State of the Park Report 2017

Headline Indicators

Upland Farming

Indicator	Average Farm Business Income (FBI)
Current Data	£18,900 (2015)
Trend	The average FBI for the last four year period was £21,800. The average between 2005-2015 for Dartmoor was £33,000

Habitats and Wildlife

Indicator	% of SSSI in 'favourable' or 'unfavourable recovering' condition
Current Data	98% (2016)
Trend	Higher than the national average (96%) but a slight decline from 2011

Indicator	State of Living Dartmoor Priority Species[1]
Current Data	11 of 12 species populations currently 'stable' or 'increasing'
Trend	The populations of Living Dartmoor priority species ('key species for conservation') are currently stabilised or improved as a result of targeted conservation work with partners and landowners. There are other species (for example curlew, lapwing, cuckoo) not currently listed as Dartmoor priorities which are still at risk and declining.

Historic Environment

Indicator	Number of scheduled monuments 'at risk'
Current Data	352 (33%) (2016)
Trend	A 7% decrease compared to 2010 where 40% of SMS were 'at risk'

[1] There are 12 Priority Species included in Living Dartmoor. Eight of these are monitored annually and have long term trend data. The status of the remaining 4 is based on less frequent monitoring or expert opinion (State of Dartmoor's Key Wildlife 2011. Source: DNPA).

Indicator	Number of listed buildings 'at risk'
Current Data	36 (1.7%) (2016)
Trend	1.1% of Grade I or II* are 'at risk', this compares favourably with the South West average of 3% and the National average of 4%

Water Environment

Indicator	% of monitored river length achieving 'moderate' or 'good' status under the WFD
Current Data	98% (2015)
Trend	A 2% decrease from 2014 where 100% of monitored river length achieved 'moderate' or 'good' status. None of the river length falls into 'high' or 'bad' status.

Volunteering

Indicator	Volunteering in the National Park
Current Data	5884 volunteer days (2015/16)
Trend	Baseline data – data includes volunteer days from DNPA, MTMTE[2] and volunteering groups carrying out work in the NP that are not DNPA staff led or MTMTE

Tourism and Recreation

Indicator	Annual number of tourist visitors
Current Data	2.31million (2015)
Trend	3% decrease in the number of visitors since 2009. Number of staying visitors and visitor spend has been increasing since 2009.

Indicator	Number of large scale events considered through the DNP notification system
Current Data	63 (2016)
Trend	The number of events has grown since 2009, 2013 saw a peak of 75 events. The number of participants taking part has seen a 66% increase since 2009

Indicator	% length of Public Rights of Way (PRoW) that are 'easy to use'
Current Data	79% (2016/17)
Trend	The % of PRoW that are 'easy to use' has fallen by 16% since 2010/11. The decline is largely a result of paths failing due to the condition of their infrastructure e.g. missing signs and broken stiles and damage to surface condition from intense rainfall events

[2] MTMTE numbers includes those from other organisations that undertake volunteering projects through MTME

Community Well-being

Indicator	Average Dartmoor House Price
Current Data	£303,129 (2015)
Trend	3.8% increase from 2012. 33% higher than the Devon County average and 11% higher than the national average

Indicator	Average life expectancy
Current Data	83.2years (2015)
Trend	1.9 years longer than the national average and 0.8 years longer than the Devon County average

Military Training

Indicator	Actual firing as % of days available for live firing: all DNP live ranges
Current Data	61% (2016)
Trend	The level of use of the live firing ranges increased in 2016; 61% of days available for live firing were used in 2016 compared to 51% in 2010. Live firing still only fills an average of 50% of the days on which MOD are licensed to undertake live firing.

Traffic and Transport (speed visor data 2017)

Location	85th percentile speed[3] (mph)	Average speed(mph)	% of cars violating speed limit
Bennet's Cross	47	38	38%
Sharpitor	47	38	37%
Haytor	40	35	14

Planning and New Development

Indicator	Proportion of dwellings granted permission that are affordable
Current Data	47% between 2011 and 2016
Trend	1% decrease from 2006-2011 where 48% of dwellings granted permission were affordable

Renewable Energy

Indicator	Installed renewable energy capacity
Current Data	340% increase to 9.1MW (2015)
Trend	Large increase in capacity between December 2011 and December 2015. Photovoltaic increased most significantly and is the most popular type of installed renewable technology

[3] The speed below which 85% of vehicles are travelling

Climate Change

Climate is generally defined as the average of weather over a 30-year period, to make observations about climate change we therefore need to compare multiple 30-year periods. The climate data for Princetown presented in this section represents only a small proportion of available trend data and provides evidence of a changing climate. 2010 is the latest year that data is available.

Mean daily temperature has increased by 0.5 degrees in comparison to the 1961-1990 climatic baseline; Figure 1 shows that all seasons have seen an increase in temperature, with winter seeing the greatest warming and autumn the least pronounced change. Average monthly precipitation has increased by 15% in comparison to the 1960-1990 climatic baseline, whilst the average number of days per month with more than 10mm of rain has increased by 13%. Figures 2 and 3 show that the greatest increases in rainfall have been seen in autumn months. The plant growing season is becoming longer (Figure 4); the 1981-2010 average annual growing season was 15 days longer than the 1971-2000 period, which in turn was 6 days longer than 1961 to 1990. A longer growing season is indicative of increasing temperatures.

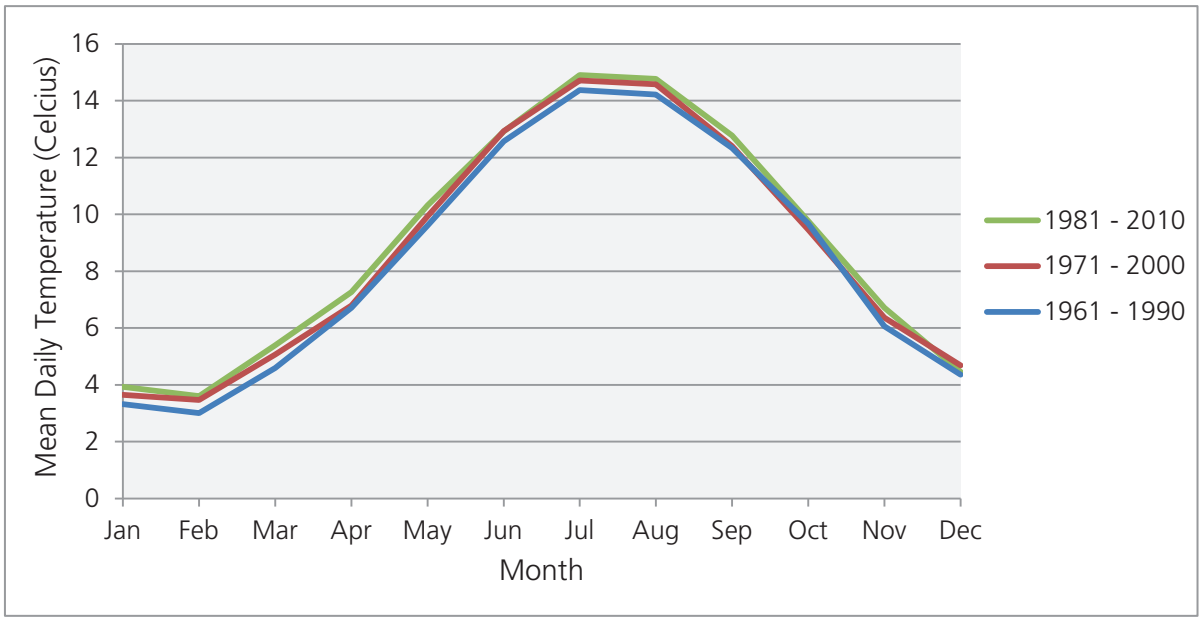

Figure 1 - Mean daily temperature-monthly average, Princetown. Source: Met Office/DCC

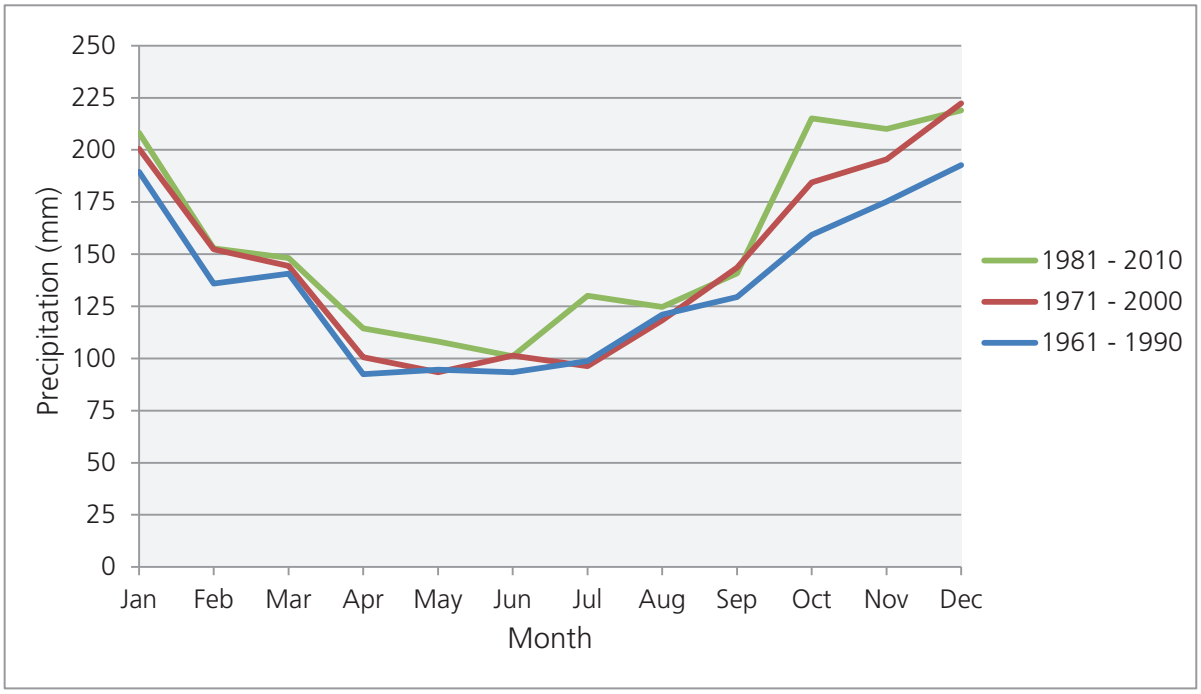

Figure 2 - Mean monthly precipitation, Princetown. Source: Met Office/DCC

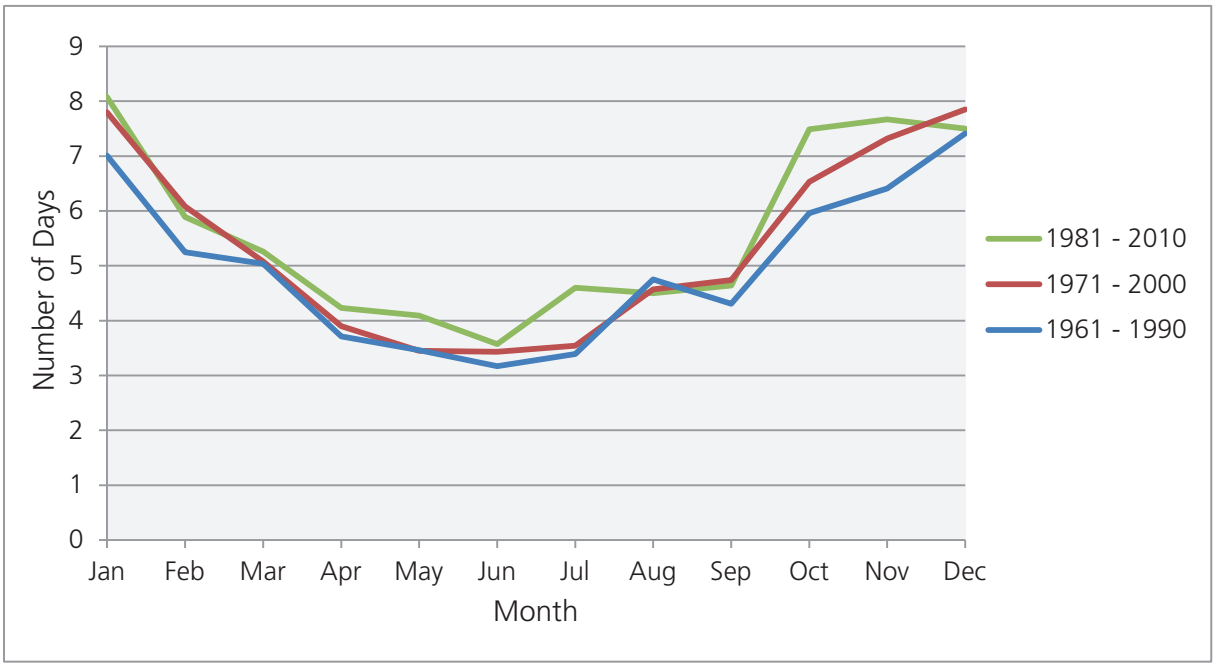

Figure 3 - Days of rainfall >10mm, Princetown. Source: Met Office/DCC

Impacts of a changing climate

The above data provides evidence of a changing climate on Dartmoor and suggests that the Dartmoor climate is becoming warmer and wetter with more intense periods of rainfall. The impacts of these changes are likely to impact both agriculture and ecology, with some changes already being seen. Temperature increases on Dartmoor are resulting in a longer plant growing season (Figure 4), the 1981-2010 average plant growing season was 15 days longer than the 1971-2000 period, which was, in turn 6 days longer than the 1961-1990 average. Increasing temperatures and the associated longer growing season is likely to have an impact on agriculture in upland areas such as Dartmoor; changes could include increased agricultural productivity and changes to livestock systems. Ecological impacts of climate change on Dartmoor can already be seen; monitoring of the Pied Flycatcher at East Dartmoor National Nature Reserve has shown

that this species has advanced its egg laying date by 2 weeks since the 1960s (Figure 5). This advancement is thought to be a direct result of a changing climate and can be directly correlated with increasing spring temperatures.

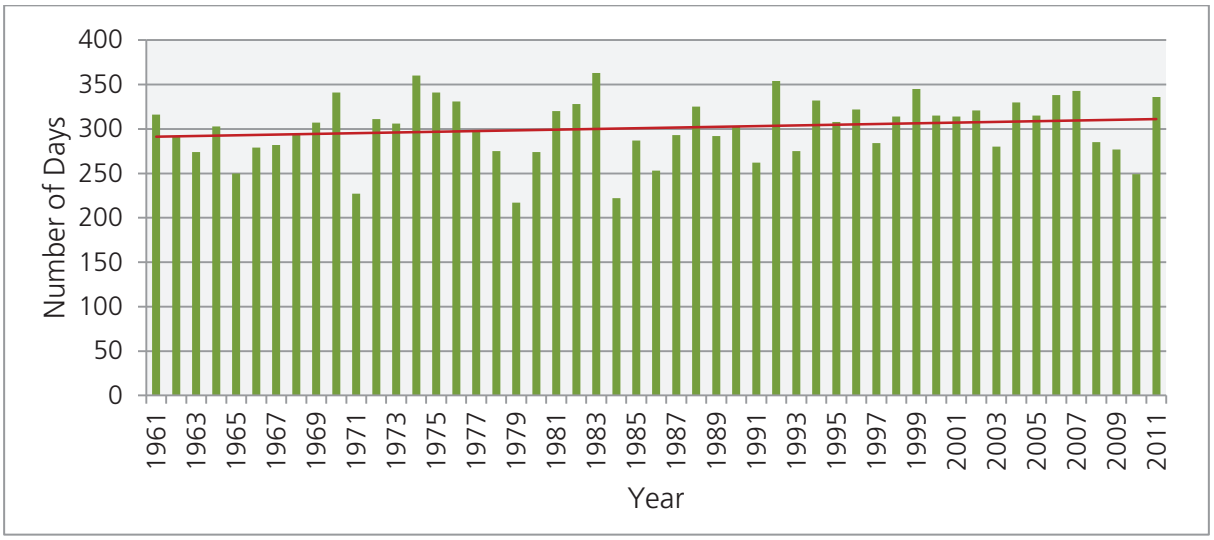

Figure 4 - Growing season length (period where daily mean temperature +5C for >5 consecutive days) for Princetown, Dartmoor. Trend shown by black line. Source: Met Office/DCC

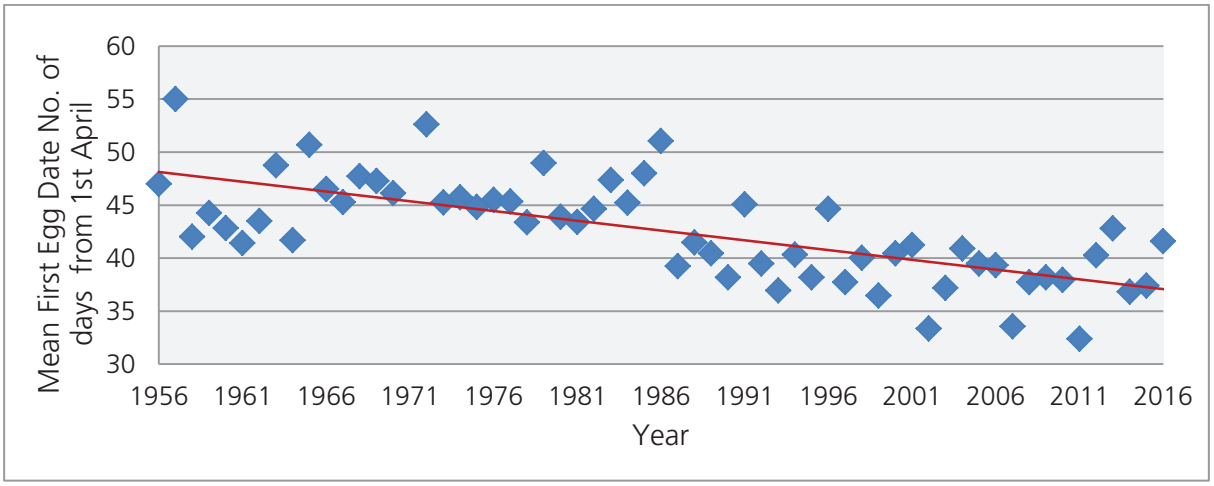

Figure 5 - Pied Flycatcher annual mean first egg date. Trend shown by black line. Source: PiedFly.net/NE

Air Quality

Nitrogen Dioxide (NO_2) is a significant air pollutant produced largely through road traffic and the combustion of other fossil fuels. Figure 6 shows annual mean NO_2 concentrations in sites across the National Park, mostly associated with vehicle emissions, on average, the data indicates a steady decrease in (NO_2) emissions. The critical level shown is the threshold above which gaseous concentrations of NO_2 and NO_X are known to have adverse health and environmental impacts. The sites at Ashburton, Dean Prior and Buckfastleigh have recorded higher annual average concentrations given their proximity to the A38.

The most significant effect of Nitrogen Oxides on ecosystems is through nitrogen deposition. The effects of Nitrogen deposition include nutrient enrichment (eutrophication), acidification and direct damage (toxicity); as a result, impacts on habitats and species include species loss, changes in soil chemistry and habitat degradation[4]. Despite the steady reduction in gaseous NO_2, overall Nitrogen deposition on Dartmoor has been found to exceed critical threshold levels for certain habitats (Table 1). Vehicle emissions are not the sole contributor to Nitrogen deposition on Dartmoor, for example, only 4.6% of Nitrogen deposition on the Dartmoor SAC is thought to be from road traffic, more significant factors include, livestock emissions through ammonia (NH_3) (41.5%), European imported emissions (28.4%) and international shipping (11.7%)[5].

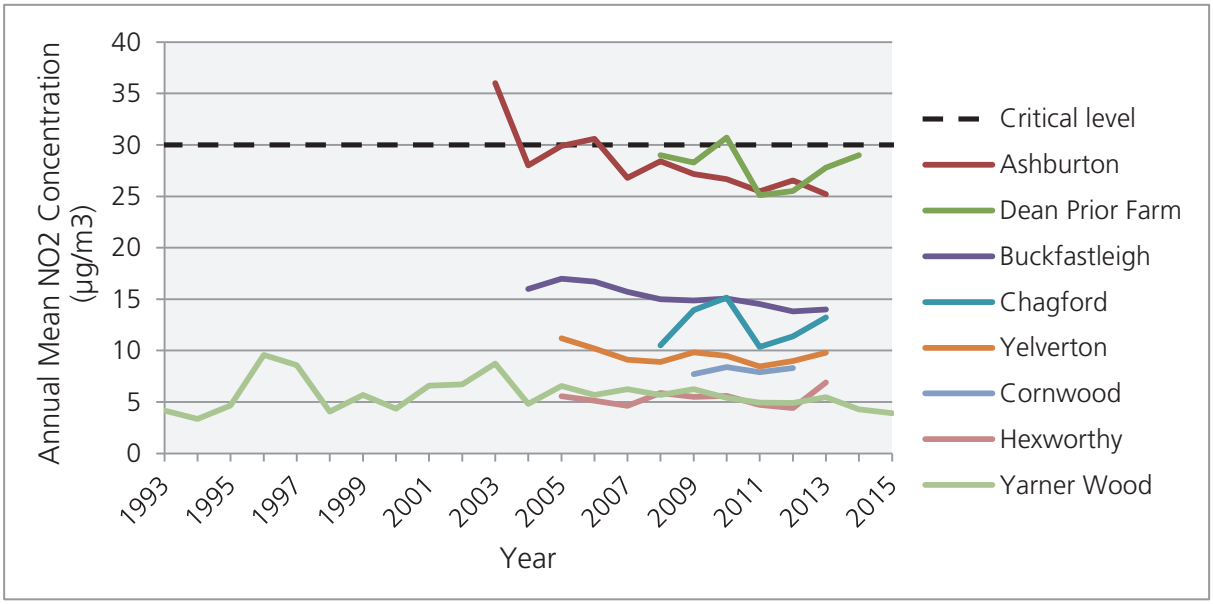

Figure 6 - Dartmoor mean NO_2 concentration. Source: District Authorities

[4] The impact of atmospheric nitrogen deposition on the UKs wild flora and fauna. Plant Link UK

[5] http://www.apis.ac.uk/srcl/select-a-site?SiteType=SAC&submit=Next

Habitat	Critical Load (Kg N/ha/yr)	SACs		
		Dartmoor	South Dartmoor Woods	South Hams
Woodland	10-15	33.1	31.5	-
Slopes, screes and ravines	15-20	-	-	23.1
Dry Heath	10-20	20.8	22.3	15.8
Wet Heath	10-20	20.8	-	
Dry grassland and scrubland	15-25	-	-	15.8
Blanket bogs	5-10	20.8	-	-

Table1 - Modelled concentrations of N deposition in Dartmoor SACs 2013. Source: http://www.apis.ac.uk/srcl/select-a-site?SiteType=SAC&submit=Next

Farming and Agri-Environment

Headline Indicator	Date of data	Latest data
Average Farm Business Income (FBI)	2015 (baseline)	£18,900
Proportion of FBI that is public subsidy	2015 (baseline)	140%
Estimated GVA for agriculture on Dartmoor	2015 (baseline)	£8.5million

Farming

Farming has shaped the landscape of Dartmoor over many hundreds of years and today the management undertaken by farmers and commoners plays a vital role in the maintenance of the landscape for biodiversity, ecosystems services, cultural heritage and access. 86% of the National Park is classed as utilisable agricultural area.

In 2015, the average Farm Business Income (FBI), per farm on Dartmoor was £18,900, similar to that of the last four yours (£21,800), but, significantly lower than the ten year average of £33,000. When broken down into income streams, the 2015 figures show a loss from agriculture of £9,300, with positive contributions from Basic Payment Scheme (£14,300), agri-environment (£12,100) and farm diversification (£1,800). A positive income was only generated from agriculture in 2009 and 2011. The Basic Payment Scheme, over the 11 year period has been the most important source of income, however, in recent year's agri-environment payments are becoming an increasingly important source of income (Figure 7).

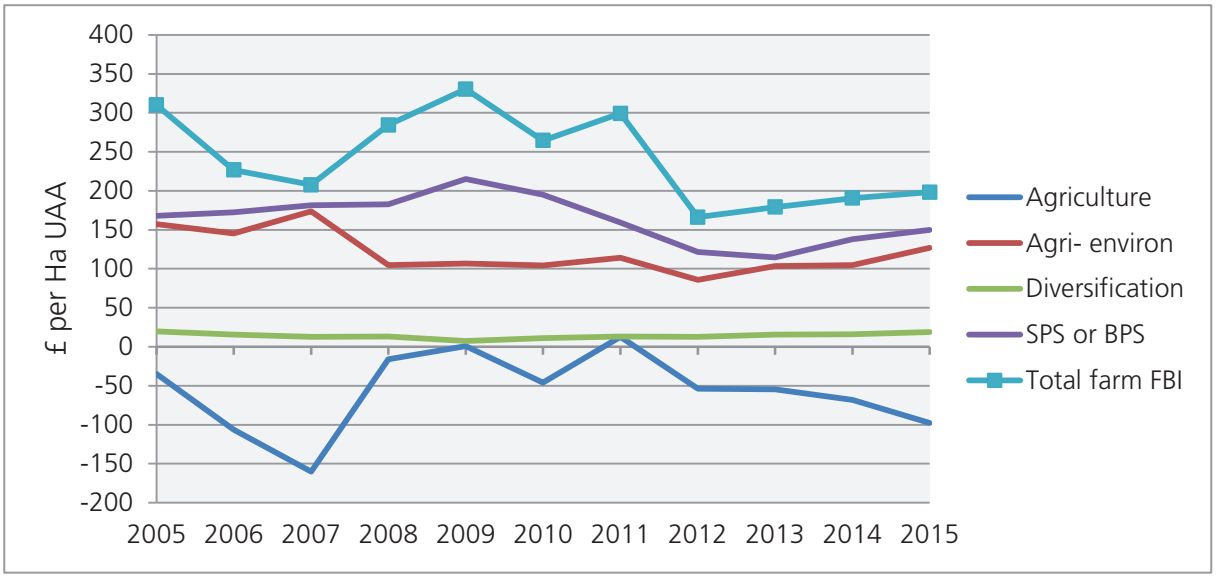

Figure 7- Farm Business Income by Cost Centre, per hectare of Utilisable Agricultural Area. Source: Farm Incomes on Dartmoor. Farm Business Survey Results for 2005-2015.

When comparing Dartmoor to South West Less Favoured Areas (LFAs) and England LFAs, Farm Business Incomes follow a similar pattern, but Dartmoor makes a higher income per hectare. For 2015, when compared to the South West as a whole, farms on Dartmoor have a higher agri-environment income, but lose more income from agriculture, and therefore have a similar final income to the South West LFAs. Prior to 2011, the sample of Dartmoor LFAs, income from agriculture was similar to that of the South West LFAs but a higher agri-environment income gave Dartmoor farms an overall income advantage (Figure 8). It is unclear as to why agricultural incomes have fallen on the Dartmoor farms from 2011[6].

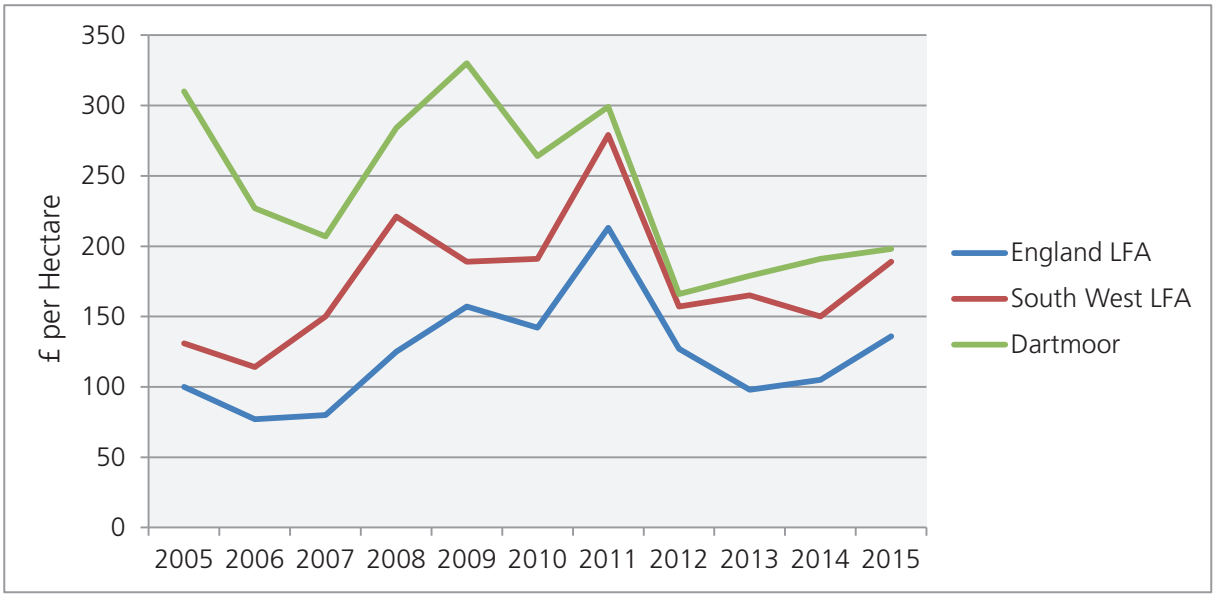

Figure 8 - Farm Business Income per hectare by region. Source: Farm incomes on Dartmoor. Farm Business Survey Results 2005-2015.

Agri-environment

In 2016, 48% of the utilisable agricultural area was in an agri-environment scheme, a reduction of 31% compared to 2015[7] (Figure 9). The extent of UAA that is in Higher Level Stewardship (HLS) has seen a significant reduction in recent years; in 2016, 35% of the UAA was under HLS, compared to 60% in 2015 and 62% in 2013).

[6] Farm Incomes on Dartmoor. Farm Business Survey Results 2005-2015

[7] Figures do not yet include the area of land covered by agreements signed in 2015/16 under the new Countryside Stewardship Scheme

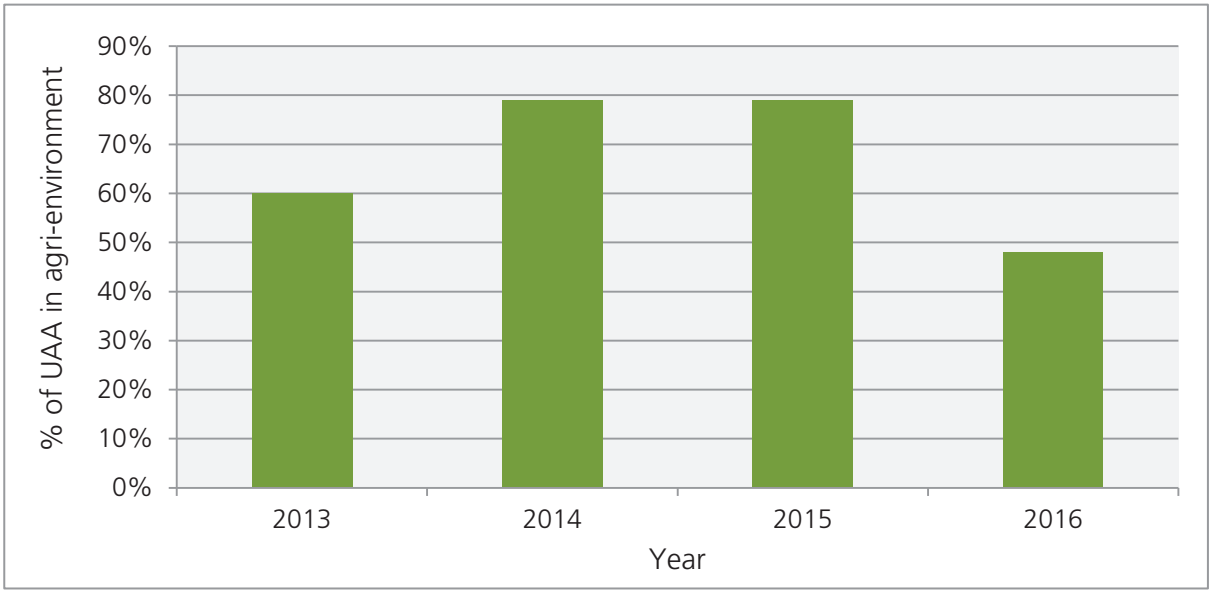

Figure 9 - Percent of UAA under agri-environment in Dartmoor National Park. Source: NE, Protected Landscapes indicator. © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2016.

Biodiversity

Habitats

Headline Indicator	Date of latest data	Latest data	Change from 2010
% of SSSI in 'favourable or 'unfavourable recovering' condition	2016	98% of SSSI area 25,751ha	+2%

Designation		Area (ha)
SSSI		26,277
SAC		25,346
County Wildlife Sites		2,247
Total area of Section 3	Moorland	44,910
	Woodland	6,095
Ancient semi-natural woodland		2,957

SSSI

26,277ha of the National Park is designated as a SSSI (28% of the total area); this figure has increased by 10ha compared to the 2010 State of the Park Reporting following the inclusion of Grenofen and West Down SSSI Unit, a single SSSI unit within the National Parks boundary that was not accounted for in the previous report. Figure 10 shows that 98% of the SSSI area within the National Park is in either favourable or unfavourable recovering condition, a higher percentage than the national average; however, there has been a slight decline from 2011/12. The area of SSSI in favourable condition has significantly declined in 2013; 2014 saw a 13% decrease in the area of SSSI in favourable condition compared to 2013. This decrease is not considered to be a decline in habitat condition but coincides with the reunitisation of SSSI units as part of Dartmoor Farming Futures to coincide with management areas. Previous smaller units considered to be in favourable condition were merged into larger units assessed as unfavourable recovering. It is expected that the condition of the sites will continue to improve through Dartmoor Farming Futures and agri-environment schemes and it is understood that recovery to favourable condition will happen over time with appropriate management.

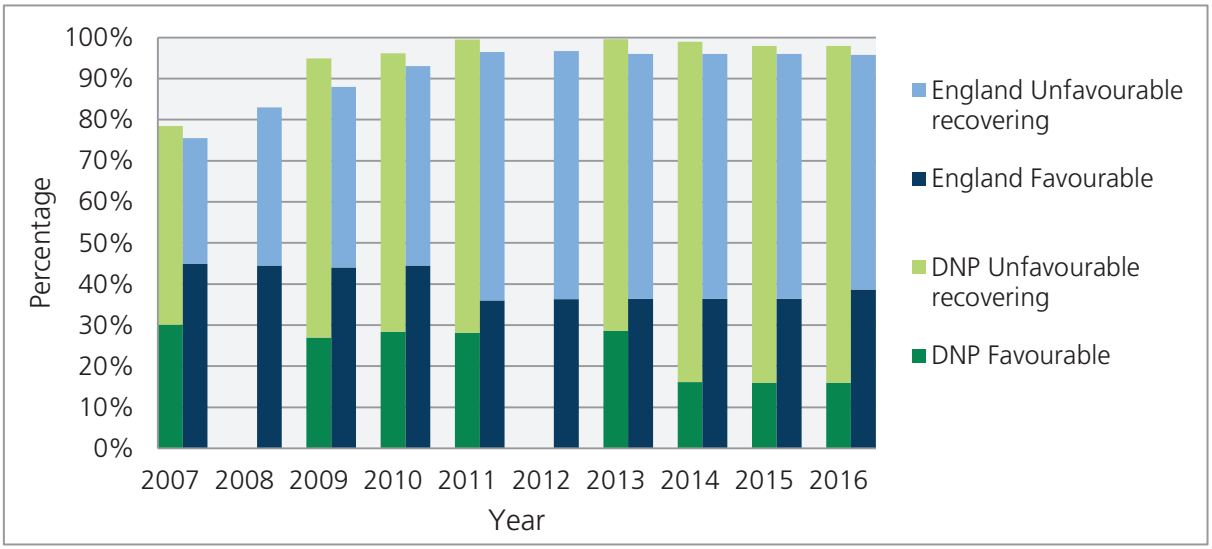

Figure 10 - Percentage of SSSI in favourable or unfavourable recovering condition in England and Dartmoor National Park Source: Natural England

County Wildlife Sites

There are currently 232 County Wildlife Sites (CWS) within the National Park, covering 2,247 ha. A further 130 sites covering 1,031ha meet the criteria for CWS but the owners are unknown or have not agreed to designation. The condition of a sample of County Wildlife Sites is assessed every year against agreed criteria; the criteria provide an indication of whether past and current management is having a positive impact on the habitats. Of the 88 sites monitored since 2009, 39 were found to be in good condition (green). Nine sites were not in positive management (red), mostly due to inappropriate levels of grazing.

HIGH	**Green**	Site is in good condition and being managed well (in positive management
MEDIUM	**Amber**	Site is not in optimum management and condition but is not far off (in positive management)
LOW	**Red**	Site requires urgent attention (not in positive management)

Section 3 Moorland and Woodland

Section 3 moorland and woodland areas were identified under the Wildlife and Countryside Act 1981 as land that was particularly important to conserve, Section 3 moorland and woodland covers 83.9% of the National Park and the conservation of the moorland is central to the National Parks fulfilment of its statutory duty to conserve and enhance the natural beauty of Dartmoor. The area of Section 3 moorland and woodland remains the same since its designation.

Woodland

12% (11,242) of the National Park is woodland, 56% of this area is currently in active management (Figure 11). The availability of Forestry Commission's English Woodland Grant Scheme (EWGS) coupled with a buoyant wood fuel market during this period encouraged management of previously neglected woods. The drop in the number of managed woods in 2016 could be related to uncertainty over Brexit and changes to the grant system; Countryside Stewardship has not proved to be as popular or as accessible to woodland owners as EWGS. CAP reform and the future viability of upland farms may lead to a further reduction in woodlands being actively managed on Dartmoor.

26% of the wooded area of the National Park is classed as ancient semi-natural woodland, 294ha of which are 'plantations on ancient woodland sites' (PAWS). Figure 12 shows the National Parks ancient semi-natural woodland resources.

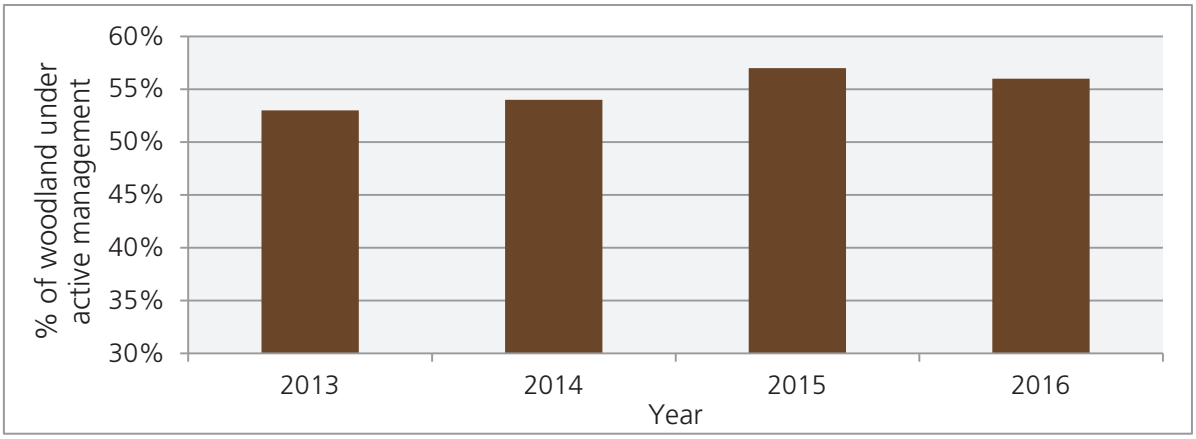

Figure 11 - Percent of Dartmoor woodland under active management. Source: Forestry Commission.

Figure 12 - Ancient woodland within Dartmoor National Park.

Species

The Dartmoor Biodiversity Action Plan (BAP) was introduced in 2001 to set out a common vision for biodiversity on Dartmoor, the Action for Wildlife Partnership was set up to help deliver projects within this plan. The Dartmoor BAP ran from 2001-2011 and has now been replaced by Living Dartmoor, the follow on document to take forward biodiversity over the next ten year period. Species listed in Table 2 received targeted conservation works within the Dartmoor BAP and are now listed as key species of conservation concern within Living Dartmoor, where monitoring permits, current trends for key species have been shown within this report[8]. Prior to the production of Living Dartmoor, an assessment was carried out of all the key species included in the Dartmoor BAP, Table 3 shows the condition of the Dartmoor BAP species included in this report as of 2011.

Key Species	Dartmoor Importance	Conservation Value
Greater Horseshoe Bat	Holds one of the largest breeding sites in Europe	European protected species; rapid national decline
Dunlin	The most southerly breeding population in the world	High conservation concern
Red-backed Shrike	The only British breeding pairs	Re-colonised after 18years national absence
Ring Ouzel	The only breeding population in southern England	High conservation concern; National decline
Southern Damselfly	3 of the 5 Devon colonies	Globally threatened; European protected species
Marsh Fritillary Butterfly	One of the national strongholds	Globally threatened; European protected species; national decline
Pearl Bordered and High Brown Fritillary Butterflies	National strongholds for both species	Both of high conservation priority; Rapid national decline
Blue Ground Beetle	Holds most of the British population	Nationally near threatened
Bog Hoverfly	Holds all of the British population	Nationally vulnerable
Deptford Pink	The largest British colony	Nationally vulnerable
Vigur's Eyebright	Only found on Dartmoor and a few Cornish sites	Endemic
Flax Leaved St John's Wort	Holds most of the British population	Nationally near threatened

Table 2 - Living Dartmoor Priority Species. Source: DNPA

[8] There are 12 Priority Species included in Living Dartmoor. Eight of these are monitored annually and have long term trend data. The status of the remaining 4 is based on less frequent monitoring or expert opinion (State of Dartmoor's Key Wildlife 2011. Source: DNPA).

Species	Trend	Monitoring Level
Greater Horseshoe Bat	Stable	Annual roost visits and emergence counts at important roosts
Dunlin	Stable	Annual checks; 5-yearly MOD funded surveys and Mires Project surveys
Ring Ouzel	Down	Survey every 5 years; intensive nest record survey 2010-2012
Southern Damselfly	Up	Annual survey of colonies
Marsh Fritillary	Up after decline	Annual coverage of most sites with five year full survey
Pearl Bordered Fritillary	Stable	Annual coverage of some sites with five year full survey
High Brown Fritillary	Stable after decline	Annual survey of key sites
Blue Ground Beetle	Stable	Five yearly full population survey
Bog Hoverfly	Stable	Five yearly site surveys
Deptford Pink	Stable after increase	Annual survey of main population
Vigur's Eye-Bright	Stable after decline	Annual survey of whole population
Flax-leaved St John's wort	Stable	Annual survey of some sites, five years of all

Table 3 – State of Dartmoor's Key Wildlife 2011. Source: DNPA

Greater Horseshoe Bat

The south-eastern edge of Dartmoor holds the largest population of greater horseshoe bats in the UK, with one roost at Buckfastleigh being the largest known maternity roost in the UK and possibly in Western Europe. Monitoring of emerging adults at Buckfastleigh shows a stable population at this site, 2016 saw a 9.2% increase in numbers compared to 2015 (Figure 13), reasons for this increase are currently unknown.

Key Plant Species

Population baselines were taken from 2003 and 2005 for the individual plant species. In 2003 the Deptford Pink was recorded to have a population of 6148, records for the Vigur's Eyebright show a population of 1228 in 2005 (Figure 14). Gaps in the data show where monitoring was not undertaken for this year. Deptford Pink populations, across the three surveyed sites in 2016 have shown a decline in numbers since the last high count in 2011 and following the last comprehensive survey that was undertaken in 2013. These declines are largely the result of scrub, bramble and more invasive species taking over the habitat. However the plant is known to germinate readily from a seed bank as a result of ground disturbance and so numbers would be expected to fluctuate. 2016 Vigur's Eyebright monitoring shows the highest numbers since 2007. Numbers remain significantly lower than those of the early 2000s but are now recovering as a result of grazing management.

Southern Damselfly

Monitoring of the Southern Damselfly colonies on Dartmoor has been taking place for the last 14 years; data from 2009 onwards has been used within this report where adult peak counts were recorded at all four colonies. After record counts of both adults and larvae at Tor View Moor in 2015, counts in 2016 were considerably reduced, marking the end of a steady increase in numbers. Despite this decline, numbers were still above the average recorded at this site since monitoring began. Monitoring at the other 3 colonies show more signs for concern, adult peak counts were at their lowest at Moortown Bottom since monitoring began and counts at Prewley Moor were also

considerably lower than average (Figure15). The Lower Prewley site, despite having benefited from past scrub clearance and the introduction of grazing is still only being utilised by occasional strays from the adjacent Prewley Moor colony. The reasons for the decline in 2016 remain uncertain, although they are thought to be a result of possible predation or parasitism. However, many insects show a 'boom-bust' pattern of population sizes with crashes following abnormally high population peaks. The quality and availability of suitable habitat remains good and there is no reason to suspect that the decline is a result of site management or other site factors that can be controlled[9].

Marsh Fritillary and High Brown Fritillary

Marsh Fritillary presence was confirmed at 42 Dartmoor sites in 2015, although numbers were not as high as the peak in 2014. The presence of the parasite Cotesia bignellii was noted at several sites in 2015 and is likely to have contributed to lower population numbers in 2016 at some sites, whilst others are unaffected – this natural parasite cycle shows why it is important to have multiple butterfly colonies supported by Dartmoor's extensive network of suitable habitat. High Brown populations have shown similar declines in 2016 (Figure 16), probably as a result of unfavourable weather; data appears to suggest that the Dartmoor population has not fared as well when compared to the UK population, however, the High Brown is only found in 3 landscapes within England (Dartmoor, Exmoor and The Morecambe Bay) and the Exmoor data has skewed the UK wide figures. Dartmoor High Brown populations can in fact be considered to be relatively stable, against a backdrop of 97% declines since the 1970's. Both species saw lower numbers in 2012 following wet weather during the main flight period and higher numbers in 2014 when the flight period was warmer and sunnier.

Wood Warbler

Monitoring of 27 Dartmoor Oak woodlands show a 47% decline in the number of Wood Warbler breeding territories since 2012 (Figure 17) and across Devon, populations have seen a 73% decrease in the number of occupied tetrads in the breeding season over the last 30 years. The monitoring of Wood Warbler nests on Dartmoor shows that the number of young produced is variable, low breeding success in 2016 is thought to be a result of very high levels of nest predation. Population decline is not thought to be a result of decreased productivity and breeding ground impacts; new research to identify causes for the decline is focussing on migration and locating African wintering areas.

Dunlin

In 2014, a breeding bird survey of Dartmoor mires was undertaken as a repeat of that carried out in 2010, in particular to assess dunlin numbers and distribution. The 2010 survey recorded 16 breeding pairs of dunlin. This was in line with the findings of surveys in 2006 and 2007 which considered the population to be moderately stable at around 15 pairs. In 2014, 22 pairs were found which was a significant increase (38%) on the previous survey and was by far the highest figure ever recorded on Dartmoor. Visually the work at the three restored sites had created considerable additional habitat for dunlin. The increased number of permanent pools and the generally wetter surroundings were the most notable features. It was at or around the restored sites that the majority of the population increase took place, with numbers at non-restored sites stable or even decreasing. The results of the survey emphasised that good quality blanket bog

[9] Monitoring and Management for the Southern Damselfly on Dartmoor 2016

habitat is essential for breeding dunlin, and reliably suggest, for the first time, that it is probably the availability of such prime habitat which is the limiting factor for this species. A follow up sample survey of just the restoration sites in 2016 showed these areas continue to support breeding dunlin. Efforts to conserve, improve and extend this habitat in the future will be critical in determining the future of the species on Dartmoor[10,11].

Ring Ouzel

The Ring Ouzel was placed on the Birds of Conservation Red List following a national decline of over 50% in 25years, the Dartmoor population is highly vulnerable and at risk of local extinction. Monitoring of Ring Ouzels has taken place comprehensively for the past seven years, in more recent years monitoring has taken on a lighter approach due to availability of funding, this is likely to have had an impact on the reliability of surveys, however, valuable information is still being provided. A survey in 2006 found that numbers had approximately halved since the late 1970s to 10-15 pairs and detailed survey work since 2010 has found a very small population of around 8-10 breeding pairs. In 2016 7 breeding pairs were confirmed, with a possible additional male sited, in 2015 8 pairs were confirmed with a 3 additional males and in 2013 and 2014 seven breeding pairs were confirmed. Following significant range contraction in previous years, the trend was less evident in 2016, with birds returning to some sites and utilising further new sites[12] (Figure 18).

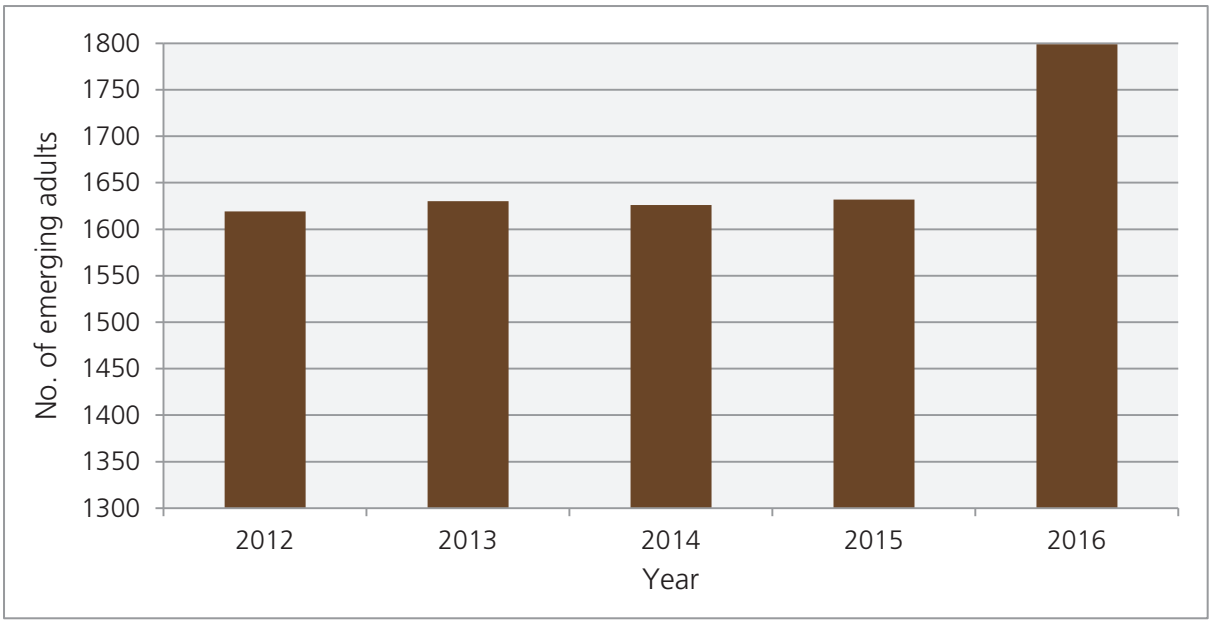

Figure 13 - Greater Horseshoe Bat, number of emerging adults at Buckfastleigh. Source: Vincent Wildlife Trust (Colin Morris) 2016.

[10] Dartmoor Mires Project Breeding Birds Survey 2014. Summary Report.

[11] Dartmoor Mires Project Breeding Birds survey 2016

[12] Dartmoor Ring Ouzels 2016. RSPB/DBRC

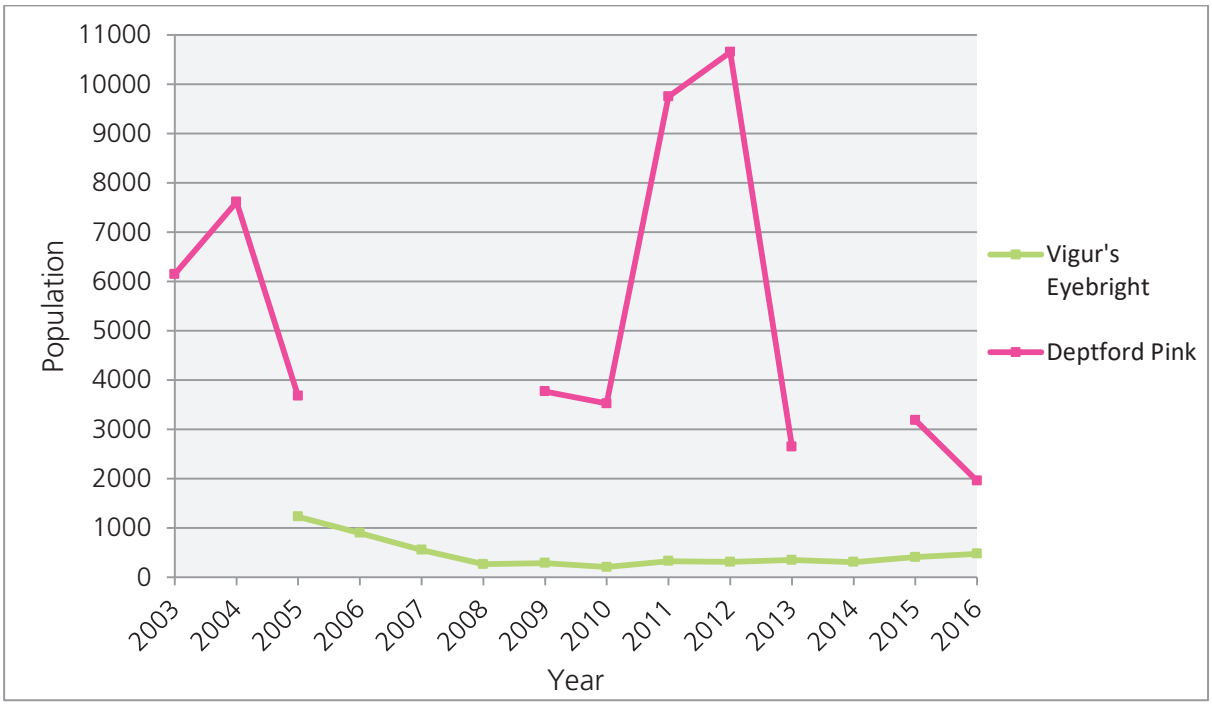

Figure 14 - Population of key plant species. Source: DNPA

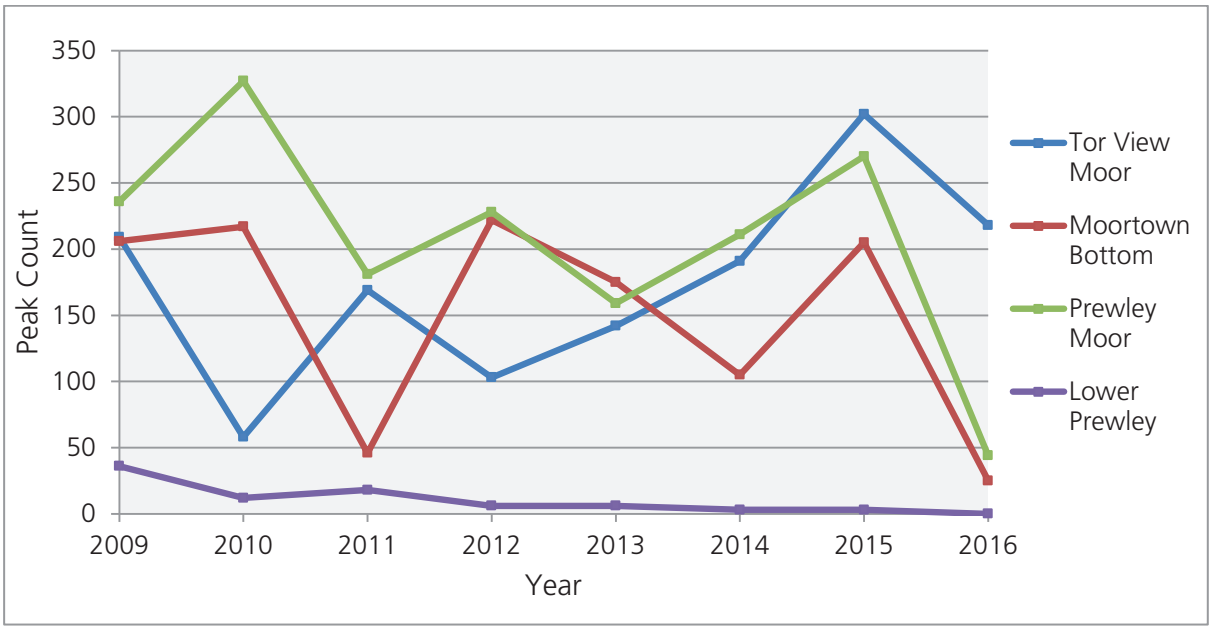

Figure 15 - Southern Damselfly adult peak counts. Source: DNPA

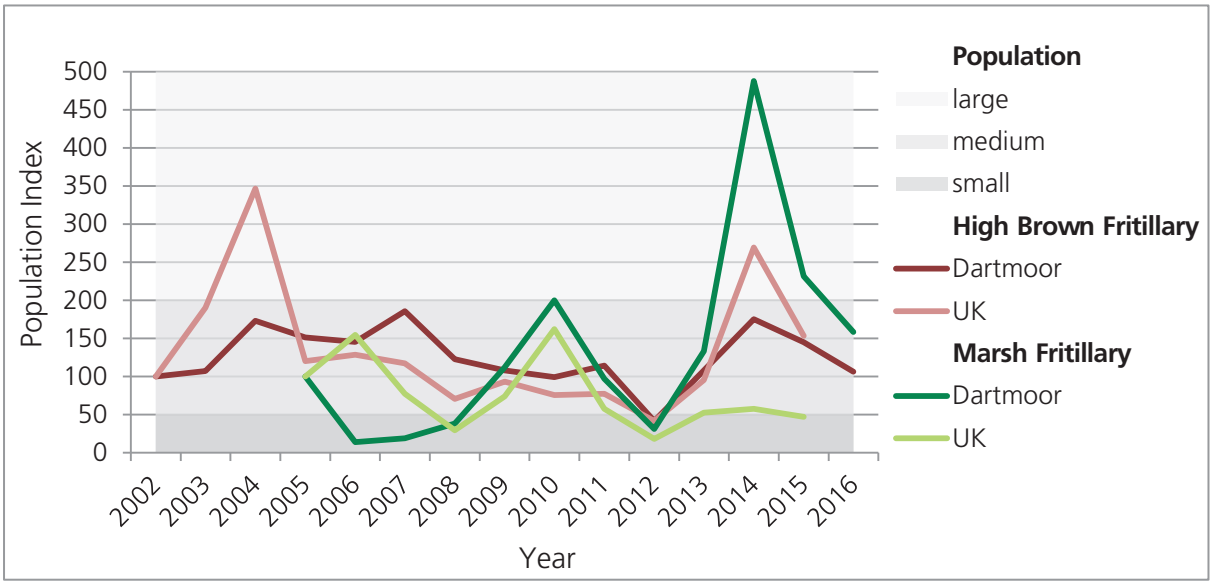

Figure 16 - Marsh Fritillary and High Brown Fritillary population indices. Source: Butterfly Conservation

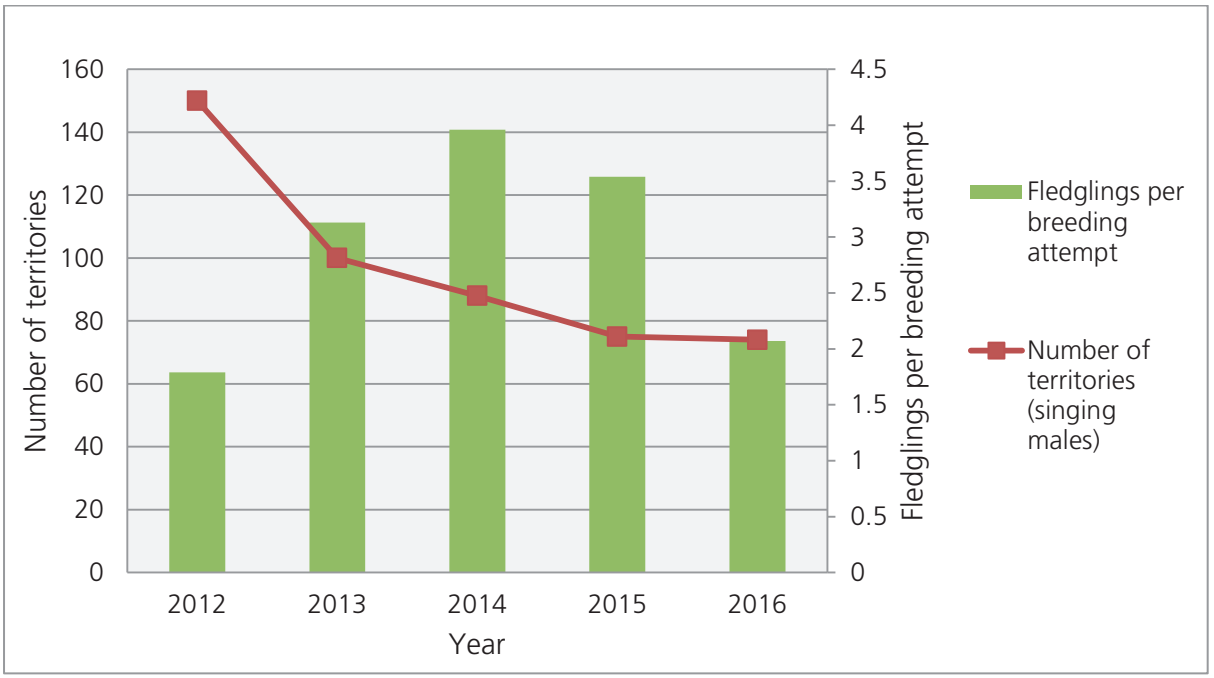

Figure 17 - Wood Warbler average nest productivity. Source: RSPB/Devon Birds

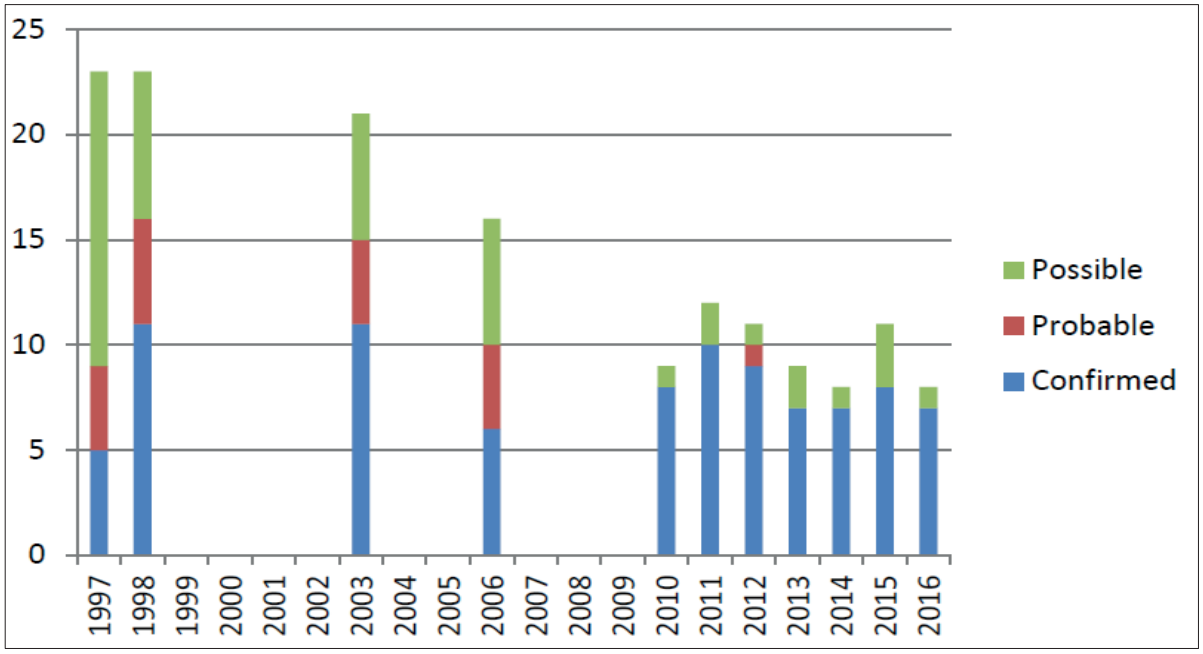

Figure 18 - Ring Ouzel breeding population (pairs). Source: Dartmoor Ring Ouzel Survey 2016. DBRC/ Devon Birds/RSPB

Archaeological Heritage

Headline Indicator	Date of data	Latest data	Change from 2010
Total number of scheduled monuments	2016	1082	-126
Number of scheduled monuments at risk (includes high and medium risk)[13]	2016	352 (33%)	-7%

A scheduled monument is a legal designation imposed by the Government for an archaeological site of historic building/structure, that due to a range of criteria is deemed to be worthy by protection of the law. The National Park currently has 1082 scheduled monuments, the highest number of any English National Park and 5.5% of all scheduled monuments in England; the number has reduced since 2010 due to a past mistake in the way scheduled monuments were counted. The mistake counted a number of scheduled monuments as individual monuments, when in fact they constituted as the same scheduling.

Of the 1082 scheduled monuments within the National Park, 181 are classified as high risk and 171 as medium risk (Table 4). Scheduled monuments are classified as 'at risk' if they are classified as high or medium risk, 33% of the National Parks scheduled monuments are currently classified as 'at risk', a 7% decrease from 2010, where 40% of SMs were considered to be at risk (Figure 19).

Classification of Scheduled Monuments 2016	
High risk	181
Medium Risk	171
Low Risk	730

Table 4 – Classification of scheduled monuments (2016).

Scheduled monuments are removed from the 'at risk' register following successful interventions to remove primary threats, the main threat is predominantly bracken and dense gorse which causes direct damage to the archaeology, as well as impacting its amenity value and setting. Since 2010, bracken has increased in proportion to other threats as conservation works have been targeted towards easier to win sites (Figure 20). Due to the success of the micro-chipping project and full consultation into the Local Forest Design Plans with the Forestry Commission and South West Lakes Trust, threats from theft and forestry have been greatly reduced. Since 2010, the baseline 114 at risk Scheduled Monuments has been removed from the register due to positive conservation interventions and works. Figure 21 shows which organisations have been responsible for organising or funding the works.

[13] Historic England has changed their annual reporting to record just 'high risk' sites for 'at risk', medium sites are now termed 'vulnerable'. DNP continues to report 'at risk' SMs as those classified at 'high' and 'medium' risk.

Premier Archaeological Landscapes (PALs) are unofficial but innovative local designations designed to represent the archaeological equivalent of a SSSI/SAC. They were created as part of the Moorland Vision to represent the best examples of Dartmoor's rich archaeological resources. It was agreed by all the Moorland Vision signatories that within the PALs archaeological management would take precedence. In total there are 14 PALs covering a variety of archaeological landscapes. It was envisaged that each PAL would have its own management plan, several plans were drawn up before it was realised that the HLS management plans were meeting the same objectives. The management plans also included the undertaking of archaeological surveys that would help to inform future management, 5 surveys still need to be completed.

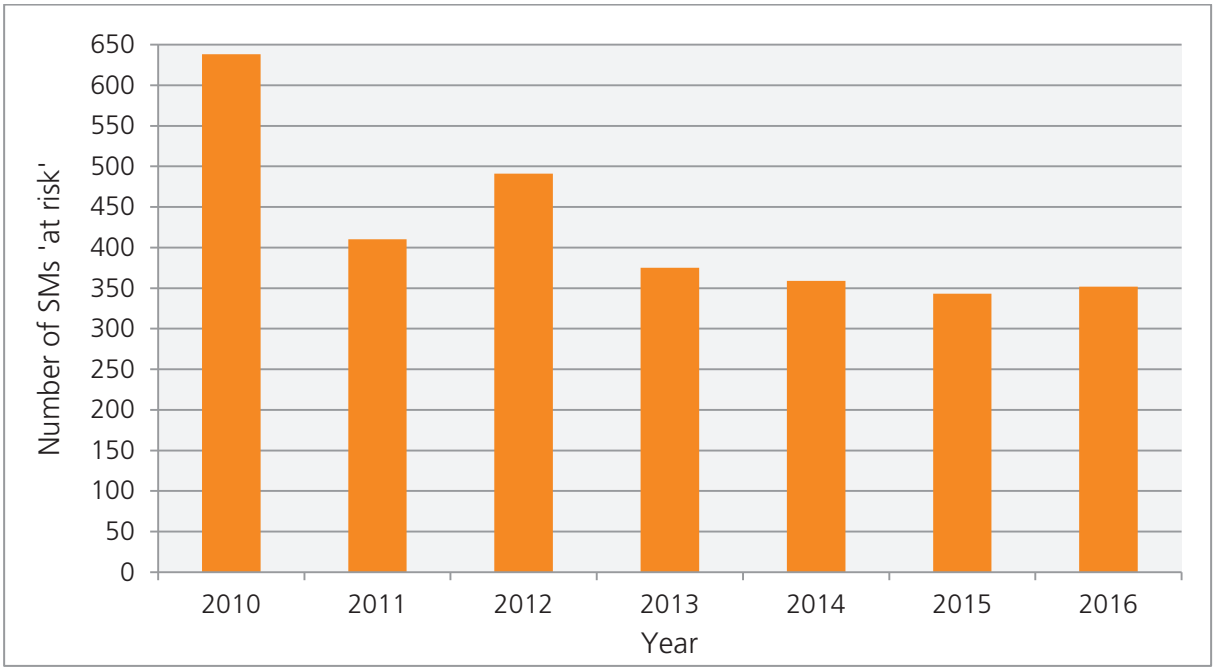

Figure 19 - Number of scheduled monuments 'at risk'. Source: DNPA

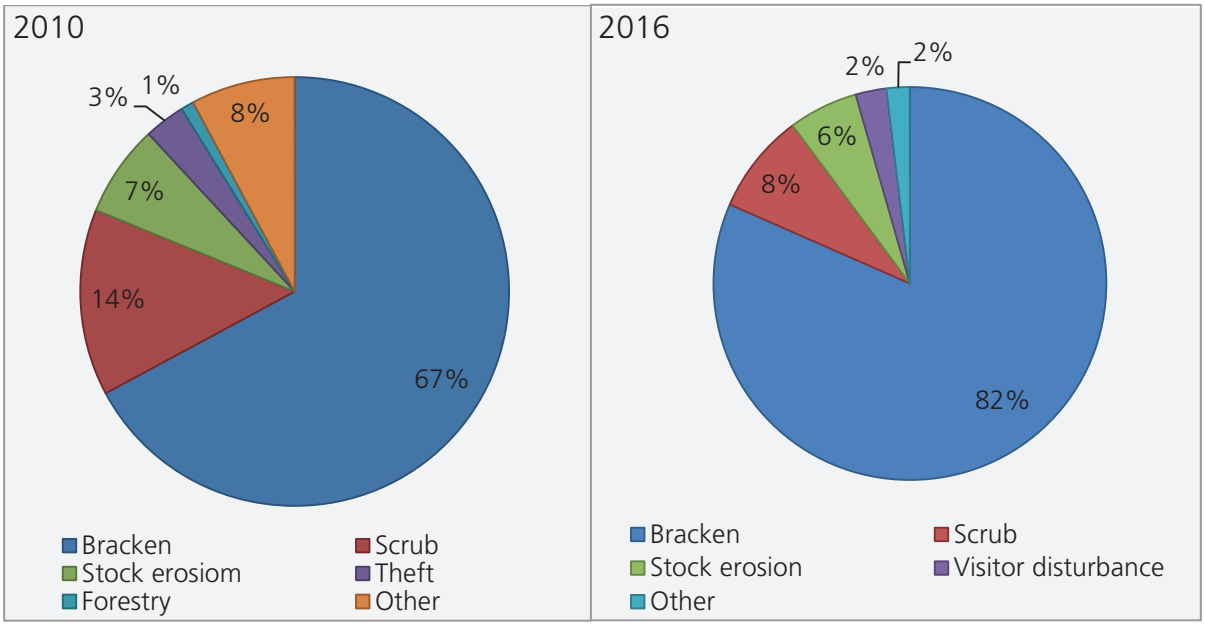

Figure 20 - Main threats to Scheduled Monuments (2010/2016). Source: DNPA

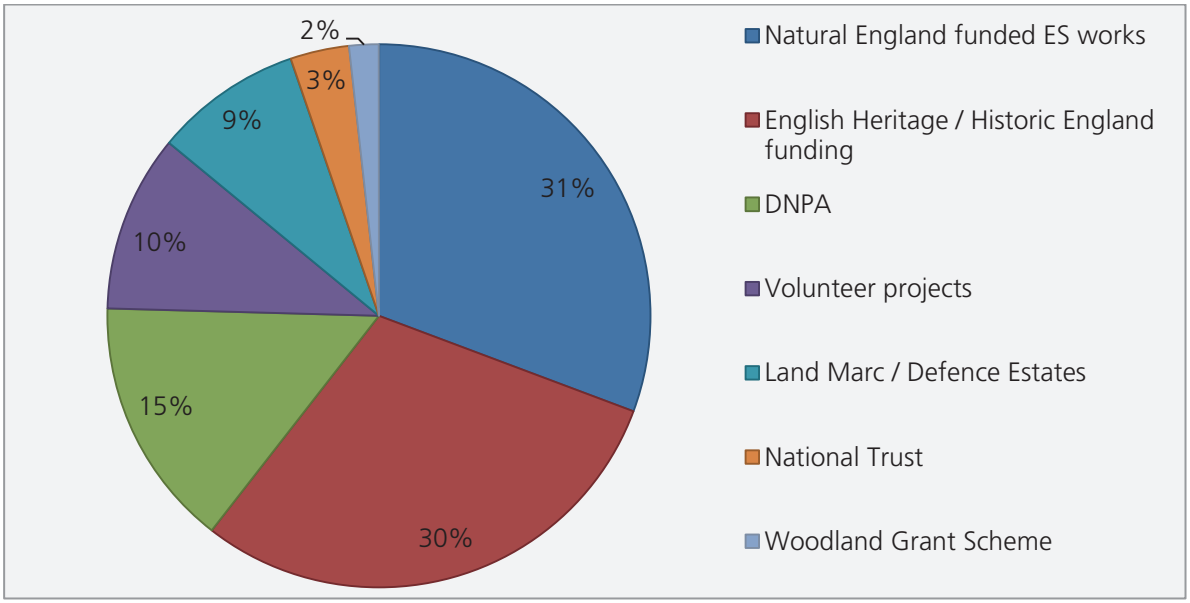

Figure 21 - Positive conservation interventions since 2010. Source: DNPA

Historic Built Environment

Headline Indicator	Date of latest data	Latest data	Change from 2010
Number of listed buildings	2016	2059	-503
Number of listed buildings at risk (and %)	2016	36 (1.7%)	+0.2%

The importance of Dartmoor's historic built environment is reflected in the high proportion of heritage assets that have national recognition and statutory protection through being designated as listed buildings or by being within a conservation area. In addition, Dartmoor National Park Authority has identified and surveyed some 900 historic farmsteads which have been added to the Historic Environment Record (HER), and has produced guidance on how to conserve this valuable resource.

There are currently 2060 designated listed buildings within the National Park (Table 5). Since 2010 a total of 25 new listed buildings have been designated, these include listing revisions for HM Prison Princetown and Okehampton Camp, as well as a number of First World War village war memorials. Although new listed buildings have been designated, the number of listed buildings has dropped by 503 since 2010. This is due to a revision of the way in which the numbers are calculated to bring the figures in line with national guidance from Historic England which allows accurate comparison across authorities. Rather than include individual addresses, as was previously the case, the total number of listed building entries recorded on the National Heritage List is given. This gives a new total of 2060 listed buildings within Dartmoor National Park.

Listed buildings were last surveyed in 2012 and the total deemed to be 'at risk' from neglect and decay was found to be 36. This is a reduction of 3 since 2010 but due to the revision in listed building totals outlined above, the overall percentage has risen slightly to 1.7%. A total of 1.1% of the listed buildings designated at Grade I or II* are deemed to be at risk – this compares favourably with the average for the South West of 3% and a national average of 4%

Since 2010 the total number of Conservation Areas has also increased, from 23 to 25, with new designated areas created for Ilsington and Walkhampton in 2013.

Number of listed buildings by classification	
Grade I	42
Grade II*	133
Grade II	1884
Total	**2059**

Table 5 - Number of listed buildings by classification. Source: DNPA

Water Environment

Headline Indicator	Date of latest data	Latest data	Change from 2010
% of monitored river length achieving 'moderate' or 'good' status	2015	98% of 534km of monitored river length	+5%

The water sources of the National Park are of huge regional importance, providing 45% of South West Waters daily water supply to domestic and business customers across Devon and Cornwall and small parts of Dorset and Somerset. The EU Water Framework Directive required the UK to achieve 'good' status of all waterbodies by 2015; however, in recognition of certain limiting circumstances to reaching this target, the Environment Agency is now aiming to achieve 'good' status of at least 60% of waters by 2021 and in as many as possible by 2027. Within the National Park there are 51 water bodies that either completely or partly fall within the boundary under Water Framework Directive Monitoring; this includes 534 km of monitored river length. Current data refers to cycle 2 of the Water Framework Directive, the number of water bodies and the length of monitored rivers has fallen since Cycle 1 following the de-designation or combining of waterbodies. Of the 51 waterbodies, 21 are classified in good ecological status, 29 at moderate and 1 at poor (Table 6). Of the 534km of monitored river length, 35% are classified as good, 63% as moderate and 2% as poor. Compared to 2014, there has been an increase in the length of monitored river length achieving 'poor' status. No waterbodies within the National Park are classified as 'high' or 'bad' status (Figure 22).

Condition of Waterbodies 2015	
Good	21
Moderate	29
Poor	1

Table 6 - Condition of National Park Waterbodies 2015. Source: © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2016.

The WFD classification system is based on various chemical and biological quality elements. If one element is classified as good and the other is moderate, the entire waterbody will be classified as moderate. WFD status of large river catchments is typically based on a single monitoring point and therefore monitoring does not always provide a complete picture of the condition of rivers on Dartmoor, especially the minor tributaries and headwaters. Improvements in WFD status have been achieved through catchment-scale partnership projects to reduce diffuse and point-source pollution and improve fish passages.

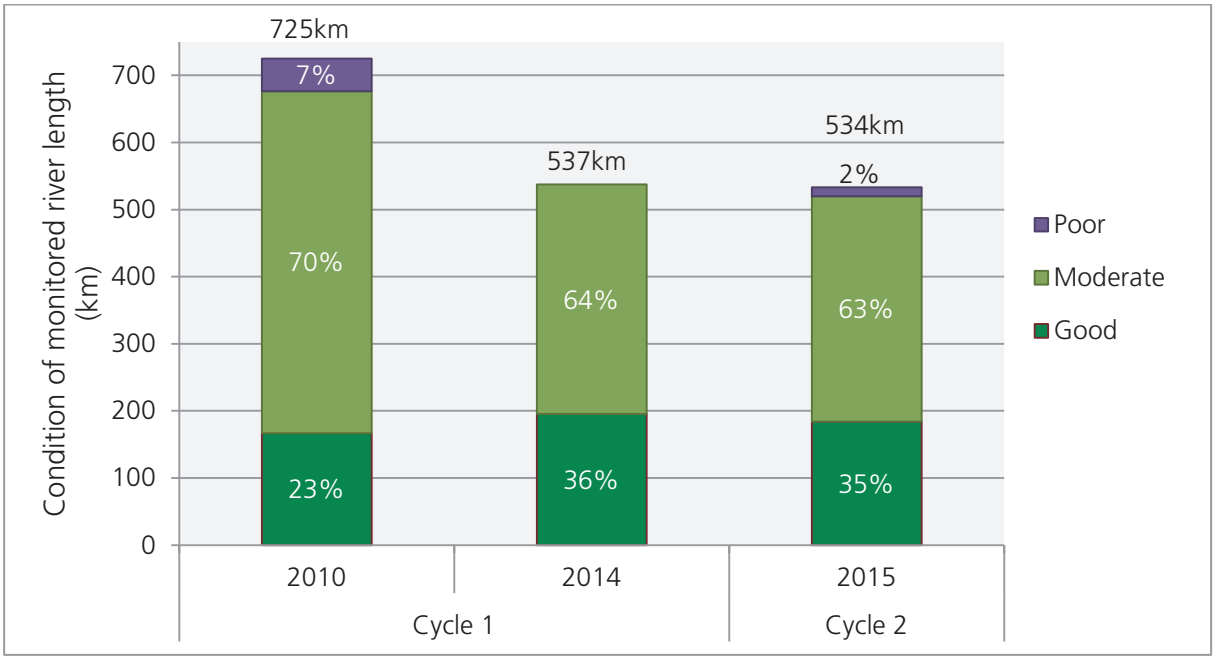

Figure 22 - Condition of monitored river length. Source: © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2016.

The state of the water environment is determined by a range of factors – naturalness of the channel, adequate flow, and the quality of the water. The Environment Agency carries out annual monitoring of aquatic invertebrates. Data from two monitoring sites on the River Dart show a general picture of improving water quality, as shown by an index of invertebrate diversity (Figure 23, 24)

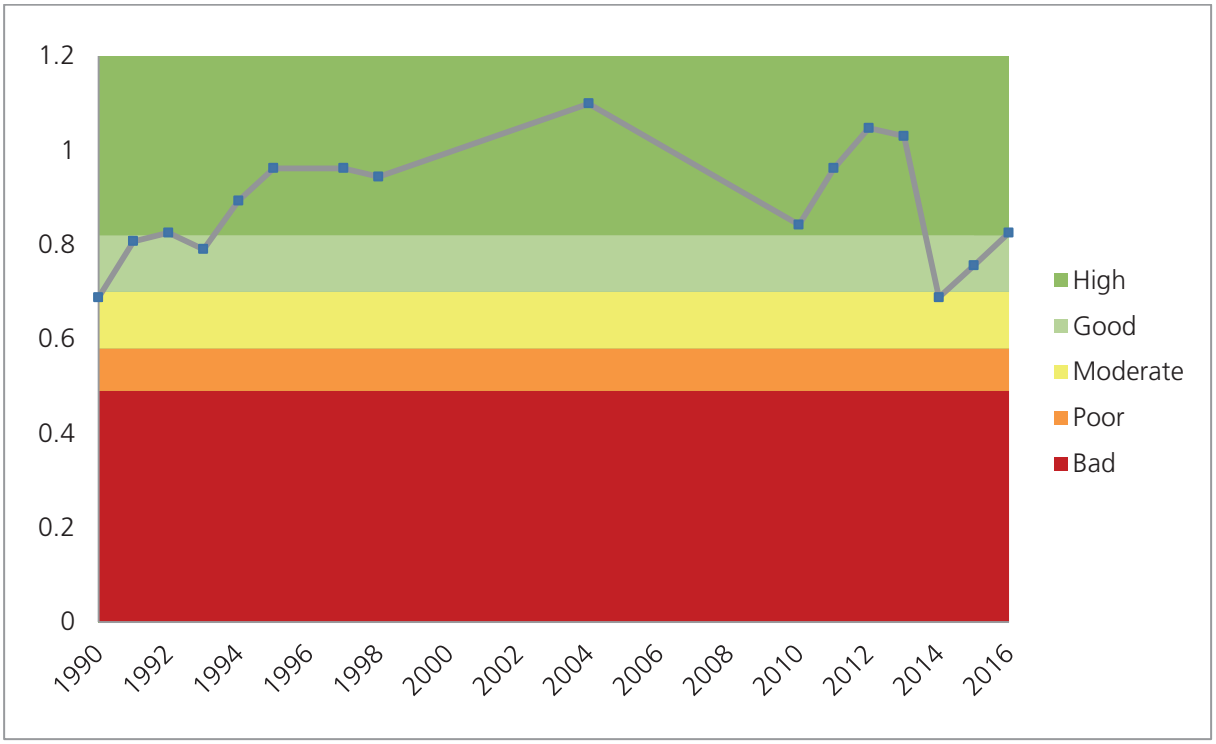

Figure 23 - Water Invertebrate diversity and population in River Dart at Buckfastleigh. Source: Environment Agency

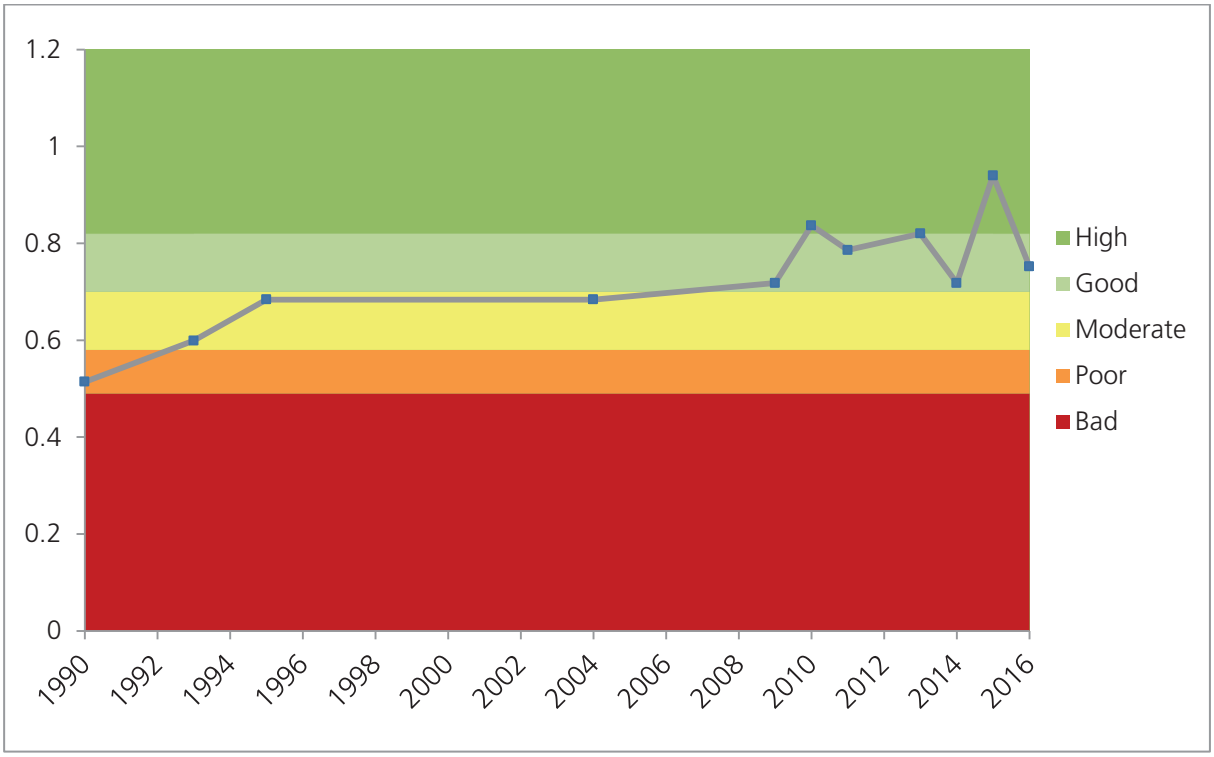

Figure 24 - Water Invertebrate diversity and population in River Dart at Two Bridges. Source: Environment Agency

Learning and Education

Headline Indicator	Date of latest data	Latest data	Change from 2009/10
Total annual attendance of education events organised by DNPA	2016	1389	78% decrease
Total annual attendance of guided walks led by DNPA	2016	383	83% decrease
Volunteering in the National Park	2015/16	5884 volunteering days	Baseline data

In 2012, as a direct result of reduction in funding, DNPA took the decision to restructure the Education Service which resulted in the loss of one paid member of staff and the 'conversion' of paid session staff to Volunteer Education Guides. At the same time education bookings from overseas education groups were transferred to an alternative provider. These two factors resulted in a reduction in event and participant numbers (Figure 25). The Education Service is currently a reactive service, responding to enquiries from schools rather than actively seeking 'new business' entirely because they are running at capacity with the current Volunteer Education Guide Pool – enquiries from schools with large group sizes are often declined.

Trend data reporting from 2003 to present provides qualitative feedback from teachers and group leaders and has remained high, with averages over this period showing that 96% of teachers and group leaders were 'satisfied or very satisfied' with the overall level of service provision and 95% of teachers and group leaders reporting that the event or activity met their learning objectives 'well or very well'.

There are over 70 education providers that use the National Park as an education resource; it is difficult to be more exact with this number given that education providers range from education centres based within the National Park to those that travel in a car to sites within the National Park.

National Citizen Service on Dartmoor – A case study from one 'partner provider'

The Dartmoor Centres have been working with The Challenge NCS, where all of the participants come from London and the South-East. Over a 4 year period, 960 NCS participants have attended the programme on Dartmoor. Last year the centres ran 4 weeks of the NCS, week 1 began with a Team Building Adventurous Activities Week; the aim of the week was for the young people to spend time together, whilst they all lived in the same postcode area, there were few friendships with many attending different school and were from different ethnic/cultural backgrounds– one

of the original aims of the NCS scheme is to breakdown community barriers and by the end of the week many strong bonds and friendships had been formed.

Comments from NCS participants include;

"I never knew there were places like this in England, it's like Africa or something"

"Where does everyone live" – referring to the amount of open space

"Dartmoor is really beautiful, I think I might come here again, how do I get here?"

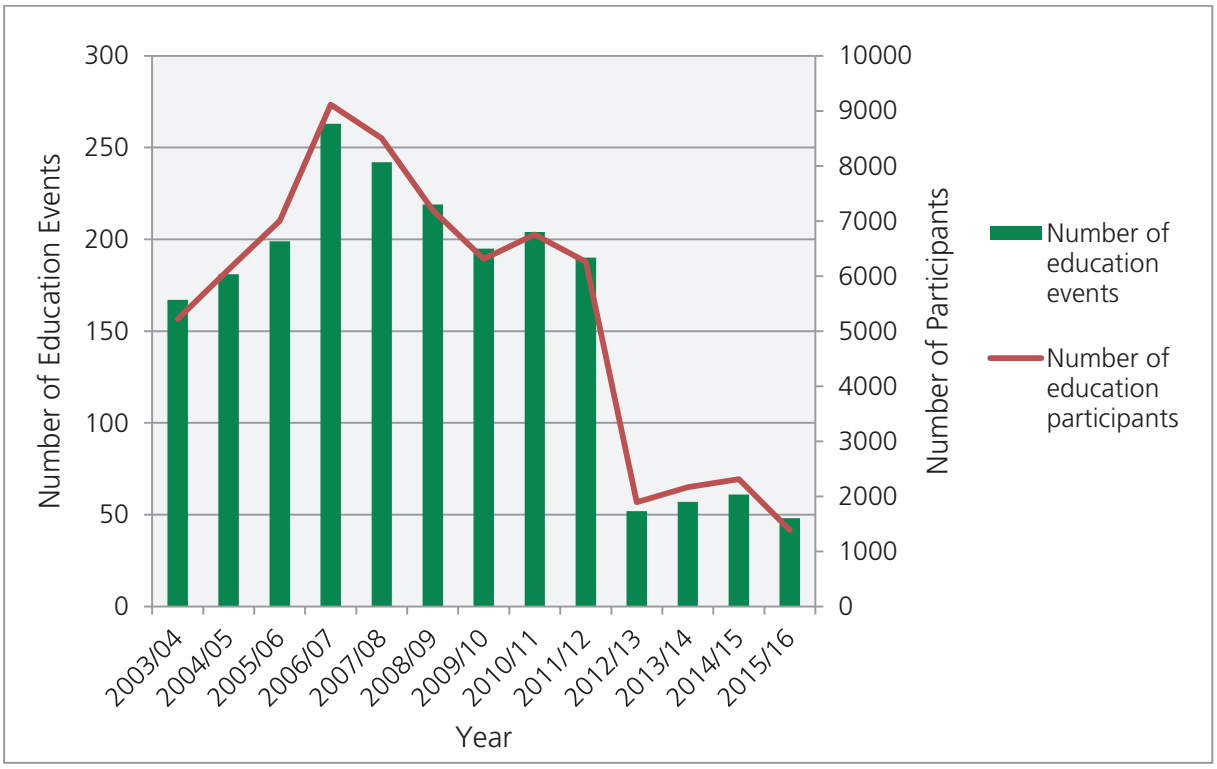

Figure 25 - Number of Education events and participants. Source: DNPA

Tourism and Recreation

Visiting the National Park

The location of the National Park and its landscape has an impact on visitor behaviours and motivations. The 2016 visitor survey was a trial survey to gain a wider understanding of these behaviours and motivations, whilst the number of responses does not provide statistical confidence, the results do correlate with other National Parks surveys and are a strong indication of peoples travels motivations and enjoyment of Dartmoor. In 2016, approximately 70% of visitors were from the South West, with a further 10% coming from overseas, on Exmoor, this figure in 2016 was just over half from the South West and 12% from overseas.

Visitors are drawn to Dartmoor due to its status as a National Park, with walking consistently the primary reason for their visit; over half of respondents on Dartmoor said that walking was the main reason for their visit, on Exmoor this figure was 70%. Visitor enjoyment of Dartmoor is very high, and when asked if their visit had lived up to expectations, 90% responded it was very high or exceptional. Furthermore, 100% of respondents said that they would recommend Dartmoor to others[14].

Trends

Headline Indicator	Date of latest data	Latest data	Change from 2009
Annual number of tourist visitors to Dartmoor (sum of staying visitors and day visitors)	2015	2.31million	3% decrease
Annual number of day visitors to Dartmoor	2015	2.05million	6% decrease
Annual number of staying visitors to Dartmoor	2015	263,000	17% increase
Total annual visitor spend	2015	139.52million	25% increase

Figures from the 2015 STEAM report show a 3% decrease in the annual number of tourist visitors from 2009; visitor numbers decreased between 2011 and 2013, however, numbers began to rise from 2013; 2015 saw a 5.9% increase in visitor numbers from 2014 (Figure 26). This trend is consistent with overall tourist trends across the UK. Despite the decline in visitor numbers, tourist spending has been increasing annually, annual visitor spend increased by 25% between 2009 and 2015. The increasing visitor spend can be linked to the growing number of staying visitors which increased by 17% between 2009 and 2015 (Figure 27).

[14] Dartmoor National Park 2016 Visitor Survey

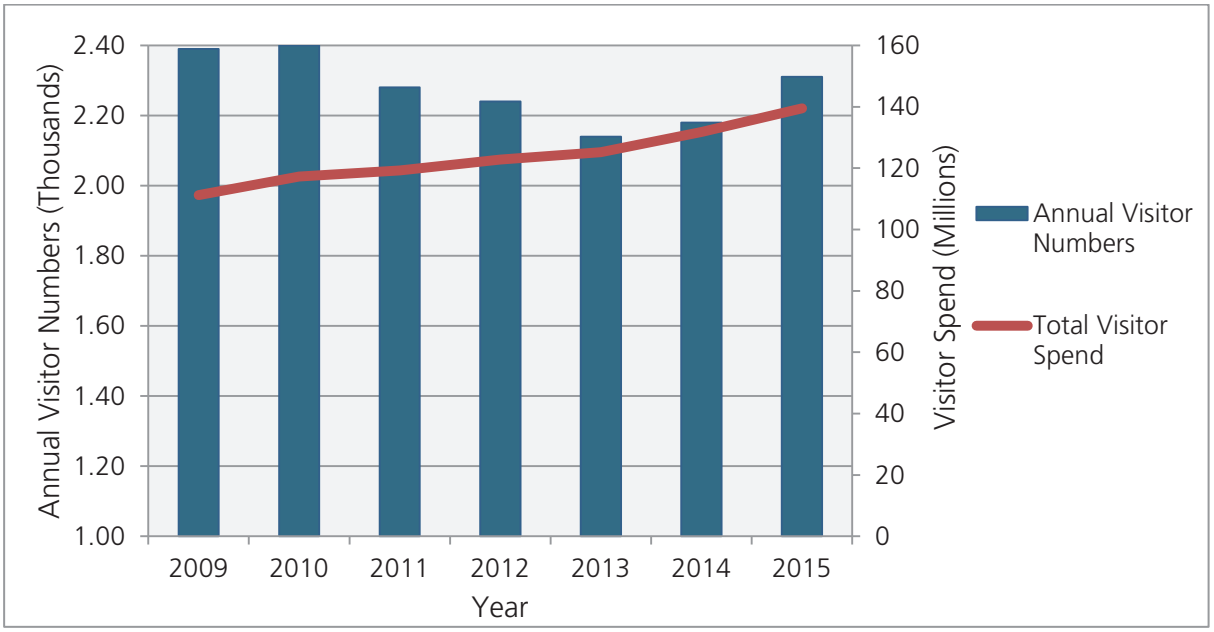

Figure 26 - Annual visitor numbers and total visitor spend. Source: STEAM

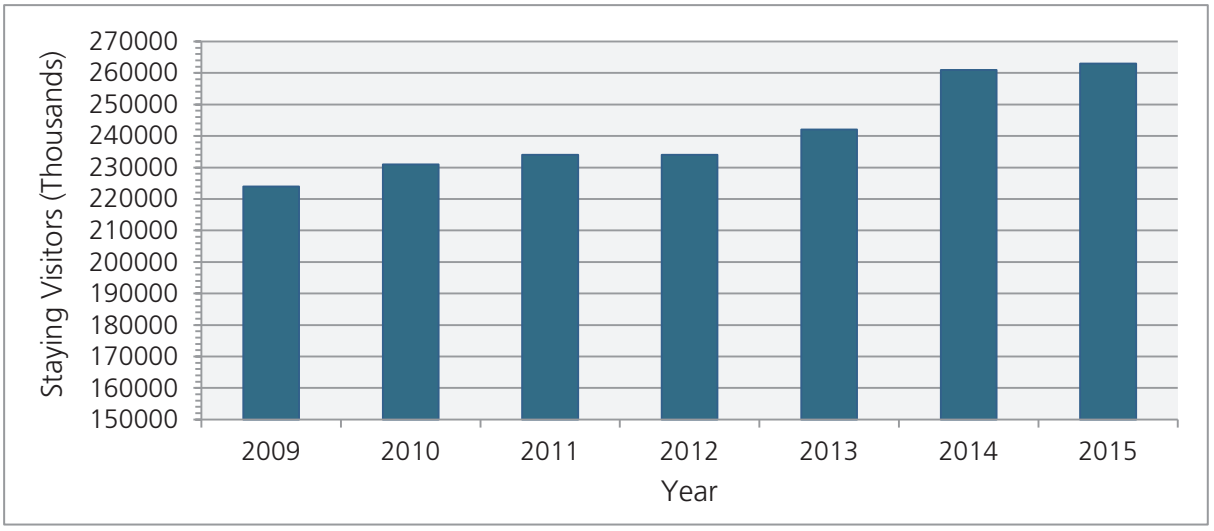

Figure 27 –Annual number of staying visitors. Source: STEAM

Large Scale Recreation

Headline Indicator	Date of latest data	Latest data	Change from 2009
Number of events considered through the DNPA organised events system	2016	63	Percentage increase of 19%
Number of participants taking part in organised events	2016	18,258	Percentage increase of 66%

The number of events considered through the DNPA event notification system has increased by 19% since 2009, however, numbers have recently fallen since a peak in 2013. Whilst the number of events coming through the notification system has shown a slight decrease from 2013, the number of people taking part in events has increased by 66% since 2009, with a recorded 18,258 participants taking part in events in 2016 (Figure 28). This suggests that whilst there might be

fewer events on Dartmoor the events that are taking place are growing in size. The increasing number of participants demonstrates the value of Dartmoor National Park in providing recreation and access opportunities; it is also likely to increase pressures on communities, habitats and wildlife.

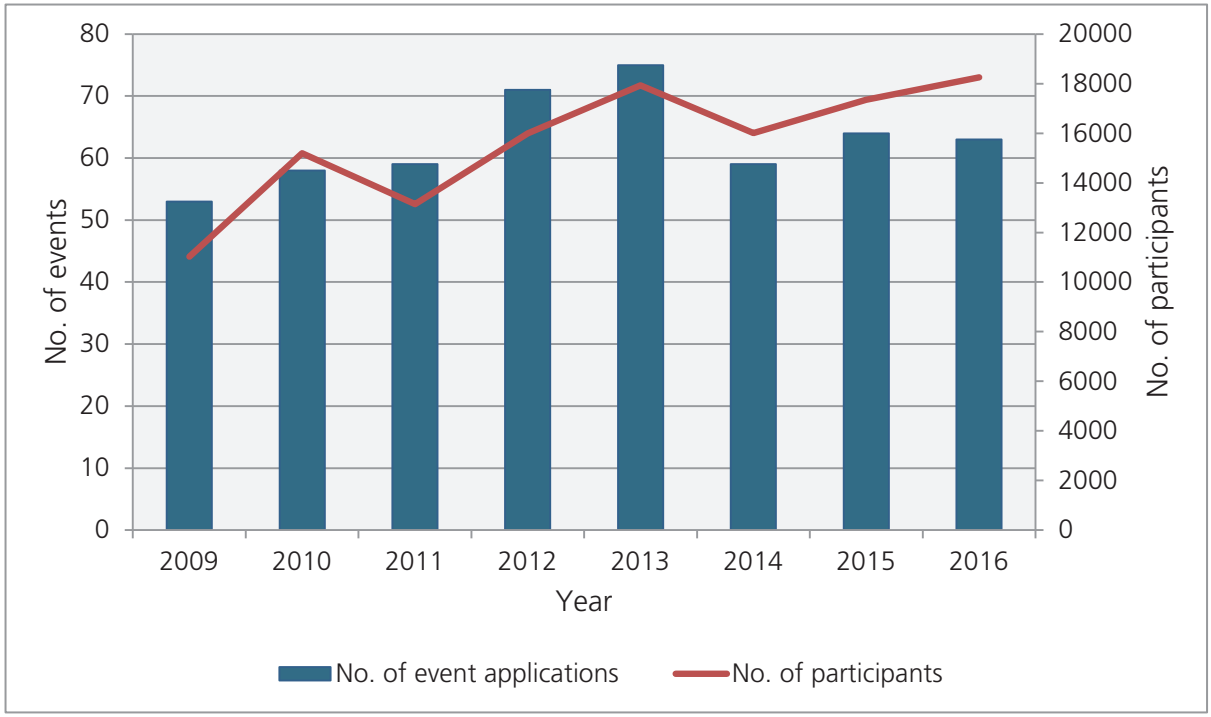

Figure 28 - DNPA event applications and number of participants. Data source: DNPA Events Notification System

Infrastructure

Headline Indicator	Date of latest data	Latest data	Change from 2010
% length of PRoW which are 'easy to use'	2016/2017	79%	-16% since 2010/11
Number of people using Haytor monitored footpath	2015	26,528	12.3% increase

Area of land which is open to public access (ha)	
Dartmoor Common Land	35,310
Open Country	11,346
Total area	46,656 (49% of Dartmoor National Park)
Lengths of Public Rights of Way (km)	
Footpaths	354
Bridleways	360
Byways	19
Total length	733km

Total length of long distance walking routes	
Total length (Two Moors Way, Tarka Trail, West Devon Way, Dartmoor Way, Taw Teign Link, Two Castles Trail, Templer Way)	308km

Public Rights of Way (PRoW) and Access Land

Access Land on Dartmoor is land with a designated right of access under the Dartmoor Commons Act 1985 and the Countryside & Rights of Way Act, 2000 (CRoW Act). Around 49% of the National Park is designated Access Land. The National Park also has 733Km of Public Rights of Way (PRoW); PRoW monitoring is undertaken twice a year in May and November along randomly generated samples of 10% of the paths, this methodology is used across all National Parks to calculate the percentage of PRoW that are defined as 'easy to use'. The data shows this has fallen by 16% since 2010/11 to 79% in 2016/17 (Figure 29). All public rights of way are assessed based on criteria provided by Devon County Council and a pass or fail is based on the degree of obstruction, interference and inconvenience from a number of listed items. The decrease in condition of PRoW is largely due to paths failing surveys due to the condition of their infrastructure, e.g. missing signs and broken stiles and damages to the surface condition, largely a result of increased erosion from rainfall events. The ongoing maintenance of the PRoW network has been impacted by the decrease in available funding, resulting in fewer staff on the ground, making it harder to carry out maintenance and repairs.

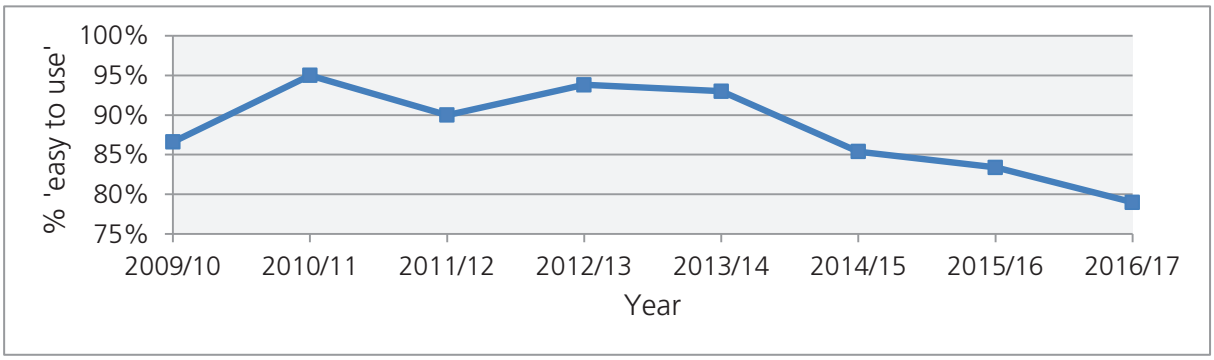

Figure 29 - % length of PRoW that are 'easy to use'. Source: DNPA

Erosion Sites

New baseline monitoring of erosion sites has been undertaken from 2013 and as a result current monitoring is not directly comparable with that of previous years. 234 sites have currently been surveyed; with 52% of these either stable or improving (Figure 30). The 2010 State of the Park reported that most erosion sites are linear (usually paths) and that the most common causes of erosion at these sites are a combination of heavy use by walkers, stock, horses and water erosion. These key pressures remain; however, cycling is becoming a growing pressure, with reports of increased cycle tracks visible on routes, including those where cycling is not permitted.

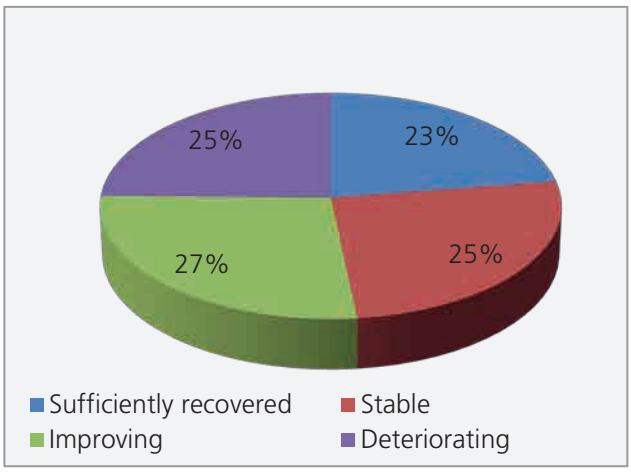

Figure 30 - Condition of surveyed erosion sites. Source: DNPA

Car park and footpath figures

Monitoring of the National Park car parks and footpaths shows the levels of use of the sites or paths and can demonstrate on the ground changes in visitor numbers. Use of the Haytor footpath has steadily increased from 2012 onwards, showing a similar trend to the number of annual tourist visitors to the National Park (Figure 31). Use of the Haytor lower car park, however, remains steady; a small increase in users can be seen between 2013 and 2015. Annual users of the Postbridge car park increased by 22% in 2015 from 2012 to 58266 cars, again, following the trend of increasing visitor numbers (Figure 32). There is not sufficient data to show usage for Princetown car park, data can be missing from some sites at certain times due to counter reliability.

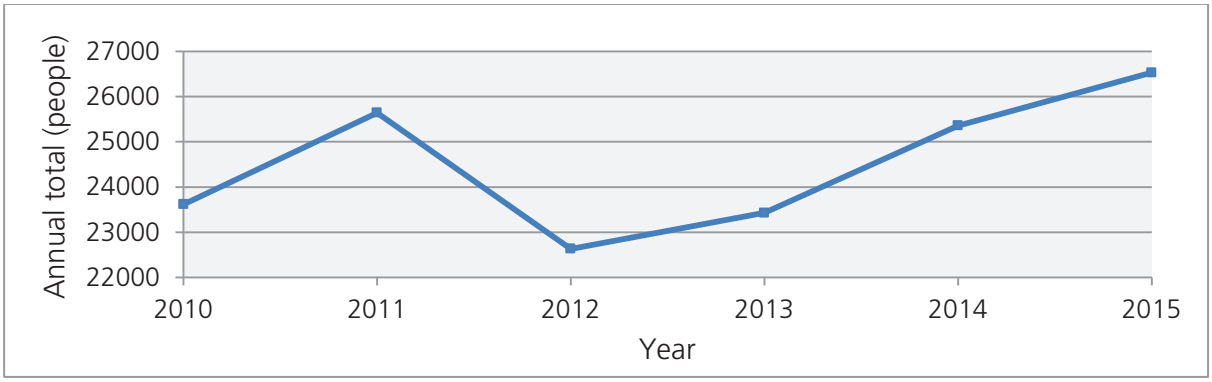

Figure 31 - Haytor footpath annual users. Source: DNPA

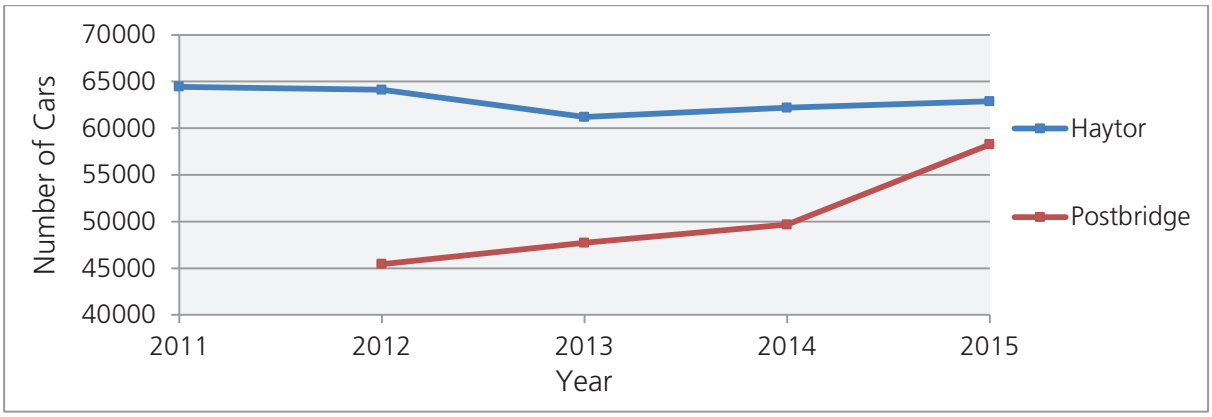

Figure 32 - Car park counters, annual usage. Source: DNPA

Community Well-being

Headline Indicator	Date of latest data	Latest data	Change from 2012
Average Dartmoor House Price	2015	£303,129	3.8% increase

The average Dartmoor house price in 2015 was £303,129, 33% higher than the average for Devon and 11% higher than the national average (Figure 33). In 2011 the Land Registry began producing data at a postcode level; data from 2011 onwards is therefore more accurate as it includes Dartmoor only postcode. Given this change, the 2015 average Dartmoor house price has not been compared to house prices prior to 2012. The 2015 average Dartmoor house price in 2015 was £303,129, 3.8% higher than the 2012 average Dartmoor house price of £291,797. In comparison, the average Devon house price has fallen by 3.06% since 2012.

The proportion of the Dartmoor population aged 65 and over has continued to increase, in 2015 (mid-year estimate) 26% of the population were aged 65+, an increase of 1.5% compared to 24.5% in 2008 (Table 6). Each National Park in England and Wales has a higher percentage of population aged 65+ than England and Wales as a whole. The aging population trend can also be seen UK wide, with the population aged 65+ growing by 47% since mid-1974 and making up 18% of the total population in mid-2014. An increase in an aging population can increase the overall demand for health services in an area and shift the focus to particular types of health services.

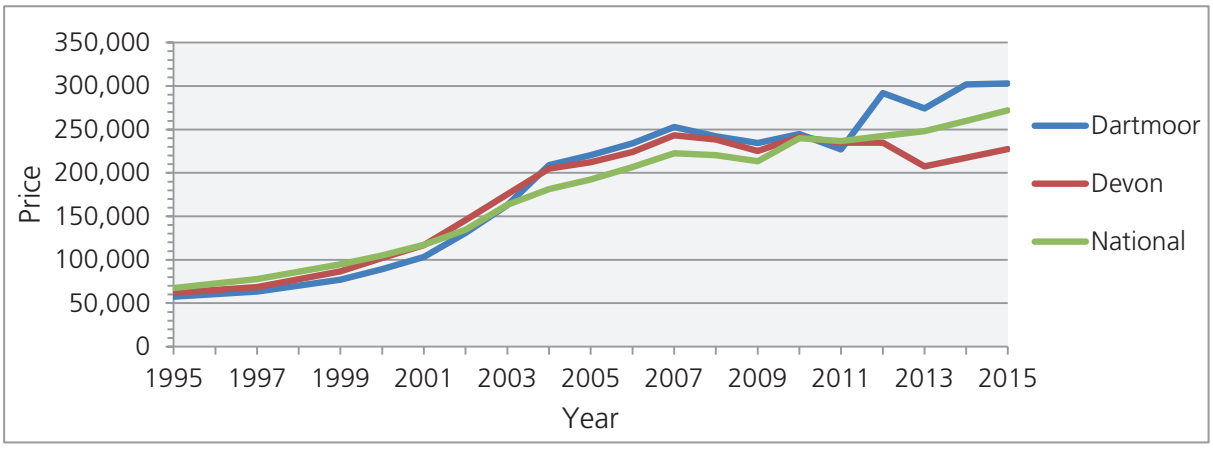

Figure 33 - Average Dartmoor house price. Source: Land Registry

	2008 (mid-year estimate)	2015 (mid-year estimate)
Total Population of DNP	34,977	34,000
Population aged 65+	8,582 (24.5%)	8840 (26%)

Table 6 - Population Statistics. Source: Office for National Statistics

Indices of Deprivation

The Index of Multiple Deprivation (IMD) provides a measure of relative deprivation for every Lower Super Output Area (LSOA), or neighbourhood in England. It is calculated from the Indices of Deprivation which combines information from seven domains to provide an overall measure of deprivation and therefore gives an idea of how deprived an area is in a particular domain, in comparison with the rest of the country (or relative to a larger area, such as the National Park as a whole). The seven weighted domains for the indices of deprivation include income, employment, education, health, crime, barriers to housing and services and living environment. 29% of Dartmoor LSOAs fall into the below average national quintile for deprivation (Quintile 4), while none of the LSOAs fall into the least deprived national quintile. 17% of LSOAs fall into the second most deprived national quintile (Quintile 2), however, none fall into the most deprived national quintile (Figure 34). The average IMD score for Dartmoor is 17.1, slightly lower than but still in line with the national average of 21.78.

The average life expectancy for Dartmoor is 83.2 years, 1.9years longer than the national average of 81.3 and 0.8 years longer than the Devon County average of 82.4. There is, however, a large difference in the length of life expectancy across the Dartmoor LSOAs; the shortest life expectancy being 78.1years and the longest 89.0years, suggesting that across areas Dartmoor, a life expectancy can vary by 10.9 years. Research suggests that there is a relationship between environmental quality and human health and life expectancy; for example, people living in areas with high quantities of green space are thought to have better health and higher levels of wellbeing[15]. The longer average life expectancy on Dartmoor compared to the Devon County average and the national average suggests that the qualities of the National Park have a positive impact on the long term health and wellbeing of its residents.

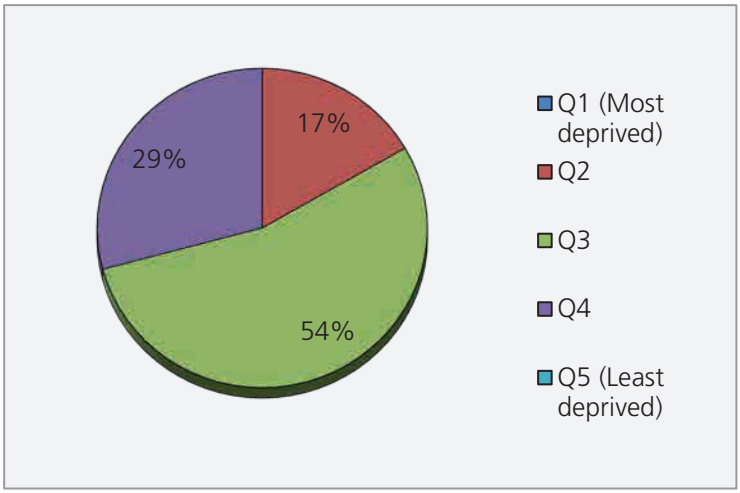

Figure 34 - Percent of Dartmoor LSOAs in IMD National Quintiles. Source: Devon County Council

[15] https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuringnationalwellbeing/2016

Superfast Broadband

The connecting Devon and Somerset programme has enabled premises to receive a superfast broadband service beyond commercial rollout, utilising public and private finance. Deliver on Dartmoor is achieved through two phases; phase 1 delivered in partnership with BT Openreach and phase 2 delivered in partnership with Airband Community Internet. Rollout of both phases across Dartmoor is expected to be complete before the end of 2017 and to provide access to superfast broadband (>24mbs) to in excess of 90% of premises.

Access to Superfast Broadband	
Feb 2015	24.4%
Dec 2015	50%
Jan 2017	79% (provisional)

Table 7 - Percent of premises in Dartmoor National Park with access to superfast broadband

Economic Activity

Headline Indicator	Date of latest data	Latest data	Change from
Employment within the National Park[16]	2013	9,700	2009 8.5%
Self-employed as % of labour force	2011	19%	National average of 10%
Average (mean) gross household income	2010	£33,039 (Difference from the respective regional average - 1.8%)	Difference from the respective regional average 1.8%
Turnover	2013	£605million	

Evidence suggests that the local economy has remained resilient in recent years, benefitting from a diverse economic base. The local rate of economic activity is slightly lower than average at 68%, compared to the England average of 70%. The proportion of full time employees (29%) is relatively low, while self-employment (19%) is significantly higher than the national average (39% and 10% respectively).

The proportion of Dartmoor's population who are economically active is similar to the county, regional and national figures. Across Dartmoor, economically active residents account for 70% of the population aged between 16 and 74; within this group a high proportion are in employment. Dartmoor's unemployment figures are also below regional and national levels; Dartmoor's unemployment rate is 4% while the national figure is 6%. This analysis is evident in Figure 35.

[16] Number of people employed in the local economies within the National Park. Valuing England's National Parks

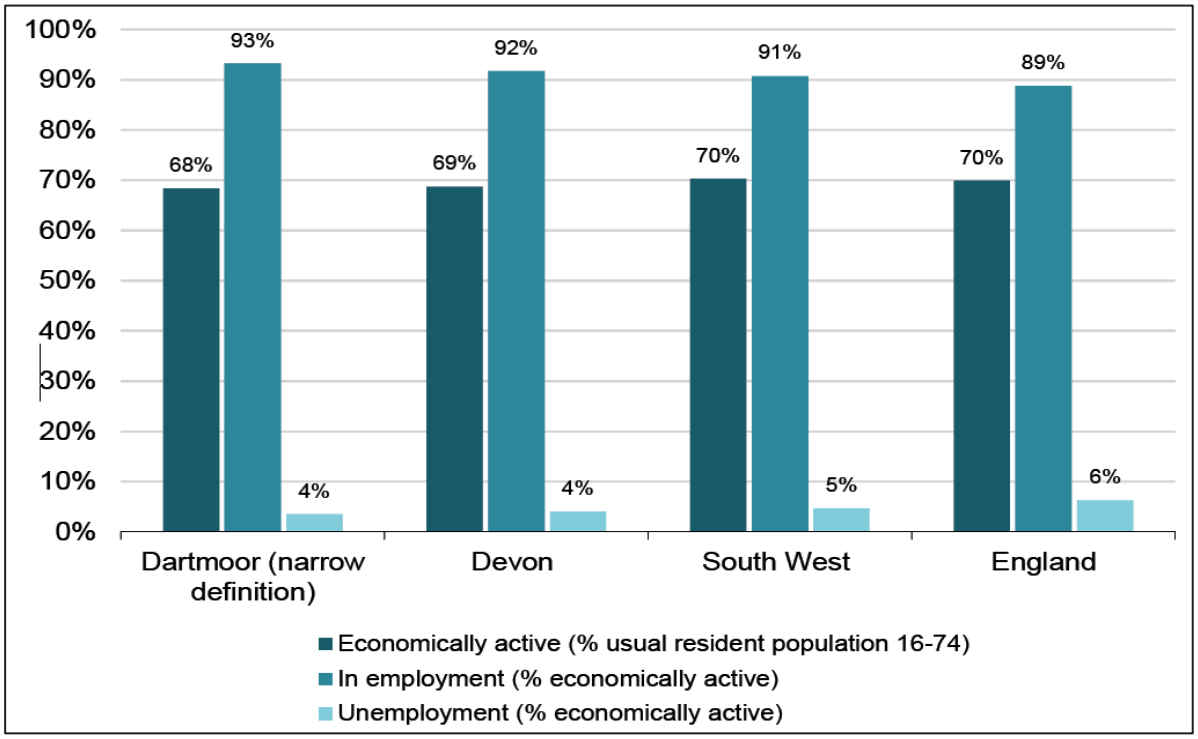

Figure 35: Breakdown of Dartmoor residents' economic activity. Source: Census 2011.

Based on 2011 Census data, Dartmoor, provides 9,580 jobs[17]. It is difficult to determine the level of growth over time, but using figures provided in Valuing England's National Parks, it would appear that employment growth is occurring at a rate of 2.8% per year in Dartmoor. Valuing England's National Parks also provides an average distribution of business sizes in National Parks. These averages indicate that 91% of businesses in National Parks are Micro, 9% are SME, and less than 1% are Large.

More than half of the businesses on Dartmoor are in "agriculture, forestry and fishing", "construction" and "professional, scientific and technical" sectors. This is higher than the other English National Parks and national averages, primarily because of particularly high number of agriculture, forestry and fishing businesses[18].

Dartmoor has a very high concentration of employment in Mining & quarrying. It is one of the features that has traditionally been associated with Dartmoor, and the LQ analysis supports this. Employment in Construction, Accommodation & Food, and Real Estate is also above average. The LQ[19] figures for Dartmoor should be treated with some caution; however, as employment levels are low in the National Park which can distort results (most sectors have less than 1000 jobs)[20].

[17] Dartmoor's Sector Outlooks – Final Report to Dartmoor National Park Authority, SERI (2013)

[18] Valuing England's National Parks

[19] The location quotients are local measures of concentration and therefore indicate in which particular local authorities there is a relatively high share of employee jobs to be found within a specific industry. An industry is considered to have a high share of employee jobs in a specific area if that area has a higher share of employee jobs in that industry than its local share of national employee jobs.

[20] HJA adapted from Business Register and Employment Survey

Planning and New Development

Headline Indicator	Date of latest data	Latest data	Change from
Proportion of dwellings granted permission that are affordable	2011 - 2016	47%[21]	1% decrease from 2006-11
Total number of new dwellings completed (net)	2016	38	2010 14% decrease
% of planning applications granted annually	2016	88%	2010 4% decrease

Housing affordability remains a significant issue nationally, but is especially important in the National Park where limited land supply demands development must meet local needs. Planning policies have been succeeding in delivering a higher proportion of affordable housing with 47% of new housing completions (excluding certificates of lawfulness, replacement dwellings and agricultural dwellings) since 2010 being delivered as affordable units (Figure 42). Permissions for new dwellings have increased significantly from the ten year low experienced between 2010 and 2012 (Figure 43). Despite this lull the Authority has done well to maintain the high proportion of affordable housing granted planning permission. Between 2011/12 and 2015/16, 47% of all new dwellings granted planning permission were affordable, between 2006/07 and 2010/11 this was 48%.

The total number of housing completions declined significantly in 2009 – 2011 (Figure 42). This drop was partly a result of a significant policy shift brought in by the Core Strategy in 2008, which aimed to focus more on affordable housing rather than open market development. It is also likely due to the 'credit crunch' and recessions, and significant reductions in funding for affordable housing. Yearly housing completions have remained relatively consistent since 2012.

Over the last 10 years 57% of new housing has been built in Local Centres (the 8 largest settlements in the National Park). Over the same period 17% of new housing has come forward in the open countryside, this percentage is higher than desired and whilst it includes agricultural conversions and agricultural dwellings, it also includes new dwellings coming forward through certificates of lawfulness.

[21] Long term average

A high proportion of planning applications continue to be approved which reflects well on the clarity of planning policy and Officers' work with applicants to ensure proposals are policy compliant. The proportion of applications approved has remained broadly consistent since 2010 (Figure 44).

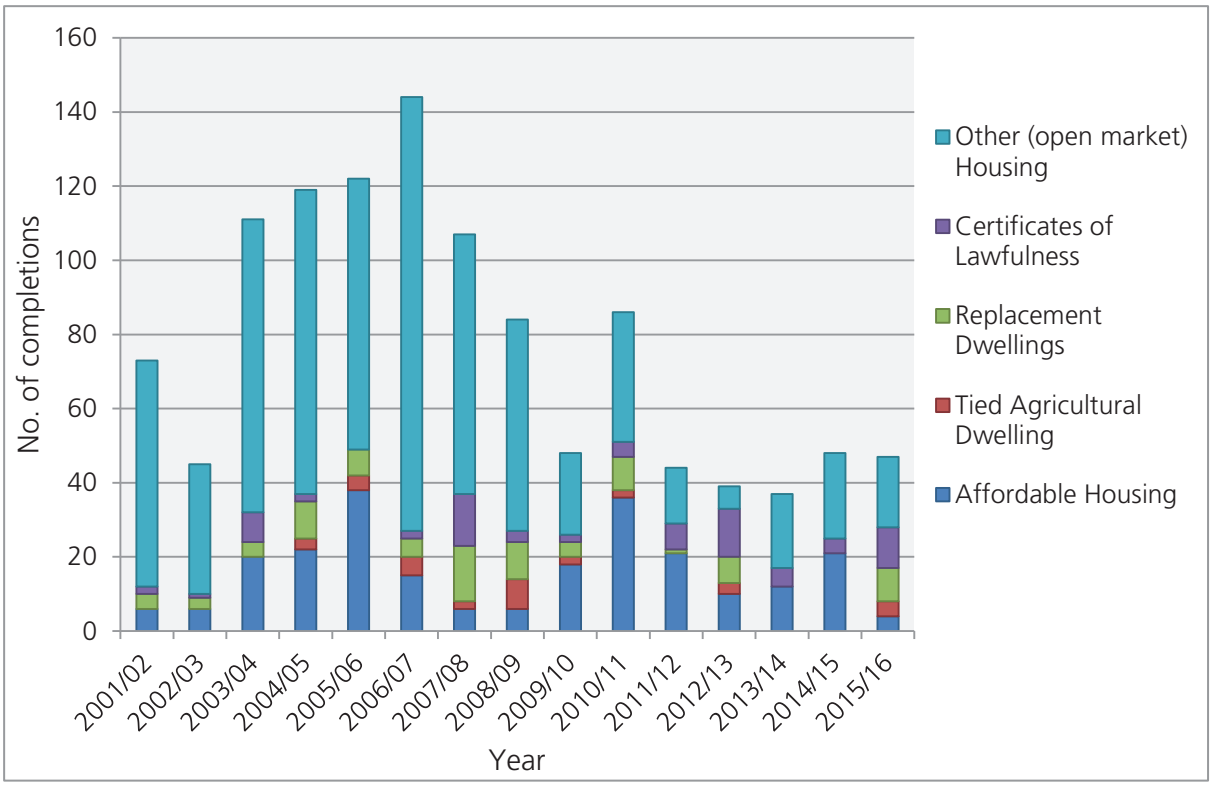

Figure 42- Housing completions by type. Source: DNPA

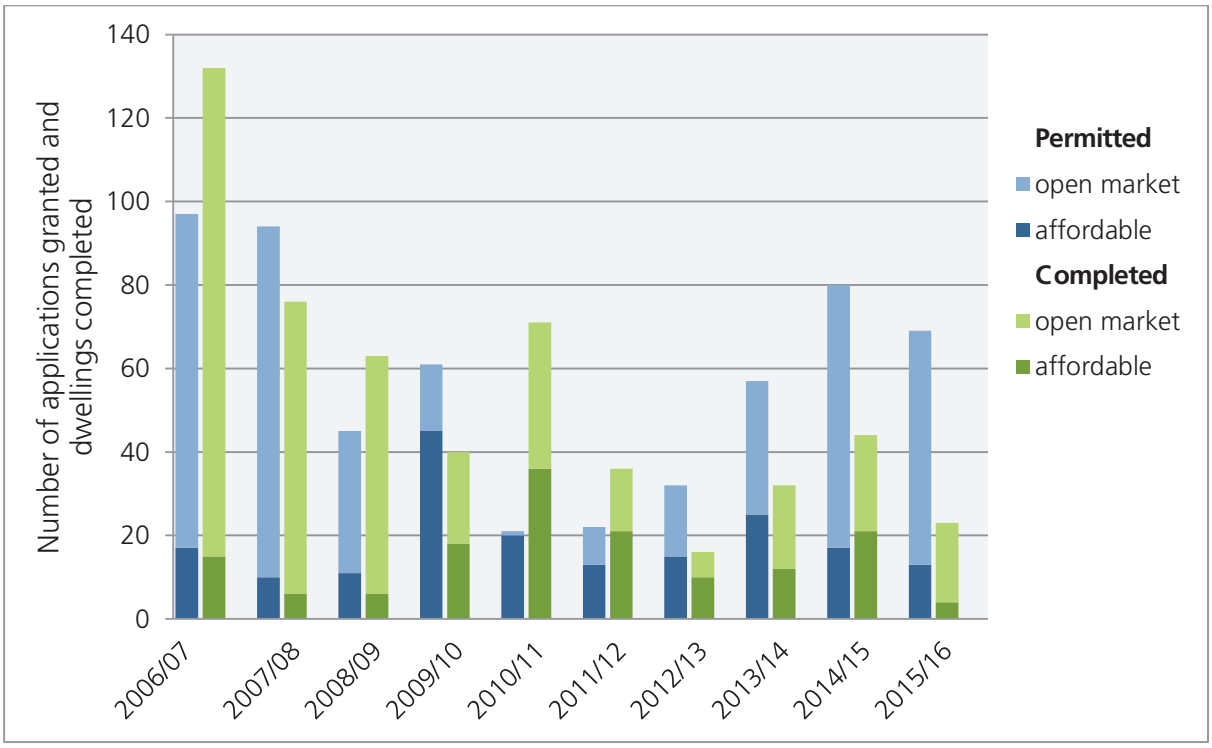

Figure 43 - Planning permissions and completions for new dwellings (excluding replacement dwellings and certificates of lawfulness). Source: DNPA

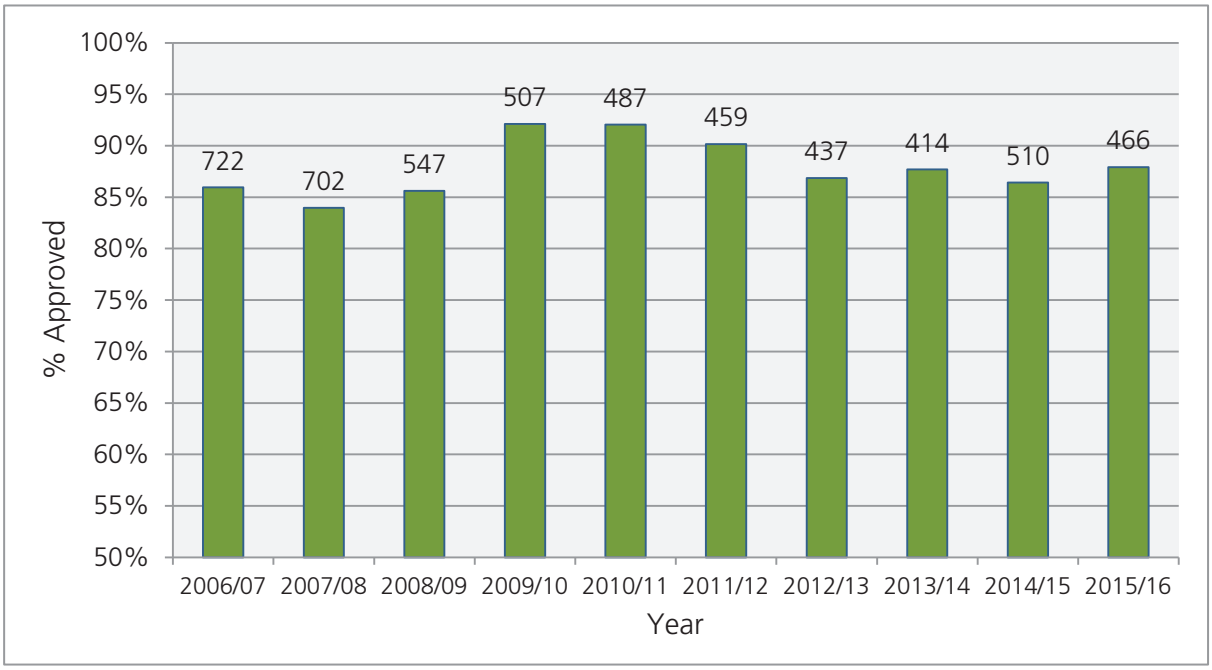

Figure 44 - % of planning applications granted annually. Source: DNPA

Military Training

Headline Indicator	Date of latest data	Latest data	Change from
Actual firing as % of days available for living firing: all DNP live ranges	2016	61%	2010 +10%
Actual closure as % of published closure: all DNP live ranges	2016	82%	1990 +19%

Dartmoor Training Area is used by all three armed forces and their cadet organisations for military training. Whilst using thee Dartmoor Training Area troops can be accommodated at Okehampton and Willsworthy Camps.

The Dartmoor Training Area consists of a total of 12,979.6ha The MoD own the freehold of 1396.96ha of land at Willsworthy, with the remaining 11,582.64ha of the training area hired from various landowners under a number of licences and tenancies. In addition, the MoD has a number of licences across Dartmoor which permit ad-hoc military training on private land. The 'Training on Private Land' licences cover use of areas including Forestry Commission Woodland and other woodlands, climbing at Dewerstone, canoeing at Meldon Reservoir and abseiling at Meldon.

Military training can be divided into Live Firing (which on Dartmoor consists of light arms firing live projectiles) and Dry Training which incorporates all types of other training including the use of blank ammunition and pyrotechnics (but excluding live projectiles).

It is not necessary to exclude public access when Dry Training is taking place on Dartmoor although it is often planned to take place away from the public.

Live Firing

Live Firing takes place within three Ranges (Willsworthy, Okehampton and Merrivale). For the safety of the public, it is essential that the public are excluded from the Live Firing Ranges whilst they are in use with live ammunition. The Ranges can be used for Dry Training whilst not in use for live firing although the public are not excluded from the Ranges when only being used for Dry Training.

Area of Live Firing Ranges		
Area (ha)	Okehampton	4974.02
	Willsworthy	1006.26
	Merrivale	2889.63
	Total	**8869.92**
% of land open to public access which can be closed for live firing		19%

Under the terms of the Licence from the Duchy of Cornwall, the public are guaranteed access to the Ranges during the periods in Table 8.

Guaranteed Public Access – Non Live Firing Days and Dates			
	Okehampton	**Merrivale**	**Willsworthy**
	Every Public Holiday, Saturday, Sunday and Monday		**Every Public Holiday, Saturday and Sunday except weekend containing 2nd Sunday of month**
Jan	1-3	1-3	1-3
Feb			
Mar	Beginning and including Wednesday before Easter		
Apr	1-30		
May	1-31		
Jun			
Jul	1-31		
Aug	1-31	1-31	1-31
Sep	1-15		
Oct			
Nov	Week beginning and including 2nd Monday of month		
Dec	20-31	20-31	20-31

Table 8 - Guaranteed Public Access – Non Live Firings Days and Dates

The level of use of the live firing ranges increased in 2016; 61% of days available for live firing were using in 2016 compared to 51% in 2010 (Figure 36). Live firing still only fills an average of 50% of the days on which MOD are licensed to undertake live firing. The MOD anticipate that military use of Dartmoor will increase; the drawdown in troops from Germany resulting in more troops based around Salisbury Plain will displaces some military training from there onto Dartmoor.

The days when Live Firing is due to take place are published 6 weeks in advance to enable the public to plan their visit to the Ranges. Whilst no additional days can be booked for live firing after the 6 week published date, it may be the case that live firing is cancelled at short notice, enabling the public to access the Ranges. The public are notified of any late cancellations (made before 3pm on the day before) through broadcasts on BBC Radio Devon, the Dartmoor Ranges Information Telephone Line (Freephone 0800 4584868) and Twitter@MOD_DIO#moddartmoor. The number of published live fire days being cancelled has steadily been decreasing since 1990, with 81% of published firing days taking place in 2016 compared to 63% in 1990 (Figure 37).

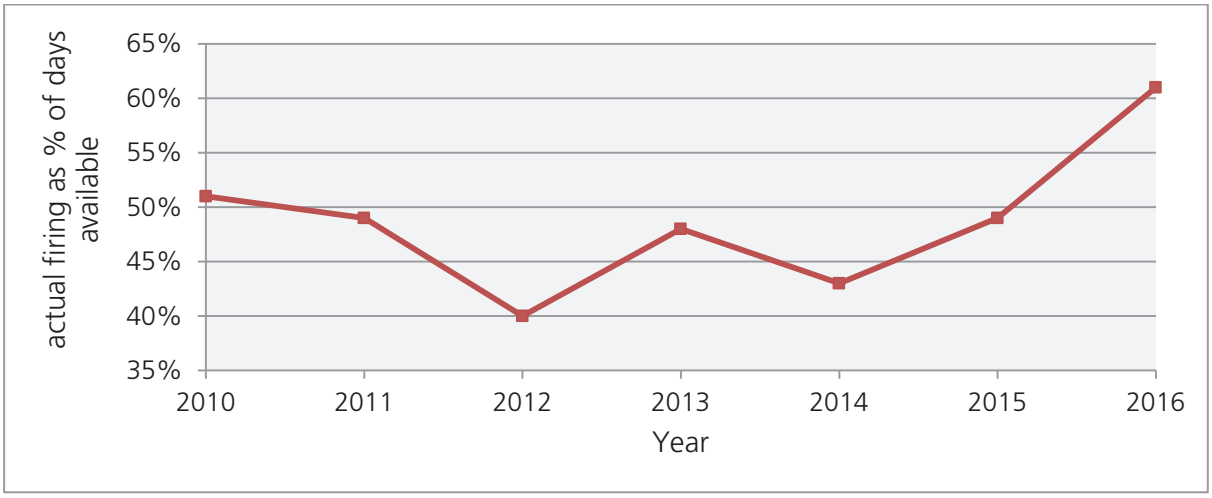

Figure 36 - Actual firing as % of days available for live firing

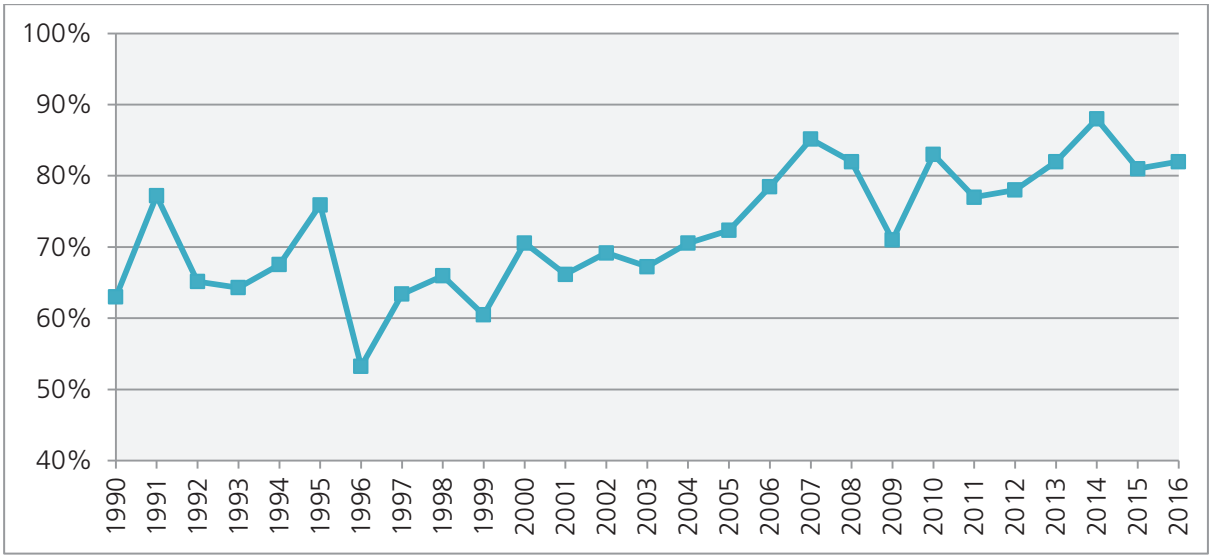

Figure 37 - Actual closure as % of published closure. Source: MoD

Traffic and Transport

Headline Indicator	Date of latest data	Latest data	Change from 2011
Annual number of passengers using the 'Haytor Hoppa' bus service	2016	1111	57% decrease

The Haytor Hoppa is a circular bus service running on Saturdays that covers the eastern side of Dartmoor, starting and finishing in Newton Abbot via Bovey Tracey. Passenger numbers have decreased by 57%, from 2606 in 2011 to 1111 in 2016 (Figure 38). 2016 saw a large drop in passenger numbers following the reduction of the service to the summer season, with services running from the 4th June to the 17th September, and therefore only operating over 16 Saturdays, previously the service had been operating on 28-31 Saturdays. Prior to 2016, passenger numbers had however been reducing, 2015 saw a 22% decrease in the number of passengers, despite operating over the same number of Saturdays.

The number of road traffic collisions within the National Park (excluding the A382 and A386) has fluctuated slightly in the five year period between 2011 and 2015. Incidents increased by 25% in 2014 compared to 2011, from 43 to 57, however 2015 saw a 22% decrease compared to 2014, falling to 44 incidents (Figure 39). Further analysis undertaken by Devon County Council suggests that the figures are randomly fluctuating each year. The figures are based on road accidents that are reported to the police.

Speed Visors

Speed visors are currently in place at three locations across the National Park; Haytor, Bennet's Cross and Sharpitor. The Speed visor is triggered by oncoming vehicles and records the time and speed of the vehicle; it does not record registration plates or vehicle type. The visor will advise vehicles of their speed if they are exceeding the 40mph speed limit. Speed data recorded by the visors throughout March 2017 is outlined in Table 9. The visors are a partnership project between DNPA, DLPS and Dartmoor Forest Parish Council.

Location	85th percentile speed[22] (mph)	Average speed(mph)	% of cars violating speed limit
Bennet's Cross	47	38	38%
Sharpitor	47	38	37%
Haytor	40	35	14%

Table 9 - Speed visor data across active sites. Source: DNPA

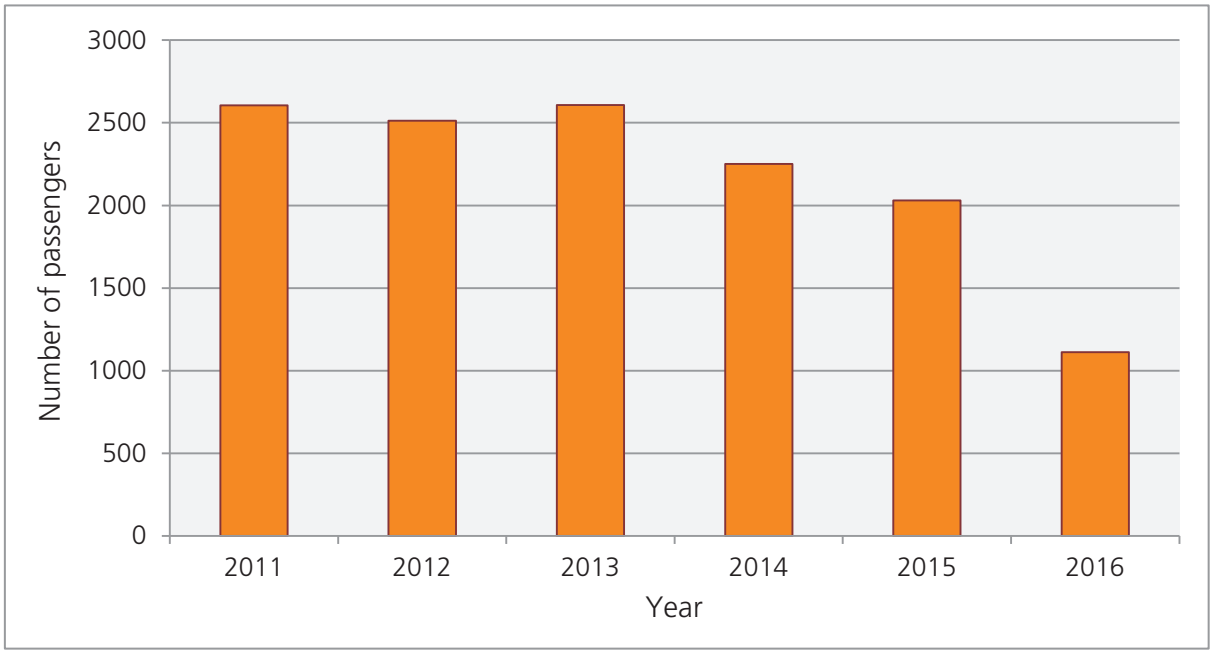

Figure 38 – Annual number of Haytor Hoppa bus passengers. Source: Country Bus Devon

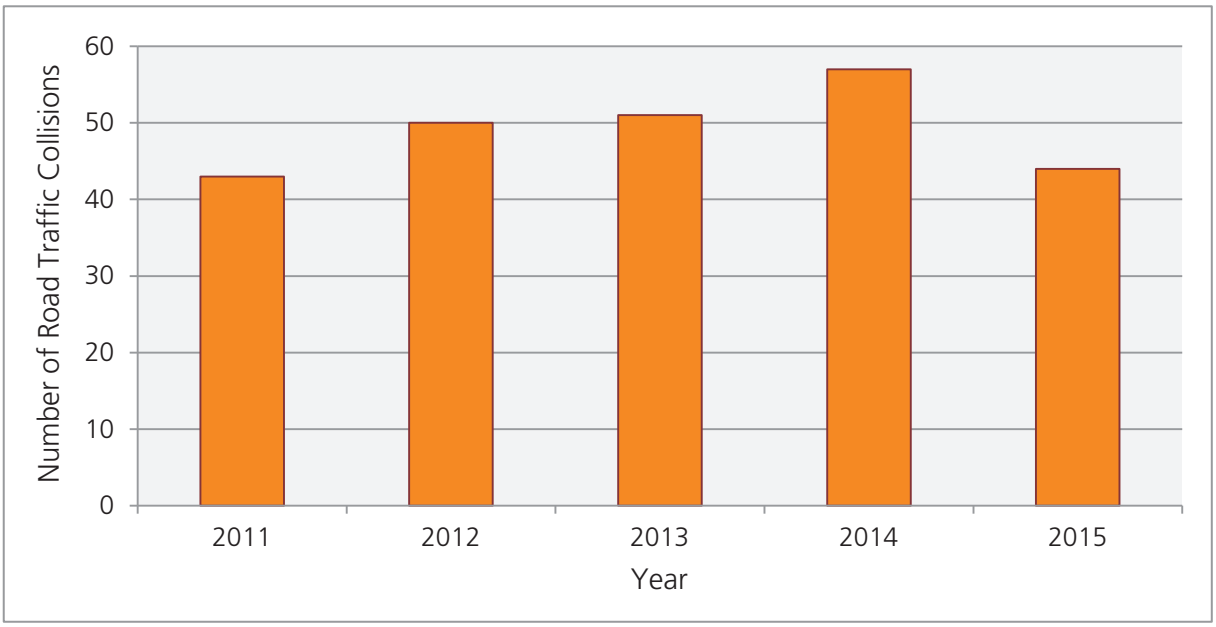

Figure 39 - Road Injury Collisions in Dartmoor National Park (excluding A roads). Source: Devon County Council

[22] The speed below which 85% of vehicles are travelling

Renewable Energy

Renewable energy is an important energy resource for reducing carbon emissions and contributing to climate change adaptation. The uptake in renewable technologies has increased significantly; installed renewable energy capacity increased by 340% between December 2011 and December 2015 (Figure 40). Photovoltaic capacity has increased most significantly and is the most popular type of renewable technology installed (Figure 41).

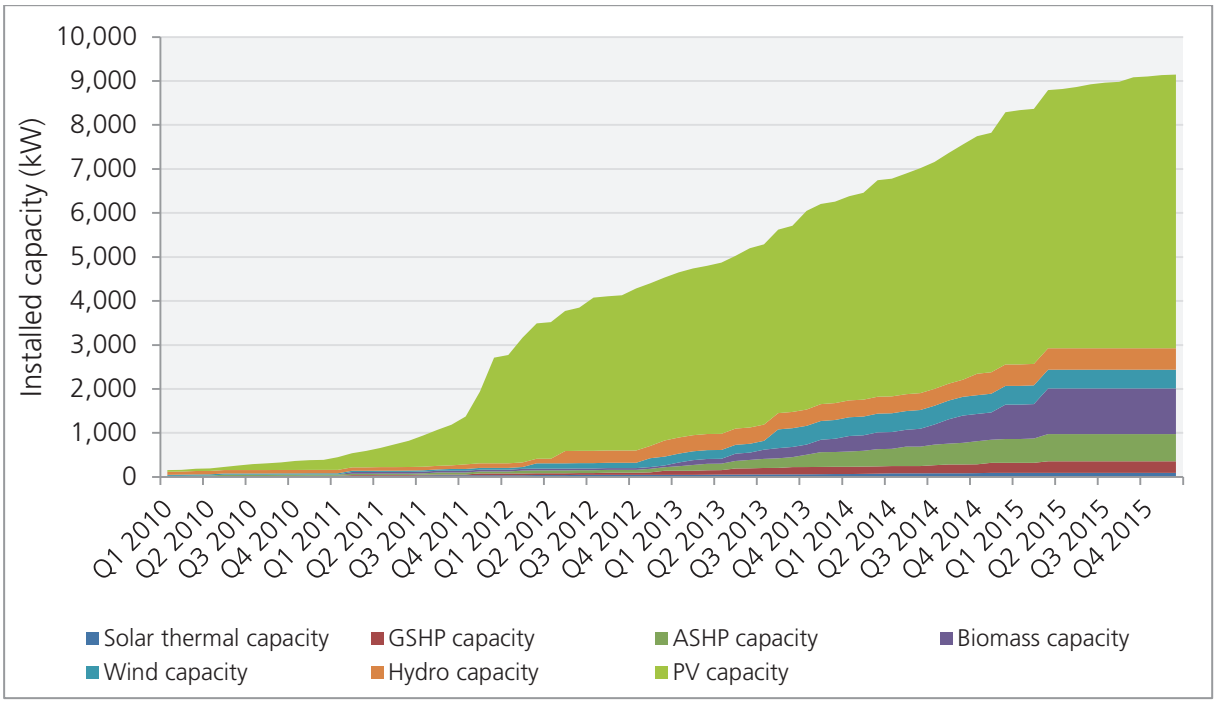

Figure 40 - Growth of renewable energy installed capacity by technology in Dartmoor National Park
Source: RegenSW

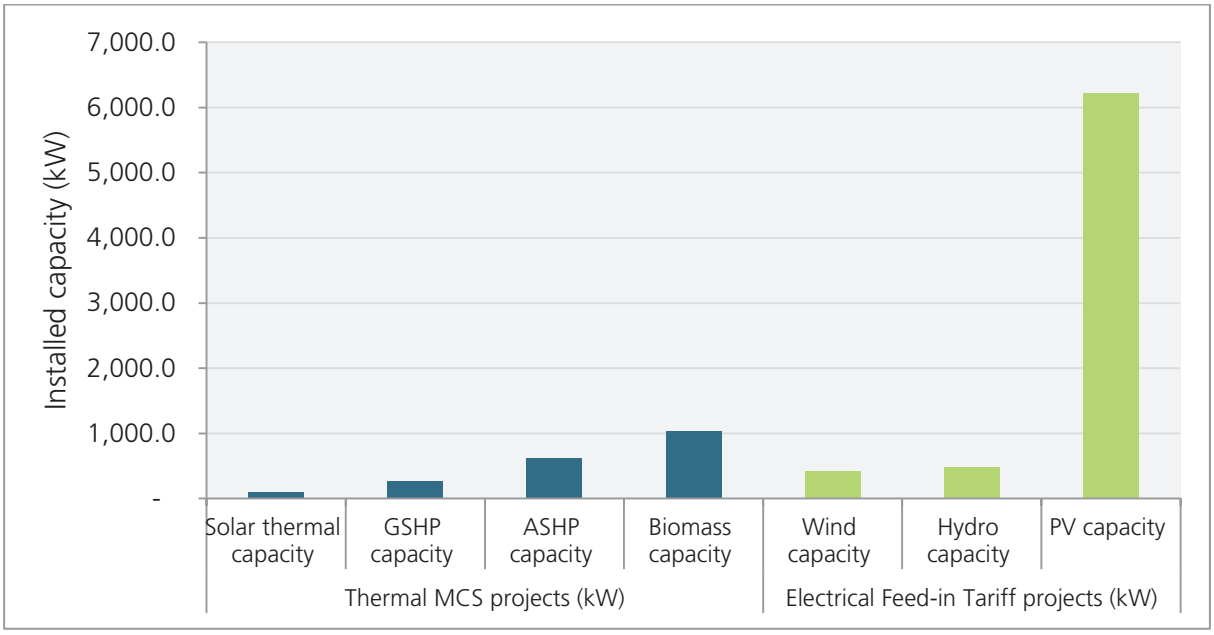

Figure 41 - Installed renewable energy capacity by technology in Dartmoor National Park Source: RegenSW

Cultural Distinctiveness

Dark Night Skies

Dartmoor's dark night skies are an integral part of the tranquillity and the sense of wildness within the National Park. Figure 45 shows light pollution in the National Park and surrounding areas. Dartmoor's dark-sky resource is under increasing threat as artificial lighting becomes more prevalent and sky glow from the rapidly growing urban centres of Exeter and Plymouth increases. Research has demonstrated the effect light pollution can have on wildlife, by interrupting natural behavioural rhythms such as migration, reproduction and feeding[23]. Light pollution can also be attributed to distress in humans, including sleep disturbance[24]. The International Dark-Sky Association (IDA) works to protect dark night skies and designate areas under several categories for their well-preserved dark-sky qualities. Achieving dark-sky status requires a rigorous application process and requires applications to demonstrate robust community support. There is a possibility of the National Park acquiring dark-sky status, but this is subject to resources and is currently being explored.

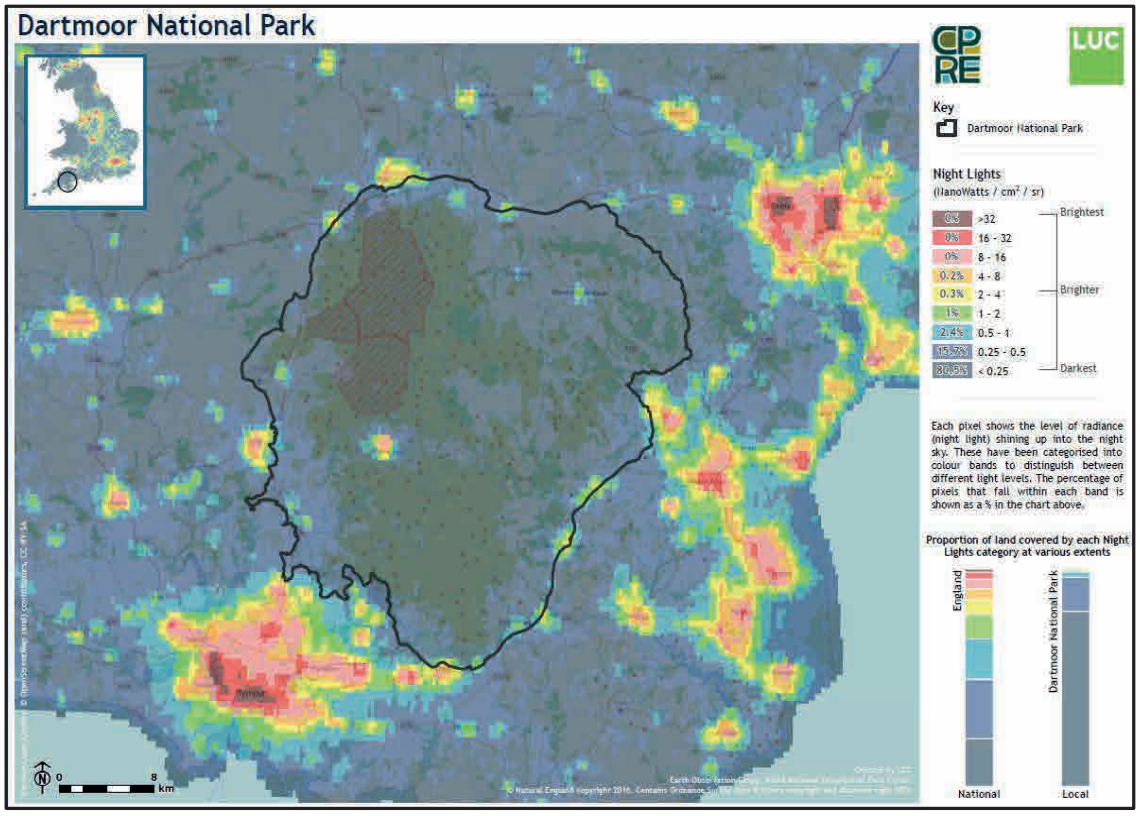

Figure 45 - Light pollution and dark skies in Dartmoor National Park and surrounding areas. Source: CPRE

[23] Royal Commission on Environmental Pollution (2009) 'Artificial Light in the Environment'

[24] CPRE (2010) 'Lighting Nuisance Survey'

Traditional Orchards

Traditional orchards are defined as groups of fruit and nut trees planted on vigorous rootstocks at low densities in permanent grassland; and managed in a low intensity way. Traditional orchards are found across England and are a quintessential component of the historic English landscape. Orchards have traditionally played a significant role in the farming economy, but also play an important role in sustaining landscape quality and cultural distinctiveness. Traditional orchards are becoming increasingly rare due to neglect, agricultural intensification and pressure for development, particularly on the fringes of settlements. A 2008 study conducted by Natural England concluded that since 1950 the overall orchard area in England has declined by 63%[25], with Devon losing 89% over a similar time period.

Figure 46 shows the provisional inventory for traditional orchards produced by Natural England as part of their 2011 Traditional Orchards Project[26]. This provisional survey suggests there may be up to 52.7ha of traditional orchard currently on Dartmoor. The inventory is provisional because in many cases detailed local survey work has not taken place and the presence and quality of orchards has not been confirmed on the ground. Although the number of orchards on Dartmoor has dropped considerably, where they still exist, their contribution to local amenity, biodiversity and cultural heritage is of huge importance.

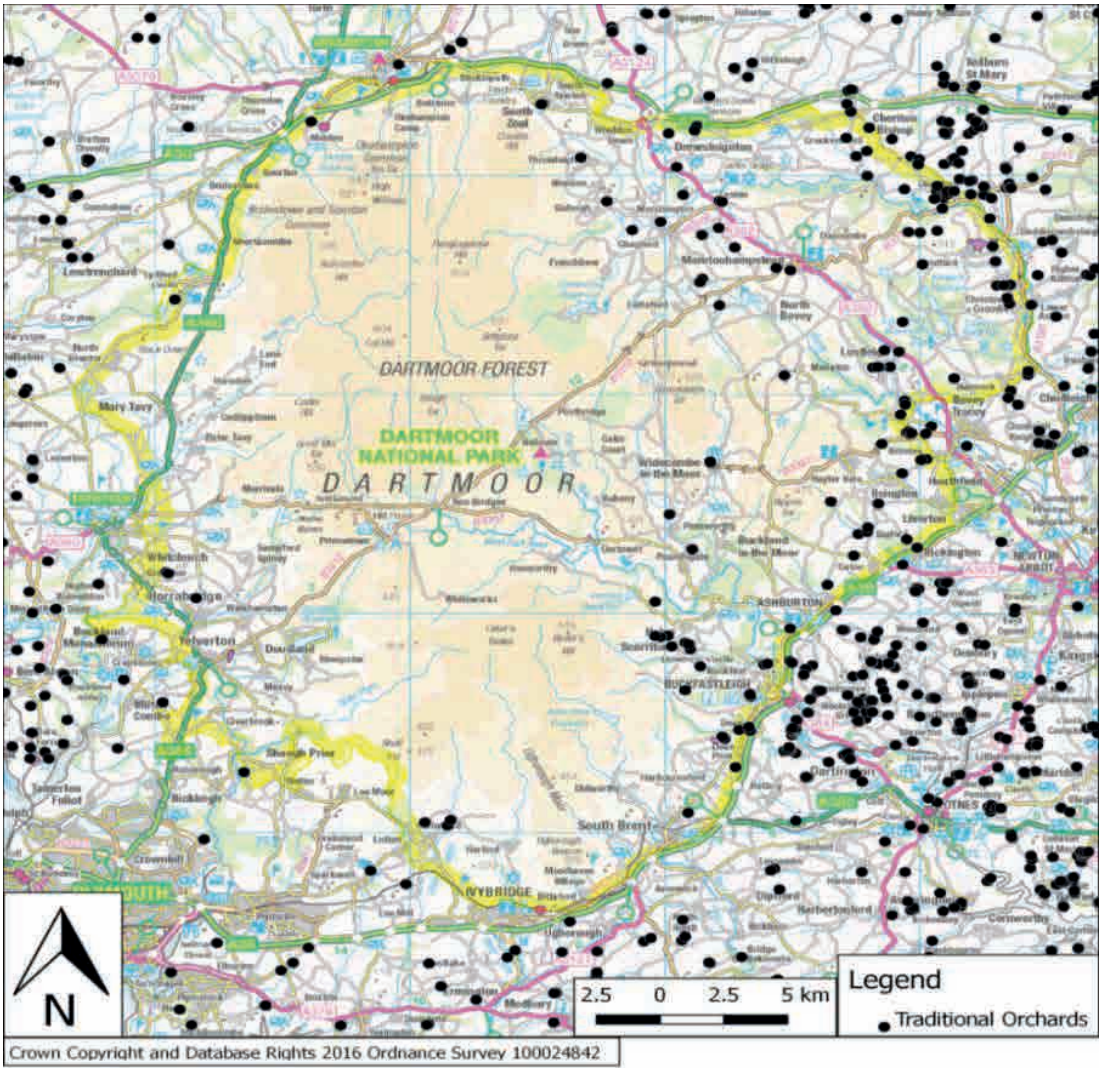

Figure 46 - Provisional inventory of traditional orchards. Source: Natural England

[25] Natural England (2008) 'State of the Natural Environment Report'

[26] Natural England (2011) 'Traditional Orchard Project in England'

ORVal - Valuing Dartmoor National Park

ORVal (Outdoor Recreation Valuation Tool) is a web application developed by the Land, Environment, Economics and Policy Institute (LEEP) at Exeter University with support from DEFRA. The main purpose of the tool is to assist with quantifying the benefits that are associated with outdoor recreation areas in England[27].

The model is estimated from a large national dataset and establishes how visits and values vary according to;

- The size of the greenspace
- Type of land cover
- The proximity to and socio-economic composition of nearby population
- The availability of alternative sites

Here ORVal has been used to explore the number of visits and welfare values associated with the National Park and also for all paths within the National Park (Table 10).

	Estimated annual visits	Estimated annual welfare value
Dartmoor National Park	8,280,996	£32,804,243
Dartmoor National Park paths	6,798,256	£29,932,053

Table 10 - Valuation estimates from ORVal for Dartmoor National Park. Source: ORVal

[27] http://leep.exeter.ac.uk/orval/

Data Sources

Data	Source
Farming and agri-environment	
Farm Business Income and individual streams	Farming Incomes on Dartmoor. Farm Business Survey Results 2005-2015.
Area of UAA in agri-environment	PLMF Data
GVA of agriculture	Farm Incomes on Dartmoor. Farm Business Survey Results 2005-2015.
Climate Change	
Climate Data	Met Office via Devon County Council
Phenology – Pied Flycatcher	PiedFly.net and Natural England
Air quality	
NO_2 concentration	District Authorities
Modelled N Deposition	Air pollution information system http://www.apis.ac.uk/srcl/select-a-site?SiteType=SAC&submit=Next
Habitats	
SSSI Condition	Natural England
Key species	
Plant species (Vigur's eye-bright and Deptford Pink)	DNPA monitoring
Southern Damselfly	Monitoring and Management for the Southern Damselfly on Dartmoor 2016
Marsh Fritillary and High Brown	Butterfly Conservation
Wood Warbler	RSPB/Devon Birds
Dunlin	Dartmoor Mires Report
Ring Ouzel	RSPB
Greater Horseshoe Bat	Vincent Wildlife Trust

Archaeology	
Scheduled monuments	English Heritage/DNPA
Historic built environment	
Listed buildings	English Heritage/DNPA
Water Environment	
WFD Data	Environment Agency
Learning and Education	
Education events/guided walks	DNPA performance indicators
Recreation and Enjoyment	
Recreation events	DNPA event notification data
Promoted walking routes	DNPA GIS
Enabling Access	
% length Prow easy to use	DNPA performance indicators
Monitored car parks/footpaths	DNPA Recreation and Access
Open access land	DNPA GIS
Length of PRoW	DNPA GIS
Erosion sites condition	DNPA
Tourism	
Annual number of tourist visitors	STEAM Report (in park boundary)
Annual number of staying visitors	STEAM Report (in park boundary)
Total visitor spend	STEAM Report (in park boundary)
Community Wellbeing	
Average Dartmoor house price	Land Registry
Total population of DNP	Office for National Statistics Small area population estimates in England and Wales - Office for National Statistics
Population aged 65+	Office for National Statistics Small area population estimates in England and Wales - Office for National Statistics
Life expectancy	Devon County Council
IMD Scores	Devon County Council

Economic Activity	
Employment within the NP	ONS (2013) UK Business: Activity, Size and Location, 2012 and additional analysis of IDBR data
Self-employed as a % of labour force	Census 2011
Average (mean) gross household income	Defra Rural Statistics Unit (2010) National Parks: economic comparison
Turnover	ONS (2013) UK Business: Activity, Size and Location, 2012 and additional analysis of IDBR data
Military Training	
Military data	MoD/DIO
Traffic and Transport	
Haytor Hoppa	Country Bus Devon
Road injury collisions	Devon County Council
85th percentile speed	DNPA Speed Visors
Renewable Energy	
Growth/installed capacity	Devon County Council
Planning and New Development	
Proportion of dwellings granted permission that are affordable	DNPA Forward Planning
Total number of new dwellings completed (net)	DNPA Forward Planning
% of planning applications granted annually	DNPA Forward Planning
Cultural Distinctiveness	
Light Pollution Dartmoor National Park	CPRE
Area of Traditional Orchard	Natural England