Dartmoor National Park Management Plan Review

Understanding and Enjoyment Evidence Paper

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1. Introduction

This is one of six Review Papers which have been prepared to provide evidence for the Dartmoor National Park Management Plan Review, leading to the publication of the 2019-2024 Management Plan. The aim of the review paper is to inform participants attending the Understanding and Enjoyment workshop on November 15th 2018.

Sections 2 – 4 of the paper focus on how and why people use Dartmoor. Data shown in this section includes trends in visitor numbers and modelled future trends to help inform the discussion.

Section 5 highlights key costs associated with an increase in visitor numbers

Sections 6 and 7 discuss the health and wellbeing and educational benefits of visiting Dartmoor.

This Evidence Paper has been written and prepared by Jennifer Manning and is based on data collected within the State of the Park Report, other evidence base documents, a literature review and discussions with DNPA staff and other experts.

The Evidence Paper has been updated following the Understanding and Enjoyment Dartmoor Debate with the local community, stakeholders and partner organisations.

Policy drivers and context

Current government polices focus on delivering access to greenspaces and connecting people with the natural environment, with particular emphasis on young people. The Governments 25 Year Environment Plan sets out a vision to connect people with the environment to improve health and wellbeing. Plans for the vision include;

- Helping people improve their health and wellbeing by using green spaces
- Encouraging children to be close to nature in and out of school¹

DEFRA's 8 Point Plan for National Parks also sets out ambitions to put National Parks at the heart of the way we think about the environment and how we manage it for future generations. Points within the plan are expected to be delivered through the 25 year environment plan and include;

- Connecting young people with nature
- National Parks driving growth in international tourism
- Everyone's National Parks
- Health and wellbeing in National Parks²

¹ HM Government. A green Future: Our 25 Year Plan to Improve to the Environment. <u>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf</u>

The new Agriculture Bill details how farmers will be paid to deliver public goods, which includes financial support for public access to land and contributing to the public's understanding and enjoyment of nature. The Bill set outs to help deliver promises outlined in the 25 Year Environment Plan³.

2. Trends in visitor numbers and recreation activities

2.1. Visitor Numbers

Dartmoor National Park attracts millions of visitors every year. Figures from STEAM⁴ (a tourism economic impact modelling process) suggest that the number of visitors has remained relatively steady since 2009 with some small fluctuations. Visitor numbers fell between 2011 and 2013, and have since increased from 2.14 million visits in 2013 to 2.47 million in 2017. The increasing trend over the last four years has been attributed to two key factors, firstly the general rise in 'staycations' and secondly fluctuations in the exchange rate which has benefited visitors from Europe when coming to the UK and for UK residents to stay at home rather than go abroad. STEAM annual visitor figures are made up of visits of 4 hours or more and overnight stays, shorter visits such as dog walking, are not included within these figures (Figure 1).



Figure 1. Annual visitor numbers. STEAM

Tourism and visitors play an important role in Dartmoor's economy. Whilst visitor numbers have seen small fluctuations in recent years, tourism spending has been increasing annually, supporting many businesses across Dartmoor (Figure 2). The increase in visitor spend can be linked to recorded increases in the number of visitors staying on Dartmoor.

https://www.gov.uk/government/publications/national-parks-8-point-plan-for-england-2016-to-2020 ³ HMGovernment. Health and Harmony: the future for food, farming and the environment in a Green Brexit. https://www.gov.uk/government/publications/the-future-for-food-farming-and-the-environment-policystatement-2018/health-and-harmony-the-future-for-food-farming-and-the-environment-in-a-green-brexit-policy-

² DEFRA (2016). National Parks: 8 point plan for England (2016 to 2020)

statement ⁴ Global Tourism Solutions. STEAM Final Trend Report for 2009-2017. Dartmoor National Park. In Park Boundary



2.2. Recreation Activities

Public Rights of Way (PROW) and Access Land

Visitors to the National Park have access to 47,000 hectares of unenclosed common land and open country (49% of the National Park) and 730km of public rights of way (footpaths, bridleways and byways) as well as other paths and tracks where landowners allow access.

Types of activities

Results from the 2017 Dartmoor National Park Visitor Survey found that physical activity is one of the main reasons for visiting Dartmoor (26% of visits)⁵, emerging research undertaken by The South West Partnership for Environmental and Economic Prosperity (SWEEP) shows that 81% of visitors come to Dartmoor for roaming recreation (e.g. walking, riding, bike riding). The remaining 19% visit Dartmoor for activity-focused recreation or other non-specified activities. Other non-specified activities might include, visiting an attraction, festivals, exhibitions, shows and specifically targeted events. The most popular recreation activities undertaken on Dartmoor are walking and running (78%) Table 1⁶,⁷. Results from the 1994 Visitors to National Park Survey found walking to be the most popular reason for taking a day visit to Dartmoor (52%)⁸.

The study also compared the number of people walking and running with and without a dog, of the 78% of visitors walking and running on Dartmoor, 44% are doing so without a dog. These findings are consistent with those of a MENE report (Monitoring of Engagement with the Natural Environment) comparing recreation activity on commons with the national average; the report shows that walking without a dog is more popular activity on commons (39%) than the national average (27%). Other activities that are more popular on commons compared the national average include off road cycling, running and playing with children⁹. Cycling UK's Off-Road Report 2017 provides an insight into off-road cycling, findings show that 4/5ths of respondents ride on footpaths or undesignated trails, with 65% doing so

⁵ Dartmoor National Park Visitor Survey 2017

⁶ SWEEP (2018) Population futures and Dartmoor National Park. Implications of development around the outskirts of Dartmoor for recreational use and management of access. <u>https://sweep.ac.uk/population-futures/</u> ⁷ Using Monitor of Engagement with the Natural Environment (MENE) data

⁸ Countryside Commission (1996). *Visitors to National Parks. Summary of the 1994 findings.*

⁹ Recreational Activities on Commons – findings from Natural England's Monitor of Engagement with the Natural Environment. Pippa Langford.

because of lack of choice and 52% to avoid traffic and danger¹⁰. Whilst data is not recorded for recreation activities across Dartmoor, anecdotal evidence from recreation users suggests that some activities may be under represented, with further understanding of local use required.

Activity	Dartmoor	Exmoor	Lake District	North York Moors	Northum- berland	Peak District	South Downs	Yorkshire Dales	All Upland Parks
Roaming Recreation									
Walking & running	78.0%	73.2%	79.4%	81.2%	21.4%	72.6%	83.0%	78.7%	76.5%
no dog	44.4%	44.7%	62.0%	48.5%	16.7%	54.4%	47.4%	65.3%	51.9%
with dog	33.6%	28.5%	19.2%	32.6%	47.6%	15.8%	35.5%	13.7%	25.4%
Horse riding	1.4%	0.8%	0.2%	1.2%	7.1%	1.4%	0.1%		0.9%
Off-road biking	1.1%	3.3%	3.3%	4.1%	17.9%	3.5%			2.7%
Boating & kayaking	0.7%	1.6%	2.2%	0.2%	2.4%	0.5%			0.7%
Leisure Activity Recreation									
Food & play	5.1%	4.1%	3.5%	2.9%	26.2%	9.5%	0.9%		4.7%
Visit an attraction	4.0%	5.7%	3.3%	2.5%	1.2%	7.1%	6.0%	8.2%	5.1%
Fishing	2.2%	0.8%	0.8%	1.4%	4.8%				0.7%
Shooting	1.8%	5.7%	2.9%	2.9%	2.4%	3.4%	4.1%	2.7%	3.3%
Watch wildlife	0.4%	1.6%	0.2%	1.0%	15.5%	1.8%	0.6%		1.3%
Other	5.4%	3.3%	4.1%	2.7%	1.2%	2.5%	5.2%	10.4%	4.2%
Obs in MENE	277	123	510	487	84	733	782	183	3,179

Table 1. Activities during visits to upland National Parks in England (from MENE 2009-2016)

Large scale recreation

Data from the Authority's organised events database shows that the number of large scale recreation events (50 participants or more) taking place within the National Park has decreased since 2013. Following a steady increase; numbers fell from 75 in 2013 to 60 in 2017. The number of participants, however, has been increasing since 2009, rising from 15,195 to 19,390 in 2017 (Figure 3). The data suggests that whilst there might be fewer events, these events are growing in size, with an increasing number of people wanting to take part in organised recreation events. This data is taken from the DNPA Event Notification System and therefore only includes events notified to DNPA. It provides an overall picture, however, the overall number is likely to be higher.



Figure 3. DNPA event notifications and number of participants.

¹⁰ Allen C (2017) Rides of Way: Cycling UK's Off-Road Report 2017, pub Cycling UK, Guildford

Further analysis of the recreation events data provides an understanding of trends in the types of activities that people are taking part in. In the past, large scale walking events were the most common form of event notified to the National Park, however, there is now a trend for fewer walking events and more running events (Figure 4), this trend suggests that people want to take part in more challenging and physically demanding events. Additional research shows that millions of people are already using the outdoors for exercise, figures show that 8.9million people are currently active outdoors and of these 2.8million want to do more. 18.2million people that are not currently active outdoors want to reengage and participate in the next 12months¹¹.



Figure 4. No. of event notifications by event type

2.3. Future trends

Future population projections suggest that the overall population in the region will increase by 13% over the 25 years between 2014 and 2039 (for the eight Local Authority Areas surrounding the National Park), rising from around 1 million people in mid-2014 to 1.1 million in mid-2039. Research undertaken by SWEEP for DNPA estimates that Dartmoor currently receives around 7.8million day visits annually, with the majority of these visits (92%) coming from the 8 neighbouring Local Authority areas. The figures predict that the estimated population growth will lead to 870,000 additional visits a year, an increase of 12%¹². Findings from the Seventh year MENE Report also point towards likely increases in the number of visitors and recreation activities within the National Park. The results show that the proportion of the population who claim to visit the natural environment at least once a week or more has significantly increased, rising from 54% in year one to 58% in year seven¹³

¹¹ Sport England and OIA (2015:3) Getting Active Outdoors

¹² SWEEP (2018) Population futures and Dartmoor National Park. Implications of development around the

outskirts of Dartmoor for recreational use and management of access. <u>https://sweep.ac.uk/population-futures/</u>
¹³ Natural England (2017) *MENE Headline report from the 2015-16 survey*

Note: Visitor and population trends from SWEEP are estimated figures based on modelling likely demand for recreation on Dartmoor. The model does, however, suggest that the amount of visits to Dartmoor is higher than other models used by DNPA, particularly the STEAM data. The difference between the two figures arises from how they are each calculated - the ORVal model only considers day visits and predicts the recreational behaviour of adults in England based on various factors such as socio-economic characteristics and the types of greenspaces available. The STEAM model uses local supply data including tourism industry stock such as beds, attractions and facilities. The STEAM data only measures stays of over 4 hours and includes staying visitors as well as day visitors. The higher levels of recreation predicted by the ORVal model would support data from people-counters at various locations around Dartmoor, and anecdotal comments that visitor numbers are increasing on the moor and is also consistent with the increase in the number of people participating in large scale recreation events monitored by DNP

3. Recreation strategy and management zones

The 2011-2017 Recreation and Access Strategy includes an Area Recreation Management Plan, this plan maps areas based on the level of recreation use for that area and how the areas will be managed (Appendix 1). Mapped recreation management areas include;

- 1. Areas of heavy recreation use
- 2. Areas for exploration and tranquillity
- 3. Quiet areas
- 4. Areas for opportunity
- 5. Enclosed land with existing public rights of way

These area management zones are likely to have changed since the strategy was produced in 2011; data also suggests that due to more visitors we are likely to see changes in the way that people use Dartmoor. Heat mapping for large scale recreation events has been overlaid against the management zones to demonstrate the current use of different areas across the park (Appendix 2). Belstone and Meldon show high levels of recreation use for events, an area that is currently mapped as an opportunity area. Additionally, parts of the north and south moors that are mapped as areas for exploration and tranquillity are showing signs of high levels of use for recreation events.

Predictions have been made using the ORVal modelling tool¹⁴ to investigate patterns of visitation across the National Park. The modelling showed that a number of high intensity footfall areas already exist, including areas around Haytor, Burrator and Princetown. When adding levels of population growth to the model, substantial increases in footfall are predicted for several locations across the National Park with peak increases of around 25 persons per hour at peak times (Figure 5). The locations attracting the largest increase in visitors are those that are also currently most attractive to visitors¹⁵.

¹⁴ The ORVal model is a statistical recreation demand model that can be used to predict the number of visits that are made by adult residents of England to different outdoor greenspaces. The model uses data collected in the Monitor of Engagement with the Natural Environment (MENE) survey from 2009 to 2016. This provides information on the recreation behaviour of a very large, representative sample of adults (over 16 years of age) resident in England. ORVal adjusts its predictions according to a number of factors, most particularly the socio economic characteristics of people, the day of the week, the month, the attributes of a green space and the availability and quality of alternative green spaces. ¹⁵ SWEEP (2018) *Population futures and Dartmoor National Park. Implications of development around the*

outskirts of Dartmoor for recreational use and management of access. https://sweep.ac.uk/population-futures/



Figure 5. Predicted increases in peak hourly footfall across Dartmoor from 2019-2039

4. Motivations and Behaviours

4.1. Motivations for visiting Dartmoor

Results from the 2017 visitor survey indicate that there are two main reasons for visiting Dartmoor;

- 1. General sightseeing (36%)
- 2. Physical activity (26%)

Findings from the Recreation Activities on Commons Report¹⁶ support the results from visitor survey. The three main motivations for visiting commons were for health and exercise, for fresh air or to enjoy pleasant weather and to relax and unwind. The motivations for visiting are in line with the findings of the MENE seventh year report, as discussed in section 1, where visiting the outdoors for health and exercise is showing an upwards trend and continues to be one of the more frequently cited motivations for visiting the outdoors. For comparison, results from the Visitors to National Parks Survey suggest that in 1994 visiting for scenery and landscape was one of the main motivators for visiting National Parks, being referred to by 58% of respondents for all English and Welsh National Parks and specifically for Dartmoor by 65% of respondents. National Park wide, only 16% of respondents were visiting to undertake a specific outdoor activity¹⁷.

Results from the 2017 visitor survey also suggest that the National Park attracts more 'older' visitors than 'younger' visitors, with over 87% of visitors aged 35 or over. Younger adults (16-34) only account for 13% of visitors. Results from Exmoor National Park visitor 2016 visitor

¹⁶ Recreational Activities on Commons – findings from Natural England's Monitor of Engagement with the Natural Environment. Pippa Langford.

¹⁷ Countryside Commission (1996). *Visitors to National Parks. Summary of the 1994 findings.*

survey¹⁸ show similar skewed results towards 'older' visitors, with over 45's accounting for 71% of all visitors in 2016 and younger adults aged between 16 and 44, making up only 16% of visitors.

4.2. Influencing Behaviours

There are a number of key issues that are regularly highlighted across the National Park. Some of these issues are ongoing issues that have been picked up in past awareness campaigns, whilst others are relatively new issues. Key issues include;

- Litter
- Anti-social behaviour
- Speeding
- Drones
- Illegal use of PROW e.g. 4X4 vehicles
- Dogs not under control
- User conflicts

The current Love Moor Life campaign aims to provide visitors with information on simple changes that they can make to help keep Dartmoor a special place. The messages are branded as the Ranger Code and the campaign will be delivered across all communication channels and will replace all current literature, signage and information produced the by the Authority. The key messages are shown in Figure 6.



Figure 6. Key messages included in the Love Moor Life campaign

Results from the 2017 visitor survey show that 43% of visitors do not use any source of information when making a decision to visit the National Park. The internet was the most commonly used source of information (24%) for those who looked for information prior to their visit. The results suggests that nearly half of visitors to the National Park do not look up information or receive key messages prior to their visit, however, these visitors could be local or repeat visitors who do not feel the need to look up information prior to their visit. This

¹⁸ <u>http://www.exmoor-nationalpark.gov.uk/</u><u>data/assets/pdf_file/0017/910700/Exmoor-National-Park-Visitor-Survey-2016.pdf</u>

suggests that there needs to be a focus on providing messages to people who are already within the National Park.

Social media reach

The Authority has a number of different social media accounts; the number of followers for each account has been increasing; the Enjoy Dartmoor Facebook account has over 7,000 followers, DNPA Twitter over 15,000 followers and the Instagram account has nearly 7,000 followers. Social media also plays an important role in influencing visitor's decisions and plays a major role in signposting visitors to specific hotspots, an effect that has recently been highlighted by American National Parks for causing damage to protected areas.

5. Costs of increasing visitor numbers

5.1. Infrastructure

Visitor infrastructure supports and underpins the experience of visitors to the National Park by providing them with ways to access, experience and learn more about the National Park. Increasing visitors can put pressure on infrastructure and the costs of maintaining infrastructure can be high, but, if used correctly, infrastructure can help mitigate visitor impacts and lead to better experiences for visitors.

PROW Network

The condition of the PROW network is monitored twice a year based on a randomly generated 10% sample of the network, a method used by all National Parks to calculate the percentage of PROW that are classed as 'easy to use'. The condition of the network has declined in recent years, falling from 87% in 2009/10 to 79% in 2016/17, however, 2017/18 saw in increase to 88%. The decline in condition of the network is largely a result of paths failing surveys due to the condition of infrastructure e.g. missing signs, broken stiles and surface condition. The ongoing maintenance of the PROW network has been impacted by a decrease in available funding and is likely to be exacerbated by increasing visitor numbers.

Visitor Centres

There are currently three visitor centres within the National Park, at Haytor, Postbridge and Princetown. Results from 2017 visitor survey show that 45% of visitors visited a National Park visitor centre during their visit. Data from people counters shows that the number of people visiting the centres has been increasing over the last five years (Figure 7). The increase in the number of visitors to the centres can be partly linked to the general increase in visitor numbers to Dartmoor but also to greater promotion of the centres, making the centres more attractive to a wider range of visitors and also individual campaigns such as the 2017 Moor Otters Campaign. With the number of visitors to the National Park predicted to increase, additional visitor centres might need to be considered. Areas such as Plymouth and Okehampton are expected to see large population increase; suggestions for sites of a new centre could include Roborough or Okehampton.



Figure 7. Visitor centre visitor numbers (DNPA)

Transport and associated infrastructure

Public transport to and within the National Park is limited and the majority of visitors rely wholly on private cars. Across the UK's National Parks, 93% of visitors travel by car¹⁹. Specifically for Dartmoor this figure is likely to be higher, given the reduction in the number of buses that service the National Park. In 1994, the National Parks Visitor Survey showed that 94% of visitors travelled to Dartmoor in their own private transport²⁰. The predicted increase in visitors to the National Park will result in an increase in cars on the road network; an increase in cars is likely to lead to increased livestock collisions, air pollution, inappropriate parking and congested roads. Additional infrastructure is also likely to be required such as car parking, all adding to maintenance costs. People counter data already shows a steady increase in the number of cars visiting car parks and users on associated footpaths (Figure 8). With an expected increase in visitors there is a need to increase accessibility to the National Park and improve the public transport network, e.g. suggestions have included reopening the railway on NW Dartmoor to create a more significant visitor zone.



Figure 8. Number of cars using Postbridge and Haytor Car parks and number of walkers on the Haytor Footpath (Source: DNPA)

¹⁹ <u>http://www.nationalparks.gov.uk/students/ourchallenges/tourism#howget.</u>

²⁰ Countryside Commission (1996). Visitors to National Parks. Summary of the 1994 findings.

<u>Toilets</u>

An increase in visitors will require additional service infrastructure such as toilets. Consideration will need to be made as to where additional toilets could be placed and who will manage and pay for these.

The location of additional infrastructure such as toilets and car parks will depend on how visitors to the National Park are managed in the future and which areas are likely to see heavier use. Resources for infrastructure are also reducing, with districts often looking to close toilets or other services. Against a backdrop of reduced funding, there is also an increasing need to for charges to be applied for the use of infrastructure to pay for their maintenance and upkeep e.g. the introduction of parking charges by DNPA.

5.2. Species and habitats

Recent research carried out by Exeter University as part of their Recreation Futures report for Dartmoor National Park provides an understanding of the sensitivity of key Dartmoor species to predicted increases in recreation levels. Predicted spatial distribution of activity and intensity of footfall was used to identify areas where key species and recreation are predicted to come into increased conflict. Key species were grouped into three sensitivity categories based on the current status of each species, current recreation levels and predicted future recreation levels (Table 2).

Green: recreation	Orange: recreation impact possible	Red: recreation impact	
impact unlikely	or minor	high or likely	
Blue Ground Beetle	Adder	Cuckoo	
Bog Hoverfly	Hen Harrier	Dartford Warbler	
Fairy Shrimp	High Brown Fritillary	Dipper	
Otter	Marsh Fritillary	Dunlin	
Peregrine Falcon	Narrow-Bordered Bee Hawkmoth	Greater Horseshoe Bat	
Snipe	Pearl-Bordered Fritillary	Nightjar	
	Plants	Raven	
	Salmon	Red Grouse	
	Skylark	Ring Ouzel	
	Southern Damselfly	Whinchat	
		Wood Warbler	

Table 2. Current sensitivity of key Dartmoor species to recreational activities (SWEEP)

The study assesses known hotspot sites for species classified as red and orange for sensitivity. The data suggests that the Cuckoo, Nightjar and Wood Warbler are of relatively high concern, with recreation levels likely to increase across most of their known hotspots. Increased footfall is also expected at important sites for Ring Ouzel, Red Grouse, Greater Horseshoe Bat and Dipper. Four vulnerable wildlife locations were also highlighted where particularly high levels of increased footfall are expected between now and 2039, these

include the areas around Burrator, Dart Valley/Venford Reservoir, Haytor and Warren House/Soussons and Fernworthy²¹.

5.3. Archaeology

A scheduled monument is a legal designation for an archaeological site or historic building/structure that is protected by law. The National Park has 1082 scheduled monument, the highest number of any English National Park and 5.5% of all scheduled monuments in England. 33% of the scheduled monuments are currently classified as 'at risk'. The main threat to scheduled monuments is predominantly bracken and dense gorse, visitor disturbance is also listed as a main threat to scheduled monuments (Figure 9). Spatial distribution mapping of Premier Archaeological Landscapes (PALs), shows expected increases of footfall in these areas. The map (Figure 10) shows that increases in footfall are expected across a range of important archaeology sites and areas of concern show similarity with those identified for species hotspot mapping; the Dart Valley, Haytor and Warren House/Soussons²².



Figure 9. Main threats to Scheduled Monuments (2016). (DNPA)

 ²¹,¹⁸ SWEEP (2018) Population futures and Dartmoor National Park. Implications of development around the outskirts of Dartmoor for recreational use and management of access. <u>https://sweep.ac.uk/population-futures/</u>
 ²² SWEEP (2018) Population futures and Dartmoor National Park. Implications of development around the outskirts of Dartmoor for recreational use and management of access. <u>https://sweep.ac.uk/population-futures/</u>



Figure 10. Increased hourly footfall 2019-39 with the locations of PALs. (SWEEP)

5.4. Erosion

Recreation Pressure

An increase in visitor numbers is likely to lead to increased pressure on the path network across the National Park, current erosion sites are shown in Appendix 3. Walking can lead to increased erosion through damage to vegetation, the churning up of plants and soil and compaction, compaction reduces the soils ability to absorb water and encourages the development of puddles and alters the course of water flow. These impacts are greatly intensified by increases in rainfall; standing water can cause walkers to deviate from the path, resulting in an increase in path width. Heavy rainfall can also lead to gullying, particularly on paths with steep gradients. Baseline monitoring of erosions sites within the National Park were undertaken in 2013, of the 234 sites surveyed 25% are deteriorating (Figure 11).



Figure 11. Condition of surveyed erosion sites (DNPA)

The SWEEP Recreation Futures report predicts that in an increase in visitors to Dartmoor will lead to the trampling of vegetation across wide areas with some more localised erosion of paths particularly on steep sections of paths where use is predicted to rise significantly (Figure 12). Unsurprisingly, this is focused in the more accessible and popular parts of the National Park where current visitor pressures are already known²³.

Climate Change

Dartmoor has experienced significant extreme weather events in recent years; data suggests that the climate on Dartmoor is becoming warmer and wetter with more intense period of rainfall²⁴. Over the last few years, the National Park has experienced significant extreme weather events; in 2014 about 40 Public Rights of Way (PROW) were storm damaged, with a similar level of damage occurring in 2017/18. The county of Devon recorded the highest level of rainfall in the UK during March 2018.

The combination of increased recreational pressure and severe storm events is likely to lead to significant damage to the PROW network in the future, with high levels of erosion, gullying and vegetation loss.



Change in Path Width 2019-39 (m)

(000 - 0.026		0.343 - 0.480
	026 - 0.071		0.480 - 0.661
- 6	071 - 0 142		0.661 - 0.994
	142 - 0 235		0.994 - 1.613
. (.235 - 0.343	•	1.613 - 2.074



Change in Bare Ground 2019-39 (m)

	0.000 - 0.006	0.077 - 0.104
	0.006 - 0.010	0.104 - 0.134
1	0.010 - 0.019	0.134 - 0.171
2	0.019 - 0.055	0.171 - 0.274
	0.035 - 0.054	0.274 - 0.499
	0.054 - 0.0//	

²⁴ Dartmoor National Park Authority (2017) *State of the Park Report.* <u>http://www.yourdartmoor.org/delivering/measuring</u>



Change in Gully Depth 2019-39 (m)

0.000 - 0.001		0.009 - 0.012
0.001 - 0.002		0.012 - 0.017
0.002 - 0.003		0.017 - 0.022
0.002 0.005		0.022 - 0.047
0.006 - 0.009	•	0.047 - 0.062

Figure 12. Predictions of increasing erosion by 2039

6. Health and Wellbeing benefits

A large amount of evidence suggests that green spaces and the natural environment have a positive impact on wellbeing. 73% of people in the UK identify that the environment is important to both personal and national wellbeing²⁵. The Government's 25 year environment plan recognised the importance of the natural environment for health and wellbeing and sets out policies to connect people with the environment to improve health and wellbeing²⁶.

Naturally Healthy Dartmoor

Exmoor and Dartmoor National Park Authority ran two linked 3 year projects that explored the relationships between National Parks and health and wellbeing. The Dartmoor Naturally Healthy Project aimed to explore opportunities and challenges in developing a 'green care; model to support improvement in health and wellbeing. The project provided a weekly programme of activities across Dartmoor based on physical gentle exercise including walking, cycling and forest tai chi as well as creative and 'mindful' activities including are therapy, creative writing and craft work in the natural environment. Whilst participants were positive about the health benefits derived from nature, the top four outcomes included,

https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuringnationalwellbeing/2015-07-01 ²⁶ A Green Future: Our 25 Year Environment Plan 2018. DEFRA

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25year-environment-plan.pdf

²⁵ Office for National Statistics (2015). *Measuring National Well-being – International Comparisons*. Accessed 8/12.17 Available from:

enjoyment, a sense of belonging, learning and relaxation, access issues to green spaces were considered a barrier²⁷.

Research suggests that if people understand how they can access and use a green space. they are more likely to use it. Known barriers include individual perceptions that they are too old, have insufficient time due to conflicting commitments, do not enjoy exercise, are overweight, suffering from ill health, injury or disability. Further concerns may emerge about a lack of suitable facilities, transport, skill availability, confidence, money, fears about safety, the environment or weather conditions²⁸,²⁹.

Volunteering

Research suggests that volunteering can have a positive impact on individual's health and wellbeing, the local environment through pro environmental behaviours and better managed green spaces, and improved social cohesion and resilience among local communities³⁰. A range of volunteering opportunities are available within the National Park, through a number of different organisations, including DNPA and conservation groups. 8,485 Volunteering days were recorded for Dartmoor by DNPA, RSPB, WT, NE, NT, DWT and SWLT in 2017.

7. Building understanding and engagement

7.1. Enhancing understanding

Promoting understanding of the National Park is of key importance and directly relates to the second statutory purpose for National Parks (Environment Act 1995) - 'Promote opportunities for the understanding and enjoyment of the special qualities of National Parks by the public'. With an expected increase in the number of visitors to Dartmoor, providing opportunities to enhance understanding is likely to play an important role in influencing behaviours.

The National Park currently offers a wide range of opportunities to aid visitor understanding and engagement; for example, the Authority offers a Ranger Ralph club for 5 – 12 years and has three visitor centres across Dartmoor. The MoD organises the annual Ten Tors event, of which an important element is to promote understanding of the special qualities of the National Park among participants. There are also a number of education providers who use Dartmoor in a variety of ways. Many opportunities for enhancing and building understanding currently take the form of structured activities. With an increase in visitors and people visiting Dartmoor for day trips or shorter, consideration should be made as to how to enhance understanding as people travel through Dartmoor to increase their understanding of the landscape and culture and to reduce the risk of an increase of key issues previously highlighted e.g. increased information boards, suggested routes, apps and QR codes.

²⁷ Howes, S., Edwards-Jones, A., and Waite, S (2018). Moor Health and Wellbeing. An evaluation of two National Park projects: Dartmoor Natural Healthy and Exmoor Moor to Enjoy. ²⁸ Physical Activity Task Force (2002). Let's Make Scotland Active: A Strategy for Physical Activity – A

Consultation. PATF. Accessed on 08/11/17. Available from:

http://www.scotland.gov/consultations/health/patf2.pdf ²⁹ SWPLF (South West Protected Landscapes) (2007). Use of countryside assets by underrepresented groups in *the South West.* Final Report for the South West Protected Landscapes Forum, March 2007. ³⁰ The Conservation Volunteers (2014) Volunteering Impacts Report

7.2. Engaging with and educating young people

The Governments 8 Point Plan for National Parks set the ambition for National Park Authorities to engage directly with over 60,000 young people per year through school visits by 2017/18, with a further 20,000 experiences to be delivered through other partners involved in education, learning and training³¹. This target has already been met and the target has now been set to double this figure. The Government 25 Year Environment Plan sets out actions to encourage children to be close to nature in and out of schools. The plan includes an action to make 2019 a year of action for the environment with the aim to help children and young people from all backgrounds to engage with nature and improve the environment³².

Natural Connections Demonstration Project

The Natural Connections Demonstration Project intended to support schools and teachers to build learning outside of the classroom in their local natural environment, 125 schools from across the South West that engaged with the project took part in the evaluation. 90% of primary pupils agreed they enjoyed lessons outside a lot or a bit and 92% of schools agreed that learning outdoors had a positive impact on pupil health and wellbeing and 85% also saw a positive impact on their behaviour³³.

Research suggests that just 10% of school children have access to outdoor learning and within a 12 month period across 2016, 12% of children (1.3 million) UK wide did not visit the natural environment³⁴. A wide variety of benefits of outdoor learning have been identified, these include: 35, 36, 37

- Enhanced personal and social communication skills •
- Increased physical health
- Enhanced mental and spiritual health •
- Enhanced sensory and aesthetic awareness •
- The ability to assert personal control and increased sensitivity to one's own wellbeing³⁸

https://www.gov.uk/government/publications/national-parks-8-point-plan-for-england-2016-to-2020 ³² HM Government. A green Future: Our 25 Year Plan to Improve to the Environment. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/498944/mene-childrens-report-<u>years-1-2.pdf</u> ³⁵ HSE 2012. Childrens Play and Leisure – Promoting Balanced Approach

³¹ DEFRA (2016). National Parks: 8 point plan for England (2016 to 2020)

year-environment-plan.pdf ³³ Waite, S., Passy, R., Gilchrist, M., hunt, A. & Blackwell, I. (2016) *Natural Connections Demonstration Project,* 2012-2016: Final Report. Natural England Commissioned Reports, Number215.

³⁴ Hunt, A., Stewart, D., Burt, J. & Dillon, J. (2016). *Monitor of Engagement with the Natural Environment: a pilot* to develop an indicator of visits to the natural environment by children - Results from years 1 and 2 (March 2013 to February 2015). Natural England Commissioned Reports, Number208.

³⁶ Play England 2008. Managing Risk in Play Provision. Implementation Guide.

³⁷ Caroline Fiennes *et al.* (2015). The Existing Evidence Base about the Effectiveness of Outdoor Learning

³⁸ OPENspace Research Centre, (2003). Health, Well-Being and Open Space, Literature Review by Nina Morris



Appendix 1

Appendix 2



Compled by jmanning on 22,6/2018

Scale 1:253,636

Dartmoor National Park Authority

Recreation Zones and Recreation Events



Appendix 3

