Scrubland Superheroes
Houndean Farm

Ecology monitoring summaries and site habitat plans 2024 - 2025

Authored by Rachel Bicker - Scrubland Project Officer
Data summaries and figures by Sam Joy - Weald to Waves Project Support

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Blackthorn *Prunus spinosa* with fruit commonly known as ‘sloes’

Project summary

Red-backed Shrike *Lanius collurio*
©Laurie Jackson

Black-veined White *Aporia crataegi*
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Scrubland Superheroes is a Knepp Wildland Foundation (KWF) project, awarded funding in 2023 by Natural England Species Recovery Programme Capital Grant Scheme, which ran for an 18 month period. The aim was to restore scrubland habitat and create new mosaics to rejuvenate threatened species through the provision of advisory and monitoring support for creating and managing scrub, along with delivering capital works such as planting and protective fencing. Key sites were selected within the Weald to Waves corridor to focus effort on increasing availability of habitats for scrubland species such as Nightingale, Common Lizard and the Brown Hairstreak Butterfly. KWF continues to work with Natural England to progress plans for the reintroduction of both the Black-veined white butterfly (BVW) and red-backed shrike (RBS) in Sussex, with this project contributing toward organisation, networking and appropriate land management. Both RBS and BVW act as flagship species to target habitat improvement contributing to the conservation of other species living in the same habitat.

Collecting information through baseline ecology surveys and studies is key for informing appropriate habitat enhancements prior to making changes to a site. Wildlife surveys began in March 2024 with setting up survey transects and the recruitment of volunteers. These surveys covered the breeding season for key species groups, and were completed by October 2024. The project officer and volunteers submitted data via the biological recording tool iRecord, to be received and collated by the Sussex Biodiversity Record Centre. Habitat management plans were drawn up at the end of the survey season based on recommendations made by the surveyors. Practical works were then implemented in the final autumn and winter season of the project. This included contracted habitat works, conservation grazing, and practical volunteering days with our project collaborators. Suggested ongoing management plans have been provided which extend beyond 2025.

Project site statistics

Overview of the ecology monitoring results and site statistics

21 Butterfly species

75 Survey volunteering hours

25 Breeding bird species

14 Wildlife surveys

84 Botanical species

5 Scrubland habitat work days

4,891 Invertebrate prey specimens analysed

Site summary - Houndean Farm

Houndean Farm is part of the Iford Estate, a 3000-acre mixed farm within the South Downs National Park. This working farm situated on sloping chalk downland contains a patchwork of outgrown scrub from old game cover, hedgerows, open farm tracks and footpaths within an exposed, largely arable landscape. Most of the scrub patches are tall, even aged and becoming leggy in the centre. Other patches more linear in nature contain a more diverse structure along with scattered mature trees comprising of Pedunculate Oak and Sycamore.

East-facing scrub edges at Houndean Farm

Edges and clearings are dominated by Common Nettle, Hogweed and tussocky grasses. Field Bindweed and Traveller's-joy are frequent, with rarer Agrimony, White Bryony, Wild Parsnip and Bush Vetch. Dense Bramble is frequent along footpaths, along with rose, Blackthorn, Buckthorn, Hawthorn and Wild Privet.There is great botanical diversity within the surrounding grassland habitat, including over 10ha of sown wildflower areas created in the past two years under a Biodiversity Net Gain scheme. Greater Bird's-foot Trefoil, Common Knapweed, Red Clover and Oxeye Daisy making up a large proportion of the mix. Some conservation mob-grazing of the grasslands has recently commenced with small herds of cattle.

Sown perennial wildflowers on ex-arable land under the Iford Biodiversity Project BNG scheme

Many species of arable weed and relict chalk grassland species can still be found around the arable field margins such as Basil Thyme, although the majority are occurring in low abundances.

There is a great opportunity at Houndean Farm to implement rotational management of scrub patches to diversify their structure and clear the Sycamore, as well as to potentially diversity their composition to include some of the missing chalk scrub species.

Houndean Farm flagship species


Nightingale
Luscinia megarhynchos


Slow Worm
Anguis fragilis


Corn Bunting
Emberiza calandra


Small Blue
Cupido minimus


Basil thyme
Clinopodium acinos


Bryony Mining Bee
Andrena florea


Skylark
Alauda arvensis


Wall
Lasiommata megera


Brown Hare
Lepus europaeus

Sussex Biodiversity Record Centre summary

These summaries have been created with data supplied through the Sussex Biodiversity Record Centre (SxBRC) and Weald to Waves project partnership.
Date request date: 03/03/25

Total number of species records for Houndean Farm = **1123**

Notable species or with conservation designation = **295**

Flagship species present:
Nightingale, Corn Bunting, Skylark, Small Blue butterfly, Wall Butterfly, Bryony Mining Bee, Slow Worm, Basil Thyme, Dwarf Spurge, Brown Hare

Other target scrubland species: **Turtle Dove, Cuckoo, Glow Worm, Adder, Brown Hairstreak, Grizzled Skipper, Adonis Blue, Black-veined White, Red-backed Shrike**

Invasive species include: **Sycamore** (*Acer pseudoplatanus)*

Butterfly surveys

Butterflies have short life cycles and thus react quickly to environmental changes. Their limited dispersal ability, larval foodplant specialisation (the particular plant species upon which the caterpillars feed) and sensitivity to fine-scale changes within habitats make them useful ecosystem indicators. They are relatively easy to survey and long-term consistent monitoring of butterfly populations can reveal trends in habitat health and the impacts of environmental changes over time.

Figure 1. Houndean Farm butterfly survey transect 2024

Wall *Lasiommata megera*
RedList GB post2001 Near Threatened

Small Blue *Cupido minimus*
RedList GB post2001 Near Threatened

Butterfly surveys

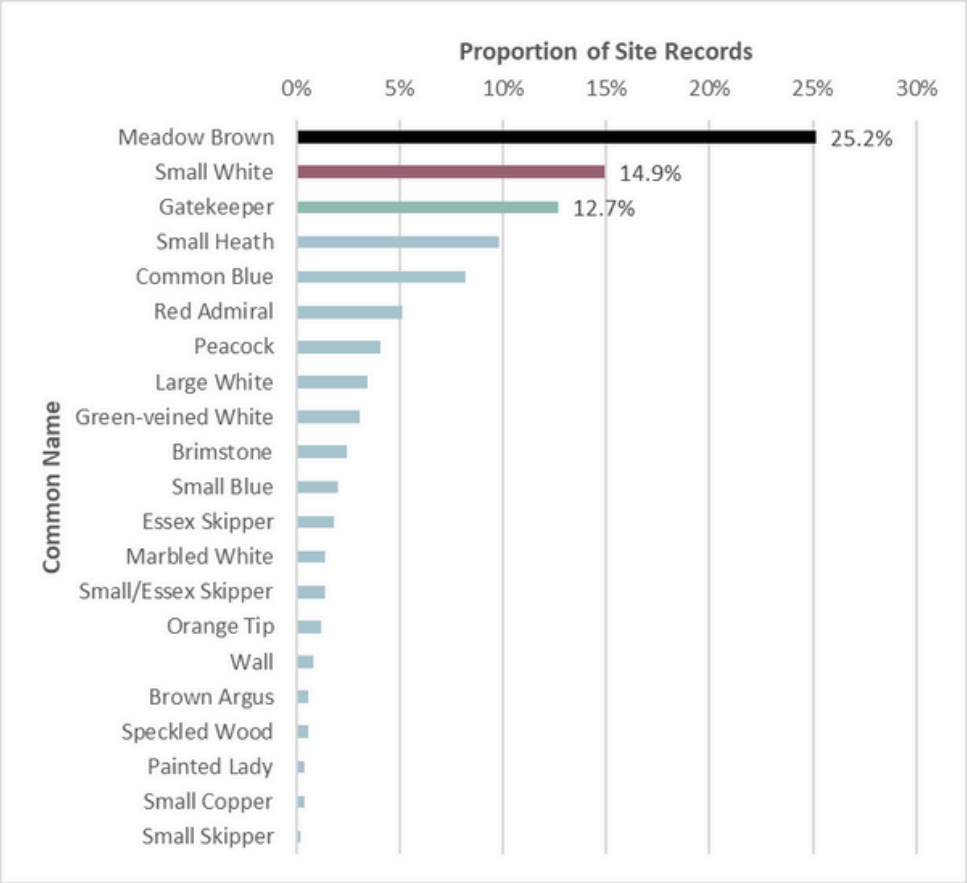


Figure 2. Proportion of Houndean Farm butterfly species records during monthly transect surveys in 2024

Weather conditions during 2024 made surveys challenging, with a cool, wet, dull and unsettled conditions being the overall theme, and widespread reports of lower butterfly numbers than average particularly in the first half of the season. Houndean seemed to buck the trend in terms of butterfly abundances, with good numbers of the whites and Vanessids observed. The most ubiquitous and abundant species was **Meadow Brown** (a peak count of 123), followed by **Small White** (73) and **Gatekeeper** (62). Notable species included **Wall**, **Small Heath**, and **Small Blue** (with a peak of 10 seen in one day), all of which have greatly declined across the nation in recent decades. Missing expected species from the survey but likely to be occurring included Holly Blue, Small Tortoiseshell and Brown Hairstreak.

Meadow Brown
Maniola jurtina

Small Heath *Coenonympha pamphilus*
RedList GB post2001 Vulnerable

Brimstone *Gonepteryx rhamni*

Bird surveys

Birds require a variety of conditions and habitat elements to meet their needs, including reliable food sources (largely insects, seeds and berries), suitable nesting sites, minimal disturbance and shelter from predators and adverse weather. Specialist species can be effective as indicators of habitat condition, such as those adapted to scrubland habitat. Successful breeding in relatively high numbers acts as a positive indicator for the habitat, particularly with species which have been declining more widely. Being highly mobile, birds are also indicative of the wider environmental conditions.

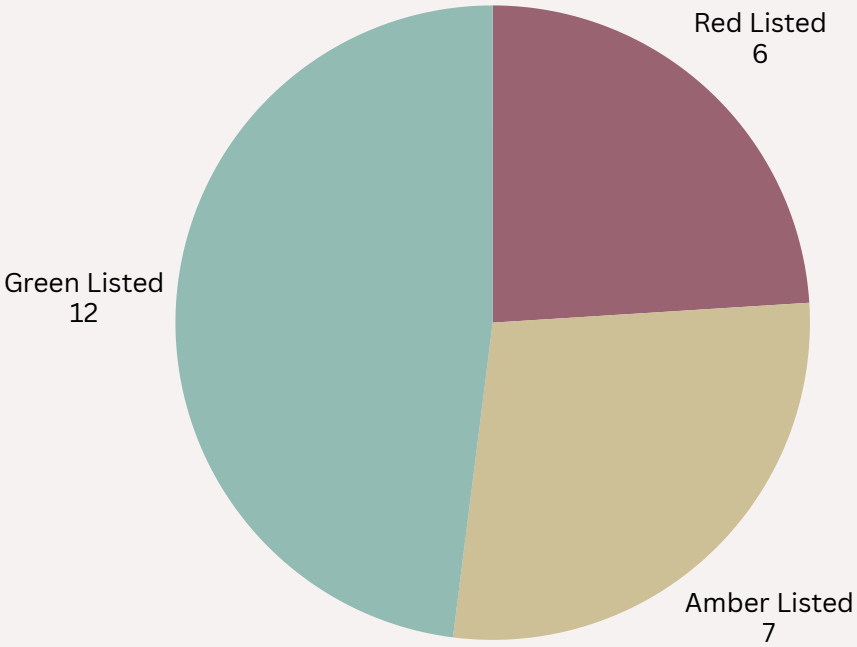


Figure 3. Proportion of bird records by conservation status for both transects combined at Houndean Farm 2024. Based on Birds of Conservation Concern 5 (BOCC5) 2021.

Corn Bunting *Emberiza calandra*
(GB Red-listed)

Bird surveys

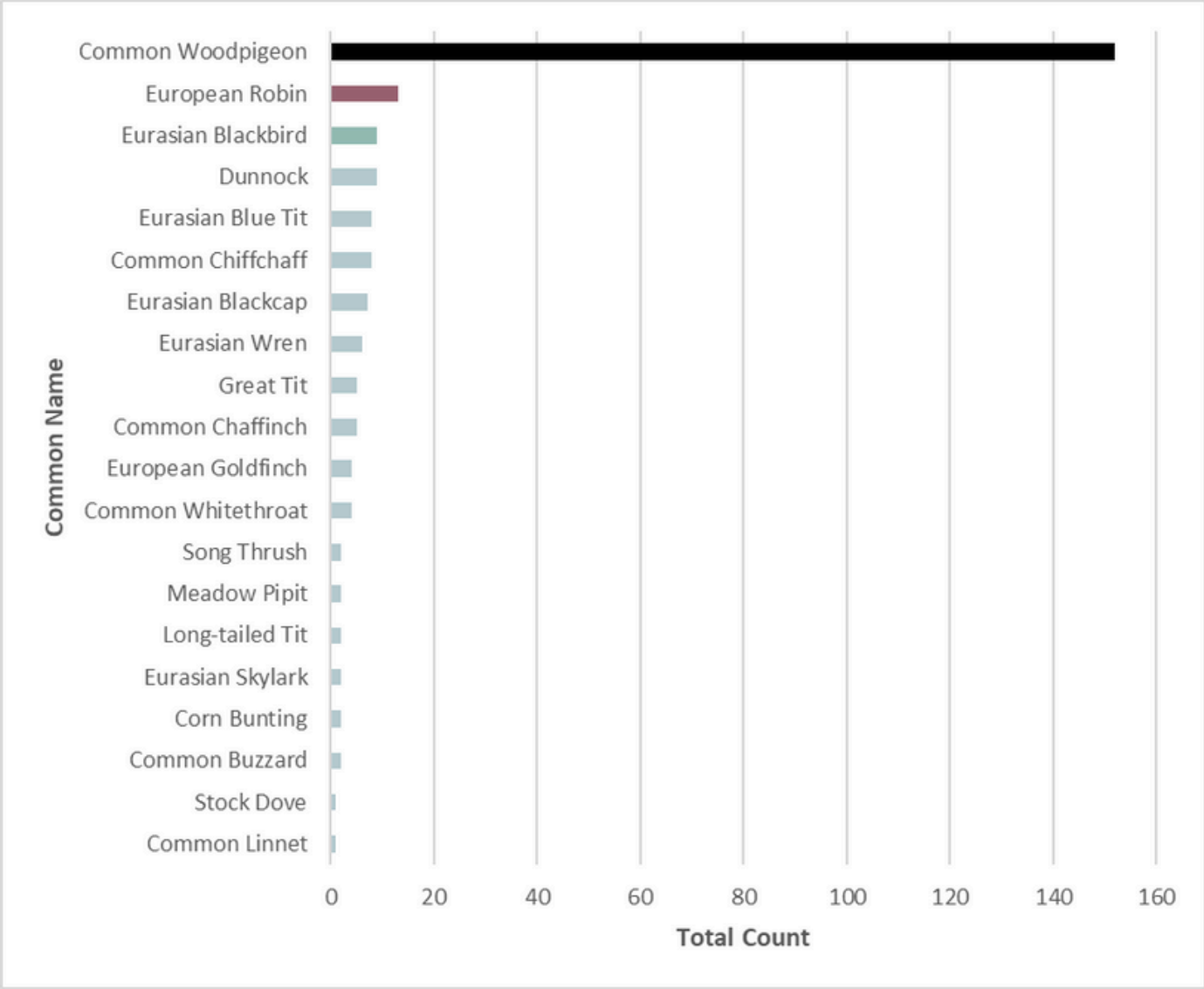


Figure 4. Breeding bird species peak counts (the highest number of records for a species in a single day) for Houndean Farm Transect 1 surveys 2024

Peak counts were collated for all breeding bird species confirmed during the surveys. The most ubiquitous and abundant species recorded on Transect 1 was **Wood Pigeon** (amber listed), with over 100 more records than for any other species. These can be attributed to the March survey visit, when large numbers of Wood Pigeon were migrating through and feeding on the arable land. The numbers progressively dropped off in subsequent surveys, to a peak count of 17 birds in June. The next most numerous species were **Robin** and **Blackbird**. Red-listed species confirmed as breeding included **Corn Bunting** and **Linnet** in low numbers, along with **Skylark** which was observed in greater numbers in the open fields just off the transect, as this species typically nests away from scrub edges. Other amber listed breeding species on Transect 1 included **Common Whitethroat**, **Wren**, **Stock Dove**, **Dunnock**, **Song Thrush** and **Meadow Pipit**, which also has a preference for more open grassland.

Bird surveys

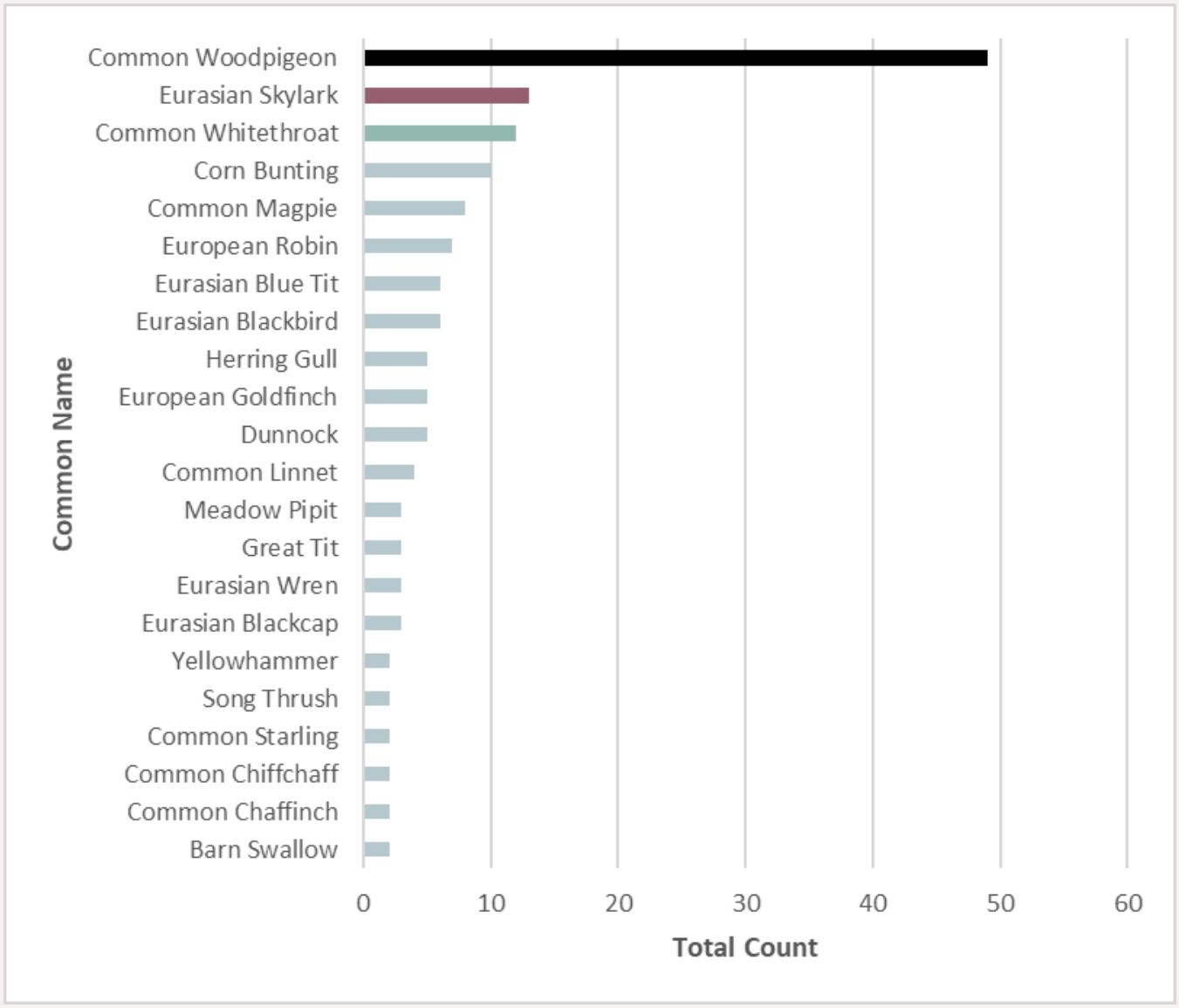


Figure 5. Breeding bird peak counts for Houndean Farm Transect 2 surveys 2024

The most abundant species recorded on Transect 2 was **Wood Pigeon** (amber listed), once again with large numbers observed feeding in the fields during April. A more expected peak count of 12 was made toward the end of June. The next most numerous species were **Skylark** (red listed) and **Common Whitethroat** (amber listed). An excellent number of **Corn Bunting** (a peak count of 10) were recorded along the newly planted and fenced scrubland to the north. Other Red-listed species confirmed as breeding included **Linnet**, **Yellowhammer**, **Starling** and **House Sparrow**, often moving between the mature hedgerow, adjacent properties and the Old Racecourse to the north. Other amber listed breeding species included **Wren**, **Meadow Pipit**, **Stock Dove**, **Dunnock**, and **Song Thrush**. Two **Nightingale** (red-listed) territories were confirmed at Houndean; one to the more remote north-west edge of the site, and another to the south where the footpaths and farm tracks cross. These records have been included within the territory maps below.

Bird survey territory maps

Fig 6 . Notable breeding bird territories at Houndean Farm - Northern section

Bird survey territory maps

Fig 7. Notable breeding bird territories at Houndean Farm - Southern section

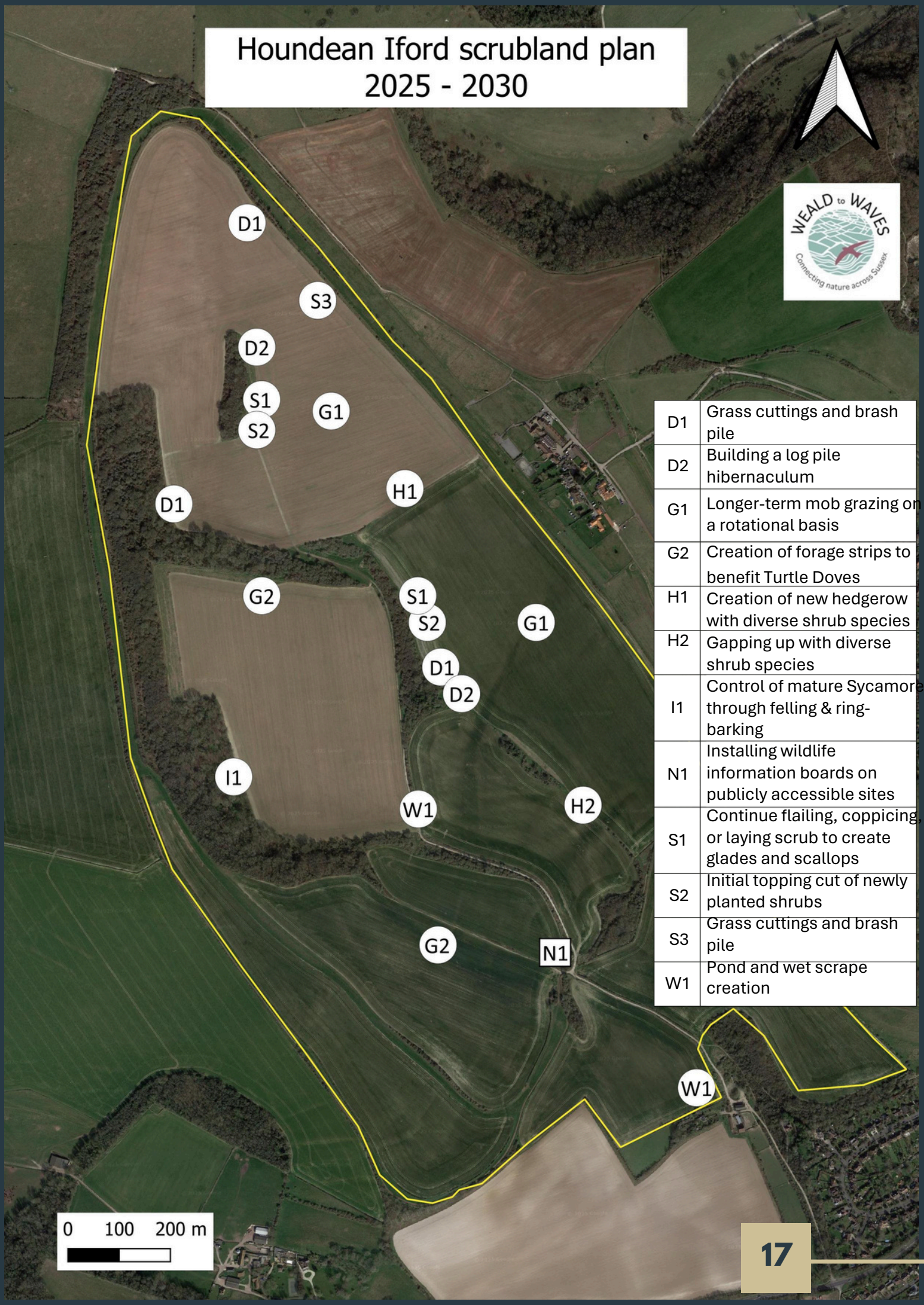
Reptile surveys

Reptiles require specific habitats, including basking areas, shelters, and access to plentiful food sources. Their sensitivity to disturbance, environmental change and their limited dispersal ability make them good indicators of habitat quality. They are also relatively easy to survey for. A limited number of survey checks took place in autumn at Houndean, resulting in two records of **Slow Worm**, both situated close to linear scrub habitat. The scrub habitat structure shows good potential in some areas for both Common Lizard and Adder.

Fig 8. Confirmed reptile records through casual checks and reptile refugia surveys

Habitat tasks completed

Date	Action	Action owner	Organisation	Method
19/02/2024 - 21/02/24	Enhancing existing scrub. A machine mounted tree shear was used to create glades and graduating edges to the old scrub, and coppice down trees to stimulate new denser growth.	Contractor	Woollard Ltd	18-tonne tracked excavator with tree shearing attachment used to coppice. Cut material carefully extracted, cut into further sections, and then stacked in dense brash piles.
17/02/25 - 19/02/2025	Increasing area of cut scrub to stimulate regeneration. A machine mounted tree shear was used to create glades and graduating edges to the old scrub. A larger area was completed this year to compnsate for ruderal weed regrowth and create a greater impact	Contractor	Woollard Ltd	18-tonne tracked excavator with tree shearing attachment used to coppice. Cut material carefully extracted, cut into further sections, and then stacked in dense brash piles.



D1	Grass cuttings and brash pile
D2	Building a log pile hibernaculum
G1	Longer-term mob grazing on a rotational basis
G2	Creation of forage strips to benefit Turtle Doves
H1	Creation of new hedgerow with diverse shrub species
H2	Gapping up with diverse shrub species
I1	Control of mature Sycamore through felling & ring-barking
N1	Installing wildlife information boards on publicly accessible sites
S1	Continue flailing, coppicing, or laying scrub to create glades and scallops
S2	Initial topping cut of newly planted shrubs
S3	Grass cuttings and brash pile
W1	Pond and wet scrape creation

Management plan table

Target ref	Habitat type	Action	Timing	Action owner	Method
D1	Deadwood and refugia	**Grass cutting and brash piles**	Spring to late autumn	Contractor	In edge habitats, create discreet piles of cuttings or hay bales mixed with small twigs and branches. Site them in partial or dappled sun. Continually top them up each season
D2	Deadwood and refugia	**Building a log pile hibernaculum**	Year round	Volunteers	Partially burying logs, woody materials andor rubble to create a hibernation space away from flood zones on higher drier ground. Sunny south-facing edge of remnant woodland, planting bramble and dog rose into or adjacent to them, creating further microhabitats.
D3	Deadwood and refugia	**Brash and log piles or dead hedge creation**	Year round	Contractor	Leaving entire fallen trees in situ where appropriate to do so. Pile up any cut wood at the edges where scrub meets grassland into dense stacks called brash piles.
D4	Deadwood and refugia	**Standing deadwood creation and preservation or beetle loggery**	Once in every 10 yrs	Contractor	Protect and preserve dead or dying whole trees in situ, where safe to do so. Consider reinforcing upright dying trees with man-made struts (seek advice of a qualified arborist). Ring-barking selected trees will result in the gradual die off and creation of deadwood. Veteranise parts of a tree through cutting holes, rough breaks and ring-barked branches. Another option to create an upright beetle loggery is by standing cut logs on their end and partially burying them. Prop up large branches as perch posts at different heights around scrub and glade edges, replicating standing deadwood habitat.
G1	Grassland	**Longer-term mob grazing on a rotational basis**	Moving the herd round (as natural a system as possible)	Contractor	Sub-dividing up the site with either permnanent or temporary fencing, then implementing controlled grazing to create different vegetation heights and stages, such as areas of very tight and short sward, recovering wildflower patches and longer areas of recovering grasses. It is important to move animals around on a rotational basis, and to be reactive if issues start to arise around over grazing. Consider using different types of livestock (cattle, sheep, ponies and pigs)
G2	Grassland	**Creation of forage strips to benefit Turtle Doves**	August - mid October, and again in early spring	Contractor	Cultivate a strip of land and plant a bespoke seed mix suited to Turtle Doves. The mix should be established in 6m-wide (minimum) blocks between August and mid-October. An autumn cultivation followed by weed management (if necessary) with a second early spring cultivation is the most effective way to establish areas of low growing plants.
H1	Newly planted hedgerow	**Creation of new hedgerow with diverse shrub species**	October - March	Volunteers	Select native trees species, ideally of local provenance. Clear ground of weeds, roots and debris where possible, add organic matter or mulch. Slot planting of bare-rooted whips, which should be planted to the same depth as in the nursery (look out for the root collar). During the first summer, weed around the base of the shrubs to prevent competition, while watering regularly. Remove tree guards after 2 years or once well established

Management plan table continued

H2	Mature hedgerow	**Gapping up with diverse shrub species**	October - March	Volunteers	Select native trees species, ideally of local provenance. Clear ground of weeds, roots and debris where possible, add organic matter or mulch. Slot planting of bare-rooted whips, which should be planted to the same depth as in the nursery (look out for the root collar). During the first summer, weed around the base of the shrubs to prevent competition, while watering regularly. Remove tree guards after 2 years or once well established
I1	Invasive species	**Control of invasive non-native species (Sycamore)**	September - February	Volunteers	Remove invasive tree and plant species through manual control, such as the felling / coppicing of young Sycamore, or ring-barking of mature trees (where safe to do so).
N1	Information board / leaflet	**Installing wildlife information boards on publicly accessible sites**	Anytime (non-capital works)	Contractor	Install an information board featuring images of flagship species for the site, including a few with high likelihood of occurrence. A board should be installed near a place with high footfall for maximum effect. If a nature trail exists, then multiple smaller signs may help to highlight key features along the trail (ponds, bee and butterfly banks, beetle loggeries, hibernacula).
S1	Mature (15 yr+) scrubland	**Continue flailing, coppicing, or laying scrub to create glades and scallops on a rotational basis**	3 yearly basis (Late October - February)	Contractor	Mark up zones of scrub to establish areas for rotational management. Using machinery such as grass cutter or a tractor mounted flail, coppice/flail no more than 1/15th of overall site on an annual basis, or around 1/6th every 3 years. Cut shrubs at a variety of heights and cutting styles, such as partially cutting through stems of tall leggy shrubs and laying over into grassland or at the base of hedgerows. Stack cuttings creating dense brash piles.
S2	Scrubland	**Continue diversifying scrubland species through replacement planting**	October - March	Volunteers	Enhancing existing scrubland through planting of additional native shrubs and trees (protecting with trees guards or deer fencing as needed), selecting species suitable for wealden clay soils (see separate species list). Plugging gaps in old hedgerows with fast growing nectar-rich species. Ensure a clear an area and good ground preparation to maximise estbalishment of individual shrubs.
S3	Newly planted scrubland	**Initial topping cut of newly planted shrubs**	In the second or third year, Late October - February	Volunteers	Use shears to snip off the top growing tips of new scrubland shrubs around 45–60cm above the ground to encourage them to bush out.
W1	Wetland	**Pond and wet scrape creation**	September - April	Contractor or volunteers	Dig out a pond and /or a series of shallow scrapes with the use of small machinery, piling earth nearby and on top of woody debris. For a permanently wet wildlife pond, consider a good grade of UV resistant pond liner, alternatively line with puddled clay to create a water-tight seal to the bottom.

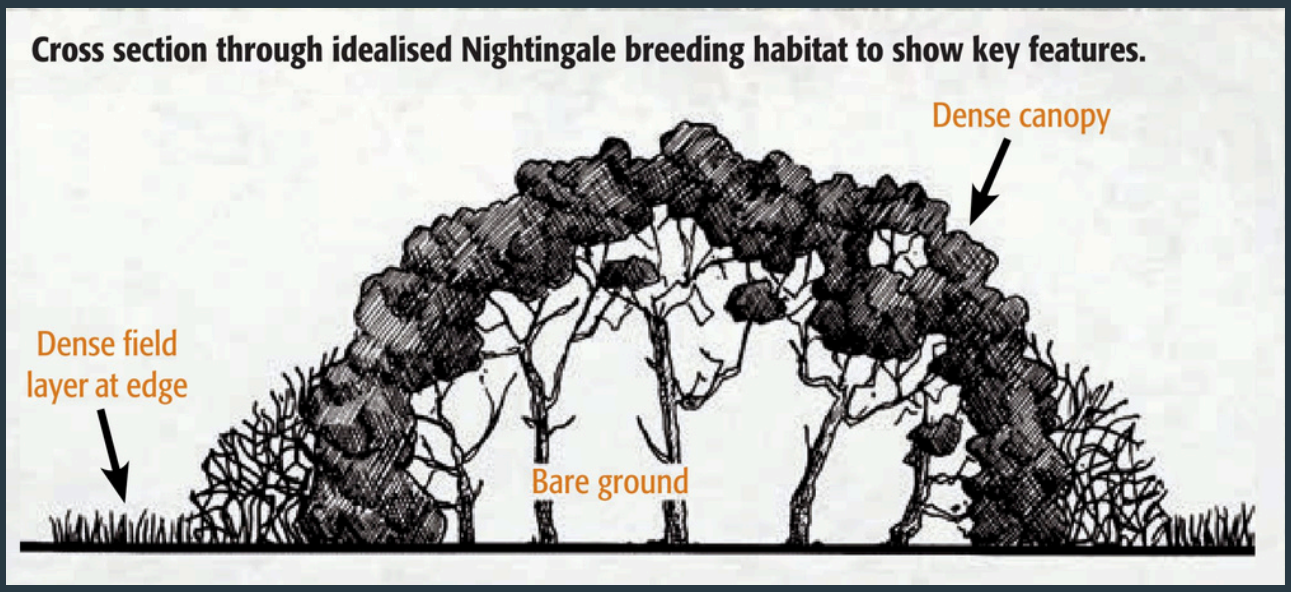
Shrike shrubland

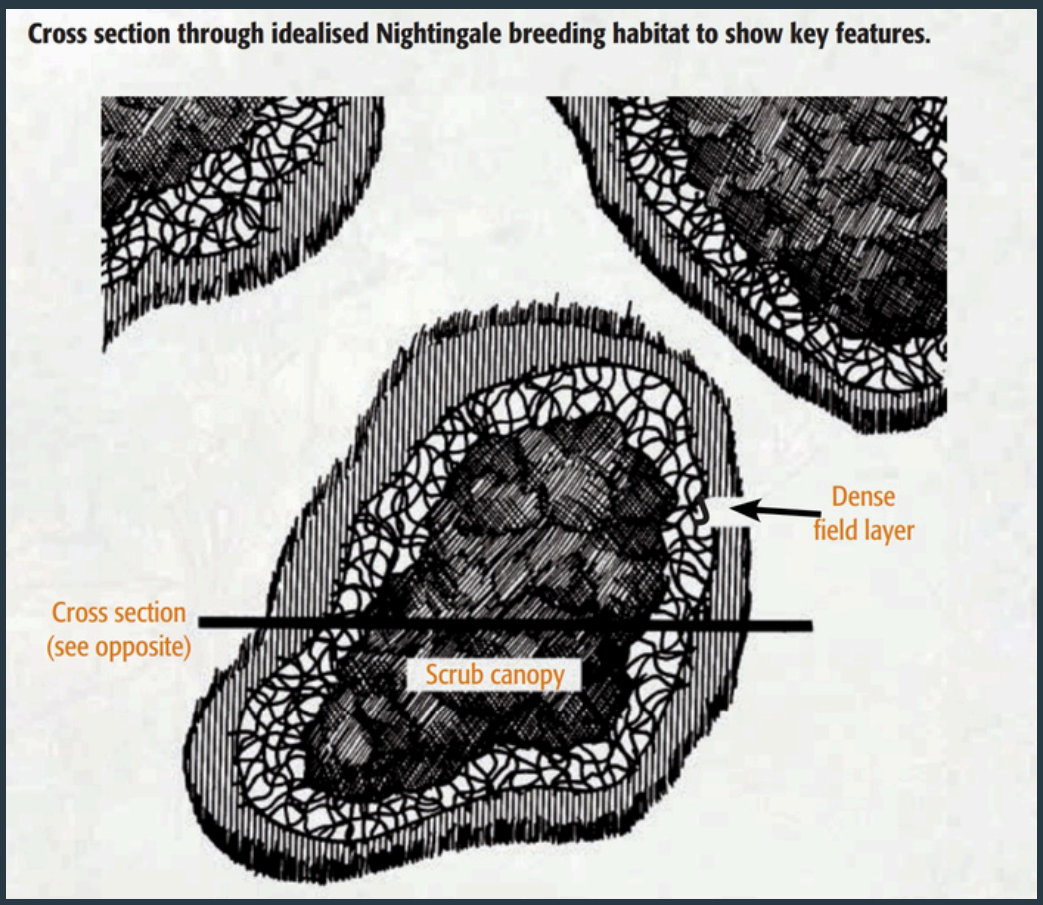
1. Widely spaced thickets of native thorny shrubs: Dog Rose, Bramble, Hawthorn, Blackthorn, Crab Apple, Gorse
2. A wide and tall thicket with margin of bramble and wildflowers - ideal nesting island for Nightingale
3. Tall flower rich vegetation and tussock grassland
4. Large standing deadwood
5. Dense bramble hummock with emerging oak sapling
6. Log piles or fallen deadwood
7. Fresh large herbivore dung
8. Recently coppiced shrub
9. Short herb-rich grassland with patches of bare ground
10. Freshwater pond or scrape with shallow draw down zone
11. Spoil pile from the newly excavated pond

Figure 9. A conceptual image of an ideal 'Shrike Shrubland', based on the book of the same name authored by Steve Jones, 2023.

Suggested habitat features

The images below are taken from the BTO Guide - Managing Scrub For Nightingales. The aim is to create a scrubland containing a variety of stages of successional growth, then re-setting by flailing once the integrity has passed beyond the denser 'Nightingale stage'. Occassional trimming or browsing by herbivores will help to prolong this denser stage.



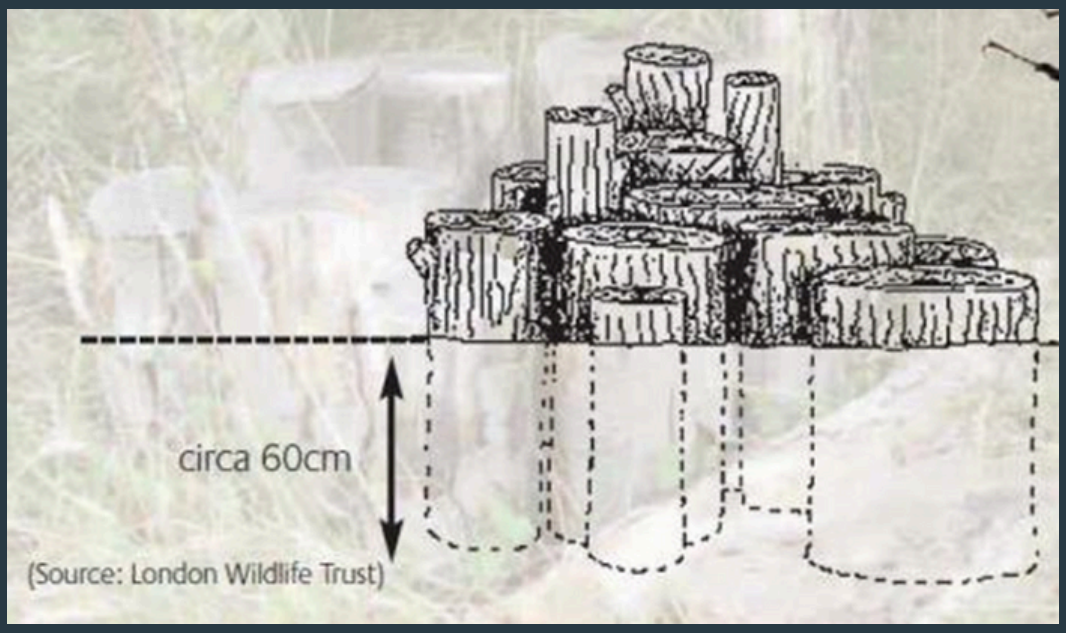


Suggested habitat features

The designs below aim to maximise available habitat niches and microclimates for amphibians, reptiles, invertebrates and cover for small mammals.

© Larry Eifert

A reptile hibernaculum provides a hibernation space for a variety of small animals. By mounding inert materials and capping off with topsoil and short turf, this creates early spring basking opportunities for newly emerging reptiles. Aim for minimum dimensions of 2m x 1m x 1m, situate well out of flood zones, ideally on free draining substrate, or mounding up on poorly-draining soils.



A beetle loggery of partially buries stands of logs of varying thickness helps to create microhabitats as the wood decays over time at varying rates. It also provides a hunting perch for predatory birds. Best situated in an area of partial or dappled shade, avoiding full sun or deep shade.

Suggested habitat features

Open areas of fresh water act as wildlife attractants within the landscape, and a newly created body of water will be rapidly colonised and utilised by a wide variety of species. They can be any shape or size, and a variety within one site is the best.

Shallow wetland scrapes (with irregular edges to maximise microhabitats) are water bodies which dry out seasonally, largely benefitting bird, amphibian and invertebrate species during the spring. Very shallow gradients are important for ease of access and reducing dominant vegetation growth. On average a scrape should be only a few centimetres in depth to a maximum of around 50cm.

This newly dug wildlife pond contains zones of deeper, permanently wet areas, providing an important water source through summer months. Note there are still extensive 'drawdown' zones of damp muddy shoreline, which will slowly colonise with marginal plant species. Aim for minimum dimensions of 4m x 4m in size.

Suggested habitat features

Butterfly or bee banks are open sunny areas of sloping bare ground, which tend to be well draining and encourage growth of the early successional wild flowers. Creating south-facing mounds ideally a minimum of 2 metres wide by 1 metre high, of soil through scraping back of sloping ground, or piling spoil from digging out wetland scrapes. This will provide important bare ground habitats for invertebrates, which can last several years before closing over with vegetation.

A bee bank with purposely cut small steep vertical faces to benefit a variety of mining bees, solitary wasps and cuckoo bees.

Suggested planting lists

A list of recommended species was drawn up by surveyors Laurie Jackson and Neil Hulme, targeting the nectar and larval foodplant preferences by Black-veined White butterfly.

Wildflowers:

Chalk soils only:

Greater Knapweed - *Centaurea scabiosa*
Field Scabious - *Knautia arvensis*
Small Scabious - *Scabiosa columbaria*

Wetter / clay soils:

Betony - *Stachys officinalis*
Bugle - *Ajuga reptans*
Common Centaury - *Centaurium erythraea*
Common Knapweed - *Centaurea nigra*
Common Restharrow - *Ononis repens*
Common Vetch - *Vicia sativa*
Ground Ivy - *Glechoma hederacea*
Hedge Woundwort - *Stachys sylvatica*
Musk Mallow - *Malva moschata*
Marsh Woundwort - *Stachys palustris*
Purple Loosestrife - *Lythrum salicaria*
Red Bartsia - *Odontites vernus*
Red Campion - *Silene dioica*
Red Clover - *Trifolium pratense*
Red Dead-nettle - *Lamium purpureum*
Saw-wort - *Serratula tinctoria*
Tufted Vetch - *Vicia cracca*
Wild Marjoram - *Origanum vulgare*

Shrubs on chalk soils:

Blackthorn - *Prunus spinosa*
Cherry (Wild) - *Prunus avium*
Elms (Ademuz, Fiorente, Lutece / Nanguen) - *Ulmus*
Field Maple - *Acer campestre*
Guelder Rose - *Viburnum opulus*
Hawthorn - *Crataegus monogyna*
Hazel - *Corylus avellana*
Juniper - *Juniperus communis*
Lime (Small-leaved) - *Tilia cordata*
Oak (Pedunculate) - Quercus robur
Spindle - *Euonymus europaeus*
Sweet chestnut - *Castanea sativa*
Whitebeam - *Sorbus aria*
Yew - *Taxus baccata*

Acknowledgments

The project work at Houndean Farm was made possible thanks to the collaboration and efforts of volunteers and task leaders from the South Downs National Park Authority, University of Sussex and the Weald to Waves network of volunteers. We would like to thank the managing director Ben Taylor and assistant manager Wes for their help and support with the Scrubland Superheroes Project.