

The State of the Tamar Valley 2018/19

Indicators of change for the Tamar Valley
Area of Outstanding Natural Beauty



Foreword

The State of the Tamar Valley 2018/19 report has been compiled to support the 5-year review of the Tamar Valley AONB Management Plan for 2019-2024. The report brings together the findings of the Monitoring Report 2018/2019, which tracks indicators for change for the Tamar Valley AONB and provides some additional detail to support the background sections throughout the Management Plan.

Using the Monitoring Report procedure, first commissioned in 2007, the data within this publication is Phase 3 of this process. It is the tool used to track changes through time and provides evidence to support the Management Plan as well as being a ready source of data for evidencing work across the AONB and its setting. The Monitoring Report was compiled by Faye Davey and John Martin of the University of Plymouth using the most up to data available in 2018.

The State of the Tamar Valley report also incorporates findings from the Economic Impact of the Tamar Valley AONB Visitor Economy 2016 report. This provides valuable additional base line data on the value of tourism to the local economy and another set of indicators to track over the course of the 5-year plan.

Data and trends identified in the report help to determine the condition of the elements that make up the cherished Tamar Valley landscape and will help shape and inform the objectives, policies and priorities for action outlined in the 2019-2024 Management Plan and the 2-year rolling Delivery Plan covering the next 5 years

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1.0 Introduction

Photo: High Summer on the middle reaches © Lesley Strong/TVAONB



Tamar Valley AONB Monitoring Project Phase 1

- 1.1 The Tamar Valley Area of Outstanding Natural Beauty (TVAONB) Monitoring Project was commissioned in 2007 with the objective of selecting a set of indicators that could accurately assess change in the landscape and to lay a firm baseline of data against which change could be assessed. Full details can be found in the document 'Cornwall, Tamar Valley and Isles of Scilly AONB Landscape Monitoring Project. Phase 1 Project Report'.
- 1.2 During Phase 1 the AONB's Landscape Character Assessment (Diacono, 2007, 2008) was used to identify key characteristics across different parts of the Tamar Valley. Data sources were then sought that could be used to look for changes in the condition of those characteristics.
- 1.3 In addition a matrix of 'forces for change' were compiled, to identify which characteristics were likely to be the ones that would change over time, and therefore make good indicators for landscape change.
- 1.4 The AONB is very varied and as such it was necessary to create a series of Landscape Monitoring Units, which were derived from the Landscape Character Assessment (See Figure 1.1). This enables changes in the landscape to be picked up at a more local scale than looking at the data over the whole AONB.
- 1.5 Sample Squares were also derived to allow data collection in the field to take place, such as looking at hedge condition or orchard condition (See Figure 1.1).

Phase 3 Method

Review of Indicators and data availability

- 1.6 Each of the indicators and the data sources that were used to form the baseline were reviewed to see if they could be repeated. If the data source was no longer available or had not been repeated a new data source was recommended. Where new data sources have become available additional indicators were added into the monitoring report.
- 1.7 Indicators 1.1 - Levels of Tranquillity, 1.2 - Levels of Intrusion have not been repeated in this phase as new data is not yet available from the Council for the Protection of Rural England (CPRE). These indicators could be used in further phases as new data becomes available. 1.3 - Extent of Dark Night Skies has been repeated but a new methodology means the results are not comparable.
- 1.8 A new baseline of data was used in Phase 2 for Indicator 2.5 - 'Extent of Semi Natural Habitats', again this data set has been amended/improved from Natural England's 'BAP Habitats' to 'Priority Habitats' and therefore caution should be used in comparing the data.
- 1.9 Data has been collected at several scales across the AONB mainly due to data availability or the usefulness of the data at different scales. For example, the indicators derived from Environmental Stewardship were only available at AONB

Level. The Department of Environment Food and Rural Affairs (DEFRA) June Agricultural Survey was only available by AONB Section (i.e. The East Cornwall side, West Devon Side and the Lynher) as any further breakdown could lead to the identification of single farms (See Figure 1, Map 1). Data such as the Historic Environment Record (HER) can be assessed using Landscape Monitoring Units (LMU) as there are many data points and sample squares are used where primary data collection is required, for indicators such as hedge condition (See Figure 1, Map 2).

1.10 Further details of new/changes to data are detailed throughout the report.

Structure of this report

1.11 This report presents the results from Phase 3 of the monitoring study, whereby the data from the baseline has been compared to new data sources to gauge how the Tamar Valley Landscape is changing.

1.12 The results are presented in themed chapters using text, tables and figures. A summary of changes table is presented at the end of each chapter to give an 'at a glance' view of whether the landscape is stable or changing.

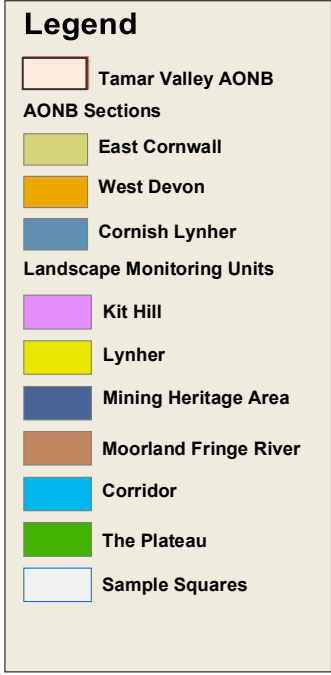
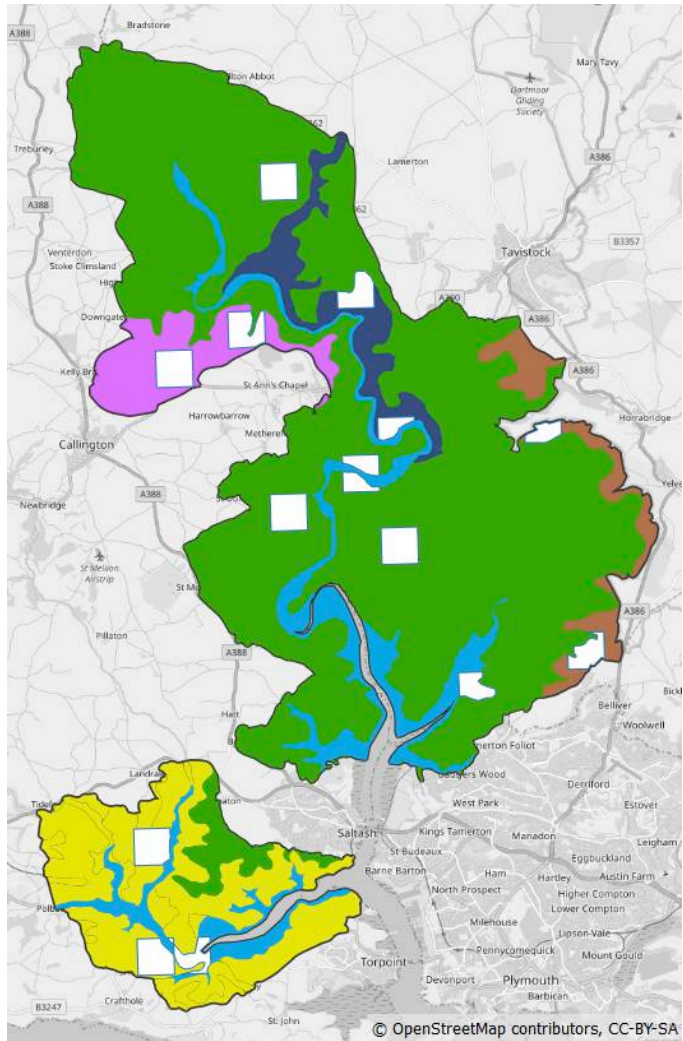
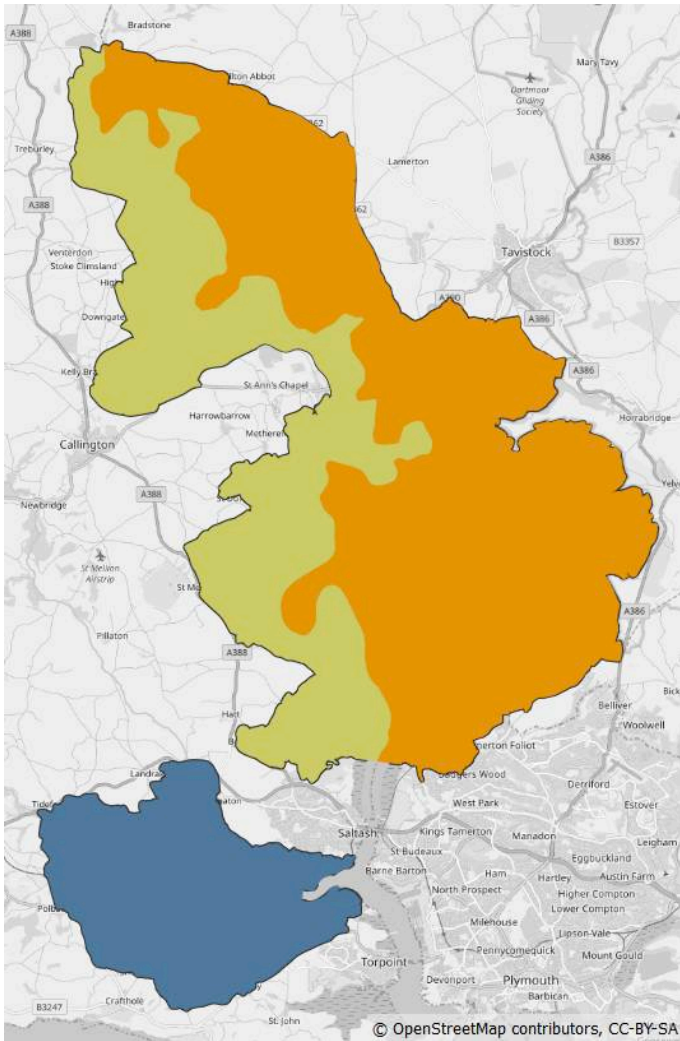


Figure 1.1 - Monitoring Units



2.0 Historic Environment and Local Distinctiveness

The Indicators:

- Presence and Condition of Historic Landscape Features
- Extent and Condition of Designed Landscapes

Photo: Engine House at Drakewalls © Lesley Strong/TVAONB



Background

The Tamar Valley has a strong and remarkable heritage, which is intrinsically connected to its special landscape qualities. Many of the Valley's buildings have grown from the very landscape in which they are placed; their materials sourced from local quarries and woodlands, lime mortar burnt at a nearby quay, bricks made in village brickworks, or slate brought in from Mill Hill near Tavistock. The removal of these materials from the landscape has itself created character, for example resulting in wildlife-rich habitats in abandoned quarries.

Much of the diverse and important buried and built heritage of the AONB is recognised through statutory and non-statutory designations: examples include Grade I listed Buckland Abbey and its associated buildings and gardens; farmhouses such as Halton Barton in St Dominick (Grade II*); and Grade II buildings such as the Maynard School in Bere Alston (the first purpose built school in Devon) and a number of war memorials that have been listed since the previous monitoring report. Many of the area's Scheduled Monuments relate to mining heritage, for example the recently designated (2013) New Consols Mine at Lockett; but the range of Scheduled Monuments also highlights the depth of history in the landscape from prehistory through to World War II.

Field boundaries reflect the changing use of the landscape, from medieval strip based fields around Latchley to late enclosures from the time of the Industrial Revolution to the north of St Ann's Chapel. The development of settlements indicate changes in employment and the economic and social success of communities. Medieval strip fields outside the AONB boundary are also a key element of the setting of the protected landscape and need to be recognised and valued.

The mining heritage of the Valley is one of its key qualities, shaping the landscape and its economic prosperity from medieval times right through to the present day with the conservation and reuse of industrial buildings. Global recognition of the deep mining technology developed in the Tamar Valley during the 19th century is reflected through its inscription as part of the Cornwall and West Devon Mining Landscape World Heritage Site (WHS) in 2006. The Tamar Valley is one of ten landscape areas inscribed which make up the Cornwall and West Devon Mining Landscape WHS. Known as area A10, it runs from and includes Tavistock in West Devon, east to Kit Hill in Cornwall and south to Weir Quay, on the Bere Peninsula.

By working in partnership with the WHS, we are promoting the sustainable management and conservation of this industrial heritage, and managing the potential pressures upon the AONB through this partnership. One of the elements identified in the Area 10 of the WHS is the presence of miner's small holdings which have been recently identified as a key and threatened part of the cultural landscape of the Tamar Valley.

The non-designated elements of the landscape are often the most locally-cherished and represent the cultural, social and economic history of a particular locality. However, these are perhaps the assets most at threat as they are often offered no protection or are disregarded, but without them the character of the AONB and our understanding of landscape development would be entirely different. These can include elements such as milestones and fingerposts or humble buildings associated with the market gardening heritage of the Valley such as packing sheds. The Heritage

Lottery Funded - Helping Hands for Heritage project helped to record additional elements across the AONB and build up an awareness of value of these assets.

Two nationally significant examples of this are the discovery of Calstock Roman fort and the recognition of the medieval silver mining industry on the Bere Peninsula. Dissemination of the importance of these archaeological sites has put the Tamar Valley firmly on the archaeological map, and will help raise their profile for protection. The 3-year Understanding Landscapes project delivered by University of Exeter will continue to build on these elements and continue to unearth the stories behind these chapters of the history of the Valley.

It is not practical to conserve every element of our historic environment, and the complexities of the development of the Tamar Valley landscape presents challenges. By understanding what assets we have, what and how people value a place, and recording what we value through specific projects and raising awareness, the AONB Partnership can

contribute to informing the management of the landscape to ensure this remarkable heritage is protected for future generations. This will be assessed in light of available resources and a strategic view taken, aided by existing frameworks such as Historic England's National Heritage Protection Plan, Cornwall Council's Historic Environment White Paper, Devon County Council Environment Group Business Plan, and the South West Archaeological Research Framework. The Local Distinctiveness work and development of the Historic Environment Strategy currently being carried out by Cornwall Council will continue to develop this theme further.

Work being carried out by Historic England on a number of Heritage at Risk assets in and around the Tamar Valley AONB. Working with Tamar Community Trust, this work will help to consolidate and provide a more secure legacy of these assets in the future.

Presence and Condition of Historic Landscape Features

Historic Environment Record

- 2.1 The Devon Historic Environment Record has 2364 unique entries which is an increase of 356 records. There have been some entries been removed from the 2013 record, for example Calstock Viaduct is on the Cornwall HER and therefore removed due to duplication. Some entries have been removed and split into several entries such as at Maristow House. Therefore the exact increase in number of entries listed should be treated with caution but there is an overall trend of increasing number of records.
- 2.2 Examples of new records include Ferry Crossing at Morwell Wood, Gulworthy, Pond at northern end of Lipwell Creek, Bere Ferrers, and Embankment at the head of Lipwell Creek, Bere Ferrers.
- 2.3 The Cornwall Historic Environment Record has 1597 this is an increase of 285. New records include 6 post medieval points of interest at Bohetherick: a Lodge, 3 quays, 2 quarries. New modern entries include: Pentillie replica stone circle and Calstock war memorial.
- 2.4 Together this totals 3961, which is an increase of 641 records since 2013.

Scheduled Monuments and Listed Buildings

- 2.5 There are 27 Scheduled Monuments (66.2ha) across the AONB, there have been no new designations since 2013. The number of Listed Buildings and Scheduled Monuments has increased slightly each year from 2010 to 2013 and is now stable (See Table 2.1).

Year	Listed Buildings				Scheduled Monuments
	Grade I	Grade II*	Grade II	Total	
2010	No data	No data	No data	643	25
2012	31	47	566	644	26
2013	31	47	567	645	27
2016	31	47	568	646	27
2017	31	47	570	648	27
2018	31	47	571	649	27

Table 2.1 Listed Buildings and Scheduled monuments 2010 – 2017

Heritage at Risk

- 2.6 There are 8 Conservation Areas on the Cornwall side of the AONB, and 6 on the Devon side. The Bere Alston Conservation Area has now been removed from the Heritage at Risk register.
- 2.7 There are 13 entries on the Heritage at Risk 2017 register for the AONB. Scraesdon Fort is a Grade II listed building and also a Scheduled Monument to ensure it is not counted twice and for the purpose of reporting it occurs on the Heritage at Risk Register and not on the Scheduled Monuments at Risk Register.

Year	Listed Buildings at Risk				Scheduled Monuments	Places of worship at risk	Conservation Area	Industrial Heritage
	Grade I	Grade II*	Grade II	Total				
2010	0	2	No data	2	7	No data	No data	No data
2012	0	2	1	3	7	1 (Grade II*)	1	1
2017	0	1	0	1	9	0	0	

Table 2.2 Heritage at Risk

- 2.8 The Grade II* Listed Buildings at Warleigh House have now been removed from the register as it is now in good condition following works to the building.
- 2.9 The Grade II* Listed Building 'Calf House at Lithiack and stable adjacent to north' remains in poor condition 'C' with slow decay, no solution currently agreed.
- 2.10 Scraesdon Fort near Antony is Grade II listed (also a Scheduled Monument) the archaeology has changed from Poor Condition to Generally Satisfactory with significant localised problems. The condition trend is improving. The buildings condition remains Poor, category C slow decay; no solution agreed.
- 2.11 The Church of St Philips and St James near Antony is a Grade II* Place of Worship was in very bad condition. Following a grant and repair works this has now been removed from the register.
- 2.12 There are now 9 scheduled monuments at risk (Excluding Scraesdon Fort). Gunnislake Clitters copper, tin, arsenic and Wolfram Mine and New Consols Mine: surface, buried and underground remains, Luckett, have been added to the register (See Table 2.3)

Scheduled monument	Condition	Trend (2013/2018)	Vulnerability	Industrial
Iron Age defended settlement in Dunterue Wood, 570m south of Castle Head	Generally satisfactory but with significant localised problems	Stable/Stable	Scrub / tree growth	No
Morwellham Quay: transport infrastructure, part of the water control system and a manganese mill	Generally satisfactory but with significant localised problems	Stable/Stable	Development requiring planning permission	Yes/Maritime
Tamar Canal, Gunnislake	Generally satisfactory but with significant localised problems	Improving/Improving	Deterioration - in need of management	Yes
Okeltor 19th century arsenic, copper and tin mine	Generally satisfactory but with significant localised problems	Unknown/Declining	Permitted development	Yes
Bury Camp	Generally satisfactory but with significant localised problems	Declining/Declining	Localised/limited stock erosion	No
Gawton Arsenic Mine and Flue	Very Bad, Category A – immediate risk of further rapid deterioration or loss of fabric; no solution agreed	Declining/Declining	Site suffered damage from vehicles. Structures are at risk.	Yes
Hilltop enclosure known as Maristow Camp, 240m east of Middle Park House	Generally satisfactory but with significant localised problems	Declining/Declining	Forestry	No
Gunnislake Clitters copper, tin, arsenic and wolfram mine	Generally satisfactory but with significant localised problems	No data/Declining	Scrub/Tree growth	Yes
New Consols Mine: surface, buried and underground remains, Lucket	Generally satisfactory but with significant localised problems	No data/Declining	Collapse	Yes

Table 2.3 Scheduled Monuments at Risk

Archaeological Conservation

2.13 Across the AONB there are 9 Environmental Stewardships agreements (253 ha), which has decreased from 16 (275.7 ha) that include the conservation of archaeological features (See Table 2.4). Most of the areas covered are for maintenance or restoration of wood pasture and parkland (See Table 2.6).

	Take archaeological features out of cultivation (Area ha)		Management of scrub on archaeological features (Area ha)	Management of archaeological features on grassland (Area ha)		Arable reversion by natural regeneration (Area ha)	Total (ha)
	Entry Level (ED2)	Organic Level (OHD2)	Entry Level (ED4)	Entry Level (ED5)	Higher Level (HD5)	Higher Level (HD7)	
2012	0.01	1.7	0.2	9.2	16.2	6.3	33.61
2013	0.01	1.7	0.2	9.2	11.1	6.3	28.1
2017	0.00	1.7	0.0	4.19 (OD5)	4.4	6.3	16.59

Table 2.4 Area of the AONB where Environmental Stewardship agreements include the conservation of archaeological features

Extent and Condition of Designed Landscapes

2.14 There are 4 Registered Parks and Gardens in the AONB; this has remained the same since 2007. There are no entries in the Heritage at Risk Register for Parks and Gardens in the Tamar Valley (See Table 2.5)

Monitoring Unit	Parkland	Grade I		Grade II*	
		Area in Monitoring Unit (ha)	Total Area (ha)	Area in Monitoring Unit (ha)	Total Area (ha)
Lynher	Port Eliot	218.6	220.4		
	Antony	-	-	123.3	127.7
Plateau	Endsleigh	198.4	215.6	-	-
	Cotehele	-	-	56	56.7

Table 2.5 Area of Registered Parks and Gardens within Monitoring Units

2.15 In addition to the Registered Parks and Gardens recognised by Historic England, Natural England has also identified some additional Parkland and Wood pasture. These occur at Bickham House, Endsleigh, Port Elliot, Antony. There is also an area of Defunct Wood Pasture within the Grenofen and Westdown SSSI of 5.39 ha. There have been no changes identified.

Parkland and Wood Pasture	2013	2017
River Corridor	2.38	2.38
The Lynher	30.92	30.92
The Plateau	25.85	25.85
Moorland Fringe	0.30	0.30










Table 2.6 Areas of the AONB identified as Parkland and Wood Pasture

2.16 Environmental Stewardship schemes for the management of Wood Pasture and Parkland have increased in the period 2012-2013 and then decreased up to 2017 (See Table 2.7)

	Maintenance of wood pasture and parkland (Area ha)	Restoration of wood pasture and parkland (Area ha)	Total (Area ha)
	Higher Level (HC12)	Higher Level (HC13)	
2012	94.5	68.3	162.7
2013	92.8	150.2	243
2017	92.4	143.9	236.3

Table 2.7 Area of the AONB covered Environmental Stewardship Schemes that include management of Wood Pasture and Parkland

Summary of Change

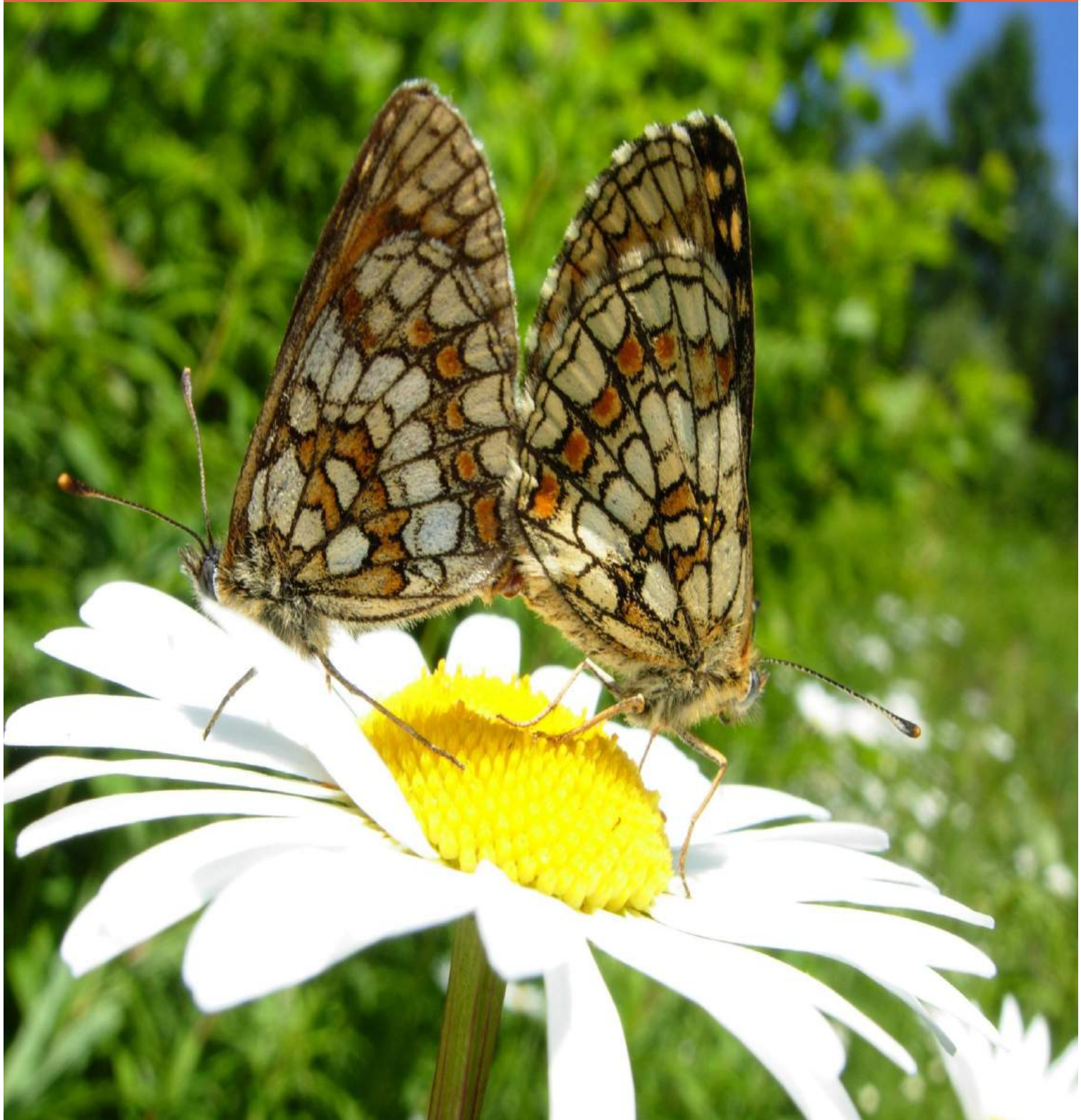
Indicator	Evidence	Desired Direction of Change	Actual Change	Next review
Presence and Condition of Historical Landscape Features	Number of entries on Historic Environment Record (Cornwall Council, Devon County Council)	Number of historical features remain stable or increase.		2023
	Number of Scheduled Monuments (Historic England, 2013, 2017)	Number of historical features remain stable or increase.		2023
	Number of Listed Buildings (Historic England, 2013, 2017)	Number of historical features remain stable or increase.		2023
	Number of entries on the Heritage at Risk Register (Historic England, 2008, 2017)	Number of Historical Features at risk to remain stable or decrease and condition to remain stable or improve.		2023
	Number and area of land in Archaeological Conservation – Environmental Stewardship (Natural England 2012, 2013, 2018)	Area of land managed for archaeological conservation stable or increasing.		2023
Extent and Condition of Designed Landscapes	Register of Parks and Gardens (Historic England, 2013, 2018)	Area of land designated as a Park or Garden to remain stable or increase.		2023
	Number of parks and gardens on the Heritage at Risk register (Historic England, 2008, 2018)	Parks or Gardens identified on the register to remain stable or decrease and Condition to remain stable or improve.		2023
	Area of BAP Priority Habitat - Parkland and Wood Pasture (Natural England, 2012, 2018)	Area of land identified as a Parkland or Wood Pasture to remain stable or increase.		2023
	Area of land in Environmental Stewardship for Parkland and Wood Pasture (2012, 2013, 2018)	Area of land managed for Parkland or Wood Pasture stable or increasing.		2023

3.0 Biodiversity and Geodiversity

The Indicators:

- Extent of BAP Habitats
- Conditions of SSSIs
- Extent of Traditional Orchards
- Extent of Semi Natural Habitats
- Sites Designated for their Conservation Value

Photo: Heath Fritillary © Caroline Kelly, Butterfly Conservation



Background

The tidal parts of the River Tamar, Tavy and Lynher are internationally important for wildlife. The Tamar Estuaries Complex Special Protection Area (SPA) is designated for wintering populations of little egret and avocet. The Plymouth Sound and Estuaries Special Area of Conservation (SAC) is one of the finest examples in the UK of estuarine communities that have adapted to varying salinity after the last ice age. Salt meadows merge into brackish and freshwater plant communities. As well as being botanically rich, these marshes buffer people from flooding. The sandbanks and large shallow inlets and bays are also internationally important.

Large areas of inter-tidal and riverine habitat are also nationally important, and designated as the Tamar-Tavy and Lynher Estuary Sites of Special Scientific Interest (SSSI). Habitats include freshwater grazing marsh, fen, rush pasture, reed marsh and some steep valley-sides and riverbanks covered in ancient woodland, notably at Warleigh Point.

The estuarine habitats support rare and notable species. Avocet (5% of the British wintering population), black-tailed godwit, redshank, dunlin, whimbrel, golden plover, greenshank, spotted redshank, spoonbill, and green sandpiper all form an impressive wintering or migratory population.

The great range of salinity along the length of the estuary, due to the large catchment area, supports a parallel range of marine seaweeds and green algae, the nationally important hydroid *Cordylophora lacustris*, and the prawn *Palaemon longirostris* which is found at only two other estuaries in Britain. The nationally scarce stiff saltmarsh-grass and bulbous fox-tail together with the notable beaked tasselweed, grass-leaved orache and carrot

broomrape occur. Stands of triangular club-rush grow amongst the reeds at the only known location in the British Isles. The rivers themselves are home to otters, kingfishers, endangered fish such as the Allis shad, salmonids, eels and other marginal and riparian species.

The Tamar Estuary Marine Conservation Zone (MCZ) (designated in 2013) covers an area of approximately 15 km² and includes the upper reaches of the Tamar and Lynher estuaries. The estuaries are particularly important as the only place where smelt (*Osmerus eperlanus*) is protected. A migratory fish species, smelt has suffered large declines but is known to breed in the Tamar. Further specific features for which the site is designated are: intertidal biogenic reefs, intertidal coarse sediment, blue mussel beds and the native oyster. Physical modifications to parts of the estuary particularly in the upper parts near the tidal limit have the potential to affect the ecology. Funding has recently been secured to develop plans for Plymouth to be the UK's first National Marine Park.

Characteristic of a significant proportion of the AONB, especially on the steep valley sides, is the extensive coverage of woodland and conifer plantation. There are 3,668ha of woodland in the AONB, with 22% of the designated area under woodland cover; this makes it one of the most wooded protected landscapes in the south west (by percentage cover). Of this resource, 376ha are ancient semi-natural woodland and 1,249.8ha is ancient, replanted woodland. These sites are likely to have the greatest current or potential biodiversity interest. Of the broadleaved woodland, much of this is classified as Lowland Mixed Deciduous Woodland or Upland Oakwoods in the Devon and Cornwall Biodiversity Action Plans (BAPs). These woods are invaluable habitats,

although a significant proportion are undermanaged. Future AONB projects will encourage the reinstatement of traditional management practices.

The heath fritillary butterfly was in decline, partly as a result of a loss of coppice management in the Valley. However, populations have started to recover following active habitat restoration by Butterfly Conservation.

The varied geology of the area has long been recognised as significant, and the mining history of the area has provided a legacy of dumps of minerals above ground, and facilitated underground access. Rock exposures dominate the landscape in the gorge-like section of the River Tamar and in many parts of the intertidal zone, and are exposed in man-made features such as road and railway cuttings and abundant small quarries. Geomorphological processes are also well illustrated in the Tamar Valley, for example where the incised river meanders have left riverside cliffs.

There is also some work to be undertaken to increase public awareness of the importance of the area for geology and minerals. Additionally, there is a need to recognise the full status of soils in the area, not least in terms of their vulnerability to climate change. World Heritage Site status has already provided an impetus for this work with a major report on geodiversity in the Tamar Valley Mining District of West Devon commissioned by Devon County Council in 2004⁷. There is now a need to extend this approach to cover the remainder of the AONB.

The Tamar Valley has an extensive and historic network of hedges. These Cornish and Devon hedges are important for wildlife and the biological diversity of the Valley,

although many have been neglected or are no longer managed in the traditional way that will sustain their biodiversity value in the longer term. In 2010, just 38% of Devon's hedges were in favourable condition for biodiversity. The particular feature of hedges in the AONB is especially notable in spring, as brightly coloured daffodils that hark back to the market gardening heyday of the Valley and jostle with the native hedgerow plants. Baseline data for this unique horticultural collection in the landscape is actively being collected through the Heralds of Spring project and will eventually be incorporated into subsequent State of the AONB report as an additional indicator.

A renewed interest in market gardening offers exciting hopes for arable plants once common in the fields, such as corn marigold, sharpleaved fluellin and weasel's snout. The notable reappearance of corn buttercup in old fields at Bohetherick is a case in point. Traditional orchards contain increasingly rare Tamar Valley varieties of apples, cherries and other fruit. Older trees support mosses, lichens, hole-nesting birds, and bark beetles.

Species-rich neutral grassland is now rare within the AONB, but just outside the boundary at St Ann's Chapel is Sylvia's Meadow SSSI, home to seven species of orchid. Otherwise, this habitat is confined to roadside verges and traditional orchards.

Increased focus on the interconnectedness of systems throughout the landscape on a catchment scale and the ecosystem services and natural capital that these provide will continue to be a priority for the partnership in the future. It is important to recognise the role that the AONB partnership plays both within its boundary and in other protected areas that it subsequently influences.

Extent of Biodiversity Action Plan Habitats

3.1 Natural England produced a series of Habitat Inventories that was used to create a new baseline for Phase 2 of the Monitoring Project. The method for data collection has changed again since Phase 2 of this project and therefore the data below should be treated with extreme caution. Although there are some significant changes to the Priority Habitat areas Natural England states this should not be considered an actual change in the habitat areas, changes are likely due to improvements in the way data is collected (DEFRA, 2017). Where there are significant differences explanations have been sought and noted in and below Table 3.1. The overall area of land in Priority Habitats is still fairly similar. This can largely be attributed to the reclassification of Reedbed to Woodland.

BAP Habitat inventory (year)	Landscape Monitoring Unit (Area ha)												Total Area (ha)	
	Kit Hill		River Corridor		The Lynher		Plateau		Mining Heritage Area		Moorland Fringe			
Coastal and floodplain grazing marsh (2012/2018)			81.78	79.38			6.70	7.62						
Habitat Action Plan woodland (2008/2018)	13.54	23.73	38.88	47.03	233.84	371.90	1114.98	1254.00	30.92	158.80	2.59	42.35	1434.75	1897.81 ^{*1}
Lowland dry acid grassland (2012/2018)			0.00	0.12			30.92	36.83	8.37	8.08	29.23	28.31	68.52	73.34
Lowland heathland (2011/2018)	61.17	112.90	0.80	0.85			1.21	0.80	1.21	0.00			64.40	114.55 ^{*2}
Lowland meadows (2012/2018)							1.87	0.00					1.87	0.00 ^{*3}
Mudflats (2004/2018)			738.75	736.00	34.71	33.44	22.18	21.66	1.87	1.12			797.51	792.22
Purple moor grass and rush pastures (2012/2018)							2.59	4.81			1.58	1.58	4.17	6.39 ^{*4}
Reedbeds (2011/2018)			224.76	25.38	121.44		199.02	12.36	22.18	0.24			567.40	37.76 ^{*5}
Total (2013 report/2018)	74.71	136.63	1084.97	888.76	389.98	405.34	1379.48	1338.08	56.19	168.24	203.19	72.24	3188.52	3009.07

Table 3.1 Area of BAP/Priority Habitat per Landscape Monitoring Unit and Total BAP/Priority habitats for the AONB

Notes:

*1 – The new data uses the National Forest Inventory as a base rather than previous sources such as BAP surveys dating back to 1999, this is likely to be closer to the actual figure

*2 – A larger area of Kit Hill has now been identified as Lowland Heathland as a result of including data from HLS.

*3 – The area of Lowland Meadow for the Plateau area has been reclassified as Traditional Orchard.

*4 – A new area of Purple moor Grass and Rush pasture has been identified on the plateau from HLS data

*5 – A large amount of land previously classified as Reedbed has been reclassified as Deciduous Woodland. Also a large amount of the area has been reclassified as 'no main habitat but additional habitats present'. Looking at aerial images in these areas confirms the reclassification.

Land Management for BAP areas

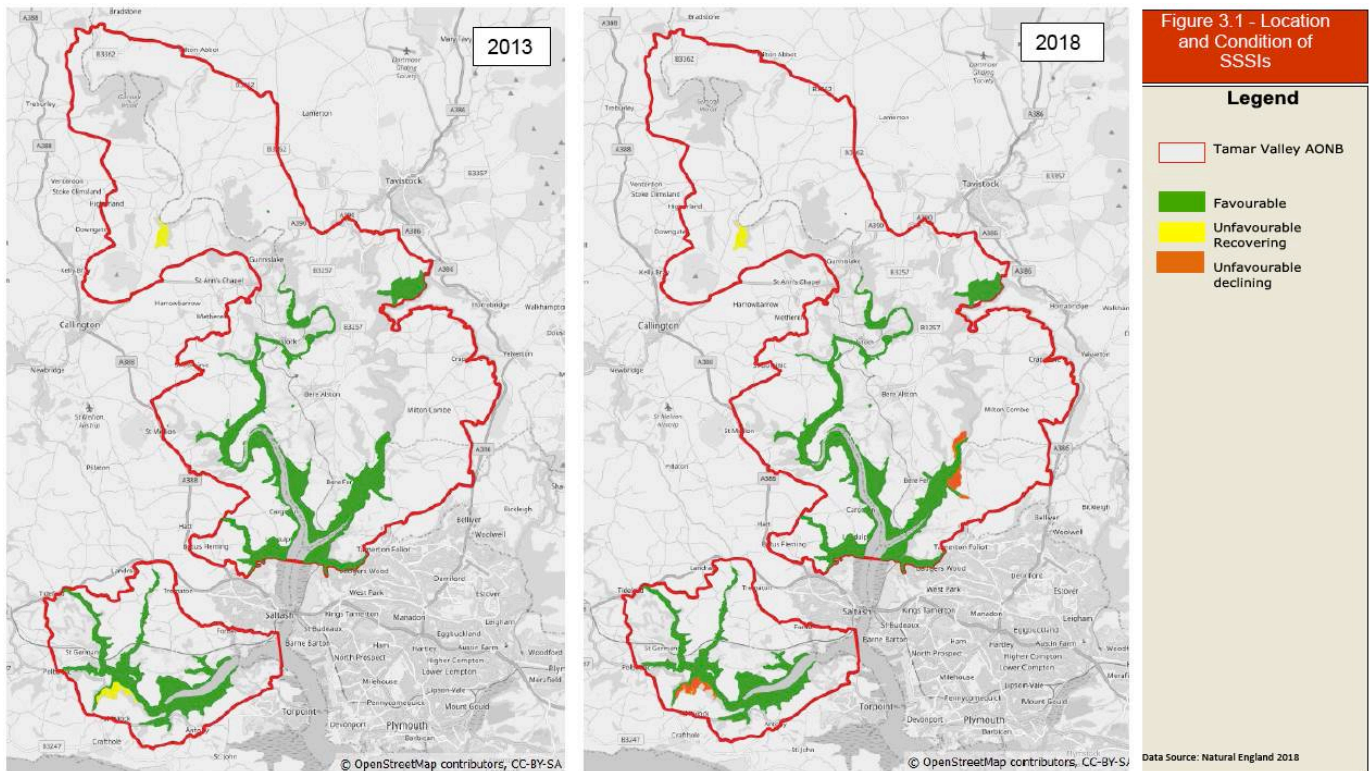
3.2 Environmental Stewardship Schemes have been granted for the maintenance, restoration and creation of a variety of BAP/Priority habitats (see Table 3.2). Overall the area under management has increased, most notably the area under option HK7 for the restoration of the Species Rich Semi Natural Grassland which has increased by 17.2ha in 2013 and 26.1ha by 2017. However, the area of land managed for Reedbed restoration has decreased by 5.7ha in 2013 and another 2.1ha in 2017.

Environmental Stewardship Option	2012 (Area ha)	2013 (Area ha)	2017 (Area ha)
Maintenance of Coastal Saltmarsh (HP5)	10.4	10.5	10.5
Restoration of Coastal Saltmarsh (HP6)	8.8	8.8	8.8
Maintenance of Species Rich Semi Natural Grassland (HK6)	39.3	38.9	38.9
Restoration of Species Rich Semi Natural Grassland (HK7)	30.4	47.6	73.7
Maintenance of Reedbeds (HQ3)	None	None	None
Restoration of Reedbeds (HQ4)	19.9	14.2	12.1
Creation of Reedbeds (HQ5)	None	None	None
Total Area	108.8	120	144

Table 3.2 Area of the AONB covered by Environmental Stewardships schemes, which include management of BAP habitats

Extent and Condition of SSSIs

3.3 There are seven SSSIs located in the Tamar Valley AONB totalling 1687.88 ha; their location and condition in 2013 and 2018 are mapped in Figure 3.1



3.4 Since 2013 the Greenscombe Wood SSSI changed from 'unfavourable recovering' to 'unfavourable declining'. The adverse condition reasons were noted as 'Forestry and Woodland management' and of note was a significant decline in the population numbers of Heath Fritillary Butterfly due to adverse weather and decline in suitable habitat (Natural England, 2018). However, survey information from Butterfly Conservation indicates a recovery of Heath Fritillary populations in recent years. Butterfly Conservation have carried out habitat management work in last 18 months and more work will be undertaken to maintain suitable habitat in the future.

3.5 The condition of part of the Tamar–Tavy Estuary SSSI has changed to 'Unfavourable declining'. Blaxton wood (SSSI unit 1030557) would benefit from more woodland management and continued clearance of rhododendron. Whittacliffe Wood requires management of the understory, rhododendron and coniferous regeneration. The site needs a long-term strategy to cope with the gradient of the site and a move to species which require a less intensive management practice. Both of these areas were under HLS when the sites visits took place in 2014 (Natural England, 2018).

3.6 Part of the Lynher Estuary has changed to 'Unfavourable declining' the area is broadleaved mixed and yew woodland that requires continued management of rhododendron along the shoreline and mature laurel which is seeding into the woodland (Natural England, 2018).

3.7 The condition of the SSSIs has been analysed using the Devon, Cornwall and Lynher Sections of the AONB. The condition of the Cornwall and Lynher areas has improved in the study period however the area in Devon has declined.

3.8 Within the condition assessment across all of the SSSIs, 4 BAP/Priority habitats have been identified:

3.8.1 Acid Grassland (lowland), Earth Heritage and Littoral Sediment remain in favourable condition

3.8.2 Broadleaved, Mixed and Yew Woodland (lowland) has decreased in the area that is Favourable, and increased the areas that are Unfavourable Recovering and Unfavourable Declining.

	2013 (ha)			2018 (ha)		
	Favourable	Unfavourable Recovering	Unfavourable Declining	Favourable	Unfavourable Recovering	Unfavourable Declining
Acid Grassland	68			68		
Broadleaved, Mixed and Yew Woodland (lowland)	240	63		198	78	29
Earth Heritage	1			1		
Littoral sediment	1645			1650		

Extent and Condition of Traditional Orchards

3.9 Natural England has produced a BAP Habitat Inventory for Traditional Orchards which has been used for comparison in 2013. The Traditional Orchards Habitat Action Plan (HAP) was used for the 2017 data (See Table 3.4).

Sample Squares	2013 (Area ha)	2017 (Area ha)	Change (Area ha)
Kit Hill	Active management 0.51 Unknown 0.09 Total Area 0.60	Active management 0.51 Unknown 0.09 Total Area 0.60	No change
River Corridor	Unknown 1.19	Unknown 1.13	-0.06
The Lynher	Active management 1.07 Unknown 5.8	Active management 1.07 Unknown 5.8	No change
Plateau	Active management 18.15 Part Managed 0.08 Unknown 54.65 Total area 72.88	Active management 24.8 Part Managed 1.23 Unknown 55.14 Total area 81.17	Active management +6.65 Part Managed +1.15 Unknown +0.49 Total area +8.29
Mining Heritage Area	Active management 1.71 Unknown 2.22 Total area 3.93	Active management 2.42 Unknown 1.63 Total area 4.05	Active management +0.71 Unknown 0.59 Total area +0.12

Table 3.3 Comparison of the Extent of Orchards in 2013 and 2018

- 3.10 In the plateau area there has been an increase in areas of orchard identified. There are many individual sites, for example there are sites near Whitsam to the south west of Bere Alston, areas to the east of Bere Alston, several areas around Blanchdown Wood and an area to the northeast of Gunnislake.
- 3.11 In the Mining Heritage area to the south east of Latchley has been an increase.
- 3.12 In the river corridor there has been an overall reduction in area but this appears to be due to adjustments in the digitising of the data set rather than areas of orchards lost.
- 3.13 Using the 2008 and 2013 Natural England Orchards data sets it is possible to assess the condition of some of the areas. See Figure 3.2 below. The condition of the Lynher orchards have improved with more areas identified as Excellent or Good. The Plateau had 6.94 ha in excellent condition this decreased to 4.43 ha. Orchards identified as good reduced from 21.67 ha to 15.65 ha but with a larger portion of orchards in an unknown condition.

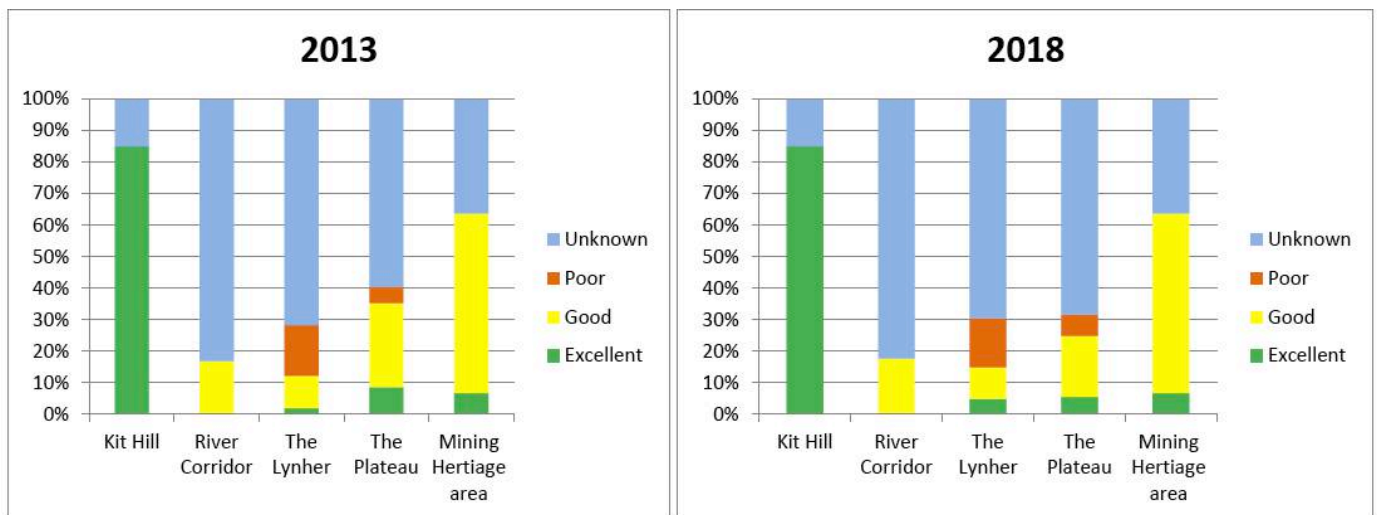


Figure 3.2 Orchard condition

- 3.14 Orchards were also surveyed by Sample Squares. Initially areas of orchard were identified by aerial photography (Microsoft 2012) and the Tamar Valley 2008 Orchards Survey. Each orchard was identified as managed or derelict based on whether the area looks to have been mown or grazed, or is scrubbed over, or if young trees appear to have been planted. The status of 'Modern' is given to orchards that appear to be very uniform in their planting. The results were also compared to the Natural England HAP data (2017). Where the orchards are visible from roads or public footpaths they are then surveyed in the field to verify the status (See Table 3.4).

Landscape Monitoring Unit	2008 (Area ha)	2013 (Area ha)	2017 (Area ha)
Kit Hill	Derelict 0.02	Derelict 0.02	Derelict 0.02
The Plateau	Derelict 4.93 Managed 4.27	Derelict 4.26 Managed 4.94	Derelict 4.26 Managed 4.94
Mining Heritage Area	Derelict 0.54 Managed 0.35	Derelict 0.54 Managed 0.35	Derelict 0.54 Managed 0.35

Table 3.4 Area and status of orchards identified from aerial photographs

3.15 In 2013 two orchards in the Plateau Monitoring Unit were surveyed. In 2018 these orchards were not accessible to being surveyed in as much detail. It was confirmed that there were apple trees of around 5m in height. No cherry trees were identified, but they may still be present. There was no analysis of the orchard condition. It was noted during survey that there was a new area of young cherry trees present, and an eucalyptus growing.

	2008	2013
Orchards surveyed	2	2
Total Number Apple Trees	17	17
Total Number Cherry Trees	4	4
Other Trees	30	30
Total Prostate Alive	51	51
Mature	10	10
Young	32	38
Grazed	No	No
Mown	Yes	Yes

Table 3.5 Orchards surveyed on the Plateau Monitoring Unit

3.16 Environmental Stewardship agreements are in place for the management of Traditional Orchards, see Table 3.6

Environment Stewardship Option	2012 (Area ha)	2013 (Area ha)	2017 (Area ha)
Maintenance of High Value Orchards (HC18)	1.7	1.7	2.1
Maintenance of Traditional Orchards in Production (HC19)	None	None	None
Restoration of Traditional Orchards (HC20)	13.8	13.7	16.7
Creation of Traditional Orchards (HC21)	1.6	1.6	0.9

Table 3.6 The Area of the AONB covered by Environmental Stewardship Schemes which include management of Traditional Orchards

Sites Designated for their Conservation Value

3.17 There are 58 sites designated for their conservation value across the AONB (See Table 3.6).





3.18 Kit Hill has been designated as a Local Nature Reserve.

3.19 A new site adjacent to the AONB was designated as a Regionally Important Geological site, Harrowbarrow Mine (spatial data was not available at time of compiling this report).

	2009		2013		2018	
	Number	Area (km ²)	Number	Area (km ²)	Number	Area (km ²)
Regionally Important Geological Sites (County Geological Sites)	5 (7 provisional)	No data	13	1.65	13	1.65 (plus Harrowbarrow Mine)
Sites of Special Scientific Interest	7	21.6	7	21.6	7	21.6
Local Nature Reserve	1	4.63	1	4.63	2	149.88
County Wildlife Sites	33	26.5	32	13.33	32	13.33
Special Protection Areas	1	11.53	1	11.53	1	11.53
Special Areas of Conservation	1	15.3	1	15.63	1	15.63

Table 3.6 Areas of the AONB which have been designated as important sites for conservation

Summary of Change

Indicator	Evidence	Desired Direction of Change	Actual Change	Next review
BAP Habitats	Area of BAP Priority Habitat – (Natural England, 2012)	Area of land identified as BAP Priority Habitat		2023
	Area of land in Environmental Stewardship for Management of BAP habitats (2012, 2013)	Area of land managed for BAP habitats remaining stable or increasing		2023
Extent and Condition of SSSIs	SSSI (Natural England, 2012)	Extent and condition of SSSI to remain stable or improve	West Devon 	2023
			East Cornwall 	2023
			Lynher 	2023
Extent and Condition of Traditional Orchards	Traditional Orchards BAP Priority Habitat areas (Natural England, 2018)	Area of Traditional Orchard to remain stable or increase		2023
	Field survey of Orchards in Sample Squares	No up to date field data available		2023
	Area of land in Environmental Stewardship for Management of Orchard BAP habitats (2012, 2013))	Area of land managed for Orchard BAP habitats remaining stable or increasing		2033
Sites Designated for their conservation value	SSSI (Natural England, 2012, 2018) SAC (Natural England, 2010, 2018) IBA (RSPB, 2000, 2018) Special Protection Areas (Natural England, 2010, 2018) National Nature Reserves (Natural England, 2010, 2018) County Wildlife Sites (ERRCIS, 2013, DBRC, 2018) County Geological Sites (ERCCIS 2013, Cornwall Wildlife Trust 2018)	Area/Number of sites designated for their conservation value to remain stable or increase		2023

4.0 River and Estuary Management

The Indicators:

- Development at Sea
- Number of Moorings
- River Access
- River Management and Condition

Photo: View from Hole's Hole towards South Hooe and Pentillie @ Lesley Strong/TVAONB



Background

The Rivers Tamar, Tavy and Lynher, and their estuaries and their tributaries, are the central defining feature of the designated landscape. These features also form significant cultural, political and physical boundaries. The lower tidal reaches of the estuary provide a dramatic contrast between extensive low water mudflats and expansive waterscapes at high water, and the middle valleys are dramatic with steep fringing woodlands, high cliffs and rocky outcrops juxtaposed with gently meandering stretches through lush pastureland.

It is only during the last thirty years that these rivers have become peripheral to the local land-based economy; this can be seen through the multitude of abandoned quays, ports and access routes terminating on the rivers.

However, the River Tamar is used extensively by rowing pilot gigs, sailing dinghies and cruisers, providing healthy and traditional activities. There has been a gradual trend towards cultural and recreational uses - demands that will need to be balanced against the environmental sensitivity of the river habitats. The recent Plymouth Sound/Tamar Estuaries Recreation Study is an additional source of data on recreational use of the river systems including those within the AONB.

The AONB Partnership and Tamar Estuaries Consultative Forum (TECF) have identified concerns regarding the general management of rivers and their environments. These include the silting up of navigation channels; long-term sustainability of some flood defences; loss of quays and landing points; lack of riparian management; invasive species; decline in fish stocks and a desire for greater public access to the riverbank.

As the AONB only covers the lower parts of the rivers Tamar, Tavy and Lynher it is important that a whole catchment approach to deal with issues of siltation, diffuse pollution and the management of carbon at source are practiced.

The Tamar Catchment Flood Management Plan 2012 suggests that the estuaries are vulnerable to the effects of climate change, and so there will be a need to work with agencies and research organisations to identify and monitor indicators of change and to put mechanisms in place to mitigate adverse effects, especially those that could damage the European Marine Site (EMS) and the newly established MCZ.

Latest predictions from the 2018 Intergovernmental Panel on Climate Change (IPCC) report have highlighted the urgent changes needed to address climate change on a global scale. More locally, impacts from extreme weather events will result in higher incidences of coastal and river flooding. The temperature rises will also impact on ecosystem dynamics, agricultural activities and pollinators.

Tamar Estuaries Consultative Forum (TECF), now a mature and effective partnership, provides a complementary forum to the AONB Partnership for coordination, planning and management, ensuring that the estuaries' EMS and other marine designations remain in favourable condition.

Additional biodiversity elements of the rivers and estuaries are addressed in the biodiversity and geodiversity section of this report.

Development at Sea

- 4.1 An investigation into possible developments at sea such as aquaculture or wind energy has found that there have been no developments either at the time of the baseline or currently.

Number of Moorings

- 4.2 The number of moorings on the River Corridor and the Lynher have stayed fairly static since the baseline in 2009. The only increase is at Calstock where 2 extra moorings are noted (See Table 4.1). It is unlikely that the number of moorings will increase, due to the lack of available space and the restrictions on having moorings on inlets. It is not possible to tell from the available data what the level of active usage of the moorings actually is. There is no data available for 2018.

Location	Number of moorings	2000/2013
Calstock		52 (2000) 54 (2013)
Cotehele		11
Halton Quay		10
Holes Hole		33
Weir Quay		157
Cargreen		157
Tavy		26
Tamerton Lake		25
Wearde Quay		47
Forder		55
St Germans		21

Table 4.1 Location and Number of Moorings in the AONB

River Access

Presence of Local Car and Passenger Ferries

- 4.3 Historically there were 11 ferries crossing the rivers of the Tamar Valley, at the time of the 2007 baseline the Calstock Passenger Ferry (Calstock>BereAlston>Cotehele Quay) was running between May and September, with 4 – 6 trips per day, tide dependant. In 2013 this ferry no longer operated and there were no other ferries running on the river. It appears that for a time the ferry did run again however was closed again at the end of 2016.

Tourist Boats

- 4.4 Plymouth Boat Trips operate from Plymouth to Calstock from April to October with up to 5 trips per month in the peak season (28 trips in total). Passengers can also disembark at Cotehele. Trips to Morwellham Quay are not running at the time of this monitoring phase. (They were previously running 2 – 3 trips per month in 2013).
- 4.5 The National Trust are currently running a boat trip from Cotehele from July to September with 10 trips over the season.







Quays and Crossings

- 4.6 There are 115 quays, 59 of which can be accessed by road, public footpath or permissive path. These quays are owned by parties such as the National Trust, Parish Councils, or estates, or they are under private ownership.
- 4.7 In a survey of 2010 it was noted that the bridges crossing the river at Blackmoreham Wood, Hatch Mill and Latchley are no longer present, leaving 5 bridges spanning the rivers.
- 4.8 Fords were also surveyed and Endsleigh Cottages, Maristow, Wareham Wood and Washford Fords are no longer present leaving a total of 5 fords.

River Management and Condition

- 4.9 Environmental Stewardship schemes are in place for 6 metre Buffer Strips on 'Intensive Grassland Next to a Water Course' (Option EE10) for 1.2 ha of riverbank; this had increased by 0.5 ha since 2012. In 2017 the area had reduced to 0.9 ha.
- 4.10 The Environment Agency has stations on 49 sections of the rivers within the Tamar Valley AONB in 2013 86,622 m for Water Framework Directive (WFD) condition monitoring, in 2018 60,000 m were reported on, this makes it difficult to assess the total changes in condition. From the previous phase it was noted that 2444m were downgraded from Good Condition to Moderate Condition. In 2017 2000 m were classified in good condition and 58,000 in moderate condition, which is a reduction in both areas though this is probably due to the area reported on. The condition has been stable since 2015. It can be noted that in 2013 8.2% of length studied were in 'high or good' condition and in 2017 only 3% of the new study length was in 'high or good condition'.
- 4.11 The Water Framework Directive (WFD) Objectives for the Tamar Valley AONB rivers were for 11,116 metres to be in good ecological status by 2015, 2000m was achieved. By 2027 – 55,993m should be in good condition.
- 4.12 The River Tamar is one of three index rivers in England and Wales and the only index river reporting on the marine survival rates of salmon and sea trout. An improved run of multi-sea winter (MSW) salmon on the River Tamar was recorded in 2017 when compared with previous years but numbers are still around 90% down on figures for the 1970s and 1980s. 4,424 adult salmon are estimated to have returned to the River Tamar in 2017, 13% over the 10-year average. An estimated 11,413 sea trout returned

Summary of Changes

Indicator	Evidence	Desired Direction of Change	Actual Change	Next review
Development at Sea	RESTATS	Area/number of developments at sea to remain stable		2023
Number of Moorings	Tamar Estuaries Consultative Forum (2013, per comms) Calstock Moorings, Environment Agency (2013)	Number of Moorings to remain stable		2023
River Access		Continued presence of car passenger ferries		
	Tourism boats - Sound & Tamar Cruising (2013)	Number of cruises to remain stable		2023
	Tamar Quays Survey (2010)	Number of accessible quays and crossings to remain stable or increase	Baseline data only	2023
River Management and Condition	River management – Environmental Stewardship (Natural England, 2013)	Area of river under management to remain stable or increase		2023
	Water Framework Directive	Condition of river to improve		2023

5.0 Farming, Forestry and Land Management

The Indicators:

- Agricultural Land Use
- Extent of Biomass Planting
- Extent of Horticultural Production
- Presence of Traditional Livestock Types
- Extent of Woodland and Tree Cover
- Woodland Management
- Field Boundary Condition

Photo: @ Coralie Barrow/TVAONB



Background

The distinctive landscape of the Tamar Valley has been shaped over thousands of years by successive generations of people who made a living from it. Although employment directly from land and water has been in decline from the last century, the Tamar Valley still has a relatively high percentage of the population employed in these industries.

Land Management

In the AONB, 67% of the land is farmed, and thus the management, business and environmental decisions of farmers, with regard to crops grown or livestock produced, all have a significant impact on the character of the landscape.

In the lifetime of this Plan, farmers will be facing new challenges and demands with accelerating pressure to produce and grow more whilst at the same time protecting and enhancing the environment. How this can be achieved within the AONB, whilst protecting the special qualities for which the area is designated, will be the test.

The AONB Partnership will have a role in investigating and researching innovative approaches and opportunities to support this crucial sector of the rural economy. If this can be achieved within a protected landscape, it will set a benchmark for what can also be achieved outside of designated boundaries.

The DEFRA 25-year plan provides new opportunities for land management and the environment and the Tamar Valley AONB will be well placed to help with coordination of local partnerships and provide help and support to the farming and forestry community. The monitoring indicators will play a key role in tracking the changes over time.

The Environmental Land Management Scheme (ELMS) brings together a number of previous land management schemes into one, building on and enhancing the current Environmental Stewardship (ES), the English Woodland Grant Scheme and the Catchment Sensitive Farming (CSF) scheme. The expected outcomes will be focused on delivery of the Government's 25 year Environment Plan and will help to meet Biodiversity 2020 goals - contributing to better, bigger and more connected habitats and closer engagement by people with the natural environment and a greater priority to soil and water management, and in particular the Water Framework Directive (WFD). On a more local scale it will help deliver key outcomes for Cornwall's Environmental Growth Strategy.

These schemes will be expected to deliver improved integration across a number of water, biodiversity, soil and flood management objectives, as well as supporting woodland creation and management to help contribute to the ambitions set out in the Forestry and Woodlands Policy Statement and outcomes for the historic environment, climate change mitigation and adaptation and improved landscapes.

The historical branding and the identity that the Tamar Valley possesses for excellence in growing still remains and there is an opportunity in this Plan period to stimulate and deliver a sustainable, profitable and vibrant land-based economy. The roadside stall laden with seasonal produce and flowers is still a distinctive, but declining, sight in the Tamar Valley.

Forests, woods and hedges

The Tamar Valley's forest, woodland and hedged landscapes are a rich and distinctive wildlife resource providing a wide range of products and ecosystem services. Especially valued for their scenic qualities by residents and visitors alike, they are often places or features with cultural associations and with high heritage value. People have an innate connection to trees, and whether cycling through the woods at the Tamar Trails or walking down a leafy lane at Cotehele, trees create an environment conducive to relaxation and enjoyment. The health and wellbeing benefits of the natural environment is becoming an increasingly important focus and the tranquility of the AONB adds to this experience.

The AONB Partnership has for some time been working to create and develop a viable new market for timber and woodfuel in particular in the Tamar Valley, especially from our hedges, to improve management and gain economic, biodiversity and landscape benefits. A series of toolkits have also available to support this.

The forestry industry in the Tamar Valley is operating below full potential. Low market prices (due to often unsustainable imports), have led to a depression in the forestry industry, which could seriously threaten its future. The Tamar Valley AONB contains an estimated 3,668ha (20.2%) of woodland, significantly above the regional average.

Woodland condition is variable but the Valley produces timber – especially Douglas Fir – of excellent quality and the potential productivity is certainly higher than at present. Conifer crops, providing they are planted sympathetically in the landscape, have a role in sustaining the economic viability of land-holdings. Sustainably managed coniferous and broadleaved forests will continue to provide fuel, timber, carbon storage, biodiversity and other ecosystem services.

Agricultural Land Use

Agricultural Holdings

- 5.1 The total number of agricultural holdings and holdings has decreased in 2013 and 2016 based on the June Agricultural Census. Although it is interesting to note that the amount total area of land has increased by 1257 ha overall. The numbers of holdings over the different size categories have fluctuated as can be seen in Table 5.1 below.

	2010	2013	2016
Total number of holdings	237	215	213
<5ha	27	29	28
>5ha but <20ha	74	56	62
>20ha but <50ha	58	49	48
>50ha but <100ha	45	50	42
>100ha	33	31	33
Total land area	12,137	11, 858	13,394

Table 5.1 Agricultural Holdings 2010 to 2016

Grassland

- 5.2 Overall there has been a decrease in grassland across the AONB in the period 2007-2016. Taking the following grassland categories and combining them – Rough Grazing, Permanent Grass and <5 years Permanent Pasture, grassland has decreased across the AONB from 2963 ha to 2800 ha (-163 ha) in the period 2007-2016. The Cornish side of the AONB had increased by 124 ha (4%) in 2010. However, this has decreased again to an overall reduction of 163 ha. There has also been a redistribution between the grassland categories with the area of <5 years Permanent Pasture decreasing and an increase in Permanent Pasture. The area of Rough Grazing had also decreased by 25 ha in 2010. It is worth noting that the rough grazing data is suppressed for the years 2013 and 2016. There was a total of 78 ha for 2007, this may account for some of the difference.
- 5.3 On the Devon side, there is a combined reduction of 220 ha from 2007-2016, this is largely accounted for by the reduction in Rough Grazing which has decreased 221 ha.
- 5.4 The Lynher has a total increase of 99 ha for the period 2007-2016, there has been an increase in Grass under 5 years old of 65.62 ha and Permanent Grass of 72.73 ha. It is not possible to tell the change in the area of Rough Grazing as the figures for 2010-2016 have been suppressed for the surveys but the difference in the increase figures probably accounts for the 39.00 ha that was reported in 2007.

DEFRA June Agricultural Survey – Grassland Categories

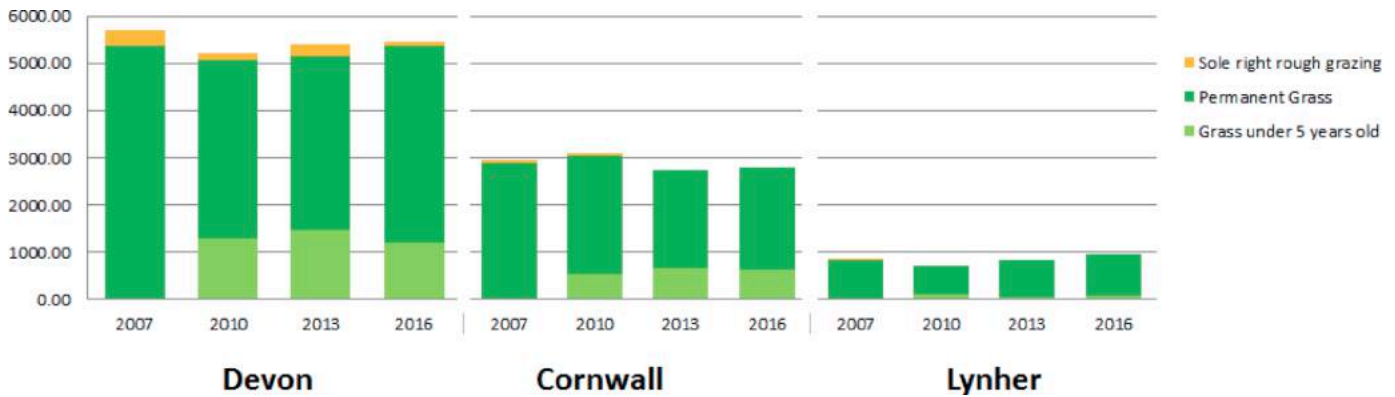
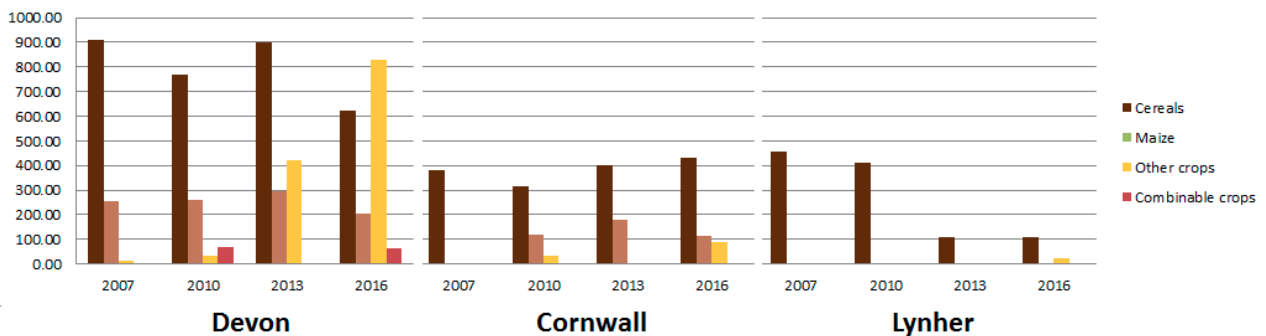


Figure 5.1 Comparison of the June Agricultural Survey – Grassland Categories between 2007 and 2016

Arable

- 5.5 Across the Arable Categories (Cereals, Maize, Other Crops and combinable crops) the West Devon section of the AONB has an overall increase from 2007-2016 of 428 ha, with Cereals decreasing by 285 ha but Other crops increasing by 816 ha. The area of Maize decreased by 52 ha. There was also an additional new category area of 42 ha of Root Crops, Brassicas and Fodder Beet for stock feeding.
- 5.6 In the East Cornwall Section there has been an overall increase in area by 293 ha, there has been an increase in the area of cereals 50 ha and an increase an additional 115 ha of Maize and 87 ha of Other Crops.
- 5.7 The Cornish Lynher area had a reduction of cereals by 344 ha, however in the 2010-2016 surveys the figures for Maize and Combinable Crops are suppressed to protect individual holdings so this data should be treated with caution (See Figure 5.2). Figure 5.2 gives an overview of the variable trends across the data which should be taken into account, for example from 2007 to 2010 the area of cereals decreased but recovered in 2013, only to decrease again in 2016.



Agricultural Survey – Arable Categories

Horticultural

5.8 The area covered by Hardy Nursery Stock and Bulbs and Flowers had increased on the Cornwall Side of the AONB by 3 ha to 19 ha, and has stayed the same in Devon at 29 ha from 2007 – 2010. In 2013 this figure had decreased to 17.98 ha. In the 2016 census it decreased to 3 ha, however a new category of Fruit and Vegetables (not including orchards) showed an area of 22 ha so the area has stayed stable. In Devon the area of Hardy Nursery Stock and Bulbs and Flowers decreased from 25 ha to 10 ha, but with the addition of 85.58 ha classified as Fruit and Vegetables (not including orchards), an overall increase of 70.12 ha.

Livestock

5.9 In 2013 58.1 ha of land was under Environmental Stewardship for Native Breeds at Risk Supplement (Option HR2) in 2018 this increased to 105.5 ha.

Extent of Biomass Planting

5.10 Since the last survey a live scheme has been put in place for Miscanthus under the Energy Crop Scheme. This totals 63.65 ha and is located to the west of Tamerton Foliot. The area borders some priority habitats but has not replaced them. The land was identified as Grade 3b and 4 agricultural land (Natural England, Agricultural Land Classification).

Extent of Woodland and Tree Cover

5.11 Total woodland cover across the AONB has increased by 20.57 ha from the 2012 National Forestry Inventory survey to the latest data for 2016. There is an area 1.3 ha of young trees planted west of Cox Park and 1.89 ha at Chilsworthy. The other new plantings are extensions of existing woodland, for example, there is a new area of broadleaved woodland identified that links the woods near Lockett and Broadgate, an extension to the broadleaved woodland running along Sydenham Damerel river, an extension to the area south of Latchley. An area of 9.30 ha that was previously identified as 'assumed woodland' has been reclassified as Young Trees this area also has been extended to 11.21 ha. Comparing GoogleEarth images from 2010 to 2017 reveals a previously scrubby area has been planted as woodland.

5.12 The different woodland categories in each AONB area can be seen in Figure 5.3. Note some categories have been combined for ease of interpretation: Broadleaved + Mainly Broadleaved, Conifer + Mainly Conifer and the following minor categories: Open Area+Bare+Grassland+River> Other

Woodland Cover (ha)

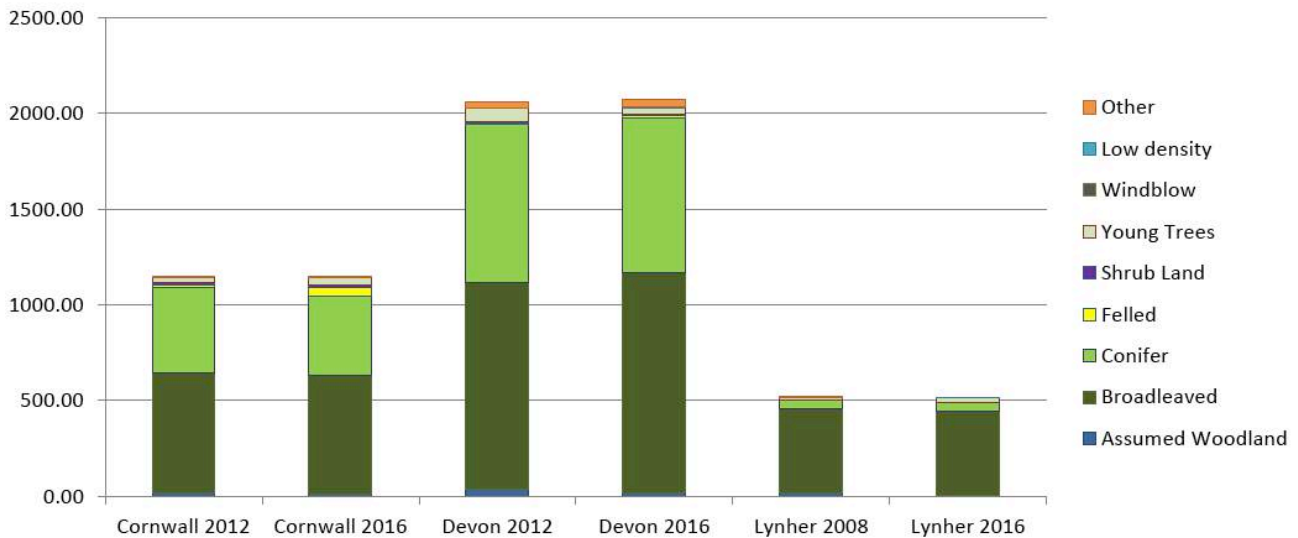


Figure 5.3 Comparison of Woodland Cover for the AONB section between 2002 and 2016

- 5.13 There has been very little change in Cornwall for the total area of woodland cover (6.41 ha). The area assumed woodland in 2012 has decreased by 5.78 ha and mostly confirmed as young trees in 2016. There is a large increase of Felled area from 18.90 ha to 45.59 ha much of this is in Gunoak Wood (Tavistock Woodland), the felling has occurred mostly under unconditional selection/thinning. There has been a decrease in the area of Conifer here (24.86 ha) which has been reclassified to Felled. The woodland is actively managed (Forestry Commission Active Management Indicators, 2016) and is covered by woodland improvement grants, woodland management grants and woodland regeneration grants. This also spans over the Devon side of Tavistock woodland. There is an area of Wind Blow (an area where trees have been broken or uprooted and not cleared or regenerated) of 1.60 ha this is located in Comfort Wood on the Cotehele Estate, where it is actively managed and under a Woodland Improvement Grant and Woodland Management Grant.
- 5.14 In Devon, there is little overall change in woodland area (-5.1 ha or -0.93%) this can be accounted for by changes in the area of Assumed Woodland where there has been a decrease in the area 19.88 ha (49%), some was removed from the inventory though most has now been interpreted as young trees and some as ground prep. These areas are actively managed (Forestry Commission Active Management Indicators, 2016) though not currently under a grant scheme. There has been a rise in the area of Broadleaved woodland of 65.02 ha (6%) this is due to areas of Young Trees now being classified as Broadleaved Woodland and to the west of Walreddon. There has been a decrease of Conifer by 14.45 ha (1.75%) around Blanchdown Wood there are areas that are now Broadleaved or Mixed with Predominant Broadleaf. Also there are 3 areas to the Tamerton Road area that are now Felled, these areas are Actively Managed (Forestry Commission Active Management Indicators, 2016) and under Woodland Grant Schemes.
- 5.15 In the Lynher, the total woodland area has decreased by 2.95 ha, this can be accounted for in the adjustments to the area of Assumed Woodland which has decreased by 13.76 ha, the rest of this category has been reclassified as young trees.

5.16 Figure 5.4 is useful to compare the composition of the woodland cover across the AONB sections.

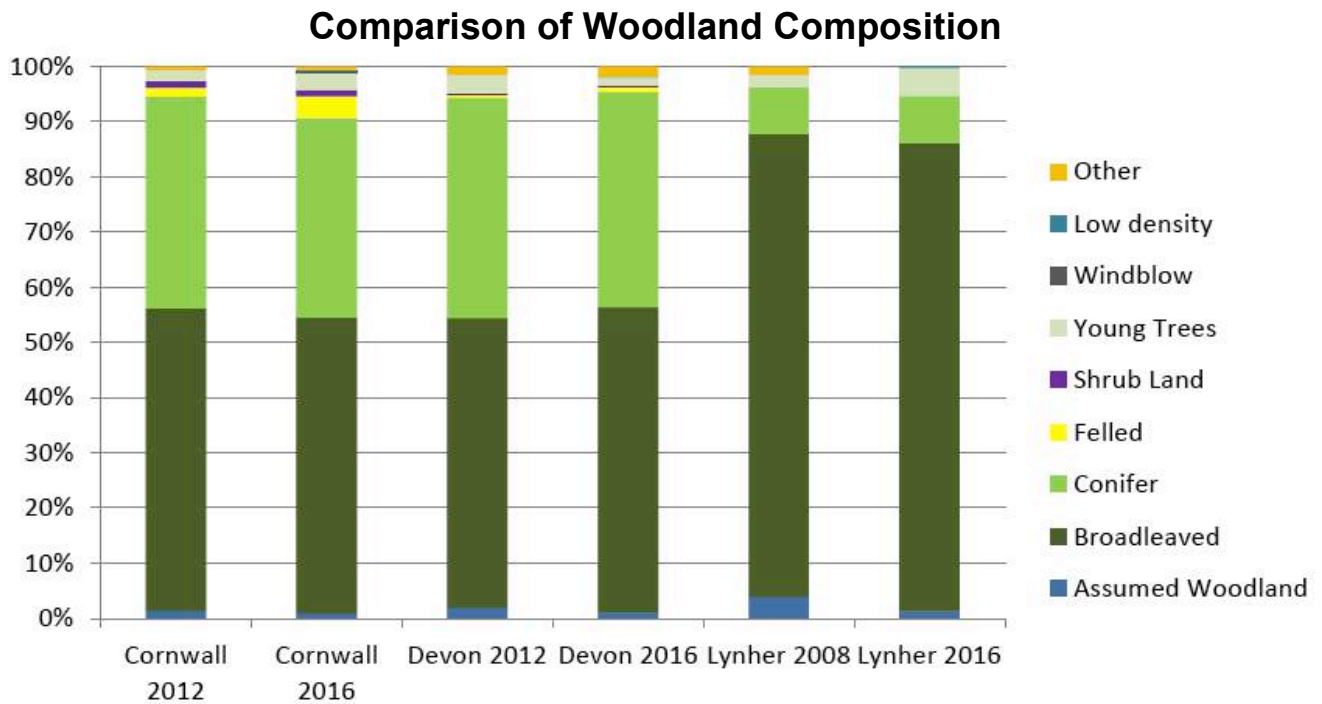


Figure 5.4 Comparison of Woodland Composition by AONB section between 2008 and 2016

Woodland Management

5.17 Environmental Stewardship Schemes are in place for 30 features across the AONB related to protecting in-field trees, see Table 5.2. There has been a large decrease from a total number of features from 251 in 2012 to 30 in 2017.

	Protection of in-field trees on arable land (EC1)	Protection of in-field trees on grassland (EC2)	Protection of in-field trees on grassland (HC2)	Protection of in-field trees on rotational land (OC1)	Protection of in-field trees on organic grassland (OC2)	Total Number of Features
2012	54	102	8	1	86	251
2013	55	75	8	0	84	222
2017	0	13	8	0	9	30

Table 5.2 Areas of Land Covered by Environmental Stewardships schemes that include elements for in Field Tree Protection

5.18 For management of farm woodland, a total of 224 ha (previously 217.6 ha) are under Environmental Stewardship agreements, see Table 5.3 and 5.4 for Countryside Stewardship Schemes.

	Maintenance of woodland (HC7) (Area ha)	Restoration of woodland (HC8) (Area ha)	Management of woodland edges (EC4) (Area ha)
2012	68.6	78.8	1.3
2013	136.3	78.8	2.5
2017	136	86	2

Table 5.3 Areas of Land Covered by Environmental Stewardship schemes that include elements for Woodland Management

	Woodland Creation – Maintenance Payments (Area ha)	Woodland Improvement WD2 (Area ha)	Management of successional areas and scrub (WD7) (Area ha)	Livestock Exclusion Supplement WD9 (Area ha)
2016	-	696.5	5	-
2017	-	-	19.5	19.5
2018	44.0	-	-	-

Table 5.4 Areas of Land Covered by Countryside Stewardship schemes that include elements for Woodland Management

- 5.19 Between 2005 and 2013 there were 815.7 ha of land under a Woodland Grant Scheme and a further 554 ha within ancient woodland. In 2016 there was 2488.15 ha still under English Woodland Grant Schemes which will be paid until the end of the scheme which was closed in 2015 and replaced by Countryside Stewardship Schemes.
- 5.20 Woodland Created and Managed under Environmental Stewardship was 224 ha across the AONB as at May 2017. Under Countryside Stewardship schemes there was no uptake for Woodland Creation Grants in 2017 or 2018.
- 5.21 According to the Forestry Commissions' Managed Woodland data there are now 2159 ha (Previously 2,012 ha) of actively managed woodland in the AONB accounting for 58% of the woodland (Source: Forestry Commission © 2017). Managed woodlands include any woodland that is supported by any of the Forestry Commissions' initiatives, is part of the publicly owned forest estate owned or managed by the Forestry Commission, or any woodland with a felling licence. Land under Woodland Grant Schemes (WGS) such as the Assessment Grant, Regeneration Grant, Forest Plans, Dedication, WGS1, WGS2 and Natural England's Higher Level Stewardship Scheme are not included in the data.

Ancient Woodland

5.22 The area of ancient woodland across the AONB has stayed fairly stable with 367.40ha (Previously 376.3 ha) of Ancient Semi Natural Woodland (ASNW) and 1256.67 (Previously 1249.8 ha) of Ancient Replanted Woodland (PAWS). Some areas in Langham/Round woods and Great North Woods have changed from ASNW to PAWS. The overall area has decreased from 1632.97 ha to 1627.07 ha a difference of 5.9 ha, there are no significant areas removed so it is likely this reduction is due to boundary adjustments.

Field Patterns and Hedge Condition

5.23 The analysis of field boundaries was based on sample squares within each monitoring unit. For the base line each hedgerow was mapped and classified from Aerial Photographs taken in 2005 (Get Mapping, 2005) and repeated using Aerial Photographs from 2012 (Microsoft, 2012). The analysis looked at: Field Boundary Type and Features, Field Boundary Pattern and Field Size. Field surveys then took place to assess the condition of each hedge. The findings here relate to the changes since 2012.

Field Boundary Type and Features

5.24 The Field Boundary Types were initially identified during the aerial photograph analysis and then ground truthed during the field surveys. The following classifications and criteria were used:

- Cornish/Devon hedgebank: Traditional stone-faced or bare earth/grassy banks either topped with vegetation (hedgerows, trees or other vegetation) or free from topping vegetation. No gaps other than specifically designed gateways, stiles and other openings.
- Non-continuous Cornish/Devon hedge: Hedges with gaps other than specifically designed gateways, stiles and other openings greater than 20% of the total hedge length.
- Relic Cornish/Devon hedge: not stock proof, less than 1m high
- Hedgerow: Continuous hedgerow with interwoven growing branches forming a dense stockproof barrier from the ground up.
- Non-continuous hedgerow: As above gaps of more 20% or more
- Wooded boundary: overgrown hedge or tree line with uneven boundary line.
- Non-continuous wooded boundary: Gaps of more 20% or more
- Other: all other features defining a field edge, including fences, footpaths, buildings, woodland, scrub, etc

5.25 In total 1288 hedges were mapped with 722 (56%) checked in the field. There has been very little change in the hedgerow types in the period from 2012 to 2018 (see Table 5.5). In the Kit Hill monitoring unit one section (34.86m) of Cornish

Hedgebank on the edge of a woodland has now become overgrown and reclassified as a Wooded Boundary, and one section of Cornish Hedge bank (65.78 m) has further deteriorated and been reclassified as Wooded Boundary. In addition gaps were identified in 2 hedges in the Plateau Monitoring unit, 1 hedge in the Kit Hill area and 1 in the Mining Heritage Area, these are not enough to be re-classified as non-continuous (>20%) but are noted as deteriorating.

Type of Field Boundary	Total length (m) 2005 in AONB	Total length (m) 2012 in AONB	Total length (m) 2017 in AONB
Cornish/Devon Hedgebanks	86303.06	86016.06	85915.42
Cornish/Devon Hedgebanks Non-continuous	308.44	454.34	454.34
Hedgerow	267.86	267.86	267.86
Hedgerow Non-continuous	89.19	89.19	89.19
Wooded Boundary	41770.14	41911.24	42011.88
Woodland Boundary Non-continuous	313.94	313.94	313.94
Removed	584.14	0	0
Other	5339.56	5339.56	5339.56

Table 5.5 Comparison of the total lengths of field boundaries 2005 – 2017

5.26 The proportion of each hedge type per AONB area can be seen in Figure 5.1. This chart gives a good overview of the main boundary type per AONB monitoring unit, for example it can be seen that the Moorland Fringe consists of mainly hedgebanks with few wooded boundaries compared to the areas that feature more woodland such as the mining heritage area and the River Corridor that has more wooded boundaries.

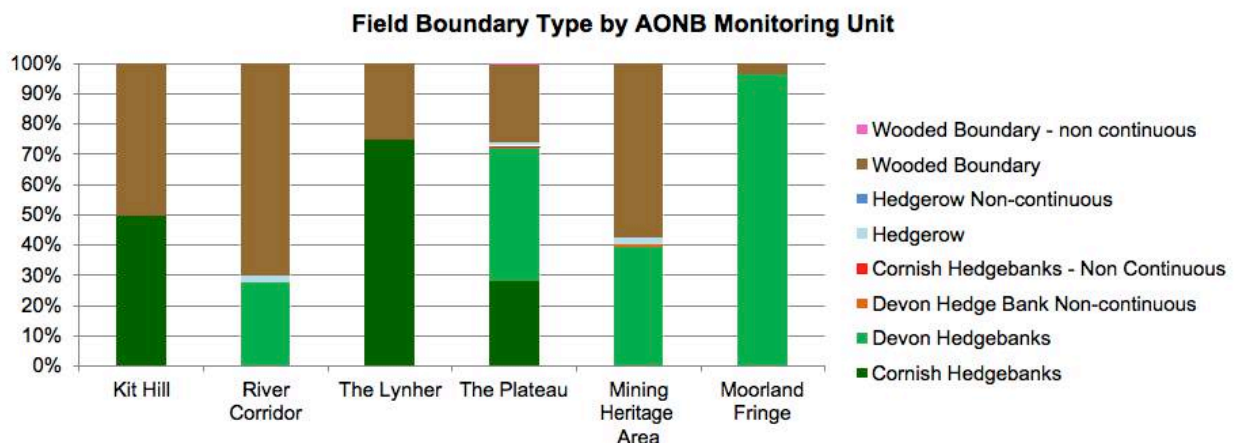


Figure 5.1 Composition of field boundaries within each landscape monitoring unit.

5.27 During the field survey the features of each visible hedgerow were also recorded for presence of the following:

- Hedgebanks with Trees
- Shrubs
- Gorse
- Bracken
- Scrub
- Grasses
- Wildflowers
- Bare Earth
- Bare Earth and Exposed Stone
- Stone Facing

5.28 The overall composition of the field boundary features per AONB area can be seen in Figure 5.2. Kit Hill has the most varied amount of features with many stone-faced hedgebanks. The River Corridor has the most simple hedgebank composition with just hedgebanks with trees, shrubs and wildflowers. The Moorland Fringe area features the most amount of scrub. Although there has been a slight variation in hedgebanks featuring wildflowers or grasses there has been no significant change in boundary features in the period 2008 to 2018. It was also noted that in 2 hedges in the Plateau area Hydrangea, Bamboo and pampas grass were present with Cornish hedgebanks.

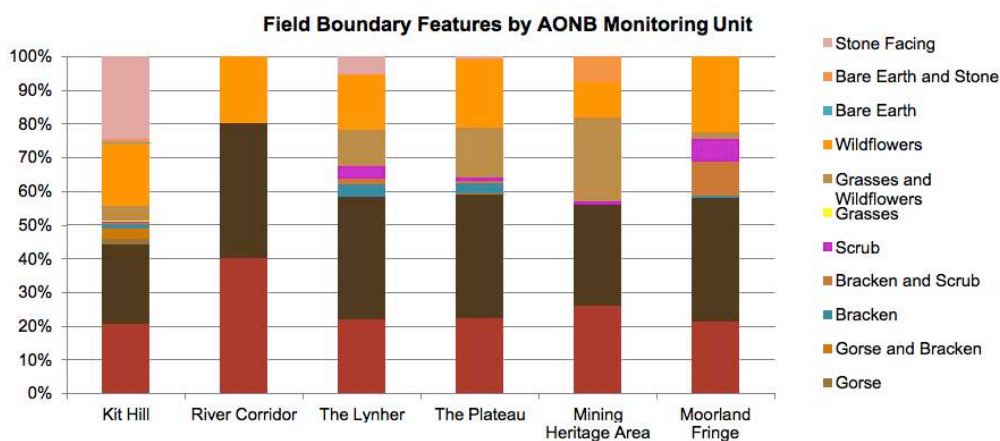


Figure 5.2 Composition of field Boundary features within each monitoring unit.

Field Boundary Management

5.29 Each visible hedge was also surveyed for evidence of management by flailing. There was no significant change in the period 2008 to 2013. None of the field boundaries surveyed in the River Corridor were managed by flailing reflecting the dominant type of field boundary in this area of Wooded Boundary, featuring Trees and Shrubs. Other areas such as the Moorland Fringe and Plateau show a much higher occurrence of flailing (See Figure 5.3).

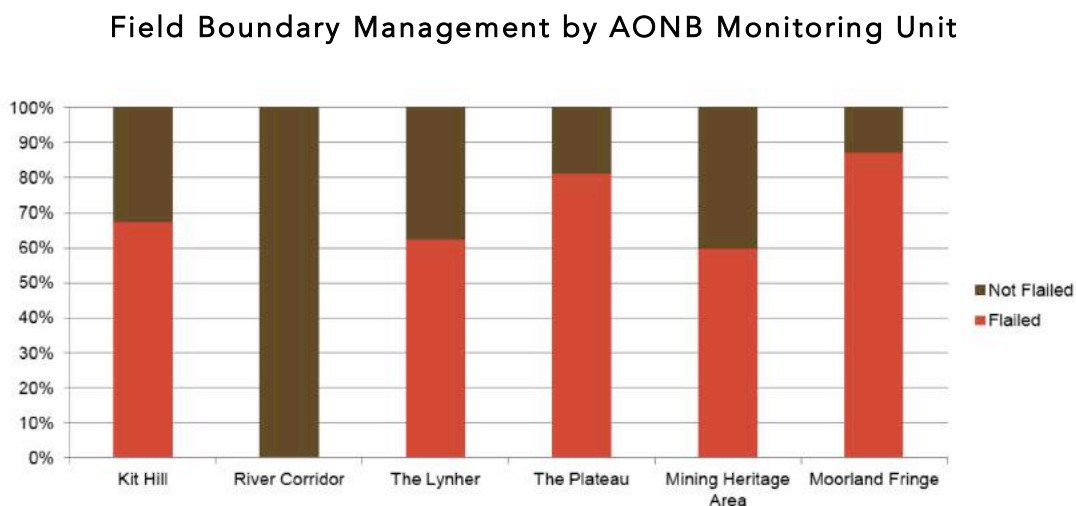


Figure 5.3 Percentage of field boundaries that are managed by flailing.

Field Boundary Pattern and Size

5.30 The field boundary survey did not find any changes to the structure of the field pattern, with no occurrences of hedgerow removal since the baseline survey in 2008. Therefore there has been no change in the field pattern or size.

5.31 Field Boundaries were assessed during the baseline study to be either straight or sinuous. It can be seen from Figure 5.4 that Kit Hill has a largely uniform field pattern with the majority of boundaries being straight, whereas the Moorland Fringe and the Lynher have over half of the boundaries identifies as sinuous.

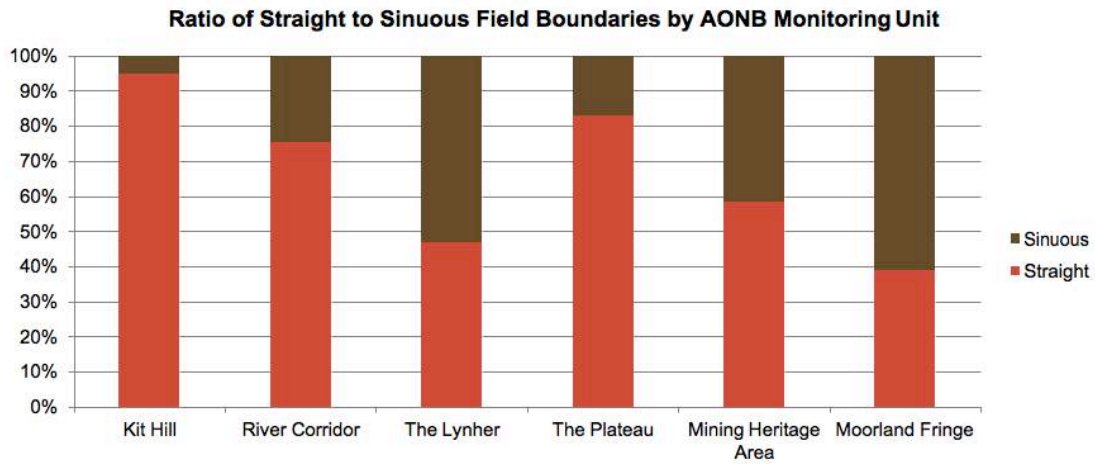


Figure 5.4 Percentage of straight or sinuous field boundaries within each monitoring unit.

5.32 The average Field Size for each monitoring unit was analysed using whole fields that occurred in the sample squares for each monitoring unit. The Lynher has the largest average field size at 4.2 ha and the River Corridor the smallest at 0.8 ha. The Plateau also has a relatively small field size of 1.7 ha (see Figure 5.5).

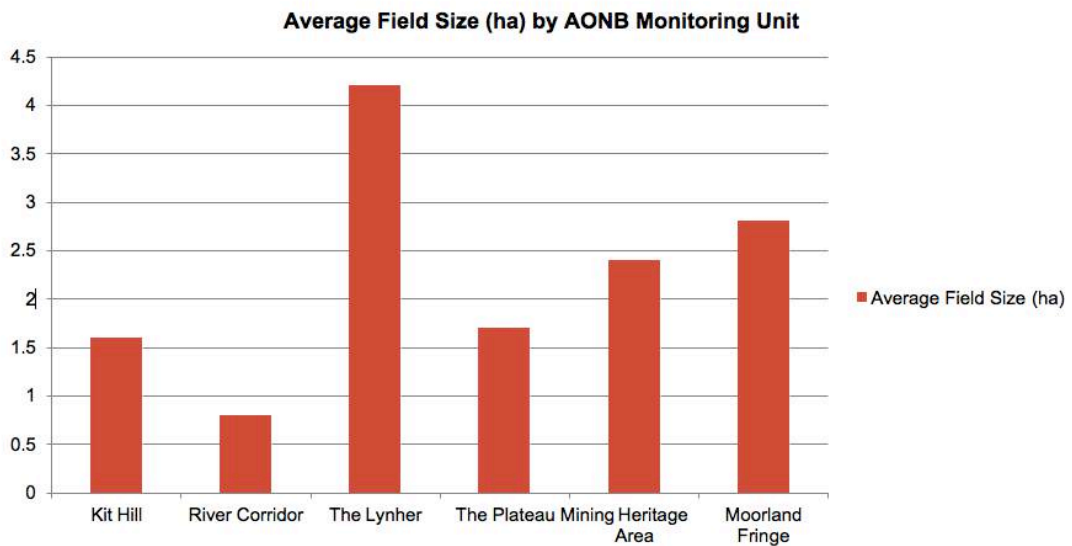




















Figure 5.5 Average field size within each monitoring unit.

Summary of Changes

Indicator	Evidence	Desired Direction of Change	Actual Change	Next Review
Agricultural Land Use	Number of Agricultural Holdings – DEFRA June Agricultural Survey (2007-2010) (Protected Landscapes Project Data)	Maintenance of Agricultural Holdings		2023
	Area in Grassland – DEFRA June Agricultural Survey (2007-2016)	Maintenance or increase in the area of pastoral farming, including cattle grazed meadows in the south	Cornwall  Devon  Lynher 	2023
	Area in Arable – DEFRA June Agricultural Survey (2007-2016)	Reduction in the area of arable cultivation	Cornwall  Devon  Lynher 	2023
	Area in Horticultural production – DEFRA June Agricultural Survey (2007-2016)	Increase in the area of horticultural production	Cornwall  Devon 	2023
	Livestock – Environmental Stewardship data (Protected Landscapes Protect data)	Increase or maintenance in the area of land managed for Native Breeds at Risk		2023
Extent of Biomass Planting	Area planted for biomass. Energy Tranche data (Natural England) RESTATS (2013)	No loss of permanent pasture of BAP habitats to biomass planting. Biomass to be incorporated into existing cultivated land or woodland		2023
Extent of Woodland and Tree Cover	Area of woodland cover. National Inventory of Woodland and Trees (2002) National Forestry Inventory (2012)	Maintenance or increase of woodland in valleys and estate woodland, maintenance or increase in the number/size of small copses. No increase in conifer plantations	Cornwall  Devon  Lynher 	2023
	Ancient Woodland Inventory (Natural England, 2012)	Maintenance or increase in area of Ancient Woodland		
Woodland Management	Area of in-field tree protection – Environmental Stewardship (Natural England, 2012, 2013)	Maintenance or increase in the area managed for the protection of in-field trees		2023
	Area in woodland management – Environmental Stewardship (Natural England 2012, 2013)	Maintenance or increase in the area of woodland managed		2023
Field Patterns and Hedge Condition	Aerial Photographic analysis of field Boundary Type and pattern	No Decrease in the length Total of Field Boundaries. No increase in Field Size		2023

6.0 Access, Recreation and Tourism

The Indicators:

- Public rights of way and permissive access
- Open Access Land
- Transport Infrastructure
- Tourism

Photo: Lamerhooe Cross @ Countryside Agency/Chris Chapman



Background

The Tamar Valley is an oasis of tranquility and is valued by both local people and visitors as a place to relax and to enjoy the scenery. It has escaped excessive tourism development; to date the low-key tourism infrastructure is largely sympathetic to the Valley heritage and in scale with the landscape and environment. The Tamar Valley Tourism Association (TAVATA) are the main association supporting tourism providers in the AONB.

The links between protected landscapes and tourism are becoming much clearer. Work by South West Tourism and others has concluded that 85% of visits to the South West are motivated by protected landscapes. With trends suggesting that heritage and rural tourism are expanding, there will almost certainly be a growth in tourism and recreation in the Valley, especially as the increased cost of travel and awareness about carbon footprints are encouraging people to holiday in the UK.

Recreation is mostly based around countryside access and quiet enjoyment with some of the largest attractions being Morwellham Quay, National Trust Cotehele and Buckland Abbey, and more recently the Tamar Trails. The Cornwall and West Devon Mining Landscape World Heritage Site, inscribed in 2006, has helped increase the awareness about the Valley internationally. The Mining Heritage Project assessed ways of improving facilities for the many user groups who access the area and has left a strong legacy. Improvements were also made to increase access opportunities for all ages and abilities, and to encourage active exploration of the landscape through this project.

There is scope to reinvest in the area, improve facilities and help sustain local services. The emphasis should be on year-round visitors, who will support the local accommodation providers and local food producers. However, much care is needed to ensure that the impacts are managed so that facilities and services complement the landscape and reflect the carrying capacity of the Valley, especially in relation to increased road traffic and congestion. The river and the Tamar Valley branch railway line provide important opportunities for travel by public transport, and the increasing popularity of cycling could be exploited through improved cycling routes. The rivers are important as a leisure and tourism resource and there are a number of small boatyards, gig clubs and marinas mostly in and around the lower parts of the estuary. Weir Quay Community Watersports Hub Club and St Germans' Quay Sailing Club enable participation in activities such as rowing, sailing and small river craft cruising on a regular basis. Saltash, Torpoint and Plymouth are also active sailing centres, located just outside the AONB. However, there are limitations to the growth of water-based recreation due to the environmental sensitivity of the estuary.

Access to the countryside has been the subject of an evolving legislative and policy framework. Each new or amended Act, from the Countryside and Rights of Way (CRoW) Act (2000), to the signing of a Sustainable Tourism Accord between VisitEngland, Defra and the National Association of AONBs (NAAONB) in 2013, brings with it new opportunities for the Tamar Valley AONB Partnership as its members seek to increase the level and standard of public access to the natural environment.

There is an emerging body of literature on the benefits of physical activity for overall health and wellbeing. Walking has been shown to benefit mental health by reducing physical symptoms of anxiety, improving sleep quality, cognitive development and performance, and increasing people's psychological wellbeing. The greatest psychological benefits of walking have been found in a social environment with specific outdoor features (e.g. greenery and water). Walking has a greater restorative effect for adults of poor mental health (compared to adults of good mental health) in rural (as opposed to urban) settings. 'Walking for Health' and 'Walk and Talk' groups in and around the Tamar Valley have provided opportunities to achieve these benefits for free through local, easy walks, tailored and

lead by trained walk leaders. Statistics show an average of 100 people participate on these walks on a weekly basis.

A report examining the volume and value of tourism within the AONB was commissioned in 2016 and some key statistics are highlighted in this report, which provides baseline data to monitor change in the future. Devon and Cornwall Rail Partnership (DCRP) also commissioned the 'Valuing the Tamar Valley Line' report in 2018 and the overall value of the Tamar Valley Line in a year is £13million. The railway provides a valuable sustainable transport lifeline in the valley for both local communities and visitors to the area.

The Economic Impact of the Tamar Valley Area of Outstanding Natural Beauty Visitor Economy 2016

This report examines the volume and value of tourism and the impact of visitor expenditure on the local economy in the Tamar Valley Area of Outstanding Natural Beauty (AONB) in 2016 and a wider area, which also incorporates part of the Lynher Valley for use with the Tamara Landscape Partnership Scheme (Project Area). The figures were derived using the Cambridge Economic Impact Model undertaken by The South West Research Company (TSWRC).

Value of Tourism 2016

Key Facts

72,000	Staying visitor trips
305,800	Staying visitor nights
£13,573,000	Staying visitor spend
606,000	Day visits
£14,791,000	Day visitor spend
£28,364,000	Direct visitor spend
£676,000	Other related spend
£29,040,000	TOTAL VISITOR RELATED SPEND
£33,489,000	TOTAL BUSINESS TURNOVER SUPPORTED
710	Estimated actual employment
510	FTE employment

Key Measures

3.9	Domestic staying visitor nights per trip
£174	Domestic staying visitor spend per trip
£45	Domestic staying visitor spend per night
7.6	Overseas staying visitors per trip
£326	Overseas staying visitor per trip
£43	Overseas staying visitor spend per night
£24	Day visitor spend per trip

Valuing the Tamar Valley Line commissioned by the Devon and Cornwall Rail Partnership in 2018

Value of the railway

£13m	overall value of the Tamar Valley Line a year
193,207	passenger journeys per year (2016)
£69	average value per single rail trip
£2.6m	GDP value of employment enabled by rail commuting
£482,768	rail fare revenue a year
£401,000	value of employment from rail staff and supply chain

Tamar Valley AONB Walks statistics

Weekly walk numbers

Monday	Saltash W&T approx. 20
Tuesday	Bere Alston approx. 26
Wednesday	Tamar Valley W&T approx. 25
Thursday	Tamar Valley WFH approx. 26

Access

Public Rights of Way

- 6.1 The total length of Public Footpaths and bridle ways across the AONB has remained stable.
- 6.2 Byways have decreased by 40m across the AONB.

Public Rights of Way	2009	2013	2018
Footpaths	111,447	111,557	111,557
Bridleways	14,575	14,627	14,627
Byway Open to all Traffic	818	818	778
Total	126,840	127,003	126,962

Table 6.1 The total lengths of public rights of way over the Tamar Valley Area of Outstanding Natural Beauty

Permissive access – The Tamar Trails and access under Stewardship Schemes

- 6.3 The Tamar Trails covers 25km and is a combination of footpaths, cycle ways, multi-use trails, byways and bridleways. The trails have been opened up on routes previously used as public access such as on the former mineral tramway. Other routes have been opened on private land as permissive access. The work on the trails began in 2007 and was completed in 2013. In 2015 a new 200m footpath was created (Ambers Way) in Shevioc Parish. The St Dominica Heritage Trail was also opened in 2017, this covers a length of 20.4 km through a combination of byways, lanes existing footpaths and new permissive paths. The trail is partly in the AONB and partly outside; new permissive areas appear to be approximately 10km in length with the AONB.
- 6.4 In 2012 and 2013 there was 780m of permissive access to footpaths under Environmental Stewardship Schemes (3 Agreements – HN3). In 2012 there was 603m of permissive access to footpaths in 2013 this has increased to 4824m under Countryside Stewardship Schemes. In 2017 there are 485m of permissive footpaths, 2 agreements.

Open Access Land

- 6.5 There are 239 ha of Open Access land in the AONB, totalling 1% of the AONB area.
- 6.6 In 2012 there was 0.7 ha of open access land permissible under Countryside Stewardship Schemes; in 2013 this has increased to 6 ha. This data was not available for 2018.

6.7 There is also 146 ha of open country, 93 ha registered common land, and 7 ha of section 15 land (1% of the AONB). 136 ha of Wildlife Trust reserves, 159 ha of Country Parks, 512 ha of Forestry Commission land and 97 ha of Woodland Trust land (5% of the AONB).

Transport Infrastructure

6.8 Where roads were present within the sample squares a Transport Infrastructure survey was undertaken. In the Kit Hill area there was an increase in the number of road signs present, also a 100m length of centre road markings have been added. No changes were noted in the Lynher area. Three additional signs were noted in the Moorland fringe, these were noted as 'Private' signs rather than highways sign. On the Plateau there was a reduction of signs noted across the roads surveyed. Most of the reduction was in the amount of 'Private' signs observed. There were also less direction signs noted and more hazard signs. (See Table 6.2).

	Kit Hill 2018 (2015)	The Lynher 2018 (2015)	The Plateau 2018 (2015)	Moorland Fringe 2018 (2015)
Roads surveyed	5	1	14	2
Total Length (m)	4646	510	6110	2252
Average width (m)	4 (4)	4 (4)	4 (4)	2.5 (2.5)
Average road depth (m)	1 (1)	0 (0)	3 (3)	0 (0)
Total amount of road signs	26 (18)	2 (2)	86 (154)	3 (0)
% of roads with pavements			57	
% of roads with Kerb stones			42	
Fingerposts			4 (4)	1
Roads with centre markings	100m		200m (200m)	3 m
Roads with painted words			3	

Table

6.2 Transport infrastructure








Tourism

6.9 The latest tourism data available is from 2003 (South West Tourism) which can be compared to the data from 2001. In each category there was an increase.

Tamar Valley AONB Value of Tourism			
	2001	2003	2018
Number of Trips per year	56,180	60,800	72,000
Visitor Spend	10,512,000	11,908,000	13,573,000
Staying Nights	256,000	275,000	305,800
Day Trip Spend	5,898,000	6,334,700	14,791,000
Tourism Employment	481	No data	710 or 510 FTE

Table 6.3 Comparison of the value of tourism from 2001 to 2018

Summary of Changes

Indicator	Evidence	Desired Direction of Change	Actual Change	Next review
Public Rights of Way	Length of Public Right of Way (Cornwall Council - 2013, Devon County Council - 2013)	Maintenance or increase in length of Public Rights of Way		2023
	Length of Tamar Trails	Maintenance or increase of permissible trails		2023
	Length of paths made accessible through Environmental Stewardship Schemes and Countryside Stewardship	Maintenance or increase in the length of permissible trails		2023
Open Access Land	Area of Open Access Land (Natural England)	Maintenance or increase in the area of Open Access Land		2023
	Area of access permissible under Stewardship Schemes (Natural England, 2013)	Maintenance or increase in the area of Permissible Access Land		2023
Transport Infrastructure	Field Survey for road signage, painting, pavements, width and depth	No widening of typically narrow lanes, no significant increase in roadside clutter		2023
Tourism	South West Tourism statistics (Tamar Valley Economic Profile, 2005)	Maintenance or increase in number of visitors, trips and tourism spend		2023

7.0 Planning and Development

The Indicators:

- Local Vernacular Building Styles
- Settlement Pattern

Photo: Cornwall Street, Bere Alston @ Lesley Strong/TVAONB



Background

The rich heritage and scenic qualities of the Tamar Valley draw people to live here. Therein lies a need for achieving a balance between sustaining the landscape character and a vibrant living countryside. Due to the challenges expected with increased population growth, along with the consequences of a changing climate, wise choices and informed decisions about future development must be made in order to sustain the integrity of this unique area for the benefit of future generations.

A development proposal has the potential to impact on a range of values as well as the landscape. The AONB's objectives and policies for the breadth of AONB features and qualities are found in the other themed chapters within this Management Plan. This chapter largely establishes recommendations and procedures for Local Authorities when presented with planning proposals within the Tamar Valley AONB or its setting.

Development planning proposals are determined by Local Planning Authorities (LPAs) – in the case of the Tamar Valley AONB these are Cornwall Council, Devon County Council, West Devon Borough Council, South Hams District Council or Plymouth City Council.

The developing localism agenda is now empowering communities, usually on a parish level, to influence the development of where they live through a process called Neighbourhood Planning. These plans will include information gathered by, and from, the community, on the area's character, on development and infrastructure needs, and what elements of the landscape should be protected, for example its heritage

values. The AONB Partnership is taking a strategic approach towards Neighbourhood Planning and can offer support to communities to help them reflect the significance of this special landscape within their plans. One Neighbourhood Plan, Bere Ferrers Parish, has now been adopted.

The revised National Planning Policy Framework (NPPF) published on 24 July 2018 sets out the government's planning policies for England and how these are to be applied. The revised NPPF through paragraph 172 reaffirms that "**Great weight should be given to conserving and enhancing landscape and scenic beauty**" in AONB's and that the designation has "**the highest status of protection in relation to these issues**". The revised NPPF also gives greater protection to ancient woodland and ancient and veteran trees.

667 planning applications in AONB and its setting have been reviewed in last 5 years.

Settlement Pattern

7.1 A detailed look at settlement pattern has taken place using aerial photographic analysis during Phase 1 using photos from 2005 (Get Mapping, 2005), and in Phase 2 using aerial photos from 2012 (Microsoft, 2012), Phase 3 used Google Earth 2015 for Kit Hill and 2017 for the rest of the squares. The analysis looks for new development outside of the existing curtilage of developments; therefore any new development that is 'infill' will not be identified.

7.2 Seven incidents of new development were located including:

- New farm building at Cox Park
- An amendment to a curtilage around an extension or possibly a new building at Cox Park
- A small additional dwelling and shed at Cox Park
- Two new large sheds/buildings at Morwellham Quay
- Expansion of the curtilage of a farm at Bohetherick
- New house on the edge of an existing curtilage at Bohetherick
- Building extension in Bohetherick

7.3 Glasshouses and polytunnels were identified using Google Earth and the condition assessed during fieldwork. Initially, small polytunnels on an area of allotment were identified. However, these were very transient and it was decided to record the whole area as allotments and only record the larger commercial glasshouses/polytunnels. There were 27 glasshouses identified from the aerial imagery however we were only able to survey 8 from the roadside to make a statement of condition. It appears that the glasshouses are intact though we cannot be sure they are in use from the imagery.

	Kit Hill		The Plateau	
	2008	2017	2008	2017
Glasshouses intact in use (GI)	1	1	31	27
Glasshouses Derelict (GD)			1	2
Glasshouses Intact but out of use (GO)			11	3
Polytunnel Intact (PU)			15	18
Polytunnel Derelict (PD)	2	0	2	2
Polytunnel Intact Out of Use (PO)			6	2

Table 7.1 Market gardening infrastructure comparison data for 2008 – 2017.

Local Vernacular Building Styles

7.4 Research into local vernacular building styles is being considered by the Tamar Valley AONB. This will become a valuable tool in future planning applications and will also provide a detailed account of the building styles within the Tamar Valley from which future monitoring phases will be able to look for changes.



Renewable Energy

- 7.5 A solar farm (Solar Photovoltaics) at Warleigh Barton commenced generation of energy in March 2103, with an installed capacity of 4.95 MW
 (Source:www.ukdataexplorer.com/renewables/ updated 2014 from RESTATS data, sites over 0.01 MW). See Figure 7.2 below.



Figure 7.2 Google Earth Image © 2018. Areas coloured green represent Miscanthus Planting (See section 4.6) and Solar farm at Warleigh Barton.

Summary of Changes

Indicator	Evidence	Desired Direction of Change	Actual Change	Next review
Settlement Pattern	Area identified from Aerial Photographs, (Microsoft, 2012)	Maintenance or enhancement of distinctive character of the planned mining settlements and related small holdings. No new development outside of settlement curtilages (including industry and housing)		2023
Renewable Energy Development	RESTATS (2017)	No loss of permanent pasture or BAP habitats to renewable energy developments		2023

8.0 Environmental Quality and Climate

The Indicators:

- Extent of Dark Night Skies
- Levels of Tranquillity
- Levels of Intrusion
- Extent of Bare Mining Spoil
- Soil Protection

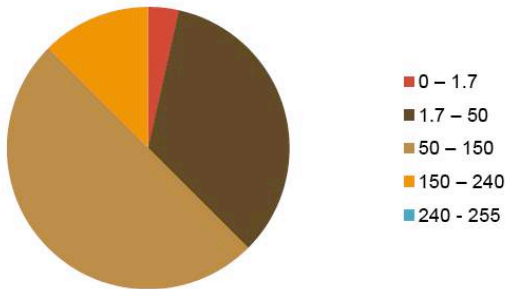
Photo: Early Morning Mist over the Valley @ Lesley Strong/TVAONB



Extent of Dark Night Skies

8.1 The extent of dark night skies data has not been repeated since the baseline in 2007. However, the results of the baseline are included here and should be followed up if new data becomes available for future phases. Analysis of the previous data suggests the Tamar Valley improved within the Dark Night Skies categories (See Figure 8.1). In 2016 the CPRE created a new baseline that is not comparable to the old method. A map of the results is in Figure 8.2.

Extent of Dark Night Skies - Categories of Darkness 1993 (ha)



Extent of Dark Night Skies - Categories of Darkness 2000 (ha)

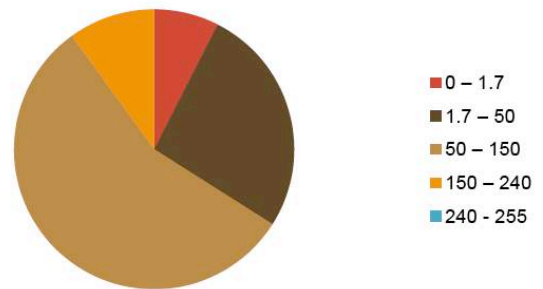


Figure 8.1 Comparison of the Extent of Dark Night Skies results from 1993 to 2000

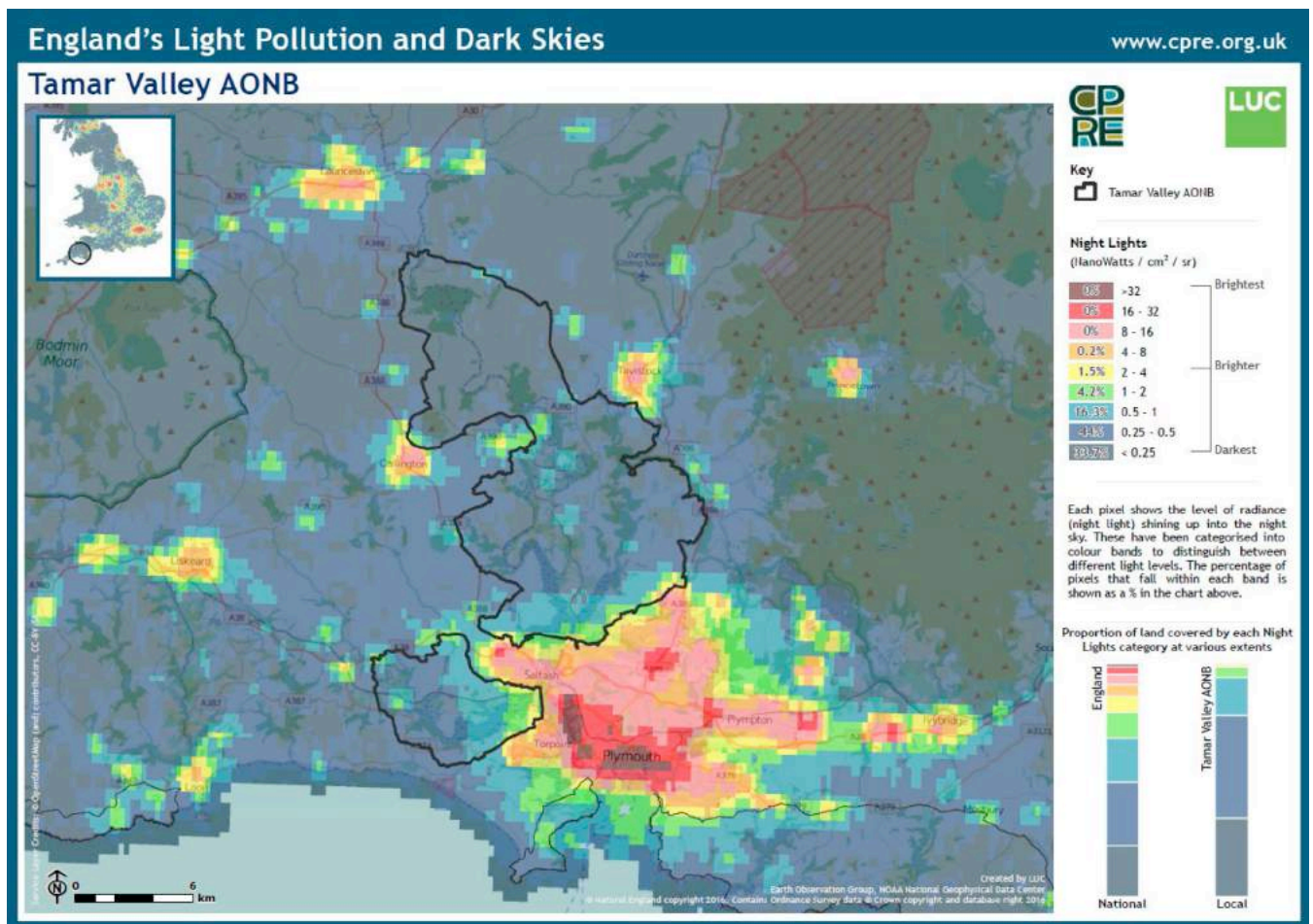


Figure 8.2 Light pollution and Dark Skies (Source: Earth Observation Group, NOAA National Geophysical Data Center. Data processed by LUC on behalf of CPRE).

8.2 The Tamar Valley AONB organised a community star count in 2008. This was due to be repeated in 2015/16 as part of the HH4H project but poor weather hampered collection of data (see Table 8.1)

Location	GPS	Date	Weather	No of Stars Visible
Milton Abbot	50 05 28.5 04 17 40.0	31.12.08	Clear, frosty	9
Milton Abbot	50 35 08.8 04 15 05.8	31.12.08	Clear, frosty	9

Extent of Intrusion

8.3 Intrusion mapping was completed in 2007. However, this has not been repeated, the results are included here to enable comparison to be made when future data becomes available. Comparing the results to 1997 (see Figure 8.2), it appears that over that period the AONB was becoming more disturbed in each section of the designation. This study has not been repeated as of June 2018.

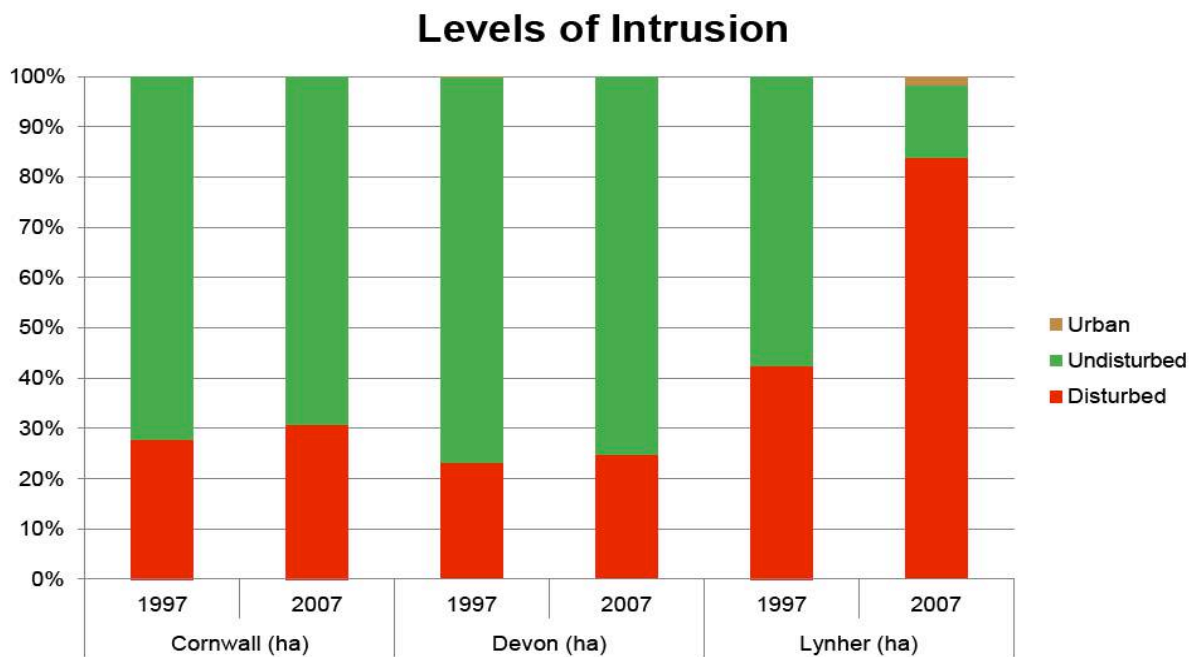


Figure 8.2 Comparison of the levels of intrusion from 1997 to 2007

Levels of Tranquility

8.4 A tranquility study took place in 2007 by the CPRE. However, this has not been repeated in time for this survey period. The results are presented here for comparison in future phases of the monitoring project (see Table 8.2). The range of scores across England ranged from the most tranquil area at +28.6 to the least tranquil area (-79.5). This data had not been repeated.

Level of Tranquility	Cornwall	Devon	Lynher
Highest	32.7	41.6	44.9
Lowest	-40.4	-29.4	-32.6
Mean	-1.1	9.8	6.2

Table 8.2 Levels of Tranquillity across the three sections of the Tamar Valley Area of Outstanding Natural Beauty

Extent of Bare Mining Spoil

8.5 The extent of bare mining spoil was mapped within the sample squares during Phase 2 using Google Earth Imagery. There has been significant decrease in the amount of mining spoil visible.



8.6 In Kit Hill the area visible has reduced from 741.6 m² to 126.9 m² in 2012 and stayed the same until 2015 (Google Earth 2015).

8.7 In the mining heritage area the visible spoil has reduced from 13540 m² to 1344.1 m² in 2012 to 9081 m² (Google Earth 2017).

Soil Protection

8.8 6.6 ha of land is covered by 'Soil Protection' Environmental Stewardship agreements, these are 'In Field Grass Areas to prevent erosion and run off (EJ5)' - 0.2 ha and 'Arable Reversion to unfertilised grassland to prevent erosion or run off (HJ3)' – 6.6 ha. This has remained the same in both 2012 and 2013 and 2017.

Summary of Changes

Indicator	Evidence	Desired Direction of Change	Actual Change	Next review
Extent of Bare Mining Spoil	Area identified in aerial photographs, Google Earth image dates 2015 and 2017	Maintenance or increase in the visible mining spoil		2023
Soil Management	Area in Environmental Stewardship (Natural England 2012, 2013, 2018)	Maintenance or increase in the area managed for soil protection		2023

Glossary

AONB	Area of Outstanding Natural Beauty
BAP	Biodiversity Action Plan
CEH	Centre for Ecology and Hydrology
CGS	County Geological Sites
CPRE	Campaign to Protect Rural England
CRoW Act	Countryside Rights of Way Act
DBRC	Devon Biodiversity Records Centre
DEFRA	Department for Food and Rural Affairs
ENSIS	Natural England Site Information System
ELMS	Environmental Land Management Scheme
ERCCIS	Environmental Record Centre for Cornwall and the Isles of Scilly
HAP	Habitat Action Plan
HER	Historic Environment Record
LMU	Landscape Monitoring Unit
MCZ	Marine Conservation Zone
NPPF	National Planning Policy Framework
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TAVATA	Tamar Valley Tourism Association
TECF	Tamar Estuaries Consultative Forum
TSWRC	The South West Research Company
WHS	World Heritage Site
WFD	Water Framework Directive
WFH	Walking for Health
WGS	Woodland Grant Schemes



Photo: River Tamar @ Ainsley Cocks

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TamarValley
Area of Outstanding Natural Beauty