Dedham Vale Area of Outstanding Natural Beauty Nature Recovery Plan

Hazel Dormouse (*Muscardinus avellanarius*) - Photo Credit: Alison Looser – Suffolk Wildlife Trust

Vision

By 2030, the establishment and connection of nine Nature Recovery Core Zones (totalling 6,680 ha) within the Dedham Vale AONB (and adjacent to it) will have led to the formation of a vast Nature Recovery Area. The creation of habitat wildlife corridors and steppingstones will connect the most wildlife rich zones in the AONB from Assington in the west to the Stour Estuary in the east. This contiguous expanse of wildlife rich sites will connect to the network of seven nature recovery core zones in the Coast & Heaths AONB culminating at the Broads National Park. This creation of a connected network of ecologically diverse zones will enable wildlife to flourish and help the process of adaptation and build resilience against a changing climate and other human induced pressures. In addition, the breeding population of the AONB's flagship species (Hazel Dormouse – Tringa totanus) will have increased by 10% between 2020 – 2030.

Introduction

This document provides an overview of how the Dedham Vale Area of Outstanding Natural Beauty (DV AONB) intends to address wildlife declines of priority species by 2030. It describes the nine key Nature Recovery Core Zones (NRCZs) that have been identified as the most important connected expanses of wildlife rich habitats in the DV AONB. It also explores the potential for habitat enhancement, creation and connectivity within these core zones; on land adjacent to them and between the core zones themselves. The long-term ambition for nature recovery in the DV AONB is to form a vast Nature Recovery Area through the formation of habitat wildlife corridors which connect all nine NRCZs in the DV AONB with the seven identified in the Coast & Heaths AONB and up to the Broads National Park in the North. This will result in the creation of a super-sized contiguous landscape scale wildlife rich zone spanning from Arger Fen in south Suffolk up to the Norfolk Broads.

In response to the Glover Review, in 2019, the National Association for Areas of Outstanding Natural Beauty (NAAONB) made a collective declaration on nature in AONBs. Through the Colchester Declaration, the NAAONB made the following key pledges to be achieved by 2030 which are shown in the left-hand column of Figure 1 below. The DV AONB has set targets to help the NAAONB meet its collective nature recovery targets to be met by 2030. These targets can be found in Figure 1 below.

Figure 1: Table Showing Nature Recovery Targets at a National and Local Level

NAAONB Collective Target	Dedham Vale AONB Contributory Target	Explanation of How Dedham Vale AONB Target was Calculated
At least 200,000 hectares of SSSI's in AONBs will be in favourable condition.	To increase the total hectarage of the 2 SSSI's in the Dedham Vale AONB to favourable condition by 73.6 hectares resulting in all SSSI designated land being in favourable condition.	N/A
At least 100,000 hectares of wildlife-rich habitat outside of protected sites will have been created / restored in AONBs.	The creation / restoration of at least 470ha of wildlife rich habitat outside of protected sites	The Dedham Vale AONB is 9,000 ha in size which is 0.47% of the total size of AONBs in the UK (1,903,500ha). 470 ha is 0.47% of 100,000 ha.
At least 36,000 ha of new woodland will have been planted or allowed to	The creation of at least 169ha of new woodland in the AONB.	The Dedham Vale AONB is 9,000 ha in size which is

regenerate in AONBs following the principle of the right tree in the right place.		0.47% of the total size of AONBs in the UK (1,903,500ha). 169ha is 0.47% of 36,000 ha.
By each AONB immediately adopting a species on the threatened list and by preparing and delivering a Species Action Plan, at least thirty species relevant to AONBs will be taken off the list by 2030.	Adopted Species: Hazel Dormouse (*Muscardinus avellanarius*)	Democratically selected in partnership with environmental partners

State of Nature In the UK and the Coast & Heaths AONB

As successive State of Nature reports have shown, the general picture for biodiversity in the UK remains one of decline. The State of Nature 2019 report revealed that 41% of UK species studied have declined, 26% have increased and 33% show little change since 1970, while 133 species assessed have already been lost from the UK since 1500 (Hayhow *et al*. 2019[1]). In order to reverse the decline of wildlife in the AONB it is essential to have an understanding of the species of wildlife that are currently present. Figure 2 below shows the number of species for different animal groups with recent reliable records that are present within the AONB. Neither flora nor moth species have been recorded here due to unreliable data being available. Full details of the species currently present in the AONB will be available upon request.

Figure 2: Table Showing the Total Number of Species Present in the AONB in 13 Different Animal Groups

Animal Group	Total (Recorded) Species Present in the AONB	% of Total Species in the UK
Chiroptera (Bats)	9	50%
Rodentia (Rodents)	10	55.56%
Lagomorpha (Rabbits and hares)	2	50%
Eulipotyphla (Insectivores)	5	71.43%
Carnivora (Carnivores)	7	77.78%
Artiodactyla (Even-toed ungulates)	4	57.14%
Birds	165	26.15%
Amphibians	4	57.14%
Reptiles	4	66.67%
Butterflies	28	47.46%
Odonata (Dragonflies and damselflies)	25	52.08%

Factors Impacting Upon Nature in the Dedham Vale AONB

The factors impacting upon nature in the DV AONB are both increasing and intensifying and in order to ensure the AONBs precious wildlife and its associated habitats can flourish well into the future its essential to understand what the main threats are so the appropriate measures can be taken to address the main issues. Figure 3 on page 4 below shows what the main threats to wildlife are within the DV AONB and the Nature Recovery Core Zones they are most likely to affect.

Figure 3: Table Showing the Main Threats to Wildlife in the DV AONB and the Nature Recovery Core Zones

| Impacting Factor	Predicted Negative Impacts	NRCZs Most Likely to be Affected
Climate Change	• Increased coastal erosion • Introduction of new/larger scale coastal defences. • Increased risk of flooding • Ocean acidification • Range shifts of native flora and fauna	All 9
Land Use Change	• Increase in development pressures	All 9
Population Growth and Social Change	• Increase in wildlife disturbance and pollution	All 9
Estuarine and River Activity	• Increased levels of noise and risk of collisions. • Changes to seabed & ocean habitats and alterations to food webs. • Pollution from increased vessel traffic or release of contaminants from seabed sediments.	NRCZs C,F and G only
Water Quality	• Increased levels of pollution from agriculture, business and recreation.	All 9
Light Pollution	• Negative impact on the behaviour of native flora and fauna	All 9
Tourism and Recreation	• Increased levels of wildlife disturbance and habitat degradation • Increased levels of litter and pollution	A, C, D, E, F, G, H
Surface Water Quality	• Reduction in surface water volume leading to increases in water temperature • Pollution	All 9
Ground Water Quality	• Over-abstraction • Diffuse pollution from agriculture • Industrial sources of pollution and sewage discharges.	All 9
Fish Stocks	• Overfishing	NRCZ G only
Shellfish Stocks	• Climate change leading to increasing sea temperatures and ocean acidification	NRCZ G only
Seabirds and Migratory Birds	• Offshore developments causing bird collisions and disturbance • Climate change – milder winters affecting where waterbirds and other birds forage and reduced numbers of small fish and other prey affecting condition and breeding success.	All 9
Decline of Insect Populations	• Loss of insect biodiversity and the knock-on impact on other wildlife that depends on them. • Negative impact on pollination.	All 9
Non-native Invasive Species	• Alteration of ecosystems • Out competing native species • Huge financial implications relating to their control	All 9

Nature Recovery Core Zones

Nine Nature Recovery Core Zones have been identified as the highest priority areas that need to be more effectively protected, enhanced for biodiversity, expanded in size and better connected to habitats within them and adjacent to them. The Nature Recovery Core Zones are the largest expanses of wildlife rich sites within the DV AONB. Collectively the NRCZs total 6,680.06 hectares of terrestrial and estuarine habitats. Figure 4 below shows the distribution of the core zones stretching from Arger Fen in the west to the Stour estuary in the east.

Figure 4: Map Showing the Nine Nature Recovery Core Zones in the Dedham Vale AONB
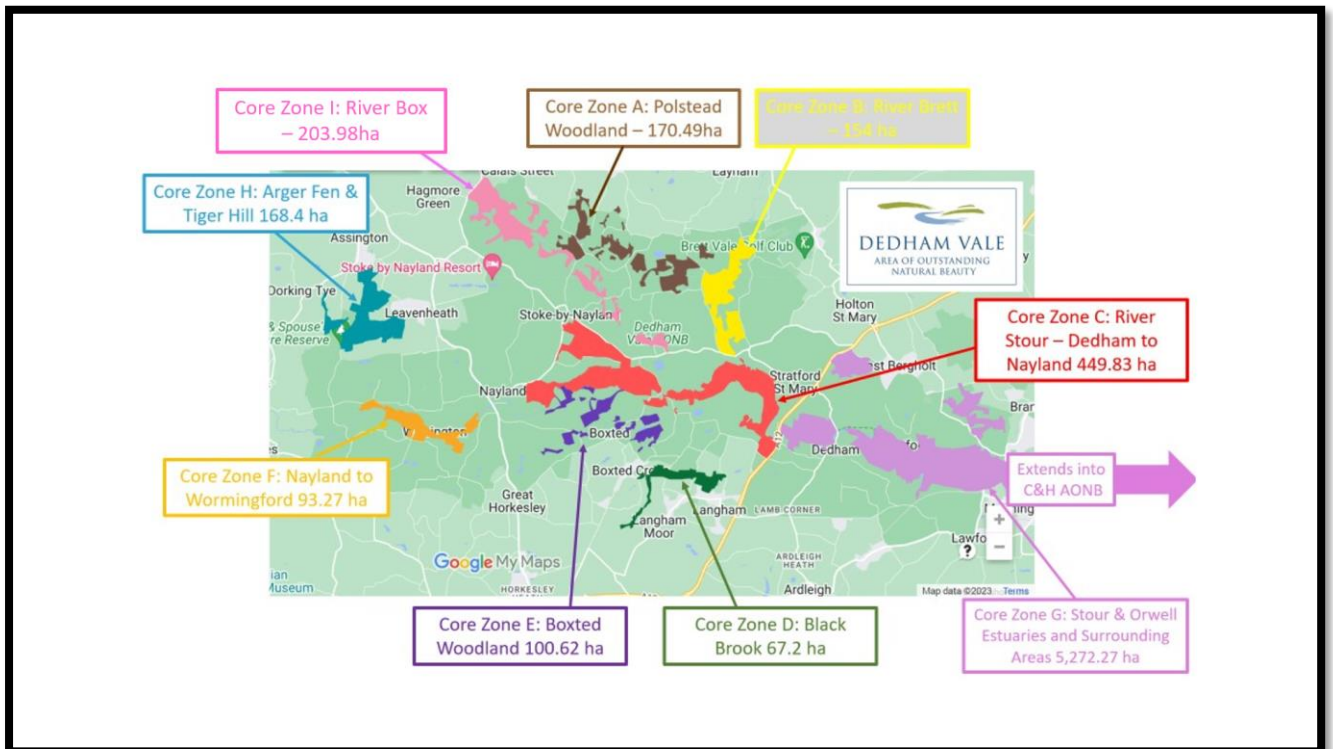
Figure 5: Nature Recovery Core Zone A: Polstead Woodland – 170.49ha
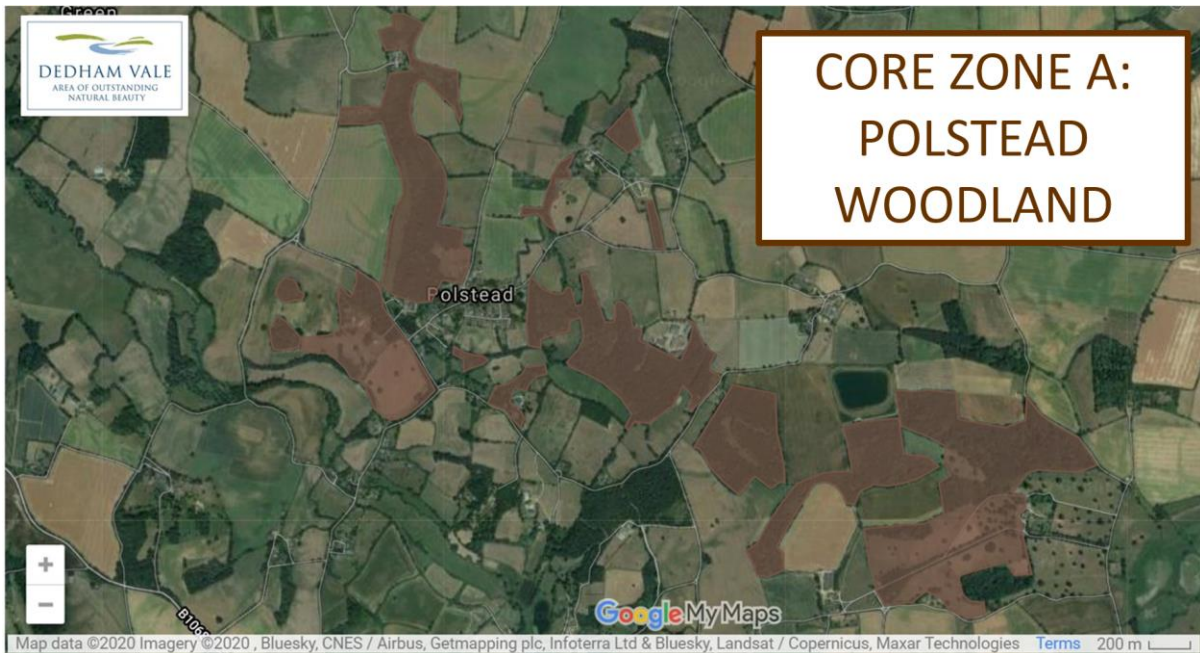
Figure 6: Nature Recovery Core Zone B: River Brett – 154ha

Figure 7: Nature Recovery Core Zone C: River Stour – Dedham to Nayland – 449.83ha
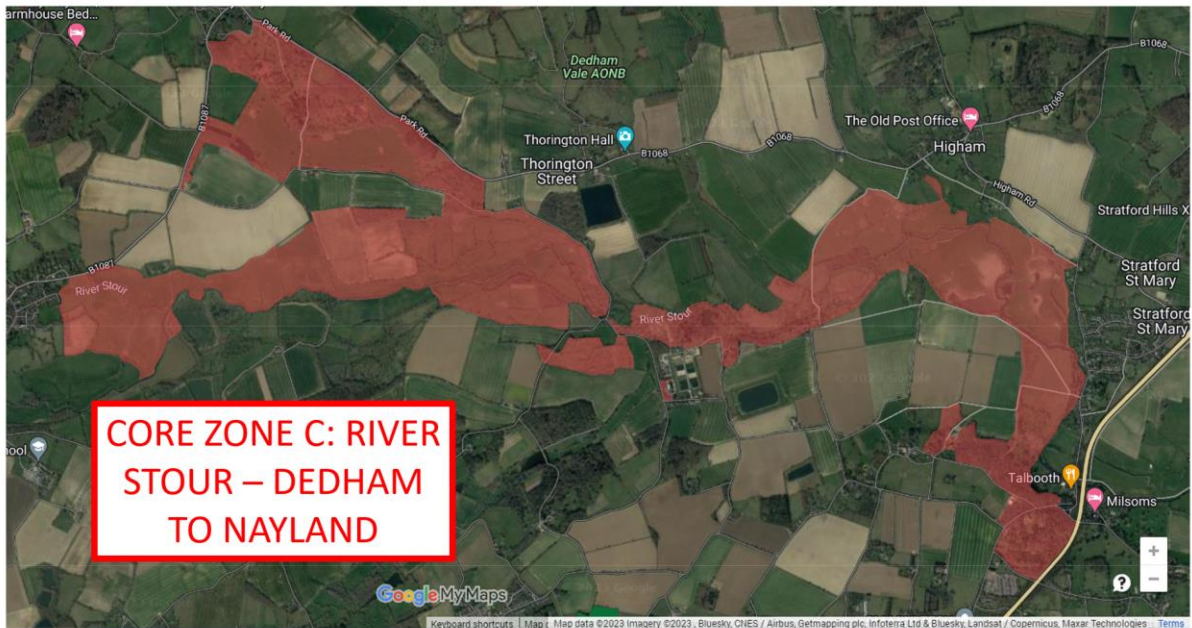

Figure 8: Nature Recovery Core Zone D: Black Brook – 67.2ha

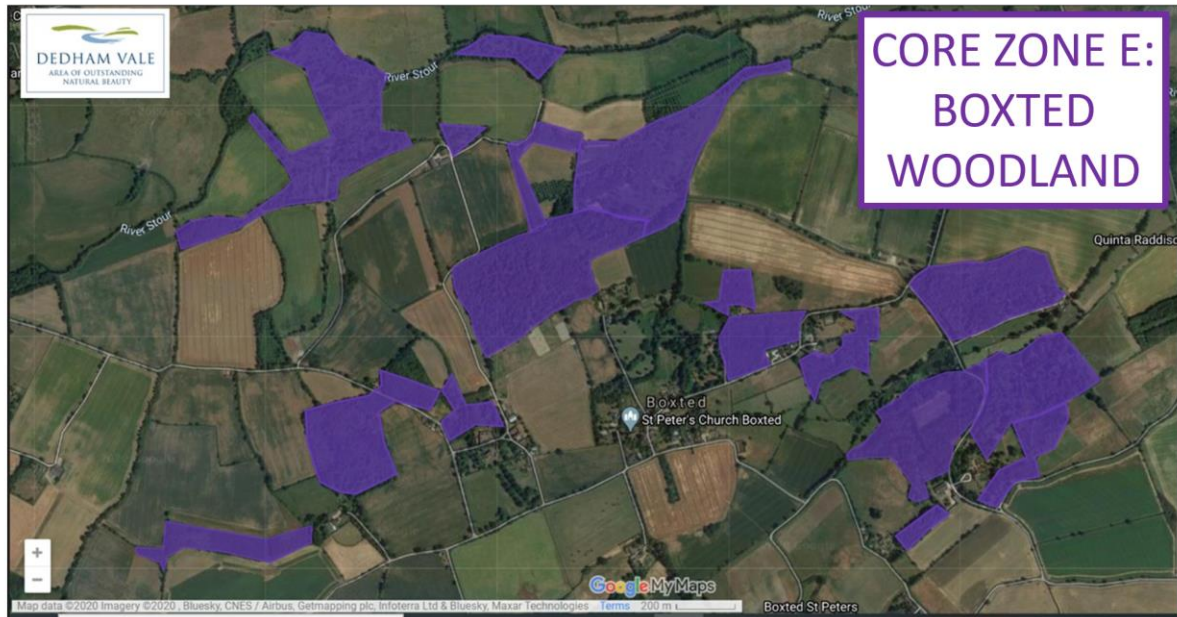Figure 9: Nature Recovery Core Zone E: Boxted Woodland – 100.62ha
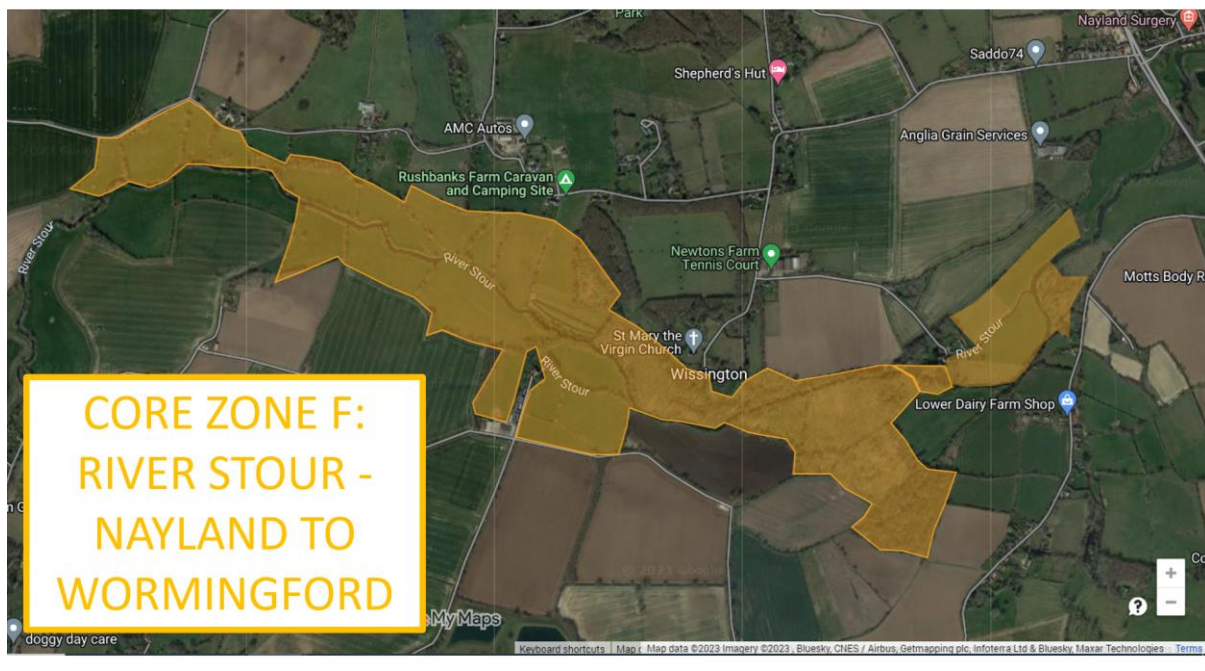

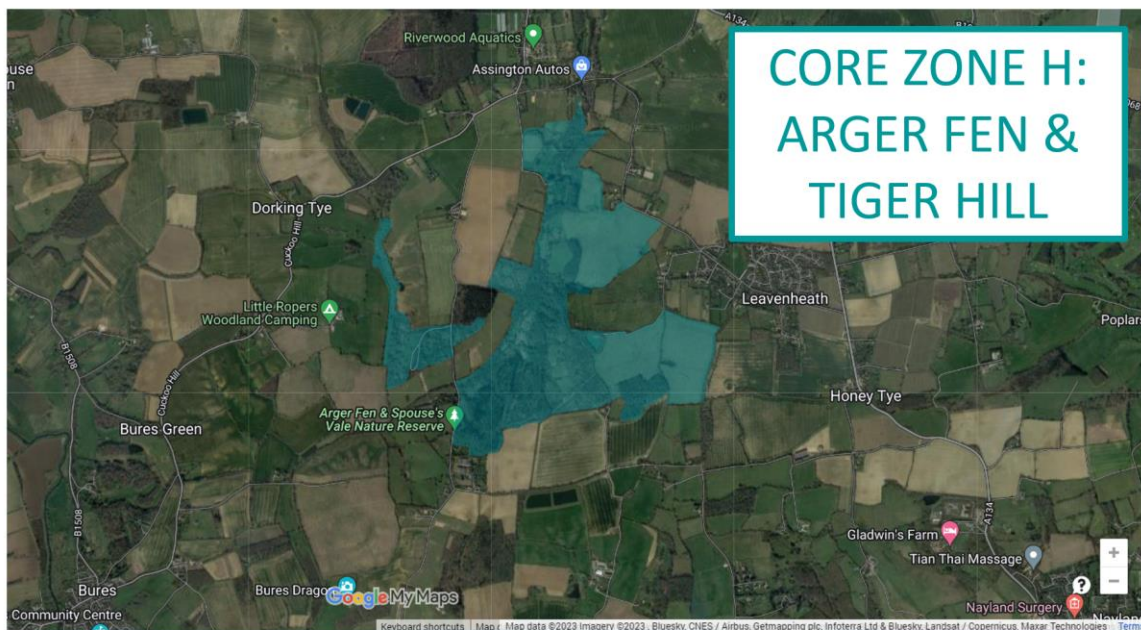Figure 10: Nature Recovery Core Zone F: Nayland to Wormingford – 93.27ha

Figure 11: Nature Recovery Core Zone G: Stour & Orwell Estuaries and Surrounding Areas – 5,272.27ha

Figure 12: Nature Recovery Core Zone H: Arger Fen & Tiger Hill – 168.4ha

Figure 13: Nature Recovery Core Zone I: River Box – 203.98ha

Potential for Habitat Creation and Restoration

The National Habitat Network Mapping tool produced by Natural England has been used to calculate the total size of each of the priority habitats within and connected to the NRCZs. The tool has also been used to calculate the total hectarage of land that is suitable for habitat creation, restoration and enhancement within and connected to each of the Nature Recovery Core Zones. This information has helped to determine realistic but ambitious habitat creation and enhancement targets for each NRCZ. Figure 5 below shows the collective total hectarage of priority habitats currently present within the nine NRCZs along with the potential for habitat creation, restoration and expansion within them and onto surrounding land outside.

Figure 14: Table Showing the Potential for Habitat Creation, Restoration and Expansion Within the NRCZs and on Surrounding Land Outside

	Primary Habitat	Restorable Habitat	Habitat Creation / Restoration	Fragmentation Action Zone 1	Network Enhancement Zone 1
Ancient Semi-Natural Woodland	168.84 ha	19.33 ha	0.88 ha		
Coastal Saltmarsh		336.85 ha			98.63 ha
Lakes		1 (4.56 ha)			
Lowland Acid Grassland	16.84 ha			452.68 ha	12.85 ha
Lowland Meadows	30.16 ha	104.32 ha	2.31 ha		483.34 ha
Reedbeds	8.76 ha	484.75 ha			617.88 ha
Traditional Orchards	50.21 ha				541.81 ha

Priority Habitats

A tiered system has been adopted for the habitat prioritisation process resulting in the identification of four Tier 1 (highest priority) Priority Habitats; three in Tier 2 and four in Tier 3. In the DV AONB Nature Recovery Plan consultation which closed for responses in September 2020, consultees were asked to select the top 4 habitats they think should be prioritised for nature recovery from a list of 12 Suffolk and Essex priority habitats that are present in the AONB. Their responses helped to shape the prioritisation of habitats within the Nature Recovery Plan. Figure 15 on page 12 shows the eleven selected priority habitats.

There are a variety of different reasons why the priority habitats have been selected which are summarised in Figure 15 below. Due to the huge significance for wildlife that scrub (natural regeneration) has to offer, it has been included in Tier 1 and grouped together with hedgerows. Compared to all the other priority habitats in the AONB scrub and hedgerows are important habitats (at varying degrees) for the largest number of priority species by a significant margin. 68% of all Tier 1 and Tier 2 Priority Species (namely turtle dove, yellowhammer, hazel dormouse, common lizard, harvest mouse, grey partridge, barn owl, common toad, hedgehog, grass snake, adder, stag beetle and water vole) benefit from scrub in the mix of habitats available to them. For some species, scrub and / or hedgerows are essential habitats for the given species to survive and reproduce. The flagship species for the Dedham Vale AONB (Hazel Dormouse) is heavily reliant upon scrub and hedgerow habitats. The huge significance of hedgerows and scrub in terms of the recovery of many of the AONBs priority species is reflected in the ambitious habitat creation targets for both. The aspiration has been set to create 130 hectares of scrub (natural regeneration) in and around the nine nature recovery core zones along with the planting of 55km of new hedges, both by 2030. It's also important to note that more than 75% of the priority habitats in Norfolk and Suffolk are in patches under 10 hectares in size and connectivity needs to be improved (Lovett, *et.al*, 2020[2]). Therefore, hedgerows, patches of scrub and ponds (a Tier 2 priority habitat) are particularly important in this regard. Hedgerows, lines of trees and shrubs, ditches and ponds are important corridors and 'steppingstones' connecting habitats, especially in the types of agricultural landscapes that exist in many parts of Norfolk and Suffolk (Lovett, *et.al*, 2020[2]). There is a complex network of old species-rich hedgerows, ancient woods and parklands currently in the Dedham Vale AONB so the planting of new hedgerows and facilitation of natural regeneration will help tremendously to better connect these existing habitats.

Deciduous woodland was also selected as a Tier 1 Priority Habitat in order to ensure the Dedham Vale AONB meets the collective national AONB target to plant or allow to regenerate 36,000 hectares of new woodland in AONBs by 2030 following the principle of the right tree in the right place. It is also important to note that all of the priority habitats in tiers one, two and three have associations (at varying levels) with all of the priority species in the Coast and Heaths AONB Nature Recovery Plan.

For a brief explanation for the reasons the priority habitats were selected for the Dedham Vale AONB see Table X below.

Figure 15: Table Showing the Reasons For Priority Habitat Selection

Priority Habitat	Tier	Reasons for Selection
Hedgerows and Scrub (please note that although scrub has not been classified as a Suffolk Priority Habitat, due to its very high biodiversity value and importance for many priority species it has been grouped together with hedgerows).	1	• Key habitats for the AONB's flagship species (Hazel Dormouse) • 63% of all Tier 1 and Tier 2 Priority Species benefit from scrub in the mix of habitats of available to them (yellowhammer, turtle dove, hazel dormouse, common lizard, harvest mouse, grey partridge, barn owl, common toad, hedgehog, grass snake, adder and stag beetle). • Hedgerows and scrub are particularly important in terms of improving connectivity between habitats.
Rivers and Streams	1	• 3 core rivers in the River Stour catchment dissect their way through the DV AONB providing ample opportunity for habitat enhancement projects. • Rivers and streams are extremely important corridors for wildlife where they connect habitat along their course. • They have the potential to be one of our richest freshwater habitats in terms of biodiversity that depend on permanent running water. • Important habitat for five Tier 1 and 2 Priority Species (european eel, water vole, grass snake, black poplar and common toad)
Mixed Deciduous Woodland (inc. Wet Woodland)	1	• Key habitat for the DV AONB's flagship species (Hazel Dormouse) • To ensure the DV AONB helps the NAAONB meet its national target of planting (or allowing to regenerate) 36,000ha of new woodland by 2030. • Woodlands provide rich food sources for an array of wildlife. Deadwood is a vital habitat for an abundance of insect and fungi spp. • Important habitat for three Tier 1 and 2 Priority Species (yellowhammer, hazel dormouse and stag beetle).
Floodplain Grazing Marsh	1	• Significant benefits in terms of ecosystem services such as flood prevention and carbon sequestration. • Particularly important for breeding waders and flocks of wintering birds. • Important habitat for five Tier 1 and 2 Priority Species (yellow wagtail, skylark, lapwing, barn owl and water vole).
Arable Field Margins	2	• Most of the land in the Dedham Vale is agricultural, with the majority of land used for arable crops and bare fallow. • Up to 75% of the biodiversity within an arable field is found in the margins, regardless of the farming practice (SBIS 2023$_6$). • They provide nesting sites, hunting areas, overwintering habitat for insects and attract pollinators (SBIS 2023$_6$). • Important refuges for wildlife including rare arable plants. • Important habitat for ten Tier 1 and 2 Priority Species (grey partridge, yellow wagtail, turtle dove,

			skylark, yellowhammer, barn owl, harvest mouse, hedgehog, common toad, stag beetle)
Lowland Meadows	2	•	Species rich habitat with significant opportunity in the DV AONB to enhance existing lowland meadows and create new ones.
		•	Extremely important habitat that provides a source of pollen and nectar for a diverse range of pollinating insects. These invertebrates provide food for higher organisms such as bats, small mammals and birds (SBIS 2023$_6$).
		•	Important habitat for nine Priority 1 and 2 species (grey partridge, yellow wagtail, lapwing, skylark, yellowhammer, barn owl, harvest mouse, hedgehog and grass snake).
Ponds	2	•	Ponds are important 'steppingstones' of connecting habitat.
		•	Ponds support two-thirds of all freshwater species.
		•	Ponds are particularly important for invertebrates, dragonflies / damselflies and amphibians (SBIS 2023$_6$).
		•	Important habitat for five Priority 1 and 2 species (common toad, turtle dove, water vole, European eel and grass snake)
Wood Pasture and Parkland	3	•	A prevalent habitat within the DV AONB with opportunities for habitat creation.
		•	Important habitat for wide range of invertebrates, birds (especially hole-nesting), mammals and plants.
		•	A symbolic habitat of the DV AONB which forms part of a managed landscape created by traditional farming practices.
		•	Important habitat for three Priority 1 and 2 species (turtle dove, barn owl and stag beetle).
Traditional Orchards	3	•	These habitats have often escaped agricultural intensification and are important refuges for a wide range of wildlife (Anon 2010$_7$).
		•	Within orchards, usually the most important habitat for wildlife is the old fruit trees, however they often contain associated habitats including scrub, hedgerows, unimproved grassland, fallen dead wood, ponds and dykes (Anon 2010$_7$).
		•	Important habitat for eight Priority 1 and 2 species (turtle dove, hazel dormouse, harvest mouse, hedgehog, common lizard, grass snake, common toad, stag beetle).
Lowland Fens	3	•	Lowland fen is a 'super' habitat in terms of the diversity of species that they support. A third of all plant species native to the UK along with half of all dragonfly species are found in this habitat.
		•	They support many marshland flowers, thousands of invertebrate species as well as a large number of aquatic beetles (SBIS 2023$_6$).
		•	They are an important habitat for two Priority 2 species (swift and black poplar).
Lowland Dry Acid Grassland	3	•	The tussocky vegetation and bare ground support a wide range of invertebrates including grasshoppers, solitary wasps and butterflies.

		• Important habitat for five Priority 1 and 2 species (skylark, yellowhammer, common lizard, grass snake, common toad).

Priority Species

The Hazel Dormouse (*Muscardinus avellanarius*) has been selected as the Flagship Species to represent the DV AONB. The Hazel Dormouse was democratically selected by conservation partners for a variety of different reasons. Within the DV AONB there remains several significant scattered populations of the hazel dormouse found in a healthy network of hedgerows and well-connected vigorous patches of scrub. The dormouse has declined significantly in the last 100 years, so much so they are now defined on the IUCN red list as a species that is vulnerable to extinction in Britain. In addition to the selection of the flagship species an additional 40 species have been prioritised within the DV AONB Nature Recovery Plan. The priority species have been grouped into three tiers which will determine the level of attention the species receive. The species were selected based on consultation with key environmental partners. The priority species are shown below in Figure 16. In order to align priorities with the Stour Valley Farmer Cluster group (whose constituents farm 4/5 of the land in the DV AONB) the DV AONB has identified a number of shared priority species where that is appropriate. It is hoped that this collective approach to species recovery will lead to more significant gains. The shared priority species are shown in bold below.

Figure 16: Table Showing the Nature Recovery Plan Priority Species

Tier 1 (Highest level of importance)			
FLAGSHIP SPECIES: Hazel Dormouse (*Muscardinus avellanarius*)	Yellowhammer (*Emberiza citrinella*)	**Stag Beetle (*Lucanus cervus*)**	Skylark (*Alauda arvensis*)
Harvest Mouse (*Micromys minutus*)	**Grey Partridge (*Perdix perdix*)**	**Lapwing (*Vanellus vanellus*)**	Turtle Dove (*Streptopelia turtur*)
European Eel (*Anguilla anguilla*)	**Hedgehog (*Erinaceus europaeus*)**	**Water Vole (*Arvicola amphibius*)**	Common Lizard (*Zootoca vivipara*)
Tier 2 (Medium Level)			
Grass Snake (*Natrix natrix*)	Adder (*Vipera berus*)	**Swift (*Apus apus*)**	**Black Poplar (*Populus nigra*)**
Barn Owl (*Tyto alba*)	**Yellow Wagtail (*Motacilla flava*)**	Common Toad (*Bufo bufo*)	
Tier 3 (Lowest Level)			
Brown Hare (*Lepus europaeus*), Spotted Flycatcher (*Muscicapa striata*), slow worm (*Anguis fragilis*), sea trout (*Salmo trutta*), white clawed crayfish (*Austropotamobius pallipes*), reed bunting (*Emberiza schoeniclus*), polecat (*Mustela putorius*), nightjar (*Caprimulgus europaeus),* corn bunting (*Emberiza calandra*), crested cow wheat (*Melampyrum cristatum*), white letter hairstreak (*Satyrium w-album*), bullfinch (*Pyrrhula pyrrhula*), tree sparrow (*Passer montanus*), soprano pipistrelle (*Pipistrellus pygmaeus*), large garden bumblebee (*Bombus ruderatus*), cuckoo (*Cuculus canorus*), willow tit (*Poecile montanus*), nightingale (*Luscinia megarhynchos*), house sparrow (*Passer domesticus*), annual knawel (*Scleranthus annuus*), great crested newt (*Triturus cristatus*), song thrush (*Turdus philomelos*).			

The core reasons why the Tier 1 priority species were selected are highlighted in Figure 17 on page 15.

Priority Species	Main Reasons for Selection
Hazel Dormouse (*Muscardinus avellanarius*)	- Within the DV AONB there remains several significant scattered populations of the hazel dormouse found in a healthy network of hedgerows and well connected vigorous patches of scrub. - The dormouse has declined significantly in the last 100 years, so much so they are now defined on the IUCN red list as a species that is vulnerable to extinction in Britain. - There is recent evidence from the National Dormouse Monitoring Programme that the decline is accelerating and an analysis of the dataset published in 2017 indicates that the Hazel Dormouse has suffered a 72% population crash since 1993 and the decline is still ongoing. - It would be extremely concerning to lose the dormouse because they act as an umbrella species. Where dormice thrive so do a host of other species inhabiting similar habitats. For example, the Nightingale (Luscinia megarthynchos) also need scrub and coppiced woodland habitats. Farmland birds such as Yellowhammers breed in the dense hedges and invertebrates such as the White Admiral butterfly benefit (Limenitis Camilla) from the honeysuckle that grows in the dormouse's favourite habitats. - It is not too late to help the Hazel Dormouse and there are several actions that can be taken to turnaround their fortunes such as sensitive woodland management to help reinstate an uneven aged structure to the woodland shrub layer. In addition, allowing scrubby corners to develop will increase their habitat availability and new species rich hedgerows planted in strategic locations will help to re-connect the landscape for the benefit of dormice and many other species.
Yellowhammer (*Emberiza citrinella*)	- The yellowhammer is emblematic of the most dominant habitat types in the DV AONB such as farmland, grassland, woodland edge and hedgerows. - They are one of the most physically prominent members of the farmland wildlife community and members of the public have a very good chance of seeing them throughout the year. - They have experienced a significant population decline since the second half of the 20th century which is a trend that has continued since 2000. BTO surveys indicate that over half the UKs population was lost between 1966 and 2000 with a further 25% reduction through to 2019. They have been a red-listed bird of conservation concern since 2002. - The multiple reasons for yellowhammer decline are well understood. The reasons include high frequency and intensity of pesticide applications which reduce the invertebrates that are the primary food source for the nestlings. Wide field margins and precision application both help to reduce this collateral damage. Also, the significant increase in post-harvest sowing of arable crops that has removed the opportunities for feeding on winter stubbles and reduced the survival rates particularly of inexperienced juveniles. Field margins sown with wild bird and pollinator cover are good replacements for lost stubble fields and direct provision of supplementary seed can be really effective in supporting large numbers of yellowhammers and other species through harsher winter weather conditions. Poor yellowhammer

	productivity has also been linked to late summer broods which can be compromised by hedgerow and field management carried out before the young have fledged. Practices that encourage tall, broad based hedgerows behind wide margins make success of these late broods much more likely.
Stag Beetle (*Lucanus cervus*)	• An iconic species demonstrated by the spectacular, charismatic male which is easily recognised by the general public. • The Dedham Vale is a stronghold for the species – there are notable records for them in Flatford and locations all along the Stour Valley. However, their populations are vulnerable because they occur in metapopulations and have very poor dispersal capabilities. • The reasons for their decline are well understood including loss of habitat such as the removal of tree stumps, logs and deadwood in addition to their vulnerability to road traffic and tidy gardeners. • Solutions to help stag beetles are also widely known too and are achievable including educating people about the non-removal of trees and deadwood, the importance of planting new trees and hedgerows; creating log piles and stag beetle pyramids (using broadleaved tree species). • The stag beetle has the potential to be a flagship species to represent the whole insect group and raise awareness about the catastrophic decline of pollinators and other insects.
Skylark (*Alauda arvensis*)	• An iconic species that is known and loved by the general public – synonymous with British summertime. • They are a farmland bird that is widely distributed throughout the DV AONB and they take up residence in many of the key habitats the Dedham Vale has to offer. • It is a red-listed bird that has experienced catastrophic declines. • Extensive research has been carried out into understanding the reasons for skylark decline and the measures required to halt this are well documented such as skylark plots, beetle banks and uncropped margins. • Conservation of the skylark has knock on positive benefits for a number of other bird species such as the yellow wagtail, yellowhammer and lapwing. Therefore, the skylark can act as the spearhead of a DV AONB farmland assemblage. • There is potential in the long-term to help skylark adapt to urban and semi-urban environments. There are examples now of skylarks breeding on green roofs.
Grey Partridge (*Perdix perdix*)	• Iconic species that has experienced a steep rate of decline of 64% in the 23 years between 1995 to 2018. • They were previously an abundant species in the DV AONB which used to harbour plenty of suitable farmland habitats to support them. Therefore, it is hoped through sensitive regenerative farming techniques grey partridge numbers can be restored. • The headlands, hedgerows, grassy margins and scrub habitats that are crucial for sustaining healthy populations of grey partridge also provide vital refuges for an abundance of pollinators, other animals and plants.
Lapwing (*Vanellus vanellus*)	• Used to be present in the AONB in much larger numbers compared to more recent times. A red-listed species whose UK population has declined by 55% since 1967. With the creation of suitable habitats lapwing numbers could be restored. In the east at Cattawade Marshes there is an existing healthy breeding

	population of lapwing which could be boosted on adjacent grazing marsh. • In keeping with many of the other selected priority species it is well known how to reverse the decline of the lapwing. It is essential to create more wet features in grazing marsh and more wet edge habitats to encourage invertebrates which are essential for lapwings to feed their chicks. Adopting grazing regimes which are appropriate for lapwings is essential to ensure the grass sward is short enough to nest in. Also, by using cattle to create a varied sward height will also benefit other species of bird such as the redshank that likes to nest in grassy tussocks. • There are huge carbon sequestering capabilities in two of the lapwings' favourite habitats (grazing marsh and wet grassland). • They are a charismatic species, widely recognised and loved by the general public.
Turtle Dove (*Streptopelia turtur*)	• Alarming rate of decline in the UK (93% since the 1970s). Help is urgently required to help maintain and restore breeding populations in the AONB and in Suffolk and Essex. • The conservation work for turtle doves will benefit several habitats including woodland edge, scrub, hedgerows, arable field margins and ponds which in turn will benefit a significant portion of all the AONB Nature Recovery Plan Priority Species. • Charismatic, well known and loved by people from many backgrounds and there is currently targeted action to help them going on in the DV AONB.
Hedgehog (*Erinaceus europaeus*)	• Classified as vulnerable to extinction. Experienced a huge UK wide population decline from around 30 million in the 1950s to only 1 million in 2020. It's estimated in the last 20 years the UKs hedgehog population has declined by over half in rural areas and a 1/3 in urban settings. • There are plentiful habitats (such as scrub, woodland, gardens, parks and cemeteries) in the Dedham Vale suitable for hedgehogs which can be enhanced through educational work. • A species which is well loved by many people with ample opportunities to promote their conservation to schools, youth organisations, community groups, allotment holders and families.
European Eel (*Anguilla anguilla*)	• Catastrophic rate of decline (95% in last 25 years) – on the cusp of extinction in the UK. Huge declines since the 1940s mainly due to overfishing, pollution and parasites. Knock on impacts for bird and animal species dependent upon them. • Using the migration pattern of an eel from source to where it migrates to in the DV AONB is a perfect education tool to teach people about migration. The barriers to migration can be used as educational implements to highlight the issues they face to the public. It is a fantastic species in which to engage school children and members of the public through campaigns such as World Fish Migration Day. • Historical links locally with the Dedham Vale AONB - for example Victorians trapping them in Dedham. They are also a historical species of lowland Britain and the Netherlands which are engrained in people's psyche. • Key migratory species which is a symbol of the success of the measures that are put in place to mitigate the induced environmental harm. • The eel is an excellent indicator of the health of the environment and river habitats.

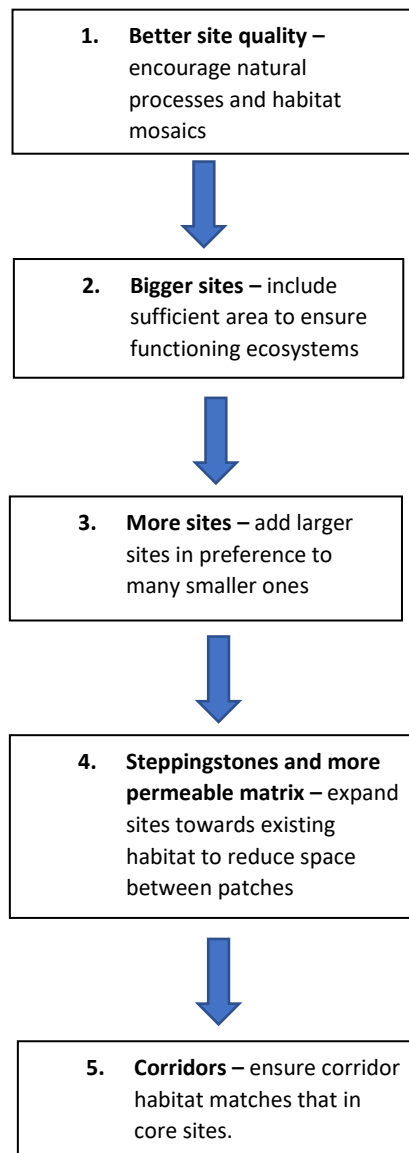|	
	• A species with huge citizen science potential including mophead surveys, pond dipping and elver counts. • The solutions are known how to reduce the issues that the eels face including opening pathways such as blocked ditches, creating new off channel refuges, creating eel passes.
Water Vole (*Arvicola amphibius*)	• Experienced a rapid widespread rate of decline in the UK and the DV AONB. By the end of the 1990's it was recorded as the UKs fastest declining mammal. • They are fascinating animals which are visible and can be observed in the wild by visitors to the AONB. • Mini-ecosystem engineers that create micro-habitats through their burrowing habits and pathways through bankside vegetation. • They are the canary in the coalmine for good wildlife habitats on our rivers, streams, ponds and lakes. Habitats that are suitable for water vole are suitable for a whole range of other species. • The reasons why they are declining is well known and understood therefore with the right funding availability it should be possible to reverse their decline. The AONB is also well placed within the Waterlife Recovery East regional project area which is bringing about nationally significant long-term mink control impacts. • There are currently fragmented populations of water voles in the DV AONB that can recover alongside the tools to make that recovery a possibility.

Nature Recovery Core Principles

The key principles that have been used to develop and guide the creation of the DV AONB Nature Recovery Plan are based on the ecological rules of thumb that were described in the Nature Networks Evidence Handbook produced by Natural England in 2020[3]. A hierarchy of priority actions has been incorporated into the Nature Recovery Plan and will be adhered to throughout the duration of all future nature recovery work. The hierarchy of priority actions are listed below.

a. Improve core wildlife sites
b. Increase the size of core sites
c. Increase the number of core sites
d. Improve the 'permeability' of the surrounding landscape for the movement of wildlife
e. Create corridors of connecting habitat

The importance of these core principles in nature recovery were highlighted by John Lawton in his Making Space for Nature Report in 2010[4].

Figure 18: Nature Recovery Plan Priority Hierarchy - Based on Lawton's principles (Lawton *et* al, 2010[3])

1. **Better site quality –** encourage natural processes and habitat mosaics

↓

2. **Bigger sites –** include sufficient area to ensure functioning ecosystems

↓

3. **More sites –** add larger sites in preference to many smaller ones

↓

4. **Steppingstones and more permeable matrix –** expand sites towards existing habitat to reduce space between patches

↓

5. **Corridors –** ensure corridor habitat matches that in core sites.

The highest priority objective in the Nature Recovery Plan is to enhance and protect existing wildlife rich sites. Nine Nature Recovery Core Zones have been identified as the areas within the Dedham Vale AONB with the largest expanses of connected wildlife rich sites. The protection of these Nature Recovery Core Zones against deterioration in quality is of paramount importance and has been given the highest ranked level of importance within the Nature Recovery Plan. Secondly, opportunities for enhancing (improving the condition of) these sites will be identified and carried out, followed by seeking opportunities for increasing the size of these existing wildlife rich sites. Thirdly, opportunities for connecting wildlife habitats will be explored (both within the Nature Recovery Core Zones and to adjacent land outside) such as through the creation of habitat corridors and 'steppingstones'. This approach is in line with advice given in Natural England's Founding a Nature Recovery Network document (Anon 2020[5]) that states that 'the rationale for a Nature Recovery Network is that, if we are to reverse wildlife declines, we need not only to continue to conserve and improve our best wildlife sites, but also to expand our resource of wildlife-rich habitat outside the protected site series in a resilient and growing network of spaces for nature. Bigger core zones help to ensure that species have sufficient habitat and habitat diversity for their needs. Bigger areas along with buffer zones, can reduce the impact of outside pressures and provide better conditions for nature through making space for natural

processes. Many areas are currently in a degraded condition, so it is important to make such sites better to improve habitat quality, with more variation in structure to accommodate more species and help them cope with pressures such as climate change. Connectivity also needs to improve by joining up isolated areas, such as through the provision of habitat steppingstones and corridors in the landscape, to increase the chances for species to disperse between habitat patches and colonise new ones'.

Key Nature Recovery Plan Aspirations

Figure 19: Table Showing the Key Nature Recovery Plan Aspirations

Aspiration	Description
To establish a nature recovery working group for the Dedham Vale AONB	This will involve the formation of an action group focussed on the nine nature recovery core zones. This will consist of environmental partners with an active interest in the NRCZs along with landowners that own land within the NRCZs and on land adjacent to them.
To move all units making up SSSI designated sites in the AONB into favourable condition by 2030.	Currently the AONB contains two SSSI's (Arger Fen and Cattawade Marshes) totalling 138.94 ha. 65.34 ha are classed as being in Favourable condition (47.03%) and 73.60 ha are classed as Unfavourable Recovering.
To increase the size of all nine nature recovery core zones resulting in the creation and restoration of 470 ha of wildlife habitats.	In order to achieve the AONB's contributory target towards the NAAONB's ambition to create and restore 100,000 ha of wildlife rich habitat outside of protected sites the AONB has set the target of 470 hectares. Land adjacent to the NRCZs and land between them will be targeted for this habitat creation and restoration work.
To create 169 hectares of new mixed native species deciduous woodland in the AONB.	The planting / natural regeneration of woodland will follow the principle of the right tree in the right place. Opportunities for woodland creation will be focussed on land in and around the nine NRCZs. Particular attention will be given to the three woodland NRCZs (Arger Fen & Tiger Hill, Boxted and Polstead) and opportunities to better connect the NRCZs together through woodland corridors and steppingstones of copse habitat will be explored (where appropriate).
Dedham Vale Connections: To better connect the nine NRCZs by creating habitat corridors and steppingstones between them.	A long-term nature recovery aspiration is to explore the potential to connect the nine NRCZs through the creation of wildlife corridors and steppingstones between them. This aspiration in combination with the ambition to connect the DV AONB NRCZs with the Coast & Heaths AONB NRCZs in addition with connecting the northern tip of the Coast & Heaths AONB with the Norfolk Broads would result in a connected expanse of wildlife rich sites 100km in length.
To establish a Wildlife Friendly Village	East Bergholt will be set up to act as a pilot scheme with the long-term ambition of replicating successful elements of it to other villages throughout the AONB and on the border.

To explore potential species re-introduction opportunities	The aspiration to explore opportunities for species re-introductions was popular amongst consultees although it's clear that a cautious approach should be adopted, and a greater focus will be placed upon enhancing and creating habitats that support a wide range of extant species.

Delivery – Nature Recovery Funding Opportunities

The NRCZs shown on page 5 are intended to provide a blueprint to target investment through FiPL (Farming in Protected Landscapes) and other funding mechanisms. The table below shows the main sources of funding that will be used to fund nature recovery projects in the nine NRCZs and on land adjacent to them between 2021 – 2030.

Figure 20: Table Showing Nature Recovery Funding Sources

Funding Scheme	Expected Timeframe	Nature Recovery Opportunities
New Countryside Stewardship agreements and Capital Grants (Higher and Mid-Tier, Wildlife offers and Capital Grants)	2021 – 2023	• Hedgerow and water quality improvements • Facilitation Fund to help groups of farmers work together.
Forestry Commission Incentives	2021 – TBC	• Woodland Creation
Farming in Protected Landscapes	2021 – 2024	• Multiple
Tree Health Pilot	2021 – 2024	• Felling and treatment of diseased trees. • Restocking following felling
ELM: Tests and Trials	2018 – 2024 and beyond	• Establishing cross border farmer clusters
ELM: Sustainable Farming Incentive	2024 – ongoing	• Multiple
ELM: Local Nature Recovery	2024 – ongoing	• Landscape and ecosystem recovery
Biodiversity Net Gain	2023 - ongoing	• Minimum 10% biodiversity net gain required on all new developments.
Natural England Biodiversity Credits Scheme	TBC	• Habitat creation off site from developments.
Habitat Banks	2023 - ongoing	• Landscape scale habitat creation.
Essex and Suffolk Water Branch Out Fund	Ongoing	• WFD catchment scale.
Essex and Suffolk Water Branch Out Priority Fund	Ongoing	• Creation and restoration of priority habitats
Essex and Suffolk Water Branch Out Invasive Non-Native Species Fund	Ongoing	• Control and monitoring of INNS.
Anglian Water Invasive Species Fund	Ongoing	• Control and monitoring of INNS.
Anglian Water Flourishing Environment Fund	Ongoing	• Priority habitat creation and enhancement and

		• priority species recovery projects.
Water Environment Improvement Fund	Ongoing	• WFD
Esmee Fairbairn Foundation Environment Fund	Ongoing	• Priority species projects targeted at less charismatic species. • Projects focussed on engaging with urban groups. • Landscape scale and marine recovery.
The Natural Environment Investment Readiness Fund	Ongoing	• Woodland creation • Saltmarsh creation and restoration • NFM
The Woodland Carbon Guarantee	Ongoing	• Woodland Creation
Nature for Climate Fund	2021 – 2025	• Woodland Creation • NFM
Carbon Footprint	Ongoing	• Tree planting • Pond creation • Priority Species Recovery
Forest Carbon	Ongoing	• Woodland Creation • NFM
Galloper Wind Farm Fund	Ongoing	• Conservation of biodiversity and lessen fragmentation of habitats
AONB Amenity and Accessibility Fund	Ongoing	• Conservation of landscape character & biodiversity
Woodland Trust MOREhedges	Ongoing	• Creating new hedgerow habitat • Connectivity
Woodland Trust Free Trees for Schools and Communities	Ongoing	• Hedgerow creation • Connectivity • Orchard creation • Small woodland creation
Woodland Trust MOREwoods & Community Woods	Ongoing	• Woodland creation
Green Recovery Challenge Fund	TBC	• Multiple
National Lottery Grants for Heritage	Ongoing	• Landscape scale and species recovery • Urban nature recovery

Monitoring and Evaluation

The effectiveness of the Nature Recovery Plan will be reviewed annually using outputs (immediate results), outcomes (short-medium term results every 1-3 years) and impacts (longer term results achieved after 3 years) with set targets to measure the success against and assess whether the plan is keeping on track. The targets will be adjusted if necessary if they are found to be over ambitious or too conservative.

Figure 21: Table Showing Annual Nature Recovery Targets Between 2021 to 2030

Target: The restoration of 15 hectares of semi-ancient natural woodland within and connected to Core Zones A, E, F, G, H, I								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
1.67ha	3.34ha	5.01ha	6.68ha	8.35ha	10.02ha	11.69ha	13.36ha	**15ha**
Target: The restoration and creation of 20ha of reedbed within and connected to Core Zones G.								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
2.22ha	4.44ha	6.66ha	8.88ha	11.10ha	13.32ha	15.54ha	17.76ha	**20ha**
Target: The restoration and creation of 40ha of lowland meadows within and connected to Core Zones A-I by 2030								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
4.44ha	8.89ha	13.33ha	17.77ha	22.21ha	26.65ha	31.09ha	35.53ha	40ha
Target: The creation of 130ha of scrub habitat (natural regeneration) within and connected to Core Zones A-I								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
14.44ha	28.88ha	43.32ha	57.76ha	72.20ha	86.64ha	101.08ha	115.52ha	**130ha**
Target: The creation of 55km of hedgerows within and connected to Core Zones A-I								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
6.11km	12.22km	18.33km	24.44km	30.55km	36.66km	42.77km	48.88km	**55km**
Target: The creation of 205 ponds within the Dedham Vale AONB by 2030								
21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
23	46	69	92	115	138	161	184	205
Target: The creation of 169ha hectares of mixed deciduous woodland within and connected to Core Zones A-G and the Extension Zone by 2030.								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
18.77ha	37.56ha	56.33ha	75.10ha	93.87ha	112.64ha	131.41ha	150.18ha	**169ha**
Target: The creation and/or restoration of 40 hectares of lowland acid grassland within and connected to Core Zones B,C,D & E by 2030.								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
4.44ha	8.88ha	13.32ha	17.76ha	22.20ha	26.64ha	31.08ha	35.52ha	**40ha**
Target: The creation and/or restoration of 60 hectares of wood pasture and parkland within and connected to Core Zones B & G by 2030.								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
6.67ha	13.34ha	20.01ha	26.68ha	33.35ha	40.02ha	46.69ha	53.36ha	**60ha**
Target: The installation of 1,500 swift boxes and 250 swift callers on high buildings throughout the AONB by 2030 (only box targets shown below).								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
167	334	501	668	835	1,002	1,169	1,336	**1,500**
Target: The creation of 50 stag beetle pyramids throughout the AONB by 2030.								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
6	12	18	24	30	36	42	48	**50**
Target: The creation and distribution of 200 hedgehog homes in towns and villages within and connected to the AONB by 2030.								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
22	44	66	88	110	132	156	178	**200**
Target: To encourage and provide advice to at least 50 landowners on how to reduce the burning of dead wood and brash on their land by at least 30% by the end of 2030.								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
6	12	18	24	30	36	42	48	**50**
Target: The creation of 250 grass snake habitat piles throughout the AONB by the end of 2030.								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
28	56	84	112	140	168	196	224	**250**
Target: The creation of 250 toad shelters throughout the AONB by the end of 2030.								
21/22	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**
28	56	84	112	140	168	196	224	**250**

Enhanced Engagement in the AONB

In order to ensure the AONB communicates effectively with the widest audience as possible including hard to reach groups about nature recovery, the AONB Communications Strategy 2021 – 2022 (and beyond) will be adhered to. The main objectives of the Communications Strategy are outlined below:

- Raise awareness of the AONBs, role, purpose, and objectives.

- Engage with new audiences to reach beyond traditional demographics.

- Expand the range of mobile-friendly, digital, and online communications to reduce reliance on print media.

- Increase the diversity, accessibility, and inclusivity of the AONBs.

- Build relationships with partners, key organisations, and community groups to collaborate and support campaigns where key messages align.

- Adopt a strategic and analytical approach to measure the effectiveness of communications activities.

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