

# The Cornwall and West Devon Mining Landscape World Heritage Site

Ecological Audit Project – Final Report

## Appendix 4

### Statements of Significance

March 2026

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## Abbreviations

For all species listed in this Statement of Significance, the following abbreviations relate to their conservation status: Red Data Book Data Deficient **DD**, Near Threatened **NT**, Vulnerable **VU**, Endangered **EN**, and Least Concern **LC**, and Section 41 priority Species **S41**.

## A1. St Just Mining District

Across the St Just Mining District, past mineral extraction activities have resulted in large areas of semi-natural habitats like heathland forming on old spoil heaps and leading to County Wildlife Site designation as well as providing specific conditions for the very rare Liverwort species – the Western Rustwort, found on just two small areas designated as a Site of Special Scientific Interest and a Special Area of Conservation.

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The St Just Mining District is particularly significant for its coverage of Invertebrate Conservation designations, with 30% of the land designated as an Important Invertebrate Area and 86% classed as a B-Line. An Important Bird Area covers half of the St Just Mining District due to the Area's importance for coastal and heathland birds. 35% of the St Just Mining District is designated as a Sites of Special Scientific Interest, and 24% is a County Wildlife Site.

### 1.1. Designations

#### 1.1.1. National designations

##### *Sites of Special Scientific Interest (SSSI):*

The Aire Point to Carrick Du SSSI is a long coastal strip that covers from St Ives to Sennen Cove, designated for its nationally scarce plants and animals associated with flora-rich coastal communities of maritime cliffs, grassland, heath and scrub. Notified species of conservation interest include Vigur's Eyebright (*Euphrasia vigursii* (**EN**, S41)), the nationally scarce Lanceolate Spleenwort (*Asplenium billotti* (**NT**)), Pale Dog-violet (*Viola lactea* (**VU**, S41)) and Solms' Screwmoos (*Tortula solmsii* (**EN**)). These flower-rich habitats further support Red Data Book invertebrate fauna such as Limestone Ant Fly (*Microdon mutabilis* (**DD**)), as well as nationally scarce Butterfly species Pearl-bordered Fritillary (*Boloria euphrosyne* (**VU**, S41)) and Silver-studded Blue (*Plebejus argus* (**VU**, S41)), and a Jewel Beetle species, *Trachys troglodytes* (**DD**). Although not notified, mines and mining infrastructure across the landscape provide roosting sites for bats such as the Greater Horseshoe (*Rhinolophus ferrumequinum* (**LC**, S41)).

Two small areas east of St Just-in-Penwith, designated as the **Lower Bostraze and Leswidden SSSI** for the presence of the very rare liverwort Western Rustwort (*Marsupella profunda* (**EN**, S41)), growing on clay waste and granite rocks.

West Penwith Moors and Downs SSSI cover over 3000 ha of the central moorland area in Penwith. Red Data Book species include Coral-necklace (*Illecebrum verticillatum* (**EN**, S41)), Pale Dog-violet (*Viola lactea* (**VU**, S41)), Pilwort (*Pilularia globulifera* (**NT**, S41)), Cornish Moneywort (*Sibthorpia europaea* (**LC**)) and nationally scarce species of Lanceolate Spleenwort (*Asplenium obovatum* (**NT**)), Wilson's filmy-fern (*Hymenophyllum wilsonii*

(NT)), Allseed (*Radiola linoides* (NT)) and Chaffweed (*Lysimachia minima*). Granite outcrops characteristic of the Penwith Moors and Downs SSSI support a range of nationally important Lichens, *Cladonia cyathomorpha* (LC), *Gyroglypha saxigena* (syn. *Opegrapha saxigena* (LC)), *Herteliana gagei* (LC), *Lecanora alboflavida* (LC), *Lecidea fuliginosa* (LC), *Melaspilea interjecta* (DD), *Parmelinopsis horrescens* (NT), *P. minarum* (LC), *Pertusaria excludens* (LC), *Sarcogyne clavus* (NT) and *Usnea subscabrosa* (VU). The SSSI also supports many heath and moor-associated invertebrates such as the nationally rare Perkins' Mining Bee (*Andrena rosae*) and Tormentil Nomad Bee (*Nomada roberjeotiana*), as well as Butterflies Grayling (*Hipparchia semele* (EN, S41)) and Wall Brown (*Lasiommata megera* (EN, S41)) and the vulnerable Wetland Rove Beetle (*Stenus kiesenwetteri*). Scattered scrub across the heathland provides habitat for Dartford warbler (*Curruca undata* (LC)).

## 1.2. Special Areas of Conservation (SAC)

**Lower Bostraze and Leswidden SAC** is designated for the same reason as the SSSI - the internationally important populations of Western Rustwort (*Marsupella profunda* (EN, S41)).

### *National Landscape*

WHS Area A1 is almost entirely within Section 07 (West Penwith) of the Cornwall National Landscape.

### *Important Invertebrate Areas (IIA)*

**West Penwith IIA** supports at least 22 qualifying IIA species of conservation concern. Its inland sites are mostly covered by West Penwith Moors and Downs SSSI, with the main habitats creating an extensive patchwork of lowland heath, grassy marshes, dry acid grassland and inland rock. The area also features unique former mining habitat elements, such as arid peatlands and coastal cliff scrapes, which are especially important for ground-nesting bees and wasps. The dry areas of dwarf shrub heath at Chapel Carn Brea and further north support the Limestone Ant Fly (*Microdon mutabilis* (DD)) and Tormentil Nomad Bee (*Nomada roberjeotiana*), a kleptoparasite of Tormentil Mining Bee (*Andrena tarsata* (S41)). The wet acid mire elements of the heath support the crane fly *Tipula melanoceros*. The presence of old mineshafts in the coastal habitats here, especially around St Just, causes surface water to drain quickly down the shafts, creating an unusually arid scree environment that is especially important for spiders, as well as ground-nesting bees and wasps.

The maritime grassland and soft-geology cliffs of the Aire Point to Carris Du SSSI support Buff-banded Mining Bee (*A. simillima*), and two Sheep's-bit plant specialists: Sheep's-bit Weevil (*Cleopomiarus micros*) and Scarce Clouded Knot-horn (*Homoeosoma nimbella*). The IIA supports the endemic British Cave Shrimp (*Niphargus glenniei* (S41)) as well as the European Vulnerable Moss Carder Bee (*Bombus muscorum* (S41)) and European Vulnerable Hairy-saddled Colletes (*Colletes fodiens*) (a mining bee). Additionally, this IIA is also regionally important in the South West for several

other rare or declining Bee and Butterfly species (but not IIA qualifying species), including Perkins' Mining bee (*Andrena rosae*), Large Scabious Bee (*A. hattorfiana*), Small Pearl-bordered Fritillary (*Boloria selene* (**VU**, S41)) and Silver-studded Blue Butterfly (*Plebejus argus* (**VU**, S41)).

### *Buglife B-Lines*

A B-Line runs adjacent to the coastline, covering 86% of Area A1.

### *Important Bird Areas (IBA)*

**West Penwith Coast and Moors IBA** consists of a stretch of rocky coastline and a large number of moorland areas, situated mainly to the north and west of Land's End. The IBA is important for cliff-nesting and heathland species. The site is notified due to the presence of Common Stonechat (*Saxicola rubicola* (**LC**)) and Peregrine Falcon (*Falco peregrinus* (**LC**)), and covers 50% of Area A1.

### *RSPB Priority Landscapes*

**The Celtic Sea and Islands Seascape** runs along the coast adjacent to WHS Area 01, so that this area's entire coastline falls within this RSPB priority landscape.

## 1.2.1. Local designations

### *County Wildlife Sites*

Eight County Wildlife Sites cover 24% of WHS Area A1. These sites predominantly comprise of lowland heathland, with some priority habitats of lowland dry acid grassland, lowland fen, wet woodland, and purple moor grass and rush pasture. On **Busvargus & Tregeseal Common to Dowran Common & Bosworlas Moor CWS**, past mineral extraction activities have resulted in large areas of semi-natural habitat being formed on old spoil heaps. Along with **Botrea Downs CWS**, **Carne Eanes & Trewellard Common CWS**, **Chun Downs to Boswens Common CWS**, **Boswarva Carn CWS**, **Central Moors CWS**, this site forms an extensive part of the Penwith Moors Complex. **Great Moor Zawn to Porthmeor Cove CWS** extends north from Central Moors CWS and adjoins Aire Point to Carrick Du SSSI on the north coast. **Carnyorth Common and Bostraze Bog CWS** has no citation.

## 1.3. Habitats

The most common habitat in Area A1 is Unimproved Grassland, which makes up 43% of the total area. Dwarf Shrub Heath accounts for 22% of the total habitat, and almost completely coincides with the various CWS and SSSIs in Area A1. All other habitats make up 10% or less of the total area. Of these, Bare Ground (5%) is notable as it completely coincides with the Aire Point to Carrick Du SSSI, which runs along the coastline.

## 1.4. Species

The assemblages of vascular plants of conservation concern, found largely in the bare ground and heathland habitats of the SSSIs in WHS Area A1, include Vigur's Eyebright (*Euphrasia vigursii* (**EN**, S41)), nationally scarce Lanceolate Spleenwort (*Asplenium obovatum* (**NT**)), Pale Dog-violet (*Viola lactea* (**VU**, S41)), Coral Necklace (*Illecebrum verticillatum* (**EN**, S41)), Pilwort (*Pilularia globulifera* (**NT**, S41)), Cornish Moneywort (*Sibthorpia europaea* (**LC**)), Allseed (*Radiola linoides* (**NT**)), Common Dodder (*Cuscuta epithymum* (**VU**)), Chamomile (*Chamaemelum nobile* (**VU**)), Wilson's Filmy-fern (*Hymenophyllum wilsonii* (**NT**)), Ivy-leaved Bellflower (*Wahlenbergia hederacea* (**NT**)) and Chaffweed (*Lysimachia minima*).

Bryophytes of conservation concern for which nationally designated areas are notified include Solms' Screwmoss (*Tortula solmsii* (**EN**)), and Western Rustwort (*Marsupella profunda* (**EN**, S41)).

The granite outcrops of the Penwith Moors and Downs SSSI support a range of nationally important Lichens (*Cladonia cyathomorpha* (**LC**), *Gyroglypha saxigena* (syn. *Opegrapha saxigena* (**LC**)), *Herteliana gagei* (**LC**), *Lecanora alboflavida* (**LC**), *Lecidea fuliginosa* (**LC**), *Melaspilea interjecta* (**DD**), *Parmelinopsis horrescens* (**NT**), *P. minarum* (**LC**), *Pertusaria excludens* (**LC**), *Sarcogyne clavus* (**NT**) and *Usnea subscabrosa* (**VU**)).

The species-rich habitats of the three SSSIs in Area A1 also host a multitude of plant species listed in the Red Data Book as **least concern (LC)**. In the flora-rich coastal communities of maritime cliffs, grassland, heath and scrub of Aire Point to Carrick Du SSSI the following species are found: Hairy Bird's-foot Trefoil (*Lotus subbiflorus*), Common Bird's-foot Trefoil (*L. corniculatus*), Heather (*Calluna vulgaris*), Bell Heather (*Erica cinerea*), English Stonecrop (*Sedum anglicum*) Buck's-horn Plantain (*Plantago coronopus*), Sea Plantain (*P. maritima*), Ribwort Plantain (*P. lanceolata*), Kidney Vetch (*Anthyllis vulneraria*), Red Fescue (*Festuca rubra*), Yorkshire Fog (*Holcus lanatus*), Wild Carrot (*Daucus carota*), Sea Campion (*Silene maritima*), Thrift (*Armeria maritima*), Rock Samphire (*Crithmum maritimum*), Sea Aster (*Aster tripolium*), Sea Spleenwort (*Asplenium marinum*), Spring Squill (*Scilla verna*), Bluebell (*Hyacinthoides non-scripta*), Oxeye Daisy (*Leucanthemum vulgare*) and Cock's-foot (*Dactylis glomerata*). The heath and mire habitats are dominated by Purple Moor-grass (*Molinia caerulea*), Tormentil (*Potentilla erecta*), Early Meadow grass (*Poa infirma*), Western Gorse (*Ulex gallii*), Sheep's-bit (*Jasione montana*), Wild Thyme (*Thymus drucei*), Cross-leaved Heath (*Erica tetralix*), Sharp-flowered Rush (*Juncus acutiflorus*), Royal Fern (*Osmunda regalis*) and Yellow Bartsia (*Parentucellia viscosa*). Additional common species found in the scrub habitats include Bracken (*Pteridium aquilinum*), European gorse (*Ulex europaeus*), Bramble (*Rubus fruticosus*) Blackthorn (*Prunus spinose*), Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*).

In addition to the above, West Penwith Moors and Downs also support multiple plant species of **RDB (Least Concern, LC)**. Its heathland habitats feature Bristle Bent (*Agrostis curtisii*), Green-ribbed Sedge (*Carex binervis*), Heath Milkwort (*Polygala serpyllifolia*), Lousewort (*Pedicularis sylvatica*), Heath Plait-moss (*Hypnum jutlandicum*), and bog-mosses (*Sphagnum* spp.), in addition to typical gorse and heather species. The fen habitats

feature Greater Bird's-foot Trefoil (*Lotus pedunculatus*), Star Sedge (*Carex eChinata*), Carnation Sedge (*C. panacea*), Common Sedge (*C. nigra*), Soft-rush (*Juncus effusus*), Sharp-flowered Rush (*J. acutiflorus*), Marsh-bedstraw (*Galium palustre*), Wild Angelica (*Angelica sylvestris*), Water Mint (*Mentha aquatic*), Lesser Skullcap (*Scutellaria minor*) and Devil's-bit Scabious (*Succisa pratensis*). Mires, soakaways and bog pools are characterised by bog-mosses, including *Sphagnum subnitens*, *S. denticulatum* and *S. cuspidatum*, and associated flowering plants such as Bog Asphodel (*Narthecium ossifragum*), Common Cottongrass (*Eriophorum angustifolium*), Hare's-tail Cottongrass (*E. vaginatum*), Round-leaved Sundew (*Drosera rotundifolia*), Marsh St-John's-wort (*Hypericum elodes*), Bog Pondweed (*Potamogeton polygonifolius*) and Pale Butterwort (*Pinguicula lusitanica*). Adjacent areas of wet woodland feature Grey Willow (*Salix cinerea*), Broad Buckler-fern (*Dryopteris dilatata*), Lady Fern (*Athyrium filix-femina*), Overleaf Pellia (*Pellia epiphylla*), Shining Hookeria (*Hookeria lucens*), Dotted Thyme-moss (*Rhizomnium punctatum*) and blunt-leaved bog-moss (*Sphagnum palustre*). Lowland dry acid grassland in this SSSI is characterised by Common Bent (*Agrostis capillaris*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Sheep's-fescue (*Festuca ovina*), Field-woodrush (*Luzula campestris*), Heath Bedstraw (*Galium saxatile*), Sheep's Sorrel (*Rumex acetosella*) and Common Dog-violet (*Viola riviniana*) along with Neat Feather-moss (*Pseudoscleropodium purum*) and Springy Turf-moss (*Rhytidiadelphus squarrosus*).

The heathlands and flower-rich habitats of Area A1 support invertebrate fauna of conservation interest such as the Pond Mud Snail (*Omphiscola glabra* (**LC**, S41)), the seed bug *Heterogaster artemisiae* and Limestone Ant Fly (*Microdon mutabilis* (**DD**)), nationally rare Perkin's Mining Bee (*Andrena rosae*), Buff-banded Mining Bee (*A. simillima*), Tormentil Nomad Bee (*Nomada roberjeotiana*), Pearl-bordered Fritillary (*Boloria euphrosyne* (**VU**, S41)), Small Pearl-bordered Fritillary (*B. selene* (**VU**, S41)) Silver-studded Blue (*Plebejus argus* (**VU**, S41)), Grayling (*Hipparchia semele* (**EN**, S41)), Wall Brown (*Lasiommata megera* (**EN**, S41)), the wetland rove Beetle *Stenus kiesenwetteri*, crane fly *Tipula melanoceros*, Sheep's-bit Weevil (*Cleopomiarus micros*), Scarce Clouded Knot-horn (*Homoeosoma nimbella*), Heather Beetle (*Lochmaea suturalis* (**LC**)), the rove Beetle (*Staphylinus erythropterus* (**LC**)), Small Heather Weevil (*Micrelus ericae*), the weevils *Protopirapion atratum*, *Stenopterapion scutellare* and *Sitona striatellus*, the ground bugs *Scolopostethus decoratus* and *Ulopa reticulata*, the spiders *Agroeca proxima* (**LC**) and *Clubiona trivialis* (**LC**) and the jewel Beetle *Trachys troglodytes* (**DD**).

The various nationally designated sites host few notified vertebrate species. These include the Greater Horseshoe (*Rhinolophus ferrumequinum* (**LC**, S41)) (in addition to Daubenton's (*Myotis daubentonii* (**LC**)), which also frequently uses old mining infrastructure as roosting sites). Notified birds include Common Stonechat (*Saxicola rubicola* (**LC**)), Peregrine Falcon (*Falco peregrinus* (**LC**)) and Dartford warbler (*Curruca undata* (**LC**)). The Grey Seal (*Halichoerus grypus* (**LC**)) is present when hauling up in the West Point to Carrick Du SSSI.

The West Penwith IIA supports at least 22 qualifying IIA species of conservation concern, including the endemic British Cave Shrimp (*Niphargus glenniei* (S41)) as well as the European Vulnerable Moss Carder Bee (*Bombus muscorum* (S41)) and European Vulnerable Hairy-saddled Colletes

(*Colletes fodiens*). This IIA is also regionally important in the southwest for several other rare or declining Bee and Butterfly species (but not IIA qualifying species), including the Large Scabious Bee (*Andrena hattorfiana*).

## 1.5. Nature Recovery Strategy opportunities

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Local Nature Recovery Strategy Mapping shows large areas for opportunity for Heathland & Moor Mosaic around Lower Bostraze and through the Kenijack and Kelynack valleys, with areas of Rivers & Wetland opportunities following those valleys. There is a large area for the Coastal Wildbelt opportunity inland from the **Aire Point to Carrick Du SSSI**, as well as an Intertidal opportunity following the SSSI from Nanquidno to Portmear cove.

## 1.6. Landscape change analysis

For Area A1, the St Just Mining District, the biggest change in Land Cover was for Improved Grassland, with an estimated increase of 702 ha to 1451 ha, followed by large decreases in Arable and Semi-natural Grassland (517 ha and 491 ha decrease in area, respectively). The increase in Improved Grassland Land Cover was predominantly made up from the reduction in Arable and Semi-natural Grassland, but also smaller areas of Mountain Heath & Bog, Broadleaf Woodland and Built-up Areas & Gardens Land Cover Classes. See **Appendix 6** for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show mixed confidence levels, especially for Improved Grassland and Semi-Natural Grassland.

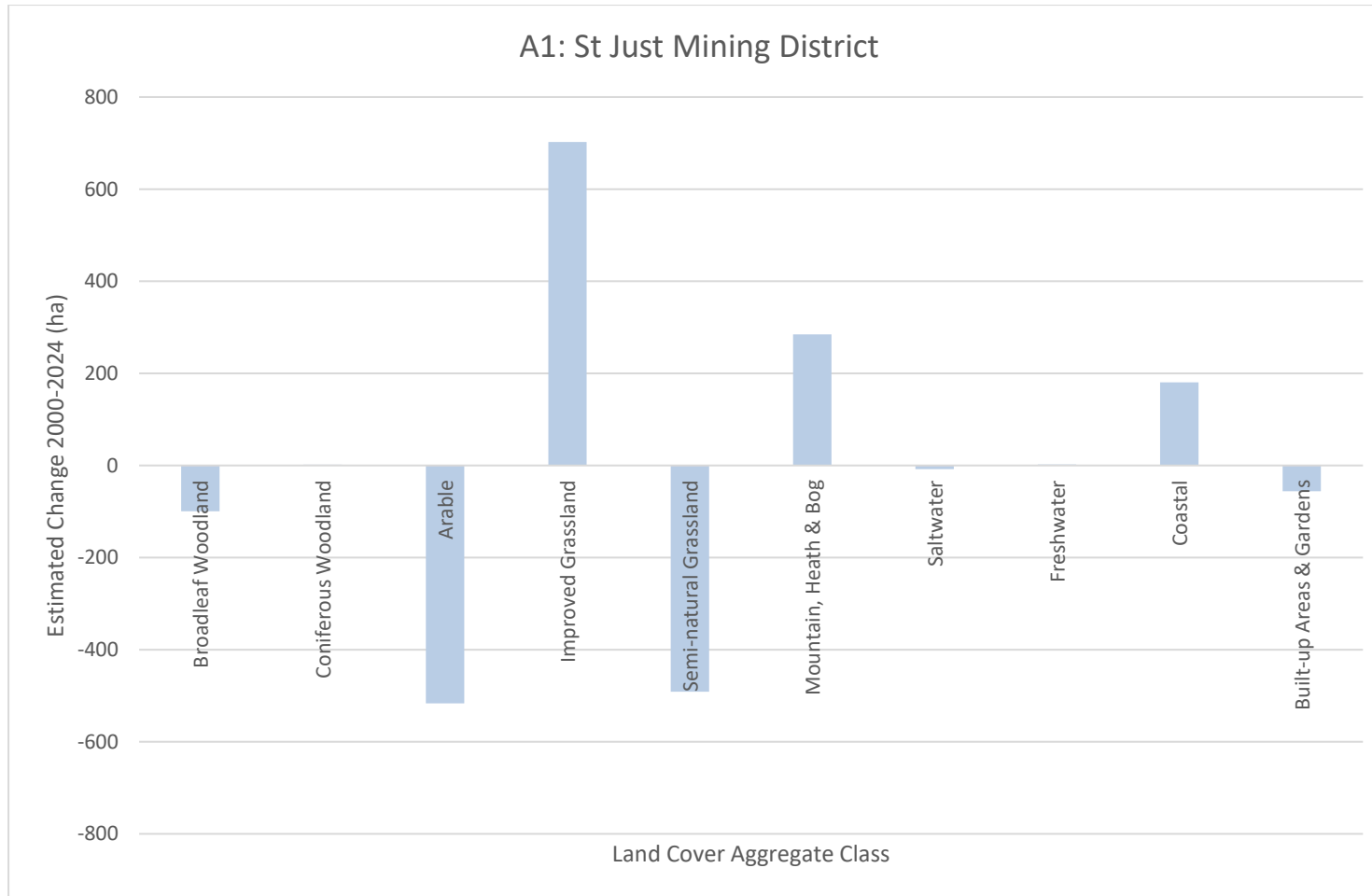


Figure 1. Area A1 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).

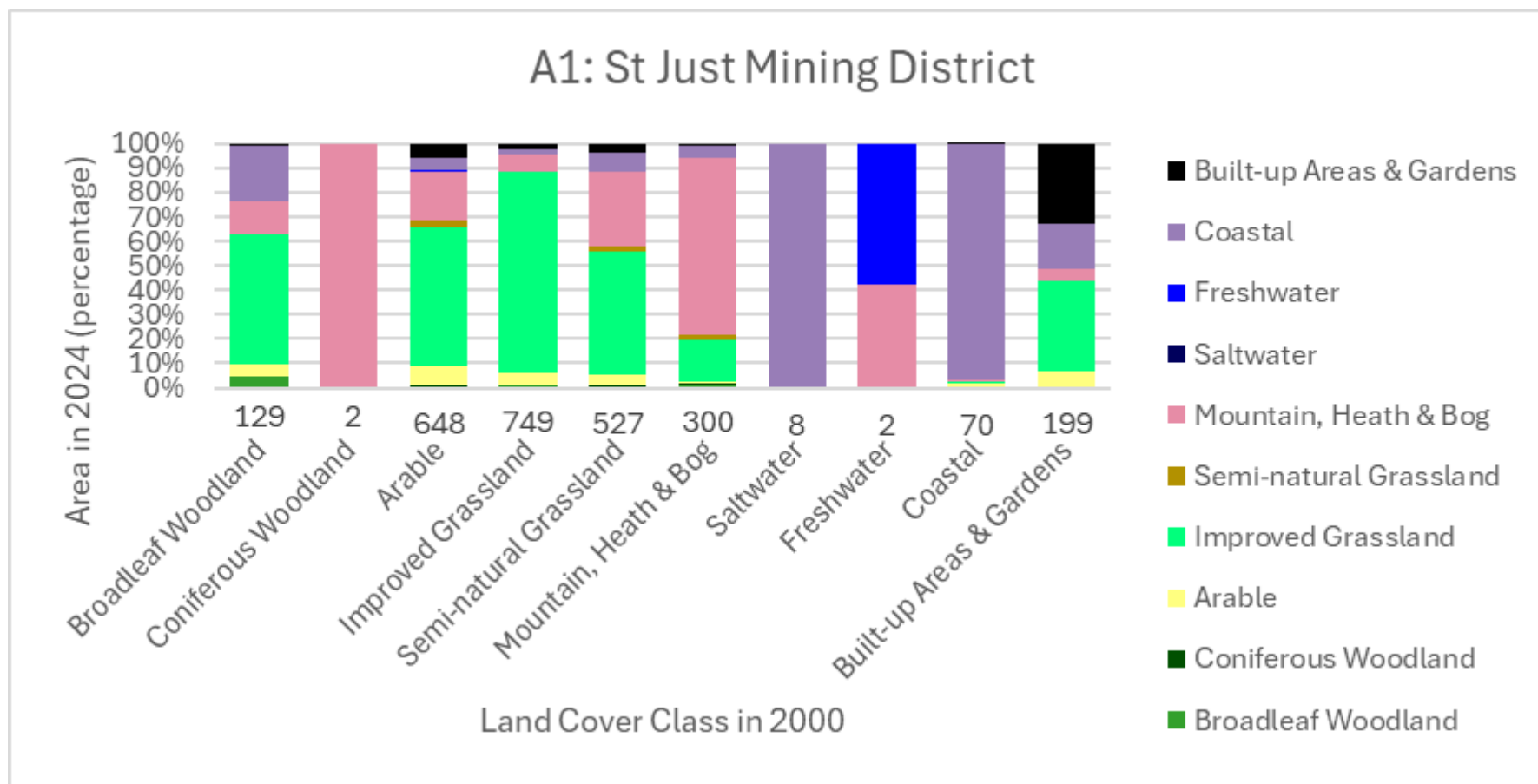


Figure 2. Area A1: Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

## 1.7. Area profile

Table 1. Area A1 Results of designations, priority areas, and land cover within the WHS Area.

<b>Designation</b>	<b>A1 ha</b>	<b>A1 %</b>
Buglife B-Lines	2294.64	86
Buglife IIA	813.52	30
Countryside Stewardship (MID-TIER)	391.24	15
Countryside Stewardship (HIGHER-TIER)	545.80	20
Cornwall County Wildlife Sites (ERCCIS)	643.37	24
National Landscapes	2670.41	100
RSPB IBA	1336.39	50
RSPB Priority Landscapes	149.42	6
SSSI	944.84	35
SAC	2.34	<0.5
<b>WHS TOTAL</b>	<b>2672.42</b>	<b>100</b>
<b>Primary Habitat</b>	<b>A1 ha</b>	<b>A1 %</b>
Arable & Horticultural	184.72	7
Bare Ground	133.88	5

Bare Sand	7.758	<0.5
Bracken	260.417	10
Broadleaved, Mixed & Yew Woodland	12.09	<0.5
Built-up Areas & Gardens	171.64	6
Dwarf Shrub Heath	595.40	22
Fen, Marsh & Swamp	33.11	1
Improved & Semi-Improved Grassland	18.95	1
Scrub	82.34	3
Unimproved Grassland	1149.29	43
Water	17.72	1

## A2. The Port of Hayle

The Port of Hayle is mainly designated for its important estuarine habitats and associated bird species, with over half (53%) of the Area designated as a Site of Special Scientific Interest and more than a third (38%) designated as an RSPB Reserve as an important site for migratory birds. The Port of Hayle is also within 1km of various other SSSIs designated for dune, heath, and grassland attributes and species.

### 2.1. Designations

#### 2.1.1. National designations

##### *Sites of Special Scientific Interest (SSSI)*

Over half (53%) of Area A2 is covered by **Hayle Estuary & Carrack Gladden SSSI**, which comprises a total of 190 ha of mudflat, sand flats, saltmarsh, reedbed, sand dunes, dune grassland, open water and tidal reservoir habitats. It is an important site for migratory birds, as the most south-westerly estuary in Britain, with mild conditions throughout the winter and along key migration routes, the site provides vital feeding and roosting for a plethora of bird species. The SSSI supports wintering wildfowl and wading bird species such as Curlew (*Numenius arquata* (**EN**, S41)) and Scaup (*Aythya marila* (**EN**, S41)), Ringed plover (*Charadrius hiaticula* (**VU**)), Grey Plover (*Pluvialis squatarola* (**VU**)), Dunlin (*Calidris alpina* (**VU**)), Pintail (*Anas acuta* (**VU**)), Scaup (*Aythya marila* (**EN**, S41)), Long-tailed Duck (*Clangula hyemalis* (**NT**)), Red-breasted Merganser (*Mergus serrator* (**VU**)) and Common Sandpiper (*Actitis hypoleucos* (**NT**)). Species such as Oystercatcher (*Haematopus ostralegus* (**VU**)) and Shelduck (*Tadorna tadorna* (**EN**)) are resident all year round. The open water habitat supports wildfowl and diving birds such as Black-throated Diver (*Gavia arctica*), Slavonian Grebe (*Podiceps auritus* (**VU**)) and Goldeneye (*Bucephala clangula* (**VU**)). The site is also designated for several other avian species categorised as Least Concern (**LC**). An assemblage of vascular plants has also been notified, including Round-fruited Rush (*Juncus compressus* (**NT**)), Autumn Lady's Tresses (*Spiranthes spiralis* (**NT**)) and Mountain St John's-wort (*Hypericum montanum* (**NT**)), among others classified as Least Concern in Great Britain.

**Loggans Moor SSSI** sits within a 1km buffer of the Area A2 boundary to the northeast. It is designated for its calcareous, species-rich grassland and marshland habitats. The calcareous grasslands support populations of species-rich meadow characteristic plant species, including the Early Marsh Orchid (*Dactylorhiza incarnata* (**LC**)), which is rare in Cornwall. Wetter areas support a wide array of species adapted to damp habitats. All species for which the site is designated are categorised as Least Concern.

**Gwithian to Mexico Towans SSSI** also sits within a 1km buffer of the Area A2 boundary and is the second-largest dune system in Cornwall, covering a total of 371.1 ha. The SSSI is designated for the rare native plant and associated fauna species in this complex system of foredune, dune, short-grass herb-rich calcareous grassland, scrub, dune-slack, cliff and pond habitats. Only a small section lies within 1km of the WHS boundary; however, a multitude of plant species have been recorded across these habitats, such as Autumn Lady's-tresses (*Spiranthes spiralis* (NT)). The vast majority are categorised as Least Concern, or no rating is provided. Phillack Towans, just over 100m from the north-east of the WHS boundary, is particularly notable. Here, there is a small pond supporting a wide variety of plant species in addition to the Great Pond Snail (*Lymnaea stagnalis* (LC)), one of only a few locations for this species in Cornwall, as well as the Pond Mud Snail (*Omphiscola glabra* (LC, S41)).

This complex dune system and the range of flowering plants are important for the *Lepidoptera* communities (Moths and Butterflies) it supports, including the Silver-studded Blue (*Plebejus argus* (VU, S41)), the Grayling (*Hipparchia semele* (EN, S41)), the White-letter Hairstreak (*Strymonidia album* (VU, S41)) and Pearl-bordered Fritillary (*Boloria euphrosyne* (VU, S41)).

### Buglife B-Lines

The entire land-based area in Area A2 is covered with a Buglife B-Line, which creates a corridor along the Cornwall Coast and 3km inland.

### RSPB Reserves

A large proportion (38%) of Area A2 includes **Hayle Estuary RSPB Reserve**, the most south-westerly estuary in the UK. It is home to a wide variety of wetland birds (see Hayle Estuary & Carrack Gladden SSSI above). The vagrant Ring-billed Gull (*Larus delawarensis*) from North America may be seen in winter. In summer, Osprey (*Pandion haliaetus* (NT)) has been seen. The reserve is only one of two RSPB Reserves within the Cornwall and Devon Mining Landscape WHS (The other being in Area 10).

### RSPB Priority Landscapes

To the north of Area A2 and within a 1km buffer of the A2 boundary is the **Celtic Sea and Islands Seascape** RSPB Priority Landscape, which stretches from the Bristol Channel right around Devon and Cornwall to the English Channel at Exmouth, Devon.

## 2.1.2. Local Designations

### County Wildlife Sites (CWS)

Cornwall County Wildlife Sites cover 8% of the A2 Area. The majority of this is **Hayle Estuary CWS**, which links the two units of Hayle Estuary and Carrack Gladden SSSI and adjoins Hayle Dune System CWS at the mouth of the estuary and is designated for its intertidal mudflat habitat. A small section of the **Hayle Dune System CWS** is within the boundary of A2 at Hayle Beach, comprising coastal sand dunes, and is split across two

sections linking up the three SSSIs along this part of the coast: Godrevy Head to St Agnes SSSI, Gwithian to Mexico Towans SSSI and Hayle Estuary and Carrack Gladden SSSI.

## 2.2. Habitats

Over half the area of Area A2 is classified as Open Water (the estuary) or Built-up Areas & Gardens in Hayle town (26% and 30%, respectively). The estuarine open water underpins the RSPB reserve and SSSI within the site boundary. Bare Ground, Bare Sand, Coastal Saltmarsh, Coastal Sand Dunes around the estuary and Arable & Horticultural to the southwest and northeast of Area A2, all making up the vast majority of the remaining area, underpinning the County Wildlife Sites and Buglife B-Line designations. Finally, small areas of Improved and Semi-improved Grassland to the northeast, Broadleaved, Mixed, and Yew Woodland and Scrub cover scattered around the built-up areas each form 1% of Area A2's area.

## 2.3. Species

Over 68,000 records for Section 41 species have been recorded in the National Biodiversity Network database and over 1,100 in the ERICA database since 2000, for such a small area. An array of Red Data Book and/or Section 41 species have been recorded in Area A2 and the designated sites within its 1km boundary, these include migratory water and wildfowl bird species associated with the Hayle Estuary & Carrack Gladden SSSI, and Hayle Estuary RSPB Reserve designations, Ringed plover (*Charadrius hiaticula* (**VU**)), Golden Plover (*Pluvialis apricaria* (**LC**)), Grey Plover (*P. squatarola* (**VU**)), Curlew (*Numenius arquata* (**EN**, S41)) and Dunlin (*Calidris alpina* (**VU**)), Pintail (*Anas acuta* (**VU**)), Widgeon (*A. Penelope*), Teal (*A. crecca* (**LC**)) Scaup (*Aythya marila* (**EN**, S41)), Long-tailed Duck (*Clangula hyemalis* (**NT**)), Common Sandpiper (*Actitis hypoleucos* (**NT**)), Little Stint (*Calidris minuta*) and Red-breasted Merganser (*Mergus serrator* (**VU**)). Species such as Oystercatcher (*Haematopus ostralegus* (**VU**)), Mute Swan (*Cygnus olor* (**LC**)) and Shelduck (*Tadorna tadorna* (**EN**)) are resident all year round. The open water habitat supports wildfowl and diving birds such as the Black-throated Diver (*Gavia arctica*), Red-throated Diver (*G. stellate* (**LC**)), Great Northern Diver (*G. immer* (**LC**)), Little Grebe (*Tachybaptus ruficollis* (**LC**)), Slavonian Grebe (*Podiceps auritus* (**VU**)), and Goldeneye (*Bucephala clangula* (**VU**)). In addition, the vagrant Ring-billed Gull (*Larus delawarensis*) from North America has been seen in winter. In summer, Osprey (*Pandion haliaetus* (**NT**)) has been seen.

Several plants are also notified in this area: Western Ramping Fumitory (*Fumaria occidentalis* (**LC**)), Balm-leaved Figwort (*Scrophularia scorodonia*), Round-fruited Rush (*Juncus compressus* (**NT**)), Autumn Lady's Tresses (*Spiranthes spiralis* (**NT**)), Marram Grass (*Ammophila arenaria* (**LC**)), Traveller's Joy (*Clematis vitalba* (**LC**)), Wild Privet (*Ligustrum vulgare* (**LC**)), Portland Spurge (*Euphorbia portlandica* (**LC**)), Bulbous Meadowgrass (*Poa bulbosa* (**LC**)), Mountain St John's-wort (*Hypericum montanum* (**NT**)), Hebridean Orchid (*Dactylorhiza fuchsii* ssp. *hebridensis* (**LC**)), Soft-

leaved Sedge (*Carex montana* (**LC**)), Hazel (*Corylus avellana* (**LC**)), Ivy Broomrape (*Orobanche hederæ* (**LC**)) and Maidenhair Fern (*Adiantum capillus-veneris* (**LC**)).

The Dune system of Gwithian to Mexico Towans SSSI supports *lepidoptera* (Moths and Butterflies), including the Silver-studded Blue (*Plebejus argus* (**VU**, S41)), the Grayling (*Hipparchia Semele* (**EN**, S41)), the White-letter Hairstreak (*Strymonidia album* (**VU**, S41)) and Pearl-bordered Fritillary (*Boloria Euphrosyne* (**VU**, S41)), which may be sufficiently mobile to disperse into the wider WHS A2 area.

Red Data Book Near Threatened **NT**, Vulnerable **VU**, Endangered **EN**, and Least Concern **LC**, and Section 41 priority Species **S41**.

## 2.4. Nature Recovery Strategy opportunities

Local Nature Recovery Strategy Mapping focuses mainly on Intertidal and Rivers & Wetlands opportunities given Area A2's predominant habitat types. There are mapped opportunities for Coastal Wildbelt adjacent to the estuary. There are also Nature-rich Grasslands, Town & Village Green & Blue Space and Trees, Scrub & Woodland opportunities at the edges of the boundary near more built-up areas, such as north of the roundabout near St Erth railway station, around Foundry Hill and around Hayle Recreation Ground and Skatepark.

Given the low proportion of arable and horticultural land, there are no mapped Countryside Stewardship agreements.

## 2.5. Landscape change analysis

In Area A2, The Port of Hayle, the biggest change in Land Cover was in Arable land with a reduction of over 8 ha, but followed by a significant increase in Built-up Areas & Gardens (7 ha). This Arable land was mainly changed to Built-up Areas & Gardens, Coastal and Improved Grassland in 2024. There were also increases in Saltwater and Coastal land cover, which may be due to the timing of the satellite imagery (capturing high or low tide), but would require further investigation. See **Appendix 6** for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show mixed confidence levels across WHS Areas and land cover types, especially for Improved Grassland and Semi-Natural Grassland.

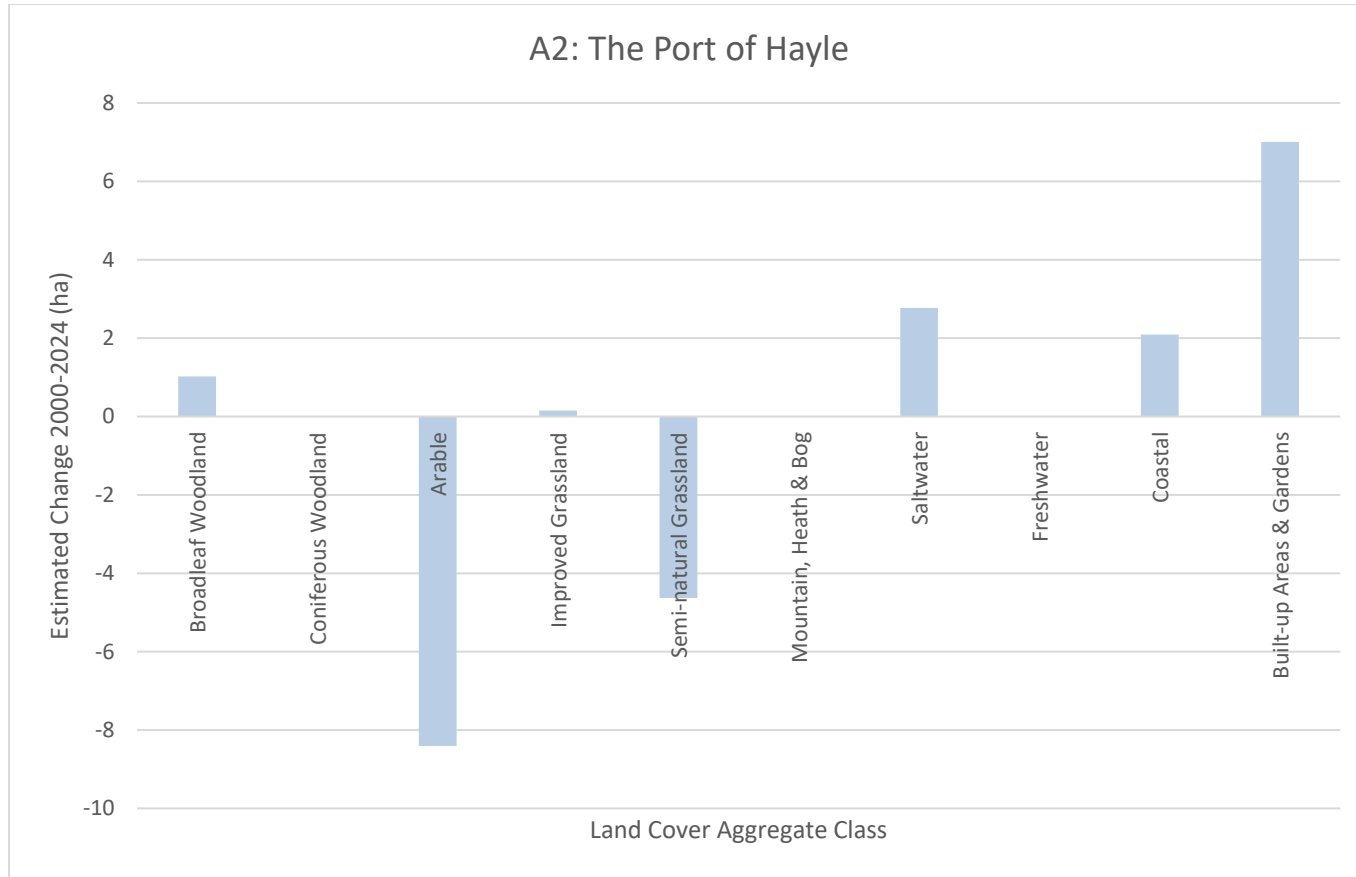


Figure 3. Area A2 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).

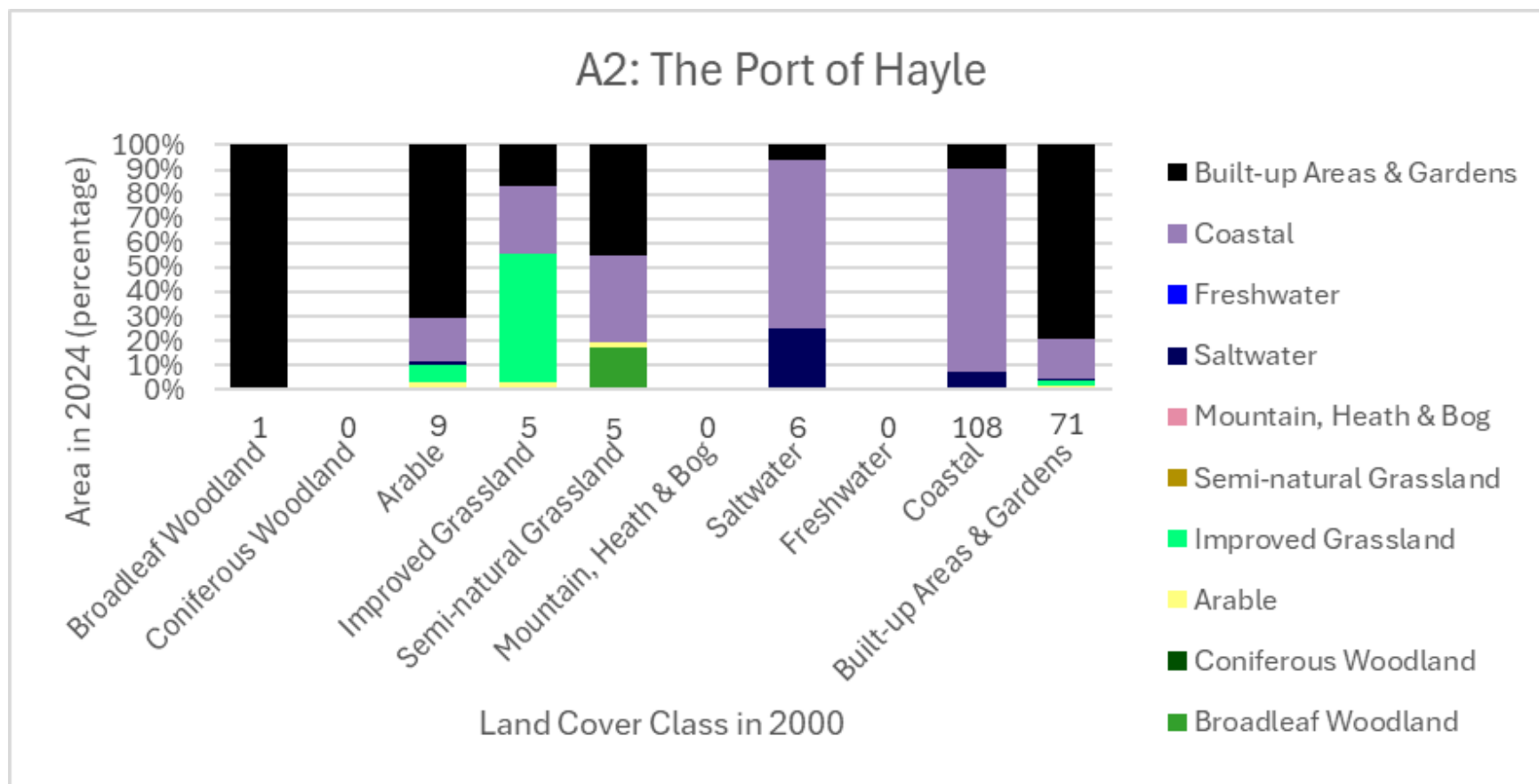


Figure 4. Area A2 Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

## 2.6. Area profile

Table 2. Area A2 Results of designations, priority areas, and land cover in terms of area (Ha) and percentage cover (%) within the WHS Area.

<b>Designation</b>	<b>A2 ha</b>	<b>A2 %</b>
Buglife B-Lines	204.94	99
Cornwall County Wildlife Sites (ERCCIS)	16.02	8
RSPB Reserves	78.99	38
SSSI	108.82	53
<b>WHS TOTAL</b>	<b>207.01</b>	<b>100</b>
<b>Primary Habitat</b>	<b>A2 ha</b>	<b>A2 %</b>
Arable & Horticultural	11.52	6
Bare Ground	20.97	10
Bare Sand	20.71	10
Broadleaved, Mixed & Yew Woodland	2.83	1
Built-up Areas & Gardens	61.90	30
Coastal Saltmarsh	14.41	7
Coastal Sand Dunes	14.84	7
Coniferous Woodland	0.38	<0.5
Improved & Semi-Improved Grassland	3.10	1

Scrub	2.49	1
Water	53.87	26

## A3. Tregonning and Gwinear Mining Districts with Trewavas

Tregonning and Gwinear Mining Districts with Trewavas are predominantly designated for mine sites and associated fauna and flora on mine infrastructure, waste materials, disused mining pits, gullies, waste and spoil tips surrounded by scrub and lowland heath. The Tregonning and Gwinear Mining Districts have a small but nationally important Site of Special Scientific Interest for rare and scarce mosses and liverworts which thrive on mining heritage features (West Cornwall Bryophytes SSSI). Cornwall County Wildlife Sites cover 8% of the Area and are scattered throughout the WHS, many on mining sites or great house estates, consisting of lowland heathland, wet and Oak woodland, stream valleys, and maritime habitats, including areas around Godolphin and Clowance houses. To the South of the Trewavas sub-area, there is an RSPB Priority Landscape.

### 3.1. Designations

#### 3.1.1. National Designations

##### *Sites of Special Scientific Interest (SSSI)*

**West Cornwall Bryophytes (SSSI)** comprises seven separate areas on former mining sites, designated for rare and scarce Mosses and Liverworts which thrive on copper-rich areas such as spoil tips, mine waste, mine buildings and other associated structures. These sites support 20% of all known British populations of four nationally rare species, including the Liverworts: Great Copperwort (*Cephaloziella nicholsonii* (VU, S41)), Common Threadwort (*C. Integerrima* (EN, S41)), Lesser Copperwort (*C. Massalongi* (EN)) and the moss species Tongue-leaved Copper-moss (*Scopelophila cataractae* (EN, S41)).

**Tregonning Hill (SSSI)** covers 5.21 ha and is the only known British location of Western Rustwort (*Marsupella profunda* (EN, S41)), which grows on granite outcrops around the disused China clay mine workings. The site also supports Bristle-leaf Moss (*Brachydontium trichodes* (LC)), which is heavily restricted in Cornwall.

Several sites within a 1 km buffer of Area A3 are designated for geological features. **Great Wheal Fortune (SSSI)** is a 0.55 ha opencast mining site; **Porthcew (SSSI)** is 9.6 ha; **Penberthy Croft Mine (SSSI)** is a 2.32 ha former mine site for tin, copper, and lead with spoil dumps and shafts. **Tremearne Par (SSSI)** is just outside the WHS boundary and is 14.54 ha.

**Marazion Marsh (SSSI)** is a 59.9 ha area of mainly reed-marsh and willow carr just within a 1 km buffer of A3. The site is important for breeding wetland birds, including Sedge Warbler (*Acrocephalus schoenobaenus* (**NT**)). Yellow Wagtail (*Motacilla flava* (**NT**, S41)) and Quail (*Coturnix coturnix* (**EN**)), both rare in Cornwall, breed in this SSSI. The site also supports large numbers of overwintering wildfowl and waders, including Bittern (*Botaurus stellaris* (**NT**, S41)), as well as other bird species such as Osprey (*Pandion haliaetus* (**NT**)) and Nightingale (*Luscinia megarhynchos* (**VU**)). The site also hosts the nationally rare plants Yellow Centaury (*Cicendia filiformis* (**VU**, S41)) and Pillwort (*Pilularia globulifera* (**NT**, S41)).

### *Special Protection Areas (SPA)*

The most easterly edge of **Marazion Marsh SPA** sits just within the 1km boundary of Area A3, designated for two bird species: Bittern (*Botaurus stellaris* (**NT**, S41)) and Aquatic Warbler (*Acrocephalus paludicola* (**no red list data**, S41)). Other species of interest include the Spotted Crake (*Porzana porzana* (**CR**)) and Kingfisher (*Alcedo atthis* (**VU**)).

### *Special Areas of Conservation (SAC)*

**Tregonning Hill SAC**, which is underpinned by the aforementioned SSSI of the same name, is designated for the rare Western Rustwort (*Marsipella profunda* (**EN**, S41)). The site also supports nationally scarce Bristle-leaf Moss (*Brachydontium trichodes* (**LC**)).

### *Marine Conservation Zones (MCZ)*

**Mounts Bay (MCZ)** sits just within the 1km buffer of the boundary of the Marazion section of WHS Area A3.

### *National Landscape*

**Cornwall National Landscape, South Coast Western**, section 08 along the WHS Area A3 southerly coastal section.

### *Buglife B-Lines*

A 3km wide stretch along the southerly edge of the Area A3 boundary is B-Line.

### *RSPB Priority Landscapes*

**Celtic Sea and Islands Seascape** around Marazion and between Praa Sands and Porthleven.

### 3.1.2. Local designations

#### *County Wildlife Sites (CWS)*

Eight different Cornwall County Wildlife Sites cover a total of 8% of Area A3. These are: **Carnmeal Downs CWS** (which has extensive disused mine workings with associated spoil heaps and disturbed ground), **Carbismill to Relubbus CWS**, **Godolphin Warren CWS**, **Gurlyn Wood CWS**, **Relubbus Ponds CWS**, **Tregonning Hill CWS**, **Clowance House & Park CWS**, and **Porthleven to Lesceave Cliff CWS**. Key habitats in these sites are maritime cliff and slopes, lowland heathland, wet woodland, reedbeds, hedgerows and upland Oak woodland.

## 3.2. Habitats

Over half of the area in Area A3 is classified as Arable & Horticultural (39%) or Improved & Semi-Improved Grassland (15%), while Built-Up Areas & Gardens take up a further 9%. The remaining habitats, all covering less than 14% of the A3 Area, underpin the various nationally and locally designated sites (see table 3 below).

## 3.3. Species

Over 156,000 Section 41 species have been recorded in the National Biodiversity Database, with over 2,000 in ERICA since the year 2000.

National designations within Area A3 are primarily designated for Liverworts and mosses: Great Copperwort (*Cephaloziella nicholsonii* (**VU**, S41)), Common Threadwort (*C. Integerrima* (**EN**, S41)), Lesser Copperwort (*C. Massalongi* (**EN**)), Western Rustwort (*Marsupella profunda* (**EN**, S41)), Tongue-leaved Copper-moss (*Scopelophila cataractae* (**EN**, S41)) and Bristle-leaf Moss (*Brachydontium trichodes* (**LC**)), which is restricted to two sites in Cornwall. Many of these are specifically associated with former mining sites and the associated metal contamination. Further notified plant species which have been recorded in the area include Heather (*Calluna vulgaris* (**LC**)), Bell Heather (*Erica cinerea* (**LC**)), Western Gorse (*Ulex gallii* (**LC**)), Bilberry (*Vaccinium myrtillus* (**LC**)), Tormentil (*Potentilla erecta* (**LC**)), Cross-leaved Heath (*Erica tetralix* (**LC**)), European Gorse (*Ulex europaeus* (**LC**)), Bracken (*Pteridium aquilinum* (**LC**)) Bramble (*Rubus fruticosus* agg. (**LC**)), willows (*Salix* sp.), Roth's Thread-moss (*Pohlia andalusica* (**DD**)), Don's Thread-moss (*Bryum donianum* (**LC**)), Heath Threadwort (*Cephaloziella stellulifera* (**NT**)) and Spanish Frillwort (*Fossombronina caespitiformis* (**LC**)).

A small part of Marazion Marsh SPA and its underpinning SSSI is within 1 km of Area A3. The birds for which this area is designated are primarily associated with wetland habitats and thus, although highly mobile, are unlikely to move to or within this part of the WHS. The SSSI is also designated for two rare plant species, which are unlikely to disperse and become established in the WHS.

Red Data Book Near Threatened **NT**, Vulnerable **VU**, Endangered **EN**, and Least Concern **LC**, and Section 41 priority Species **S41**.

### 3.4. Nature Recovery Strategy opportunities

Local Nature Recovery Strategy Mapping shows large areas of Nature-rich grassland opportunities around the villages of Goldsithney, Relubbus, Townsend, and Leedstown, with Heath and Moor Mosaic opportunities around Godolphin Hill and Tregonning Hill, and along the River Hayle valley. Opportunities for Farmland Hedges & Edges are across the extensive areas of Arable & Horticulture and Improved & Semi-improved Grassland land covers with Rivers & Wetlands and Trees, Woodland and Scrub opportunities along stream valleys with larger areas at Godolphin Cross and Clowance Estate. In addition, 24% of the land across Area A3 is under a Countryside Stewardship Scheme.

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### 3.5. Landscape change analysis

In Area A3, Tregonning and Gwinear Mining District with Trewavas, the largest Land Cover change was from the increase in Improved Grassland by an estimated 751 ha to 2039 ha, mirrored by a decrease in Sem-natural Grassland of 610 ha. The majority of this Improved Grassland was classified as Arable, followed by Semi-natural Grassland and Broadleaf Woodland in 2000.

There was also a reasonably large, estimated increase in Mountain, Heath & Bog Land Cover (119 ha), mostly made up of previously Arable, Improved Grassland and Semi-natural Grassland in the year 2000. This may be due to bracken encroachment, but further investigation would be required. See **Appendix 6** for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show mixed confidence levels across WHS Areas and land cover types, especially for Improved Grassland and Semi-Natural Grassland.

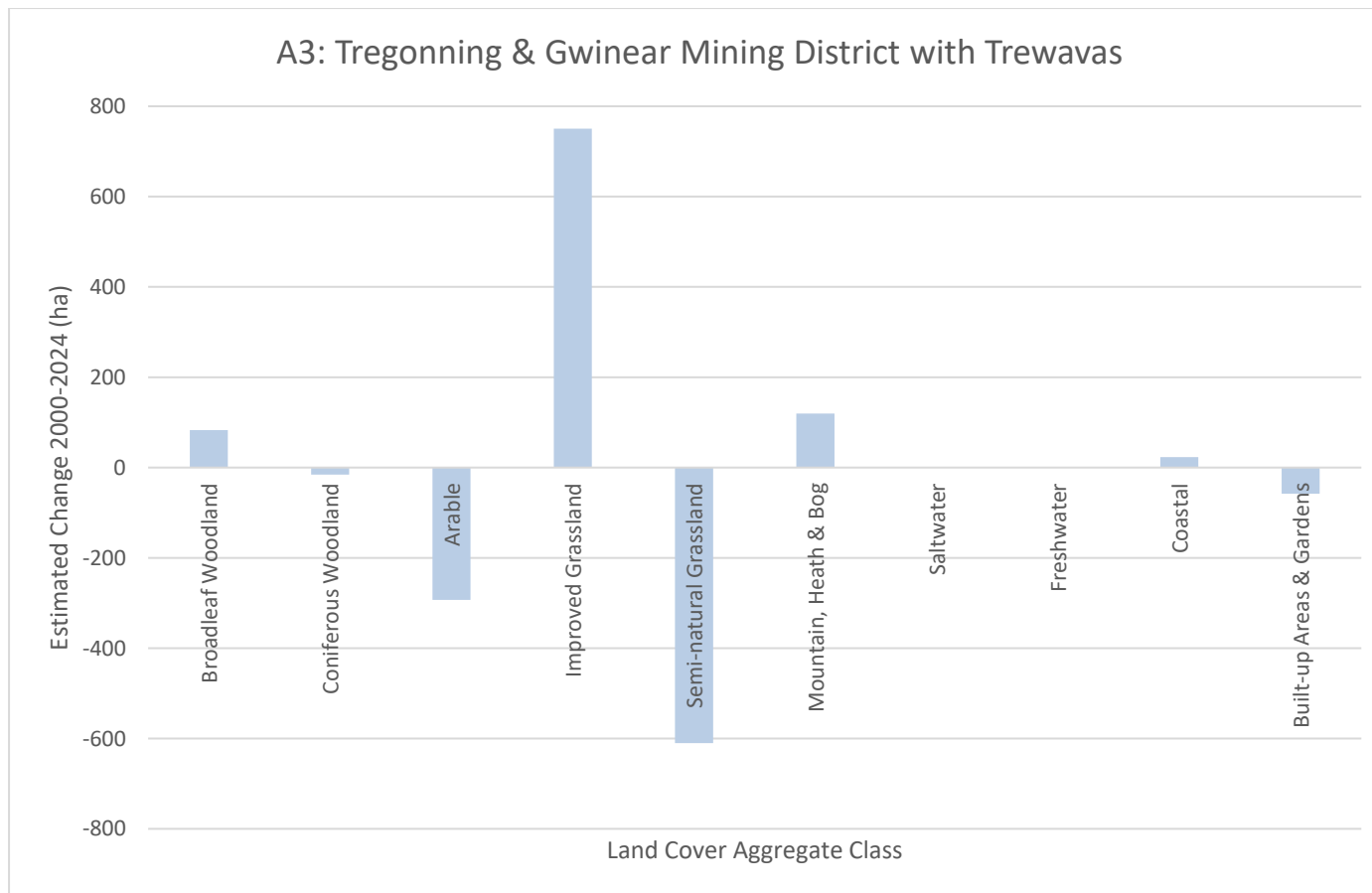
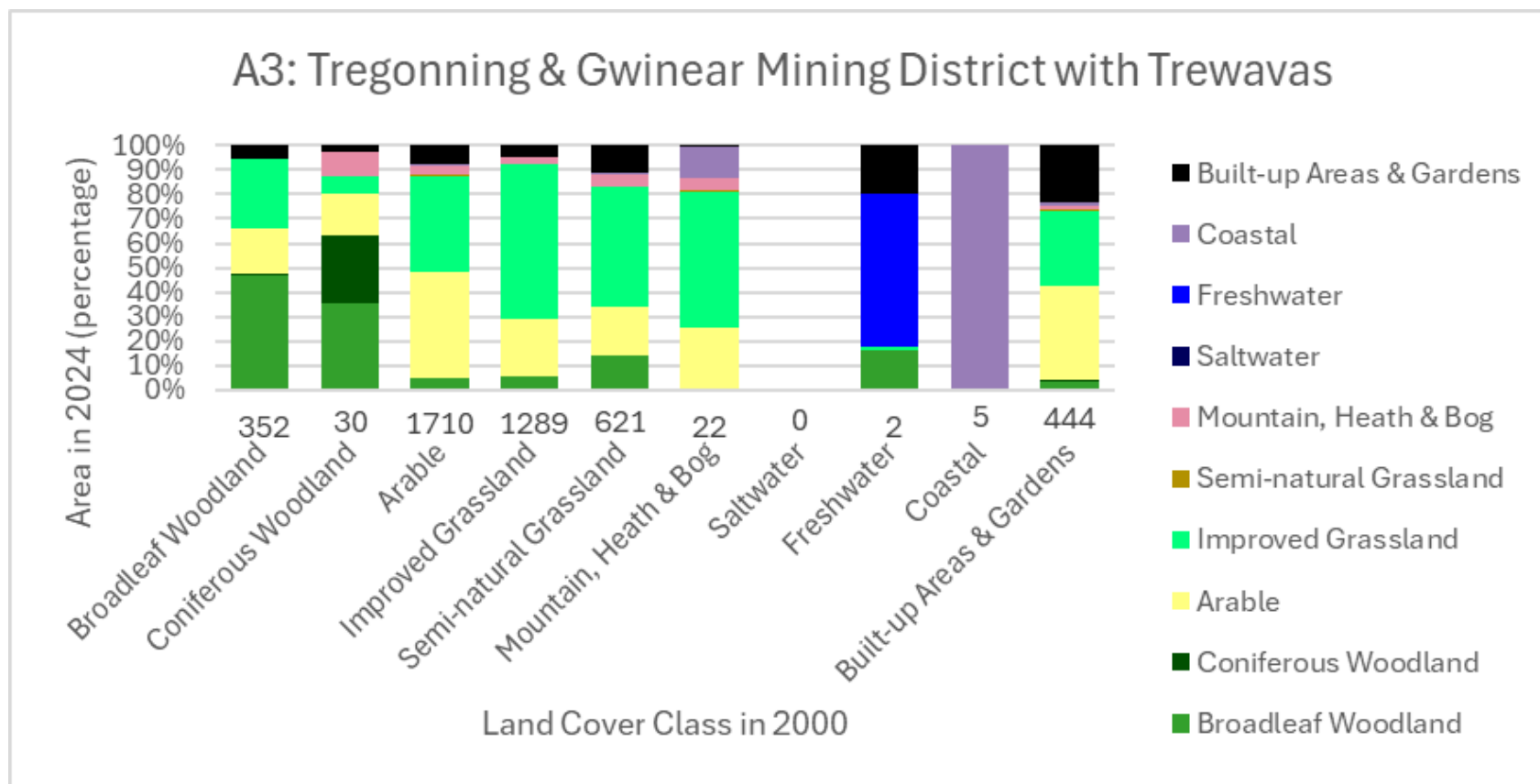


Figure 5. Area A3 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).



Figures 6. Area A3 Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

### 3.6. Area profile

Table 3. Area A3 Results of designations, priority areas, and land cover within the WHS Area.

<b>Designation</b>	<b>A3 ha</b>	<b>A3 %</b>
Buglife B-Lines	945.10	21
Countryside Stewardship (MID-TIER)	909.11	20
Countryside Stewardship (HIGHER-TIER)	188.72	4
Cornwall County Wildlife Sites (ERCCIS)	345.39	8
National Landscapes	48.43	1
RSPB Priority Landscapes	4.51	<0.5
SSSI	26.65	1
SAC	5.42	<0.5
<b>WHS TOTAL</b>	<b>4483.18</b>	100
<b>Primary Habitat</b>	<b>A3 ha</b>	<b>A3 %</b>
Arable & Horticultural	1742.93	39
Bare Ground	22.04	<0.5
Bare Sand	2.16	<0.5
Bracken	122.98	3
Broadleaved, Mixed & Yew Woodland	377.61	8

Built-up Areas and Gardens	390.53	9
Coastal Saltmarsh	0.14	<0.5
Coastal Sand Dunes	0.17	<0.5
Coniferous Woodland	25.42	1
Dwarf Shrub Heath	24.15	1
Fen, Marsh & Swamp	28.50	1
Improved & Semi-Improved Grassland	670.80	15
Scrub	624.82	14
Unimproved Grassland	441.73	10
Water	8.74	<0.5

## A4. Wendron Mining District

The Wendron Mining District Area has limited national designations; however, Area A4 overlaps significantly with a Buglife B-Line, which covers nearly two-thirds (63%) of the Area, running from the North to the South coasts and linking Area A4 with Area A5. The Wendron Mining District has good coverage of County Wildlife Sites, with nearly one-third (29%) of the area designated for a variety of habitats. An example is South Porkellis Moor CWS, which is an important site for Dragonflies and Damselflies (*Odonata*) and Bryophytes due to its water-filled pits and spoil heaps from previous mining activities.

### 4.1. Designations

#### 4.1.1. National designations

##### *Sites of Special Scientific Interest (SSSI)*

**Porkellis Moor**, one of seven separate land parcels which form **West Cornwall Bryophytes (SSSI)**, hosts Great Copperwort (*Cephaloziella nicholsonii* (**VU**, S41)), Lesser Copperwort (*C. Massalongi* (**EN**)) and Common Threadwort (*C. Integerrima* (**EN**, S41)) on the open areas of the mine spoil tips in its eastern section. Porkellis Moor is 5.5 ha and takes up only 1% of WHS Area A4.

##### *Buglife B-Lines*

A B-Line runs from the North to South Coasts, joining Portreath and Porthleven and running via Helston and to the east of Camborne and the west of Pool. This B-Line also joins up with WHS Area A5, effectively joining these two WHS Areas. This B-Line covers 63% of Area A4.

#### 4.1.2. Local Designations

##### *County Wildlife Sites (CWS)*

Seven county wildlife sites overlap with WHS Area A4, taking up 29% of the total area. **Carmenellis Moor and Lancarrow Marsh CWS** lies on the Carmenellis granite outcrop. Carmenellis Moor consists of a small, steep, rounded hill and is largely heathland, wind-clipped in places, and co-dominated by Western Gorse and Bell Heather. Lancarrow Marsh features a lowland fen habitat site. **Stithians Reservoir CWS** is run as an angling and watersports centre, but parts are managed for nature conservation.

**Calvadmack Moor CWS** is located on the western side of a large hill and lies on the Carmenellis granite outcrop. It comprises a range of habitats including lowland heathland, lowland fens, wet woodland, purple moor grass and rush pastures. **Halabezack Moor CWS** is situated at the southern

end of Stithians reservoir on the Carnmenellis granite upland. Habitats include lowland heathland dominated by Western Gorse, Bristle Bent, and Purple Moor Grass, and lowland dry acid grassland. **South Porkellis Moor CWS** is centred on the confluence between the Rivers Cober and Medlyn. The area has been extensively disturbed by deep mining, tin streaming, and China clay extraction, resulting in a complex topography of water-filled pits and spoil heaps. **Medlyn Moor CWS** slopes gently to the south, where two streams unite and run into the River Cober. This part of the site is predominantly wet willow woodland, interspersed with patches of fen vegetation. The northern section includes a large area of mixed scrub. **Little White Alice CWS** is a heathland habitat, but no citation information is available.

## 4.2. Habitats

Over 70% of the habitat in Area A4 is Unimproved Grassland (48%) and Dwarf Shrub Heath (23%). The Unimproved Grassland forms the majority of the Buglife B-Line that runs through this area. Dwarf Shrub Heath forms the majority of County Wildlife Sites as well as the single SSSI unit in this area. Other important habitats for designated sites include Broadleaved, Mixed & Yew Woodland (8%) and Bracken (4%).

## 4.3. Species

Only just over 2,000 species records are in the National Biodiversity Network database, with just over 1,100 in ERICA. The only species notified under site designations are Great Copperwort (*Cephaloziella nicholsonii* (**VU**, S41)), Lesser Copperwort (*C. Massalongi* (**EN**)) and Common Threadwort (*C. Integerrima* (**EN**, S41)).

Red Data Book Vulnerable **VU** and Endangered **EN**, and Section 41 priority Species **S41**.

## 4.4. Nature Recovery Strategy opportunities

Local Nature Recovery Strategy opportunities include large areas for Heath & Moor Mosaic around Calvadnack and Carnmenellis, to the west of Medlyn Moor Farm, and around Wendron. Areas for Rivers & Wetland opportunities following stream valleys and a large area between Calvadnack and Carnmenellis. Areas for Nature-rich Grassland buffer and link Heath & Moor Mosaic opportunities, and Trees, Woodland & Scrub opportunities, enhance and extend existing woodland habitats. There is a 27% coverage of Countryside Stewardship schemes.

## 4.5. Landscape change analysis

In Area A4, Wendron Mining District, the largest estimated change in Land Cover was from the reduction in Semi-natural Grassland of an estimated 257 ha from 267 ha, mirrored by an increase in Improved Grassland by 216 ha. This change in Semi-natural Grassland was predominantly made up

of Improved Grassland, but also from increases in Mountain, Heath & Bog and Broadleaf Woodland Land Cover. See **Appendix 6** for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show mixed confidence levels across WHS Areas and land cover types, especially for Improved Grassland and Semi-Natural Grassland.

Mountain, Heath & Bog increased by 139 ha; this is possibly due to an increase in bracken coverage, which changed the land cover category, as 77 ha of Semi-natural Grassland in 2000 was classified as Mountain, Heath & Bog in 2024.

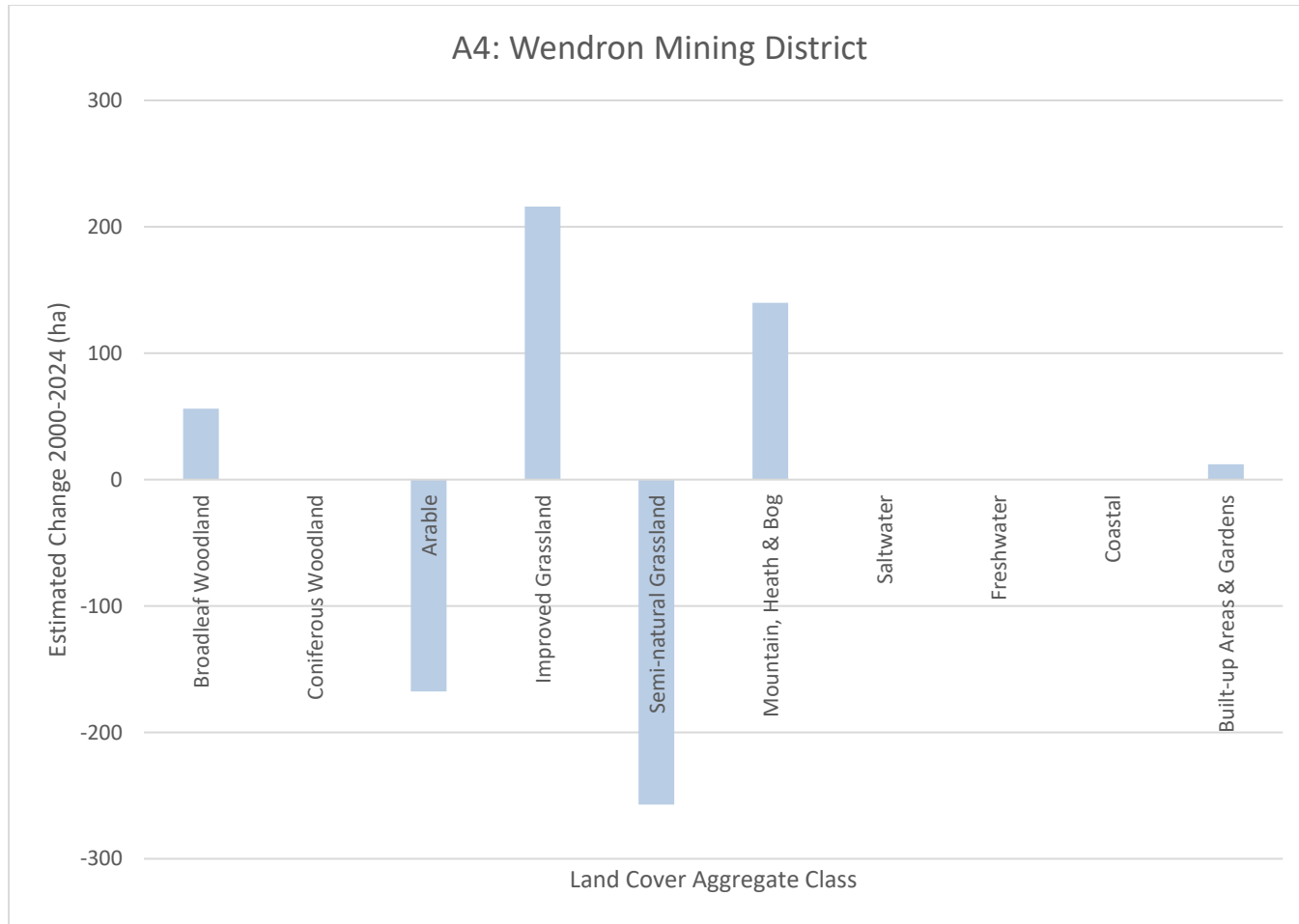
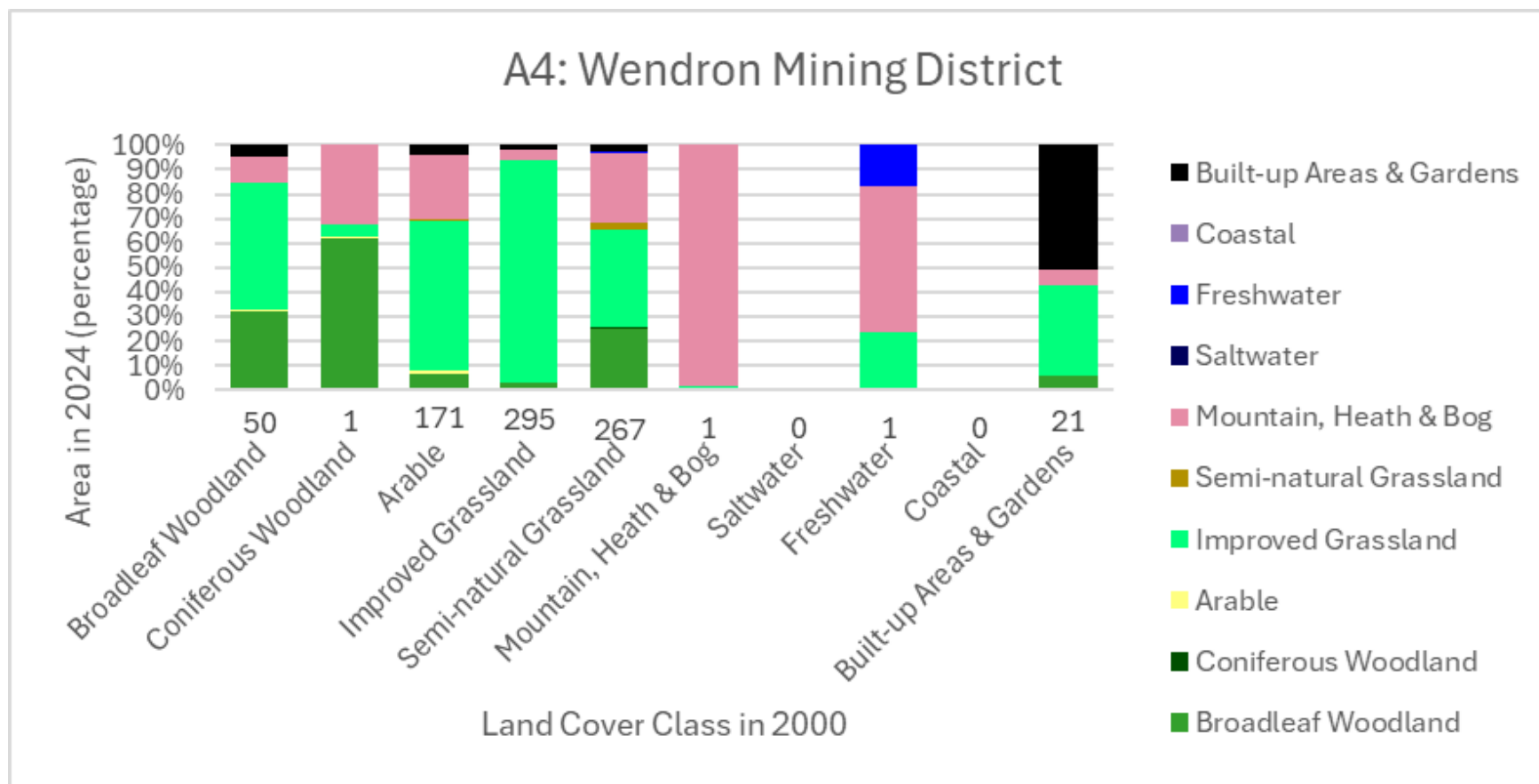


Figure 7: Area A4 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).



Figures 8. Area A4 Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

## 4.6. Area profile

Table 4. Area A4 Results of designations, priority areas, and land cover within the WHS Area.

<b>Designation</b>	<b>A4 ha</b>	<b>A4 %</b>
Buglife B-Lines	511.55	63
Countryside Stewardship (MID-TIER)	181.50	22
Countryside Stewardship (HIGHER-TIER)	36.54	5
ERCCIS CWS	235.83	29
SSSI	5.05	1
<b>WHS TOTAL</b>	<b>809.48</b>	<b>115</b>
<b>Primary Habitat</b>	<b>A4 ha</b>	<b>A4 %</b>
Arable & Horticultural	44.18	5
Bare Ground	0.08	<0.5
Bracken	33.58	4
Broadleaved, Mixed & Yew Woodland	64.67	8
Built-up Areas & Gardens	44.88	6
Coniferous Woodland	3.50	<0.5
Dwarf Shrub Heath	185.00	23
Fen, Marsh & Swamp	11.11	1

Scrub	34.25	4
Unimproved Grassland	385.59	48
Water	2.65	<0.5

## A5. Camborne and Redruth Mining District with Wheal Peevor and Portreath Harbour

The Camborne and Redruth Mining District, including Wheal Peevor and Portreath Harbour, is a large Area with low designation coverage, though the existing designations encompass a broad range of habitats. Area A5 contains key locations of the West Cornwall Bryophytes SSSI, home to nationally rare Bryophytes, as well as SSSIs containing deciduous woodland, maritime heathland and grassland habitats. Cornwall County Wildlife Sites cover 8% of Area A5, including lowland heath, woodland, wet woodland, and fen habitats in the largest parcel of Area A5 (Camborne and Redruth), as well as a wooded stream valley near Portreath Harbour. At Newton Moor CWS, the eastern valley is dominated by mixed scrub habitat, which has developed around a series of old spoil tips and disused former mine workings. The Portreath Harbour area has designations due to its coastal location and stream valleys. Area A5 has a Buglife B-Line running through the centre of this Area, covering 59% of its area, before extending east along the north coast towards St Agnes. The majority of the habitats in this Area is categorised as built-up urban areas and gardens, unimproved grassland and bracken.

### 5.1. Designations

#### 5.1.1. National Designations

##### *Sites of Special Scientific Interest (SSSI)*

Sites of Special Scientific Interest (SSSI) make up just 1% land coverage in Area A5. **West Cornwall Bryophytes SSSI**, at its **West Basset Stamps** and **Dolcoath Road** sites, hosts the nationally rare Bryophytes Great Copperwort (*Cephaloziella nicholsonii* (VU, S41)), Common Threadwort (*C. Integerrima* (EN, S41)), Heath Threadwort (*C. Stellulifera* (NT)) and Roth's Thread-moss (*Pohlia andalusica* (DD)) occur. In addition, the nationally scarce Liverwort Heath Threadwort (*C. Stellulifera* (NT)). In addition, Entire Threadwort (*C. calyculata* (EN, S41)) occurs on the tops and sides of two of the old wheel pit walls at **Dolcoath Road**. Lesser Copperwort (*C. Massalongi* (EN)) is present at **West Basset Stamps** only.

**Nance Wood SSSI** is a 9.8 ha strip of deciduous woodland coppice. The site is particularly good for Bryophytes with over 100 moss and Liverwort species recorded, including the nationally rare species Roth's Thread-moss (*Pohlia andalusica* (DD)). The site also hosts one of two British populations of the Red Data Book species Irish spurge (*Euphorbia hyberna* (VU)).

**Godrevy Head to St Agnes SSSI** is a large 627.4 ha area designated mainly for its maritime heathland and grasslands. The heathlands include the rare Pale Dog-violet (*Viola lactea* (**VU**, S41)) and the nationally rare Vigur's eyebright (*Euphrasia vigursii* (**EN**, S41)) and Hairy Greenweed (*Genista pilosa* (**NT**)). There is also the nationally rare Dorset Heath (*Erica cicliaris* (**LC**)) in heathland along the Chapel Porth valley. The species-rich grassland supports several nationally rare species, including Shore Dock (*Rumex rupestris* (**EN**, S41)), Wild Asparagus (*Asparagus officinalis* (**LC**)) and Carrot-broomrape (*Orobanche minor* subsp *maritima* (**LC**)), which is a parasite of Wild Carrot (*Daucus carota* (**LC**)). Only a very small part of this SSSI extends into WHS Area A5, but given its contiguous nature, these rare plants may be able to disperse into the wider area.

### *National Landscape*

**Cornwall National Landscape, Section 06, Godrevy to Portreath**, runs through the Portreath parcel of WHS Area A5. The main habitat of interest is coastal heath.

### *Important Invertebrate Area (IIA)*

Overlapping with both WHS Areas A5 and A7, and the Red River Valley Local Nature Reserve, and across the Portreath section of Area A2, is part of the West Cornwall and the Lizard Important Invertebrate Area, **covering just 1% of Area A5**. On the north coast, the IIA overlaps the coastal stretch of Godrevy Head to St Agnes SSSI/SAC. Maritime cliff and slope, together with the surrounding lowland heathland, especially around Porthtowan, support a diverse invertebrate assemblage including the weevil *Cathormiocerus maritimus*. The presence of old mineshafts along the coast here, especially around Porthtowan and St Agnes, causes surface water to drain quickly down the shafts, creating an unusually arid scree environment that is important for rare spiders as well as ground-nesting bees and wasps. The nearby area of the Red River and its surrounding wetland and woodland habitats is of high importance to invertebrates and supports the jumping ground bug *Pachycoleus waltli* (**NT**) and the Limestone Ant Fly (*Microdon mutabilis* (**DD**)).

For more information on West Cornwall and the Lizard IIA, see the Area A7 description.

### *Buglife B-Lines*

A B-Line runs from the North to South Coasts, joining Portreath and Porthleven and running via Helston and to the east of Camborne and the west of Pool. This B-Line also joins up with WHS Area A4, effectively joining these two WHS Areas. This B-Line covers 59% of Area A5.

### *RSPB Priority landscapes*

A section of **The Celtic Sea and Islands Seascape** runs along the coast at Portreath.

## 5.1.2. Local Designations

### *Local Nature Reserves (LNR)*

A small section of the **Red River Valley LNR** is within a 1km buffer of the Area A5 WHS site, just North of Camborne. The site supports a range of amphibian species, as well as Otters (*Lutra lutra* (**LC**, S41)) and is a key spot for *Odonata* (Dragonflies and Damselflies).

### *County Wildlife Sites (CWS)*

County Wildlife Sites make up 9% of the area of A5. Four of these, comprising the majority of the CWS area, are found in the Camborne-Redruth conurbation: **The Rocks CWS** extends along a small stream flowing east from Troon towards Pendarves. The area comprises Beech-dominated woodland to the north and Beech coppice to the south west. **Newton Moor CWS** is situated in two small, sheltered valleys whose streams unite and run north to form the Red River. The eastern valley is dominated by mixed scrub developed around several old spoil tips and disused mine workings. **Penventon Moor CWS** is almost entirely heathland with some areas of scrub and bracken scattered throughout. There are two small pools to the extreme southwest, surrounded by wetland habitat. **Carn Brea CWS**, an exposed hill sloping except to the south, is mainly composed of heathland, varying from tall and rank to short and wind-clipped over the western sections of the site. In the Portreath area, **Portreath Valley CWS** comprises mainly woodland, much of which is mixed broadleaved. The south-facing slope of the main valley includes a small quarry, with scattered trees and a diversity of Bryophytes and plants. The rail links runs through a variety of habitat types.

## 5.2. Habitats

Covering a large part of the Camborne-Pool-Redruth conurbation, 31% of Area A5 is Built-up Areas & Gardens. The largest areas of conservation interest are Unimproved Grassland (30% of total area) to the south of the Redruth and Camborne section of Area A5, with Scrub (15%) and Bracken (8%) across Carn Brea and South of Brea and Carnkie. Smaller in area but underpinning many of the national and local designations are Broadleaved Mixed & Yew Woodland (5%), Dwarf Shrub Heath (3%) and Fen, Marsh & Swamp (1%) habitats. The Portreath section is predominantly Build-up Areas & Gardens, with small sections of Bare Sand, Broadleaved, Yew & Mixed Woodland, and Scrub, and the small Wheal Peevor Section is predominantly Dwarf Shrub Heath.

## 5.3. Species

Nearly 23,000 records are in the National Biodiversity Network database and 3,300 in the ERICA database for Area A5 since 2000, with the large Camborne-Redruth section having the most records. Areas of national designations are primarily notified for Bryophytes and Arthropods.

Bryophytes of national or Cornish concern include: Great Copperwort (*Cephaloziella nicholsonii* (**VU**, S41)), Common Threadwort (*C. Integerrima*

(**EN**, S41)), Heath Threadwort (*C. Stellulifera* (**NT**)), Roth's Thread-moss (*Pohlia andalusica* (**DD**)), Entire Threadwort (*C. calyculata* (**EN**, S41)), Lesser Copperwort (*C. Massalongi* (**EN**)), Irish spurge (*Euphorbia hyberna* (**VU**)). Other notified plants of national or local interest include Pale Dog-violet (*Viola lactea* (**VU**, S41)), Vigur's eyebright (*Euphrasia vigursii* (**EN**, S41)), Hairy Greenweed (*Genista pilosa* (**NT**)), Dorset Heath (*Erica cicliaris* (**LC**)), Shore Dock (*Rumex rupestris* (**EN**, S41)), Wild Asparagus (*Asparagus officinalis* (**LC**)) and Carrot-broomrape (*Orobanche minor* subsp *maritima* (**LC**)).

Red Data Book Data Deficient **DD**, Near Threatened **NT**, Vulnerable **VU**, Endangered **EN**, and Least Concern **LC**, and Section 41 priority Species **S41**.

#### 5.4. Nature Recovery Strategy opportunities

Given the large urban areas, Local Nature Recovery Strategy opportunities for Town & Village Green & Blue Space naturally occur within and around Camborne, Pool, and Redruth, with large areas of Nature-rich Grassland to the south of Camborne and Pool, and to the southeast of Redruth. Smaller areas of opportunity for Trees, Woodland & Scrub occur to the west of Troon and around Treskillard (east of King Edward Mine), and opportunities for Rivers & Wetlands follow the Red River. Intertidal and Trees, woodland & Scrub opportunities are shown at Portreath and mainly Nature-rich Grassland opportunities at Peavor mine. Countryside Stewardship Schemes cover 16% of Area A5.

#### 5.5. Landscape Change Analysis

In Area A5, Camborne & Redruth Mining District, with Wheal Peavor & Portreath, the largest change in Land Cover is the increase of Improved Grassland from 328 ha to 727 ha, followed by a reduction of 296 ha in Semi-natural Grassland. The increase in Improved Grassland is made up predominantly of previously Semi-natural Grassland (188 ha) and Arable (119 ha), but also a smaller amount of 'Built-up Areas & Gardens' and Broadleaf Woodland Land Cover Classes. A small increase in Mountain, Heath & Bog habitat is predominantly made up from previously Semi-natural Grassland, so may be due to bracken encroachment, but would need further investigation. See **Appendix 6** for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show mixed confidence levels across WHS Areas and land cover types, especially for Improved Grassland and Semi-Natural Grassland.

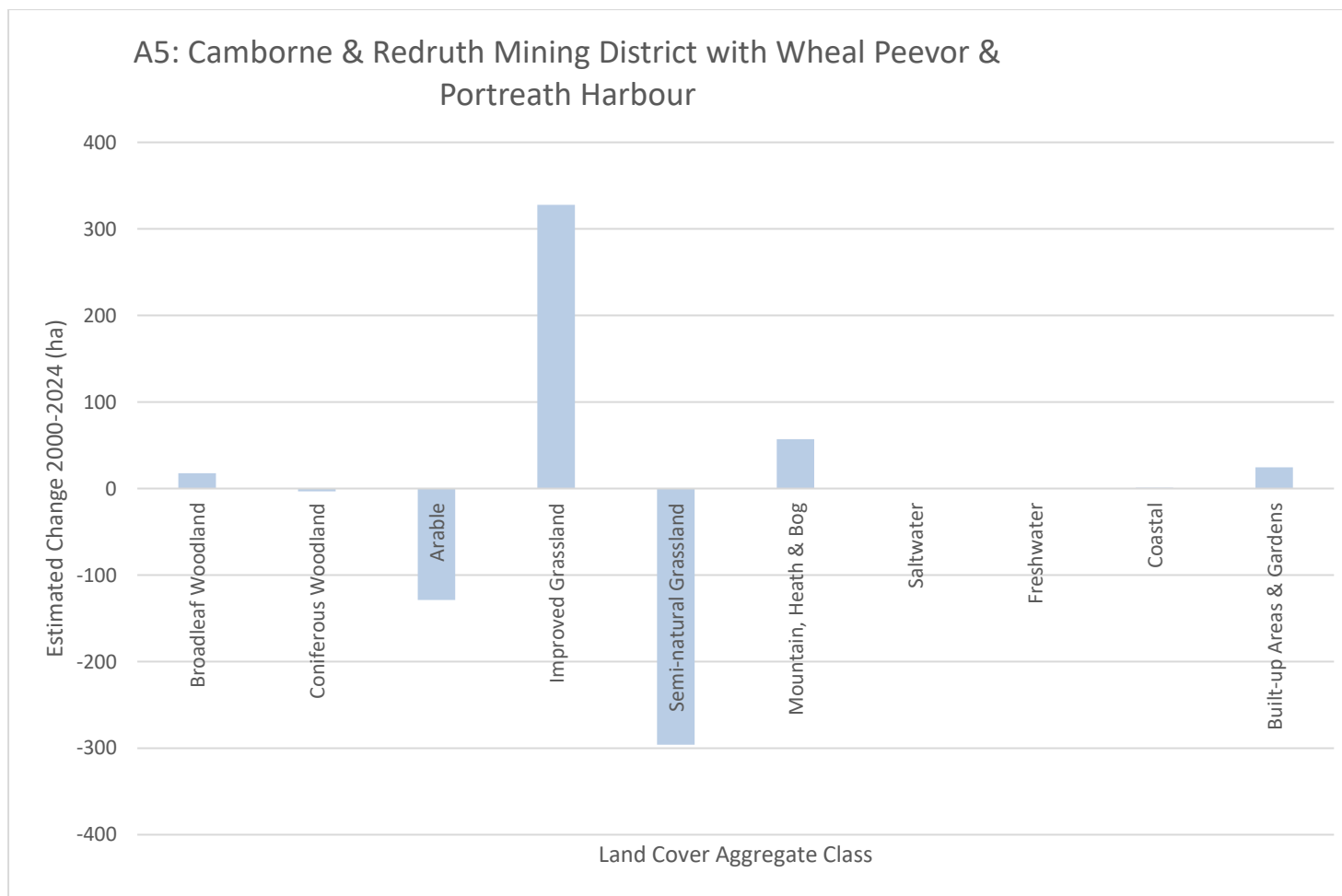


Figure 9: Area A5 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).

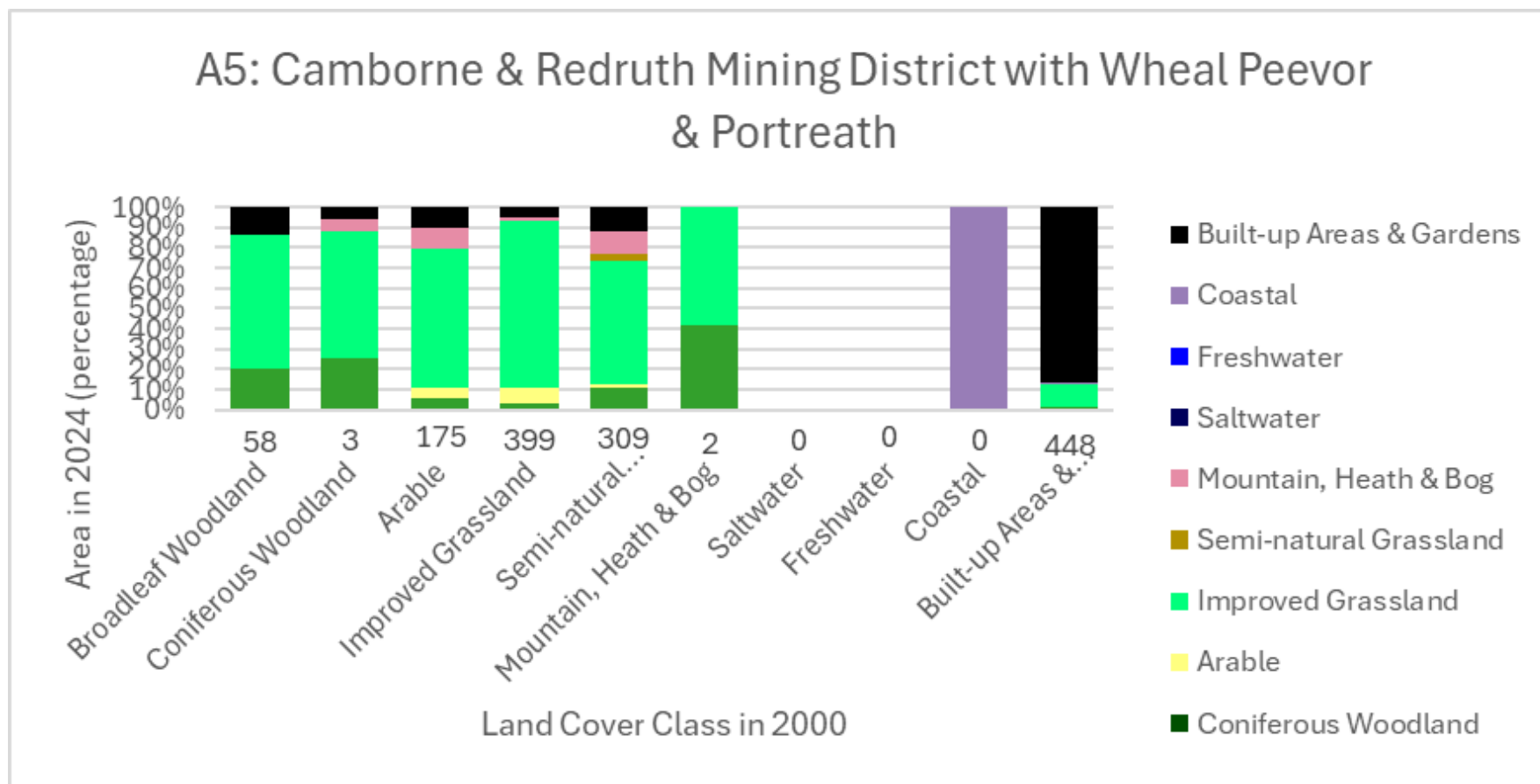


Figure 10. Area A5 Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

## 5.6. Area profile

Table 5. Area A5 Results of designations, priority areas and land cover within the Area boundary.

<b>Designation</b>	<b>A5 ha</b>	<b>A5 %</b>
Buglife B-Lines	824.80	59
Buglife IIA	8.55	1
Countryside Stewardship (MID-TIER)	227.50	16
Cornwall County Wildlife Sites (ERCCIS)	125.62	9
RSPB Priority Landscapes	1.76	<0.5
SSSI	9.83	1
<b>WHS TOTAL</b>	<b>1,395.91</b>	
<b>Primary Habitat</b>	<b>A5 ha</b>	<b>A5 %</b>
Arable & Horticultural	29.65	2
Bare Ground	6.58	<0.5
Bare Sand	0.056	<0.5
Bracken	104.90	8
Broadleaved, Mixed & Yew Woodland	69.55	5
Built-up Areas & Gardens	431.83	31
Coastal Saltmarsh	0.2	<0.5

Coniferous Woodland	1.09	<0.5
Dwarf Shrub Heath	42.38	3
Fen, Marsh & Swamp	11.30	1
Improved & Semi-Improved Grassland	69.89	5
Scrub	202.56	15
Unimproved Grassland	424.91	30
Water	1.35	<0.50

## A6. Gwennap Mining District with Devoran, Perran & Kennall Vale

**Gwennap Mining District, with Devoran, Perran & Kennall Vale, is a large Area with a scattering of designations, notified for estuarine habitats at Devoran and, in the Gwennap Mining District, for heathland and historic mining sites. Many designations are situated on former mining sites; for example, the West Cornwall Bryophytes SSSI at Poldice Valley contains spoil tips and old mining structures that support areas for rare Bryophytes. Seven Cornwall County Wildlife Sites cover 6% of Area A6. These sites contain woodland, River valleys, heathland, and grassland mosaics, often linked to historical mining activities. A key site is Kennall Vale CWS, where gunpowder mills, leats, and a water-filled quarry are surrounded by woodland habitat.**

### 6.1. Designations

#### 6.1.1. National Designations

##### *Sites of Special Scientific Interest (SSSI)*

Overall, Sites of Special Scientific Interest (SSSI) cover just 1% of Area A6, comprising two small sites. In the **West Cornwall Bryophytes SSSI** site at **Poldice Valley**, east of the village of St Day, spoil tips and old mining structures support extensive areas for Bryophytes such as Great Copperwort (*Cephaloziella nicholsonii* (**VU**, S41)), Roth's Thread-moss (*Pohlia andalusica* (**DD**)), Heath Threadwort (*Cephaloziella stellulifera* (**NT**)) and the nationally scarce moss Don's Thread-moss (*Bryum Donianum* (**LC**)). **Wheal Gorland SSSI** is a small 0.6 ha site north-east of St Day, designated as a former copper mine with associated infrastructure and mine waste and dumps rich in lead and copper.

Another two small sections of the **Carrick Heaths SSSI** occur to the north between Chasewater village and Chiverton cross roundabout. Overall, **Carrick Heaths** consists of ten separate areas totalling 42.71 ha around the city of Truro, forming a mosaic of wet and dry heath habitats, along with adjoining rush pasture, Oak (*Quercus* spp.) woodland, streams, and Willow (*Salix* spp.) carr. On the Heath, the nationally rare heather species Dorset Heath (*Erica ciliaris* (**LC**)), as well as the nationally scarce Yellow Centaury (*Cicendia Filiformis* (**VU**, S41)), Cornish Moneywort (*Sibthorpia europa* (**LC**)), Sand Feather-moss (*Brachythecium mildeanum* (**LC**)) and Twiggy Spear-moss (*Sarmentypnum sarmentosum* (**LC**)) are present. Other species of note include Royal Fern (*Osmunda regalis* (**LC**)), the rare Heather hybrid (*Erica x watsonii*) and Upright Hedge Bedstraw (*Galium album* (**LC**)).

**The Carrick Heaths SSSI** overall also support many heathland characteristics and nationally or locally important invertebrates such as the nationally scarce Pearl-bordered Fritillary (*Boloria Euphrosyne* (**VU**, S41)), the uncommon Birch Catkin Tortrix Moth (*Pammene obscurana*), Emperor

Dragonfly (*Anax imperator* (**LC**)) and the Broad-bodied Chaser Dragonfly (*Libellula depressa* (**LC**)). The SSSI is also a refuge to many wetland-associated bird species such as Woodcock (*Scolopax rusticola* (**NT**)), Coot (*Fulica atra* (**VU**)) and Barn Owl (*Tyto alba* (**LC**)), which have been recorded on Penstraze Moor.

**Carrine Common and Penwethers SSSI** are also within 1km of the boundary of Area A6; - see the Carrine Common SAC below, which covers the entire SSSI area.

### *Special Protection Areas (SPA)*

The Falmouth Bay to St Austell Bay SPA is the largest in Cornwall covers the Devoran section of Area A6. It is the largest SPA in Cornwall, covering 25,898 ha. This SPA is designated for birds; specifically, the Black-throated Loon (*Gavia arctica*), the Great Northern Diver (*G. immer* (**LC**)) and the Slavonian Grebe (*Podiceps auritus* (**VU**)).

### *Special Areas of Conservation (SAC)*

Area A6 has two Special Areas of Conservation (SACs), both within the 1km buffer zone of the WHS boundary. One covering the Carrine Common SSSI, which is within the 1km buffer of the Gwennap section of Area A6. The **Carrine Common SAC**, southwest of Truro, supports lowland heath, wet heath, scrub and species-rich meadow habitats across its 45.86 ha and is designated for 'European Dry Heath' and 'Temperate Atlantic Wet Heath' habitats and supporting the largest population of heather species: Dorset Heath (*Erica ciliaris* (**LC**)) as well as populations of Cross-leaved Heath (*Erica tetralix* (**LC**)).

A small section of the **Fal & Helford (SAC)** is within the 1km buffer of the WHS boundary at the southeast near Feock, this SAC is designated for its estuarine habitats of 'Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)', estuaries, large shallow inlets and bays, intertidal mudflats and sandflats, reefs and subtidal sandbanks as well as for the occurrence of associated plant species of Shore Dock (*Rumex rupestris* (**EN**, S41)).

### *National Landscape*

Area A6 contains 7% of **Cornwall National Landscape, Section 09 South Coast Central**.

### *Important Invertebrate Area (IIA)*

A small section covering 3% of Area A6 of the West Cornwall and The Lizard Important Invertebrate Area (IIA) where Devoran is specifically important for brackish specialists, including Grey Blite Case-bearer (*Coleophora deviella*).

### *Important Bird Area (IBA)*

A small section of the South Coast Cornwall Important Bird Area (IBA) covering 1% area at Restronguet Creek, which is a long stretch of coastline running from the Helford River to St Austell, incorporating the estuary complexes of the Fal and Helford, and extending 6 km out to sea. The nearshore area supports important numbers of divers and grebes. The site is notified due to the presence of Common Loon (*Gavia immer* (**LC**)), Black-throated Loon (*G. arctica*) and Slavonian Grebe (*Podiceps auritus* (**VU**)).

## 6.1.2. Local Designations

### *County Wildlife Sites (CWS)*

County Wildlife Sites cover 6% of Area A6. In the **Perran Woods CWS**, to the south of Perranworthal, woodland lines the southern valley sides of the River Kennall, which flows into Restronguet Creek. **Devichoys and Cosawes Woods** are important sites of ancient Oak woodland. To the south of Devoran is **Restronguet Creek CWS**, an important component of the larger Fal Estuary complex, extending from Restronguet Point in the east to Perran Wharf in the west, consisting of intertidal mudflats, coastal saltmarsh, and reedbed habitats.

East of the above CWSs is the Kennell Vale section of Area A6. Here, the Kennall Vale CWS is almost entirely Beech-dominated woodland along a steep-sided River Valley, where the remains of granite gunpowder mills, leats, and water-filled quarries are surrounded by woodland habitat.

In the Gwenapp section of Area A6 are two woodland-dominated County Wildlife Sites. A small section of **Treskerby Wood CWS** sits between Redruth and St Day, consisting of 4.5 ha of wet woodland and lowland fen habitats. Here, mixed broadleaved and wet woodland has colonised an old system of fields, and the higher, drier areas of woodland are dominated by Alder, Beech and Oak, with a typical woodland ground flora. **Unity Wood CWS**, a larger 12 ha CWS north of St Day, lies on the south-facing side of the upper Poldice Valley and is on a former mine site with spoil tips, mine shafts and adits. The ancient woodland site is dominated by Oak coppice

Cornwall County Wildlife Sites of Wetland habitats within the Gwennap section of Area A6 include **Carnhot CWS**, a site of lowland fen habitats, near the head of an open valley, extending along a tributary of the River Carnon around the Chacewater viaduct. The small, fast-flowing stream has grassy margins, shallow pools, and wetland habitats. Additionally, a small 1 ha section of the larger 28 ha **Carnon Valley CWS**, at the hamlet of Bissoe, lies within the Area A6 boundary. This site has a long history of tin streaming, dating back to the Bronze Age and continuing into the 20th century and is now used by the Environment Agency to treat contaminated mine water. The whole site, which extends down to Devoran, is a mosaic of lowland heathland, calaminarian grassland, and open mosaic habitats on previously developed land.

## 6.2. Habitats

The habitat type with the most extensive coverage in Area A6 is Improved & Semi-improved Grassland (21%), followed by Woodlands (15%), and Built-up Areas & Gardens and Scrub (both 15%). Arable & Horticulture make up 12%, with all other habitats accounting for less than 10% coverage.

## 6.3. Species

There are over 34,000 Section 41 species records in the National Biodiversity Network database and over 3,300 in the ERICA database since the year 2000. Heath habitats are typically home to the aforementioned nationally rare heather species, Dorset Heath (*Erica ciliaris* (LC)), as well as the nationally scarce Yellow Centaury (*Cicendia Filiformis* (VU, S41)), Cornish Moneywort (*Sibthorpia europea* (LC)), Sand Feather-moss (*Brachythecium mildeanum* (LC)) and Twiggy Spear-moss (*Sarmentypnum sarmentosum* (LC)). Other species of note include Royal Fern (*Osmunda regalis* (LC)), the rare Heather hybrid (*Erica x watsonii*) and Upright Hedge Bedstraw (*Galium album* (LC)).

Generally, other heath characteristic species include Purple Moor-grass (*Molinia caerulea* (LC)), Black Bog-rush (*Schoenus nigricans* (LC)). Wet Heath areas are characterised by Bog Moss (*Sphagnum* species), Sedges (i.e. Green-ribbed (*Carex binervis* (LC)), Common Yellow-sedge (*C. Demissa* (LC)), Carnation Sedge (*C. Panicea* (LC)), Soft Rush (*Juncus effusus* (LC)) and Sharp Flowered Rush (*J. Acutiflorus* (LC)). Other wetland-associated species are Devil 's-bit Scabious (*Succisa pratensis* (LC)), Water Mint (*Mentha aquatic* (LC)), Bog Asphodel (*Narthecium ossifragum* (LC)), Common Cottongrass (*Eriophorum angustifolium* (LC)), Greater Bird's-foot Trefoil (*Lotus pedunculatus* (LC)), Marsh Thistle (*Cirsium palustre* (LC)) and Cuckoo Flower (*Cardamine pratensis* (LC)).

Other plant species of interest are Common Sundew (*Drosera rotundifolia* (LC)), Hay-scented Buckler-fern (*Dryopteris aemula* (LC)), Bog-myrtle (*Myrica gale* (LC)) and Creeping Willow (*Salix repens* (LC)).

In more waterlogged runnels across the Heaths are Broad-leaved Cottongrass (*Eriophorum angustifolium* var. *Elatius*), Bog Pondweed (*Potamogeton polygonifolius* (LC)), Marsh Pennywort (*Hydrocotyle vulgaris* (LC)), Lesser Spearwort (*Ranunculus flammula* (LC)), Marsh St John ' s-wort (*Hypericum elodes* (LC)) and Bog Pimpernel (*Anagallis tenella* (LC)).

Other plant species recorded in the SSSI are Lousewort (*Pedicularis sylvatica* (LC)), Heath Spotted-Orchid (*Dactylorhiza Maculata* (LC)), Saw-wort (*Serratula tinctoria* (LC)), Common Milkwort (*Polygala vulgaris* (LC)), Tormentil (*Potentilla erecta* (LC)), and Bristle Bent grass (*Agrostis curtisii* (LC)), along with plant species more typical of damp grassland such as Common Fleabane (*Pulicaria dysenterica* (LC)), Tufted Vetch (*Vicia cracca* (LC)),

Selfheal (*Prunella vulgaris* (LC)) and Yellow Bartsia (*Parentucellia viscosa* (LC)). In drier heath areas, Bell Heather (*Erica cinerea* (LC)) and Western Gorse (*Ulex gallii* (LC)) are dominant with either Cross-leaved Heath (*E. tetralix* (LC)) or with Heather (*Calluna vulgaris* (LC)).

**The Carrick Heaths SSSI** also support many Heathland characteristics and nationally or locally important invertebrates such as the nationally scarce Pearl-bordered Fritillary (*Boloria Euphrosyne* (VU, S41)), the uncommon Birch Catkin Tortrix Moth (*Pammene obscurana*), Emperor Dragonfly (*Anax imperator* (LC)) and the Broad-bodied Chaser Dragonfly (*Libellula depressa* (LC)).

Wetland-associated bird species such as Willow Warbler (*Phylloscopus trochilus* (LC)), Chiffchaff (*P. collybita* (LC)), Snipe (*Gallinago gallinago* (LC)), Woodcock (*Scolopax rusticola* (NT)), Coot (*Fulica atra* (VU)), as well as duck species Mallard (*Anas platyrhynchos* (LC)), Teal (*A. crecca* (LC)), Garganey (*A. querquedula*), and Shoveller (*A. clypeata*) are present at this site. Barn Owl (*Tyto alba* (LC)) has also been recorded.

## 6.4. Nature Recovery Strategy opportunities

Local Nature Recovery Strategy opportunities for Area A6 are mainly for Nature-rich Grassland, Heath & Moor Mosaics and Trees, Woodland & Scrub. In the Gwennap section of Area A6, Nature-rich Grassland opportunities are mapped from Bissoe up to Chasewater, following the Calenick Creek and its tributary rivers. Heath & Moor Mosaic opportunities are highlighted northwest of Carharrack, along the Carnon River, around Todpool, and north of Chasewater. Trees, Woodland & Scrub opportunities are found mainly between St Day and Scorrier and at Penstraze. Rivers & Wetland opportunities follow the main rivers and creeks. At Devoran, the main opportunity is for Intertidal, but there is also a large area for Trees, Woodland & Scrub to the south of Perranworthal and Devoran. At Kennall Vale, there are mainly Trees, Woodland & Scrub opportunities with some areas for Rivers & Wetland opportunities. Countryside Stewardship schemes cover 19% of Area A6.

## 6.5. Landscape change analysis

In the Gwennap Mining District, including Devoran, Perran, and Kennall Vale, the largest Land Cover change was an increase in Improved Grassland, from 767 ha to 1791 ha, followed by a similar decrease in Semi-natural Grassland (723 ha) and Arable (373 ha). The increased area in Improved Grassland comprised of previously Improved Grassland (438 ha), Arable (355 ha) and Broadleaf Woodland (94 ha). See Appendix 6 for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show varying confidence levels across WHS Areas and land cover types, especially for Improved Grassland and Semi-Natural Grassland.

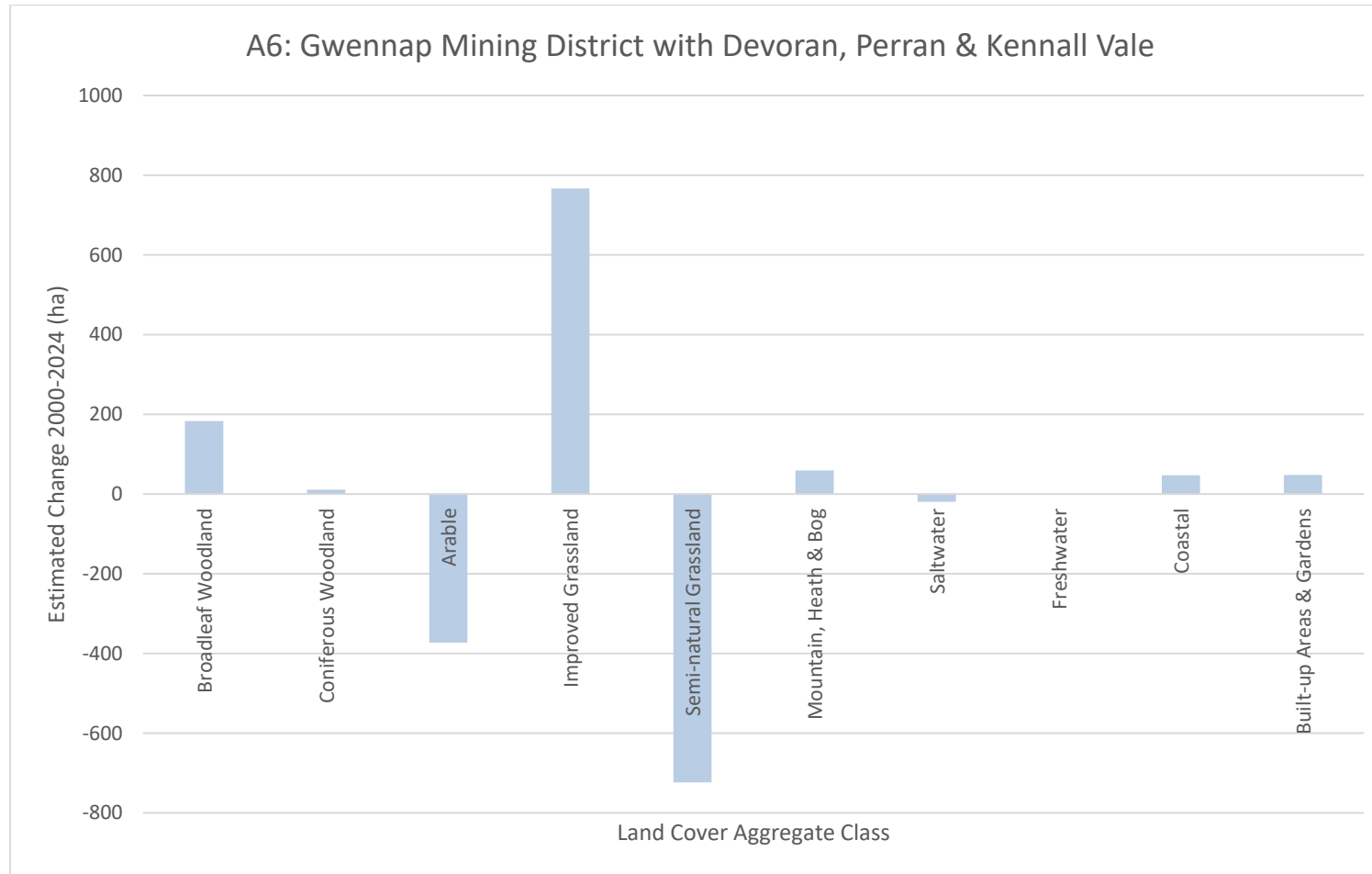


Figure 11: Area A6 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).

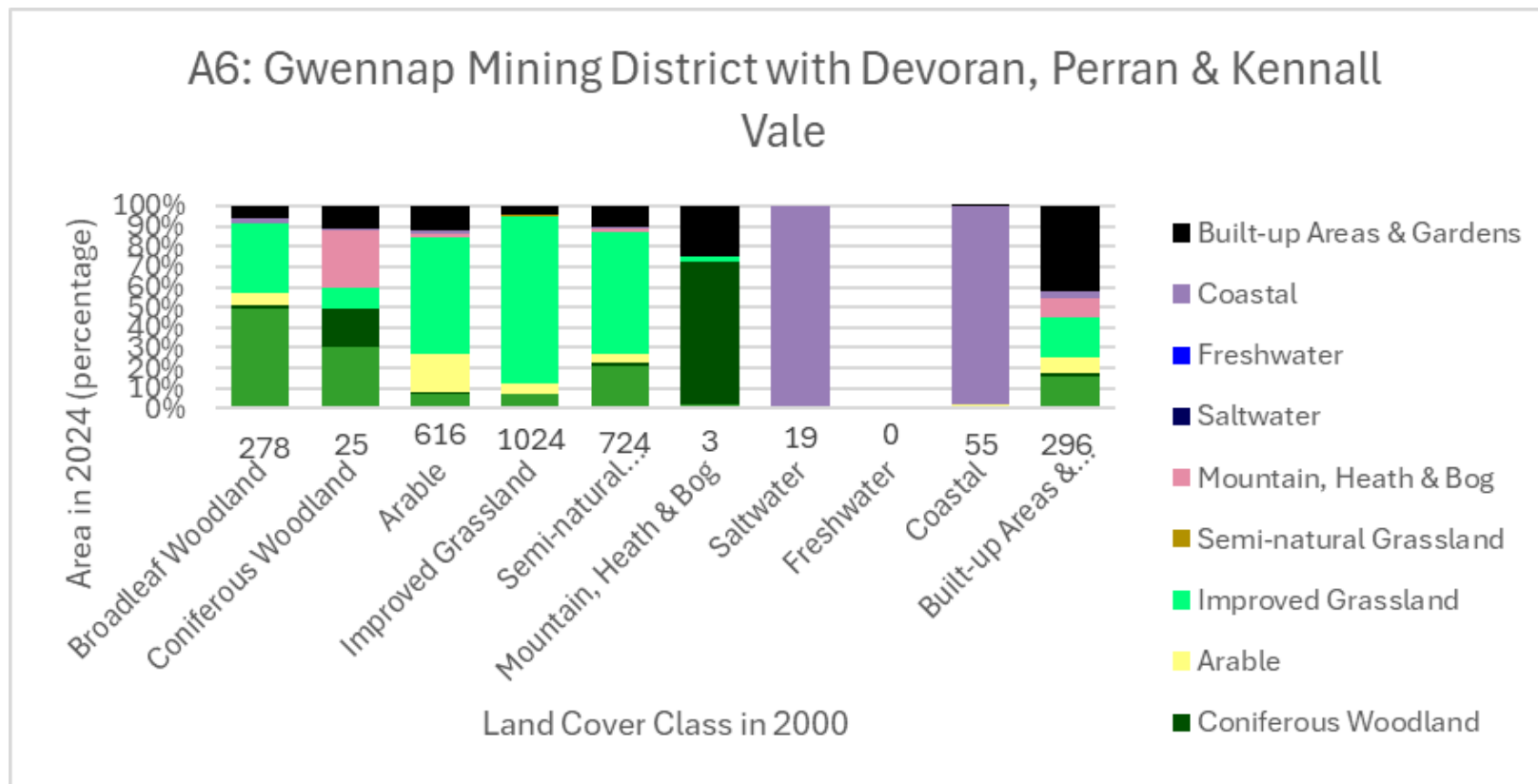


Figure 12. Area A6 Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

## 6.6. Area profile

Table 6: Area A6 Results of designations, priority areas, and land cover in terms of area (ha) and percentage cover (%) within the WHS Area boundary.

<b>Designation</b>	<b>A6 ha</b>	<b>A6 %</b>
Buglife B-Lines	67.19	2
Buglife IIA	102.85	3
Countryside Stewardship (MID-TIER)	536.12	18
Countryside Stewardship (HIGHER-TIER)	20.71	1
Cornwall County Wildlife Sites (ERCCIS)	173.17	6
National Landscapes	202.58	7
RSPB IBA	44.17	1
SSSI	33.71	1
<b>WHS</b>	<b>3049.67</b>	100
<b>Primary Habitat</b>	<b>A6 ha</b>	<b>A6 %</b>
Arable & Horticultural	356.03	12
Bare Ground	13.49	<0.5
Bare Sand	15.67	1
Bracken	28.18	1

Broadleaved, Mixed & Yew Woodland	443.96	15
Built-up Areas & Gardens	383.03	13
Coastal Saltmarsh	29.16	1
Coniferous Woodland	42.17	1
Dwarf Shrub Heath	311.11	10
Fen, Marsh & Swamp	49.84	2
Improved & Semi-Improved Grassland	652.16	21
Scrub	394.13	13
Unimproved Grassland	276.22	9
Water	54.60	2

## A7. St Agnes Mining District

The St Agnes Mining District is a relatively small Area but with a high density of often overlapping designations. Sites of Special Scientific Interest cover over one third (35%) of Area A7, with many SSSIs relating to their underlying geology, historic mining infrastructure and resulting habitats. Godrevy Head to St Agnes SSSI and Special Areas of Conservation (SAC) is designated mainly for its maritime heathland and grasslands, and associated fauna and flora, which is scattered with engine houses and spoil heaps. Cornwall County Wildlife Sites cover 12% of the St Agnes Mining District, including the coastal heathland habitats and iconic mining infrastructure at St Agnes Head and Cliffs CWS and Porthtowan Valley CWS.

The St Agnes Mining District significantly overlaps with key Invertebrate designations, with nearly three-quarters (72%) covered by the Important Invertebrate Areas and nearly all the Area covered by a Buglife B-Line (94%).

### 7.1. Designations

#### *National Designations*

##### *Sites of Special Scientific Interest (SSSI)*

Sites of Special Scientific Importance (SSSI) cover 35% of Area A7. **St Agnes Beacon Pits SSSI** is a 7.9 ha area designated for its geological importance of presumed pre-Pleistocene sands and Clays. To the south is **Cameron Quarry SSSI**, a 0.47 ha site designated for its nationally important geology; it is the sole site in Britain for what is known as the pervasive greisen of granite, whereby the granite has been altered by hot, chemically active fluids, transforming the minerals and is usually associated with sites rich in tin and tungsten ore. On the coast of Area A7 and due north of the town of St Agnes is **Trevaunance Cove SSSI**, a 6.85 ha site, designated due to its geological interest for lodes of copper-lead-zinc-tin Mineralisation.

Those SSSIs that are designated more specifically for the ecological importance of their heath, grasslands and dune habitats are **Godrevy Head to St Agnes SSSI** and **Cligga Head SSSI** within the Area boundary, and **Penhale Dunes SSSI** and **Carrick Heaths SSSI** within the 1km buffer of the Area A7 boundary.

**Godrevy Head to St Agnes (SSSI)** crosses both Areas A5 (Camborne & Redruth Mining District with Wheal Peevor & Portreath) and A7, and is a large 627.4 ha area designated mainly for its maritime heathland and grasslands and associated fauna and flora. A list of the associated flora is provided in the Species section below, with those rare species seen on the heathland habitat being Pale Dog-violet (*Viola lactea* (**VU**, S41)), the nationally rare

Vigur's eyebright (*Euphrasia vigursii* (**EN**, S41)) and Hairy Greenweed (*Genista pilosa* (**NT**)). There is also the nationally rare Dorset Heath (*Erica ciliaris* (**LC**)) located in the heathland along the Chapel Porth valley. For the species-rich grassland habitat, nationally rare species occur on the cliff grassland, including Shore Dock (*Rumex rupestris* (**EN**, S41)), Wild Asparagus (*Asparagus officinalis* (**LC**)) and Carrot-broomrape (*Orobancha minor* subsp *maritima* (**LC**)).

The cliffs and offshore rocks of the **Godrevy Head to St Agnes SSSI** provide important nest sites for several breeding seabird species (See Species section below) most significantly Great Cormorant (*Phalacrocorax carbo* (**NT**)) and the largest breeding colony of kittiwake (*Rissa tridactyla* (**CR**)) in Cornwall with Rock Pipit (*Anthus spinoletta* (**EN**)) breeding on the cliffs. The coastal section also supports a rich invertebrate fauna; twenty-five species of Butterfly occur here, including the Small Pearl-bordered Fritillary (*Boloria selene* (**VU**, S41)) and the nationally scarce Silver-studded Blue (*Plebejus argus* (**VU**, S41)). Ten species of Dragonfly and Damselfly (Odonata) have been recorded, including the nationally scarce Blue-tailed Damselfly (*Ischnura pumilio* (**NT**)).

To the North of Godrevy Head, to St Agnes SSSI, the **Cligga Head SSSI**, stretches along the coast North of St Agnes town to Perranporth. It is a large 113.5 ha site designated for its species-rich maritime heathland and grassland. The site also has international geological importance, with disused former mine workings exposed on cliff faces and dump heaps of mine waste, much of which is toxic due to deposits of toxic metals from this former tungsten mining area. The majority of the site is maritime heath habitat, with some patches of maritime grassland and bracken, and scrub occurring only in small clumps. Due to its former mining use, much of the site is disturbed ground, but it is now being recolonised by Heather (*Calluna vulgaris* (**LC**)). In other, less disturbed areas to the south of the site, nationally rare plant species occur in the maritime heath, including Hairy Greenweed (*Genista pilosa* (**NT**)) and the nationally scarce Pale Dog-violet (*Viola lactea* (**VU**, S41)). Other notable species recorded include the rare Vigur's Eyebright (*Euphrasia vigursii* (**EN**, S41)) and a species in the Daisy family which is normally found in north England and Scotland - Mountain Everlasting (*Antennaria dioica* (**LC**)). The SSSI also supports rare Bryophyte species, the Frizzled Crisp-moss (*Tortella tortuosa* (**LC**)) and the notable Liverwort species Husnot's Frillwort (*Fossombronia husnotii* var. *Anglica* (**LC**)) and Dwarf Flapwort (*Jungermannia pumila* (**LC**)), which is rare in West Cornwall.

Cligga Head SSSI is also an important site for Butterflies and Moths with 88 Moth species and four Butterfly species recorded, including GB redlist Endangered Butterfly Grayling (*Hipparchia semele* (**EN**, S41)), and the GB redlist vulnerable Silver-Studded Blue (*Plebejus argus* (**VU**, S41)).

Within the 1km buffer of the WHS boundary and just 200m from the Area A7 boundary and south of Mount Hawk village is one section of the larger **Carrick Heaths (SSSI)**, see Area A6 (Gwennap Mining District with Devoran, Perran & Kennall Vale) for more information on this SSSI. Also within the 1km buffer to the very north of Area A7 is **Penhale Dunes (SSSI)**, a large 1070.4 ha site and part of the most extensive dune system in Cornwall,

stretching 4 kilometres long from Perranporth to Ligger Point, the most southerly point coming just within the 1km of the boundary. It consists of calcareous habitats and is exceptionally rich in associated flora, including at least 4 very rare plant species and many other rarities. Penhale Dunes is one of the richest moss sites in Cornwall, with 19 local or rare species. In addition, at least 66 Lichen species have been recorded, including two nationally rare species. The site is also of exceptional importance for both Butterflies and Moths, with some 27 Butterfly and 107 Moth species recorded here. In addition, the site supports at least six species of *Odonata* (Dragonflies and Damselflies), eight nationally local species of Beetles, one nationally local species of ant, and two Mollusc species specifically associated with calcareous habitats.

### *Special Areas of Conservation (SAC)*

There are two Special Areas of Conservation (SACs) within the Area A7 boundary and a 1km buffer. **Godrevy Head to St Agnes SAC** covers 128 ha within the WHS boundary and covering 10% of Area A7. **Penhale Dunes SAC** is within the 1km buffer of the boundary. Reasons for designation are as described in the SSSI citations but also specifically designated for ‘Temperate Atlantic Wet Heaths with Bell Heather (*Erica ciliaris* (**LC**)) and Cross-leaved Heath (*Erica tetralix* (**LC**, S41))’, ‘European Dry Heaths’, and specific plant species of Early Gentian (*Gentianella anglica* (**VU**, S41)) at Godrevy Head to St Agnes SAC. Penhale Dunes SAC is designated specifically for ‘Fixed Coastal Dunes with Herbaceous Vegetation (‘grey dunes’) and their ‘Humid Dune Slacks’ habitats and associated species, as well as specifically for a species of Petalwort (*Petalophyllum ralfsii* (**VU**, S41)), Shore Dock (*Rumex rupestris* (**EN**, S41)), and Early gentian (*Gentianella anglica* (**VU**, S41)).

### *National Landscape*

**Section 05 St Agnes of Cornwall National Landscape** covers nearly half of Area A7 (49%).

### *Important Invertebrate Area (IIA)*

The **West Cornwall and the Lizard, Important Insect Area (IIA)**, covers 72% of Area A7. On the north coast, the IIA overlaps the coastal stretch of Godrevy Head to St Agnes SSSI and SAC. Maritime slope and cliffs and lowland heathland support a diverse invertebrate assemblage, including the Cornwall Red Weevil (*Cathormiocerus maritimus*). The presence of old mineshafts along the coast here, especially around Porthtowan and St Agnes, causes surface water to drain quickly down the shafts, creating an unusually arid scree environment that is important for rare spiders as well as ground-nesting bees and wasps.

Overall, the **West Cornwall and the Lizard IIA** supports at least 62 qualifying IIA species of conservation concern. The area supports the endemic British Cave Shrimp (*Niphargus glenniei* (S41)) as well as the following species, which have been directly observed on the WHS and are threatened on a European scale or Endangered on a national scale; Endangered Nose Gallows-spider (*Lasaeola prona* (**EN**)), Provisionally Endangered grass fly (*Cryptonevra consimilis*), Provisionally Endangered Cigarillo Gall-fly (*Lipara similis* (S41)). Additionally, this IIA is also regionally important in the

south west for a number of other rare or declining bee and Butterfly species (but not IIA qualifying species), including Perkins' Mining bee (*Andrena rosae*), Large Scabious Bee (*Andrena hattorfiana*), Long-horned Bee (*Eucera longicornis* (S41)), Grayling (*Hipparchia Semele* (EN, S41)), Small Pearl-bordered Fritillary (*Boloria selene* (VU, S41)) and Silver-studded Blue Butterfly (*Plebejus argus* (VU, S41)).

### Buglife B-Line

Nearly all of Area A7 is covered with a Buglife B-Line (94%) following the coast and extending 3km inland.

### RSPB Priority Landscapes

A small proportion (2%) of Area A7 is the **Celtic Sea and Islands Seascape RSPB Priority Landscape** along the coast.

## 7.1.1. Local Designations

### County Wildlife Sites (CWS)

There are four Cornwall County Wildlife Sites (CWS) in Area A7, covering 12% of the Area, all of which are significant for their lowland heath habitat and associated species. **Porthtowan Valley CWS** lies inland from Porthtowan on the north coast, adjacent to the southerly section of Godrevy Head to St Agnes SSSI, with evidence of past mining activity and areas of Bell Heather (*Erica ciliaris* (LC)), heathland habitat.

**St Agnes Head and Cliffs CWS** is situated on the north coast and includes a short stretch of coastline to the west of Trevaunance Cove (also a SSSI) and an area inland of Newdowns Head. The area has been subjected to intensive mining. **Trevellas Coombe CWS** covers 66 ha and consists of a small section of cliff and intertidal zone at Trevellas Porth beach, linking the Trevaunance Cove SSSI and Cligga Head SSSI, extending further across the steep valley sides and exposed cliff-tops to the south and inland along the sheltered Trevellas valley. Finally, **St Agnes Beacon CWS**, west of St Agnes village, is mainly a lowland heath habitat, with associated species, on an isolated inland hill rising from a coastal plateau to 190 metres above sea level.

## 7.2. Habitats

The largest habitat area across Area A7 is Dwarf Shrub Heath (37%), followed by Improved & Semi-Improved Grasslands around St Agnes and Porthtowan (15% and 12%, respectively). Scrub, Bare Ground, Arable & Horticulture are each less than 10%, with the latter mainly situated inland, often adjacent to Improved Grasslands. Very small pockets of Bracken, Broadleaved woodland, Unimproved Grassland and Water account for less than 5% each, with woodland mainly through St Agnes down to Trevaunance Cove and near Goonvrea.

### 7.3. Species

There are over 8,300 records of Section 41 species in the National Biodiversity Network database and over 1,600 in the ERICA database since the year 2000. The Heathlands (mainly SSSIs and SAC) are dominated by ling (*Calluna vulgaris* (LC)), with Bell Heather (*Erica cinerea* (LC)), Cross-leaved Heath (*Erica tetralix* (LC, S41)), Bristle Bent (*Agrostis curtisii* (LC)) and Western Gorse (*Ulex gallii* (LC)). Common Dog Violet (*Viola riviniana* (LC)), Wild Carrot (*Daucus carota* (LC)), Tormentil (*Potentilla erecta* (LC)) are also typical of this habitat, with cliffs abundant with Cowslip (*Primula veris* (LC)) at Cligga Head SSSI. Also commonly found is Saw-wort (*Serratula tinctoria* (LC)), Spring Squill (*Scilla verna* (LC)), Burnet Rose (*Rosa spinosissima* (LC)) and Betony (*Stachys officinalis* (LC)), with the aforementioned rare Pale Dog-violet (*Viola lactea* (VU, S41)), Vigur's eyebright (*Euphrasia vigursii* (EN, S41)) and Hairy Greenweed (*Genista pilosa* (NT)) as well as the Portland spurge (*Euphorbia portlandica* (LC)) of particular note. The nationally rare Dorset Heath (*Erica cicliaris* (LC)) is also present along the Chapel Porth valley specifically. Other species of note are the Soft-Leaved Sedge (*Carex montana* (LC)) and Mountain Everlasting (*Antennaria dioica* (LC)).

The species-rich coastal grasslands (mainly SSSIs and SAC) are dominated by Red Fescue (*Festuca rubra* (LC)) with Wild Thyme (*Thymus praecox*), Kidney Vetch (*Anthyllis vulneraria* (LC)) and the Red-flowered Kidney Vetch (*Anthyllis vulneraria* var. *Coccinea*) as well as Sea Thrift (*Armeria maritima* (LC)), Spring Squill (*Scilla verna* (LC)), Burnet Rose (*Rosa spinosissima* (LC)) with the rare Golden Samphire (*Inula crithmoides* (LC)), Tall Ramping Fumitory (*Fumaria bastardii* (LC)), Cornish Gentian (*Gentianella anglica* subsp. *cornubiensis* (LC)), Rock Sea lavender (*Limonium binervosum* (LC)) and Autumn Squill (*Scilla autumnalis* (LC)). The cliff grassland areas also support several nationally rare species mentioned previously, including Shore Dock (*Rumex rupestris* (EN, S41)), Wild Asparagus (*Asparagus officinalis* (LC)) and a parasite of Wild Carrot (*Daucus carota* (LC)); Carrot-broomrape (*Orobanche minor* subsp. *maritima* (LC)) as well as the vulnerable Early gentian (*Gentianella anglica* (VU, S41)).

The SSSI also supports rare Bryophyte species mentioned previously; the Frizzled Crisp-moss (*Tortella tortuosa* (LC)), Husnot's Frillwort (*Fossombronina husnotii* var. *Anglica* (LC)) and Dwarf Flapwort (*Jungermannia pumila* (LC)).

The exposed rocky intertidal shore supports the Scarlet and Gold Star Coral (*Balanophyllia regia*), a species rarely recorded on Cornish coasts, and the Grey Seal (*Halichoerus grypus* (LC)) breeds in inaccessible sea caves.

The habitats found within A7 support invertebrates such as Green Hairstreak (*Callophrys rubi* (LC)), Small Pearl-bordered Fritillary (*Boloria selene* (VU, S41)), Silver-studded Blue (*Plebejus argus* (VU, S41)) and Grayling (Hipparchia Semele (EN, S41)) Butterflies. *Odonata* species include the Emerald Damselfly (*Lestes sponsa* (LC)) and the nationally scarce Blue-tailed Damselfly (*Ischnura pumilio* (NT)). Other invertebrates noted in the Important Invertebrate Area (See section above) include the Cornwall Red Weevil (*Cathormiocerus maritimus*), a species of flea Beetle (*Ochrosis ventralis* (VU)), the Sausage Millipede (*Chordeuma sylvestre* (VU)), the British Cave Shrimp (*Niphargus glenniei* (S41)) and the Nose Gallows-spider

(*Lasaeola prona* (**EN**)). Fly species include the Grass Fly (*Cryptonevra consimilis*) and Cigarillo Gall-fly (*Lipara similis* (S41)). Other species of interest as part of the IIA that may be present include the Moths, Cornish Detritus Moth (*Infurcitinea captans*) and Cornish Midget (*Phyllonorycter staintoniella*) and bees, Perkins' Mining bee (*Andrena rosae*), Large Scabious Bee (*Andrena hattorfiana*), and Long-horned Bee (*Eucera longicornis* (S41)).

The cliffs, cliff-top scrub and offshore rocks provide sites for Guillemot (*Uria aalge* (**LC**)), Razorbill (*Alca torda* (**LC**)), Great Cormorant (*Phalacrocorax carbo* (**NT**)) and the aforementioned kittiwake (*Rissa tridactyla* (**CR**)), along with Peregrine (*Falco peregrinus* (**LC**)), Rock Pipit (*Anthus spinoletta* (**EN**)) and Stonechat (*Saxicola rubicola* (**LC**)).

Red Data Book Near Threatened **NT**, Vulnerable **VU**, Endangered **EN**, and Least Concern **LC**, and Section 41 priority Species **S41**.

## 7.4. Nature Recovery Strategy opportunities

Local Nature Recovery Strategy Mapping shows extensive opportunity for Heathland & Moor Mosaic, mainly within or adjacent to the CWS. The mapping shows a large strip of Intertidal opportunity across Porthtowan and to St Agnes Head, and around Trevaunance Cove. Smaller pockets of Coastal Wildbelt and Nature-rich Grasslands occur around the Heathland & Moor Mosaic Opportunities and built-up areas. A significant opportunity for Nature-rich Grasslands is highlighted to the south of the Porthtowan valley. Trees, Woodland & Scrub and Rivers & Wetland opportunities following the valleys towards Chapel Porth Beach and Trevaunance Cove. A very small proportion of Area A7 is in Countryside Stewardship (3%).

## 7.5. Landscape change analysis

In Area A7, the largest change in Land Cover was in the area of Improved Grassland, which increased by 215 ha to 397 ha, followed by Arable, which decreased by 182 ha and Semi-natural Grassland, which decreased by 176 ha. The increase in Improved Grassland was previously Arable (145 ha), Semi-natural Grassland (68 ha), and Built-up Areas & Gardens (23 ha). See **Appendix 6** for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show varying confidence levels across WHS Areas and land cover types, especially for Improved Grassland and Semi-Natural Grassland.

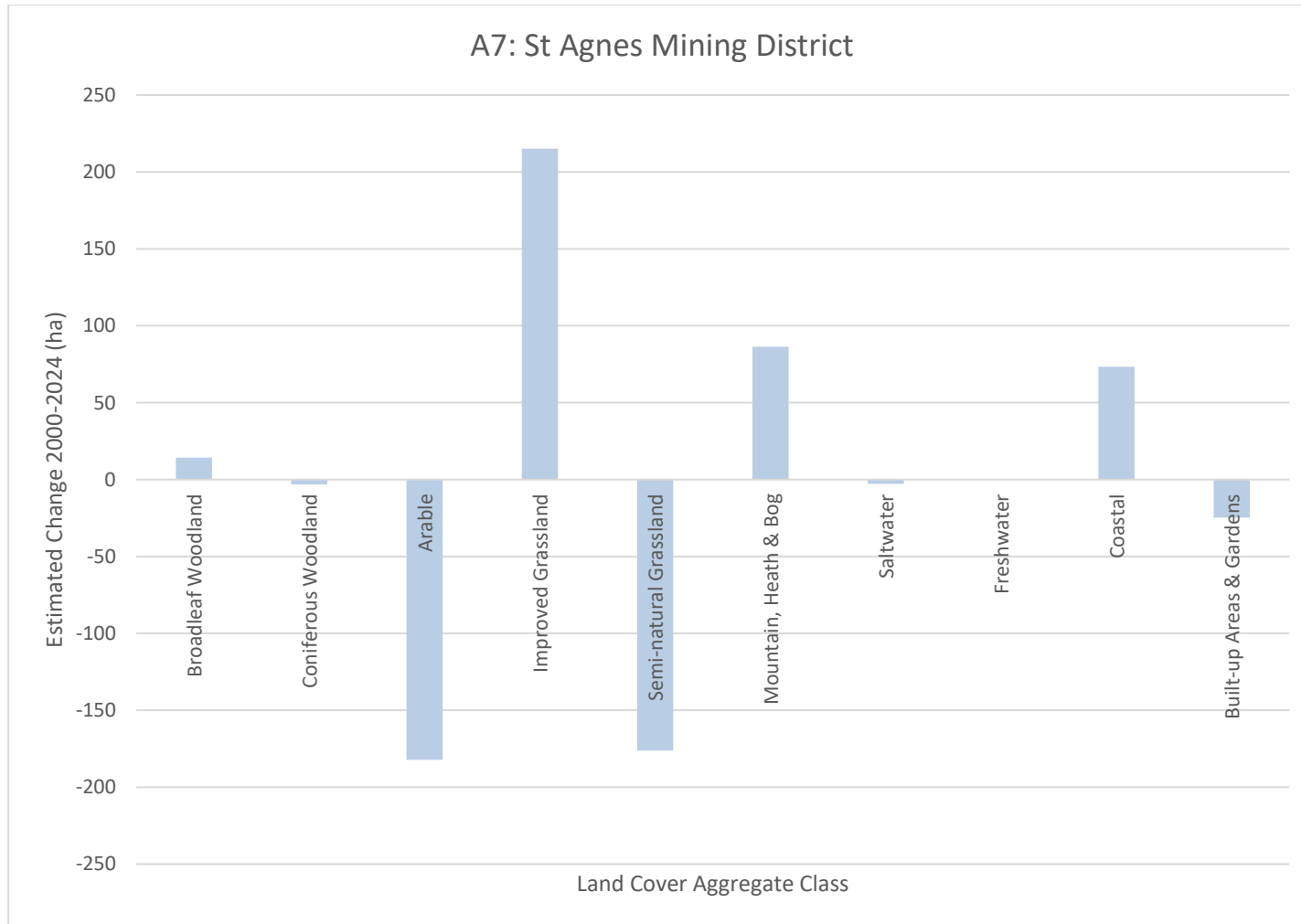


Figure 13. Area A7 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).

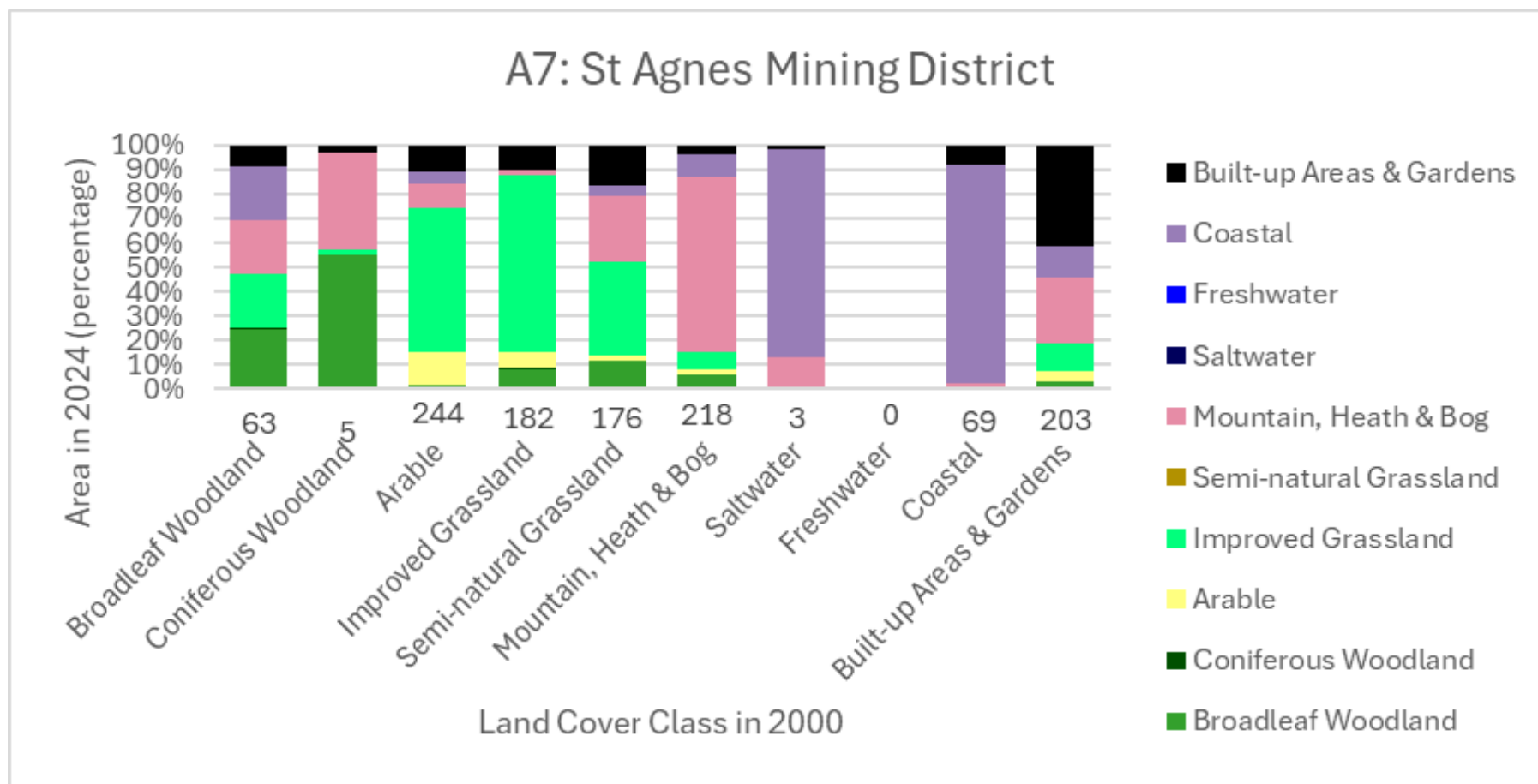


Figure 14. Area A7 Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

## 7.6. Area profile

Table 7. Area A7 Results of designations, priority areas and land cover in terms of area (ha) and percentage cover (%) within the WHS Area boundary.

<b>Designation</b>	<b>A7 ha</b>	<b>A7 %</b>
Buglife B-Lines	1152.61	94
Buglife IIA	885.42	72
Countryside Stewardship (MID-TIER)	33.92	3
Cornwall County Wildlife Sites (ERCCIS)	148.51	12
National Landscapes	596.85	49
RSPB Priority Landscapes	26.79	2
SSSI	429.62	35
SAC	127.87	10
<b>WHS</b>	<b>1227.98</b>	<b>100</b>
<b>Primary Habitat</b>	<b>A7 ha</b>	<b>A7 %</b>
Arable & Horticultural	72.32	6
Bare Ground	111.44	9
Bare Sand	9.41	1
Bracken	15.87	1
Broadleaved, Mixed & Yew Woodland	49.55	4

Built-up Areas & Gardens	148.60	12
Coastal Sand Dunes	0.66	<0.5
Coniferous Woodland	3.26	<0.5
Dwarf Shrub Heath	449.28	37
Fen, Marsh & Swamp	2.96	<0.5
Improved & Semi-Improved Grassland	179.77	15
Scrub	106.89	9
Unimproved Grassland	39.749	3
Water	20.20	2

## A8. Luxulyan Valley and Charlestown

The Luxulyan Valley and Charlestown Area predominantly features the Luxulyan Valley, a wooded stream valley with leats, tramways and the large Treffry viaduct. Nearly two-thirds (64%) of Area A8 is covered by broadleaved woodland habitat. There is 58% coverage of Cornwall County Wildlife Sites designated for their wooded valley habitats and for habitats associated with China clay extraction, such as quarries, woodland, ponds, and quarry Lakes.

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This section links to Charlestown on the coast, with a small proportion of designations relating to coastal birds via the Important Bird Areas, RSPB Priority Landscape, and Special Protection Areas.

### 8.1. Designations

#### 8.1.1. National Designations

##### *Sites of Special Scientific Interest (SSSI)*

There are two SSSIs within 1km of Area A8: Luxulyan Quarry SSSI and Carn Grey Rock SSSI, both notified due to their importance for the study of granite mineralisation, but with no specific ecological-based designations.

##### *Special Protection Areas (SPA)*

At Charlestown, near St Austell, the **Falmouth Bay to St Austell Bay SPA** is the largest SPA in Cornwall, covering 25,898 ha, with the most northeasterly section coming within Area A8. This SPA is designated for birds; specifically, the Black-throated Diver (*Gavia arctica*), the Great Northern Diver (*G. immer* (LC)) and the Slavonian Grebe (*Podiceps auritus* (VU)).

##### *Buglife B-Lines*

The Buglife B-Line that follows the Cornwall coastline and extends 1km inland, intersects with Area A8, covering 13% of its overall area.

##### *Important Bird Area (IBA)*

A very small section of the **South Cornwall Coast IBA** occurs within the site boundary (1%) and its 1km buffer. This IBA covers a long stretch of coastline running from the Helford River to St Austell, incorporating the estuary complexes of the Fal and Helford, and extending 6 km out to sea. The nearshore area supports important numbers of divers and grebes. The site is notified for Common Loon (*Gavia immer* (LC)), Black-throated Loon (*G. arctica*) and Slavonian Grebe (*Podiceps auritus* (VU)).

### *RSPB Priority Landscape*

Similarly to the IBA, there is a very small section of RSPB Priority Landscape within the site boundary (1%).

## 8.1.2. Local Designations

### *County Wildlife Sites (CWS)*

Almost 60% of Area A8 is covered by a Cornwall County Wildlife Site (59%). The CWSs are found on former China clay and quarry extraction sites, where upland Oak woodland habitat is present. The **Trethurgy & Garkar Valley CWS** is a site of former China clay workings, and Little Carne CWS comprises an historic drowned quarry (former China clay pit). Both have upland Oakwood habitat, with Little Carne having additional wet woodland habitats. Similarly, **Bodelva Moor Ponds CWS** is an old quarry site now consisting of ponds and quarry lake surrounded by lowland mixed deciduous woodland and hedgerow habitats.

**North Hill Wood CWS** is particularly important. It is one of the largest continuous areas of woodland in Cornwall. Parts of the site are associated with a long history of industrial and mining activities. Habitats include ancient woodland (specifically upland Oakwood) and hedgerow habitats.

## 8.2. Habitats

The main habitats in Area A8 are Broadleaved, Mixed & Yew Woodland (64%), Unimproved Grassland (15%), Build-up Areas and Gardens (10%), and Improved & Semi-improved Grassland around Charlestown and St Blazey (3%). Smaller amounts of Fen, Marsh & Swamp and Coniferous Woodland occur in the Luxulyan Valley (4% combined).

## 8.3. Species

There are fewer than 500 Section 41 species records in the National Biodiversity Network database and over 1,700 in the ERICA database since 2000.

There are three avian species notified as part of the national designations in WHS Area A8: Black-throated Diver (*Gavia arctica*), the Great Northern Diver (*G. immer* (**LC**)) and the Slavonian Grebe (*Podiceps auritus* (**VU**)).

Red Data Book Vulnerable **VU**, and Least Concern **LC**.

## 8.4. Nature Recovery Strategy opportunities

Local Nature Recovery Strategy opportunities include Trees, Woodland & Scrub in the Luxulyan Valley, and Nature-rich Grasslands, Rivers & Wetlands at Penpillick, northeast of St Blazey. At Charlestown, opportunities are mapped for Coastal Wildbelt, Nature-rich Grasslands and Trees, Woodland & Scrub, with a small area around the harbour for Town & Village Green & Blue Space. There is a very low proportion of Countryside Stewardship Schemes in Area A8 (2%).

## 8.5. Landscape change analysis

The biggest Land Cover change was in the estimated area of Coniferous Woodland, which reduced by 22 ha, with Broadleaf Woodland increasing by 21ha to a total of 162 ha. The increase in Broadleaf Woodland was previously Coniferous Woodland (21 ha) and Improved Grassland (11 ha). Whether this is due to the gradual replacement of Coniferous Woodland areas with Deciduous Woodland (via planting or succession) or to errors in classifying the two woodland types using satellite imagery, would need further investigation (See **Appendix 6**). See **Appendix 6** for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show mixed levels of confidence across WHS Areas and land-cover types, especially regarding an apparent underestimation of the area of coniferous woodland in this Area.

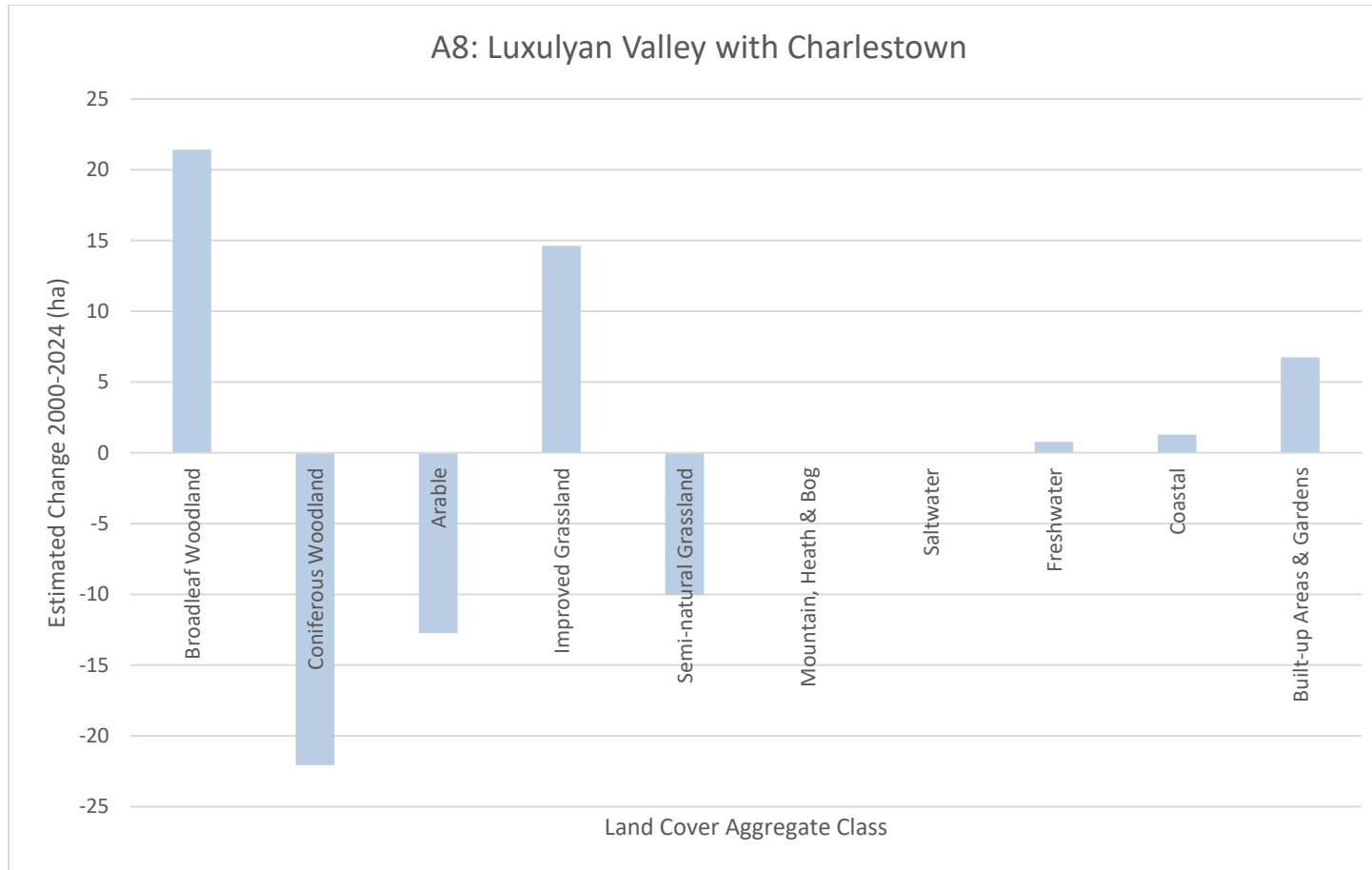


Figure 15. Area A8 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).

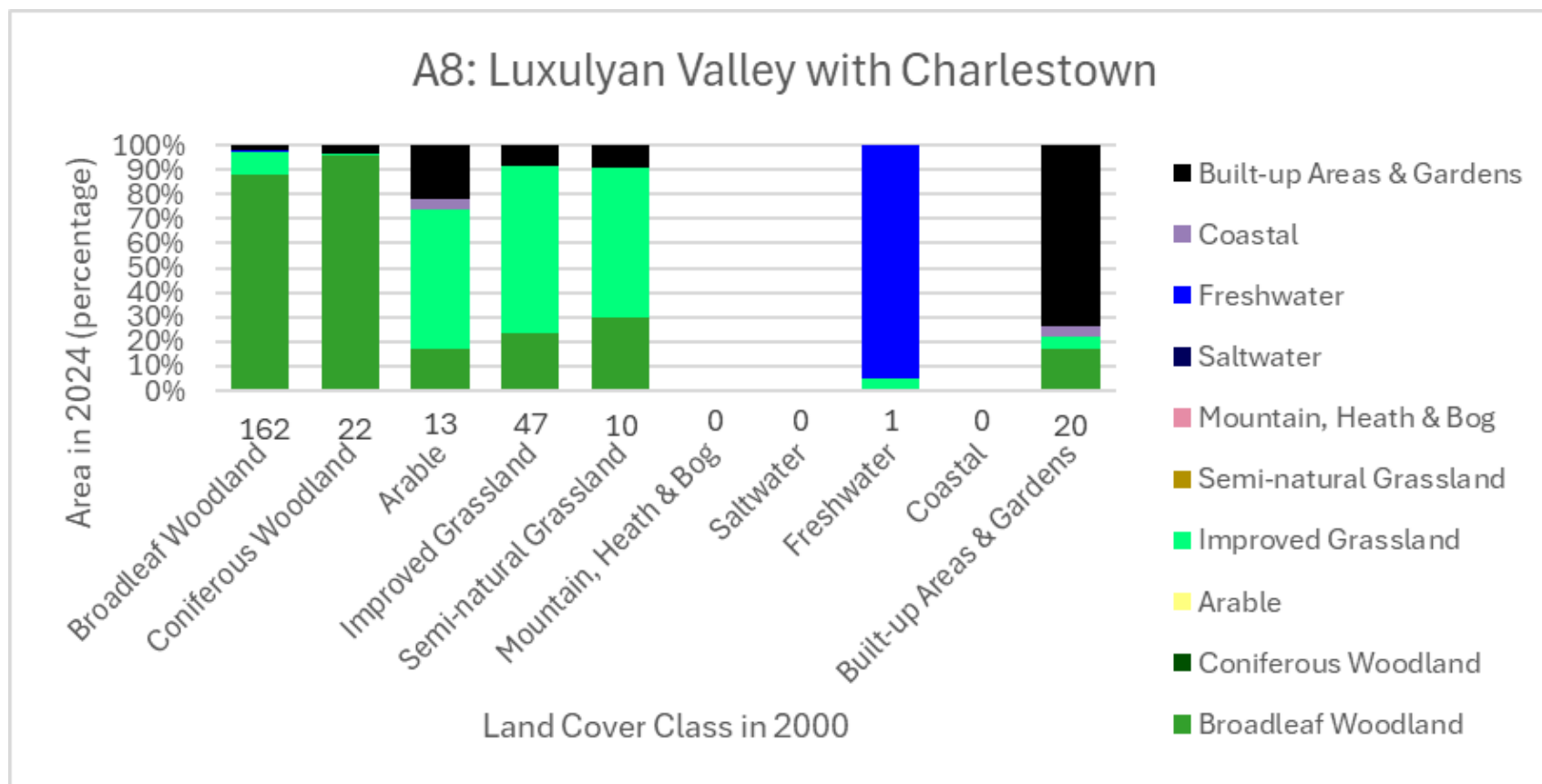


Figure 16. Area A8 Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

## 8.6. Area profile

Table 8. Area A8 Results of designations, opportunities and land cover in terms of area (ha) and percentage cover (%) within the WHS Area boundary.

<b>Designation</b>	<b>A8 ha</b>	<b>A8 %</b>
Buglife B-Lines	34.70	13
Countryside Stewardship (MID-TIER)	4.16	2
Cornwall County Wildlife Sites (ERCCIS)	161.51	59
RSPB IBA	2.53	1
RSPB Priority Landscapes	2.62	1
SPA	1.06	<0.5
<b>WHS</b>	<b>275.10</b>	100
<b>Primary Habitat</b>	<b>A8 ha</b>	<b>A8 %</b>
Arable & Horticultural	0.93	<0.5
Bare Ground	3.98	1
Bare Sand	0.002	<0.5
Bracken	1.55	1
Broadleaved, Mixed & Yew Woodland	177.01	64
Built-up Areas & Gardens	26.53	10

Coniferous Woodland	7.13	3
Fen, Marsh & Swamp	1.80	1
Improved & Semi-Improved Grassland	6.89	3
Scrub	5.47	2
Unimproved Grassland	40.79	15
Water	2.73	1

## A9. Caradon Mining District

The Caradon Mining District is particularly noted for The Phoenix United Mine & Crow's Nest Special Areas of Conservation (and SSSIs) are notified for rare Bryophytes that thrive on spoil heaps created by former metal mining operations. Area A9 is also important for birds, with nearly two-thirds (63%) covered by an Important Bird Area (IBA) influenced by the Area's position on the Bodmin Moor fringe. There is extensive coverage of Cornwall County Wildlife Sites in Area A9, nearly half of the Area (49%), consisting of heathland, unimproved grassland, wetland and mosaic habitats.

### 9.1. Designations

#### 9.1.1. National Designations

##### *Sites of Special Scientific Interest (SSSI)*

The Caradon Mining District has two SSSIs covering 3% of the section: Crow's Nest SSSI and Phoenix United Mine SSSI. **Crow's Nest SSSI** is approximately 2km northwest of the village of St Cleer. It is of special interest for its lower plants associated with disused former metal mining operations and infrastructure. Copper mining here dates back to about 1830; old mine buildings, shafts, adits, mine spoil tips, a disused railway, and tramways remain. The mine spoil tips, associated mine buildings, tracks, and stream banks support a specialised flora of rare Mosses and Liverworts that are tolerant of high levels of toxic metals. Three nationally rare Mosses occur here, including Cornish path-moss (*Ditrichum cornubicum* (EN, S41)), which is endemic to Cornwall and protected under Schedule 8 of the 1981 Wildlife and Countryside Act (as amended), and listed in the UK Steering Group Biodiversity Report 1995 as a globally threatened/declining species. The other nationally rare mosses found at Crow's Nest are Roth's Thread-moss (*Pohlia andalusica* (DD)) and Tongue-leaf Copper Moss (*Scopelophila cataractae* (EN, S41)). Three nationally rare Liverworts also occur at Crow's Nest: Greater Copperwort (*Cephaloziella nicholsonii* (VU, S41)), *C. massalongi* (EN) and Heath Threadwort (*C. stellulifera* (NT)). The site is also abundant in Atlantic Bryophyte and Liverwort flora (see Species section below).

**Phoenix United Mine SSSI**, less than 1km north of the village of Minions, has evidence of past mining activity in the disused mine buildings, engine house, and associated mine waste, spoil, and derelict mine leats. Heavy metals in mine waste and soils have favoured colonisation by Bryophytes that can tolerate these conditions. The site hosts nationally rare Cornish path Moss (*Ditrichum cornubicum* (EN, S41)), in addition to three nationally rare Liverwort species: the Greater Copperwort (*Cephaloziella nicholsonii* (VU, S41)), Lobed Threadwort (*C. integerrima* (EN)) and *C. massalongi* (EN), along with other nationally scarce species (see Species section). Other habitats present include dry heath, with granite clitter slopes merging

into scrub and woodland, with rich Moss and Lichen communities including the String-of-sausages Lichen (*Usnea articulata* (NT, S41)). The disused mine adits at the northern boundary of the site provide a winter roost site for the Greater Horseshoe bat (*Rhinolophus ferrumequinum* (LC, S41)).

### *Special Areas of Conservation (SAC)*

The combined 48.65 ha of **Phoenix United Mine & Crow's Nest SAC** is designated for its calaminarian grasslands of the *Violetalia calaminariae* type, which occur on soils with heavy metals such as lead, zinc, chromium and copper, toxic to most plant species, but host to important Bryophytes as described in the SSSI section above. All of the SAC occurs within the Area A9 boundary.

### *National Landscape*

**Section 12; Bodmin Moor**, of the **Cornwall National Landscape**, occurs in the north and northwest, covering 36% of the area.

### *Important Bird Area (IBA)*

Area A9 includes the most southeasterly section of the RSPB Important Bird Area (IBA), 'Bodmin Moor IBA', with approximately 904 ha (10% of the IBA) covering 63% of the WHS Area. The entire Bodmin Moor IBA is 8,262 ha and is important for breeding waders and other moorland species and wintering raptors. The site is notified due to the presence of European Golden Plover (*Pluvialis apricaria* (LC)) and Common Stonechat (*Saxicola rubicola* (LC)), typical of heath and wet grassland habitats.

## 9.1.2. Local Designations

### *County Wildlife Sites (CWS)*

Nearly half of Area A9 is covered by Cornwall County Wildlife Sites (49%). The two main sites are **Craddock Moor & Witheybrook Marsh CWS** and **Caradon Moor CWS**. Craddock Moor & Witheybrook Marsh is situated between Siblyback Reservoir and the village of Minions. It is centred around Witheybrook Marsh, with the high ground of Craddock Moor and Tregarrick Tor to the west and consists of upland heathland, upland flushes, fens and swamp, purple moor grass and rush pasture habitats. Caradon Moor, east of Minions, is dominated by unimproved acid grassland with upland heathland.

Other County Wildlife Sites include a 2 ha part of the larger 10 ha, **Tremarcoombe Common CWS**, just north of the village of St Cleer. Tremarcoombe Common is a neglected common, with encroaching scrub and bracken. It contains remnant habitats such as purple moor grass and rush pasture, wet woodland, lowland fens, and hedgerows. The WHS Area intersects the **Halbathick Wood CWS** where the disused railway runs south-westerly towards Liskeard. Here, the poorly drained and often waterlogged soils support important habitats such as wet woodland, purple moor grass and rush pasture, lowland mixed deciduous woodland and hedgerows. Finally, on the northwest boundary of Area A9 is a very small

section of **Twelve Men's Moor CWS**, a larger site consisting of upland heathland, upland flushes, fen and swamp, and purple moor grass and rush pasture habitats.

## 9.2. Habitats

The majority of Area A9 is covered with Unimproved Grassland (37%) and Dwarf Shrub Heath (13%) across the western side and to the east, Bracken (18%), Broadleaved Woodland (9%) and Improved & Semi-improved Grasslands (5%). Built-up areas cover 9% around Tremar Coombe and Middlehill.

## 9.3. Species

Area A9 has over 11,000 Section 41 species records since 2000 in the National Biodiversity Network (NBN) database and over 1,400 in the ERICA database.

Species associated with the SSSI include the aforementioned Cornish path-moss (*Ditrichum cornubicum* (**EN**, S41)), Roth's Thread-moss (*Pohlia andalusica* (**DD**)) and Tongue-leaf Copper Moss (*Scopelophila cataractae* (**EN**, S41)). Nationally important Liverworts also occur; Greater Copperwort (*Cephaloziella nicholsonii* (**VU**, S41)), *Cephaloziella massalongi* (**EN**) and Heath Threadwort (*Cephaloziella stellulifera* (**NT**)), Lobed Threadwort (*C. integerrima* (**EN**)) and *C. massalongi* (**EN**). A plethora of bryophyte species are present, including Western Pouncewort (*Lejeunea lamacerina*) and Thick-set Earwort (*Scapania compacta* (**LC**)) and Mosses Rusty Swan-neck Moss (*Campylopus flexuosus* (**LC**)), Supine Plait-moss (*Hypnum resupinatum*), Verdigris Tufa-moss (*Gymnostomum aeruginosum* (**LC**)), Luisier's Tufa-Moss (*G. viridulum* (**LC**)), Blunt Leaf Tufa-moss (*G. calcareum* (**LC**)) and Greater Pincushion (*Ptychomitrium polyphyllum* (**LC**)). Also, Liverworts Fairy Beads (*Microlejeunea ulicina*), Whiskered Veilwort (*Metzgeria consanguinea* (**LC**)), Heath Threadwort (*Cephaloziella stellulifera* (**NT**)), Hill notchwort (*Barbilophozia sudetica* (**VU**)), White Frostwort (*Gymnomitrium obtusum* (**LC**)), Western Earwort (*Scapania gracilis* (**LC**)), and Funck's Rustwort (*Marsupella funckii* (**LC**)) are also present. The String-of-sausages Lichen (*Usnea articulata* (**NT**, S41)) also occurs, and Camomile (*Chamaemelum nobile* (**VU**)) has also been recorded.

The dry heath is dominated by heather (*Calluna Vulgaris* (**LC**)) and European gorse (*Ulex europaeus* (**LC**)) with bracken (*Pteridium aquilinum* (**LC**)). The Scrub Woodland comprises Pedunculate Oak (*Quercus robur* (**LC**)), Silver Birch (*Betula pendula* (**LC**)), and Holly (*Ilex aquifolium* (**LC**)), while the greater horseshoe bat (*Rhinolophus ferrumequinum* (**LC**, S41)), mentioned previously, is present in mine adits.

Bodmin Moor is generally notable for both nesting and wintering birds, which may be present in Area A9. Breeding species include Lapwing (*Vanellus vanellus* (**VU**)), Snipe (*Gallinago gallinago* (**LC**)), Redstart (*Phoenicurus phoenicurus* (**LC**)), Black-headed Gull (*Larus ridibundus*),

Wheatear (*Oenanthe oenanthe* (**EN**)), Curlew (*Numenius arquata* (**EN**)), Whinchat (*Saxicola rubetra* (**NT**)) and Dunlin (*Calidris alpina* (**VU**)). In winter, Bodmin Moor also supports Hen Harrier (*Circus cyaneus* (**EN**)), Merlin (*Falco columbarius* (**EN**)), Peregrine Falcon (*Falco peregrinus* (**LC**)), Red Kite (*Milvus milvus* (**LC**)) and Short-eared Owl (*Asio flammeus* (**EN**)).

Red Data Book Near Threatened **NT**, Vulnerable **VU**, Endangered **EN**, and Least Concern **LC**, and Section 41 priority Species **S41**.

## 9.4. Nature Recovery Strategy opportunities

Local Nature Recovery Strategy mapping shows large areas of Heathland & Moor Mosaic opportunity scattered across Area A9. Trees, Scrub & Woodland, and Nature-rich Grassland opportunities are identified around the built-up areas and northeast edges of Caradon Hill and Stowes Hill. 14% of Area A9 is in a Countryside Stewardship Scheme.

## 9.5. Landscape change analysis

In Area A9, Caradon Mining District, the largest Land Cover change was in the area of Improved Grassland, increasing by 221 ha to 639 ha, followed by Semi-natural Grassland, reducing by 204 ha, with Arable reducing by 63 ha. The increased area of Improved Grassland was previously Semi-natural Grassland (183 ha), Broadleaf Woodland (42 ha) and Arable (39 ha) in 2000. See **Appendix 6** for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show mixed confidence levels across WHS Areas and land cover types, especially for Improved Grassland and Semi-Natural Grassland.

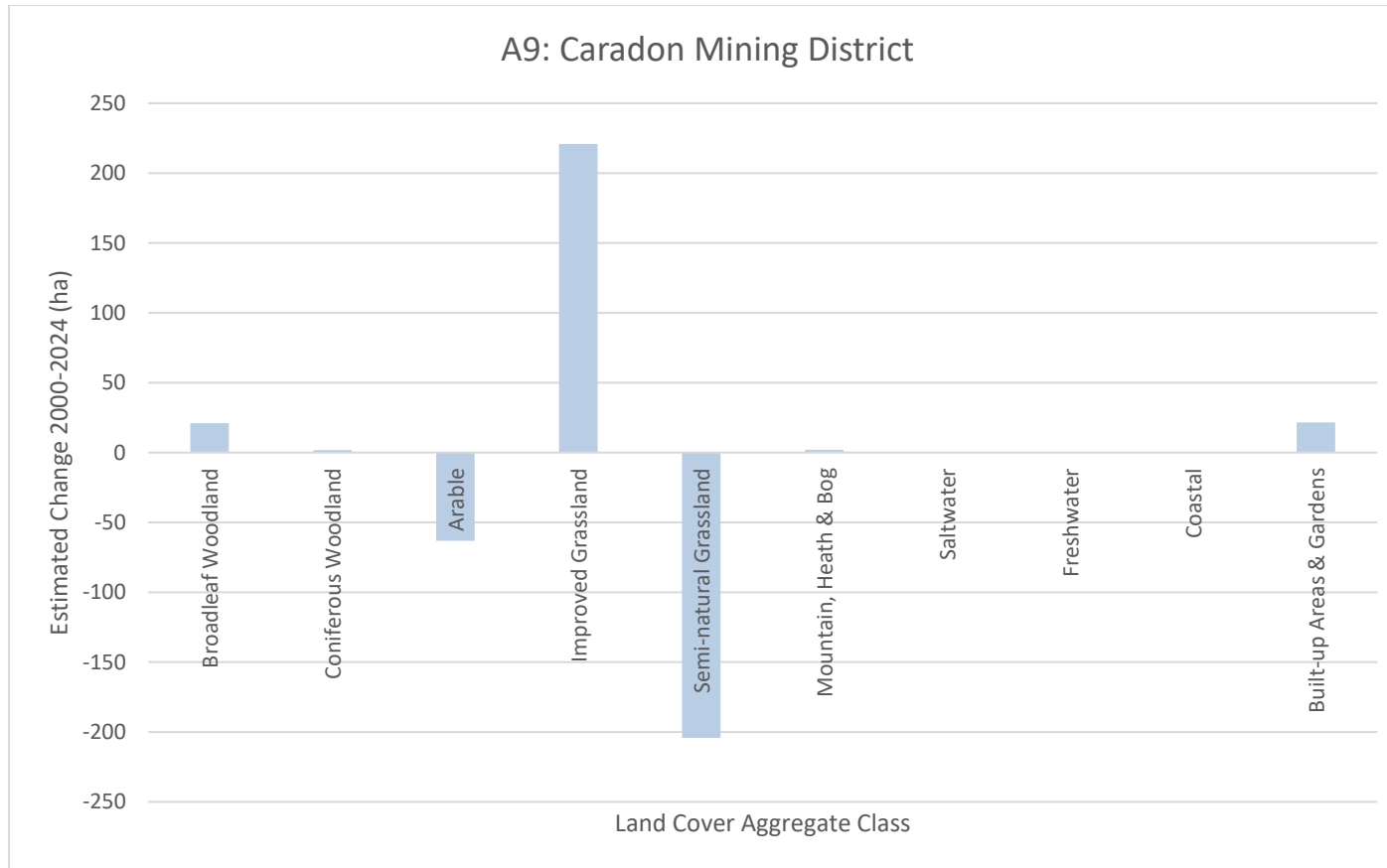


Figure 17. Area A9 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).

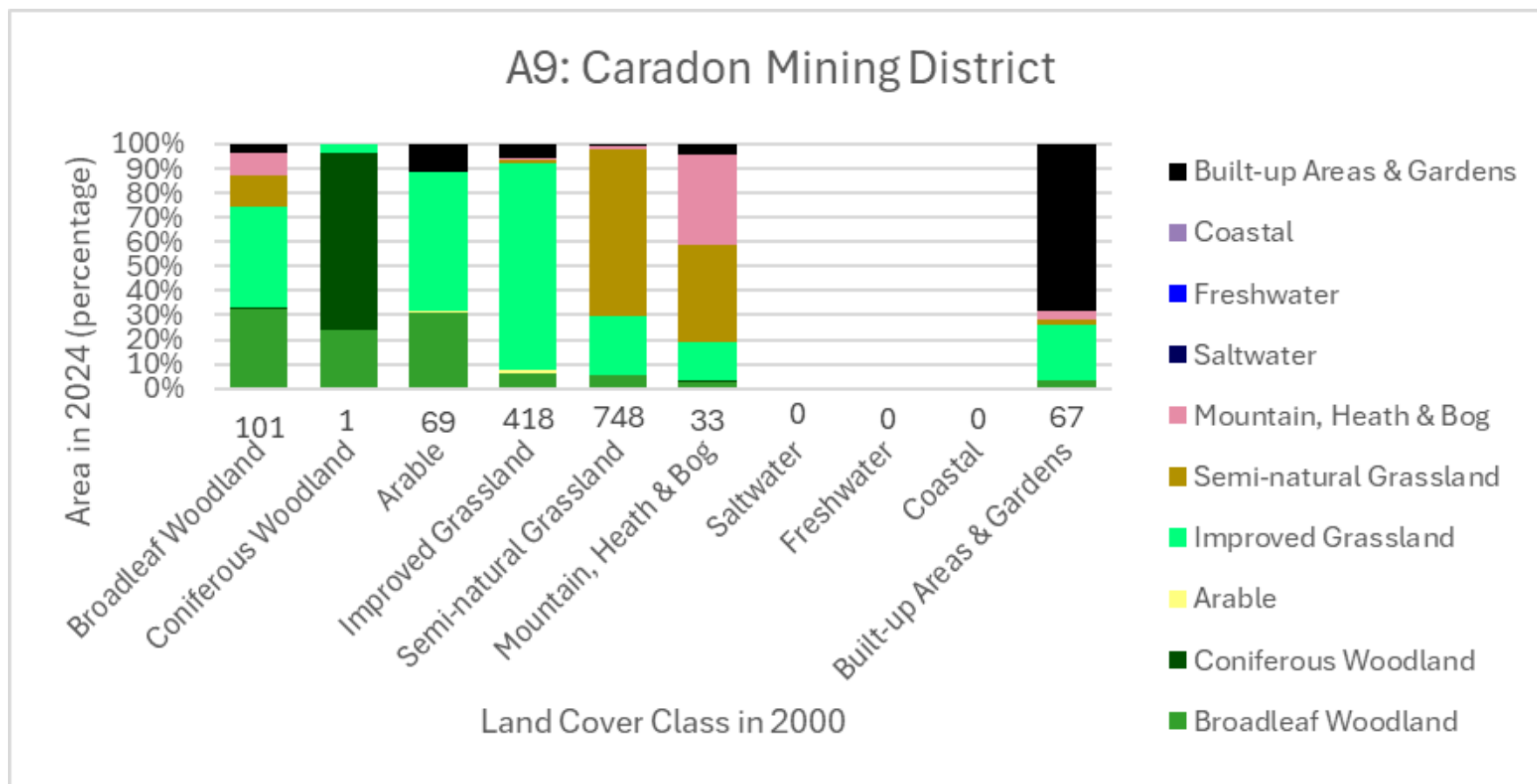


Figure 18. Area A9. Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

## 9.6. Area profile

Table 9. Area A9 Results of designations, opportunities and land cover in terms of area (ha) and percentage cover (%) within the WHS Area boundary.

<b>Designation</b>	<b>A9 ha</b>	<b>A9 %</b>
Countryside Stewardship (MID-TIER)	194.71	14
Countryside Stewardship (HIGHER-TIER)	2.98	<0.5
ERCCIS CWS	708.00	49
National Landscapes	520.96	36
RSPB IBA	903.85	63
SSSI	48.80	3
SAC	48.72	3
<b>WHS TOTAL</b>	<b>1436.87</b>	<b>100</b>
<b>Primary Habitat</b>	<b>A9 ha</b>	<b>A9 %</b>
Arable and Horticultural	19.22	1
Bare Ground	29.99	2
Bog	41.46	3
Bracken	258.90	18
Broadleaved, Mixed and Yew Woodland	128.81	9

Built-up Areas and Gardens	126.55	9
Coniferous Woodland	2.82	<0.5
Dwarf Shrub Heath	189.34	13
Fen, Marsh and Swamp	14.77	1
Improved and Semi-Improved Grassland	68.96	5
Scrub	23.41	2
Unimproved Grassland	531.81	37
Water	0.89	<0.5

## A10. Tamar Valley Mining District with Tavistock

The Tamar Valley Mining District with Tavistock is a large and complex part of the WHS. Designated mainly for its estuarine habitat (SSSIs, SPA, SAC, MCZ) and bird species, but also for ancient woodland and heathland habitats often associated with former mining infrastructure and mine waste (an exception being Sylvia's meadow SSSI). Kit Hill Local Nature Reserve (LNR) is an excellent example of where the mining industry has created nature value. The LNR is covered with Western heath habitat and scattered with disused mining workings, providing homes for a plethora of fauna and flora.

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There is an array of County Wildlife Sites (covering 12% of the Area). The CWSs contain important mining-related habitats along with traditional orchard and meadow habitats. The entire area was intensively mined from the medieval period to the 19th century, primarily for copper extraction and arsenic production. Mining activity resulted in a modified landscape with patches of ancient woodland, more recent conifer plantations, and scattered brownfield sites with habitat mosaics, including scrub, lowland heathland, old spoil heaps, and exposed rock screes. These habitats now support unique fauna and flora that have moved into this often chemically harsh environment.

The river itself is highly designated for its estuarine habitats, which support wildfowl and wading birds. Adjacent riverine woodland and wetland habitats support rare Lichens, important invertebrate assemblages, and Bats.

### 10.1. Designations

#### 10.1.1. National Designations

##### *Sites of Special Scientific Interest (SSSI)*

Sites of Special Scientific Interest (SSSI) make up 5% of Area A10. **Devon Great Consols SSSI** consists of a mine dump resulting from the working of a large sulphide lode and is notified due to its unique natural geology. Similarly, notified for their geology are **Hingston Down Quarry & Consols SSSI**, a large active quarry with adjacent disused mines and spoil tips, and Lockridge Mine SSSI, likely a former lead-silver mine.

**Greenscombe Wood, Luckett SSSI**, is designated mainly for its woodland habitat types and associated species (see Species section below) as well as a mosaic of scrub and acid grassland habitats. Woodland forest rides support a rich flora, including Bastard Balm (*Melittis melissophyllum* (VU, S41)), Bird's-Nest Orchid (*Neottia nidusavis* (NT)), Lesser Butterfly Orchid (*Platanthera bifolia* (VU, S41)), and Autumn Ladies' Tresses (*Spiranthes spiralis* (NT)). Two nationally rare plant species, Bladder-seed (*Physospermum cornubiense* (LC)) and Toadflax-leaved St John's Wort (*Hypericum linariifolium* (NT)) also occur here.

*Lepidoptera* species are also abundant in this SSSI, including the nationally rare Heath Fritillary (*Melitaea athalia* (**EN**, S41)), Marsh Fritillary (*Euphydryas aurinia* (**VU**, S41)), Small Pearl-bordered Fritillary (*Boloria selene* (**VU**, S41)) and Pearl-bordered Fritillary (*B. Euphrosyne* (**VU**, S41)). Two nationally scarce *Odonata* species, Banded Demoiselle (*Calopteryx splendens* (**LC**)) and White-legged Damselfly (*Platycnemis pennipes* (**LC**)), occur here, along with four other *Odonata*. Two Molluscs with a limited distribution, Copse Snail (*Arianta arbustorum* (**LC**)) and the glass snail species *Phenacolimax major* (**LC**), are present.

**Sylvia's Meadow SSSI** is a Lowland Meadow with typical plant species (see Species section below). Of note are Orchids: the Lesser Butterfly Orchid (*Platanthera bifolia* (**VU**, S41)), Greater Butterfly-orchid (*Platanthera chlorantha* (**NT**)) and Autumn Lady's-tresses (*Spiranthes spiralis* (**NT**)). Wetter areas support Ivy-leaved Bellflower (*Wahlenbergia hederacea* (**NT**)).

**The Tavy Estuary SSSI** supports a nationally important wintering population of the Avocet (*Recurvirostra avosetta* (**LC**)) and encompasses a section of the River Tamar that is considered to be of national significance for its marine biological interest. Red Data Book species noted as at least 'Vulnerable', or Section 41 species include Black-tailed Godwit (*Limosa limosa* (**EN**, S41)), Spotted Redshank (*Tringa erythropus* (**VU**)), Green Sandpiper (*Tringa ochropus* (**VU**)), Dunlin (*Calidris alpina* (**VU**)) and Whimbrel (*Numenius phaeopus* (**CR**)) are dependent on parts of the SSSI in Winter. Otter (*Lutra lutra* (**LC**), S41) and Kingfisher (*Alcedo atthis* (**VU**)) are among the many animals dependent on the undisturbed stretches of the river.

The site is also of interest for its sediment invertebrate communities between Weir Quay and Calstock, as well as the polychaete worm communities in the estuarine mud. There are also dense populations of the Freshwater hydroid (*Cordylophora caspia*) and the Delta Prawn (*Palaemon longirostris*) near Calstock. Saltmarsh communities border the tidal mudflats and occur as far upstream as Cotehele Quay. Typical plant species include two nationally scarce grasses: Stiff Saltmarsh-grass (*Puccinellia rupestris* (**LC**)) and Bulbous Fox-tail (*Alopecurus bulbosus* (**LC**)). Another plant of interest due to its Red Data Book and Section 41 status is the Triangular Club-rush (*Schoenoplectus triqueter* (**CR**, S41)), listed as specially protected under the 1981 Wildlife and Countryside Act; this is the only known population in the British Isles.

### *Special Protection Areas (SPA)*

**Tamar Estuaries Complex Special Protection Area (SPA)** makes up 1% of the total area of Area A10. It sits within the most southerly part of Area A10 and its 1km buffer. It includes intertidal habitats, mudflats and saltmarsh supporting Red Data Book ('Vulnerable' or higher) and Section 41 species of wildfowl and waders such as Shelduck (*Tadorna tadorna* (**EN**)), Black-tailed Godwit (*Limosa limosa* (**EN**, S41)), Whimbrel (*Numenius phaeopus* (**CR**)), Dunlin (*Calidris alpina* (**VU**)) and Curlew (*N. arquata* (**EN**, S41)).

### *Special Areas of Conservation (SAC)*

Special Areas of Conservation (SACs) cover 4% of the A10 Area. **Plymouth Sound & Estuaries (SAC)** is large, at 6386 ha, designated for its sublittoral sandbank, estuaries, large shallow inlets and bays, reefs and Atlantic salt meadows habitats. Additionally, it is notified for the plant species Shore dock (*Rumex rupestris* (**EN**, S41)).

### *Marine Conservation Zones (MCZ)*

**Tamar Estuary Sites Marine Conservation Zone (MCZ)** makes up 1% of the area of A10 and sits within the A10 Area and its 1km boundary just north of the town of Saltash.

### *National Landscape*

**The Tamar Valley National Landscape** covers 78% of Area A10.

### *Buglife B-Lines*

Area A10 is covered by a B-Line -21% of the area.

### *Important Invertebrate Area (IIA)*

The Important Invertebrate area **Tamar Valley, Plymouth and Coast** covers 21% of A10. The most important parts of the IIA for invertebrates in this area include two inland patches west of Tavistock within the Tamar Valley AONB. In the north, the meandering, often steep river valleys are surrounded by plateau land of farmland and woodland, rising onto the neighbouring Dartmoor IIA to the east. The northern inland parts of the IIA are within the World Heritage Site.

### *Important Bird Area (IBA)*

The **Tamar Estuaries Complex** Important Bird Area (IBA) covers 1% of Area A10. This is a large marine inlet on the English Channel coast, and includes the estuaries of the Rivers Tamar, Lynher and Tavy, which collectively drain an extensive part of Devon and Cornwall. The site comprises extensive mudflats and areas of saltmarsh, freshwater reedmarsh, and fen habitats. The IBA is important for wintering waders and waterbirds especially notified due to the presence of Common Stonechat (*Recurvirostra avosetta* (**LC**)). The IBA overlaps with the Tavy Estuary SSSI and Tamar Estuaries Complex (SPA) described above.

## 10.1.2. Local Designations

### *Local Nature Reserves (LNR)*

Local Nature Reserves (LNRs) cover 4% of Area A10. **Kit Hill Local Nature Reserve (LNR)** covers 152 ha to the west of Area 10 near Callington within the WHS boundary. The site is covered with Western heath habitat and scattered with disused mining workings, providing homes for a plethora of fauna and flora. The site is important for Bats that roost in the chimney stacks and underground mine workings, and the disused granite quarry infrastructure has created wetland habitats for Amphibians and *Odonata* (Dragonflies and Damselflies). The Heathland across the site provides nesting for birds such as Cuckoo (*Cuculus canorus* (LC, S41)), Skylark (*Alauda arvensis* (LC, S41)) and Tree Pipit (*Anthus trivialis* (LC, S41)), as well as foraging grounds for raptors like Kestrel (*Falco tinnunculus* (VU)). The site also contains some deciduous woodland providing further habitat for flora and fauna. **Tavistock Viaduct Walk LNR** covers a linear route through Tavistock, the majority of which is within the WHS boundary in the north east of the Area.

### *County Wildlife Sites (CWS)*

#### *Devon County Wildlife Sites*

Devon Country Wildlife Sites cover 5% of A10. The majority of these are designated for their ancient semi-natural broadleaved woodland habitat and associated flora and fauna, especially Lichens and Bats. These include former mine sites, **Gawton Mine and Woodland CWS**, a mix of ancient woodland, and regenerating lowland heathland on mine spoil heaps. **Sheepridge Wood & George & Charlotte Mines CWS** and **Russell United Mine Woods CWS**, both ancient woodland and coniferous plantations. Finally, **Wheal Maria Wood CWS** has planted woodland on the site of ancient woodland, wet woodland, lowland heath, ponds, and mine spoil.

Other woodland sites include **Blanchdown Wood CWS**, which contains ancient semi-natural broadleaved woodland and a Conifer plantation, and Hatch Wood CWS, which contains ancient semi-natural broadleaved woodland and plantation woodland on an ancient woodland site. Further County Wildlife Sites are designated for their ancient woodland and also contain a mixture of other habitat types. **Morwellham CWS** also has a mire and scrub, **Hanginclair Wood CWS** with lowland heathland, and **Grenoven Wood CWS** with a mix of woodland types: lowland mixed deciduous woodland, wet woodland, and upland Oak woodland.

Other CWS sites include sites of semi-natural broadleaved woodland and traditional orchard, such as **New Quay CWS** with semi-natural broadleaved woodland, mire, unimproved neutral grassland and scrub, **Ferry Farm Orchard CWS**, which contains traditional orchard and **Long Meadow Orchard CWS**, an orchard of Apple, Pear, Cherry Plum and Cherry trees and **Hele Fields and Orchard CWS** containing unimproved neutral grassland with patches of marshy grassland, and a traditional orchard.

Heath and grassland sites include **Blanchdown Heath CWS**, containing lowland heathland, acid grassland, scrub, secondary woodland, and mine spoil heaps (with Lichen interest) and **Morwellham Farm CWS**, with unimproved and semi-improved neutral grassland and **Old Shaft Marsh CWS**, with wet unimproved grassland with tall herb vegetation and wet woodland.

An additional four sites are classified as 'Other Sites of Wildlife Interest', and 20 are 'Unconfirmed Wildlife Sites', covering just 2% collectively of Area A10.

### *Cornwall County Wildlife Sites*

Cornwall County Wildlife Sites (CWS) cover 7% of Area A10. Sites of woodland habitats include **Deer Park Wood CWS**, situated along two unnamed tributaries of the River Tamar, occupying valleys to the north of Kit Hill (CWS and LNR). Most of the site is a Conifer plantation, but parts are listed as planted woodland on an ancient woodland Site. **Cotehele Woods CWS** is mainly an ancient woodland site consisting of upland mixed Ashwoods and upland Oak wood habitats. The site is situated along the western bank of the River Tamar and the Morden and Danescombe tributary valleys. It connects to the Tamar-Tavy Estuary SSSI and Plymouth Sound and Estuaries SAC (see above).

**Clitter's Wood CWS** is a site of upland Oak woodland habitat and disused mining operations. The site is situated on the southern banks of the River Tamar, on a steep-sided valley slope, with disused shafts, associated buildings, and large areas of spoil, evidence of former mining activity. Similarly, a former mining site at Kit Hill is designated as the **Kit Hill CWS**, which is also an LNR (see above). The site has a mosaic of lowland heathland, lowland dry acid grassland, and hedgerow habitats, and several species of note (see below). **Okeltor CWS** has lowland heathland and lowland fen habitats. It is a former mine site situated along the south-facing bank of the River Tamar. Finally, **Roundbarrow Cottage Meadow CWS** contains lowland meadow habitat and is a small, semi-improved pasture field on the edge of Hingston Down, managed for wildlife for nearly 30 years.

## 10.2. Habitats

The largest proportions of habitats across Area A10 (according to the Living England 2022 Map) are for Broadleaved, Mixed & Yew Woodlands and Improved & Semi-improved Grassland, covering 23% and 22%, respectively. Unimproved Grassland covers 14%, with Built-up Areas & Gardens at 11%. Those areas under 10% include Coniferous Woodland and Arable & Horticulture. Bare Ground, Bracken, Coastal Saltmarsh, Dwarf Shrub Heath, Fen Marsh & Swamp, Scrub and Water all under 5% each.

### 10.3. Species

There are over 72,000 Section 41 species recorded in the National Biodiversity Network (NBN) database and over 2,200 in the ERICA database (ERICA covering only the Cornwall side of Area A10). The estuary habitat and designated sites supports a range of birds including the Pied Avocet (*Recurvirostra avosetta* (LC)), Black-tailed Godwit (*Limosa limosa* (EN, S41)), Redshank (*Tringa totanus* (LC)), Greenshank (*Tringa nebularia* (LC)), Spotted Redshank (*Tringa erythropus* (VU)), Green Sandpiper (*Tringa ochropus* (VU)), Dunlin (*Calidris alpina* (VU)), Whimbrel (*Numenius phaeopus* (CR)), Golden Plover (*Pluvialis apricaria* (LC)), Little Egret (*Egretta garzetta* (LC)), Shelduck (*Tadorna tadorna* (EN)) and Curlew (*Numenius arquata* (EN, S41)), with Kingfisher (*Alcedo atthis* (VU)) dependent on the undisturbed stretches of river.

The heathland at Kit Hill LNR and CWS supports European Stonechat (*Saxicola rubicola* (LC)), Cuckoo (*Cuculus canorus* (LC, S41)), Skylark (*Alauda arvensis* (LC, S41)), Tree Pipit (*Anthus trivialis* (LC, S41)), Buzzard (*Buteo buteo* (LC)) and Kestrel (*Falco tinnunculus* (VU)).

Saltmarsh habitat plant species are typically, Common Saltmarsh-grass (*Puccinellia maritima* (LC)), Red Fescue (*Festuca rubra* (LC)) and Sea Couch (*Elymus pycnanthus*), along with Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium* (LC)), Seaside Arrowgrass (*Triglochin maritima* (LC)), English Scurvygrass (*Cochlearia anglica* (LC)), Sea Club-rush (*Bolboschoenus maritimus* (LC)), Common Cordgrass (*Spartina anglica* (LC)), Stiff Saltmarsh-grass (*Puccinellia rupestris* (LC)) and Bulbous Fox-tail (*Alopecurus bulbosus* (LC)). Other plants of estuarine margins are the Beaked Tasselweed (*Ruppia maritima* (LC)), Carrot Broomrape (*Orobanche maritima* (LC)) and Grass-leaved Orache (*Atriplex littoralis* (LC)) and potentially Shore dock (*Rumex rupestris* (EN, S41)) with bankside beds of Common Reed (*Phragmites australis* (LC)), and the aforementioned Triangular Club-rush (*Schoenoplectus triqueter* (CR, S41)).

Woodland habitats support predominantly plant species of Sessile Oak (*Quercus petraea* (LC)), with the woodland rides supporting patches of Heather (*Calluna vulgaris* (LC)), Bastard Balm (*Melittis melissophyllum* (VU, S41)), Yellow Bartsia (*Parentucellia viscosa* (LC)), Wood Sage (*Teucrium scorodonia* (LC)), Foxglove (*Digitalis purpurea* (LC)), Golden Rod (*Solidago virgaurea* (LC)), Broom (*Sarothamnus scoparius*) and Herb Robert (*Geranium robertianum* (LC)). The woodland understorey includes Hazel (*Corylus avellana* (LC)), Silver Birch (*Betula pendula* (LC)), Holly (*Ilex aquifolium* (LC)), Elder (*Sambucus nigra* (LC)), and Beech (*Fagus sylvatica* (LC)). The ground flora is dominated by Bramble (*Rubus fruticosus* (LC)) and Bilberry (*Vaccinium myrtillus* (LC)). Flora in the heathy acid grassland includes Bird's-Nest Orchid (*Neottia nidusavis* (NT)), Fragrant Orchid (*Gymnadenia conopsea* (LC)), Pyramidal Orchid (*Anacamptis pyramidalis* (LC)), Lesser Butterfly Orchid (*Platanthera bifolia* (VU, S41)), and Autumn Ladies' Tresses (*Spiranthes spiralis* (NT)). The two aforementioned, rare plant species, Bladder-seed (*Physospermum cornubiense* (LC)) and Toadflax-leaved St John's Wort (*Hypericum linariifolium* (NT)) also occur here. Small areas of scrub containing European Gorse (*Ulex europaeus* (LC)) and Bracken (*Pteridium aquilinum* (LC)) are typical. Estuarine-adjacent woodland also contains Sessile Oak (*Quercus petraea* (LC)) but in

addition, Downy Birch (*Betula pubescens* (LC)), with the understorey of Wild Service Tree (*Sorbus torminalis* (LC)), Rowan (*S. aucuparia* (LC)) as well as the woodland typical Hazel (*Corylus avellana* (LC)) and Holly (*Ilex aquifolium* (LC)). Ground flora includes Ramsons (*Allium ursinum* (LC)), Woodruff (*Galium odoratum* (LC)), Wood Anemone (*Anemone nemorosa* (LC)) and Hay-scented Buckler-fern (*Dryopteris aemula* (LC)).

Lowland meadow plant species are typically and also noted at Slyvia's Meadow SSSI are Crested dog's-tail (*Cynosurus cristatus* (LC)), Common Knapweed (*Centaurea nigra* (LC)), Oxeye Daisy (*Leucanthemum vulgare* (LC)), Lousewort (*Pedicularis sylvatica* (LC)), Cat's-ear (*Hypochoeris radicata* (LC)), Creeping Cinquefoil (*Potentilla reptans* (LC)) and Common Bird's-foot-trefoil (*Lotus corniculatus* (LC)) along with orchids; Heath Spotted-orchid (*Dactylorhiza maculate* subsp. *ericetorum* (LC)), Southern Marsh-orchid (*D. praetermissa* (LC)), Common Spotted Orchid (*D. fuchsia* (LC)), Early Purple-orchid (*Orchis mascula* (LC)), Lesser Butterfly Orchid (*Platanthera bifolia* (VU, S41)), Greater Butterfly-orchid (*P. chlorantha* (NT)) and Autumn Lady's-tresses (*Spiranthes spiralis* (NT)). Wetter meadow areas support Wild Angelica (*Angelica sylvestris* (LC)), Marsh Pennywort (*Hydrocotyle vulgaris* (LC)) and Ivy-leaved Bellflower (*Wahlenbergia hederacea* (NT)), and dryer, more acid areas support Heath-grass (*Danthonia decumbens* (LC)) with occasional plants of Heather (*Calluna vulgaris* (LC)).

Invertebrate species of note in the estuarine habitats include the aforementioned Freshwater hydroid (*Cordylophora caspia*) and the Delta prawn (*Palaemon longirostris*). Typical invertebrate species associated with the woodland designated sites include Lepidoptera species Heath Fritillary (*Melitaea athalia* (EN, S41)), Marsh Fritillary (*Euphydryas aurinia* (VU, S41)), Dark Green Fritillary (*Argynnis aglaja*), Silver-washed Fritillary (*A. paphia* (LC)), Small Pearl-bordered Fritillary (*Boloria selene* (VU, S41)), Pearl-bordered Fritillary (*B. Euphrosyne* (VU, S41)) and Purple Hairstreak (*Favonius quercus* (LC)). Odonata species of Banded Demoiselle (*Calopteryx splendens* (LC)) White-legged Damselfly (*Platycnemis pennipes* (LC)) and Cope Snail (*Arianta arbustorum* (LC)), and a Glass Snail (*Phenacolimax major* (LC)) were specifically recorded at Greenscombe Wood, Luckett SSSI. Other invertebrates protentially in Area A10 as designated by the Important Invertebrate Area (IIA) are the Serrated Tongue-spider (*Centromerus serratus* (EN)), spider *Mioxena blanda*, cranefly *Tanyptera nigricornis* and Heath Fritillary (*Melitaea athalia* (EN)) as well as Horrid Ground Weaver (*Nothophantes horridus* (EN)), Dung Beetle *Brindalus porcicollis* (CR), White-letter Hairstreak (*Satyrium w-album* (VU)), centipede *Hydroschendyla submarina* (NT), money spider (*Pseudomaro aenigmaticus*) and weevils (*Cathormiocerus attaphilus*, *Anchonidium unguiculare* and *Barypeithes pyrenaicus*).

As for mammals, the Otter (*Lutra lutra* (LC), S41) utilises the quieter stretches of river at designated sites and the Greater Horseshoe bat (*Rhinolophus ferrumequinum* (LC, S41)) roosts in the chimney stacks and underground mine workings at Kit Hill LNR and CWS. Eurasian Beaver (*Castor fiber* (EN)) is also present in the Tamar Valley.

Other species known to occur in the World Heritage Site include the Serrated Tongue-spider (*Centromerus serratus* (**EN**)), spider (*Mioxena blanda*), cranefly (*Tanyptera nigricornis*) and Heath Fritillary (*Melitaea athalia* (**EN**)).

#### 10.4. Nature Recovery Strategy opportunities

Local Nature Recovery Strategy Mapping is available for the Cornwall side of Area A10, but not yet available for the Devon side. The largest areas of opportunity are for Heath & Moor Mosaics, around Kit Hill, South of Harrowbarrow, south of Latchley, and north of Calstock. Opportunities for Trees, Woodland & Scrub follow the River Tamar, with Rivers & Wetland opportunities mainly north of Latchley and north of Gunnislake. As the River Tamar travels through Calstock towards the estuary, there are opportunities for Intertidal habitats. Species-rich Grassland opportunities are in clusters to the west and south of Kit Hill, between Kit Hill and Hingston Down, south of Lucket and around Gunnislake. The Cornwall side of Area 10 is covered by 22% of Countryside Stewardship schemes.

#### 10.5. Landscape change analysis

For Area 10, the Tamar Valley with Tavistock, the biggest Land Cover change was estimated for Arable land, reducing by 636 ha from 776 ha to just 139 ha, followed by Improved Grassland increasing by 528 ha and then Semi-natural grassland reducing by 253 ha. This Arable land in 2000 subsequently changed to Improved Grassland (462 ha), Broadleaf Woodland (128 ha), and Built-up Areas & Gardens (53 ha) by 2024.

There was also a large, estimated increase in Broadleaf woodland of 176 ha made up from previously Improved Grassland, arable, and built-up areas and Built-up Areas & Gardens Land Covers. See **Appendix 6** for sample ground-truthing of the Land Cover Map data used for this analysis, comparing results with the Living England habitat map and satellite imagery from Google Earth Pro. Results of this ground-truthing show mixed confidence levels across WHS Areas and land cover types, especially for Improved Grassland and Semi-Natural Grassland.

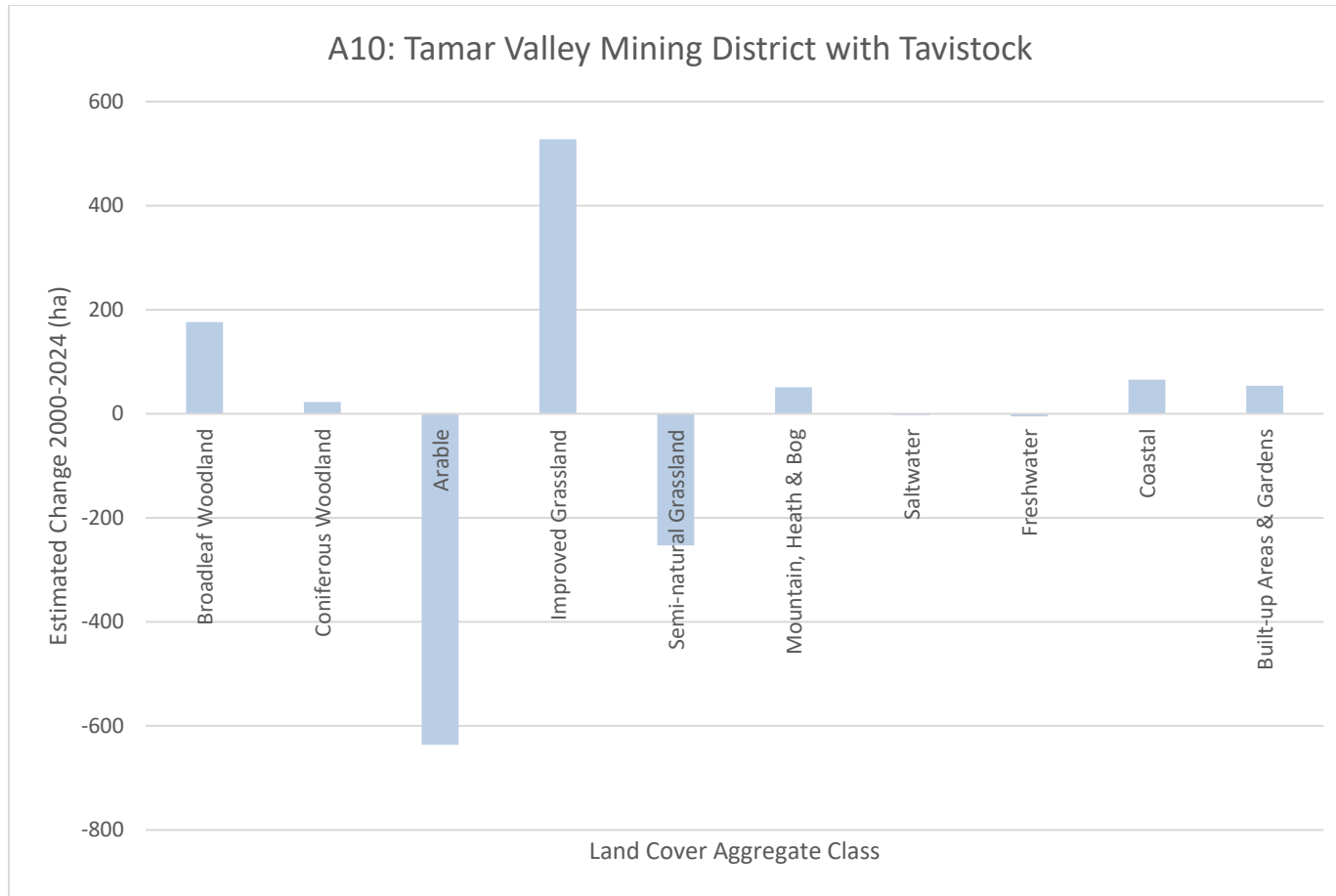
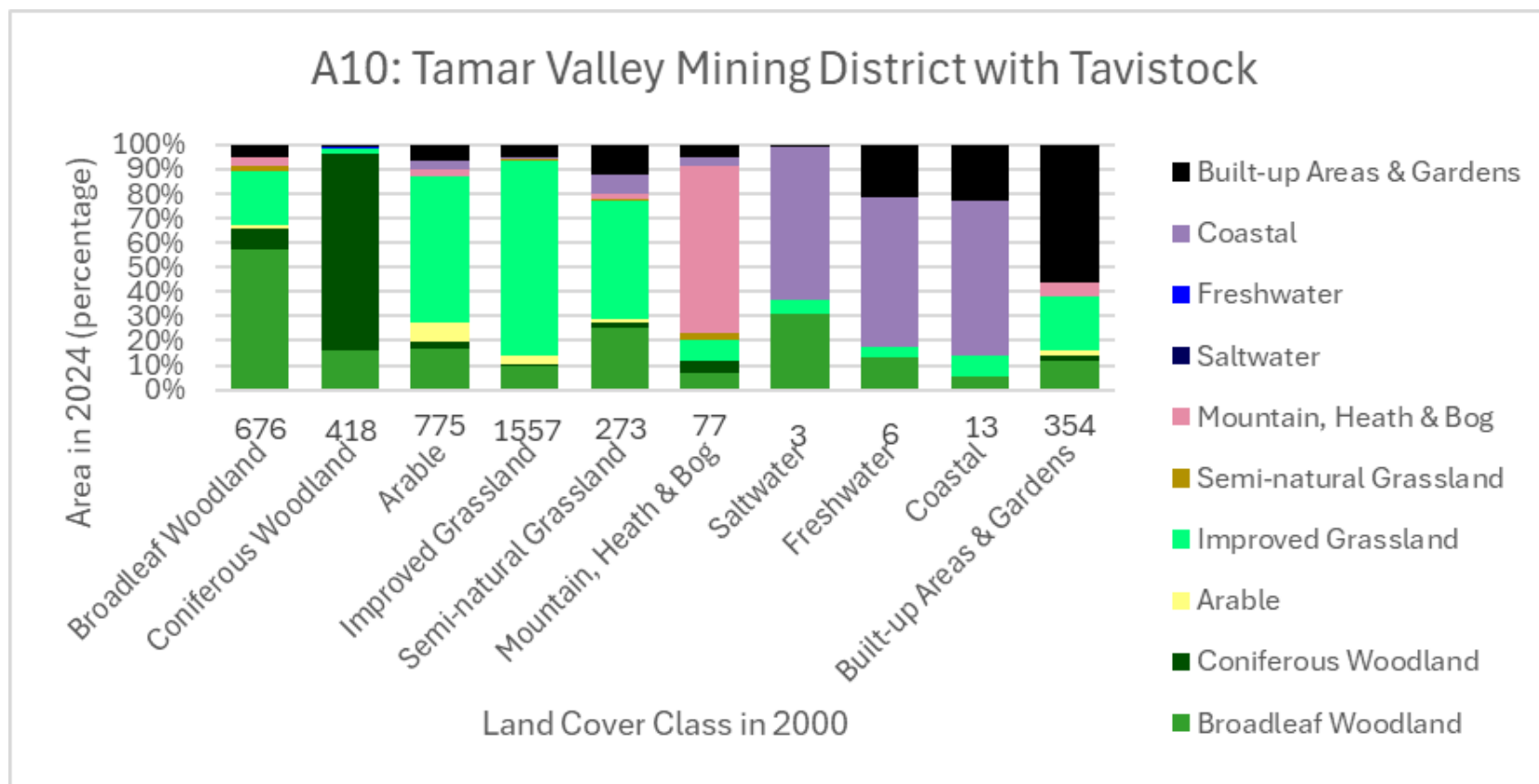


Figure 19. Area A10 Land Cover changes in hectares between the years 2000 and 2024 (CEH Land Cover Map).



Figures 20. Area A10 Overall results of the Landscape Change analysis. Each bar represents a Land Cover Class in the year 2000 (total area in hectares displayed at the bottom of each bar) and any subsequent percentage change in Land Cover Class by the year 2024 (using CEH Land Cover Map data).

## 10.6. Area profile

Table 10. Area A10 Results of designations, opportunities and land cover in terms of area (ha) and percentage cover (%) within the WHS Area boundary.

<b>Designation</b>	<b>A10 ha</b>	<b>A10 %</b>
Buglife B-Lines	1474.64	36
Buglife IIA	865.03	21
Countryside Stewardship (MID-TIER)	762.30	18
Countryside Stewardship (HIGHER-TIER)	174.37	4
Devon County Wildlife Site (DBRS)	227.67	5
Devon (Other Sites of Wildlife Interest (DBRS)	17.02	<0.5
Devon Unclassified Wildlife Sites (DBRS)	74.70	2
Cornwall County Wildlife Site (ERCCIS)	297.54	7
LNR	147.07	4
MCZ	49.65	1
National Landscapes	3242.76	78
RSPB IBA	46.06	1
SSSI	226.47	5
SAC	165.19	4

SPA	29.35	1
<b>WHS</b>	<b>4152.05</b>	100
<b>Primary Habitat</b>	<b>A10 ha</b>	<b>A10 %</b>
Arable & Horticultural	303.75	7
Bare Ground	29.08	1
Bare Sand	2.40	<0.5
Bracken	63.09	2
Broadleaved, Mixed & Yew Woodland	969.13	23
Built-up Areas & Gardens	443.43	11
Coastal Saltmarsh	35.15	1
Coastal Sand Dunes	0.80	<0.5
Coniferous Woodland	353.71	9
Dwarf Shrub Heath	103.07	2
Fen, Marsh & Swamp	107.51	3
Improved & Semi-Improved Grassland	917.73	22
Scrub	183.16	4
Unimproved Grassland	581.95	14

Water	58.55	1
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## A11. Summary of all designations across the World Heritage Site

Overall, the Cornwall and West Devon Mining Landscape WHS overlaps with the following designations.

- 1 Buglife B-Line
- 3 Buglife Important Invertebrate Areas
- 16 Devon County Wildlife Sites (plus 20 Unconfirmed Wildlife Sites and 4 Other Sites of Wildlife Interest)
- 56 Cornwall County Wildlife Sites
- 2 Local Nature Reserves
- 1 Marine Conservation Zone
- 2 National Landscapes
- 4 RSPB Important Bird Areas
- 1 RSPB Priority Landscape
- 1 RSPB Reserve
- 25 Sites of Special Scientific Interest
- 5 Special Areas of Conservation
- 2 Special Protection Areas