Devon Wildlife Consultants

Cranbrook Country Park

Habitat Management Plan

Reference Number: 23/4351.01

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Wildlife Trust Consultancies

Unit 2, Aldens Business Court, Chudleigh Road, Exeter EX2 8TS
01392 455930
dwc@devonwildlifetrust.org
www.devonwildlifeconsultants.co.uk

Revision	Prepared by	Authorised by	Dated
Initial Issue	**Laura Trawford BSc. (Hons)**	**Kitty Straghan BSc. (Hons) MCIEEM**	15/08/2024

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1 Introduction

1.1 Site Location & Introduction

1.1.1 This report details a Habitat Management Plan (HMP) for a site known as Cranbrook Country Park in Cranbrook, located at National Grid Reference SY 006 956. The survey area is approximately 31ha in size and comprises the public park for the Cranbrook Estate.

1.1.2 Cranbrook Country Park is set within a wider urban landscape to the east, west and south with arable fields to the north.

1.2 Personnel

1.2.1 The site assessment was undertaken on 8th May 2024 by James Woodin BSc. (Hons) ACIEEM (Consultant Ecologist) & Laura Harris BSc. (Hons) (Assistant Ecologist), to identify the habitats currently present and provide advice on managing and enhancing these habitats.

1.3 Limitations

1.3.1 It is possible that some species may have been overlooked in the field or were not recorded because they were not evident at the time of survey. No account can be taken for the presence or absence of a species on any particular day.

2 Methodology

2.1 Habitat Survey

2.1.1 The survey area was subject to a walkover survey to assess the habitats present within the site. Not all habitats within the site were fully surveyed due to the size of the survey area. Only areas identified with potential for habitat enhancement and creation were surveyed in detail, these areas are shown with habitat reference numbers (A1, A2 etc.) in Habitat Management Plan Map (DWC Drawing No. 23/4351.01-01). A species list was collated for all fully surveyed habitats within the site. All areas within the site were surveyed and assessed for indicators of ecological value, including the presence or signs of any protected or rare species.

2.2 Data Collection

2.2.1 In order for habitats to be accurately identified, a comprehensive species list was recorded for each habitat parcel. Percentage (%) cover of species over a specific habitat parcel was recorded.

2.2.2 Estimations of % cover for species within habitat parcels are based on the DAFOR scale of abundance. In order to form an accurate picture of percentage cover across a habitat parcel, estimations of % cover were made following a walkover of each habitat parcel. The DAFOR scale comprises the following categories: Dominant (>75%), Abundant (51-75%), Frequent (26-50%), Occasional (11-25%) and Rare (1-10%). Whilst every effort has been made to estimate % cover accurately, there is a level of subjectivity and it is possible that some % cover estimates are not fully representative of the relative abundance of each species within specific habitat parcels.

3 Habitat Descriptions

3.1 Introduction

3.1.1 The survey area has been split into three separate smaller parcels named Long Meadow, Stone Meadow and Great Meadow for ease of surveying and reference.

3.1.2 A Habitat Management Plan Map (DWC Drawing No. 23/4351.01-01) and associated Target Notes (TN) is presented in Appendix 1 with raw survey data shown in Appendix 2. Examples of bird and bat provision are shown in Appendix 3.

3.2 Long Meadow

Grasslands

3.2.1 Long Meadow predominately comprises large areas of amenity grassland characterised by a short sward height and low species diversity. Amenity grassland is the definition given to a grassland that typically comprises paths, playing fields etc. that have high footfall and are species-poor, providing very little benefit to wildlife. Species identified within the amenity grasslands include meadow foxtail *Alopecurus pratensis*, perennial ryegrass *Lolium perenne,* Yorkshire fog *Holcus lanatus*, annual meadow grass *Poa annua*, cock's-foot *Dactylis glomerata*, common ragwort *Senecio jacobaea*, broad-leaved dock *Rumex obtusifolius*, common dandelion *Taraxacum officinale* agg., creeping buttercup *Ranunculus repens* and white clover *Trifolium repens*. Parts of the amenity grassland (areas used for BBQ and events) experience higher levels of footfall than other habitat parcels, resulting in areas of compacted ground.

3.2.2 Tussocky grasslands with a longer sward height are present around the periphery of the amenity grassland areas. Species recorded include timothy *Phleum pratense*, perennial ryegrass, Yorkshire fog, common bent *Agrostis capillaris*, sweet vernal grass *Anthoxanthum odoratum*, soft brome *Bromus hordeaceus*, greater bird's-foot trefoil *Lotus pedunculatus*, white clover and creeping buttercup. In places, the grasslands show signs consistent with high fertility indicated by the presence of broad-leaved dock, creeping thistle *Cirsium arvense* and common nettle *Urtica dioica*. Some grassland areas are located on a floodplain and experience periods of seasonal inundation. In these areas, species such as sharp flowered rush *Juncus acutiflorus* dominate and natural depressions in the eastern extent of Long Meadow also support areas of rush.

3.2.3 A small wet grassland and watercourse are located within the western extent of Long Meadow. Species identified include bulrush *Scirpus* species, hard rush *Juncus inflexus*, soft rush *Juncus effusus*, creeping buttercup, willow *Salix* species, hemlock water dropwort *Oenanthe crocata*, floating sweetgrass *Glyceria fluitans*, water mint *Mentha aquatica*, crosswort *Cruciata laevipes* and water plantain *Alisma plantago-aquatica*.

3.2.4 A grassland with higher forb diversity is located within the southwestern extent of Long Meadow. Additional forb species identified include common bird's-foot trefoil *Lotus corniculatus*, ribwort plantain *Plantago lanceolata*, common mouse ear *Cerastium fontanum*, greater bird's -foot trefoil, bristly ox-tongue *Helminthotheca echioides*, soft rush, germander speedwell *Veronica chamaedrys*, common knapweed *Centaurea nigra,* glaucous sedge *Carex flacca* and lesser celandine *Ficaria verna*.

Woodlands

3.2.5 A small area of broadleaved woodland (A1) comprising oak *Quercus robur,* willow, bramble *Rubus fruticosus* agg. scrub and elder *Sambucus nigra* is located in Long Meadow. The woodland is dense in nature resulting in a shaded environment and as a result, the understory is limited.

Other habitats

3.2.6 A small watercourse is located in the western extent of the site. A small, heavily shaded pond is present within the broadleaved woodland in the western extent of the site (A1).

3.2.7 A recently planted orchard comprising approximately 16 small apple *Malus x domestica* trees is located in the northern extent of Long Meadow (A2).

3.3 Stone Meadow

Grasslands

3.3.1 Stone Meadow comprises a large section of the country park and is located in the eastern extent of the site. Similar to Long Meadow, this section of the park is dominated by large areas of amenity grassland which is utilised by the public for BBQs, dog walking and socialising. The grasslands in the southwestern extent of Stone Meadow also experience seasonal inundation, particularly in the lowland areas close to

the river. These wetter areas are characterised by a longer sward height and the presence of rushes. A small area of wet grassland is located in the southern extent of Stone Meadow. Species composition includes bulrush, pendulous sedge *Carex pendula*, hard rush, soft rush and willowherb species *Epilobium* sp.

3.3.2 The far eastern extent of Stone Meadow was not surveyed as the Council is planning to expand the SuDS in late 2024. Another small area of wet grassland is located in a natural depression in the northern extent of Stone Meadow. Species recorded include ragged robin *Lychnis flos-cuculi,* silverweed *Argentina anserina*, creeping buttercup, oxeye daisy *Leucanthemum vulgare*, common knapweed, meadow foxtail, white clover, Yorkshire fog and soft rush.

Woodlands

3.3.3 A broadleaved woodland runs along the length of the northern boundary of Stone Meadow. The woodland is in a poor condition due to heavily compacted ground in areas with public access. Species recorded include alder *Alnus glutinosa*, hazel *Corylus avellana*, willow species, elder, field maple *Acer campestre*, sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna*, oak and blackthorn *Prunus spinosa*. Throughout the woodland, the ground flora is limited to common ivy *Hedera helix*, common nettle, male fern D*ryopteris filix-mas*, hemlock water-dropwort, lesser celandine, hart's tongue fern *Asplenium scolopendrium*, bramble and garlic mustard *Alliaria petiolata*.

Other habitats

3.3.4 Cranny Brook runs along the north extent of Stone Meadow. Small watercourses, ponds and Sustainable Drainage Systems (SuDS) are scattered throughout Stone Meadow. They are typically disturbed habitats as they are open to the public/dogs.

3.3.5 Small young orchards comprising apple species are located within the northern extent of Stone Meadow.

3.4 Great Meadow

*Grassland*s

3.4.1 Great Meadow comprises a large field currently bisected by a fence. The field is utilised by the public for exercising, dog walking and picnics and is predominately a grassland habitat. The parcel supports the most species-diverse grasslands within the park, although they cannot be defined as species-rich. These more species-diverse grasslands are located within the northeastern extent of the parcel and comprise species such as common vetch *Vicia sativa*, red clover *Trifolium pratense,* meadow foxtail, creeping buttercup, meadow buttercup *Ranunculus acris*, hard rush, ribwort plantain, common sorrel *Rumex acetosa,* common dandelion, creeping cinquefoil *Potentilla reptans*, common bird's-foot trefoil, meadow vetchling *Lathyrus pratensis*, great willowherb *Epilobium hirsutum*, common mouse ear, greater bird-s-foot trefoil and germander speedwell *Veronica chamaedrys.* Across the rest of the parcel, the grasslands are more species poor, but the sward is often tussocky meaning it has high potential to support reptiles. The southern extent of the habitat parcel is in a transitional state from a tussocky species-poor grassland to a more species diverse neutral grassland.

Woodlands

3.4.2 No woodlands are present within this parcel.

Other habitats

3.4.3 A small watercourse is located adjacent to the southern site boundary. The stream is shallow in nature and has compacted banks from dogs and children utilising the watercourse.

3.5 Invasive Species

3.5.1 Himalayan balsam *Impatiens glandulifera* was recorded along the banks of the watercourse in the southern extent of Great Meadow and the northern extent of Stone Meadow (TN1).

4 Protected Species

4.1 Badger

4.1.1 A disused badger *Meles meles* set was identified in the eastern extent of Great Meadow (TN2). It is likely that badgers commute/forage within the wider survey area.

4.2 Bats

4.2.1 Cranbrook Country Park provides a variety of habitats for foraging and commuting bats. The woodlands and watercourses provide essential flight lines and the longer sward height in some grassland areas is likely to provide invertebrate populations, which are an important food source for foraging bats.

4.2.2 There are several mature and standing deadwood trees around the site. Mature trees may possess rot holes and other potential roosting features suitable for crevice and void dwelling species of bat. Bat boxes were noted around the site.

4.3 Birds

4.3.1 The mature trees, shrubs and scrub present within the survey area are considered likely to support commonly encountered species of nesting birds. Bird species recorded during the site visit include chaffinch *Fringilla coelebs*, great tit *Parus major,* carrion crow *Corvus corone*, robin *Erithacus rubecula*, common kingfisher *Alcedo atthis*, wood pigeon *Columba palumbus*, blue tit *Cyanistes caeruleus*, blackcap *Sylvia atricapilla,* house sparrow *Passer domesticus*, blackbird *Turdus merula,* wren *Troglodytes troglodytes* and chiff chaff *Phylloscopus collybita*.

4.4 Reptiles

4.4.1 The short sward of amenity grassland around the site is not considered to be suitable for reptile species, as it does not provide adequate foraging/sheltering/breeding habitat. However, the tussocky grassland within the site does provide suitable habitat for reptile species. Additionally, the deadwood piles and habitat piles around the site may provide sheltering habitat for common reptile species such as slow worm *Anguis fragilis*.

4.5 Hedgehog

4.5.1 It is likely that the site is utilised by commuting and foraging hedgehogs *Erinaceus europaeus*. The habitat piles within the site may be utilised by hibernating hedgehogs.

4.6 Otter

4.6.1 It is likely that otters *Lutra lutra* utilize Cranny Brook to move through the surrounding habitat. No potential otter holts or resting places were identified during the site survey.

4.7 Great Crested Newts

4.7.1 Cranbrook lies within the Great Crested Newt *Triturus cristatus* (GCN) Consultation Zone. The site is considered to have potential to be used by GCN as it supports grassland, scrub, hedgerows, log piles and woodland and is linked to the ponds/SuDS by suitable habitat.

5 Habitat Management Advice

5.1 Introduction

5.1.1 The recommendations in this section are intended to provide information on how to increase biodiversity within the site, with particular emphasis on improving the floral diversity of the grassland areas and increasing the abundance of native species. A Habitat Management Plan Map (DWC Drawing No. 23/4351.01-01) is presented in Appendix 1. Examples of bird and bat boxes can be found in Appendix 3.

5.2 Site Wide Recommendations

Amenity Grasslands

5.2.1 The amenity grassland areas within the site are subject to intensive pressures including high rates of footfall and regular mowing. This has resulted in areas of compacted ground. The amenity grassland present also has a short sward height and is of very limited value to small mammals, invertebrates, birds and reptiles. Currently, flowering species within the amenity grassland areas are limited to dandelion and white clover. To increase the prevalence of flowering species within the grassland, it is recommended that the grassland areas are sown with common daisy *Bellis perennis*, or a lawn seed mixture such as Emorsgate EL1 Flowering Lawn Mixture or similar which is tolerant of regular mowing, disturbance and maintenance. The species is hardy and flowers year-round, making it an ideal species in an amenity setting. Increasing the floristic diversity will increase the nectar and pollen available for a variety of invertebrate species, especially during the winter months when other flowering species may not be present. Increasing the prevalence of flowering species will also enhance the aesthetics of the county park.

Tussocky Grasslands

5.2.2 The tussocky grassland areas within the site could be enhanced to improve the floristic diversity and create wildflower meadows. Some of these areas have high soil fertility (indicated by the presence of common nettle, creeping thistle and broad-leaved dock) and are subject to seasonal flooding. This means that seed sowing should be carefully considered in these areas. Suitable drier areas for wildflower meadow creation include the western extent of Long Meadow, the western extent of Stone Meadow and the southern extent of Great Meadow. Areas in the center of the site should be avoided due to the wet nature of the grassland. It is recommended that topsoil is stripped from these higher fertility grasslands in small 5x5m plots and an appropriate seed mix should be sown. This is to allow the seed to spread naturally and to act as a seed source for the rest of the grassland. A suitable seed mix would be Emorsgate EM10 Tussock Meadow Mixture or similar. Implementation of an effective management regime together with seeding will increase the floral diversity of the grasslands. This will encourage invertebrates and small mammals, which in turn provide foraging opportunities for bats and birds. Instructions for creating wildflower meadows are presented in Section 5.2.3 – 5.2.5 below.

Wildflower Meadow Establishment – Year 0

5.2.3 In year 0 the grasslands must be prepared for enhancement in order to increase the likelihood of seed germination. The grassland sward height must be reduced to below 5cm by cutting and the arisings should be removed no later than 5 days after cutting.

Wildflowers grow in nutrient poor soil and removing the cuttings will prevent nutrient enrichment of the soil. Following the removal of the cuttings, the top soil of the plots should be stripped to create patches of bare ground. This is necessary as seeds must be in direct contact with the ground to germinate. This is best carried out in the autumn and preferably before the end of November. Seed should not be sown into the grassland in periods of excessive wet weather or when the ground is saturated, as this will cause seed to rot and not germinate the following spring.

5.2.4 Once the ground has been successfully prepared, the grasslands should then be seeded. This should be undertaken during the autumn, ideally before the end of November, as grasses become dormant at this time of year and some floral species require overwintering before germination. Yellow rattle *Rhinanthus minor* should be purchased separately and sown at a rate of 1g/m^2. It should be noted that many wildflower species are slow to germinate and grow and may not flower in the first year after sowing.

Wildflower Meadow Management – Year 1 and beyond

5.2.5 If there is an excessive amount of grass growth in January and February (over 30cm), the grasslands should be cut in late February and the cuttings should be removed. Following this, the grasslands should be left uncut from the beginning of March for the duration of the spring and summer. This will allow the flowering species within the grassland to flower and set seed. The grasslands can be cut from early-August and the arisings should be removed after 5 days. This will allow time for the seeds of flowering species to drop back into the soil. After 5 days all arisings should be removed and composted. Cutting a wildflower grassland is fundamental to their development and health, as a lack of cutting will eventually result in decline in botanical diversity. A summary of grassland management regime is presented in Table 5.1.

Summary Table

Year 0	Year 1	Year 2
-Cut: August-mid November. -October: topsoil strip and preparation and wildflower seeding.	-Late winter cut* -Cut: mid-August-September	-Repeat steps detailed in Year 1.

Table 5.1 Summary of Grassland Management Regime

*Only required if there is excessive grass growth over January and February (over 30cm).

Bee hotels

5.2.6 It is recommended that bee hotels are installed/created within the site. Suitable areas include the small orchards in Stone Meadow and Long Meadow and the more species-diverse grassland in the northern extent of Great Meadow. These areas are considered to be the most suitable due to their sheltered, sunny position and increased numbers of invertebrates may increase local pollination. Bee hotels can be purchased from a number of suppliers and should be installed at least 1m above ground level in a sunny

location. Maintenance of bee hotels is very important. Without care, bee hotels can quickly deteriorate due to exposure to weather. Bee hotels should be inspected at the end of each summer to remove and clean dead cells. This will help prevent the build-up of mould and mites, which may otherwise prevent bees from utilising the hotel. However, even with care bee hotels will likely need replacing every 2-3 years.

Bat and Bird Boxes

5.2.7 It is recommended that bird boxes are installed on mature trees around the site on a northerly aspect at least 3m from ground level. Bat boxes can also be installed on sunny aspects on mature trees. Boxes should be as high as possible to avoid predation from cats. Ideally, these boxes should be located near hedgerows, woodland or lines of trees. It is important that bat boxes are located away from artificial light sources.

5.2.8 Barn owl *Tyto alba* boxes could be placed on mature trees around the site. They must be placed at least 4 meters from the ground with an opening or hole at least 3 meters above ground level which overlooks open countryside. The barn owl box located in the northern extent of Stone Meadow should be relocated to another tree which is subject to less disturbance.

Deadwood Piles

5.2.9 Additional deadwood piles and standing deadwood should be created onsite wherever possible. These features create habitats for invertebrates, a food source for saproxylic beetles and are important for many fungi species. Reptile species also use deadwood piles for hibernation and basking.

Butterfly/beetle banks

5.2.10 It is recommended that a large butterfly/beetle bank is created in the southern extent of Great Meadow or the western extent of Long Meadow (TN3) as these areas are fully exposed to the sun. These features should be fenced off to the public to prevent destruction and vandalism.

5.2.11 A butterfly/beetle bank provides an open sunny area, rich in early successional herbs that rely on disturbed ground. These areas can be important breeding habitats for invertebrates. Any shape bank can be created; however, it is recommended that a 'C' shaped bank is designed to ensure all aspects are created. When forming the bank, the nutrient rich soil from the surface will be buried under the nutrient poor soil from below. The vegetation will colonise the nutrient poor soil slowly so there will be bare ground for longer. This methodology is following the guidance from Butterfly Conservation:

1. An area approximately 50m long, 10m wide and 30cm deep should be dug using earth moving machinery. This should be in a rectangle shape. If possible, this should be orientated east/ west and this soil should be placed to the side to use later.

2. Within this rectangle shape, a 'C' shaped trench (50-60m long, 2m wide, 30-100cm deep) should be dug and placed to the side in a different pile.

3. The top soil removed in step 1 should be scraped into the new 'C' shaped trench. This will form the base of the bank. Both sides of the soil adjacent to the trench should be

scraped and put on this same pile to increase the height to approximately 60cm from ground level.

4. The soil from step 2 should be placed on top to create the bank. The ends of the bank should create a sloped fan shape and the soil should be compacted.

5. The top of the bank should be covered in calcareous aggregate or rubble that is 5-10cm in depth.

6. On the flat scraped area on the southern side of the bank, leave a 2m strip of soil in front of the bank and beyond this, cover another 2m strip with stone chippings at a depth of 10cm. Cover other areas at the north side of the bank with stone chippings at a depth of 10cm. A plan illustrating the layout of the butterfly bank is presented in Figure 5.1.

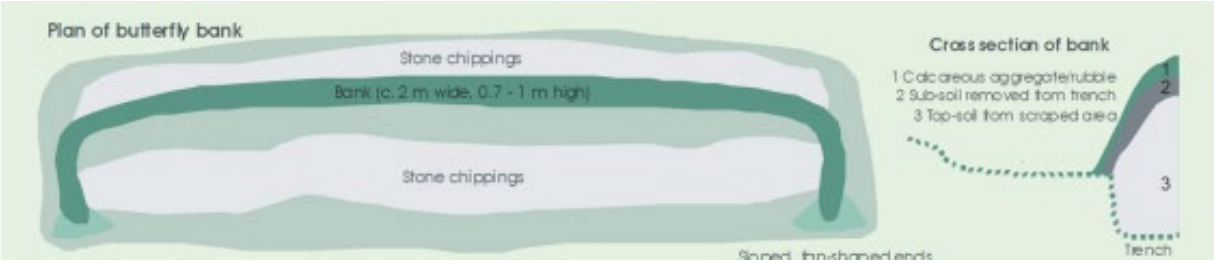

Figure 5.1: Plan illustrating butterfly bank layout

5.2.12 Local seed mixes should be scattered by walking on top of the bank. The plants will grow and then drop seeds on the slope of the bank. Scraped areas including the strip of chippings can also be seeded.

5.2.13 A suitable mix for local butterflies would include common bird's-foot trefoil, dove's-foot crane's-bill *Geranium molle*, sheep's sorrel *Rumex acetosella*, red clover, common knapweed, lady's bedstraw *Galium verum*, pignut *Conopodium majus* and yellow rattle.

5.2.14 To maintain the bank, invasive or vigorous weeds or scrub should be removed to maintain diverse vegetation and bare ground. In the longer term, it may be necessary to scrape some soil away to create more bare ground patches.

Tree planting

5.2.15 Site wide tree planting is recommended to increase the abundance of native trees and scrub habitat available for foraging and nesting bird species. Suitable species include hawthorn, hazel, oak and silver birch *Betula pendula*. These trees should be planted in the drier areas of the site around the western extent of Long Meadow and eastern extent of Stone Meadow (TN4). Hazel trees are best planted in groups of 3 or 5. The optimum time for planting is during the winter months (between January and March). Planting should take place no later than mid-April. The hazel should be coppiced on rotation at least every 5-10 years. This gives the roots a chance to establish. For best results, hazel should be coppiced in early spring (February to March). This ensures the cut is carried out before the tree comes into active growth. This cutting regime can be

repeated on rotation for many years. Arisings should be used to supplement habitat piles where necessary.

5.2.16 In the wetter sections of the site (the eastern extent of Long Meadow and western extent of Stone Meadow) suitable species for planting include alder and weeping willow *Salix babylonica*. These species are tolerant of a wetter environment and should be planted at least 5m away from each other to allow trees to grow in their natural form.

5.2.17 Tree planting should be undertaken between November and early March when the weather and soil conditions are most suitable for root establishment. Trees should be pit planted into prepared soil, with a protective guard and well firmed in. All trees should be securely tied with stakes and all stakes and trees should be re-firmed after strong winds, frost heave and disturbance. Additional checks should be carried out on a monthly basis. Young trees should also be regularly watered in extended periods of hot and dry weather. The ties should be adjusted to account for growth and removed after between 3-5 years depending on establishment. Apply mulch to the bases of the tree in April for the first two years and weed around the trees on a monthly basis during the main growth period of April to October (inclusive).

5.2.18 Pruning of scrubby species such as hawthorn, should be undertaken during January and early February with the aim of achieving a dense structure suitable for nesting birds. Pruning should be avoided between March and September (inclusive) to ensure that nesting birds are not affected. Arisings should be used to supplement habitat piles on-site where necessary.

Pond and SuDS Management

5.2.19 The ponds and SuDS located around the site should be subject to some vegetation removal, in order to create suitable habitat for amphibians and invertebrates such as damselflies. Currently, the ponds are choked with duckweed *Lemna minor* and other vegetation limiting the light availability to the water column and oxygen available to submerged vegetation. Approximately 50% of the water surface should be kept clear. Vegetation can be hand pulled or scooped out with a net in summer. The vegetation should be left on the side of the pond overnight so invertebrates can return to the water. The following day, the vegetation should be rinsed in a bucket of pond water to ensure no invertebrates are left before composting.

5.2.20 It is recommended that the bankside vegetation is cut on rotation by 1/3 per annum in the autumn. This will create a variety of sward heights, remove dead litter and create opportunities for other species to establish around the ponds.

5.2.21 In winter, it is essential that overhanging branches are pruned to allow submerged plants and algae to continue to photosynthesize and replenish oxygen levels in the

water. Consider adding more oxygenating plants in spring if there is not enough for the body of water.

5.2.22 Small wildlife ramps should be added to the SuDS and ponds. This is especially important in areas with steep sides to wildlife such as hedgehogs and amphibians can get in and out safely.

5.2.23 If possible, the ponds and SuDS should be fenced off to prevent access from the public and dogs.

Waste Removal

5.2.24 It is recommended that more landfill, recycling and dog waste bins are installed around the site. Litter was noted on the site visit.

5.3 Long Meadow Recommendations

Orchard Management

5.3.1 The small orchard in Long Meadow (A2) should be enhanced to increase the biodiversity value of this habitat. Currently, the orchard comprises 16 immature apple trees. An additional four lines of trees should be added to the orchard to allow it to expand. It is recommended that additional species are planted such as wild cherry *Prunus avium*, pear *Pyrus communis* and mulberry *Morus nigra*.

5.3.2 A shade tolerant native seed mix could be sown underneath the orchard to create a more species-rich grassland habitat for reptile species, foraging bats, small mammals and invertebrates. A suitable seed mix could include the Emorsgate H1 Hedgerow Mixture or the Hedgerow and Light Shade Seed Mix from British Wildflower Seeds. These seed mixes have been suggested due to their composition and prevalence of shade tolerant plant species.

5.3.3 Prior to seeding the grassland beneath the orchard, the grassland should be cut with arisings removed and weeds should be removed. Care should be taken when removing weeds in close proximity to trees, as excessive cultivation can be damaging to root systems. Seed is best sown in autumn or spring when weather conditions are appropriate. The seed should be rolled or stamped into the ground. The seed should be sown by hand.

5.3.4 Annual weeds will appear first, arising from the seed bank. Although they may look unsightly, they will die before the year is out and will provide shelter to the sown seedlings. The weeds should be cut in mid to late summer. The revealed meadow should be kept short by mowing through to the end of March the following year. Any remaining weeds should be hand dug out.

Woodland Management

5.3.5 The small area of broadleaved woodland (A1) is located in the western extent of Long Meadow and comprises oak, willow species, elder and bramble scrub. There is a small pond and wetland area within this woodland which is heavily shaded. It is recommended that tree branches and scrub are pruned on an annual basis outside of the nesting bird season of March to August (inclusive). This will facilitate an increase

in light levels and should increase the diversity of plants beneath the canopy and around the perimeter of the pond.

5.3.6 Shade tolerant native ferns could be plug planted around the pond edges. Suitable species include lady fern *Athyrium filix-femina* and royal fern *Osmunda regalis.*

Grassland Management

5.3.7 A grassland with high fertility levels is present in the western extent of Long Meadow (TN5). The grassland is tussocky in nature and provides an optimum habitat for reptile species. The species diversity of the grassland could be improved by topsoil stripping small areas within the existing grassland (15m^2 sections) and subsequently seeding them with an appropriate seed mix. An appropriate seed mix would include the EM2 seed mix from Emorsgate (or similar). This mix contains a number of wildflower species including yellow rattle, which will help to reduce the dominance of the vigorous grasses within the grassland. Topsoil stripping and subsequent seeding should be undertaken in early autumn before reptiles go into hibernation. A summary of grassland management regime is presented in Table 5.2.

Summary Table

Year 0	Year 1	Year 2
-Cut: August-mid November. -October: Top soil strip and wildflower seeding.	-Late winter cut* -Cut: mid-August-September	-Repeat steps detailed in Year 1.

Table 5.2 Summary of Grassland Management Regime

*Only required if there is excessive grass growth over January and February (over 30cm).

5.4 Stone Meadow Recommendations

Wet Grassland Creation

5.4.1 Wet grassland areas could be created in the natural depressions and flood prone areas in the southwestern and northern extents of Stone Meadow. These areas are shown on the map as TN6 on DWC Drawing No: 23/4351.01-01.

5.4.2 These habitats and damp soils provide ideal conditions for many species of invertebrates and also provide foraging habitat for bats and birds.

5.4.3 To create an area of wet grassland, the existing grasslands in this area should be scarified by hand by using a rake or similar equipment. The aim should be to create patches of bare ground to allow wildflower seeds to germinate. Following scarification, all weeds should be removed by hand.

5.4.4 Once the ground is prepared, seed sowing can commence. It is best to sow the seed in early autumn or spring to avoid the seasonally wet periods. A suitable seed mix includes Emorsgate Seeds EM8 Meadow Mixture for Wetlands or similar. This seed mix includes species of grasses, sedges and 19 species of forbs. The seed should be

sown by hand. Following seeding, seed should be pressed into the ground to ensure successful germination. This can be achieved by treading the seed in manually.

5.4.5 The grassland should not be cut from spring through to July or August to allow the species to flower. After flowering, the grassland can be cut back with a scythe, strimmer or tractor. The cut grass or 'hay' can be left to dry and shed seed for 1-7 days before being removed. The regrowth should then be cut through to late autumn/winter to 50mm and again in spring if needed.

Summary Table

Year 0	Year 1	Year 2
-Cut: August-mid November. -October: scarification and seeding.	-Late winter cut* -Cut: late-August and collect cuttings after 1-7 days	-Repeat steps detailed in Year 1.

Table 5.3 Summary of Grassland Management Regime

*Only required if there is excessive grass growth over January and February (over 30cm).

Restricting Public Access

5.4.6 It is recommended that the SuDS in the center of Stone Meadow is fenced off to restrict dog access. Alongside this, habitat piles/hibernaculum should be created for amphibians and reptile species along the slope opposite the SuDS (TN7).

5.4.7 There is a section of watercourse within the woodland in the northern extent of Stone Meadow. Field observations indicate that this area is subject to very high levels of human activity (TN8). As a result, the ground adjacent to the watercourse is unvegetated and heavily compacted due to excessive footfall. This has led to a reduction in soil porosity and an increase in soil erosion. It is recommended that this area is temporarily fenced off to the public and the ground is allowed to recover. The soil should be aerated using a pitchfork or spading fork. Holes should be as deep as possible, and the fork should be maneuvered from side to side to increase the hole size. This should be repeated across the whole area. It is recommended this is carried out in spring or autumn when the soils are moist. Plant roots and earthworms naturally reduce soil compaction; native shade tolerate plants such as lady fern and royal fern should be plug planted once the soil is aerated. Earthworms can be purchased live to increase the aeration in the ground and to reduce soil compaction.

Willow Maze/Feature Creation

5.4.8 Area A3 on the Habitat Management Plan Map has been identified as a potential area to create a willow feature. This is a seasonally wet amenity grassland and therefore willow would naturally thrive in the soil.

5.4.9 This could be a volunteer-led project for local people to engage the community and involve them in a biodiversity project.

5.4.10 The grassland should be cleared of any weeds and cultivated to a depth of 30cm. This area should then be composted. A breathable weed suppressing membrane or bark chipping can be laid to prevent weeds taking over during the growing season.

5.4.11 Any species of freshly cut willow can be utilized for the structure. However, it is recommended that purple willow *Salix purpurea* is used if possible. This species is native to the UK and is visually aesthetic with purple shoots, blue-green leaves and silver catkins. Purple willow is easy to grow, is low maintenance and thrives in wet soils. This plant will also provide nectar and pollen for pollinating insects.

5.4.12 Prior to planting, the shape of the feature/maze should be planned out. Once a shape has been agreed, whips should be plug planted from January to early spring. Depending on the species, the cuttings may need to be soaked in water for 24 hours with all triangular buds pointing upwards. Example features include arches, tunnels, dens, wigwams or a maze.

5.4.13 A metal pole can be used to create approximately 9” holes in the ground with the diameter the same as the cutting. Cuttings should be placed in the hole with 2-3” showing above ground level. The willow should be weaved between one another to create the desired shape. To ensure the cuttings take, they should be watered daily for a couple of weeks (if it is unseasonally dry). Any weeds should be removed to ensure that the willow has space to grow.

5.4.14 Any new growths should be woven to strengthen the structure. It is important the shoots face upwards otherwise they will die. Willow grows rapidly and it is likely that the structure will require pruning over the summer to maintain the desired shape.

Invasive Species

5.4.15 The Schedule 9 invasive species Himalayan balsam should be removed from Stone Meadow (TN1). This can be carried out by hand pulling before the species sets seed and arisings removed. The area will have to be checked regularly to ensure that more plants have germinated. Alternatively, a specialist contractor can be contacted to control the species.

5.5 Great Meadow Recommendations

Woodland Creation

5.5.1 It is understood that a woodland creation scheme is planned for the southwestern extent of the site. It is recommended that native species such as oak, silver birch, blackthorn and hawthorn are planted.

Grasslands

5.5.2 As described in paragraph 5.2.2, it is recommended that a wildflower meadow is created in the southern extent of Great Meadow. This is to encourage an invertebrate

rich habitat suitable for foraging bats, birds and reptiles. Raptor posts can be installed around the wildflower meadow to encourage birds of prey to utilize the meadow for hunting small mammals.

5.5.3 The existing paths should be maintained by mowing to ensure that the public stay to the paths and do not walk into the wildflower meadow. Interpretation signs could be added to the paths to show the wildflower planting and biodiversity actions taking place.

Orchard Expansion

5.5.4 As recommended in paragraph 5.3.1, it is recommended that additional species are planted in the small orchard in the northern extent of Great Meadow. Suitable species include pear and wild cherry.

Invasive Species

5.5.5 As described in paragraph 5.4.17, the invasive non-native species Himalayan balsam should be eradicated from the site (TN1).

6 References

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7 Appendices

Appendix 1: Habitat Management Plan Map

Appendix 2: Raw Survey Data

Appendix 3: Examples of Bird and Bat Boxes

Appendix 1 – Habitat Management Plan Map

N

Four lines of fruit trees should be planted to allow the orchard to expand.
Suitable species include wild cherry, pear and mulberry.
A shade tolerant seed mix should be sown underneath the orchard to create a more species-rich grassland.

Proposed willow maze/feature creation area.

Restrict public access and increase aeration of the soil to prevent further soil erosion.

Restrict public access and create habitat piles/hibernaculum on the slope opposite the SuDS.

Create wet grasslands in natural depressions by seeding appropriate meadow mixtures.

Tree branches and scrub should be pruned on a annual rotational basis outside of nesting bird season (March to August inclusive).
Shade tolerant ferns can be plug planted around the perimeter of the pond.

Fruit trees should be planted to expand the orchard.
Suitable species include wild cherry and pear.

Create a wildflower meadow with mown paths for the public. Raptor posts and biodiversity signage can be added to the area.

Proposed location of a butterfly/beetle bank.

Site wide recommendations:

Amentiy grasslands - sow flowering lawn seed mixtures to increase the biodiversity value for invetebrates and birds.

Tussocky grasslands - Create wildflower meadows.

Pond/SuDS management - remove vegetation so approximately 50% of the water surface is clear. Prune overhanging branches and add oxygenating plants if required. Install small wildlife ramps to ensure wildlife can access the pond safety.

Install bee hotels, bat/bird boxes, deadwood piles and additional waste facilites around the site.

A1 A2 A3

TN1 TN2 TN3 TN4 TN5 TN6 TN7 TN8

1:3000

0 100 200 300 400 m

Legend

- Stone Meadow
- Long Meadow
- Great Meadow
- Target Notes
- Watercourse
- Orchard
- Wildflower grassland
- Tussocky grassland
- Wet grassland
- Amenity grassland
- Pond
- Sustainable Drainage System (SuD)
- Broadleaved woodland

Target Notes:

TN1: Himalayan balsam present

TN2: Disused badger sett

TN3: Proposed butterfly/beetle bank location

TN4: Proposed tree planting areas

TN5: Location of high fertility grasslands where test pits and seed sowing is recommended

TN6: Proposed wet grassland area

TN7: Proposed location of habitat piles/hibernaculum

TN8: Restrict public access and reduce soil compaction by aerating with a pitchfork, plug planting shade tolerant ferns and utilising earthworms

Map Title: Habitat Management Plan Map

Site: Cranbrook County Park
Drawing No.: 23/4351.01-01
Client: Cranbrook Town Council
Date: August 2024

Drawn by: LT
Checked by: JW

Devon Wildlife Consultants

Appendix 2 – Raw Survey Data

Parameter	Condition
Temperature (ºC)	19
Cloud cover (%)	20
Wind	F1
Precipitation	None

Table A1.1 Weather Conditions Recorded During the Survey

English name	Scientific name
Alder	*Alnus glutinosa*
Annual meadow grass	*Poa annua*
Apple tree	*Malus domestica*
Ash	*Fraxinus excelsior*
Blackthorn	*Prunus spinosa*
Bramble	*Rubus fructicosus* agg.
Bristly ox-tongue	*Helminthotheca echioides*
Broadleaved dock	*Rumex obtusifolius*
Bullrush	*Typha latifolia*
Cock's-foot	*Dactylis glomerata*
Common bent	*Agrostis capillaris*
Common knapweed	*Centaurea nigra*
Common mouse-ear	*Cerastium fontanum*
Common sorrel	*Rumex acetosa*
Common vetch	*Vicia sativa*
Creeping buttercup	*Ranunculus repens*
Creeping cinquefoil	*Potentilla reptans*
Creeping thistle	*Cirsuim arvense*
Crosswort	*Cruciata laevipes*
Cuckoo flower	*Cardamine pratensis*
Dandelion	*Taraxacum officianale* agg.
Dogwood	*Cornus sanguinea*
Duckweed	*Lemna minor*
Elder	*Sambucus nigra*
False oat grass	*Arrhenatherum elatius*
Field maple	*Acer campestre*
Floating sweet grass	*Glyceria fluitans*
Garlic mustard	*Allaria petiolate*
Germander speedwell	*Veronica chamaedrys*

English name	Scientific name
Gorse sp.	*Ulex* sp.
Hard rush	*Juncus inflexus*
Harts tongue fern	*Phyllitis scolopendrium*
Hawthorn	*Crataegus monogyna*
Hazel	*Corylus avellana*
Hemlock	*Conium maculatum*
Hemlock water dropwort	*Oenanthe crocata*
Himalayan balsam	*Impatiens glandulifera*
Hairy sedge	*Carex hirta*
Ivy	*Hedera helix*
Common birds-foot trefoil	*Lotus corniculatus*
Lesser celandine	*Ficaria verna*
Male fern	*Dryopteris filix-mas*
Meadow buttercup	*Raninculus acris*
Meadow foxtail	*Alopecurus pratensis*
Meadow vetchling	*Lathyrus pratensis*
Common nettle	*Urtica dioica*
English oak	*Quercus robur*
Ox-eye daisy	*Leucanthemum vulgare*
Pendulous sedge	*Carex pendula*
Perennial ryegrass	*Lolium perenne*
Ragged robin	*Lychnis flos-cuculi*
Common ragwort	*Senecio jacobaea*
Red clover	*Trifolium pratense*
Red fescue	*Festuca rubra*
Ribwort plantain	*Plantago lanceolata*
Silverweed	*Potentilla anserina*
Soft brome	*Bromus hordeaceus*
Soft rush	*Juncus effusus*
Sweet vernal grass	*Anthoxanthum odoratum*
Sycamore	*Acer pseudoplatanus*
Water mint	*Mentha aquatica*
Water plantain	*Alisma plantago-aquatica*
White clover	*Trifolium repens*
Willow	*Salix* sp.
Willowherb sp.	*Epilobium* sp.
Yorkshire fog	*Holcus lanatus*

Table A1.2 Botanical Species Recorded During the Site Walkover Survey

English name	Scientific name
Badger	*Meles meles*
Blackbird	*Turdus merula*
Blackcap	*Sylvia atricapilla*
Blue tit	*Cyanistes caeruleus*
Carrion crow	*Corvus corone*
Chaffinch	*Fringilla coelebs*
Chiffchaff	*Phylloscopus collybita*
Damselfly	*Zygoptera*
Great tit	*Parus major*
House sparrow	*Passer domesticus*
Kingfisher	*Alcedo atthis*
Large white butterfly	*Pieris brassicae*
Orange-tip butterfly	*Anthocharis cardamines*
Robin	*Erithacus rubecula*
Small white butterfly	*Pieris rapae*
Wood pigeon	*Columba palumbus*
Wren	*Troglodytidae troglodytas*

Table A1.3 Fauna Recorded During the Site Walkover Survey

Appendix 3 – Examples of Bird and Bat Boxes

BAT ROOSTING PROVISION

This information is provided as an indication of different types of roosting provision, and is not comprehensive. DWC does not endorse any particular products or suppliers.

	**General Purpose Wooden & Woodcrete Bat Boxes** e.g. Schwegler Bat Boxes 2F & 2FN for trees Woodcrete boxes e.g. Schwegler are more durable and provide more stable temperatures Position: Upon external walls or mature trees with a southerly aspect, at approximately 3m or higher from ground level.
	**Schwegler N27 Bat Box** (pictured) Position: Within external walls with a southerly aspect, beneath eaves or approximately 3m or higher from ground level.

BIRD NESTING PROVISION

This information is provided as an indication of different types of nesting provision, and is not comprehensive. DWC does not endorse any particular products or suppliers.

General Purpose Wooden & Woodcrete Bird Boxes

e.g. Greenalyte range (pictured), Schwegler Bird Boxes 1B & 2H for trees, and Schwegler 1MR Avianex for buildings.

Woodcrete boxes e.g. Schwegler are more durable and provide more stable temperatures

A range of entrance hole sizes will cater for different species e.g.

26mm: Blue Tit, Coal Tit, possibly Wren.

32mm: Great Tit, Nuthatch, Pied Flycatcher.

45mm: Starling

Open Fronted: Robin, Wren, Pied Wagtail.

Position: External walls or mature trees with a northerly aspect, approximately 2m or higher from ground level, with nearby tree or hedge cover.

http://www.wildcareshop.com/product/nest-boxes-artificial-habitats/bird-boxes.html

http://www.nhbs.com/bird_boxes_eqcat_426.html

	**Sparrows** e.g. NHBS FSC sparrow terrace (pictured) Position: At a height of at least 2m upon external wall, facing east. Several boxes can be installed approximately 1.5m apart