

ecological support, management &
solutions



Ecological Management Plan

Yachthaven

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For Alpine Homes

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MAPS

MAP 1. On-site Reptile Translocation: Habitat Lost vs Habitat Compensated

1.0 Introduction

1.1 Purpose of Document

Ecosupport Ltd. was commissioned by Alpine Homes to prepare an Ecological Management Plan suitable to discharge Condition 29 of approved Planning Permission ref APP/13/00317 from the Havant Borough Local Planning Authority for the development at Yachthaven comprising six residential dwellings with associated landscaping and infrastructure and a 12-berth pontoon.

Condition 29:

'Prior to commencement of the development hereby approved, a detailed site-wide Ecological Management Plan shall be submitted for written approval to the Local Planning Authority. The Ecological Management Plan should include details of mitigation and enhancement measures designed to protect and enhance populations of legally-protected species throughout the development process and should include (but not necessarily be restricted to): species capture and translocation measures, timing and methods of habitat clearance, habitat creation and planting, details of the site lighting scheme and proposed enhancements such as bat and bird boxes. Development shall subsequently proceed in accordance with any such approved details.'

Reason: To protect and enhance biodiversity in accordance with NPPF, the Wildlife & Countryside Act 1981, the Natural Environment and Rural Communities Act 2006 and Policy CS11 of the Havant Borough Local Plan (Core Strategy).

This document is based in full upon the information contained within the REVISED Ecological Assessment for Yachthaven, Hayling Island (Ecosupport Ltd., 2012). Please refer to this Ecological Assessment document for details on the ecological baseline and survey results for the site. This document builds upon the avoidance, mitigation and enhancement presented within the ecological assessment.

This document is submitted alongside a Habitat Creation Strategy (Ecosupport Ltd., 2017), which details the habitats to be created and enhanced on site, including the removal of structures within the intertidal area and the establishment of the Yachthaven Nature Reserve consisting of the Yachthaven Coastal Meadow & Wetland and the Yachthaven Conservation Grassland.

1.2 Background and Site Context

At the time of the Ecological Scoping Survey in October 2010 (GPM Ecology, 2010), the site supported ten (largely derelict) buildings in various states of repair. A small boatyard is located on the shore of the creek and has an associated wet dock, wooden structured workshop (separate but directly adjacent the application site) and further hard-standing area. Both the existing and derelict boatyards may have

been infilled to the present ground level (approximately 1.5m above the high tide mark), although there is no evidence of significant reclamation over the last 150 years, from First Edition Ordnance Survey Maps.

The proposed pontoon extends into an intertidal creek that forms part of Chichester Harbour estuary, supporting estuarine mudflats. The intertidal is between 75m and 150m in width at the point of the southern edge of the site to the adjacent northern creek shoreline to Verner Common. Below the mean high tide mark, the sediments show a narrow width of gravel substrates at the higher range of the tidal level, but with a significant amount of exposed mud sediments over much of the tidal creek. The creek adjacent to the site is dominated by upper shore seaweeds of the genus *Fucus* (bladder-wracks). The width of the creek narrows to the east to an abrupt end and widens significantly to the east, towards the central intertidal area of the main harbour. At the head of the creek is a strip of vegetation between the shoreline and seawall, comprising saltmarsh plant communities west of the proposed pontoon.

The site is located directly adjacent to statutory designated sites including Chichester and Langstone Harbours Special Protected Area (SPA); Solent Maritime Special Area of Conservation (SAC); Chichester and Langstone Harbours Ramsar Site and Chichester Harbour Site of Special Scientific Interest (SSSI). These sites are particularly important for populations of overwintering wildfowl and waders.

The proposed development site is bounded to the west by an old hedgerow and to the east by a line of scrub with some young trees. The western part of the site ownership consists of unimproved coastal grassland, partly invaded by bramble and thorn scrub (part of the Fields and Saltmarsh South of Copse Lane Site of Importance for Nature Conservation (SINC)). This is partly bounded by hedgerows and mature trees.

1.3 Summary of the Development

The development will include the construction of six detached dwellings covering an area of approximately 0.1ha on the site of derelict buildings of the former boatyard and the construction of a floating pontoon to accommodate twelve sailing boats (generally 10m long by 4m wide) with no multi hulled craft requiring to be moored. The pontoon will be held in position by 4 driven piles, either timber or steel. No dredging or bottom levelling within the creek is required as part of these plans. A boat store and associated office and wash room facilities for on site and off site pontoon owners/lease holders will be located on the existing hard standing areas and a new concrete slipway will be constructed over the footprint of the existing slipway.

In addition to the construction of buildings and the pontoon, further habitat creation and improvement will take place as part of the development plan. Existing sea

defences (concrete piles) and disused pontoons will be removed to create more habitat within the intertidal area. A public footpath will be reinstated with inert materials. Areas of green space either side of the development will be landscaped where necessary and managed as a Nature Reserve: Yachthaven Coastal Meadow & Wetland (part of the existing SINC) to the west and Yachthaven Conservation Grassland east of the hard standing area.

2.0 Ecological Avoidance & Mitigation Measures

Ecological avoidance and mitigation measures are to be implemented in advance of all construction works (including site clearance) to ensure the proposed works proceed in full compliance with all relevant wildlife legislation and policy.

2.1 Wintering SPA Birds

2.1.1 During Construction

Verner Common and Gutner Peninsula have been identified as having potential for feeding and roosting waders and wildfowl including Brent Goose (*Branta bernicla*) during the wintering period within the intertidal zone and high tide roosts.

Since the majority of important bird species use Chichester Harbour during the wintering period, construction works to the foreshore and within the creek (clearance of the foreshore debris and pontoon installation) **will not take place between late summer and early spring (September to April) to avoid any disturbances to migrating and wintering birds.** In addition, any construction works within the creek will be carried out with specialist non-vibration equipment. This will reduce disturbance to any birds that may still be using the creek during the summer months, as well as nesting birds in the vicinity.

To avoid impacts to nesting birds that may be present within habitats outside the creek and foreshore, all clearance in such areas will avoid the bird nesting period, which spans February-August inclusive. Further, clearance will be undertaken by a maximum of four contractors at any one time to reduce disturbance to any wintering birds using the nearby habitats.

All works will be supervised by a Suitably Qualified Ecologist (SQE).

2.1.2 Post-Construction

Although the addition of up to twelve boats using the new pontoon is not expected to have a significant impact on birds, there is potential for boat users to disturb important high-tide Brent Goose feeding areas and wader roosts at Verner Common and Gutner Peninsula by illegally mooring at these areas.

To increase boat users' awareness of the ecological importance of the local area and to provide information regarding potential damaging actions an Environmental Code of Conduct for Yachthaven boat users will be published. This will include the following clauses:

- *Gutner Peninsula and Verner Common are private land-holdings and internationally important winter-roost sites and thus boats should not be moored here at any time.*
- *During the autumn and winter periods (September to April) boats should use the centre of the navigation in order to ensure disturbance to birds on high-tide roosts at Gutner Peninsula and Verner Common is kept to a minimum.*
- *'No Landing Areas' will be clearly shown within the Code of Conduct.*
- *Information will be provided detailing the importance of the wintering birds using Chichester Harbour SPA as a whole as well as the importance of lessening disturbance to these bird populations. Locations of other important bird high tide and feeding areas within the harbour will be detailed.*
- *General information on littering and location of rubbish disposal areas.*

In addition to the Code of Conduct **signs will be attached to channel marker posts** adjacent to Gutner Peninsula and Verner Common, with wording to the effect: *'Private, Protected Area, No Landing'*.

This will reduce the likelihood of any additional users of the creek from landing at the high tide roost site and may also deter current users of the creek from landing. Currently there are no such measures to deter landing at these sites and therefore this would reduce any potential disturbance of the high tide roosts at Verner Common and Gutner Peninsula.

The potential for disturbance of feeding, breeding or roosting birds at the Fields and Saltmarsh South of Copse Lane SINC has been identified. The survey data and incidental observations indicate that currently there is minimal human activity along the coastal footpath and although this may increase, any increase is likely to be small due to the low number of residential dwellings proposed. **A stock netting with top rail fence on the landward side of the coastal path will be installed** adjacent to the Fields and Saltmarsh South of Copse Lane SINC to deter public access to the site. The location details for installation of this fence are further detailed in the Habitat Creation Strategy document (Ecosupport Ltd., 2017).

2.2 Reptiles

Low populations of Slow Worm (*Anguis fragilis*) and Common Lizard (*Zootoca vivipara*) have been identified within the works area on site, with additional

populations also assumed to be present within the Conservation Grassland site). If no mitigation were implemented, reptiles would therefore most likely be killed or injured during site preparation. To ensure the protection of reptiles in association with the proposed works on site a translocation will be undertaken prior to any construction works (including site clearance) commencing. Approximately 2434m² of existing suitable reptile habitat will be lost within the area of works but approximately 4189m² of reptile habitat will be added through scrub clearance within the Yachthaven Coastal Meadow & Wetland (**Map 1**).

2.2.1 Receptor Area

As per best practice, *in-situ* relocation schemes, where reptiles are retained in suitable areas of a development site or released into immediately adjacent suitable habitat, are preferable (English Nature, 2004). Subsequently, reptiles identified within the areas of impact of the proposals (comprising the works area and the Yachthaven Conservation Grassland) will be relocated to the Yachthaven Coastal Meadow and Wetland (*Fields and Saltmarsh South of Copse Lane SINC*) prior to works commencing (**Figure 1**).



Figure 1. Location of Receptor Area (in red)

2.2.2 Site Set Up

Reptile exclusion fencing will be installed around the perimeter of the works area (**Figure 2**). This will prevent recolonisation of the works area. The fencing will remain in place until all construction works on site have been completed.

Prior to the translocation commencing, the receptor site will be subject to selective scrub clearance as detailed within the accompanying document Habitat Creation Strategy (Ecosupport Ltd., 2017) to increase the availability of suitable reptile habitat. In addition four specifically constructed reptile hibernacula will be constructed within the receptor site to further enhance habitat quality.



Figure 2: Approximate location of reptile exclusion to be installed (blue lines)

2.2.3 Translocation

Timing

The optimum period for capture of reptiles is April to June and September, however it is possible to capture reptiles outside of this period providing weather conditions are suitable. By ensuring that all reptiles are translocated by the end of September/start of October (weather permitting), it will allow sufficient time for reptiles to find suitable hibernation sites within the receptor site.

Capture

Following the site setup, artificial refugia, comprising a combination of bitumen felt and corrugated metal, will be distributed throughout the catch area. The density will be increased from that which is recommended by best practice (50/ha) to increase catch rates. Refugia will be left to bed in for a minimum of seven days, after which daily captures will be undertaken by SQEs during the active reptile season and during suitable conditions (i.e. between 10°C and 20°C, full to partial sun and little to no wind or rain).

Reptiles will be captured by hand from beneath the artificial refugia and placed into

a suitable container. All captured reptiles will be released into the receptor area on the same day they are captured and within suitable habitat.

Capture Effort

The HGBI guidelines (1998) suggest that for “low” populations of Slow Worm and Common Lizard a minimum of 60 days capture should be undertaken. However, using increased refugia density, and given the limited size of the suitable habitat within the catch area, it is deemed proportionate to reduce the number of capture days to 30. However the capture effort will not be deemed completed until five consecutive negative days are recorded during suitable conditions. Therefore the capture process may continue past the 30 day minimum period. It should be noted that since the original Phase II Reptile Survey was undertaken three breeding seasons have passed, with vegetation becoming more developed. As such increased population sizes may be present on site.

2.2.4 Destructive Search

Following the completion of the reptile capture, a sensitive destructive search supervised by a SQE will take place within all areas of suitable habitat. The vegetation and topsoil will be sensitively stripped using an excavator with a toothed bucket. Any reptiles identified will be caught and placed into the receptor area by the SQE.

2.3 Bats

2.3.1 Lighting Mitigation

A sensitive lighting strategy will be implemented on site to reduce any associated disturbance to commuting and foraging bats.

The following information has been taken from the Bat Conservation Trust (BCT) publication ‘Bats and Lighting in the UK’ (2009):

Type of Lamp

Sodium or LED lights will be used on site instead of mercury or metal halide lamps. Glass glazing is preferred due to its UV filtration characteristics. Light sources that emit minimal ultra-violet light and avoid the white and blue wavelengths of the light spectrum reduce their attractiveness to invertebrates; this avoids a reduction of insects in other foraging areas, and can alter the assemblage of bats on site.

Luminaire and Light Spill Accessories

If street lighting is a necessity, lighting should be directed to where it is needed and light spillage avoided. This will be achieved by the design of the luminaire and by using hoods to direct the light to the intended area only. Lighting will be avoided along the boundary vegetation.

Lighting Column

The height of lighting columns will be as short as possible, and will be limited to a maximum of 3 metres. Use of hooded bollards will be employed wherever possible on site.

Light Levels

Lighting will be as low as guidelines permit, and only installed where necessary.

Timing of Lighting

The times during which the lighting is on will be limited to provide some dark periods. Any security lighting will be sensor activated.

2.3.2 Updated Phase I Bat Survey

The initial Extended Phase I Habitat Survey of the site was undertaken in 2010. Whilst no potential bat features were identified in any of the trees on site at the time of the survey, an updated site walkover will be conducted by a SQE prior to works commencing to identify if any trees to be removed or disturbed have since developed potential bat roosting features. If a potential feature is identified in a tree that is planned to be removed, further assessment will be necessary prior to felling to determine the presence/likely absence of roosting bats. Should a roost be identified a suitable mitigation strategy must be implemented (advised by the SQE), with all works undertaken under a European Protected Species Licence due to the legal status of bats in the UK.

2.4 Eelgrass Beds

2.4.1 Pontoon

Although the construction of the pontoon itself is highly unlikely to adversely impact the Eelgrass beds, there is some potential for boats moored at the pontoon to directly impact a very small (approximately 10m²) area of Eelgrass. The Eelgrass bed closest to the pontoon is located to the southwest, therefore mooring at the end of the pontoon will be restricted to the southeast end, with no moorings permitted on the southwest end. **Suitable signage will also be installed at the southwestern end of the mooring** stating that, '*No mooring permitted within this area, to protect important wildlife habitat*'.

2.4.2 Eelgrass Code of Conduct

In order to prevent other sources of potential damage to eelgrass by boat users, an '*Eelgrass Code of Conduct*' similar to the code in operation in Tor Bay in Devon (Torbay Coast and Countryside Trust, n.d) will be incorporated into the Yachthaven Environmental Code of Conduct (an informative publication for residents & visitors).

The 'Yachthaven Eelgrass Code of Conduct' will include the following actions:

- . Reducing risk of littering within the creek
- . Use of fixed moorings to avoid anchoring
- . No anchoring outside of the navigation channel
- . If you have to anchor, do so on bare mud areas avoiding eelgrass beds
- . Avoid using boat (sea) toilets within the creek
- . Keep to the speed limit (8 knots) whilst in the creek
- . Avoid grounding on the eelgrass, but if this happens allow the tide to refloat you

2.4.3 Licences for Swing-moorings

In the Revised Ecological Assessment report (Ecosupport Ltd., 2012), existing swing-moorings (26 were available within the creek at the time of survey) were identified as causing significant damage to eelgrass beds within the creek, potentially leading to increased fragmentation of the beds. No new licences for swing-moorings will be granted by the Chichester Harbour Conservancy and existing licences reviewed, with all new alternative moorings being offered at the new Yachthaven pontoon. This aims to reduce the overall level of damage from moored boats within the creek, thereby reducing the negative impacts of the development upon eelgrass beds to an insignificant level.

2.5 Trees & Hedgerows

The potential for locally important trees and hedgerows to be damaged as a result of crown damage and root compaction during construction has been identified. In order to prevent this, standard arboricultural tree protection measures will be implemented. Heras fencing (or similarly robust construction fencing) will be installed prior to works commencing on site, to protect all retained ecological features outside of the works area, including Root Protection Zones. Appropriate signage will be installed on all such fencing, and fencing will remain in place until all construction works have been completed.

2.6 Updating Badger Survey

Immediately prior to the commencement of construction works on site an updating site walkover will be undertaken by a SQE to determine whether any Badger setts have been newly constructed within the area of impact (the works area plus a 30m buffer). Should an active sett be identified and is considered to be at risk by the construction works, a suitable avoidance/mitigation strategy will be produced by the Ecologist, including the attainment of a Natural England European Protected Species Mitigation Licence if necessary to ensure full compliance with wildlife legislation. Further, all vegetation clearance will be supervised by a SQE to identify the presence of any setts.

2.7 Ecological Clerk of Works

A Suitably Qualified Ecologist (SQE) will supervise all ecological mitigation measures prior to (and during) construction works. The SQE will also supervise all ecological mitigation measures included within the Habitat Creation Strategy document.

2.8 Toolbox Talk

A pre-commencement toolbox talk will be delivered to all relevant contractors by a SQE to ensure compliance with mitigation measures. This will be supported by a Biodiversity Checklist, to be issued to all contractors, which will include measures to be taken if protected species are encountered.

3.0 Habitat Creation and Enhancement

The Yachthaven Nature Reserve will be created to enhance and provide long-term management of features of ecological value. The Yachthaven Nature Reserve Meadow & Wetland will consist of two areas of land along the foreshore on the site on either side of the boat storage and pontoon facilities. The details of habitat creation and site enhancements may be found in the Yachthaven Habitat Creation Strategy (Ecosupport Ltd., 2017).

4.0 Schedule of Mitigation & Enhancements

The following schedule encompasses all ecological mitigation and enhancement works as part of both the Yachthaven Ecological Management Plan and the Yachthaven Habitat Creation Strategy (Ecosupport Ltd., 2017).

Task	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18	Jul 18	Aug 18	Sep 18	Oct 18
Scrub Removal by Hand cut and Glyphosate treatment											
Installation of Reptile Fencing											
Construction of Reptile Hibernacula											
Installation of Stock Fencing											
Installation of Tree/Hedgerow Protection Fencing											
Hedgerow Planting											
Scrub Root Removal by Digger											

(as required)											
Removal of Intertidal Structures											
Reptile Capture & Translocation								(if required)			
Removal of Waste Material in Nature Reserve											
Ground Re-levelling											
Coastal Grassland Seed Foraging											
Coastal Grassland Ground Preparation & Seeding											
Installation of Owl, Bird & Bat Boxes											
Erection of 2 interpretation boards											

5.0 Ecological Monitoring and Management Plan

5.1 Management Plan

Following initial habitat creation and enhancement works the following Habitat Monitoring and Management Plan will be implemented for a minimum period of 10 years, to be suitably secured during the planning process. The Yachthaven Nature Reserve will be managed and monitored by a suitable conservation land management organisation. This programme will be re-evaluated and continued past the 10-year period as the managing conservation authority sees fit.

The key objectives of the management plan are as follows:

- Manage existing landscape features on site to ensure their current and continued ecological value;
- Manage newly created and enhanced habitats on site to ensure their success and future ecological value;
- To maximise the biodiversity value of the site as a whole.

The Monitoring and Management Plan is a working document and will require updating reflective of the findings of the on-going monitoring surveys. This will ensure habitat quality is maintained as per the original aims of its

creation/enhancement. All updates to the plan will be submitted to Havant Borough Council for written approval.

5.2 Monitoring Targets

5.2.1 Grassland

To ensure the species-rich grassland is suited to local habitat and continues to provide habitat opportunities for a range of species, management is required.

The grassland sward will be managed from first sowing as follows, depending upon the timing of the initial sowing (Germinal, 2016). Where cuts are undertaken, only 75% of the sward will be cut at any one time (on rotation) and to varying lengths to provide habitat opportunities for wildlife such as invertebrates and reptiles. Since reptiles may be using the grass habitat at the time of cutting, **vegetation will not be cut lower than 150mm** to ensure the protection of reptile populations.

Autumn Sown:

AUTUMN SOWN (First year)	
March	Cut to 4-7cm if there is sufficient material
May	Cut to 4-7cm in early May
September	Cut to 4cm after flowering. In all cases, remove the clippings
Maintenance thereafter: March/April	Cut to 4-7cm to remove excess grass
September/October	Cut to 4cm after flowering. In all cases, remove the clippings

(Germinal, 2016)

Spring Sown:

SPRING SOWN (First year)	
6 weeks after sowing	Cut to 4-7cm if there is sufficient material
May	Cut to 4-7cm if sufficient material (sward at 10cm or above)
September/October	Cut to 4cm. In all cases, remove the clippings
Maintenance thereafter: March/April	Cut to 4-7cm to remove excess grass
September/October	Cut to 4cm after flowering. In all cases, remove the clippings

(Germinal, 2016)

After the first year, the grassland will be cut sensitively on an annual basis in September once the wildflowers have set seed. All arisings will be collected and composted in a suitable area of the grassland, as described above in Section 3.3.2.

5.2.2 Scrub Management

To enable continued suitable reptile habitats to persist within the Yachthaven Nature Reserve invasive bramble and woody scrub species will need to be kept in check. This will also favour and increase the likelihood of small numbers of waders and wildfowl using the Yachthaven Meadow and Wetland for foraging by providing open flight lines and grassland.

A ratio of 70% open grassland to 30% scrub will be maintained and therefore annual monitoring of the scrub will be undertaken by a SQE. Scrub reduction by hand cutting will be undertaken as required between the months of September – January. This will inform the regularity and necessary requirements for continued management as factors such as grazing (rabbit/deer) and growth rates will have an affect upon the schedule of management intervention.

5.2.3 Hedgerows

The hedgerows will be managed as followed to ensure their on-going ecological quality:

Hedge Cutting

Many hedgerow plant species do not produce fruits until 2-3 years after they have been cut. The site hedgerows will therefore be cut on an on-going three-year rotation as per best practice guidelines. In year one the inside aspects of the hedges will be cut, in year two the tops of the hedges will be cut, and in year three the outside aspects of the hedges will be cut. This process will then be repeated. This rotation will ensure the sustained annual provision of fruit and nectar (Bright *et al.*, 2006). The optimum height of a hedge is 2-3m in an A-shape with a dense base and 2m adjacent to the hedge retained as an undisturbed margin (**Figure 3**) (Suffolk Wildlife Trust, n.d.); wherever possible, this will be promoted on site during the cutting process. In addition, where mature trees are present within the boundary hedgerows, these will be retained at full height to provide a range of habitat types and enhance bat commuting routes.

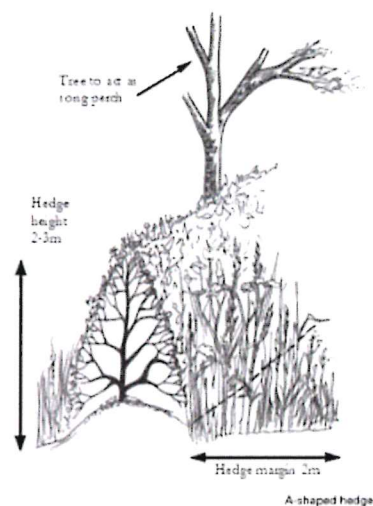


Figure 3 – Diagram of A-shaped hedge (Suffolk Wildlife Trust, n.d.)

Hedge cutting will be undertaken between September - January to ensure no adverse impacts to nesting birds, using a hand-held hedge cutter to reduce damage and disturbance. So as not to disturb important wintering birds that may be using the habitat within or nearby the site, a maximum of two contractors will undertake the cutting on site at any time.

Additional Planting

Should gaps appear in the boundary hedges (for example through plant damage/death), native whips will be planted to fill the gaps and promote continued robust habitat connectivity. Planting will comprise 2-year native species whips from the species list below and should be undertaken during the winter months. Each whip will be protected with a cane and clear plastic rabbit guard for the first two years of growth, after which the canes and guards will be removed to promote continued growth. All whips will be locally-sourced to reduce the carbon footprint of the project and to ensure their suitability to local environmental conditions. A suitable fertiliser, such as blood, fish and bone, will be used during the planting of all new whips, and all whips will be watered during planting.

Species to be planted within hedge:

- Hazel (*Corylus avellana*);
- Ash (*Fraxinus excelsior*);
- English Oak (*Quercus robur*);
- Crab Apple (*Malus sylvestris*);
- Bird Cherry (*Prunus padus*);

- Guelder Rose (*Viburnum opulus*);
- Dogwood (*Cornus sanguinea*);
- Field Maple (*Acer campestre*);
- Hop (*Humulus lupulus*); and
- Holly (*Ilex aquifolium*);

Ivy and Bramble Management

Where hedges are considered to have become overgrown with Ivy and Bramble to a level that has the potential to negatively impact upon the health of the hedgerow (to be informed by the on-going habitat monitoring programme), this will be managed via selective thinning. Such management will again be undertaken between September - January to avoid the bird nesting season and with care taken to leave hedge bases undisturbed in case hibernating wildlife is present. So as not to disturb important wintering birds that may be using the habitat within or nearby the site, a maximum of two contractors will undertake the cutting on site at any time.

5.2.4 Bat boxes

Bat boxes will be inspected annually and, if no bats or evidence of bats is identified, cleaned or replaced if necessary. **Please note, any disturbance of bat boxes must only be undertaken by a suitably qualified and licensed Ecologist – bats and their roosts are fully protected under UK and European wildlife legislation.**

5.2.5 Bird Boxes

Bird boxes will be cleared of old nests annually, in December/January, and rinsed with warm water (no soap). Boxes will be replaced as/if necessary.

5.2.6 Owl Nesting Box

The Barn Owl Trust (2015) states that boxes used only by breeding Barn Owls will need clearing out every 2 or 3 years. However, the nesting box should be inspected by a SQE annually and cleared out as needed. Since it is an offence under the Wildlife and Countryside Act 1981 to disturb breeding Barn Owls, clearing of boxes should take place between November and January. The box will be replaced as/if necessary.

5.2.7 Eelgrass Beds

The health of the eelgrass beds will require monitoring annually to determine the state of health of eelgrass beds within the creek adjacent to the site. Monitoring will follow the methodology for surveying mudflats as outlined in JNCC's marine monitoring handbook (Davies *et al*, 2001). An area of eelgrass is considered fragmented if eelgrass cover is less than 50% within a 0.5m² quadrat. For marine grassland communities, each monitoring survey will take place at the same time of year because vegetation cover can change throughout the year. The optimum survey period is May to August; however it is recommended to conduct monitoring surveys at the same time each year to compare to the baseline data. Therefore, the

monitoring surveys will be conducted in September to October to compare to the baseline data for Chichester Harbour collected by HWC previously, as described in the Yachthaven Revised Ecological Assessment (Ecosupport Ltd, 2012).

Methods for monitoring will include both transect and distribution mapping using GIS and drone controlled camera. An annual eelgrass distribution map will be produced from the survey results and submitted to HBC.

This mapping information will then inform recommendations and if necessary any advisory mitigation put in place with the cooperation of resident and visiting water craft users. Any advisories will be distributed to all boat users of the Yachthaven pontoon.

5.3 Monitoring and Management Schedule

A schedule of work is provided in the following table, giving a timetable for management actions for the first 10 years following the completion of the first main phase of development works.

Feature	Management Prescription	Timing	Frequency
Grassland	First year cutting at different times of year (described above). After first year, one cut per year.	September	Annually
Scrub Management	Scrub clearance to be carried out to prevent loss of optimum reptile habitats. Reduction of scrub every 3 years to enable a 20% ratio of scrub to grassland	September – January	3 years
Hedgerow Cutting	3 year rotation cut of established hedges (one side or top per year). N.B. First cut of new plants only after 8 years to allow for establishment.	September - January	Annual cut on rotation
Additional Hedgerow Planting	New whips planted only if needed	Any time	As necessary, advised by monitoring programme
Bat Boxes	Monitoring of bat boxes by a Suitably Licenced Ecologist and replacement as necessary	Any time	Annually
Bird Boxes	Nests removed and cleaned.	November-	Annually

	Boxes replaced as needed.	February	
Owl Nesting Box	Inspection of nesting box by a SQE, cleaned as required. Box replaced if necessary.	November - January	Annually
Eelgrass Beds	Monitoring health of beds. Recommending additional mitigation as required	September - October	Annually

6.0 Conclusion

This document provides an ecological mitigation, enhancement, monitoring and on-going management scheme of the proposed Yachthaven development. It is considered that should the details contained within this document, together with the Habitat Creation Strategy and all other documents associated with Ecology, are implemented in full the immediate and long-term valued ecological aspects on site and within the proximity of the site will be suitably protected and maintained both during development and in the future. The management plan within this document is a working document and will be updated as necessary during the on-going habitat monitoring programme, with all future updates agreed in full with Havant Borough Council.

7.0 References:

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**YACHTHAVEN,
HAYLING ISLAND**

MAP 1

On-site Reptile

**Translocation: Habitat Lost
vs Habitat Compensated**

Approximate site boundary

Approximate area of existing
suitable reptile habitat to be lost

Total: 2434m²

Approximate area of reptile
habitat to be added through
scrub clearance

Total: 4189m²

