2023 No. 91

ENVIRONMENTAL PROTECTION, ENGLAND

The Environmental Targets (Biodiversity) (England) Regulations 2023

Made - - -

Coming into force

29th January 202330th January 2023

The Secretary of State makes these Regulations in exercise of the powers conferred by sections 1, 3, 6(1) and 143(1) of the Environment Act $2021(\mathbf{a})$ ("the 2021 Act").

In accordance with section 3(4) of the 2021 Act, the Secretary of State is satisfied that meeting the species abundance target referred to in regulation 11 will halt a decline in the abundance of species.

In accordance with section 4(1) and (2) of the 2021 Act, the Secretary of State has sought advice from persons the Secretary of State considers to be independent and to have relevant expertise, and is satisfied that the targets in these Regulations can be met.

In accordance with sections 4(8) and 143(5)(b) of the 2021 Act, a draft of these Regulations has been laid before, and approved by resolution of, each House of Parliament.

PART 1

Introduction

Citation, commencement, extent and application

1.—(1) These Regulations may be cited as the Environmental Targets (Biodiversity) (England) Regulations 2023.

(2) These Regulations come into force on the day after the day on which they are made.

(3) These Regulations extend to England and Wales but apply in relation to England only, including the territorial sea adjacent to England.

Interpretation

2. In these Regulations—

"the 2021 Act" means the Environment Act 2021;

"the 2022 Red List Index for England" means the document entitled "Outcome Indicator Framework for England's 25 Year Environment Plan: D5 Conservation status of our native species, Data Sheet 2022 (NERR124)" published by Natural England in October 2022(**a**);

"native species" means species which naturally occur or have in the past naturally occurred in England, and include—

- (a) regularly occurring migratory species (both breeding and non-breeding) and natural colonists; and
- (b) species that have been reintroduced in England following past extinction;

"natural colonists" means species that arrived in England of their own accord and have become established, including those that become migratory species;

"species" includes ranks below and above species level, where these are listed-

- (a) for the purposes of Part 2 of these Regulations, in the 2022 Red List Index for England; or
- (b) for the purposes of Part 4 of these Regulations, in Schedule 2.

Biodiversity targets

3.—(1) Regulations 4, 7 and 14 specify targets for the purposes of the Secretary of State's duty in section 1 of the 2021 Act to set a long-term target in respect of biodiversity.

(2) Regulation 11 specifies a target for the purposes of the Secretary of State's duty in section 3 of the 2021 Act to set a target in respect of a matter relating to the abundance of species.

PART 2

Long-term biodiversity target: species' extinction risk

Species' extinction risk target

4. The long-term biodiversity target for species' extinction risk is to reduce the risk of species' extinction by 2042, when compared to the risk of species' extinction in 2022.

Measurement of species' extinction risk target

5.—(1) The target in regulation 4 is met by 31st December 2042 if the extinction risk value for 2042 calculated in accordance with paragraph (2) has a greater value than the baseline value, with the extinction risk value for 2042 and the baseline value being expressed as values in a range from 1 to 0 where—

- (a) a value of 1 would indicate that all baseline species were of Least Concern; and
- (b) a value of 0 would indicate that all baseline species were Regionally Extinct.

(2) The Secretary of State must ensure that an extinction risk value for 2042 is calculated in 2042 using the same methodology that was used to calculate the baseline value(\mathbf{b}), to indicate the aggregate risk of extinction for all baseline species at the time of its calculation.

(3) In this regulation—

"baseline species" means a species listed in the 2022 Red List Index for England;

⁽a) The 2022 Red List Index for England may be found at http://publications.naturalengland.org.uk/publication/6315201438941184. A printed copy of the 2022 Red List Index for England may be obtained from Natural England, County Hall, Spetchley Road, Worcester WR5 2NP.

⁽b) An explanation of how the 2022 Red List Index for England is calculated can be found in the document named "Outcome Indicator Framework for England's 25 Year Environment Plan: D5 Conservation status of our native species – Technical background document for D5 Conservation status of our native species" published in October 2022, which can be found online at http://publications.naturalengland.org.uk/publication/6315201438941184. A printed copy of this document may be obtained from Natural England, County Hall, Spetchley Road, Worcester WR5 2NP.

"the baseline value" means the value of 0.9070, being the value set out in the 2022 Red List Index for England to indicate the aggregate risk of extinction for all baseline species.

- (4) In this regulation—
 - (a) a species is considered to be of Least Concern when it is classified as such for the purposes of calculating the 2022 Red List Index for England;
 - (b) a species is Regionally Extinct when it is classified as such for the purposes of calculating the 2022 Red List Index for England.

Reporting date for the species' extinction risk target

6. For the purposes of section 6(1) of the 2021 Act (environmental targets: reporting duties), the reporting date for the target in regulation 4 is 1st July 2043.

PART 3

Long-term biodiversity target: wildlife-rich habitat restoration or creation

Wildlife-rich habitat restoration or creation target

7. The long-term biodiversity target for the restoration or creation of wildlife-rich habitat is that on or after the day these Regulations come into force, in excess of 500,000 hectares of a range of wildlife-rich habitats are to be restored or created by 31st December 2042.

Measurement of the habitat restoration or creation target

8.—(1) In order to measure the area of wildlife-rich habitat which is restored or created, the Secretary of State must obtain information about action that has been or is being undertaken in order to restore or create the wildlife-rich habitat on or after the day on which these Regulations come into force, including information about—

- (a) the location of the action;
- (b) the size of the area intended to become wildlife-rich habitat;
- (c) the type of wildlife-rich habitat that is being restored or created.

(2) The Secretary of State must keep a record of the information obtained under paragraph (1).

(3) For the purposes of this Part, habitat is restored or will be restored when appropriate action has been or is being taken to improve the condition of relict or degraded habitat which might reasonably be expected to lead to an expansion of the wildlife-rich habitat there, but excluding such action taken—

- (a) on protected sites; or
- (b) for the purpose of replacing habitat that has been lost on or after the day these Regulations come into force.

(4) For the purposes of this Part, habitat is created or will be created when appropriate action has been or is being taken to establish wildlife-rich habitat on land, or water, excluding such action taken—

- (a) on protected sites; or
- (b) for the purpose of replacing habitat that has been lost on or after the day these Regulations come into force.
- (5) In paragraphs (3) and (4) "appropriate action" includes action—
 - (a) to develop one or more specific wildlife-rich habitat types; or
 - (b) to allow a dynamic mosaic of wildlife-rich habitats to develop through the restoration of natural processes and ecosystems.

Reporting date for the wildlife-rich habitat restoration or creation target

9. For the purposes of section 6(1) of the 2021 Act, the reporting date for the target in regulation 7 is 1st December 2043.

Interpretation of Part 3

10. In this Part—

"baseline" means the baseline from which the breadth of the territorial sea is measured;

"European site" has the meaning given in regulation 8 of the Conservation of Habitats and Species Regulations 2017(**a**) (European sites and European marine sites);

"marine conservation zone" means an area designated as a marine conservation zone under section 116(1) of the Marine and Coastal Access Act 2009(**b**) (marine conservation zones);

"nautical mile" means an international nautical mile of 1,852 metres;

a "protected site" means a site which is—

- (a) a European site;
- (b) a site of special scientific interest; or
- (c) a marine conservation zone,

on or before the day these Regulations come into force, to the extent that the site is situated wholly or partly in England or in its waters;

"site of special scientific interest" means an area notified under section 28(1) of the Wildlife and Countryside Act 1981(c) (sites of special scientific interest);

"territorial sea" means such of the territorial sea of the United Kingdom that is adjacent to England;

"water" and "waters", in relation to England only, means all waters, including, in the case of the sea, the area of the sea and the seabed below that area of the sea which is on the landward side of a line every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline;

"wildlife-rich habitat" means a habitat that is one of the following types of habitat and which is of sufficient quality that it is, or will be, capable of supporting flora and fauna which are typically found in the habitat in question—

- (a) a habitat type of principal importance for the conservation of biodiversity listed by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006(d) (biodiversity lists and action (England));
- (b) another habitat type listed in Schedule 1.

⁽a) S.I. 2017/1012, as amended by S.I. 2019/579.

⁽b) 2009 c. 23. There are amendments of section 116, but none is relevant.

⁽c) 1981 c. 69. Section 28(1) was amended by section 105(1) of, and paragraph 79 of Schedule 11 to, the Natural Environment and Rural Communities Act 2006 (c. 16) and by section 148 of, and paragraph 2(1) and (2) of Schedule 13 to, the Marine and Coastal Access Act 2009 (c. 23).

⁽d) 2006 c.16. Section 41 is amended by section 102(8) of the 2021 Act. The list published by the Secretary of State in accordance with section 41 can be found in the document entitled "List of habitats and species of principal importance in England" published on 8th September 2022 and updated on 29th November 2022. This document can be found online at https://www.gov.uk/government/publications/habitats-and-species-of-principal-importance-in-england . A printed copy of this document may be obtained from the Department for the Environment, Food and Rural Affairs, Seacole Building, 2 Marsham Street, London SW1P 4DF.

PART 4

Targets relating to the abundance of species

CHAPTER 1

2030 Species abundance target

2030 species abundance target

11.—(1) The 2030 species abundance target is that the overall relative species abundance index on the specified date indicates that the decline in the abundance of species has been halted.

(2) The specified date for the 2030 species abundance target described in paragraph (1) is 31st December 2030.

Measurement of 2030 species abundance target

12.—(1) The 2030 species abundance target is to be measured by calculating the difference between the overall relative species abundance index for the years 2029 and 2030 in order to establish whether the overall relative species abundance index for the year 2030 is the same as, or higher than, the overall relative species abundance index for the year 2029.

(2) The overall relative species abundance index for a year is derived from the calculation of the geometric mean of the relative species abundance indices for every species listed in Schedule 2 for that year, which is smoothed to reduce the impact of between-year fluctuations in data collected over time.

(3) The same methodology must be used to determine the overall relative species abundance index for each year.

(4) In this regulation—

"baseline index" means the index value of 100 for any species in the first year that it is included in that relative species abundance index;

"geometric mean" means a mathematical process where a series of numbers are multiplied together and then the "n"th root of the product is calculated, where "n" is equal to the length of the series;

"relative species abundance index" for a species means an index which-

- (a) is an annual measure;
- (b) provides a standardised measure of abundance of that species across England; and
- (c) is expressed as a value relative to 100, where—
 - (i) 100 is the baseline index for each species in the first year that it is measured in that relative species abundance index; and
 - (ii) 0 means no sightings of that species were recorded in a year(**a**).

(5) Where a species listed in Schedule 2 appears in more than one dataset that meets the criteria referred to in sub-paragraphs (a) and (b) of the definition of "relative species abundance index" in paragraph (4), the relative species abundance index for that species is calculated—

- (a) in the case of a species listed in Schedule 2 that is a plant, from the average value of species abundance for that species derived from all the species abundance datasets in which it appears;
- (b) in the case of a species listed in Schedule 2 that is an animal, from the species abundance dataset that the Secretary of State considers best provides—

⁽a) If the value of the relative species abundance index is 50, this means that the abundance of that species has decreased by 50% compared to the first year of measurement. If the value of the relative species abundance index is 200, this means that the abundance of that species has doubled compared to the first year of measurement.

- (i) an annual measure; and
- (ii) a standardised measure of abundance of that species with the widest coverage across England.

(6) For the purposes of paragraph (4), an index is only to be used if it is calculated using the same methodology each year.

Reporting date for the 2030 species abundance target

13. For the purposes of section 6(1) of the 2021 Act, the reporting date for the target in regulation 11 is 15th April 2032.

CHAPTER 2

Species abundance: long-term target

Long-term biodiversity target to reverse the decline of species abundance

14. The long-term biodiversity target to reverse the decline of species abundance is that the overall relative species abundance index by 31st December 2042 is—

- (a) higher than the overall relative species abundance index for 31st December 2022; and
- (b) at least 10% higher than the overall relative species abundance index for 31st December 2030 (the specified date for the 2030 species abundance target).

Measurement of the long-term biodiversity target to reverse the decline of species abundance

15.—(1) The long-term biodiversity target to reverse the decline of species abundance is to be measured by calculating the overall relative species abundance index for the following dates—

- (a) 31st December 2022;
- (b) 31st December 2030; and
- (c) 31st December 2042.

29th January 2023

(2) Regulation 12(2) to (6) applies in relation to the measurement of the long-term biodiversity target to reverse the decline of species abundance as it applies to the measurement of the 2030 species abundance target described in regulation 11.

Reporting date for the long-term biodiversity target to reverse the decline of species abundance

16. For the purposes of section 6(1) of the 2021 Act, the reporting date for the target in regulation 14 is 15th April 2044.

Trudy Harrison Parliamentary Under Secretary of State Department for Environment, Food and Rural Affairs

SCHEDULE 1

Regulation 10

Types of wildlife-rich habitat

Broad habitat	Wildlife-rich habitat other than a habitat type of principal importance for the conservation of biodiversity listed by the Secretary of State under section 41 of the Natural Environment
	and Rural Communities Act 2006
Acid grassland	Lowland acid grassland

Acid grassland Boundary and linear features

Boundary and linear features

Boundary and linear features Boundary and linear features

Boundary and linear features

Boundary and linear features Boundary and linear features

Boundary and linear features Broadleaved, mixed and yew woodland Broadleaved, mixed and yew woodland

Broadleaved, mixed and yew woodland Fen, marsh and swamp Inland rock Littoral rock Littoral rock Littoral rock Littoral rock Littoral sediment Littoral sediment Littoral sediment Littoral sediment Littoral sediment Littoral sediment Neutral grassland Rivers and streams Standing open waters Sublittoral rock Sublittoral rock Sublittoral rock Sublittoral sediment Sublittoral sediment Sublittoral sediment Sublittoral sediment Sublittoral sediment

Sublittoral sediment

Upland acid grassland Line of trees (ecologically valuable - such that the line includes at least one tree per 30m length of ancient or veteran quality) Line of trees (ecologically valuable – such that the line includes at least one tree per 30m length of ancient or veteran quality) - with bank or ditch Native hedgerow with trees Native hedgerow - associated with bank or ditch Native hedgerow with trees – associated with bank or ditch Native species-rich hedgerow Native species-rich hedgerow - associated with bank or ditch Native species-rich hedgerow with trees Blackthorn scrub Bramble scrub Gorse scrub Hawthorn scrub Hazel scrub Mixed scrub Mixed woodland: mainly native broadleaved (with a minimum requirement of 70% native broadleaved species) Native woodland: broadleaved Floodplain wetland mosaic Inland rock and scree Features of littoral rock High energy littoral rock Low energy littoral rock Moderate energy littoral rock Coastal saltmarsh and saline reedbeds Features of littoral sediment Littoral coarse sediment Littoral mixed sediments Littoral muddy sand Littoral sand Neutral grassland **Rivers and streams** Ponds Circalittoral rock Infralittoral rock Subtidal stony reef Native oyster (Ostrea edulis) beds Subtidal coarse sediment Subtidal mixed sediments Subtidal mud Subtidal sand Subtidal seagrass beds

SCHEDULE 2

Species for the targets relating to the abundance of species

Scientific name	Common name(a)
Birds	
Acanthis cabaret	Lesser redpoll
Accipiter gentilis	Northern goshawk
Accipiter nisus	Sparrowhawk
Acrocephalus palustris	Marsh warbler
Acrocephalus schoenobaenus	Sedge warbler
Acrocephalus scirpaceus	Reed warbler
Actitis hypoleucos	Common sandpiper
Aegithalos caudatus	Long-tailed tit
Alauda arvensis	Skylark
Alcedo atthis	Kingfisher
Anas acuta	Pintail
Anas crecca	Teal
Anas platyrhynchos	Mallard
Anser albifrons	European white-fronted goose
Anser anser	Greylag goose
Anser brachyrhynchus	Pink-footed goose
Anthus pratensis	Meadow pipit
Anthus trivialis	Tree pipit
Apus apus	Swift
Ardea cinerea	Grey heron
Arenaria interpres	Turnstone
Aythya ferina	Common pochard
Aythya fuligula	Tufted duck
Aythya marila	Scaup
Botaurus stellaris	Eurasian bittern
Branta bernicla	Brent goose
Bucephala clangula	Common goldeneye
Burhinus oedicnemus	Stone-curlew
Buteo buteo	Buzzard
Calidris alba	Sanderling
Calidris alpina	Dunlin
Calidris canutus	Knot
Calidris maritima	Purple sandpiper
Calidris pugnax	Ruff
Caprimulgus europaeus	Nightjar
Carduelis carduelis	Goldfinch
Certhia familiaris	Treecreeper
Cettia cetti	Cetti's warbler
Charadrius hiaticula	Ringed plover
Chloris chloris	Greenfinch
Chroicocephalus ridibundus	Black-headed gull
Cinclus cinclus	Dipper
	Marsh harrier
Circus aeruginosus	

(a) The common name or names given in the second column of this Schedule are included by way of guidance only.

Circus pygargus Coloeus monedula Columba oenas Columba palumbus Corvus corax Corvus corone Corvus frugilegus Coturnix coturnix Crex crex Cuculus canorus Curruca communis Curruca undata Cvanistes caeruleus Cygnus columbianus Cygnus cygnus Cygnus olor Delichon urbicum Dendrocopos major Dryobates minor Egretta garzetta Emberiza calandra Emberiza cirlus Emberiza citrinella Emberiza schoeniclus Erithacus rubecula Falco columbarius Falco peregrinus Falco subbuteo Falco tinnunculus Fringilla coelebs Fulica atra Fulmarus glacialis Gallinago gallinago Gallinula chloropus Garrulus glandarius Grus grus Haematopus ostralegus Hirundo rustica Ichthyaetus melanocephalus Lagopus lagopus Lanius collurio Larus argentatus Limosa lapponica Limosa limosa Linaria cannabina Linaria flavirostris Locustella luscinioides Lullula arborea Luscinia megarhynchos Lyrurus tetrix *Mareca penelope* Mareca strepera Mergus merganser

Montagu's harrier Jackdaw Stock dove Woodpigeon Raven Carrion crow Rook Common quail Corncrake Cuckoo Whitethroat Dartford warbler Blue tit Bewick's swan Whooper swan Mute swan House martin Great spotted woodpecker Lesser spotted woodpecker Little egret Corn bunting Cirl bunting Yellowhammer Reed bunting Robin Merlin Peregrine Hobby Kestrel Chaffinch Common coot Northern fulmar Snipe Moorhen Jay Common crane Oystercatcher Swallow Mediterranean gull Red grouse Red-backed shrike Herring gull Bar-tailed godwit Black-tailed godwit Linnet Twite Savi's warbler Woodlark Nightingale Black grouse Wigeon Gadwall Goosander

Mergus serrator Milvus milvus Morus bassanus Motacilla alba Motacilla cinerea Motacilla flava Muscicapa striata Numenius arquata Oenanthe oenanthe Oriolus oriolus Pandion haliaetus Panurus biarmicus Parus major Passer domesticus Passer montanus Perdix perdix Periparus ater Pernis apivorus Phalacrocorax aristotelis Phalacrocorax carbo Phoenicurus ochruros Phoenicurus phoenicurus Phylloscopus collybita Phylloscopus sibilatrix Phylloscopus trochilus Pica pica Picus viridis Platalea leucorodia Pluvialis apricaria Pluvialis squatarola Podiceps cristatus Podiceps nigricollis Poecile montanus *Poecile palustris* Porzana porzana Prunella modularis Pyrrhula pyrrhula Recurvirostra avosetta Regulus ignicapilla Regulus regulus Riparia riparia Rissa tridactyla Saxicola rubetra Saxicola rubicola Sitta europaea Somateria mollissima Spatula clypeata Spatula querquedula Spinus spinus Sterna dougallii Sterna hirundo Sterna paradisaea Sternula albifrons

Red-breasted merganser Red kite Northern gannet Pied wagtail Grey wagtail Yellow wagtail Spotted flycatcher Curlew Wheatear Golden oriole Osprey Bearded tit Great tit House sparrow Tree sparrow Grey partridge Coal tit Honey-buzzard European shag Great cormorant Black redstart Redstart Chiffchaff Wood warbler Willow warbler Magpie Green woodpecker Eurasian spoonbill Golden plover Grey plover Great crested grebe Black-necked grebe Willow tit Marsh tit Spotted crake Dunnock Bullfinch Avocet Firecrest Goldcrest Sand martin Black-legged kittiwake Whinchat Stonechat Nuthatch Eider Shoveler Garganey Siskin Roseate tern Common tern Arctic tern Little tern

Streptopelia decaocto Streptopelia turtur Strix aluco Sturnus vulgaris Sylvia atricapilla Sylvia borin Sylvia curruca Tachybaptus ruficollis Tadorna tadorna Thalasseus sandvicensis Tringa totanus Troglodytes troglodytes Turdus merula Turdus philomelos Turdus torquatus Turdus viscivorus Uria aalge Vanellus vanellus **Bumblebees** Bombus pascuorum Bombus lapidarius Bombus pratorum Bombus hypnorum Bombus hortorum Bombus lucorum / terrestris Bombus vestalis Bombus sylvestris Bombus campestris Bombus rupestris Bombus humilis Fish Abramis brama Alburnus alburnus Ammodytes tobianus Anguilla anguilla Atherina presbyter Barbatula barbatula Barbus barbus Blicca bjoerkna Carassius carassius Chelon labrosus Clupea harengus Cobitis taenia Cottus gobio Dicentrarchus labrax Esox lucius Gasterosteus aculeatus Gobio gobio Gymnocephalus cernuus Leuciscus leuciscus Liza aurata Liza ramada Osmerus eperlanus

Collared dove Turtle dove Tawny owl Starling Blackcap Garden warbler Lesser whitethroat Little grebe Shelduck Sandwich tern Redshank Wren Blackbird Song thrush Ring ouzel Mistle thrush Guillemot Lapwing Common carder bee Red-tailed bumblebee Early bumblebee Tree bumblebee Garden bumblebee White-tailed / buff-tailed bumblebee Southern cuckoo bumblebee Forest cuckoo bumblebee Field cuckoo bumblebee Red-tailed cuckoo bumblebee Brown-banded carder bee Common bream Bleak Lesser sandeel Eel Sand smelt Stone loach Barbel Silver bream Crucian carp Thick lipped grey mullet

Lesser sandeel Eel Sand smelt Stone loach Barbel Silver bream Crucian carp Thick lipped grey mullet Herring Spined loach Bullhead Sea bass Pike Three spined stickleback Gudgeon Ruffe Dace Golden grey mullet Thin lipped grey mullet

Perca fluviatilis Phoxinus phoxinus Platichthys flesus Pleuronectes platessa *Pomatoschistus microps* Pomatoschistus minutus Pungitius pungitius Rutilus rutilus Salmo salar Salmo trutta Scardinius erythrophthalmus Sprattus sprattus Squalius cephalus Syngnathus acus Thymallus thymallus Tinca tinca **Freshwater invertebrates** Acroloxus lacustris Adicella reducta Aeshna spp. Agabus spp. Agapetus spp. Agraylea multipunctata Alboglossiphonia heteroclita Ameletus inopinatus Amphinemura spp. Ampullaceana balthica Anabolia nervosa Anacaena globulus Anacaena limbata Ancylus fluviatilis Anisus leucostoma Anisus vortex Antocha vitripennis Aphelocheirus aestivalis Asellus aquaticus Atherix ibis Athripsodes spp. Austropotamobius pallipes **Baetis buceratus** Baetis muticus Baetis rhodani Baetis scambus group Baetis vernus Bathyomphalus contortus Beraea maurus Beraea pullata Beraeodes minutus Beris spp. Bithynia leachii Bithynia tentaculata Brachycentrus subnubilus Brachyptera risi

Perch Minnow Flounder Plaice Common goby Sand goby Ten spined stickleback Roach Atlantic salmon Brown trout Rudd Sprat Chub Greater pipefish Grayling Tench Lake limpet Hawkers Agabus (beetle) Salt and pepper microcaddis White leech Upland summer mayfly Spring stoneflies Wandering snail **River** limpet White-lipped ramshorn Whirlpool ramshorn Pond slater / Water louse Yellow-legged water-snipefly White-clawed crayfish Scarce olive Iron blue Large dark olive Small dark olive Medium olive Twisted ramshorn Green soldier flies Faucet snail

Brychius elevatus Caenis horaria Caenis luctuosa group Caenis pusilla Caenis rivulorum Caenis robusta Callicorixa praeusta Calopteryx spp. Capnia spp. Centroptilum luteolum Ceraclea spp. Chaetopteryx villosa Cheumatopsyche lepida Chloroperla tripunctata Cloeon dipterum Coenagrion spp. Cordulegaster boltonii Crenobia alpina Crunoecia irrorata Cyrnus flavidus Cyrnus trimaculatus Dendrocoelum lacteum Dicranota spp. Dinocras cephalotes Diplectrona felix Dixa nebulosa Dixa puberula Drusus annulatus Dryops spp. Dugesia polychroa group Dytiscus spp. Ecclisopteryx dalecarlica Ecdyonurus spp. Electrogena spp. Elmis aenea Elodes spp. Eloeophila spp. Enallagma cyathigerum Ephemera spp. Erpobdella spp. Erythromma najas Esolus parallelepipedus Galba truncatula Gammarus pulex group Gammarus zaddachi Gerris spp. Glossiphonia complanata Glossiphonia verrucata Glossosoma spp. Glyphotaelius pellucidus Goera pilosa Graptodytes pictus Gyraulus albus

Angler's curse

Water boatman Damselflies Small winter stoneflies Small spurwing Long-horned caddisflies

Pond olive Eurasian bluets damselflies Golden-ringed dragonfly Alpine flatworm

Aquatic flatworm

Common blue damselfly

Red-eyed damselfly

Dwarf pond snail Common freshwater shrimp

White ramshorn

Gyraulus crista Gyraulus laevis Gyrinus substriatus Gyrinus urinator Habrophlebia fusca Halesus spp. Haliplus confinis *Haliplus lineatocollis* Haliplus ruficollis group Helobdella stagnalis Helophorus brevipalpis Hermiclepsis marginata Heptagenia spp. Hesperocorixa sahlbergi Hippeutis complanatus Hydraena gracilis Hydraena riparia Hydrobius fuscipes Hydroporus palustris Hydropsyche angustipennis Hydropsyche contubernalis Hydropsyche instabilis Hydropsyche pellucidula Hydropsyche siltalai Hydroptila spp. Hyphydrus ovatus Ibisia marginata Ilybius spp. Ilyocoris cimicoides Ischnura elegans Isoperla grammatica Ithytrichia spp. Laccobius spp. Laccophilus hyalinus Lepidostoma basale Lepidostoma hirtum Leptophlebia spp. Leuctra spp. Limnephilus extricatus Limnephilus flavicornis Limnephilus lunatus Limnephilus marmoratus Limnephilus rhombicus Limnius volckmari Lymnaea stagnalis Lype spp. Melampophylax mucoreus Micronecta spp. Micropterna lateralis Micropterna sequax Molanna angustata Mystacides spp. Nebrioporus depressus group

Nautilus ramshorn Smooth ramshorn Ditch dun Lesser waterboatman Flat ramshorn Black-legged water-snipefly Saucer bug Blue-tailed damselfly Common yellow sally Cinnamon sedge Great pond snail

Nemoura spp. Nemurella pictetii Nepa cinerea Neureclipsis bimaculata Nigrobaetis spp. Noterus clavicornis Notonecta glauca Notonecta maculata Notonecta viridis Ochthebius spp. Odontocerum albicorne Oecetis spp. Orectochilus villosus Oreodytes sanmarkii Oulimnius spp. Oxycera spp. Oxyethira spp. Paraleptophlebia spp. Pedicia spp. Perla bipunctata Perlodes mortoni Phagocata vitta Philopotamus montanus Phryganea bipunctata Physa fontinalis Pilaria spp. Piscicola geometra Pisidium spp. Planorbarius corneus Planorbis spp. Platambus maculatus Platycnemis pennipes Plea minutissima Plectrocnemia spp. Polycelis spp. Polycentropus spp. Potamanthus luteus Potamophylax cingulatus Potamophylax latipennis Potamophylax rotundipennis Proasellus meridianus Procloeon pennulatum Prosimulium spp. Protonemura spp. Psychomyia pusilla Ptychoptera spp. Pyrrhosoma nymphula Radix auricularia Rhithrogena spp. Rhyacophila dorsalis Rhyacophila fasciata Rhyacophila munda Rhyacophila obliterata

Water scorpion

Larger noterus Common backswimmer

Orange-striped stonefly

Yellow spotted sedge		
Common bladder snail		
Common fish leech		
Great ramshorn		
White-legged damselfly		
Yellow mayfly		
One-spotted waterlouse		
Large red damselfly Ear pond snail		
Sandfly		

Distance	
Riolus spp.	
Sericostoma personatum	Dhua winand aliwa
Serratella ignita	Blue-winged olive
Sialis fuliginosa	
Sialis lutaria	Common alderfly
Sigara dorsalis	
Sigara falleni	
Sigara fossarum	
Silo nigricornis	
Silo pallipes	
Simulium (Wilhemia) spp.	
Simulium angustitarse group	
Simulium argyreatum group	
Simulium aureum group	
Simulium costatum	
Simulium cryophilum-vernum group	
Simulium erythrocephalum	
Simulium noelleri	
Simulium ornatum group	
Simulium reptans	
Simulium tuberosum complex	Twinn's black fly
Siphlonurus spp.	-
Siphonoperla torrentium	Small yellow sally
Sisyra spp.	
Sphaerium spp.	
Stagnicola spp.	
Stictotarsus duodecimpustulatus	
Taeniopteryx nebulosa	February red
Theodoxus fluviatilis	River nerite
Theromyzon tessulatum	Duck leech
Tinodes unicolor	
Tinodes waeneri	
Tipula spp.	
Triaenodes bicolor	
Trocheta spp.	
Valvata cristata	Flat valve snail
Valvata piscinalis	European valve snail
Velia spp.	European varve shan
Viviparus viviparus	Common river snail
Wormaldia spp.	Common river shar
Lepidoptera (Butterfly)	Dagaash
Aglais io	Peacock
Aglais urticae	Small tortoiseshell
Anthocharis cardamines	Orange-tip
Apatura iris	Purple emperor
Aphantopus hyperantus	Ringlet
Argynnis adippe	High brown fritillary
Argynnis paphia	Silver-washed fritillary
Aricia agestis	Brown argus
Aricia artaxerxes	Northern brown argus
Boloria euphrosyne	Pearl-bordered fritillary
Boloria selene	Small pearl-bordered fritillary
Callophrys rubi	Green hairstreak

Celastrina argiolus Coenonympha pamphilus Colias croceus *Cupido minimus* Erebia aethiops Erynnis tages Euphydryas aurinia Favonius quercus Gonepteryx rhamni Hamearis lucina Hesperia comma Hipparchia semele Lasiommata megera *Leptidea sinapis* Limenitis camilla Lycaena phlaeas Maculinea arion Maniola jurtina Melanargia galathea Melitaea athalia Melitaea cinxia Ochlodes sylvanus Papilio machaon Pararge aegeria Pieris brassicae Pieris napi Pieris rapae Plebejus argus Polygonia c-album Polyommatus bellargus Polyommatus coridon Polyommatus icarus Pyrgus malvae Pyronia tithonus Satyrium pruni Satyrium w-album Speyeria aglaja Thecla betulae Thymelicus acteon Thymelicus lineola Thymelicus sylvestris Vanessa atalanta Vanessa cardui Lepidoptera (Moths) Abraxas grossulariata Abraxas sylvata Abrostola tripartita Abrostola triplasia Acasis viretata Achlya flavicornis Acronicta psi Acronicta rumicis Acronicta tridens

Holly blue Small heath Clouded yellow Small blue Scotch argus Dingy skipper Marsh fritillary Purple hairstreak Brimstone Duke of burgundy Silver-spotted skipper Grayling Wall Wood white White admiral Small copper Large blue Meadow brown Marbled white Heath fritillary Glanville fritillary Large skipper Swallowtail Speckled wood Large white Green-veined white Small white Silver-studded blue Comma Adonis blue Chalk hill blue Common blue Grizzled skipper Gatekeeper Black hairstreak White-letter hairstreak Dark green fritillary Brown hairstreak Lulworth skipper Essex skipper Small skipper Red admiral Painted lady

The magpie Clouded magpie The spectacle Dark spectacle Yellow-barred brindle Yellow horned Grey dagger Knot grass Dark dagger

Aethalura punctulata Agriopis aurantiaria Agriopis leucophaearia Agriopis marginaria Agrochola helvola Agrochola litura Agrochola lota Agrochola macilenta Agrochola circellaris Agrochola lychnidis Agrotis clavis Agrotis exclamationis Agrotis ipsilon Agrotis puta Agrotis segetum Agrotis vestigialis Alcis jubata Alcis repandata Allophyes oxyacanthae Alsophila aescularia Amphipoea lucens Amphipoea oculea Amphipyra berbera Amphipyra pyramidea Amphipyra tragopoginis Anaplectoides prasina Anarta trifolii Anorthoa munda Anticlea derivata Antitype chi Apamea anceps Apamea crenata Apamea epomidion Apamea lithoxylaea Apamea monoglypha Apamea remissa Apamea scolopacina Apamea sordens Apamea unanimis Apeira syringaria Aplocera efformata Aplocera plagiata Apocheima hispidaria Aporophyla lutulenta Aporophyla nigra Apterogenum ypsillon Arctia caja Aspitates gilvaria Aspitates ochrearia Asteroscopus sphinx Asthena albulata Atethmia centrago Athetis pallustris

Grey birch Scarce umber Spring usher Dotted border Flounced chestnut Brown-spot pinion Red-line quaker Yellow-line quaker The brick Beaded chestnut Heart & club Heart & dart Dark sword-grass Shuttle-shaped dart Turnip moth Archer's dart Dotted carpet Mottled beauty Green-brindled crescent March moth Large ear Ear moth Svensson's copper underwing Copper underwing Mouse moth Green arches Nutmeg Twin-spotted quaker The streamer Grey chi Large nutmeg Clouded-bordered brindle Clouded brindle Light arches Dark arches Dusky brocade Slender brindle Rustic shoulder-knot Small clouded brindle Lilac beauty Lesser treble-bar Treble-bar Small brindled beauty Deep-brown dart Black rustic Dingy shears Garden tiger Straw belle Yellow belle The sprawler Small white wave Centre-barred sallow Marsh moth

Autographa bractea Autographa gamma Autographa jota Autographa pulchrina Axylia putris Biston betularia Biston strataria Brachylomia viminalis Bryophila domestica Bupalus piniaria Cabera exanthemata Cabera pusaria Calliteara pudibunda Campaea margaritaria Camptogramma bilineata Caradrina clavipalpis Caradrina morpheus Catarhoe rubidata Catocala nupta Celaena haworthii Cerapteryx graminis Cerastis rubricosa Ceramica pisi Charanyca trigrammica Chesias legatella Chesias rufata Chiasmia clathrata Chloroclysta miata Chloroclysta siterata Chloroclystis v-ata Cidaria fulvata Cilix glaucata Cirrhia gilvago Cirrhia icteritia Cleorodes lichenaria Clostera curtula Coenobia rufa Coenotephria salicata Coleophora vibicella Colocasia coryli Colostygia multistrigaria Colostygia pectinataria Colotois pennaria Comibaena bajularia Conistra ligula *Conistra rubiginea* Conistra vaccinii Cosmia affinis Cosmia pyralina Cosmia trapezina Cosmorhoe ocellata Craniophora ligustri Crocallis elinguaria

Gold spangle Silver Y Plain golden Y Beautiful golden Y The flame Peppered moth Oak beauty Minor shoulder-knot Marbled beauty Bordered white Common wave Common white wave Pale tussock Light emerald Yellow shell Pale mottled willow moth Mottled rustic Ruddy carpet Red underwing Haworth's minor Antler moth Red chestnut Broom moth Treble lines The streak Broom-tip Latticed heath Autumn green carpet Red-green carpet The V-pug Barred yellow Chinese character Dusky-lemon sallow Sallow Brussels lace Chocolate-tip Small rufous Striped twin-spot carpet Nut-tree tussock Mottled grey Green carpet Feathered thorn Blotched emerald Dark chestnut

Dark chestnut Dotted chestnut The chestnut Lesser-spotted pinion Lunar-spotted pinion The dun-bar Purple bar The coronet Scalloped oak

Cucullia umbratica Cybosia mesomella Cyclophora albipunctata Cyclophora linearia Cyclophora punctaria Cymatophorina diluta Deilephila elpenor Deileptenia ribeata Deltote pygarga Denticucullus pygmina Diachrysia chrysitis Diacrisia sannio Diaphora mendica Diarsia brunnea Diarsia dahlii Diarsia mendica Diarsia rubi Diloba caeruleocephala Drepana falcataria Drymonia dodonaea Drymonia ruficornis Dryobotodes eremita Dypterygia scabriuscula Dysstroma citrata Dysstroma truncata Earophila badiata Ecliptopera silaceata Ectropis crepuscularia Eilema complana Eilema depressa Eilema griseola Eilema lurideola Eilema sororcula Electrophaes corvlata Ennomos alniaria Ennomos autumnaria Ennomos erosaria Ennomos fuscantaria Ennomos quercinaria Entephria caesiata Epione repandaria *Epirrhoe alternata* Epirrhoe galiata Epirrhoe rivata Epirrita autumnata *Epirrita christyi* Epirrita dilutata Epirrita filigrammaria Erannis defoliaria Eremobia ochroleuca Euchoeca nebulata Eugnorisma glareosa Eulithis mellinata

The shark Four-dotted footman Birch mocha Clay triple-lines Maiden's blush Oak lutestring Elephant hawk-moth Satin beauty Marbled white spot Small wainscot **Burnished brass** Clouded buff Muslin moth Purple clay Barred chestnut Ingrailed clay Small square-spot Figure of eight Pebble hook-tip Marbled brown Lunar marbled brown Brindled green Bird's wing Dark marbled carpet Common marbled carpet Shoulder-stripe Small phoenix The engrailed Scarce footman Buff footman Dingy footman Common footman Orange footman Broken-barred carpet Canary-shouldered thorn Large thorn September thorn Dusky thorn August thorn Grey mountain carpet Bordered beauty Common carpet Galium carpet Wood carpet Autumnal moth Pale November moth November moth Small autumnal moth Mottled umber Dusky sallow Dingy shell Autumnal rustic The spinach

Eulithis populata Eulithis prunata Eulithis testata Euphyia biangulata Euphyia unangulata Eupithecia abbreviata Eupithecia absinthiata Eupithecia assimilata *Eupithecia centaureata* Eupithecia dodoneata Eupithecia exiguata Eupithecia haworthiata Eupithecia icterata Eupithecia indigata Eupithecia innotata Eupithecia intricata Eupithecia inturbata Eupithecia lariciata Eupithecia linariata Eupithecia nanata Eupithecia phoeniceata Eupithecia pulchellata Eupithecia pusillata Eupithecia satyrata Eupithecia simpliciata Eupithecia subfuscata Eupithecia succenturiata Eupithecia tantillaria Eupithecia tenuiata Eupithecia tripunctaria Eupithecia venosata Eupithecia virgaureata Eupithecia vulgata Euplexia lucipara Euproctis chrysorrhoea Euproctis similis Eupsilia transversa Eustroma reticulata Euthrix potatoria Euxoa nigricans Euxoa tritici Falcaria lacertinaria Furcula furcula Gandaritis pyraliata Gastropacha quercifolia *Geometra papilionaria* Gortyna flavago Graphiphora augur Griposia aprilina Gymnoscelis rufifasciata Habrosyne pyritoides Hada plebeja Hadena bicruris

Northern spinach The phoenix The chevron Cloaked carpet Sharp-angled carpet Brindled pug Wormwood pug Currant pug Lime-speck pug Oak-tree pug Mottled pug Haworth's pug Tawny speckled pug Ochreous pug Angle-barred pug Freyer's pug Maple pug Larch pug Toadflax pug Narrow-winged pug Cypress pug Foxglove pug Juniper pug Satyr pug Plain pug Grey pug Bordered pug Dwarf pug Slender pug White-spotted pug Netted pug Golden-rod pug Common pug Small angle shades Brown-tail Yellow-tail The satellite Netted carpet moth The drinker Garden dart White-line dart Scalloped hook-tip Sallow kitten Barred straw The lappet Large emerald Frosted orange Double dart Merveille du jour Double-striped pug **Buff** arches The shears The lychnis

Hadena confusa Hadena perplexa Hecatera bicolorata Helotropha leucostigma Hemistola chrysoprasaria Hemithea aestivaria Hepialus humuli Herminia grisealis Herminia tarsipennalis Hoplodrina ambigua Hoplodrina blanda Hoplodrina octogenaria Horisme tersata Horisme vitalbata Hydraecia micacea Hydraecia osseola Hydrelia flammeolaria Hydria cervinalis Hydria undulata Hydriomena furcata Hydriomena impluviata Hylaea fasciaria Hypena crassalis Hypena proboscidalis Hypomecis punctinalis Hypomecis roboraria Idaea aversata Idaea biselata Idaea dimidiata Idaea emarginata Idaea fuscovenosa Idaea ochrata Idaea rusticata Idaea seriata Idaea straminata Idaea subsericeata Idaea trigeminata Ipimorpha subtusa Jodis lactearia Korscheltellus fusconebulosa Korscheltellus lupulina Lacanobia oleracea Lacanobia suasa Lacanobia thalassina Lampropteryx otregiata Lampropteryx suffumata Laothoe populi Larentia clavaria Lasiocampa quercus Laspeyria flexula Lateroligia ophiogramma Leucania comma Ligdia adustata

Marbled coronet Tawny shears Broad-barred white Crescent Small emerald Common emerald Ghost moth Small fan-foot The fan-foot Vine's rustic The rustic Uncertain The fern Small waved umber Rosy rustic Marsh mallow moth Small yellow wave Scarce tissue Scallop shell July highflyer May highflyer Barred red Beautiful snout The snout Pale oak beauty Great oak beauty Riband wave Small fanfooted wave Single-dotted wave Small scallop Dwarf cream wave Bright wave moth Least carpet Small dusty wave Plain wave Satin wave Treble brown spot The olive Little emerald Map-winged swift Common swift Bright-line brown-eye Dog's tooth Pale-shouldered brocade Devon carpet Water carpet Poplar hawk-moth The mallow Oak eggar Beautiful hook-tip Double lobed Shoulder-striped wainscot Scorched carpet

Litoligia literosa Lithophane leautieri *Lithophane ornitopus* Lithophane socia Lobophora halterata Lomaspilis marginata Lomographa bimaculata Lomographa temerata Luperina testacea Lycia hirtaria Lycia zonaria Lycophotia porphyrea Lygephila pastinum Lymantria monacha Macaria alternata Macaria liturata Macaria notata Macaria wauaria Macrothylacia rubi Malacosoma neustria Mamestra brassicae Melanchra persicariae Melanthia procellata Menophra abruptaria Mesapamea secalis / didyma Mesoleuca albicillata Mesoligia furuncula Mesotype didymata Miltochrista miniata Mniotype adusta Mythimna albipuncta Mythimna ferrago Mythimna conigera Mythimna impura Mythimna pallens Naenia typica Noctua comes Noctua fimbriata Noctua interjecta *Noctua janthe* Noctua pronuba Nola confusalis Nola cucullatella Nomophila noctuella Notodonta dromedarius Notodonta ziczac Nudaria mundana Nycteola revayana Ochropacha duplaris Ochropleura plecta Odontopera bidentata Odontosia carmelita Oligia fasciuncula

Rosy minor Blair's shoulder-knot Grey shoulder-knot Pale pinion The seraphim Clouded border White-pinion spotted Clouded silver Flounced rustic Brindled beauty Belted beauty True lover's knot The blackneck Black arches Sharp-angled peacock Tawny-barred angle Peacock moth The V-moth Fox moth The lackey Cabbage moth Dot moth Pretty chalk carpet Waved umber Beautiful carpet Cloaked minor Twin-spot carpet Rosy footman Dark brocade White-point The clay Brown-line bright-eye Smoky wainscot Common wainscot The gothic Lesser yellow underwing Broad-bordered yellow underwing Least yellow underwing Lesser broad-bordered yellow underwing Large yellow underwing Least black arches Short-cloaked moth Rush veneer Iron prominent Pebble prominent Muslin footman Oak nycteoline Common lutestring Flame shoulder Scalloped hazel Scarce prominent Middle-barred minor

Oligia latruncula Oligia strigilis Oligia versicolor **Omphaloscelis** lunosa Operophtera brumata Operophtera fagata Opisthograptis luteolata Orgyia antiqua Orthonama vittata Orthosia cerasi Orthosia cruda Orthosia gothica Orthosia gracilis Orthosia incerta Orthosia populeti Ourapteryx sambucaria Pachycnemia hippocastanaria Panolis flammea Parascotia fuliginaria Parectropis similaria Pasiphila rectangulata Pelurga comitata Pennithera firmata Peribatodes rhomboidaria Peridea anceps Perizoma affinitata Perizoma albulata Perizoma alchemillata Perizoma bifaciata Perizoma flavofasciata Petrophora chlorosata Phalera bucephala Pheosia gnoma Pheosia tremula Phigalia pilosaria Philereme transversata Philereme vetulata Phlogophora meticulosa Photedes fluxa Photedes minima Phragmatobia fuliginosa Phymatopus hecta Plagodis dolabraria Plagodis pulveraria Plemyria rubiginata Plusia festucae Plutella xylostella Poecilocampa populi Polia nebulosa Polychrysia moneta Polymixis flavicincta Polymixis lichenea Polyploca ridens

Tawny marbled minor Marbled minor Rufous minor Lunar underwing Winter moth Northern winter moth Brimstone moth The vapourer Oblique carpet Common quaker Small quaker Hebrew character Powdered quaker Clouded drab Lead-coloured drab Swallow-tailed moth Horse chestnut Pine beauty Waved black Brindled white-spot Green pug Dark spinach Pine carpet Willow beauty Great prominent The rivulet Grass rivulet Small rivulet Barred rivulet Sandy carpet Brown silver-line Buff-tip Lesser swallow prominent Swallow prominent Pale brindled beauty Dark umber Brown scallop Angle shades Mere wainscot Small dotted buff Ruby tiger Gold swift Scorched wing Barred umber Blue-bordered carpet Gold spot Diamond-back moth December moth Grey arches Golden plusia Large ranunculus Feathered ranunculus Frosted green

Pseudoips prasinana Pseudoterpna pruinata Pterapherapteryx sexalata Pterostoma palpina Ptilodon capucina Pyropteron chrysidiformis Rhizedra lutosa Rhodometra sacraria Rivula sericealis Rusina ferruginea Saturnia pavonia Schrankia costaestrigalis Scoliopteryx libatrix Scopula floslactata Scopula imitaria Scopula immutata Scopula marginepunctata Scotopteryx chenopodiata Scotopteryx luridata Scotopteryx mucronata Scythris siccella Selenia dentaria Selenia lunularia Selenia tetralunaria Sideridis rivularis Siona lineata Spaelotis ravida Spilosoma lubricipeda Spilosoma lutea Stauropus fagi Stilbia anomala Subacronicta megacephala Tethea ocularis Thalera fimbrialis Thalpophila matura Thera Britannica Thera juniperata Thera obeliscata Theria primaria Tholera cespitis Tholera decimalis Thumatha senex Thyatira batis Tiliacea aurago Tiliacea citrago Timandra comae Trichiura crataegi Trichopteryx carpinata Triodia sylvina Triphosa dubitata Tyria jacobaeae Udea ferrugalis Venusia cambrica

Green silver-lines Grass emerald Small seraphim Pale prominent Coxcomb prominent Fiery clearwing Large wainscot The vestal Straw dot Brown rustic Emperor moth Pinion-streaked snout The herald Cream wave Small blood-vein Lesser cream wave Mullein wave Shaded broad-bar July belle Lead belle Early thorn Lunar thorn Purple thorn Campion Black-veined moth Stout dart White ermine Buff ermine Lobster moth The anomalous Poplar grey Figure of eighty Sussex emerald Straw underwing Spruce carpet Juniper carpet Grey pine carpet Early moth Hedge rustic Feathered gothic Round-winged muslin Peach blossom Barred sallow Orange sallow Blood-vein Pale eggar Early tooth-striped Orange swift The tissue The cinnabar Rusty dot pearl Welsh wave

Watsonalla binaria Watsonalla cultraria Xanthia togata Xanthorhoe decoloraria Xanthorhoe designata Xanthorhoe ferrugata Xanthorhoe fluctuata Xanthorhoe montanata Xanthorhoe quadrifasiata Xanthorhoe spadicearia Xestia agathina Xestia baja Xestia castanea Xestia c-nigrum Xestia ditrapezium Xestia sexstrigata Xestia triangulum Xestia xanthographa Xylocampa areola Mammals Arvicola amphibius Capreolus capreolus Dama dama Eptesicus serotinus Lepus europaeus Muscardinus avellanarius Myotis daubentonii Myotis mystacinus/Myotis brandtii Myotis nattereri Nyctalus noctula Oryctolagus cuniculus Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus Rhinolophus ferrumequinum Rhinolophus hipposideros Vulpes vulpes Vascular Plants Achillea millefolium Aethusa cynapium Agrimonia eupatoria Ajuga reptans Alisma plantago-aquatica Allium ursinum Alnus glutinosa Alopecurus geniculatus Ammophila arenaria Anagallis arvensis Anthemis cotula Anthoxanthum odoratum Anthyllis vulneraria Apium nodiflorum Arctium minus/nemorosum

Oak hook-tip Barred hook-tip Pink-barred sallow Red carpet Flame carpet Dark-barred twin-spot carpet Garden carpet Silver-ground carpet Large twin-spot carpet Red twin-spot carpet Heath rustic Dotted clay Neglected rustic Setaceous Hebrew character Triple-spotted clay Six-striped rustic Double square-spot Square-spot rustic Early grey Water vole Roe deer Fallow deer Serotine bat Brown hare Dormouse Daubenton's bat Whiskered bat/Brandt's bat Natterer's bat Noctule bat Rabbit Common pipistrelle bat Soprano pipistrelle bat Brown long-eared bat

Yarrow Fool's parsley Agrimony Bugle Water-plantain Ramsons Alder Marsh foxtail Marram Scarlet pimpernel Stinking chamomile Sweet vernal-grass Kidney vetch Fool's-water-cress

Greater horseshoe bat Lesser horseshoe bat

Red fox

Armeria maritima Arum maculatum Asplenium trichomanes Aster tripolium Atriplex portulacoides Atriplex spp. **Bellis** perennis Berula erecta Beta vulgaris Blackstonia perfoliata Blechnum spicant Briza media Bromopsis erecta Calluna vulgaris Caltha palustris Calystegia sepium Campanula glomerata Campanula rotundifolia *Campanula trachelium* Capsella bursa-pastoris Cardamine pratensis Carduus nutans Carex echinata Carex nigra Carex otrubae Carex pendula Carex remota Carex sylvatica Cerastium arvense Cerastium fontanum *Cerastium glomeratum* Ceratocapnos claviculata Chaerophyllum temulum Chenopodium album Chrysosplenium oppositifolium Circaea lutetiana Cirsium acaule Cirsium palustre Clematis vitalba Cochlearia Conopodium majus Cornus sanguinea Corylus avellana Crataegus monogyna Cruciata laevipes Cynosurus cristatus Dactylorhiza fuchsii Daucus carota Deschampsia cespitosa Deschampsia flexuosa Digitalis purpurea Dioscorea communis Dipsacus fullonum

Thrift Lords-and-ladies Maidenhair spleenwort Sea aster Sea-purslane Daisy Lesser-water-parsnip Beet Yellow-wort Hard-fern Quaking-grass Upright brome Heather Marsh-marigold Hedge bindweed Clustered bellflower Harebell Nettle-leaved bellflower Shepherd's-purse Cuckooflower Musk thistle Star sedge Common sedge False fox-sedge Pendulous sedge Remote sedge Wood-sedge Field mouse-ear Common mouse-ear Sticky mouse-ear Climbing corydalis Rough chervil Fat-hen Opposite-leaved golden-saxifrage Enchanter's-nightshade Dwarf thistle Marsh thistle Traveller's-joy Scurveygrass Pignut Dogwood Hazel Hawthorn Crosswort Crested dog's-tail Common spotted-orchid Carrots Tufted hair-grass Wavy hair-grass Foxglove Black bryony Wild teasel

Drosera rotundifolia Elytrigia atherica Empetrum nigrum Epilobium hirsutum Equisetum fluviatile Erica cinerea Erica tetralix Eriophorum angustifolium Eriophorum vaginatum Euonymus europaeus Euphorbia amygdaloides Euphorbia exigua Euphorbia helioscopia Filipendula ulmaria Filipendula vulgaris Fumaria Galium mollugo Galium odoratum Galium palustre Galium saxatile Galium verum Geranium robertianum Geum urbanum Glaucium flavum Glechoma hederacea Hedera helix Helictotrichon pratense Heracleum sphondylium Hippocrepis comosa Hippuris vulgaris Holcus lanatus Hordeum secalinum Huperzia selago Hyacinthoides non-scripta Hydrocharis morsus-ranae Hydrocotyle vulgaris Hypericum tetrapterum Hypochaeris radicata Ilex aquifolium Iris pseudacorus Juncus gerardii Juncus squarrosus Kickxia elatine Kickxia spuria Knautia arvensis Lamium amplexicaule Lathyrus pratensis Lemna trisulca Leucanthemum vulgare Limonium spp. Linum catharticum Lonicera periclymenum Lotus corniculatus

Round-leaved sundew Sea couch Crowberry Great willowherb Water horsetail Bell heather Cross-leaved heath Common cottongrass Hare's-tail cottongrass Spindle Wood spurge Dwarf spurge Sun spurge Meadowsweet Dropwort **Fumitories** Hedge bedstraw Woodruff Marsh-bedstraw Heath bedstraw Lady's bedstraw Herb-robert Wood avens Yellow horned-poppy Ground-ivy Common ivy Meadow oat-grass Hogweed Horseshoe vetch Mare's-tail Yorkshire-fog Meadow barley Bluebell Frogbit Marsh pennywort Square-stalked St John's-wort Cat's-ear Holly Yellow iris Saltmarsh rush Heath rush Sharp-leaved fluellen Round-leaved fluellen Field scabious Henbit dead-nettle Meadow vetchling Ivy-leaved duckweed Oxeye daisy

Fairy flax Honeysuckle Common bird's-foot-trefoil Lotus pedunculatus Luzula multiflora Lycopus europaeus Lysimachia nemorum Lysimachia vulgaris Lythrum salicaria Matricaria chamomilla Medicago lupulina Melica uniflora Mentha aquatica Mercurialis perennis Milium effusum Moehringia trinervia Molinia caerulea Mycelis muralis Nardus stricta Narthecium ossifragum Nuphar lutea Nymphaea alba Origanum vulgare Ornithopus perpusillus Osmunda regalis Pastinaca sativa Persicaria amphibia Persicaria lapathifolia Petasites hybridus Phalaris arundinacea Phyllitis scolopendrium Picris echioides Pilosella officinarum Plantago coronopus Plantago lanceolata Plantago maritima Plantago media Polygala serpyllifolia/vulgaris Potamogeton polygonifolius Potentilla anserina Potentilla erecta Potentilla sterilis Poterium sanguisorba Primula veris Prunus spinosa Puccinellia maritima Ranunculus acris Ranunculus bulbosus Ranunculus repens Ranunculus sceleratus Ranunculus spp. Rhamnus cathartica Rhinanthus minor Rorippa nasturtium-aquaticum Rubus chamaemorus Rumex acetosa

Greater bird's-foot-trefoil Heath wood-rush Gypsywort Yellow pimpernel Yellow loosestrife Purple-loosestrife Scented mayweed Black medick Wood melick Water mint Dog's mercury Wood millet Three-nerved sandwort Purple moor-grass Wall lettuce Mat-grass Bog asphodel Yellow water-lily White water-lily Wild marjoram Bird's-foot Royal fern Parsnip species Amphibious bistort Pale persicaria Butterbur Reed canary-grass Hart's-tongue Bristly oxtongue Mouse-ear-hawkweed Buck's-horn plantain Ribwort plantain Sea plantain Hoary plantain Bog pondweed Silverweed Tormentil Barren strawberry Salad burnet Cowslip Blackthorn Common saltmarsh-grass Meadow buttercup Bulbous buttercup Creeping buttercup Celery-leaved buttercup Water-crowfoots Buckthorn Yellow-rattle Water-cress

Common sorrel

Rumex acetosella Rumex hydrolapathum Sagittaria sagittifolia Sanguisorba officinalis Sanicula europaea Scabiosa columbaria Schoenoplectus lacustris Sherardia arvensis Silene dioica Silene flos-cuculi Silene latifolia Solanum dulcamara Sonchus arvensis Sonchus oleraceus Sparganium erectum Spirodela polyrhiza Stachys officinalis Stachys palustris Stellaria graminea Stellaria holostea Suaeda maritma Succisa pratensis Symphytum officinale Teucrium scorodonia Thymus polytrichus/pulegioides Torilis japonica Trifolium campestre Trifolium dubium Trifolium pratense Trifolium repens Triglochin maritimum Tripleurospermum inodorum Typha latifolia Ulex gallii/minor Vaccinium myrtillus Vaccinium vitis-idaea Veronica arvensis Veronica beccabunga Veronica montana Veronica officinalis Vicia cracca Vicia hirsuta Viola arvensis Viola palustris Viola reichenbachiana/riviniana Sheep's sorrel Water dock Arrowhead Great burnet Sanicle Small scabious Common club-rush Field madder Red campion Ragged-robin White campion Bittersweet Perennial sow-thistle Smooth sow-thistle Branched bur-reed Greater duckweed Betony Marsh woundwort Lesser stitchwort Greater stitchwort Annual sea-blite Devil's-bit scabious Common comfrey Wood sage Upright hedge-parsley Hop trefoil Lesser trefoil Red clover White clover Scentless mayweed Bulrush Bilberry Cowberry Wall speedwell Brooklime Wood speedwell Heath speedwell Tufted vetch Hairy tare

EXPLANATORY NOTE

(This note is not part of the Regulations)

Field pansy

Marsh violet

These Regulations set long-term targets in respect of three matters within the priority area of biodiversity under section 1 of the Environment Act 2021 (c. 30). These Regulations also set a target in relation to the abundance of species in accordance with section 3 of the Environment Act

2021. The Regulations specify the standard to be achieved in respect of each target and the date by which it must be achieved.

Part 2 makes provision in respect of a long-term biodiversity target to reduce the risk of species' extinction by 2042, when compared to the risk of species' extinction in 2022 (regulation 4). Regulation 5 makes provision in relation to how that target is to be measured. Regulation 6 provides that the reporting date for the species' extinction risk target is 1st July 2043.

Part 3 makes provision in respect of a long-term biodiversity target to ensure that in excess of 500,000 hectares of a range of wildlife-rich habitats are to be restored or created by 31st December 2042 (regulation 7). Regulation 8 makes provision in relation to how that target is to be measured. Regulation 9 provides that the reporting date for that target is 1st December 2043. Regulation 10 defines terms used in Part 3 including "wildlife-rich habitat". Schedule 1 makes further provision in relation to the definition of "wildlife-rich habitat".

Part 4 makes provision in respect of the 2030 species abundance target to ensure that by 31st December 2030 (the specified date) the decline in the abundance of species has been halted (regulation 11). Regulation 12 makes provision in relation to how the 2030 species abundance target is to be measured. Schedule 2 provides a list of species for which data are included in the relative species abundance indices. Regulation 13 provides that the reporting date for that target is 15th April 2032.

Part 4 also makes provision in respect of a long-term biodiversity target to reverse the decline of species abundance to ensure that the overall species abundance is higher by 31st December 2042 than for 31st December 2022, and at least 10% higher than for 31st December 2030 (regulation 14). Regulation 15 makes provision in relation to how the long-term biodiversity target to reverse the decline of species abundance is to be measured. Regulation 16 provides that the reporting date for that target is 15th April 2044.

A full impact assessment of the effect that this instrument will have on the costs of business, the voluntary sector and the public sector is available from the Department for the Environment, Food and Rural Affairs, Seacole Building, 2 Marsham Street, London SW1P 4DF, and is published with an Explanatory Memorandum alongside these Regulations on www.legislation.gov.uk.

[©] Crown copyright 2023

Printed and published in the UK by The Stationery Office Limited under the authority and superintendence of Jeff James, Controller of His Majesty's Stationery Office and King's Printer of Acts of Parliament.

http://www.legislation.gov.uk/id/uksi/2023/91