016 and Jansen et al., 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.</p>	

3.2.3 Phase II Emergence Surveys

The bat survey at Sparkes Marina, Hayling Island was led by Darla Brown (NE class level 2 bat licence 2025-80060-SCI-CL18) with assistance from Laura Chidlow, Ollie Cole, Tom Evans, Chod Apol, experienced ecologists and subcontractors with Ecosupport (with the approximate locations of the surveyors indicated in **Figure 2**). Both heterodyne (Elkon Batscanner) and time expansion (Elekon Batlogger) detectors were used for identifying species calls / analysis of calls via sonogram (where required).

In addition to this, Night Vision Aids (NVAs) were set up at each surveyor location, covering the building. The NVAs used were the Nightfox Whisker which were checked periodically in 20 – 30-minute intervals to ensure appropriate Infrared (IR) levels were set for the conditions on site. The NVA footage was reviewed the next day for any emergences that were not observed during the survey. The specifications of the Nightfox Whisker can be found appended to this report with images showing the NVA field of view at the end of the survey shown in **Table 2**.

The dusk emergence survey began approximately 15 minutes prior to sunset and continued until approximately 1 hour and 30 minutes after sunset. The survey was carried out in suitable weather conditions. Survey sheets were used to record the following information:

- Time of call registration
- Species (if possible, to identify using heterodyne detector)
- Location / activity
- Direction of flight (if seen)
- NVA number used

Figure 2. Approximate locations of the surveyors and NVAs (red circles) (Google Earth, 2025).



Table 2. Field of views of the NVAs, relating to the locations shown in **Fig 2.**

NVA / loca tion	Field of view (start of survey)	Field of view (end of survey) with infrared setting
1		



4		
5		



3.3 Limitations

There were not considered to be any limitations during the preliminary roost assessment (PRA) as all areas of the site to be impacted upon were accessible. Similarly, there were not considered to be any limitations to the phase II bat survey with the survey carried out as per BCT best practice guidance (Collins (ed), 2023), during suitable weather conditions, and with all areas of the building covered.

4.0 RESULTS

4.1 Preliminary Roost Assessment

An assessment of the buildings on site was undertaken, with a location plan shown in **Figure 3**, and the results outlined below.

Figure 3. Building location plan of the site (Google Satellite, 2025).



Building 1 is a two-storey dwelling, of brick construction with plastic cladding on the exterior, and a pitched tiled roof (**Fig 4**). A single-storey attached cladded garage was present at the east with a flat bitumen felt roof. Furthermore, a lean to is present with a slightly pitched plastic roof. Internally, the roof is underlined with bitumen felt, with a wooden ridge and beams. No external potential roosting features or evidence of bats was identified, with the soffits and cladding tightly sealed, and no gaps identified beneath the roof tiles (**Fig 4**). Notwithstanding this, internally, there were rips and folds within the underlining, with visible light entering externally. No bats or evidence of bats was found internally. As such, the building is considered to offer **low potential** for roosting bats.

Building 2 comprises two single-storey workshop buildings, also utilised for storage. The buildings are single-skinned with corrugated metal walls and corrugated metal pitched roofs (**Fig 5**). A single-storey extension is present with a cladded half pitched roof utilised as a wash area. Externally, minor gaps were present between and corrugated roof and wall on the gable ends, however upon close inspection with a high-powered torch, no bats or evidence of bats was identified beneath. Internally, the structures are not lined, with areas of plastic

incorporated into the roof allowing for internal fluctuating light levels (**Fig 5**). No bats or evidence of bats was identified internally. Due to the location and construction (single-skinned) of the structure, it is subject to fluctuating temperatures and therefore does not provide the stable conditions for roosting bats. Furthermore, the building is accessible 24/7 and is subject to loud activities within throughout the day. As such, Building 2 was considered to be of **negligible potential** for roosting bats.

Building 3 is a two-storey building utilised as the Marina office and member's lounge. The building is mostly single-storey, with the eastern aspect of the building comprises of rendered walls and a corrugated pitched roof, whereas the western aspect of the building comprises of plastic cladded walls with a partial flat roof and partial corrugated metal pitched roof. The two-storey aspect of the building comprises of plastic cladded walls with a flat corrugated roof (**Fig 6**). The eastern aspect is utilised as a warehouse, with 24/7 use. Furthermore, internally, the structure is partially lined with wooden boarding. There is also plastic sheeting incorporated into the roof, allowing for fluctuating light levels. No bats or evidence of bats was identified internally or externally. Minor gaps beneath the roof overhang and walls of the southern and northern gable ends were identified (**Fig 6**). Upon closer inspection with a high-powered torch, no bats or evidence of bats was identified beneath. Similarly, gaps are present at the base of the roof beneath the corrugated metal. Due to the location of the building, it is anticipated that the building is subject to fluctuating non-stable weather conditions, such as wind. In combination with the use of the building and internal conditions, the building is considered to offer **negligible potential** for roosting bats.

Figure 4. Annotated north-eastern elevation of Building 1 (taken May, 2025).



Figure 5. Annotated eastern elevation of Building 2 (taken May, 2025).



Internal view



Western elevation



Southern elevation

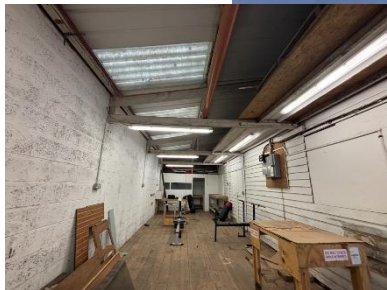
Figure 6. Annotated southern, eastern and northern elevations of Building 3 (taken May, 2025).



Southern elevation of the two-storey aspect



Southern elevation showing a gap between the gable end and roof overhang



Internal view



Eastern elevation showing gaps at the base of the roof



Northern elevation showing a gap between the gable end and roof overhang



Internal view



4.2 Phase II Emergence Surveys

The results of the bat emergence survey can be found within **Table 4**, along with other relevant information of survey conditions are provided in **Table 3** below.

Table 3. Relevant information on survey conditions recorded.

Date	Start Temp (°C)	End Temp (°C)	Cloud Cover (%)	Wind (Beaufort scale)	Sunset Time	Start Time	Finish Time
23/07/25	20	17	70	4	21:02	20:47	22:32

Table 4. Results from the emergence survey on the building HNS = Heard Not Seen.

Survey Date	Recorded Bat Roost(s)	Bat Activity on Site		
		Species	First Pass	Last Pass
23 rd July 2025	No emergences	Common Pipistrelle	21:48	22:09
		<u>Summary:</u> Activity during this survey was considered to be low with no emergences and limited foraging and commuting activity. Species diversity was considered to be low, with 1 species recorded.		
		The first registration was from a Common Pipistrelle (<i>Pipistrellus pipistrellus</i>) recorded as HNS foraging at 21:48. Following this, a further two Common Pipistrelle were noted as HNS, with the last registration at 22:09.		
		The NVAs were reviewed the following day, no emergences or additional bats were identified.		

5.0 EVALUATION, IMPACTS & RECOMMENDATIONS

5.1 Summary & Evaluation of Results

5.1.1 Foraging and Commuting

Overall, the levels of foraging and commuting bats recorded on site during the survey were low, with a low species diversity. The foraging and commuting bats recorded on site during the survey was restricted to Common Pipistrelle, a common species. Given the low activity and existing habitats on site (mostly developed land; sealed surface) it is considered there will be a **negligible impact** to foraging and commuting bats at a **local level**.

5.1.2 Roosting

Based on the results of the emergence survey, the building on site is not considered to be used by roosting bats and no further survey work with regard to roosting bats within buildings is considered necessary.

5.1.3 Mitigation / Enhancements

No bats were recorded within the dwelling and therefore no specific mitigation will be required. Below are some general mitigation and enhancements for bats.

5.1.3.1 Minimisation of Disturbance to Nocturnal Wildlife

To avoid adverse impacts on bats, any additional external lighting to be implemented at the south of the site, adjacent to the Poplar (*Populus* sp.) trees on site and Boatyard Patch SINC should be sensitive lighting.

A document (*Guidance Note 08/18 Bats and Artificial Lighting in the UK*) has been produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. The key recommendations within this document have been outlined below and will be implemented provided there are no conflicts with any legal limits of illumination (in which case a suitable compromise should be reached).

'Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires:

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used. LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.*
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.*
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).*

- *Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.*
- *The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.*
- *Column heights should be carefully considered to minimise light spill.*
- *Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.*
- *Luminaires should always be mounted on the horizontal, i.e. no upward tilt.*
- *Any external security lighting should be set on motion-sensors and short (1min) timers.*
- *As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed (**Fig 7**).'*

Figure 7. (a) Shield 'barn doors' (b) cowl hood; (c) shield and; (d) external louvre Images from ILP (2011).



5.1.3.2 Bat Boxes / Bricks

Further enhancements including bat boxes / bricks are outlined within the Preliminary Ecological Appraisal (PEA) Report (Ecosupport, 2025).

6.0 REFERENCES

Collins, J. (ed) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London. ISBN-978-1-7395126-0-6.

Ecosupport (2025). Preliminary Ecological Appraisal. Sparkes Marina.

Havant Borough Council (2011). 'Havant Borough Core Strategy' Available online at: <http://www.havant.gov.uk/sites/default/files/documents/ADOPTED%20CORE%20STRATEGY%20.pdf>

Havant Borough Council (2014). Havant Borough Local Plan (Allocations). *Adopted Version*. July 2014. Available online at: <https://www.havant.gov.uk/planning-services/planning-policy/local-plan/core-strategy-and-allocations-plan-adopted-local-plan>

HMSO (1981). *Wildlife and Countryside Act* (amended). HMSO, London.

HMSO (2017) *The Conservation of Habitats and Species Regulations*. Statutory Instrument 2010 No. 490. HMSO, London.

HMSO (2019). *The Conservation of Habitats and Species Regulations*. Statutory Instrument 2019 No. 579. HMSO, London.

ILP / BCT (2023) Guidance Note 08/2: Bats and Artificial Lighting at Night

Ministry of Housing, Communities & Local Government. (2024) 'National Planning Policy Framework'. December, 2024.

Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.

Appendix A – Nightfox Whisker Specifications

- *Fixed optical magnification: 1x to 10x (adjustable)*
- *Adjustable digital magnification: 8x*
- *IR wavelength: 850nm*
- *Digital sensor resolution: 1920*1080*
- *Infrared LED power output: 3 watts*
- *Power supply: Built-in lithium battery*
- *Battery Life: 5 hours mixed IR - 10 hours (no IR)*
- *Recharge via USB: Yes*
- *Photo taking capability: Yes*
- *Video recording capability: Yes*
- *Audio recording: Yes*
- *Memory card: Micro SD (32GB included). Min 4GB. Max 256GB*
- *Recording resolution: 1920*1080*
- *Unit dimensions metric: 157*140*57mm*
- *Unit dimensions imperial: 6.2 * 5.5 * 2.2"*
- *Unit weight: 609g inc. battery*
- *Viewfinder technology: TFT*
- *Screen size: 2.86"*
- *Screen resolution: 960*376*
- *Sensor type: CMOS*
- *Aspect ratio: 5:2*
- *Aperture: F1.6*
- *Viewing angle (FOV): 57° on 1x, 11° on 10x*
- *Aspect ratio: 5:2*
- *Viewing distance at night: 270m / 30 yards*
- *Aperture: f/1.6*
- *Minimum focus: 3cm*
- *Sensor frames per second: 30fps (20fps in low light)*
- *Video recording frames per second: 30fps*
- *Integrated Laser Rangefinder: No*
- *EAN: 5060577470687*
- *Battery Composition: Lithium Ion*
- *Number of batteries: 1*
- *Battery weight (grams): 95g*
- *Cells per battery: 1*
- *Watt hours per battery: 18.5Wh*
- *Lithium content (grams): 1.2*
- *Hazardous for: Waste, Transportation*
- *UN classification: UN3481*

(<https://nightfoxstore.com/products/nightfox-whisker-night-vision-goggles-infrared-binoculars>)