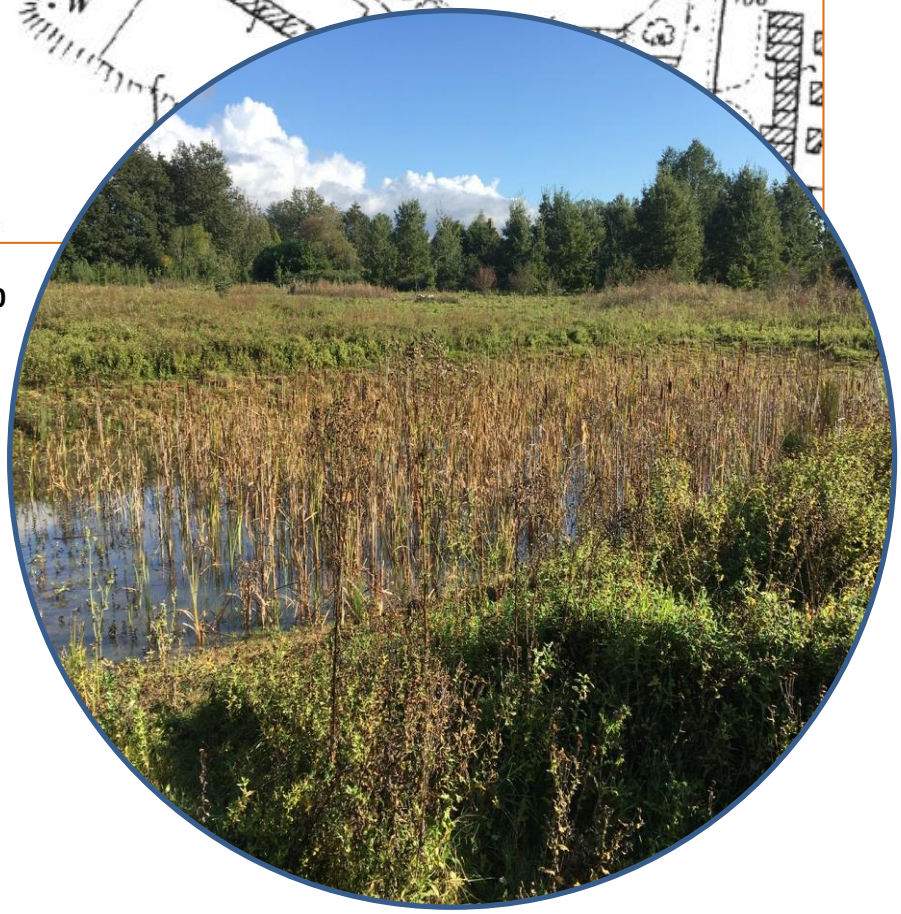
Pluckley Nature Reserve
Management Plan and Actions
Version 1 - 2021-2026

Ordinance Survey Map 1871 - 1890



KENTISH STOUR COUNTRYSIDE PARTNERSHIP

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1 INTRODUCTION

1.1 Background to the management plan

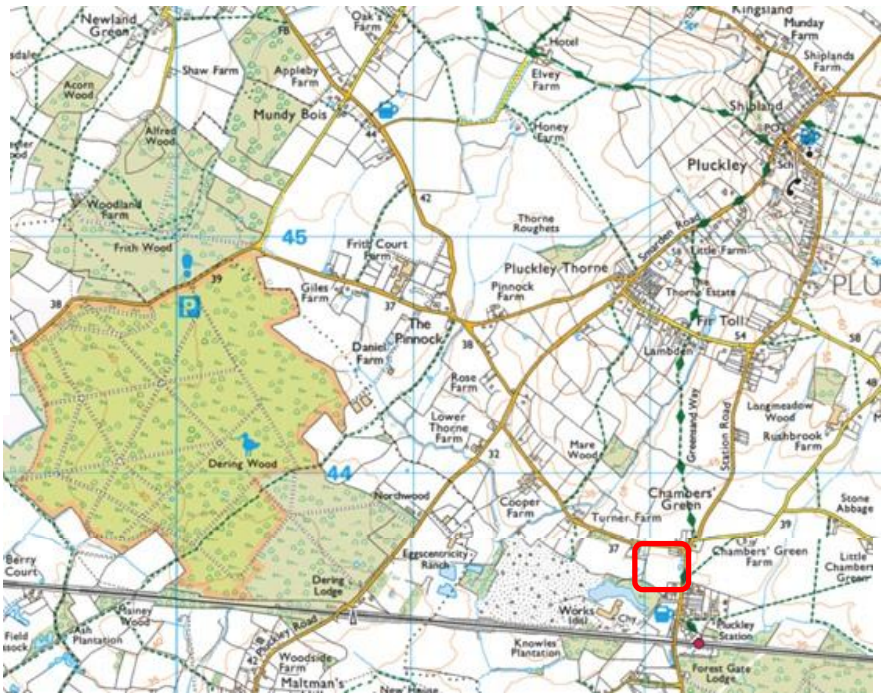
This 5-year management plan has been commissioned by Pluckley Parish Council (PPC), landowners of the approximately 1.9 hectares site now known as Pluckley Nature Reserve (PNR). It was formerly owned by Martin Wood (Riverwood Homes (Kent) Ltd., who is developing the Pluckley Brickworks site for housing, just south of the PNR. Ownership of the nature reserve land was transferred to the Parish Council in March 2021.

The nature reserve land covers most, but not all, of the receptor site used to relocate smooth newt *(Lissotriton vulgaris*) and protected species - great crested newt - GCN (*Triturus cristatus*), slow worm *(Anguis fragilis)* and common lizard, (*Zootoca vivipara).* Two small parcels are owned by Mr Mackelden of Lavender Holdings. The latter has agreed vehicular access rights with PPC, across one section of their holdings, for PNR operations and management purposes. (Map 2). As a receptor site, its management forms part of Planning Condition 30, agreed between Ashford Borough Council and the developer (Planning Application 14/01116/AS).

This Pluckley Nature Reserve Management Plan has been prepared based on KSCPs expertise and knowledge of the site, from standard walkover surveys taken over different seasons 2017-2021 which identified the principal habitats and features of interest, and in conjunction with ecological assessments and data provided in reports prepared by Bioscan (UK) Ltd. (August 2014) and Native Ecology UK (July 2018) as part of the planning process for Pluckley Brickworks Development. Some additional survey data provided by Friends of Pluckley Nature following various supported walkovers (Ref. PNR Summary 2021).

1.2 Site Location and general information

Location: Grid Reference - centre of site TQ 92062 43605



Map 1 . **Pluckley Nature Reserve location.**

The nature reserve is in a rural location on the edge of Pluckley Village in the Borough of Ashford, Kent. The village spreads over an area of approximately 5^2 miles and lies 6.5 miles from the town of Ashford. Latest available data gives the population as 1069 (Census 2011), this will be larger today. It is served by Pluckley

Train Station, which is close to the PNR, and Pluckley Church of England Primary School just over a mile away. There is a village hall, about halfway in between, and some shops and pub close to the school. The long-distance footpath the Greensand Way runs north to south through Pluckley, a section runs adjacent to the reserve. Currently there is no public access on the site.

The PNR is 1.9 hectares and roughly rectangular in shape. To the north and east, it is bordered by roads and farmland, which at the time of writing consisted of arable or pasture fields with native species hedges. No wildlife field margins were visible. To the south is a small block of broadleaf woodland, including a section belonging to the PNR, a lake and then the Brickwork development. The western boundary includes a small woodland edge containing a pond. The south and north-eastern corners abut residential and business properties. An old Veolia landfill site lies further to the west, linked by the edge of the Brickwork site.

Map 2. Site boundary from Google Earth Aug. 2020

Receptor Site:

PNR boundary

Lavender Hldgs.

Permissive Vehicle access

Map 3. Neighbouring land - Google Earth Aug. 2020

Brickwork site

Veolia Landfill site

PNR Area	Approx. 1.9 hectares.
Protected Status	No nature conservation designations, scheduled ancient monuments or other designated features. The nearest areas with conservation protection are Dering Wood which is designated a Local Wildlife Site (AS32), and Hoads Wood, 2.9 km distant, which is a Site of Special Scientific Interest (SSSI).
Land Tenure	Pluckley Parish Council.
Planning Authority	Ashford Borough Council.
Consenting Authorities	Natural England (European Protected Species (EPS)) Ashford Borough Council (planning matters)
Access	No public right of access, permissive vehicular access from Chambers Green Road, proposed permissive footpath access from Station Road.
Other designations	The RIGS outlined in 1.4 confer no protective status on the brickworks site. The larger area around the PNR is part of a Drinking Water Safeguard Zone (Surface Water) which is a non-statutory zone in a catchment area that influences the drinking water quality for that respective area. (Department of Environment Food and Rural Affairs)

1.3 Heritage

Pluckley is an historic village mentioned in the Domesday Book of 1086 and has the dubious reputation of being 'the most haunted village in England'. The Dering family rose to importance in the reign of Henry II, and their estate, which sold in 1928, covered a large part of the surrounding area including Dering Wood and The Forest south of the railway and station built 1843.

Fig. 1 - Photo by Howzey

The Pluckley Brickworks, which the PNR land was once part of, first opened in 1879, the tall chimney would have been a local landmark. After it closed in the late 1990s, the site slowly deteriorated. The abandoned buildings, manmade waterbodies and the scrub which developed around the brownfield site was habitat for many species including turtle dove, nightingale, several bat species, reptiles, and dormice. Currently under development for housing, the lake which has formed from a large clay pit, is perhaps the only visible reminder of the industry that took place there.

1.4 Geology and Landscape Character Assessment

Pluckley sits on the edge of the North Downs, in view of but outside the Kent Downs Area of Outstanding Natural Beauty. It is largely a farmed landscape in the Vale of Kent. Defined as *Dering Wooded Farmlands Low Weald Character Area* (Ashford Borough Council, Landscape Character Assessment 2009), its soils are predominantly limestone and sandstone with layers of clay. There are large areas of woodland nearby. Dering Woods, just over ½ a mile away - 125 hectares of deciduous* ancient woodland, owned and managed by the Woodland Trust. Nearby, on the south side of the trainline, is The Forest, approx. 90 hectares of privately owned deciduous woodland with an area of ancient woodland. *(UK BAP Priority Habitat)

Fig. 2 - Grassland Facing west April 2021 (a dry spring)

The western area of Pluckley brickworks was designated a Regionally Important Geological and Geomorphological Site (RIGS) due to *'.. a rare exposure of Lower Cretaceous Weald Clay. This is by far the most easterly and extensive exposure of Upper Weald Clay in the county..'* (Ref. www.GeoConservationKent.org.uk). The RIGS area does not cover the PRN field, but there are clearly deposits of clay here, enabling the creation of some ponds through puddling, and visibly evident in the cracked surface of a large part of the nature reserves central area of semi-improved grassland.

1.5 Drainage and Hydrology

The western and eastern edges of this relatively flat site can sit wet and are liable to surface flooding, where both the older and newer mitigation ponds have been located. (Fig. 3 EA flood mapping)

Map 4. **Surface Flooding** Kentview mapping - KCC, accessed 20th October 2021

Map. 4 Environment Agency, Surface Flooding**: Low** **Medium** **High**

Desk top surveys found no manmade drainage systems on the site. The nearest services are sewage points and lines which run under Station Road.

There is an open, unmanaged drainage ditch on the eastern edge of the site beside Station Road. There are no signs of recent management along this stretch and communications with Kent County Council Highways confirmed that it did not fall within their area of responsibility (Pers Comms D. Comley / R. Hadley November 2021). The section of Station Road beside the PNR lies at the bottom of a slope, where the road sits visibly higher than the field edges, and mapping indicates localised surface flooding. As this is where the older ponds are located, it might suggest that they were created as potential storage to help alleviate this issue.

Regardless of intention, these ponds will be taking run off from the road in high water situations, more so if the ditches are not managed.

1.6 Agreements and Partnerships

Pluckley Parish Council are the reserve owners, and it is their intention, to manage and maintain the PNR for wildlife and for the benefit of the local community, with the ambition of eventually obtaining Local Nature Reserve* status and protecting the ecology of the site in perpetuity.

Kentish Stour Countryside Partnership have been working with the Parish Council, advising on ecological matters, since the summer of 2017. Currently engaged to write this management plan and to oversee the initial development of the nature reserve for wildlife, and to deliver community engagement, over a minimum 1-year period commencing July 2021.

The Friends of Pluckley Nature (FPN) were formed July/August 2021, to take an ongoing, active, voluntary role in the development of the site with PPC and KSCP. KSCP will support the Friends who will eventually become custodians of the site on behalf of the PC and community.

*** Local Nature Reserves** are usually in the ownership of the local authority. Town and parish councils can create LNRs if the district council (ABC), give them the power to do this; an agreement between the LA and the PPC will therefore be required. LNR's are declared through Natural England, who will require maps, management plan and agreements signed by landowner and local authority to ensure that the site is managed as an LNR for a minimum of 21 years.

The site must be locally important for:

- wildlife
- geology
- education
- enjoyment (without disturbing wildlife)

LNRs are expected to provide some public access. This can be restricted to areas/times to ensure the protection of sensitive areas, or if general access is causing a negative impact on the wildlife. A Dog Order can restrict or ban dog access. Bylaws may be created to prevent harm if first options do not work. (See Appendix 1 for more details).

1.7 Past management of the site

The relatively flat PNR field was part of the Brickworks original landholding. The field was probably rented out to one or several farmers for pasture or arable during these years. Looking at several maps dating from the 1870s, they record only incremental changes. Ordinance Survey Map 1897-1900 (Cover image) records the appearance of St Mary's Church and Church Villas, now both private residencies. This along with the woodland on the southern edge of the site, suggest that it was planted when the brickworks were established in 1879. The treeline beside Station Road is visible on a 1946 aerial view of the field. The 2 older ponds on the eastern edge of the field first appear on an aerial map dated 1990. In living memory, the PNR field was used for a time as the village's football field, '…though it was prone to getting very muddy' and has on occasion been used as pasture since. (Pers comms Martin Newman, October 2021)

Since last used for pasture or football, prior to becoming a receptor site, there appears to have been little management. There was some coppicing of hornbeam in the woodland, which is difficult to date. Stems suggest approximately 15 years ago. However, this is conjecture as growth rates can vary from site to site. Scrub has naturally developed along the boundaries and is scattered throughout the grassland edges. The older ponds have not been managed for quite some time and are now heavily silted and vegetated.

Recent management has been carried out as part of planning conditions for the Brickwork development, following identification of the PNR area as a receptor site for protected species in 2014 by Bioscan (UK) Ltd. Native Ecology, under licence from Natural England, oversaw the creation of 2 new ponds and associated hibernacula in 2017. This was prior to translocating 7 individual GCN. Ponds margins may have been seeded with a pond edge mixture (Emorsgate Seeds mixture EP1 - Ref: Bioscan Submission in respect of Condition 30 Biodiversity Protection and Enhancement Report, Dec 2016).

Prior to translocation of reptile species, trees and scrub were thinned from the grassland and arisings/logs used to create reptile refugia. Some grassland management took place within a temporary exclusion zone. Since then, a few hazel saplings (Corylus avellana) have been planted in a line close to the boundary of the PNR land and Lavendar holdings plot (Fig, 24), bat boxes were apparently installed (locations not found at the time of writing) and 10 dormice boxes (only 5 useable boxes found). Monitoring of dormice and GCN in all ponds has taken place subsequently. (See 1:10:1 Species Tables)

The EPS licences are held by Martin Wood (Riverwood Homes (Kent) Ltd and, at the time of writing, Native Ecology are also named. However, the latter are talking to Natural England to remove their name; due to disagreements with the developer on potential unauthorised destruction of habitat in the development area. (Pers Comms. Mark Wright (PPC) and Natural England - Freedom of Information data).

1.8 Wildlife and protected species

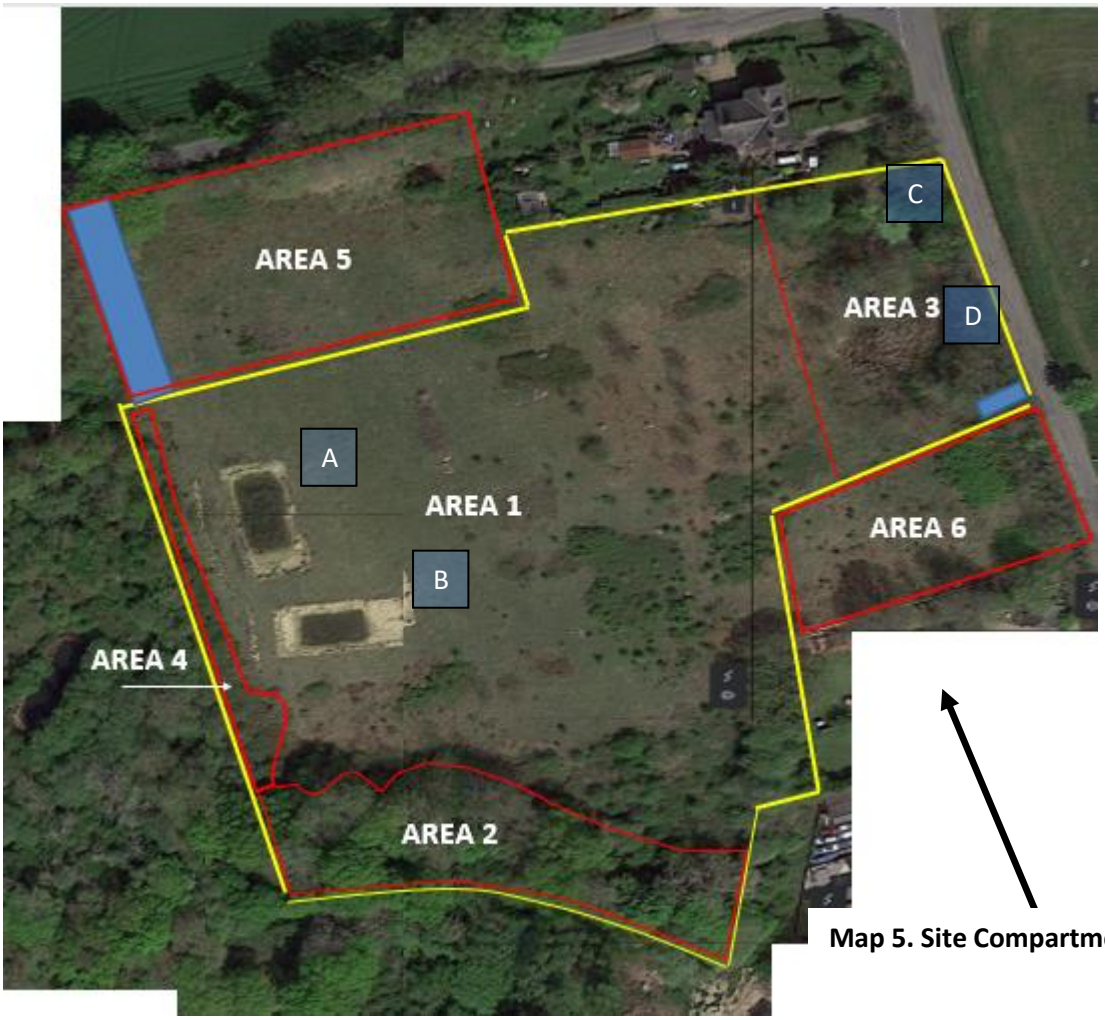
The Wildlife and Countryside Act 1981 and the Countryside Rights of Way Act 2000 provide legal constraints on what can and cannot be done on wildlife sites. Certain habitats and species are protected through this legislation, in particular European Protected Species (EPS). An EPS licence, administered by Natural England, is often required for working with these listed species. In addition, the Wildlife and Countryside Act 1981 (as amended) makes it an offence to intentionally or recklessly disturb an EPS while it is occupying a structure or place which it uses for shelter or protection, or to obstruct access to any structure or place the species uses for shelter or protection. Whilst this is usually applied to construction works and planning applications, it can equally, and does apply to habitat management and conservation works. Although such works may be intended to benefit the protected species, it still remains an offence to deliberately disturb, damage or destroy a breeding site or resting place regardless of whether they are actually occupied. However, it is generally recognised that habitat management does benefit species conservation. Therefore, this work must be guided by best practice as provided by Natural England and Forestry England and followed in all instances and works must demonstrate that they have been carefully planned. (Ref: www.planningportal.co.uk 2021)

Table 1: Key to conservation status

Biodiversity Importance	Species and habitats
K Internationally important	**European Protected Species (EPR).** Species and their habitats EPS such as bats, great crested newts, otters and dormice, receive full protection under The Conservation of Species and Habitats Regulations 2010. This makes it an absolute offence to: Deliberately capture, injure, or kill them; disturb, damage or destroy a breeding site or resting place.
N Nationally important	**Red Data Book (RDB) -** International Union for Conservation of Nature (IUCN). Categories: Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild and Extinct. **Biodiversity Action Plans (BAP)** for nationally rare or scarce species and habitats (*see Species and Habitats of Principal Importance below*) **Sites of Special Scientific Interest (SSSI)*** statutory status for sites which are of importance for their biological or geological interest and are protected from damage under legislation such as the Wildlife and Countryside Act.

	Nationally Rare *is usually defined as species which are found in 15 or less hectads.* ***Nationally Scarce or Notable*** *species which are found in between 16 and 100 hectads.* *A status of* ***Local*** *may be used, for species found in between 101 and 300 hectads.*
CWS / LWS	**County and Local Wildlife Sites -** sits recognised for their substantive wildlife value. Non-statutory designations which can are recognised in planning policy and therefore offered some protection.
HPI - Species and Habitats of Principal Importance	**Species and Habitats of Principal Importance (HPI**) in England are listed under Section 41 of the Natural Environment and Rural Communities Act 2006 (updated in November 2008). Formerly UK Biodiversity Action Plan (BAP) a term which continues to be used for Priority Species listed under Schedules 1, 5 (Section 9(1)) or 8 of the Wildlife and Countryside Act 1981 (as amended). Schedule 1. The Act makes it an offence (exceptions listed in Schedule 2) to intentionally kill, injure or take any wild bird or their eggs or nests. Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young. Schedule 5. The Act makes it an offence (subject to exceptions) to intentionally kill, injure, take, possess, or trade in any wild animal listed, and prohibits interference with places used for shelter or protection, or intentionally disturb animals occupying such places. Prohibiting certain methods of killing, injuring, or taking wild animals. Schedule 8. The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants. There is a statutory five-yearly review of Schedules 5 and 8 (protected wild animals and plants respectively).
FBI - Farmland Bird Index	This indicator tracks farmland bird species and their populations in England from 1970, with the most recent published figures (from 2014) indicating that their numbers have fallen by 56% to a level less than half that of 1970.
Red/Amber - R.S.P.B Bird List	UK's leading bird conservation organisations have worked together to review the status of birds in the UK, Channel Islands and Isle of Man. The bird species that breed or overwinter are assessed against a set of objective criteria to be placed on the Green, Amber or Red list – indicating an increasing level of conservation concern. The quantitative criteria assess the historical decline, trends in population and range, population size, localisation and international importance of each species as well as their global and European threat status.

1.9 Habitats



Map 5. Site Compartments

Table 2 - Habitats

HABITAT	STATUS
Semi-improved grassland with scrub mosaic **Area 1** Fig. 2, 3, 4 and 12 Conservation status - HPI (see 1.8 - Table 1)	• The semi-improved grassland has a Graminoid composition consisting mostly of Yorkshire fog *holcus lanatus,* with creeping bent *Agrostis stolonifera* and other grass species*. Within the grassland there are localised areas with different vegetative communities: Around the mitigation ponds and covering about 1/6th of the grassland, there are several flowering species including common fleabane *Pulicaria dysenterica,* common sorrel *Rumex acetosa*, agrimony *Agrimonia eupatoria*, yarrow *achillea millefolium,* meadow vetchling *Laythyrus pratensis* and creeping cinquefoil *Potentilla reptans**. Some of these species are likely the result of seeding when the mitigation ponds were created, not natural regeneration. Hard rush *juncus inflexus* is found on the western edge near the ponds and beside a hibernaculum installed as part of translocation process. An area identified as at higher risk of surface flooding and raising concerns for hibernating animals. (See Fig. 3) To the south and south-east, ruderal species increase, including ragwort *Jacobaea vulgaris* and creeping thistle *Cirsium arvense**. • The centre of the site remains largely open grassland with colonisation of scrub species from the edges, creating a mosaic of tree/shrub and taller grassland swards. Log piles/refugia have been created throughout. This is

	valuable habitat for a range of common and target species including reptiles, nightingale, turtle dove, harvest mice, dormice, hedgehogs &GCN. • Turkey oak (*Quercus cerris*), a fast - growing invasive species, are also colonising the grassland from all sides, but particularly the eastern edge. • Large areas of the clay ground surface are deeply cracked all year round, presenting challenges for access and management. • Rabbits have been notably prolific, grazing that grassland and new pond margins. Burrows can be found amongst the scrub around the site. * A full list of plant species can be found in Annex 1.
Scrub **Areas 1, 3 and 4** Fig. 9, 11, 12 and 15	• Area 1, the southern and south-eastern edges of grassland have margins of relatively dense more mature scrub consisting mainly of blackthorn, hawthorn, spindle, dog rose and bramble. • Area 3, beside Ponds C and D goat willow species become more frequent. • Area 4 on the western edge is predominantly goat willow and blackthorn with hawthorn and dog wood. Mature turkey oak are the dominant tree species in the neighbouring treeline behind it.
Ponds (A, B, C and D) **Area 1 (Ponds A and B)** Fig. 5 and 6 Conservation status - HPI (see 1.8 - Table 1) **Area 3 (Ponds C and D)** Fig. 7, 8, 9 and 10	• **Ponds A & B** - mitigations ponds, are situated 10 metres apart in open grassland. Created in 2017 and understood to be lined ponds (Ref. Email May 2017 Native Ecology / Natural England), they are both rectangular in shape with sloping margins and a shallow shelf at one end. Pond A is slightly larger and deeper than pond B. In the summer of 2021, both ponds were populated by marsh frog *Pelophylax ridibundus* a non-native, and some consider, invasive, species. • Aquatic vegetation in both ponds presently lacks diversity and is dominated by great reedmace or bulrush (Typha latifolia) that has colonised from ponds C and D. Bulrush now covers all of Pond B, which is shallower, and 2/3rds of Pond A. Leaving open water in the latter which has floating pondweed *(Potamogeton spcs.)*. Both A and B have very sparse marginal vegetation, possibly due to the clay soils, weather conditions since completion, and/or rabbit damage. • **Ponds C and D** located on the eastern edge, are thought to be over 30 years old and formed through puddling. They are situated beside a tree line of mature deciduous turkey oak adjacent to Station Rd. Over time the 2 ponds have silted up, are heavily vegetated and almost joined. Reedmace dominates with soft rush, hard rush, some gypsywort, brooklime and sedge species*. 2 large mature turkey oaks are situated on the western edge, with more saplings encroaching from all sides, mixed with goat willow spcs. along the southern edge. • Aquatic invertebrate surveys conducted over the whole Brickwork site ponds found C and D to have the greatest amount of diversity including dragonfly larvae, water beetles and larvae, great diving beetles and leeches. (Ref. 3.3.67, Bioscan Pluckley Brickworks Ecological Appraisal 2014) • Ponds C and D lie lower to the adjacent section of Station Road (currently used for parking). As this section of Station Road is at the bottom of a slope, run off from the road is likely to enter the ponds in high rainfall and flood conditions. Ditch in treeline is silted up. While reeds can serve to 'filter' some pollutants, it raises concerns for healthy wildlife ponds/wetland. • The habitat currently might be better categorised as pond/wetland.

	2018 survey (eDNA/eggs and larvae) GCN found in ponds B, C and D (Native Ecology, GCN Monitoring Report, 2018). Later hand/torch surveys conducted by licence holders for KSCP and FPN, found GCN eggs in pond A only. *There are several ponds in the area, and more being established, that are part of Natural England's District Level Licensing Scheme, and Strategic Opportunities area. KSCP is one of the countryside partnership's delivering the scheme for NE. The PNR ponds form an important part of a growing network of GCN ponds, consolidating and strengthening the status of this protected species locally and nationally*
Lowland mixed deciduous woodland **Area 2** Fig. 17.18.19 and 20 Conservation status - HPI (see 1.8 - Table 1)	• Approximately .35 hectares of lowland deciduous woodland runs along the southern edge of the nature reserve. Within which the PNR's boundary is formed by an old ditch line. Beyond the boundary the woodland slopes down to the lake and the Brickworks development on the opposite bank. • The woodland consists mostly of mature standard Turkey oaks, with hornbeam *Carpinus betulus* and sycamore *Acer pseudoplatanus;* coppiced hornbeam, hawthorn *Crataegus monogyna* and a *few* hazel *Corylus avellana* and ash F*raxinus excelsior.* • The understorey is sparse due to the heavy shade produced by the canopy cover, with scattered bramble *Rubus fruticosus,* ground-ivy *Glechoma hederacea,* bracken *Pteridium*, dog's mercury *Mercurialis perennis,* common cleavers *Galium aparine* and common nettle U*rticaria dioica.* • There is a large amount of litter around the woodland floor. • One residency in the south-eastern corner has broken fencing and there is no barrier to the site. Garden waste is also being dumped into the area. • Dormice present (Bioscan 2016) in the woodland/scrub edge. There are dormice breeding boxes numbered to 10 but only 5 'working' boxes found Dec. 2021, plus several old/ruined ones. • Bat spcs. recorded in area, no known roosts at time of writing.
Hedges/tree lines **Areas 3 and 4** Fig. 15 and 16 Conservation status - HPI (see 1.8 - Table 1)	• Area 3, Eastern boundary, roadside tree/hedge line is formed predominantly of mature turkey oak, with an understorey of hawthorn, dog wood, spindle and some blackthorn. This 'hedge' has been evaluated as species poor but considered **'important'** due to the nearby presence of a PROW. (Ref. Bioscan 2014 and Hedgerow Regulations 1997). • Tree line has telegraph poles and British Telecom lines running through it. • Area 4, western tree/hedge line (neighbours), mature turkey oak with scrub as above. • Dormice present (Bioscan 2016) • Bat spcs. recorded in area, no known roosts at time of writing.
Area 5 - Not in PC ownership but part of receptor site. Fig. 21 and 22	• Northern boundary treeline consists primarily of mature turkey oak, with understory of hawthorn, dogwood, spindle and some blackthorn. • Grassland is being colonised by turkey oak. A line of hazel saplings have been planted close to the boundary of the reserve grassland.
Area 6 - Not in PC ownership but part of receptor site.	• Area of grassland with scrub mosaic and section of the treeline/hedge abutting Station Road.

1.9.1 Site photographs

Fig. 3 Beside Pond A, Rosebay willowherb, fleabane, common sorrel and rush spcs..

Fig. 4 View southeast. Tussocky, bumpy grassland sward with common agrimony, meadow buttercup, hemp agrimony and ragwort

Fig. 5 Pond A, view east from hibernaculum. Bullrush dominates emergent vegetation and American pondweed in open water.

Fig. 6 Pond B, view west. Bullrush dominates with little open water. Shallow margins sparsely vegetated with mostly fleabane, grasses and some hard rush.

Fig. 7 Pond D Silted and vegetated predominantly with bullrush. View East to Station Rd. and treeline.

Fig. 8 Pond C, Mostly silted with section of open water in shaded edge. View south, Station Rd on left.

Fig. 9, Southern end of Pond D, bramble, turkey oak and willow scrub encroaching.	Fig. 10, Pond D, mature turkey oaks shading pond.

Fig. 11, Scrub woodland margin	Fig. 12, Scrub grassland mosaic, view to south-eastern corner

Fig. 13, Maturing turkey oak colonising the grassland	Fig. 14, Younger turkey oak colonising the grassland

Fig. 15, Hedge/tree-line western boundary with scrub & hibernaculum in foreground. April 2021	Fig. 16, Treeline Station Road predominantly turkey oak with ditch.

Fig. 17, Woodland, with hornbeam, turkey oak and pedunculate oak standards, dogwood, hawthorn and bramble understorey	Fig. 18, Hornbeam coppice in woodland. Very shaded, ground cover mostly leaf litter. (October 2021)

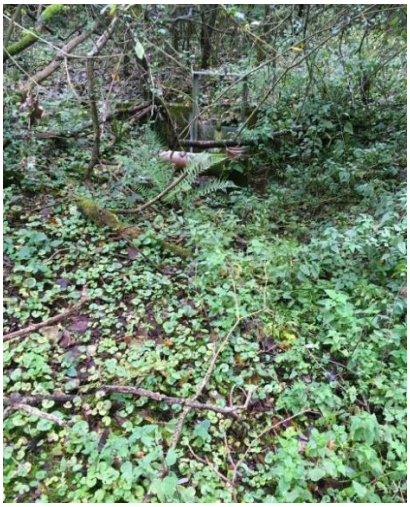


Fig. 19, Sluiced ditch at western edge of site	Fig. 20, Broken fence to private residence, south-eastern corner.

Fig. 21, Area 5 - non PNR land / turkey oak saplings	Fig. 22, Boundary marker and hazel saplings

1.10 Important Species

Table 3 (See Appendix 2 for further species data)

Reptiles (Ref Bioscan EIA 2014 unless otherwise stated) (Conservation status index 1.8 - Table 1)

Common Name	Scientific Name	Status in and close to site	K	N
Slow Worm	Anguis fragilis	A total of 740 reptiles translocated (not itemised) to PNR site in 2017. (Native Ecology EIA 2018). Slow worm were present prior to translocation. 2021- several found (no number recorded) including 1 gravid female and 2 hatchlings. (Ref. PNR Summary 2021).		**x**
Common Lizard	Zootoca vivipara	A total of 740 reptiles translocated to PNR site in 2017. (Native Ecology EIA 2018) Common lizard were present prior to translocation. 2021 - recorded unknown number of adults and 1 juvenile. (Ref. PNR Summary 2021).		**x**
Grass Snake	Natrix	None moved to receptor site, but to unknown area beside lake. Grass snake found on PNR site 2013.		**x**

Amphibians (Ref Bioscan EIA 2014 unless otherwise stated)

Common Name	Scientific Name	Status in and close to site	K	N
Great Crested Newt	Triturus cristatus	2017 - 6 individuals translocated to site. 2018 - eDNA testing found GCN in pond B only. No GCN eggs in either pond. (Native Ecology GCN Monitoring Report, 2018) 2021 - KSCP hand search found GCN eggs in Pond A. Results from Native Ecology eDNA tests 2021 not known at the time of writing. There are no records of adult GCN since translocation. Ponds C and D: GCN present prior to translocation. 2018, eggs and larvae present (Native Ecology GCN Monitoring Report 2018)	**x**	**X**

Smooth Newt	Lissotriton vulgaris	Smooth newts were translocated to PNR site in 2017 (Native Ecology EIA 2018). Probably already present in ponds C and D. 2021 Smooth newts and larvae were identified in ponds A and B (Ref. PNR Summary 2021).		**X**
Common Toad	Bufo	None translocated to receptor site, but to unknown location close to the lake.		

Mammals (Ref Bioscan EIA 2014 unless otherwise stated)

Common Name	Scientific Name	Status in and close to site	K	N
Dormice	Muscardinus avellanarius	Breeding pairs recorded 2016 (Bioscan Submission in Respect of Condition 30, 2016) in the south-western corner and in trees/hedge next to ponds C and D.	**x**	**X**
Bats Common Pipistrelle (PP) Soprano Pipistrelle (PY) Nathusius' pipistrelle (40P) Noctule (Nn) Myotis species (My) Daubenton bat (D) Long-eared bat (LE) Serotine bat (ES)	Pipistrellus Pipistrellus pygmaeus Pipistrellus nathusii Nyctalus 20aubent Myotis sp. Myotis 20aubentoniid Plecotus sp. Eptesicus serotinus	PP, PY, LE and My spc. were recorded passing through the PNR site - none recorded foraging. Foraging activities recorded by lake / woodland. No bat roosts identified (3.3.30 '*given the high number of trees within the site, the detailed survey for bat roosting potential was restricted to trees falling within or immediately adjacent to the proposed development footprint*'. (Ref. Bioscan EIA 2014) Serotine bat recorded (Ref. PNR Summary 2021).	40p & ES IUCN red list	**x** All bat spcs. PY, Nn LE - Priority species

Invertebrates (Ref Bioscan EIA 2014 unless otherwise stated)

Common Name	Scientific Name	Status in and close to site	K	N
Variegated ladybird	*Hippodamia variegata*	Ruderal or sandy habitats		**X** NS(Nb)
Ground bug	Raglans alboacuminatus			**X** NS(Nb)
Yellow-faced bee	Hylaeus signatus	Requires pollen from Reseda, nests in hollow plant stems		**X** NS(Nb)
Mining bee	Lasioglossum spcs.	Excavates nest burrows in level ground		**X** NS(Nb)
Cinnabar moth	Tyria jacobaeae	Ragwort		**x** S41 BAP(R)
Blood-vein moth	Timadra comae	Polygonaceae		**x** S41 BAP(R)

Birds (Ref Bioscan EIA 2014 unless otherwise stated) Summary of important species whole Brickworks. Noted on PNR

Common Name	Scientific Name	Status in and close to site	K	N	FBI	RSPB
Barn Owl	Tyto alba	'encountered - not breeding'		**X**		**Amber**
Bullfinch	Pyrrhula	Calling individual in PNR. Possible breeding				**Amber**
Cuckoo	Cuculus canorus	Travelling over PNR. Probable breeding				**Red**
Dunnock	Prunella modularis	Probable breeding				**Amber**
Green Woodpecker	Picus viridis	Possible breeding				**Amber**
Greylag Goose	Anser	Possible breeding (on lake)				**Amber**
House Sparrow	Passer domesticus	Not breeding				**Red**
Jackdaw	Corvus monedula	4 seen on PNR (breeding in chimney stack)			**x**	
Kingfisher	Alcedo atthis	Possibly breeding (main site)	**X**			**Amber**
Linnet	Carduelis cannabina	Confirmed breeding (main site)		**X**	**x**	**Red**
Little Grebe	Tachybaptus ruficollis	Probable breeding (lake)				**Amber**
Mallard	Ana platyrhynchos	Confirmed breeding (lake)				**Amber**
Nightingale	Luscinia megarhynchos	Probable breeding (Recorded in neighbouring scrub).				**Amber**

Reed Bunting	Emberiza schoeniclus	Possible breeding				**Amber**
Song Thrush	Turdus philomelos	Probable breeding		**X**		**Red**
Starling	Sturnus vulgaris	Confirmed breeding		**X**	**x**	**Red**
Stock Dove	Columba oenas	Probable breeding				**Amber**
Swallow	Hirundo rustica	Not breeding				**Amber**
Swift	Apus	Not breeding				**Amber**
Turtle dove	Streptopelia turtur	Possible breeding		**X**		**Red**
Whitethroat	Sylvia communis	Possible breeding			**x**	**Amber**

Fig. 23, Hazel dormouse (D. Reynolds)

Fig. 24, Great Crested Newt (KSCP)

Fig.25 Slow Worm (KSCP)

1.11 Site specific constraints and obligations

1.11.1 General

Bordered on two sides by roads, agricultural fields, and residencies. Habitat connectivity, and scope for species migration, is limited mostly to areas south and west, and their value as wildlife corridors will largely be reliant on the current and future use / management of these areas of land.

Fig.26 Wildlife pathways - Google Earth January 2022

Once completed the housing at Pluckley Brickworks will likely increase disturbance to the PNR and related habitat corridors, from human activity and domestic pets - predation.

Long-term positive management of the site depends on the continued permissive access from Chambers Green Road. (See Map 2)

Potential future development, or poor management of neighbouring properties, particularly Lavender Holdings land, which is part of the receptor site, could negatively impact on the biodiversity of the PNR.

Grassland and scrub management by livestock will depend on costs, timings and availability of appropriate animals for recommended grazing regime. If livestock management is not a viable option, the relatively small size of the site and surface conditions may limit the possibility of engaging contractors for haymaking (cut and clearing). Both may lead to gaps in management and poorer quality meadow development.

In achieving LNR status, and as a community asset, the aspiration is to have more public accessibility. This may pose some risks of inappropriate behaviour that will damage the site, habitat and disturb wildlife. Bylaws may be required should this be the case.

The geology of the site, and periods of dry weather, which are anticipated to increase, have resulted in a very cracked/fissured surface in large parts of the grassland area. Access is hazardous, particularly when vegetative cover makes it difficult to see the surface, for humans and possibly for grazing stock.

The long-term commitment and ability of the PPC and FPN could be affected by funding and manpower shortages, making it difficult to manage and maintain the site for biodiversity over the long-term.

1.11.2 Invasives and non-natives

Conservation areas are at risk from invasive, non-native species of both flora and fauna. Different habitats can be susceptible to a range of problem species that can migrate onto site from Himalayan Balsam (Impatiens glandulifera) to garden escapes like Spanish bluebell (Hyacinthoides hispanica) and cherry laurel (Prunus laurocerasus). Plus, human actions can unwittingly cause problems such as releasing fish or terrapins into ponds.

The mitigation ponds have marsh frogs (Pelophylax ridibundus), which raises concerns for native amphibians, particularly our native frog, as marsh frogs are prolific and therefore likely to out compete our native species as well as potentially act as a disease vector. At the time of writing there is no agreement on the impacts of marsh frogs or approved methods of management.

All ponds on site are heavily vegetated by reedmace *(Typha latifolia)*. This is in fact a native species however they are often considered invasive as they are prolific plants which can dominate a pond quite rapidly. Provision for their management of the above species is provided for in the Management Prescriptions (2.3.5)

Turkey Oak (*Quercus cerris)* is a vigorous non-native, invasive tree species. The site is bordered by turkey oak on 3 sides. Now the reserve has a lot of maturing trees and saplings growing throughout most of the site. Provision for their management of the above species is provided for in the Management Prescriptions (2.3.1)

Monitoring for the presence of other species, such as parrots feather (Myriophyllum aquaticum) in the pond, should be carried out during routine management work and surveys, and appropriate action taken.

1.11.3 Injurious Weeds

The Weeds Act 1959 requires landowners to take such actions as necessary to control injurious weeds such as common ragwort, curly dock (Rumex crispus), broad-leaved dock (Rumex obtusifolius), and creeping thistle (Cirsium arvense) etc. These are found throughout the open grassland. Provision for their management of the above species is provided for in the Management Prescriptions

1.11.4 Climate Change

Predicted periods of drought, rising temperatures, changing seasons and extreme events are expected to affect habitat and species health, with changes to the composition of our natural environment and impacts on resident and migrating species. As much as possible these affects need to be monitored and considered in the ongoing management of the site. Adding greater importance to the need to maintain and improve wildlife corridors to the wider landscape as well as considering natural carbon sequestration on site through planting, management and working practices.

1.11.5 Health and safety

There is a duty of care to all persons on the site. This must be taken into consideration when creating and allowing public access for community activities and when considering access rights more broadly. Risk assessment for all activities must be carried out to ensure that precautions are taken to reduce risk to a minimum.

When carrying out work on the site, whether it is staff, volunteers or contractors, the Health and Safety at Work Act 1974 and the Management of Health and Safety at Work regulation of 1992 must be followed (this to include only ticketed operators to use equipment like chain saws and brush cutters). Risk assessments should be carried out for each task/ project and for the site. It should be demonstrable that systems are in place to reduce risk to a minimum.

2 MANAGEMENT PROPOSALS

The management proposals have been developed using information gained from Bioscan Reports (2014 2016) and Native Ecology Reports (2018); Management prescriptions for protected species by Natural England and based on our experience, plus knowledge of the site from several seasonal walkovers and practical tasks to date.

2.1 Management Objectives

- Establish Pluckley Nature Reserve as a nature conservation area, rich in biodiversity, providing opportunities for local communities and schools to deepen their connection with nature. Long-term ambition to become a Local Nature Reserve.
- Provide a framework for the long-term management of PNR for the benefit of wildlife
- Manage and improve semi-improved grassland with scrub mosaic habitat for birds, reptiles, mammals, amphibians (terrestrial phase), invertebrates and flora, with particular regard for EPS hazel dormice and great crested newt.
- Manage and enhance the pond habitats for amphibians, dragonflies, aquatic invertebrates and plants, with particular regard for EPS species great crest newt.
- Manage and enhance the broadleaved deciduous woodland to protect, provide and improve habitat for birds, bats, invertebrates, and flora, and to ensure good ecological linkage with scrub edges, adjacent woodland and hedge/treelines.
- Remove and reduce invasive species such as Turkey oak wherever possible.
- Monitor wildlife and the impact of management and other environmental influences upon the site

- Where possible manage or liaise with neighbours to promote and ensure good habitat management and maintain wildlife corridors to, from and beyond the site.
- Support where possible national and local 'Species Recovery Programmes' and 'Biodiversity Species Action Plans'
- Engage and involve local people through community action, activities, and events.
- Maintain the reserve in good order, including safe access points and routes.
- Provide recommendations to review site and activity risk assessments as and when required

2.2 Rationale

As a receptor site the PNR land was identified and evaluated as providing sufficient habitat in size and type that, with agreed mitigation enhancements and management, could support existing and translocated wildlife species from the nearby Brickwork development. This plan is focussed on achieving these goals over the long-term and improving habitat quality and connectivity wherever possible to benefit biodiversity.

Establishing a Nature Reserve in perpetuity, will protect the site for wildlife but also offers the opportunity to engage the community in looking after the reserve and to provide learning opportunities based on the range and importance of wildlife habitats that this site encompasses, the species it supports. Importantly it should develop an appreciation for nature and wildlife more widely, and the importance of establishing connectivity and paths for species migration in the larger landscape.

For a relatively small site, the PNR has a wide range of habitats. Sensitive management is required to ensure that a balance is struck, to maintain and where possible increase the ecological value of these different habitats for the widest range of species that the site can support, particularly for GCN and dormice.

Semi-improved grassland/ scrub mosaic. The grassland has not historically had high wildlife value floristically. As per 1.6, there has been limited grassland management in recent years, and natural colonisation of scrub (native shrubs and bushes under 5 metres in height), has created a grassland - scrub mosaic. This mosaic has considerable wildlife value as it provides shelter, pollen, nectar, berries, and nesting habitat for a wide range of species such as birds, invertebrates, (pollinators of all types), dormice and the many reptiles which were translocated onto site in 2017. (Native Ecology 2018). Managing the grassland and maintaining the structure and ratio of scrub to grassland would best be achieved through a carefully monitored grazing regime (with some additional hand cuts as necessary). If this is not practical, it could be done through annual hay cuts and rotational, manual scrub management. Hay cuts should be done in either June to July when the hotter conditions make it less likely to impact on GCN, or much later when they are more likely to hibernate. (Ref. Froglife, GCN Conservation Handbook)

As per 1.8, around Ponds A and B there is reasonable floristic diversity (8 - 15 species per metre). Lowland Meadow is a Section 41 priority habitat, and there would be ecological benefits to managing the wider grassland as a traditional lowland meadow (by grazing and/or mowing) to maintain a mosaic of sward heights and structure, with tussocks and shorter grassland areas, and maximising seeding opportunities on site using green hay from the most floristic zone and/or local meadow cuttings.

Turkey oak, which is a fast-growing invasive species with low wildlife value, has been colonising the grassland. If unchecked, it would eventually dominate the area. It is preferable to remove all of the Turkey Oak. Planting a small copse of native tree species to the north of the site will provide a different habitat area and offset some of the turkey oak removal and associated carbon sequestration. Choice of species will need to take into consideration climate change impacts, for long term health and environmental benefits.

Deeply fissured cracks in large areas of the grassland surface are access hazards, but great habitat/cover for reptiles, amphibians and many other small animals. Management to create good access paths should take this into consideration.

Scrub along the wooded edges of the site should be managed to maintain the transitional habitat between grassland and woodland. This 'woodland edge' is a wildlife rich habitat, providing breeding and feeding areas for key species such as dormice and turtle dove. Management also prevents succession to woodland.

The woodland block, National Vegetation Classification (NVC) W8, is a Lowland mixed broadleaved woodland with dog's mercury, a UK BAP habitat. The mature standards are predominantly the invasive Turkey oak, but there are some lovely hornbeam standards and coppice, with other smaller native species including hawthorn and elder. There are also a few ash, but they show evidence of ash dieback *Chalara*. It is not a large woodland and the canopy is shading out the understorey, which is sparse and floristically poor. Nevertheless, it is an important habitat for wildlife, notably bat species and dormice. Together the woods and adjacent lake provide a natural buffer between the nature reserve and new development housing area, as well as providing habitat connectivity to green spaces beyond the PNR. Given the relatively small size of the woodland, management of any part will have a significant impact. Therefore, we recommend the gradual and selected thinning of Turkey Oak only, with ring barking for standing dead wood. This will reduce the canopy and improve conditions for the understory.

The PNR boundary in the woodland is a banked ditch with mature hornbeam along the bank edge. We recommend forming a dead-hedge boundary, using the arising from felling, to deter trespassing and provide further woodland habitat.

Hedge/Treeline beside Station Road is predominantly mature Turkey oak, which we would normally recommend removal. However, given the location beside Station Road, and presence of BT cables and posts, to remove these trees may be difficult and expensive. Therefore, we would suggest firstly meeting landowner obligations regarding tree hazard and maintenance, then to investigate funding possibilities to pollard the trees, gapping up with native species where possible. The understory of small native species growing around/between the Turkey oaks, is a valuable habitat, evaluated as a 'hedge' of importance (See Table 1.8). Recommended management will maintain its health and vigour, limit incursion into the road, and maintain the new access route proposed. (See 2.3.7)

While the boundary trees and understorey along Chambers Green Road are not owned by PPC, there will be some small maintenance requirements needed to maintain vehicle access and should form part of the agreement of access with Lavendar Holdings.

Ponds. At the time of writing EPS licences pertaining to pond (GCN) management remain with Native Ecology, working for the developer, although we understand they are in the process of removing themselves as named ecologists.

2 new ponds A and B were created to provide suitable habitat for the translocated GCN in 2017. As per 1.8 all 4 ponds have evidenced the presence of EPS, GCN over recent years.

Ponds A and B monitoring of vegetative cover to maintain floristic diversity and retain approx. 25% surface area of deeper, open water for GCN habitat. Up to 50% of the pond may be cleared of vegetation by hand in any one year, (note ponds are understood to be lined) allowing a minimum of 3 years before any other section is cleared as this will enable wildlife to recover). Management to comply with NE licence terms and management prescriptions (Appendix 3)

Ponds C and D are now largely full of reed/rush species with limited open water and as such are degraded habitat for GCN. To fully restore the ponds would require significant de-silting, potentially damage existing wildlife communities, release carbon into the atmosphere and result in a large amount of spoil to distribute around site or remove. Plus, it would be expensive. Therefore, KSCP recommend, contingent on N E approval, that these ponds are managed as wetland/pond habitat. Removing approx. 50% reed cover and creating and maintaining areas of deeper / open water (1.5 metres plus), while retaining shelves and shallow margins around the edges. This should provide viable habitat for GCN, encourage aquatic plant diversity (marginal, emergent and floating), and generally improve the wetland ecology. At least 3 years must pass before any further work/disturbance is considered, to enable wildlife to recover.

The above is intended to provide better habitat for GCN but also to continue to provide some capacity for flood /surface water flowing in from Station Road. Maintaining shallow edges and encouraging reed growth along the eastern edge, should also act to filter and minimise pollutants into open water areas. However, there remain a potential for harm from run off pollutants such as engine oils, petrol and micro plastics from tyres, therefore water quality should be monitored. If there are ongoing issues with pollution then the roadside drainage ditch, which is currently unmanaged, could be de-silted and manged to act as a first line of defence. However, the ditch management would only be effective if it takes place along its entire length, ensuring safe egress of waters with no risk of flood to property.

All ponds should have no more than 25% of the terrestrial vegetation surrounding the pond cleared at any one time. This to maintain cover for newts and other species.

All works to be carried out in the winter months to minimise impacts on pond species and ecology. EPS licence conditions must be observed. (Appendix 3).

Community engagement will be encouraged through membership and support of the Friends of Pluckley Nature and through organised events and activities for the larger community as well as particular groups such as the local primary school.

With the support of KSCP initially, FPN will seek funding to carry out management of the site, enable ongoing community access and engagement opportunities as well as membership training to facilitate practical tasks - habitat management, site monitoring and species surveys.

The local school will be invited to come on organised visits to the site, for children to learn about wildlife in their local area. Promoting an understanding and appreciation of the importance of wildlife and fostering a sense of stewardship. A stimulating, outdoor learning environment in which activities can incorporate many other curriculum-based learning outcomes - English, maths, science and geography etc.

Organised community visits and events will promote the site and provide a broader appreciation and understanding of the wider landscape and wildlife of Pluckley.

Boundaries, access points and routes through the reserve will be established, monitored and maintained (including litter) to protect the reserve wildlife, particularly sensitive areas, and provide information and a safe and healthy environment for visitors. Site and activity risk assessments will be carried out and reviewed regularly and as required.

2. 3 Detailed Management Prescriptions

2.3.1 Semi-improved grassland with scrub mosaic (Area 1)

Indicators of success: Grassland with a mix of herbs and grasses and few weeds, with open areas of both tall / tussocky and short vegetation which can provide rich hunting grounds for barn owls, basking sites and / or refuges for reptiles and amphibians and small mammals, and an abundant source of pollen and nectar for invertebrates. Scattered around the south/ south-eastern half of Area 1, a mosaic of scrub consisting of native species of different heights, age ranges and structure. Open areas of grassland should be maintained between these scrub areas. Providing excellent habitat and breeding sites for a range of species, including nightingale, dormice and turtle dove.

A) Grazing option:

The site is suited to a low number of cattle, preferably native breeds, to create a varied sward height through the flowering season. Native breeds are hardy and able to cope with unimproved grasslands. Their grazing style will create a varied sward structure. Cattle will also naturally break through scrub and control its vigour across the site, limiting encroachment and maintaining a variety of age, heights and structures. Requires amenable/affordable arrangement with organisation or landowner who can supply and supervise the livestock and manage the grazing regime. Local FPN volunteers may support this with organised visual checks for number and health of animals.

Perimeter livestock fencing will be necessary along all boundaries (exclude livestock from woodland margins, scrub edges and hedgerows - habitat for dormice) excepting western boundary which is already fenced. Livestock fencing should allow space for potential hedge planting on northern boundary.

- Graze approximately 6 small dexter type cows or 4 medium-size native cows, such as Sussex / highland / longhorn for a period of 4 months (August/September to December).
- Livestock will need to be managed to leave a sward height of no less than 7cm in height through the winter months. Tussocks should be monitored and maintained to ensure there is no overgrazing. A small amount of poaching/bare ground, no more than 5%, will be beneficial to invertebrates.
- Review grazing livestock numbers regularly to ensure the required sward heights are achieved.
- Cattle dung will support dung beetles and dung flies. This will also provide habitat for predatory insects and food for foraging birds and mammals, including bats.

- The small number and short duration of having livestock on site may not require fencing of the ponds. However, this will need to be monitored closely. Temporary electric fencing could be installed if necessary and water bowser used.
- Remove livestock if inclement weather leads to increased poaching.
- Ensure livestock welfare including nutritional needs are being met without the need to supplementary feed. This includes removing injurious weeds such as ragwort.
- Temporary livestock handling facilities can be transported to site

B) Mowing / scrub manual cutting option:

- Cut and clear main meadow. Areas with greater floristic diversity would benefit from cut in late summer July/August.
- Recommended general cutting times will be June, July or August (hot months) for grassland on the western half of site, around ponds A and B - timing to minimise harm to GCN. Late October - November for grassland on the eastern half of site - timing to minimise harm to reptile population.

- Late Feb patches of grassland to be kept short on south facing / sunny areas close to refugia - basking sites for reptiles. (*See below - mowing in reptile areas).
- Remove cuttings where resources permit this. And/or compost arisings on site away from grassland in woodland, scrub edge. Some arisings may be added to or create habitat piles for grass-snake. This can be near ponds, but on higher ground where nutrients cannot enter the pond system.
- Cut 50% maximum grassland margins adjacent to the secondary woodland and hedgerows every 2 years on rotation, to provide a tall, tussocky grassland edge which is favoured by barn owls, small mammals, over-wintering insects and for small mammal and bumblebee nests.
- Injurious Weeds. Control notifiable weed species such as common ragwort and creeping thistle as necessary to meet legal responsibility. If cover of weeds (thistle species, ragwort, broad-leaved dock) is greater than 5%, consider physical control methods. Docks and thistles: consider topping before plants set seed. Ragwort: hand pull and remove before the plants set seed.
- Monitor species diversity and consider patch scarifying and green hay / seed sowing (with the addition of yellow rattle seed) to increase number and species of wildflower throughout the grassland.
- Scrub typically matures in 15 years, so cut 1/15 every year or 1/5 every third year - cutting back/removing scrub late autumn/winter (outside of bird breeding season and fruits finished), to maintain approx. 10% scrub cover and a diversity of species, ages and heights. Maximum height approx. 5 metres depending on species.
- Consider strategic use of scrub areas to protect fragile sections of the reserve from trampling / disturbance, such as beside access routes and where the early-purple orchids are situated.

** Mowing in reptile areas. Prior to mowing, disturbing areas through walking and some gentle raking (so long vegetation is not flat), will encourage creatures to move elsewhere. Working slowly with machinery and maintaining an escape route for animals to escape.*

Constraints Option A - Grazing:

- Costs of fencing whole site.
- Availability and costs of livestock management.

Constraints Option B - Mowing/manual cutting scrub

- Small size of site may limit contractor mowing options.
- Any remaining stubs from Turkey oak removal will limit access / area of cut for larger mowing machinery.
- Smaller meadow mower (KSCP) and volunteer support offers a short-term option. However, cracking of grassland surface may be problematic for smaller mowing machinery.
- Dormice presence to be monitored and scrub management work may need to be done under licence.

2.3.2 Scrub on grassland/woodland edges (Areas 1 and 4)

Indicators of success: margin of native species scrub, including hazel, bramble and wild rose species providing transitional habitat from grassland to woodland edge. Scrub with a diverse range of ages, heights and structure, and associated/adjacent ground flora, providing connectivity, cover, food sources and a varied habitat for reptiles, birds, amphibians and invertebrates. The height of scrub should not exceed 5 m.

- Cut 1/15th of scrub area annually, or 1/5th every 3 years, in the autumn and winter months. Scrub trees not to exceed 5 metres approximately.

- Cut in sections/blocks on rotation to maintain a mix of ages and structure. Species mix and cutting rotation to support a gradation of heights down to the grassland (See mowing/management of grassland above 2.3.1)
- Leave some standing and fallen deadwood.
- Cut the stumps as low to the ground as reasonably practicable. Woody matter will be cut into short lengths. A small amount may be used to add to existing habitat piles. Surplus brash to be lost in woods.
- Monitor for invasive species such as buddleia and laurel, and control, if necessary, by cutting and applying herbicide to the stumps.
- Plant some hazel into the woodland scrub edges to improve habitat and food source for dormice and other species.
- Work should be undertaken between September and February to prevent disturbance to nesting birds and as late as possible (after Christmas) to maintain availability of nuts and berries for wildlife.

Constraints

- Over time woody brash arisings may accumulate beyond what can be usefully used for habitat on site - burning may therefore be necessary. If this is the case, ensure burning takes place away from the wildlife sensitive areas.

2.3.3 Lowland mixed broadleaf woodland (Area 2)

Indicators of success: mature trees as native broadleaved woodland with a healthy tree canopy and understorey, a wide variety of flora; with standing and fallen deadwood, free from invasives and with relatively low levels of human disturbance.

- Hazardous tree survey - Commission a survey at the earliest opportunity to identify trees which may present a hazard to members of the public (once access route agreed - if any). Any trees tagged for removal / felling should be inspected by an expert for bat roost potential prior to the work being carried out.
- Visual tree inspection every 3 years or after severe storm/wind event.
- Gradual thinning of mature Turkey oaks in winter months, to remove invasives, reduce canopy cover and let light into the understorey. Ring bark a couple to provide standing dead wood in appropriate low risk area.
- Use arisings on site to create a dead hedge beside (not in) ditch boundary. Providing physical and visual boundary along this edge. Also providing wildlife corridor and habitat for invertebrates, small mammal and birds.
- Use large pieces of timber on site as appropriate i.e., path edging or as deadwood habitat.
- Monitor woodland for disease and invasive species such Turkey oak and Laurel. Pull, cut down and treat to prevent regrowth.
- Ash currently showing signs of ash dieback *Chalara* can be left to provide dead wood.
- Coppicing of coppiced hornbeam on a 15-year rotation approx.
- Allow fallen deadwood to remain in situ.
- Retain ivy on trees.
- Monitor woodland management activity in the neighbouring woodland blocks.
- Liaise with other woodland owners / neighbours to develop positive relationships and good management of the whole woodland block.

Constraints

- Felling or woodland work that may impact neighbouring property / woodland and require permissions/agreements.

2.3.4 Boundary trees and hedgerows (Area 3 and 1)

Indicators of success: The boundary tree lines in PPC ownership are healthy and are maintained to ensure safety obligations are met. Proposed pollarding of Turkey oak alongside Station Road will let more light into site, reduce new turkey oak growth, reduce leaf litter and improve ecology of ponds C and D. Resulting hedgerow, with existing and new native species to gap up, will provide a natural boundary and wildlife corridor and habitat with blossom, berries and nuts.

If pollarding does not take place, it is the responsibility of the landowner to maintain the trees in order that they do not interfere or damage the BT cables. Initial tree health check and works arising will ensure safety for adjacent road users and properties including BT lines. However, BT may do some tree pruning as part of maintenance of if there is a fault reported and work needs doing on lines/poles. If there was any damage to the cables, '*we would replace and arrange with you to maintain as standard*,' (Pers Comms with Open Reach, Ref b2rm2-661e5c60-0d37-48cc-9384-80dbd599a15a, 16/12/2021

- Treeline, initial risk survey and recommended work, then subsequent tree checks every 3 years or after severe storms.
- All felling / pollarding work will require EPS licence holder for dormouse checks beforehand and ecologist for bat roosts. If bats found work cannot take place.
- Work to be carried out in winter months when dormice hibernating.
- Bi-annual evaluation of tree/hedge and cut as necessary to maintain a dense, vigorous, health growth and to limit incursion into Station Road. Recommended work period after September or later, to avoid the breeding season and maintain fruiting bodies on trees for animals.
- Gapping up with native trees to maintain and improve floristic diversity for wildlife and an effective boundary.
- Pruning back of access areas to maintain views and a safe, passable route.
- Plant new native hedges in the winter months alongside access routes, connecting to woodland edge/shrub boundaries where possible and practical, to create new habitat and wildlife corridors throughout the site.
- Removal of any Turkey Oak saplings (dig out roots).
- Monitor flooding of site and implement ditch desilting if necessary for health and safety*.
- Review removing and replacing Turkey oaks in tree line if practical and replace with suitable native species.

Constraints

- *Ditch work only effective if neighbouring landowners agree to manage own ditch sections. Risk assessment required to ensure work does not contribute to flooding in other residential or business properties.

2.3.5 Ponds

Indicators of success: Waterbodies with a varied profile, preferably wet all year, although wildlife ponds can and do dry out occasionally without lasting harm. Providing suitable habitat for great crested newts and invertebrates including dragonflies, with species-rich aquatic and riparian vegetation and at least 20% open water, low levels of pollution and free from invasive non-native species. Maintenance of the function of the water bodies as wildlife ponds. Attracting and supporting birds and other land-based animals living or migrating through the site. There should be minimal interference and management of wildlife ponds.

Ponds A and B (Areas 1)

- Clear a maximum of 50% of a pond in any one year Dec - Jan, leaving a minimum of 3 years between desilting/clearing works to allow the pond time to recover.
- Retain area of scrub, no greater than 10% of the pond edge, along the north and west banks adjacent to the hibernaculum and site edge. This to provide cover and habitat for GCN and other wildlife.
- Scrub to be cut on a 10-year rotation, in the winter, or to maintain maximum cover as above, avoiding bird nesting season and retain food sources.
- Survey for GCN by licences holder, to maintain records, presence/absence and health of population.
- Monitoring for invasive species such as Himalay Balsam (*Impatiens glandulifera)* New Zealand pygmy weed (*Crassula helmsii)* and fish, and control as necessary.
- Plant materials should be deposited close to the pond for a short period to allow animals to return to the pond. Silt should be deposited close to the pond, to minimise tracking if mechanical, in an area which won't drain back into the pond. This area could be deliberately managed as short grassland for the purpose*.
- Monitor for natural colonisation of aquatic and marginal plants. Currently marginals are not establishing well, which may be weather related or rabbits. If latter confirmed, plug plant bank sections with native species and protect with chicken wire until established.
- Hibernaculum to the west of Ponds C and D to be checked if sitting wet during winter/rainy periods. Any section found to sit wet should be removed or blocked up. Alternative hibernaculum to be created on higher ground as necessary.

**It may be appropriate to create a small 'sacrificial area' in the nearby grassland/meadow, which should be managed with a very short sward and devoid of any habitat piles for the months leading up to any winter works; this will discourage newts from using the area and provide a receptor area for any brash or silt resulting from the vegetation clearance / desilting works.*

Ponds C and D (Area 3)

These ponds to be managed as wetland habitat with open water/pond areas.

- Initial manual desilting (Dec- Jan) to create open areas of water approximately 10% of the original area of both ponds, then maintain as required, with a minimum 3-year gap to allow recovery.
- Retain an area of scrub / willow carr no greater than 10% of the pond edge.
- Survey for GCN by licences holder/s, to maintain records and establish presence/absence.
- Monitoring for invasive species such as Himalay Balsam (*Impatiens glandulifera)* New Zealand pygmy weed (*Crassula helmsii)* and fish, and control as necessary.
- Pond silt and other excavated plant material should be deposited close to the pond, in an area which has been deliberately managed as short grassland for the purpose*.

- Monitor for visible signs of pollution from road run off and test as necessary. Roadside ditch management may be required to mitigate (see Boundary Trees and Hedgerows above).
- Manage nearby trees (winter - prune lower branches) to limit overshading and leaf litter build up in the water.

Constraints: Ponds A and B

- Marginal plug planting should be done in spring when protection (chicken wire) will not present a potential health hazard for livestock.
- Rabbits will continue to threaten establishment of marginal vegetation unless removed from the ecosystem.

2.3.6 Access (for management purposes and to maintain estate in good order)

Indicators of success: Secure site boundary and gated entries fit for purpose. Main vehicular access point and route agreed with landowner. Safe, secure disabled footpath access and viewing point established. Footpath/s and activity areas are safe for group visits (including schools) and activities. Site free from litter, fly tipping, anti-social behaviour and safe for visitors.

- Regular checking of boundary fencing, access gates, access routes and viewing area. Repair and maintain. (Livestock fencing should be checked more frequently if livestock present)
- Maintain access track from Chambers Green to ensure contractors plant and other vehicles required in the management of the site, can access safely.
- Viewing area, gates and fencing to be checked regularly.
- Clear and dispose of litter regularly.
- Risk assessments for the site and site management activities to be reviewed and updated regularly.

2.3.7 Access for visitors and interpretation

At present there is no public access and an informal no-dog policy, as recommended by KSCP and agreed by PPPC and FPN. The creation of safe access for community engagement and management purposes is a high priority, which in the short-term will be limited to supervised events/activities, including group visits by the local school. This will require lockable, gated access and fencing on PNR boundary from Chambers Green Road (vehicular). An access point and viewing platform, with interpretation, is proposed, leading off from Station Road at the closest point from the residential area. (Appemdix 4 - A footpath / boardwalk will eventually extend from this, or other chosen access area into the site, route to be agreed.

Indicators of success: Access area provides view into site and information that informs viewers of the wildlife value of the site and opportunities to get involved. Site provides a wildlife rich experience for visitors, safe and accessible for the community, including schools.

- Creation of fenced, safe, wheelchair accessible area off Station Road, with view into the site.
- Interpretation in access / viewing area designed to engage and promote the nature reserve and the wildlife it supports. Should include contact details for interested parties and for reporting problems.
- Access route/s through the site should minimise harm to grassland and wetland habitat, take people away from sensitive or riskier areas, such as pond edges, orchids, refugia and dormice nesting areas.
- Maintain access route and any identified area for group activities, safe and litter free.
- If route maintained by cutting, then this should be done regularly, and the route walked prior to cutting to disturb animals and allow them to move away beforehand.
- Hazardous tree checks should take place every 3 years or following a severe storm.
- Risk assessments for site, access routes and activities to be reviewed and updated regularly.

2.3.8 Monitoring management outcomes

Indicators of success: Based on baseline surveys, evidence that management for key species groups (floristic communities and mammals, birds, reptiles, amphibians, and invertebrates) are successful. No loss of priority species (GCN, Dormice and Slow worms). New data where there are gaps.

- Monitoring plan for key species is maintained and data recorded and submitted to the Kent and Medway Biological Record Centre
- Other species monitoring is not set out in this document however local volunteers, members of FPN, are actively engaged in surveying the site and are actively seeking to add skills to those already found in their membership to continue monitoring and compiling new wildlife data for the site.

2.3.9 Review management plan

- Recommend reviewing the plan after one year to ensure that the management prescriptions are informed by the practicalities of said management on the ground.
- Review the management plan every 5 years.

3 5 YEAR ACTION PLAN

Index: KSCP - Kentish Stour Countryside Partnership PPC - Pluckley Parish Council FPN - Friends of Pluckley Nature O - Other

Management objective	Management Actions	2022	2023	2024	2025	2026
AREA 1 – Grassland with scrub mosaic						
Manage and improve semi-improved grassland with scrub mosaic habitat. Target species reptiles, dormice and GCN. Increase floristic diversity, manage injurious weeds, removing invasive species, and maintain varied sward structure with tussocks and patches of bare ground. Control scrub to maintain varied structure of species, age, and heights. Maintaining connectivity to scrub / woodland edges.	Remove invasive species - Turkey Oak (TO) from open grassland and scrub.	**Nov - Feb** Cut down and treat with herbicide - larger TO trees Remove saplings dig up roots **FPN/KSCP/O** **Anytime** Cut dead stumps down to ground level	Monitor and continue to remove TO saplings **FPN** **Anytime** Cut dead stumps down to ground level	Monitor and continue to remove TO saplings **FPN** **Anytime** Cut dead stumps down to ground level	Monitor and continue to remove TO saplings **FPN**	Monitor and continue to remove TO saplings **FPN**
	Injurious weed control - no more than 5% of grassland. Topping before plants set seed, pulling ragwort in flower.	**June -July** Monitor injurious weeds and control **FPN/KSCP**	**June -July** Monitor injurious weeds and control **FPN/KSCP**	**June -July** Monitor injurious weeds and control **FPN/KSCP**	**June -July** Monitor injurious weeds and control **FPN/KSCP**	**June -July** Monitor injurious weeds and control **FPN/KSCP**
	Option A - Grazing regime 4-6 cattle grazing for approx. 4 months. To achieve: • Sward height no more than 7cm in height through the winter months. • Some small areas of poaching / bare ground desirable (no more than 5%).	Stock proof fencing to be installed. **O** --------- **Aug/Sept. - Dec.** Grazing Monitor & review stock densities & timings for: cattle health, overgrazing, poaching of grassland or ponds **O / FPN** Monitor & review scrub control.	**Aug/Sept. - Dec.** Monitor & review stock densities & timings for: cattle health, overgrazing, poaching of grassland or ponds **O / FPN** ---------	**Aug/Sept. - Dec.** Monitor & review stock densities & timings for: cattle health, overgrazing, poaching of grassland or ponds **O / FPN** --------- Source and use locally sourced green hay on bare patches. Or buy in	**Aug/Sept. - Dec.** Monitor & review stock densities & timings for: cattle health, overgrazing, poaching of grassland or ponds **O / FPN** --------- Monitor & review	**Aug/Sept. - Dec.** Monitor & review stock densities & timings for: cattle health, overgrazing, poaching of grassland or ponds **O / FPN** ---------

Manage and improve semi-improved grassland with scrub mosaic habitat. Target species reptiles, dormice and GCN. Increase floristic diversity, manage injurious weeds, removing invasive species, and maintain varied sward structure with tussocks and patches of bare ground. Control scrub to maintain varied structure of species, age, and heights. Maintaining connectivity to scrub / woodland edges.	• Scrub cover approx. 10% with variety of native species, age and structure - max height 5 metres. Retain areas of connectivity to scrub/woodland edges.	**Nov - Feb** Schedule manual scrub management if/as required **FPN/KSCP**		and sow appropriate native seed mix **Sept - Oct** **FPN**	scrub control. **Nov - Feb** Schedule manual scrub management if/as required **FPN**	
	Option B - Mowing regime 1. Summer cuts for GCN (western area around Ponds A and B) 2. Late & early cuts for reptile areas (eastern grassland zone) Cut and clear, arisings to be removed or composted on site (away from the grassland to avoid adding nutrients to the ground). Some grass piles should be retained/created for grass-snake refugia. <u>Scrub - cut 1/15 every year OR 1/5 every 3 years</u>. Scrub cover approx. 10% for variety of species, age and structure - max height 5m. Retain areas of connectivity, particularly to scrub/woodland edges.	**1. June - July/August (hot months)** <u>Western area</u> Cut and clear - remove arisings or compost on site **KSCP/FPN/O** -------- **2. Oct-Nov** Eastern area, cut/clear grassland <u>Grassland - margins</u> Cut 50% maximum adjacent to the secondary woodland and hedgerows -------- **Late Feb** South facing, sunny areas - strim patches close to refugia, for reptile basking sites. **KSCP/FPN** -------- **Nov - Feb** Manual scrub management if/as required **FPN**	**1. June - July/August (hot months)** <u>Western area</u> Cut and clear - remove arisings or compost on site **FPN/O** -------- **2. Oct-Nov** <u>Eastern area,</u> cut/clear grassland ------- .**Nov - Feb** Schedule manual scrub management if/as required **FPN**	**1. June - July/August (hot months)** <u>Western area</u> Cut and clear - remove arisings or compost on site **FPN/O** -------- **2. Oct-Nov** <u>Eastern area,</u> cut/clear grassland <u>Grassland - margins</u> Cut 50% maximum adjacent to the secondary woodland and hedgerows -------- **Late Feb** South facing, sunny areas - strim patches close to refugia, for reptile basking sites. **FPN** -------- **Nov - Feb** Manual scrub management if/as required **FPN**	**1. June - July/August (hot months)** <u>Western area</u> Cut and clear - remove arisings or compost on site **FPN/O** -------- **2. Oct-Nov** <u>Eastern area,</u> cut/clear grassland -------- **Nov - Feb** Manual scrub management if/as required **FPN**	**1. June - July/August (hot months)** <u>Western area</u> Cut and clear - remove arisings or compost on site **FPN/O** -------- **2. Oct-Nov** <u>Eastern area,</u> cut/clear grassland <u>Grassland - margins</u> Cut 50% maximum adjacent to the secondary woodland and hedgerows -------- **Late Feb** South facing, sunny areas - strim patches close to refugia, for reptile basking sites. **FPN** -------- **Nov - Feb** Manual scrub management if/as required **FPN**

Management objective	Management Actions	2022	2023	2024	2025	2026
AREA 1 AND 4 - WOODLAND - SCRUB EDGES						
Maintain diverse transitional habitat between grassland and woodland and prevent succession to woodland.	Plant with hazel for diversity / dormice. <u>Cut 1/15 every year OR 1/5 every 3 years</u> - maintaining gradation of heights from woodland down to grassland vegetation. Retaining some scrub connectivity along edge. *Timings to maintain food sources and avoid breeding season Monitor for invasives and remove as necessary.	Tree planting - **Feb** **KSCP/FPN** ------- Scrub cutting ***Sept/Oct - Feb** **KSCP/FPN** ------- Monitor/remove invasives **Ongoing** **KSCP/FPN**	Scrub cutting **Sept/Oct - Feb** **FPN** ------- Monitor/remove invasives **Ongoing** **FPN**	Scrub cutting **Sept/Oct - Feb** **FPN** ------- Monitor/remove invasives **Ongoing** **FPN**	Scrub cutting **Sept/Oct - Feb** **FPN** ------- Monitor/remove invasives **Ongoing** **FPN**	Scrub cutting **Sept/Oct - Feb** **FPN** ------- Monitor/remove invasives **Ongoing** **FPN**
PONDS - AREA 1 (Ponds A and B) AREA 3 (Ponds C and D)						
AREA 1 Ponds A & B **Note: ponds understood to be lined!** Improve / maintain floristic diversity (marginal, emergent, floating), retaining areas of deeper, open water for GCN habitat. Management to comply with NE licence terms and prescriptions. (Ref) Scrub to provide cover for wildlife / GCN but not to overshade pond. Maintain hibernaculum nearby.	Monitor vegetative cover to maintain open water over approx. 25% of pond, manual reduction of no more than 50%. No work for a min. of 3 years after. • Check for GCN and other amphibian species presence prior to work! • Dispose silt/arisings to prevent nutrients & silt re-entering pond (higher ground - scrub area checked for GCN beforehand) Maintain no more than 25% scrub on north/eastern bank pond A. Establish reasons for poor marginal vegetation - (rabbits / weather?). Plug plant native	Monitor marginal plant growth on both ponds. **Spring - Autumn** **FPN** Monitor for litter, invasives and treat / remove. **Ongoing** **KSCP/FPN**	**Pond B** (shallower pond) Manual management of vegetation/silt **Dec- Jan** **FPN** ------- Monitor scrub and cut as required. **Dec - Feb** **FPN** ------- Check hibernacula for sitting water **Ongoing** Remove wet sections. Build new on raised ground to south. **Apr - Oct** **FPN** -------	Monitor scrub and cut as required. **Dec - Jan** **FPN** ------- Monitor / remove plug plant protection **FPN** ------- Monitor for litter, invasives and treat / remove. **Ongoing** **FPN**	**Pond A** - monitor vegetative cover and open water. Manually reduce as necessary. **Dec - Jan** **FPN** ------- Monitor scrub and cut as required. **Dec - Feb** **FPN** ------- Monitor for litter, invasives and treat / remove. **Ongoing** **FPN** ----- Remove plug plant protection if safe **FPN**	Review **Pond B** vegetative cover and reduce vegetation if necessary. **Dec - Jan** **FPN** ------- Monitor scrub and cut as required. **Dec - Feb** **FPN** ------- Monitor for litter, invasives and treat / remove. **Ongoing** **FPN**

	species and protect. Monitor for invasives spcs., treat / remove as per guidance. Monitor hibernaculum for standing wet and replace as necessary. Monitor for litter and remove		Plug plant marginal plants and protect as necessary. **Mch - June** **FPN** **-------** Monitor for litter, invasives and treat / remove. **Ongoing** **FPN**			
AREA 3 Ponds C & D Manage and maintain ponds as wetland bog habitat with open water. Preventing succession and benefitting a range of aquatic flora and fauna - notably GCN	Desilt and reduce vegetative cover by approx. 50%, creating open water areas approx. 1.5 metres deep, covering no more than 25% of pond areas. Retain shelves and shallow margins around pond edges. Promote reed growth on eastern edge to mitigate seasonal road runoff. No work for minimum 3 years following. Monitor water quality, pollution. Look at ditch management if necessary. Maintain no more than 25% scrub/willow carr on pond edges. Minimise pond shading . Monitor for invasives species and remove as per relevant guidance. Monitor for litter and remove	Prepare access and work area for digger* Incl. survey of ponds, work area and access route for GCN and other wildlife. **KSCP/FPN** **-------** Mechanical desilting. Silt to be left on top of banks off grassland*. **Jan- Feb** **KSCP/O/FPN** **-------** Reduce scrub / willow carr **Jan- Feb** **KSCP/FPN** ------ Monitor for invasive plant spcs. & remove. **Ongoing** **FPN** **------** Monitor for litter and remove. **Ongoing** **FPN**	Monitor for invasive plant species and remove. **Ongoing** **FPN** ------- Monitor for litter and remove. **Ongoing** **FPN**	Monitor for invasive plant species and remove. **Ongoing** **FPN** -------- Monitor for litter and remove. **Ongoing** **FPN**	Monitor for invasive plant species and remove. **Ongoing** **FPN** -------- Monitor for litter and remove. **Ongoing** **FPN**	Monitor for invasive plant species and remove. **Ongoing** **FPN** -------- Monitor for litter and remove. **Ongoing** **FPN**

Management objective	Management Actions	2022	2023	2024	2025	2026
AREA 2 – WOODLAND						
Managing woodland for healthy tree canopy, and a healthy understory that supports a wide range of flora, with standing and fallen deadwood. Improving conditions for existing native tree species. Free from invasives and minimal human disturbance. Maintain a good transitional link with scrub edge for key species dormice. Whole wood management through good communication and agreements with neighbours. Maintaining good habitat connectivity beyond the reserve.	Monitor tree health / risk assessment to maintain a safe space for access / activities. Reducing canopy cover and removing invasive species through ring barking (standing deadwood) and gradual felling of Turkey Oak (TO) where possible (no bat roosts, little/no other biodiversity value and if safe felling space).* Retain connectivity along woodland edge for dormice. Monitor and remove other invasive species such as cherry laurel. *Liaise where necessary, possible, and practical with woodland neighbours. Management of other woodland compartments may require adjustments to this plan.	Hazardous tree survey **O** Fell any dangerous trees. Fell 2-3 Turkey Oak to open up canopy gradually. Ring bark 1 -2 TO for standing deadwood **KSCP** **Dec-Feb** **KSCP/FPN** Use arisings to create dead hedge and larger sections for possible on-site use (benches) **Jan-Feb** **KSCP/FPN** Monitor and remove invasive species **Ongoing** **FPN** Monitor and remove litter **Ongoing** **FPN**	Monitor and review whole woodland management. **FPN** Fell further TO as appropriate and safe. **Dec-Feb** **FPN/O** Plant small native species such as hazel on scrub / woodland edges **Dec-Feb** **FPN** Monitor and remove invasive species **Ongoing** **FPN** Monitor and remove litter **Ongoing** **FPN**	Monitor and review whole woodland management. **FPN** Fell further TO as appropriate and safe. **Dec-Feb** **FPN/O** Monitor and remove invasive species **Ongoing** **FPN** Monitor and remove litter **Ongoing** **FPN**	Hazardous tree survey **O** Monitor and review whole woodland management. **FPN** Fell further TO as appropriate and safe. **Dec-Feb** **FPN/O** Monitor and remove invasive species **Ongoing** **FPN** Monitor and remove litter **Ongoing** **FPN**	Monitor and review whole woodland management **Ongoing** **FPN** Fell further TO as appropriate and safe. **Dec-Feb** **FPN/O** Monitor and remove invasive species **Ongoing** **FPN** Monitor and remove litter **Ongoing** **FPN**

Management objective	Management Actions	2022	2023	2024	2025	2026
AREAS 1 AND 3 - BOUNDARY TREES AND HEDGES						
Boundary trees management to meet safety obligations. Reducing/removing invasive species (Turkey Oak) where possible and replacing with native species. Create new hedges where practical. Hedges (with trees on northern boundary), to comprise a good mix of native species for wildlife corridor / habitat. Key species - dormice. Long-term ambition (beyond this management plan) to possibly lay suitable hedge/s.	**Area 3** pollard TO beside Station Road. <u>Trees to be checked beforehand for bat roosts and dormice.</u> *If not done, tree safety checks and recommended work required, then every 3 years or following a severe storm. Gap up with native species (hawthorn, blackthorn, hazel, spindle, holly, guelder rose etc) Prune road-side hedges & trees to maintain access and promote dense growth. **Area 1/3** plant new wide hedges beside access routes, connecting to woodland /scrub edges. Plant behind stock-fencing leaving space for management access. Monitor and weed new hedges for healthy establishment. Prune to manage height and density. Gap up where plants fail.	Turkey Oak pollarding Station Road to create hedge-line **Feb 22, Nov - Feb 23** **O** ------- Monitor/remove TO saplings from new hedge-line **Ongoing** **KSCP/FPN** --------- **Areas 1/3** (where suitable) Plant new hedges. Double row planting, 5 plants per metre, staggered rows. Bare root whips with guards and stakes (bamboo). Mulch base to prevent weed growth. **Nov 22 - Feb 23** **FPN**	Gap up pollarded TO hedge-line as necessary. **Nov 23 - Feb 24** **FPN** ------- Monitor/remove TO saplings from hedge-line **Ongoing** **FPN** ------ New hedges - weed management and gap up as necessary. **Nov 23 - Feb 24** **FPN**	Gap up pollarded TO hedge-line as necessary. **Nov 24 - Feb 25** **FPN** ------- Monitor/remove TO saplings from hedge-line **Ongoing** **FPN** ------ Hedge - weed management and gap up as necessary. **Nov 24 - Feb 25** **FPN**	Monitor/remove TO saplings from hedge-line **Ongoing** **FPN** ------ Prune all hedges to maintain access, thicken growth and limit height, as necessary. **Oct - Feb** **(When fruits gone)** **FPN** ---------	Monitor/remove TO saplings from hedge-line **Ongoing** **FPN** ------ Prune all hedges to maintain access, thicken growth and limit height, as necessary. **Oct - Feb** **(When fruits gone)** **FPN** ---------

4. REFERENCES

Bioscan UK Ltd, Aug 2014, ***Pluckley Brickworks Ecological Appraisal,*** *https://planning.ashford.gov.uk/Planning/IDOX/default.aspx?docid=1073439*

Bioscan UK Ltd, Oct 2014, ***Supplementary Information on Greater Horseshoe Bats and Dormice,*** *https://planning.ashford.gov.uk/Planning/IDOX/default.aspx?docid=1073440*

Bioscan UK Ltd, Oct 2016, ***C6b Dormice Survey Results***

Bioscan UK Ltd, Dec 2016, ***Pluckley Brickworks, Submission in Respect of Condition 30: Biodiversity Protection & Enhancement***

Native Ecology, July 2018, ***Ecological Impact Assessment for Brickworks New Development Area***

Native Ecology, Dec 2018, ***Great Crested Newt Monitoring Report***

Froglife (Langton Beckett and Foster), 2001, ***Great Crested Newt Conservation Handbook,*** https://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf

ARCH, Assessing Regional Habita Change (A. Brennan) ***Kent Habitat Survey 2012***

Natural England (Bright, Morris, Mitchell-Jones), 2006, ***Dormice Conservation Handbook 2nd edition***, https://ptes.org/wp-content/uploads/2014/06/Dormouse-Conservation-Handbook.pdf

GeoConservation Kent, **Pluckley Brickworks - Regionally Important Geological Status** (RIGS), accessed October 2021, https://www.geoconservationkent.org.uk/index.php?option=com_content&view=article&id=44&Itemid=21

Websites:

https://naturalengland.blog.gov.uk/2019/03/11/protecting-great-crested-newts/

www.arguk.org/info-advice/survey-and-monitoring

ptes.org/campaigns/dormice/hazel-dormouse-conservation/

https://hedgelink.org.uk/cms/cms_content/files/34_dormice_%26_hedges_leaflet.pdf

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/806960/PROTOCOL_Dormouse__May_2019_v4.0_FINAL.pdf

https://jncc.gov.uk/our-work/uk-bap-priority-species/

Planning Portal

Appendix 1

Local Nature Reserves

Local Nature Reserve: setting up and management

From: Natural England and Department for Environment, Food & Rural Affairs

Published: 2 October 2014

Local authorities can create local nature reserves (LNRs). Town and parish councils can create LNRs if the district council has given them the power to do this.

The local authority must control the LNR land - either through ownership, a lease or an agreement with the owner. As a manager of an LNR you need to care for and protect its natural features. You must also make your land accessible for any visitors.

It isn't a formal requirement that your LNR is open to the public, but you should aim to make at least part of it publicly accessible.

Select a site

Choose a site that is locally important for:

- Wildlife
- geology
- education
- enjoyment (without disturbing wildlife)

Types of land

Many types of land can make suitable LNRs. They're usually areas of natural green space but the following types of land can also be LNRs as long as they have wildlife or geological interest:

- brownfield and artificial sites, such as historic cemeteries
- agricultural land and orchards
- commons and other accessible green spaces

How to declare a local nature reserve

To declare your site as a LNR, first you should contact Natural England by email: consultations@naturalengland.org.uk or telephone: 0300 060 3900.

You'll be asked to formally declare your LNR by sending a draft declaration document - template available from NE website (See below). It must be signed by the relevant local authority committees, have a map showing the boundary and a management plan detailing:

- how long the site will remain a protected LNR – 21 years is the recommended minimum
- ownership of the land
- any agreements or partnerships
- why the LNR site was chosen
- aims and objectives
- biodiversity management and environmental education
- community participation, access and visitor management
- costs and funding arrangements

Following the consultation you will be asked to send the final declaration document to Natural England, signed by the relevant local authority committees.

Announce your local nature reserve

You should put an advert announcing the LNR in a local paper and let the public inspect the declaration and boundary map free of charge.

You can hold an official opening ceremony once you have formally declared your LNR.

Natural England will add your LNR to the Designated Sites View website which provides information about LNRs to the public.

Manage your local nature reserve

Local authorities can run LNRs independently or you can involve:

- 'friends of' community groups
- wildlife trusts and other recognised conservation bodies
- site-based rangers
- local school children
- Natural England (who can give advice)

Access to your local nature reserve

LNRs should be publicly accessible, where visitors would not damage or disturb wildlife. You can restrict access to some areas if visitors could cause damage to the natural environment unless the public have statutory access rights.

Byelaws

Local authorities and town and parish councils can create LNR byelaws.

Byelaws can help you stop people damaging your LNR, for example prevent visitors walking into areas where they could harm wildlife. Before you create byelaws, you should have tried other ways to keep your LNR safe and its wildlife protected. You can fine people if they break your byelaws.

Byelaws can only be enforced within the LNR. They must not replicate existing laws. You must have formally declared your LNR to Natural England or your byelaws will be invalid.

How to create byelaws

1. There is a model draft available* on NE website, that can be tailored to your site and then sent to Natural England for review.
2. Send your draft byelaws, with Natural England's feedback, to the Secretary of State for Environment, Food and Rural Affairs, along with a colour map of your site and a cover letter explaining why you need byelaws, for example describe other ways you've tried to prevent damage to your site.
3. You must advertise your byelaws in local newspapers, (template available* on NE website), for at least a month before applying for confirmation. If any member of the public raises issues, the Department for Environment Food and Rural Affairs (Defra) will send them to you to consider.
4. Fix the common seal to the byelaws - if you haven't got a common seal, 2 named councillors must authorise the sealing of the byelaws.
5. Authorise the named officer, for example clerk to the parish, to apply to the Secretary of State for confirmation.
6. Get confirmation from the Secretary of State.
7. Keep 2 identical signed and sealed originals of the byelaws confirmed by the Secretary of State. Only minor changes are allowed after confirmation and they should be initialled by whoever sealed it.

*(https://www.gov.uk/guidance/create-and-manage-local-nature-reserves#byelaws)

Public Space Protection Orders (PSPO)*

PSPOs come under the Anti-Social Behaviour Crime and Policing Act 2014. They can be requested for a wider range of behavioural issues. The LA can make a PSPO on any public space within its own area. The definition of public space is wide and includes any place to which the public or any section of the public has access, on payment or otherwise, as of right or by virtue of express or implied permission.

- 1) A local authority may make a public spaces protection order if satisfied on reasonable grounds that two conditions are met.
- (2) The first condition is that— (a) activities carried on in a public place within the authority's area have had a detrimental effect on the quality of life of those ...
- (3) The second condition is that the effect, or likely effect, of the activities— (a) is, or is likely to be, of a persistent or continuing nature, (b) is, or ...
- (4) A public spaces protection order is an order that identifies the public place referred to in subsection (2) ("the restricted area") and— (a) prohibits specified things being done in ...
- (5) The only prohibitions or requirements that may be imposed are ones that are reasonable to impose in order— (a) to prevent the detrimental effect referred to in subsection (2) ...

Control dogs on your local nature reserve

Dog control now comes under PSPOs to:

- Ban or restrict the number of dogs
- make visitors clear up their dog mess
- keep dogs on leads

*(www.gov.uk/control-dog-public/public-spaces-protection-orders)

LOCAL NATURE RESERVE - DECLARATION TEMPLATE

National Parks and Access to the Countryside Act 1949

No..... Declaration 20.....

In pursuance of Sections 19 and 21 of the above-mentioned Act, and all other powers enabling them in that behalf, the …….. Council hereby declares that the land containing …… ha or thereabouts situated in the Parish of …….. in the County of …….. and shown edged …….. on the attached plan (has been acquired by the Council) (is the subject of an Agreement entered into with the Council under Section …….. of the above-mentioned Act) AND in pursuance of Section 19 (2) of the above-mentioned Act and all other powers aforesaid the Council hereby further declare that the said land is being managed as a Nature Reserve.

This declaration may be referred to as the …… Nature Reserve No……..

Declaration 20.....

Given under the Common Seal of the Council this day of SEAL Two thousand and

(Signed) . . . . . .

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Appendix 2

Additional Species Data

- **Birds**
- **Invertebrates**
- **Other**

BIRDS

Breeding Bird Surveys 2013-14 Ref. Bioscan Ecological Report 2014 Appendix 8 and 9

Breeding: Confirmed Probable Possible

Whole Brickwork Site 2013/4

Common Name	Scientific Name	Status
Barn Owl	Tytus alba	Amber
Blackbird	Turdus Merula	
Blackcap	Sylvia articapilla	
Blue Tit	Cyanistes caeruleus	
Bullfinch	Pyrrhula phrrhula	Amber
Canada Goose	Branta canadensis	
Carion Crow	Corvus corone	
Chaffinch	Fringilla coelebs	
Chiffchaff	Phylloscopus collybita	
Coal Tit	Periparus ater	
Collared Dove	Streptopelia decaocto	
Coot	Fulica atra	
Cuckoo	Cuculus canorus	Red
Dunnock	Prunella modularis	
Feral Pigeon	Columba livia	
Garden Warbler	Sylvia borin	
Goldcrest	Regulus	
Goldfinch	Carduelis	
Great Crested Grebe	Podiceps cristatus	
Great Spotted Woodpecker	Dendrocopos major	
Great Tit	Parus major	
Green Woodpecker	Picus viridis	
Grey heron	Ardea cinerea	
Greylag Goose	Anser	Amber
House Sparrow	Passer domesticus	Red
Jackdaw	Corvus monedula	
Jay	Garrulus glandarius	
Kingfisher	Alcedo atthis	Amber
Linnet	Carduelis cannabina	Red
Little Grebe	Tachybaptus ruficollis	
Magpie	Pica	
Mallard	Anas platyrhynchos	Amber
Moorhen	Gallinula chloropus	
Nightingale	Luscina megarhynchos	Amber
Nuthatch	Sitta europaea	
Pheasant	Phasianus cochicus	
Pied Wagtail	Motacilla alba	
Reed Bunting	Emberiza schoeniculus	Amber
Reed Warbler	Acrocephalus scirpaceus	
Robin	Erithacus rubecula	
Rook	Corvus frugilegus	
Sedge Warbler	Acrocephalus schoenobaenus	
Skylark	Alauda arvensis	Amber
Song Thrush	Turdus Philomelos	Red
Sparrowhawk	Accipiter nisus	
Starling	Sturnus vulgaris	Red
Stock Dove	Columba oenaas	Amber
Swallow	Hirundo rustica	Amber
Swift	Apus	Amber
Treecreeper	Certhis familiaris	
Turtle Dove	Streptopelia turtur	Red
Whitethroat	Sylvia communis	Amber
Woodpigeon	Columba palumbus	
Wren	Troglodytes	

Receptor site 2013/14

Common name	Status
Blackbird	
Blackcap	
Blue Tit	
Bullfinch	Amber
Chaffinch	
Chiffchaff	
Collared Dove	
Cuckoo	Red
Dunnock	Amber
Garden Warbler	
Great Tit	
Jackdaw	
Robin	
Song Thrush	Red
Starling	Red
Wren	

INVERTEBRATES **Ref. Bioscan Ecological Report 2014 - Appendix 10**

Species survey for whole Brickwork site.

Group / species	English /common name	Status	Ecological notes and comments
COLEOPTERA	**BEETLES**		
Apionidae	**Seed weevils**		
Ceratapion carduorum		Local	Thistles
Ischneroapion loti the seeds			Lotus corniculatus and L. tenuis, the larvae galling
Malvapion malvae			Malvaceae - especially Malva sylvestris
Oxystoma pomonae			vetches - both Viccia and Lathyrus
Perapion violaceum			dock, larvae mine stems; widespread & common
Protapion fulvipes			various clovers
Byturidae			
Byturus tomentosus	the raspberry beetle		Brambles and raspberries
Cantharidae	**Soldier beetle**		
Cantharis cryptica			tall vegetation, especially wood/grassland interface
Cantharis rustica			lowland grassland - always in association with scrub
Carabidae	**Ground beetles**		
Amara (Amara) communis			phytophagous species of open sites, hiding under leaf rosettes, stones
Cerambycidae	**Longhorn beetles**		
Grammoptera ruficornis			larvae in twigs and small branches; adults at flowers
Leptura (Rutpela) maculate	Harlequin beetle		larvae feed in decaying tree stumps; adults wander and are found in flowers
Stenurella (Strangalia)melanura			larvae in dead wood; adults at umbel flowers
Chrysomelidae	**Leaf beetles**		
Altica lythri			Associated with various willowherbs
(Onagraceae)			
Aphthona euphorbiae		Local	widely polyphagous
Chrysolina staphylaea		Local	polyphagous, but most often on creeping buttercup
Cryptocephalus hypochaeridis		Local	Hieracium spcs.in base-rich grasslands & ruderal si sites
Cryptocephalus moraei		Local	Hypericum
Longitarsus luridus			widely polyphagous
Phyllotreta atra			various Brassicaceae
Coccinellidae	**Ladybirds**		
Adalia bipunctata	2-spot ladybird		predatory on other insects
Adalia decempunctata	10-spot ladybird		predatory on other insects
Coccidula rufa	Spotless ladybird		reed beds and other marshy places
Coccinella septempunctata	7-spot ladybird		predatory on other insects
Hippodamia variegata	variegated ladybird	NS(Nb)	ruderal or sandy habitats
Propylea quattuordecimpunctata	14-spot ladybird		predatory on other insects
Psyllobora	22-spot ladybird		feeds on mildews
Vigintiduopunctata Rhyzobius litura	a spotless ladybird		predatory on other insects

Curculionidae	**Weevils**		
Anthonomus rubi			flowers of brambles and raspberries
Phyllobius pyri variety of herbage and tree leaves			Larvae develop in the ground and adults feed on a
Sitona lineatus			various legumes
Tychius junceus			Local Medicago lupulina
Elateridae	**Click beetles**		
Kibunea (Cidnopus) minuta			a species of dry grasslands
Latridiidae			
Cartodere nodifer ubiquitous			leaf litter, vegetable detritus - more or less
Cortinicara gibbosa			amongst plant litter
Malachiidae	**Malachite beetles**		
Malachius bipustulatus			grasslands
Nitidulidae	**Pollen beetles**		
Meligethes aeneus			various flowers
Meligethes carinulatus			Lotus corniculatus in many habitat types
Oedemeridae			
Oedemera nobilis			a common grassland species
Staphylinidae	**Rove beetles**		
Drusilla canaliculata ants**Tenebrionidae**			litter, moss, under stones etc - a predator of
Lagria hirta sites			dry sandy habitats & in many urban brownfield
CRUSTACEA: ISOPODA	**WOODLICE**		
Armadillidiidae			
Armadillidium vulgare	the pill bug		under stones etc
Philosciidae			
Philoscia muscorum			under stones etc
DERMAPTERA	**EARWIGS**		
Forficulidae			
Forficula auricularia	common earwig		generalist species
DIPTERA	**TRUE FLIES**		
Agromyzidae			
Agromyza dipsaci			larva mines leaves of teasel
Agromyza nana Melilotus*Amauromyza labiatarum*			larva mines in Trifolium, Medicago and mines leaves of Lamium album and other labiates
Phytomyza lappae			mines leaves of Burdock (Arctium species)
Phytomyza ranunculi			larva mines the leaves of Creeping Buttercup
Stratiomyidae	**Soldierflies**		
Chloromyia formosa			ubiquitous
Syrphidae	**Hoverflies**		
Cheilosia albitarsis s. str.			larvae feed in the roots of Ranunculus repens
Dasysyrphus albostriatus			aphid predator at woodland edge habitats
Episyrphus balteatus aphids			ubiquitous spcs., partly immigrant / predates
Eristalis arbustorum			Larvae require damp habitats, adults are ubiquitous
Eupeodes corollae			Grassland
Helophilus pendulus			Larvae require damp habitats adults are ubiquitous

Melanostoma mellinum			Grassland
Melanostoma scalare			Grassland
Myathropa florea			larvae are semi-aquatic
Neoascia podagrica			edge-habitat species
Paragus haemorrhous			bare or sparsely vegetated, dry sandy ground
Pipizella viduata			Larvae feed on root aphids on Umbelliferae
Platycheirus albimanus			ubiquitous - larvae prey on aphids
Platycheirus clypeatus			Damp habitats
Sphaerophoria scripta			Grassland - larvae prey on aphids
Syritta pipiens			larvae in decaying vegetation; adults at flowers
Syrphus ribesii			larvae are aphid predators on trees and bushes
Syrphus vitripennis			larvae are aphid predators on trees and bushes
Tabanidae			
Haematopota pluvialis	**Horsefly**		damp habitats - adult females are blood sucking
Tephritidae			
Terellia ruficauda	a picture-winged fly		larvae gall the flowers of thistles
HETEROPTERA			
Anthocoridae			
Anthocoris nemoralis			trees and shrubs
Anthocoris nemorum			low vegetation
Orius niger			low vegetation on a variety of dry sites
Lygaeidae	**Ground bugs**		
Drymus brunneus			amongst litter or moss in damp or shaded places
Drymus sylvaticus habitats			amongst vegetation litter, moss etc in many
Heterogaster urticae			Nettles
Kleidocerys resedae			trees and shrubs generally
Megalonotus chiragra			dry habitats, grassland, post-industrial, sand dunes
Raglius alboacuminatus		NS(Nb)	Ballota nigra
Scolopostethus thomsoni			usually on nettles
Miridae plant bugs			
Capsus ater			Grassland
Deraeocoris lutescens			predatory amongst trees and bushes
Deraeocoris ruber			nettles, brambles and similar rough vegetation
Notostira elongata			grasslands
Stenodema laevigata			grasslands
HOMOPTERA	**PLANT HOPPERS**		
Aphrophoridae			
Aphrophora alni range of trees and shrubs			a froghopper larvae feed under froth on a wide
Philaenus spumarius	Spittle-bug/Cuckoospit bug		larvae feed under froth on a wide range of plants
HYMENOPTERA: ACULEATA	**BEES, WASPS AND ANTS**		
Apidae			
Apis mellifera	honey bee		flowers in general
Bombus lapidarius	red-tailed bumble bee		ubiquitous
Bombus lucorum	white-tailed bumble bee		ubiquitous
Bombus pascuorum	common carder bee		ubiquitous
Halictus tumulorum	ground-nesting solitary bee		in a range of habitats

Hylaeus confuses	a yellow-faced bee	Local	nests in hollow plant stems
Hylaeus signatus stems	a yellow-faced bee	NS(Nb)	requires pollen from Reseda - nests in hollow plant
Lasioglossum malachurum component	a mining bee	NS(Nb)	ground nesting species - prefers soils with a clay
Lasioglossum minutissimum	a mining bee		excavates nest burrows in level ground
Lasioglossum smeathmanellum	a mining bee		excavates nest burrows in level ground
Nomada fabriciana	a nomad bee nest		parasite of Andrena bees
Formicidae			
Lasius flavus grassland continuity	yellow ant		grassland. A high nest density indicates long term
Lasius niger	common black ant.		generalist species
Myrmica rubra	a red ant		ubiquitous
Sphecidae			
Cerceris rybyensis	a sand wasp	Local	ground-nesting, in sandy habitats
Trypoxylon attenuatum tunnel or other cavities	a wood wasp		preys on spiders. Nests in plant stems, beetle
HYMENOPTERA: SYMPHYTA	**SAWFLIES**		
Cephidae			
Calameuta pallipes			a grassland sawfly
Cephus pygmaeus			larvae mine the stems of grasses
LEPIDOPTERA	**BUTTERFLIES**		
Lycaenidae			
Celastrina argiolus generations per year	Holly blue		both holly and ivy are required - as there are two
Nymphalidae			
Aglais urticae	Small tortoiseshell		larvae feed on Stinging Nettle
Maniola jurtina	Meadow brown		grassland species
LEPIDOPTERA	**MOTHS**		
Arctiidae			
Tyria jacobaeae	Cinnabar	S 41	Ragworts
		BAP(R)	
Choreutidae			
Anthophila fabriciana	Nettle-tap		nettles
Coleophoridae			
Coleophora serratella			deciduous tree leaves
Geometridae			
Camptogramma bilineata	Yellow Shell		herbaceous plants
Timandra comae	Blood-vein	S 41	Polygonaceae
		BAP(R)	
Gracillariidae			
Deltaornix torquillella			mines leaves of blackthorn
Nepticulidae			
Stigmella aurella agg.			mines leaves of bramble
Pyralidae			
Chrysoteuchia culmella			grasses
Crambus lathoniellus			grasses
Scoparia ambigualis			thought to feed amongst mosses
Tortricidae			
Aethes beatricella			hemlock

Aethes smeathmanniana			Achillea, Centaurea and Anthemis
Epiblema uddmanniana			Rubus spp., mainly brambles
Eucosma cana			thistles and Centaurea nigra - in the flower head
Yponomeutidae			
Plutella xylostella			primary immigrant from overseas; temporary resident on Cruciferae
NEUROPTERA	**LACEWINGS**		
Chrysopidae	**green lacewings**		
Chrysopa perla			aphid predator amongst herbage
Chrysoperla carnea			aphid predator of trees and bushes
Hemerobiidae	**brown lacewings**		
Hemerobius lutescens			trees and bushes, hedges, etc
Wesmaelius subnebulosus			larvae are aphid predators on trees and bushes
ORTHOPTERA			
Acrididae			
Chorthippus parallelus	Meadow grasshopper		grassland
Tetrigidae			
Tetrix undulata	Common Groundhopper		bare ground habitats, including

Pluckley Nature Reserve - Summary of site visits 2021 - Friends of Pluckley Nature.

Author Sarah Allen

Amphibians

Pond dipping and torch light surveys were carried out during the late spring and autumn. The four ponds were surveyed separately.

2 new ponds:

- Torchlight surveys positively confirmed breeding activity of smooth newts, subsequently confirmed by the presence of larvae. No evidence was found of GCNs although the timing of the surveys was slightly later than optimal. SVCP had a positive identification of a GCN egg during their surveys.
- Of the two new ponds, the southern sector of each appeared the most positive in terms of numbers, with the southern-most pond more prolific than the other. This is an observation only and may be attributable to the shallower profile.
- Both ponds appeared to have good diversity of pond invertebrates including dragonfly, damselfly mayfly and beetle larvae, water lice, water scorpions, daphnia and other micro-invertebrates. Worm and snail numbers were low.
- There is evidence of some submerged flora but the ponds are both heavily dominated by reedmace and pondweed.
- Marsh frogs are present and breeding in both ponds with evidence of adult and tadpoles.

2 old ponds

- The overgrowth in the two old ponds made access for torchlight and particularly pond dipping challenging. Nevertheless, the presence of smooth newt larvae in both ponds was observed during 'best-endeavours' pond dipping! No evidence of GCN was found. The old ponds appeared to be less prolific than the new in terms of aquatic invertebrates, but some mayfly larvae were observed with daphne, worms and mud snails.
- Although difficult to survey, and with a profusion of reedmace, there is plant diversity in the old ponds which may help with establishment of increased diversity in the new.
- No evidence of marsh frogs was found in the old ponds.

Reptiles

3 roofing felt refugia were placed in late summer for the purpose of monitoring this autumn. A different micro habitat was chosen for each: 1) on the hibernacula in an exposed location; 2) adjacent to a woodpile refugia in an exposed location of mixed herb and nearby scrub; and 3) adjacent to a woodpile refugia in a grass dominated area with trees.

At all locations slow worms have been found- most notably at R1, a gravid female and two hatchlings were identified. Common lizard have been identified at R1 and R2, with evidence of successful breeding through identification of a juvenile.

Bats

Bat observations have been made on several occasions but a single dusk survey with specialist support identified four species of bat: Common pipistrelle, Soprano pipistrelle, Serotine and Myotis spp (thought to be Daubenton's bat).

Mammals

Footprint tunnels have been deployed with limited success at two locations, primarily for confirming the presence of hedgehogs. Presence has not been yet been confirmed; the healthy slug population has hitherto foiled our plans, but the deployment of copper foil may make our endeavours more fruitful going forward!

Dormouse surveys will be ongoing through KSCP under license. We will be carrying out a harvest mouse survey in late October/Nov.

Butterflies (and other insects)
A fixed transect route has yet to be established (once the boundary is demarcated) so there is no quantitative numerical data, but the table below shows the butterflies seen at the reserve throughout the past 5 months. The table is divided into two columns; one for species which form discrete colonies and the other for those which travel.

Discrete colonies at the reserve	**Visitors using the reserve**
Common blue	Clouded yellow
Holly blue	Painted lady
Small/Essex skipper	Brimstone
Grizzled skipper	(Silver washed fritillary?* possible)
Marbled white	Green veined white
Gatekeeper	Comma
Meadow brown	Speckled Wood
Small heath	
Ringlet	

There seems to be a lot of insects that have been observed but not recorded, particularly bees and other pollinators, dragonfly and damselfly species, Green and Speckled Bush Crickets and a hornet were observed.

Birds
No survey work has been carried out this year and there is limited observation data. Most notably, a nightingale is thought to have been seen in the scrub near the old ponds. There was evidence of dormouse boxes being used by birds early in the year. A heron was sighted foraging by one of the new ponds and moorhens have been observed, thought to be travelling through. Common birds such as great tit, blue tit, chiffchaff, blackbird,
jackdaw, wood pigeon have been sighted or heard around the scrub periphery along with a green woodpecker and a tawny owl.

Flora
Qualitative observations of flora have been made but quadrats have yet to be carried out and specialist support may be required depending on the level of detail we want to achieve. The list below is not exhaustive but captures some of the species identified through casual observation.

Non exhaustive list of observed wildflowers (excluding aquatic and trees)

Agrimony	Forget-me-not	Sedges spp
Black medick	Grasses spp	Self-heal
Blackthorn	Greater plantain	Slender speedwell
Bramble	Ground Ivy	Smooth hawksbeard
Bird's foot trefoil	Hawthorn	Sorrel spp
Bugle	Hazel	Spindle
Buttercup spp (meadow, creeping)	Hemp agrimony	Stinking Iris
Centaury	Honeysuckle	Teasel
Chickweed	Hypericum spp	Vetch spp
Cinquefoil	Meadow vetchling	White clover
Common Orchid	Mouse-ear	Willow spp
Dock spp	Ragwort	Willowherb
Enchanter's nightshade	Rose	
Eyebright	Rough hawkbit	
Fleabane	Rushes spp	

Acknowledgements
Thanks must be given to representatives from Kent Mammal Group, Kent Bat Group and Kent Reptile and Amphibian Group who have spent time with us in the field, supporting our learning and bringing a wealth of knowledge, experience and enthusiasm for our endeavours at the reserve.

Appendix 3

- Guidance and links for Protected Species Great Crested Newt and Hazel Dormice habitat management.

Guidance and links for great crested newt (GCN) pond management.

For broad detailed information on GCN, their habitat and management we would recommend Froglife's - The Great Crested Newt Conservation Handbook. www.froglife.org/info-advice/our-publications/great-crested-newt-conservation-handbook/
The Habitat Suitability Index (HIS) by the Amphibian and Reptile Groups of the UK (ARG UK) is also a useful tool to evaluate the conditions of your pond over time. www.arguk.org/info-advice/advice-notes/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5/file

Guidance:

The protection afforded this species makes it illegal to:

- Intentionally kill, injure or capture GCN
- Intentionally disturb GCN
- Intentionally take or destroy the eggs of GCN
- Deliberately interfere with places used for shelter or protection used by GCN or obstruct access to places of protection or shelter
- Damage or destroy a breeding site or resting place GCN.

For organisations that wish to conserve and improve conditions for this species, pond restoration and management activities have an inherent risk of disturbing, killing and injuring newts and therefore breaking the law. Therefore, this method statement aims to provide some simple guidelines to follow, so that risk is minimised.

Timings: Most GCN have left their breeding pond/s by the end of August, however some may overwinter in pond sediment and debris. After leaving the pond, GCN will spend time foraging and resting in terrestrial habitats. Most will be dormant by end of November. Therefore, it is considered best practice to carry out any work when they are hibernating on land Nov - Feb. This is getting harder to predict, so in our action plan we have erred on the side of caution and advised Dec-Jan. The amount of silt, water and pond condition may however determine when it is more practical. Advice should be sought from Natural England (NE) or suitably qualified, licenced ecologist. It may be necessary to apply for a conservation licence.

Manual vegetation and de-silting will be required on lined ponds.

In months leading up to planned desilting works, (late summer/autumn) and to ensure newts don't use the area, ensure a large enough area of vegetation to hold the silt is kept cut short (max 15cm). It should be close enough to the pond not to require too much 'tracking' and will not allow the silt to wash back in, in heavy rain. It should have no newt refuge on it (rocks/logs etc).

Directly before works take place surveys should be conducted of the pond, pond margins, potential hibernating refuge, and the access / machinery tracking route to check for GCN/newt presence. If any are found work should not proceed and advice sought from NE or suitably licenced ecologist. (Ref. Froglife, GCN Conservation Handbook)

Do I need a licence to carry out pond management work?
In many cases of typical pond management, no licence is required. Pond Management includes the restoration of ponds which have become full of silt to such an extent that they no longer provide good habitat for great crested newts. A conservation licence is only required if the work would otherwise be an offence in relation to great crested newts e.g. deliberate killing or injury, deliberate disturbance or damage or destruction of a breeding site or resting place.

Pond management work is designed to improve the breeding site and therefore there is little risk of damage or destruction occurring, as the site will be enhanced. Where the work is carried out with sensible precautions then the risk of deliberate killing, injuring or disturbing newts can be greatly minimised. When the risk of killing, injury or disturbance has been considered and minimised then it is unlikely that an offence will occur, as such actions are unlikely to be considered as deliberate. Natural England envisages that carefully planned standard pond management works would be highly unlikely to result in offences, and therefore we would not normally expect licence applications.

What precautions do I need to consider?
Pond management work should normally be carried out in late autumn through winter, typically 1st November to 31st January, when great crested newts are unlikely to be present in ponds. The dates are for guidance only as we cannot give specific dates that apply to all situations. In some ponds newts may have left the pond earlier whereas in certain ponds great crested newts can overwinter in low numbers. In some cases it may be essential to do the work in the summer months because of ground conditions; however this will require careful consideration of the impacts on great crested newts and, if newts are present, a conservation licence will be required. Each project should be looked at individually and if you feel that you may commit an offence in doing the works then you can apply for a licence.

It is also important to consider whether the proposed pond management work will impact upon surrounding terrestrial great crested newt habitat. Large machinery can damage habitat and hibernacula if not carefully planned and the silt removed from pond must not be deposited on areas used by great crested newts. Before pond management work commences, a survey of the immediate area is a sensible precaution. A survey for great crested newts should be undertaken by someone who is appropriately experienced and licensed. The results of this survey can help to decide whether a licence is required for pond management works.

What should I do if great crested newts are found to be present as a result of the survey?
If great crested newts are found during a survey undertaken immediately prior to the work then the work should either be rescheduled or amended to avoid committing an offence, or an application for a conservation licence should be submitted to Natural England.

If great crested newts are present how do I apply for a licence for pond management work?
All applications for conservation licences should be made using the Natural England application form WLM –A29 and will need to state how the proposed work will benefit the conservation of great crested newts. The applicant will also have to provide survey information, the proposed methodology, justification as to why this is the best course of action despite the presence of great crested newts, and confirm that there are no other feasible options for achieving the conservation gain which would have less direct impact on the great crested newts. The licence application must state clearly which licensable activities will occur (disturbance, etc). If pond management work is part of mitigation for development affecting great crested newts, and an offence would result from the proposed works, then a mitigation licence would be required.

How do the changes to the Habitat Regulations in 2007 affect pond management work?
The amendment to the Habitat Regulations in 2007 removed the defence which previously made an action lawful if it was the incidental result of a lawful operation and could not reasonably have been avoided. Although there is now no statutory defence to killing, injuring or disturbing great crested newts under the Regulations, note that to constitute an offence the actions must be done 'deliberately'. In addition, disturbance must be substantial to cause an offence under the Regulations. Therefore, if people take all sensible precautions to reduce the risk, such as those described above, then such offences are unlikely.

Further information Further advice on applying for licences can be obtained by contacting Natural England's Wildlife Management & Licensing Service.

Advice on conservation matters can be obtained from local offices of Natural England. Office details are available on the Natural England website www.naturalengland.org.uk

Natural England - January 2009

Guidance and links for Dormice habitat management

For broad detailed information on dormice and their habitat and management we would recommend English Nature's Dormouse Conservation Handbook - **https://ptes.org/wp-content/uploads/2014/06/Dormouse-Conservation-Handbook.pdf**

For further information, particularly on monitoring Dormice, we recommend information in the National Dormice Monitoring Programme produced by Peoples Trust for Endangered Species and Natural England - https://ptes.org/campaigns/dormice/hazel-dormouse-conservation/

Dormice are usually active from late March to the end of October, living in hedges, shrub layers, but also feeding higher in the woodland canopy. Based on dormice biology, the dormouse year is divided in to 4 periods:

1. May to mid-September (core breeding season)
2. Mid-September to end of October (pre-hibernation & active)
3. November to end of March (hibernation)
4. April (post hibernation & active)

This represents a typical dormouse year, but an early or late spring or winter will mean dormice may be active weeks earlier or later respectively.

Dormice breeding sites and resting places are protected by law. A dormice 'disturbance licence' or 'class licence' is required to survey and handle dormice. A licence will be required from Natural England if you can't avoid disturbing or destroying their habitat.

WOODLAND HABITAT

Favourable habitat features:
Wide range of broadleaved tree species and ages.
Shrub layer, especially with yew, hazel, honeysuckle or bramble (brash can be a component of this structure).
Species-rich scrub on woodland margins, ride-sides or in patches.
Species-rich woodland creation, especially if hazel, honeysuckle or bramble present.
Canopy connections across tracks.
Thick wide hedgerow connections to other, nearby suitable habitat.
Conifer/broadleaved mixtures or conifer plantations colonised by native broadleaves.
Fruiting trees especially hazel or sweet chestnut – ideally as managed coppice.

Unfavourable features:
Conifer plantation already subjected to several traditional rack thinning operations.
Densely shaded woodland with little or no understorey.
Signs of deer/livestock suppressing regenerating trees/shrubs, or lack of regeneration.
Preponderance of waterlogged ground in winter.
Absence of large fruiting trees.
Plantations lacking any native broadleaved trees and shrubs.

Avoid carrying out any large operations in good habitat areas and/or areas known to have dormice.
Marginal Habitat - restrict operations to 10% in any one year.

Nov to March.

- In semi-natural woodland, clear fell, or coppice less than one quarter of total favourable habitat area in any one five-year period. Avoid unnecessary disturbance of the ground and work from centre of clearfell

outwards towards remaining favourable habitat. Retain stands adjoining felled areas until the restocking (or natural regeneration) of the first coupe has reached a minimum height of 2 m.

- Thin less than two-thirds of area in any five year period, leave the remaining one-third undisturbed.
- Arising stacks must not compromise the shrub layer or understorey, best situated on shorter vegetation.

The following operations should improve your woodland for dormice:

- Work to improve connections between areas of habitat within the woodland by developing a network of connecting areas of scrub, or retaining and promoting canopy contact over rides.
- Creating a network of habitat across the landscape, linking isolated woodland by creating new woodland and dense hedges
- Enhance the shrub layer and understorey by coppicing, thinning or group felling to open up canopy gaps and promote woodland regeneration
- Control or exclude livestock or deer to ensure adequate understorey and ground vegetation

(Ref: Forestry Commission, Protocol Version 4 May 2019 - **A protocol for undertaking woodland management in England where dormice are present**)

HEDGES

A key attribute for good wildlife hedges in general and therefore for dormice, is connectivity within the hedge (no gapping) and to other hedges or areas of woodland / scrub.

The hedge or shrub layer should have a variety of native species, emergent trees, shrubs, climbers and ramblers; species such as hawthorn, hazel, evergreen holly, oak, wayfaring, honeysuckle and bramble. Ideally a wide buffer zone, approx. 1 metre each side, should be maintained on rotation to maintain a transitional margin of taller grassland species and can include outgrowths of bramble or rose. This should provide shelter, food and a good nesting habitat for dormice.

Hedges should be planted double width and topped to ensure branching out in the establishment phase. and maintained to ensure that the shrub layer is dense from the base to the top. On hedges along northern boundaries, allow a few trees to grow to maturity in the hedge - hedge trees.

Generally, hedges should be cut in the winter months every 3 years, after the fruits have gone. Rotate cutting regimes so approx. only a third of all hedges on a site are cut at the same time. Leave some hedges uncut for longer to increase flowering and fruiting. Minimum height, once cut, 2 metres.

Ditches and banks beside the hedges should be maintained earlier - Sept-Oct before hibernation period.

When cutting hedges, cut on an inward slope to maximise branching, so it isn't gappy at the base. Hedges may be rejuvenated by hedge laying if they become gappy at the base.

(Ref: Hedgelink, **How to Manage Your Hedges for Dormice Leaflet**)

Appendix 4

Proposed access and viewing platform for the public (TBC)

Rough design of access and platform proposed from Station Road on south-eastern boundary (Area 3) of Pluckley Nature Reserve land. Trees to be felled to create access and view from constructed platform that would sit on stilts above Pond D / wetland edge. Boardwalk would similarly have to extend along site boundary past large willow - over wetland edge.