Dorset's Environmental Economy

PLACING AN ECONOMIC VALUE ON THE JURASSIC COAST

JURASSIC COAST
DORSET AND EAST DEVON
WORLD HERITAGE SITE

December 2015

This report, by Ash Futures in association with Vallance Economics, was produced on behalf of the Dorset Council and the Jurassic Coast Partnership. It focuses on estimating the economic impact of the Jurassic Coast World Heritage Site on the wider Dorset area.

It is a stand-alone companion document to the broader report on Valuing Dorset's Environmental Economy. Although this report, in itself, provides a detailed analysis of the economic value of the Jurassic Coast, it is better read in the context of the main report.

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INTRODUCTION

This report produced by Ash Futures on behalf of the Dorset Council and the Jurassic Coast Partnership focuses on estimating the economic impact of the Jurassic Coast on the wider Dorset and East Devon area. The Dorset and East Devon coast was designated as a World Heritage Site based on its outstanding geological and coastal characteristics in 2001. It is the only natural World Heritage Site in England. It covers 95 miles of coastline from Old Harry Rocks in Dorset to Orcombe Point in East Devon.

There is a general perception that the Jurassic Coast has been beneficial to the wider area but there has been limited evidence. The difficulty of understanding the impact of the designation is related to the fact that it is spread over a large area, largely accessible along its entire length, and is free and open to the public to use. Therefore capturing use and value is difficult. Given this relative lack of evidence, the Jurassic Coast Partnership wanted to understand the benefits that have been felt by local residents, businesses and visitors.

In support of this report, a number of surveys were developed to understand impact from a primary research perspective. The survey findings form the basis of the subsequent estimates of impact. As with any such approach – especially across dispersed area – there are significant margins of error in the estimates made. This is also heightened by limitations on the resource available to undertake the study. This report is part of a wider analysis on the importance of the Dorset environment, looking at a number of different factors.

However, given the level of survey responses received, there is some confidence that these estimates do ***robustly illustrate*** that the benefits accruing as a consequence of the Jurassic Coast are highly significant. A conservative and pragmatic approach has been adopted which demonstrates that impact.

Ash Futures
November 2015

EXECUTIVE SUMMARY

The headline result from the work undertaken in this report is that we estimate that the Jurassic Coast influences circa £111mn of output in the wider Dorset andEast Devon area on an annual basis.

What cannot be said with certainty is how much of this estimate can be associated with the designation itself i.e. the 'Jurassic Coast WHS', or simply due to the Dorset and East Devon coast. Given the positivity expressed in all of the surveys undertaken to support this work, it is *highly likely* that the existence of the designation itself has helped to increase the scale of benefits to the area but it is difficult to identify the exact role the designation has played. As a result of the extensive survey work, we have reasonable confidence in assigning a significant proportion of the estimated impact to the designation itself.

However, due to the Jurassic Coast and the Dorset AONB 'overlapping' in large parts of Dorset, it is equally important to recognise that it has been difficult to separate the impact of the Dorset AONB from the Jurassic Coast (as part of this overall work we have also undertaken a similar exercise for the Dorset AONB). **Therefore, the estimate of economic impact, or influence, for the two designated areas should not simply be added together.** It is likely that there will be overlap in the estimates. For example, many visitors coming to the area will visit the protected landscape of the AONB, as well as the outstanding coastline of the Jurassic Coast. 'Attributing' visitor expenditure to one or the other designated areas is not possible at an aggregate level given the data which is available. This is a fundamental point to recognise when interpreting the estimates contained in the subsequent analysis.

The surveys highlight the positive view of the impact of the Jurassic Coast designation held by visitors, businesses and residents. It shows that the quality of the Dorset environment, and the Jurassic Coast in particular, is a key influence for people to visit the area. The business survey showed a demonstrable positive impact of the Jurassic Coast on businesses' performance.

The Jurassic Coast team have played an important role in developing a brand which has helped attract more people to the area, and to assist organisations extract value from the designation through leveraging additional funding. The surveys indicate that the majority of businesses feel that the Jurassic Coast significantly helps with wider branding/marketing of the area, and a large proportion of those businesses adopt the brand for their own purposes. Significant public investment has flowed into the area and, although difficult to quantify, much of this is associated with the World Heritage Site and the Jurassic Coast brand.

Finally, the value that residents attach to the Dorset environment – expressed in the surveys as willingness-to-pay and much of it encompassing the Dorset AONB – appears relatively high, certainly greater than the current indirect cost they may currently contribute to its ongoing management. It is clear that residents highly value the contribution the Dorset environment makes to their own well-being. It is also clear that residents continue to value the largely free and open access currently afforded.

GENERAL APPROACH

To estimate the economic activity that relates to the Jurassic Coast, it is appropriate to undertake a number of steps. Each step represents a different approach to estimating the economic activity that relates to the Jurassic Coast and, importantly, each step progressively narrows that relationship between economic activity and the value of the designation itself. The four steps that form the structure of this section are:

- Firstly, we make an estimate of all the economic activity that takes place *within* the defined area of influence of the Jurassic Coast area (see later comment on definition)
- Secondly, following a similar methodology, and also following on from work done in the 'Definitions and Valuations' section in the main report (Dorset's Environmental Economy), we make an estimate of the economic activity in the defined area that relates to our definition (in terms of flows) of the environmental economy
- Thirdly, we then *illustrate* the economic activity (impact) that can be specifically associated with the existence of the assets that sit behind the Jurassic Coast i.e. the outstanding and unique geophysical coastal characteristics
- Finally, we focus on *illustrating* the value of the designation itself, understanding whether the World Heritage Site status has provided specific and additional stimulus over and above what would have been expected anyway.

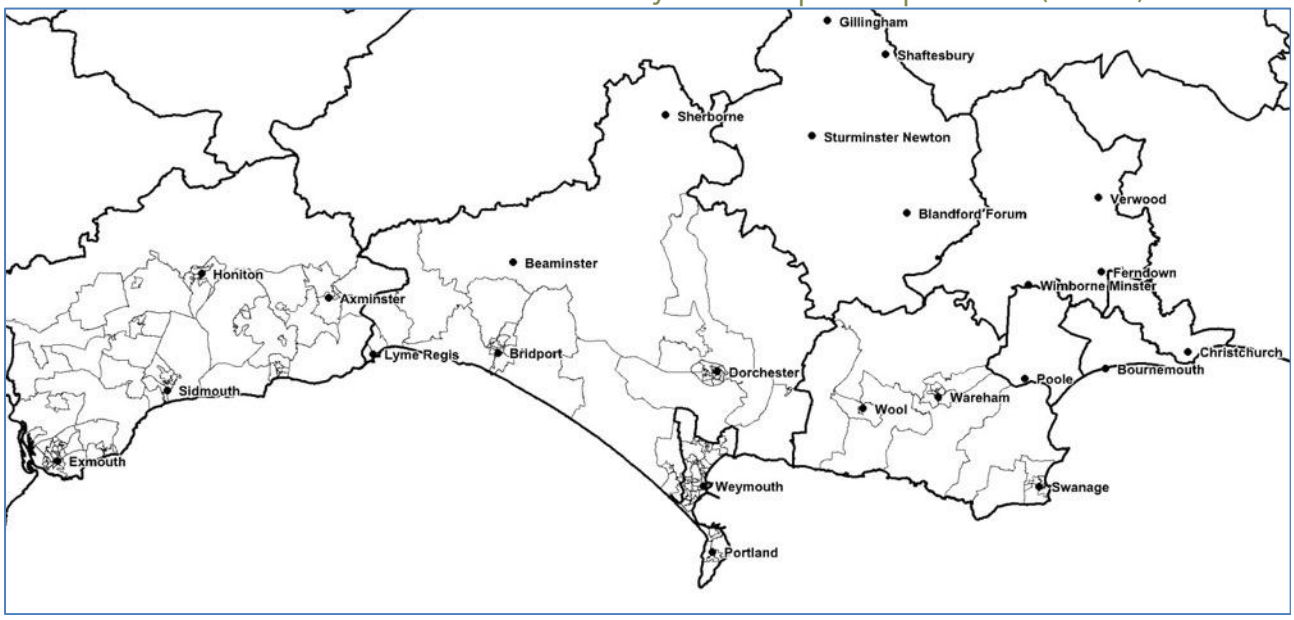
We address each of these steps in turn. Our expectation is that the value of economic activity will decrease with each step; each step effectively representing a sub-set of the previous estimate.

Valuation of all economic activity that takes place within the defined Jurassic Coast area

The first step in our overall approach is to estimate the extent of economic activity that takes place within the defined Jurassic Coast area. It is important to immediately recognise that the 'definition' of the Jurassic Coast presents an interesting issue. Strictly speaking, the protected coast represents an area from mean low water mark to the top of the cliffs and excludes the man-made frontages of the towns along its 95-mile designation. It does not extend inland, and only 10 people are estimated to live in the designated boundary itself.

However, our analysis is based on a geographical scope which the Jurassic Coast team felt best represented the 'area of influence' of the designation. This extends inland and is based on Lower Super Output areas – a geographical statistical block - which allows us to build a data profile. This defined area is set out in the map below.

The Jurassic Coast area of influence as defined by Lower Super Output Areas (LSOAs)



The definition has been supplied to us for the purposes of this work. Whilst the geographical definition extends beyond the area protected/covered by the World Heritage Site status, equally it could be argued that it 'understates' the true area of influence that the Jurassic Coast may have. For example, many visitors influenced by the Jurassic Coast to visit the wider Dorset area are likely to stay outside of this tightly defined geographical boundary.

In terms of our approach to estimating economic activity that takes place within the Jurassic Coast area[1] we use employment share as a proxy. That is, we estimate the number of jobs that are contained within the Jurassic Coast area and then pro rata this against the wider area for which economic output data is available. For the Jurassic Coast this is set against Dorset and East Devon. We then use that proportional employment share to estimate the proportion of total economic output (Gross Value Added) relating to the Jurassic Coast.

[1] From this point onwards we may use the term 'defined area' for the Jurassic Coast, although we recognise that it does not represent the designated area in WHS terms. Equally, we may refer to the Jurassic Coast when it refers to the wider defined area based on the LSOA definition.

There are some important issues that are useful to recognise:

- Effectively this assumes that productivity levels are constant i.e. a job is equally productive in the Jurassic Coast as it is in the wider area. Given that the defined area represents a relatively large proportion of the total wider area (i.e. approximately 50% of East Devon and a large part of Dorset), then it could be argued this is a reasonable assumption. It is probable that productivity levels are higher in the major towns i.e. Dorchester, than in the most rural areas. This will be partly due to sector differences and partly due to scale, connectivity and competition. However, without town-level productivity data being available then assuming that productivity levels are constant across the whole area is a pragmatic position to assume.
- On a related matter, the approach does not account for any sector differences i.e. there may be a higher representation of a highly productive sector that sits outside the Jurassic Coast area. The approach effectively assumes that the Jurassic Coast area has its proportional 'share' of all sectors. Again, the extent of the defined area partially addresses this but we need to recognise there are some highly productive clusters that exist elsewhere i.e. the aerospace/advanced engineering cluster around Christchurch and East Dorset and in parts of East Devon near Exeter. However, making adjustments at a sector-level across small geographical boundaries is a complex exercise – and also introduces further uncertainties – and we again assume a workable approach in the context of the overall report.
- By making a further adjustment to reflect the proportion of land area of the LSOAs within the defined area, we are effectively assuming that employment is equally 'shared' on a geographical basis. Clearly that will not be the case. However, by making this adjustment on an aggregated basis i.e. across all the LSOAs, then it is reasonable to expect the impact of this on an individual LSOA basis may even itself out.

We have accessed data from the Office of National Statistics[2] in relation to job numbers. This data can be accessed at an LSOA level and therefore we have been able to build an employment profile for the Dorset AONB area. To address volatility in the data – given that it is survey based and volatility will increase the lower the geographical entity – we have taken a 5-year average (2009-2014).

To corroborate this 'employment-led' approach, we have also retrieved population data for the defined area and set them in the context of the population of the wider area. They do closely correspond and therefore we have confidence in using employment share as a reasonable proxy for economic activity.

We then make an adjustment for the proportion of land that falls within the defined LSOAs. For the Jurassic Coast the figure is 66%[3]. This is then placed in the context of the estimated economic output of the wider Dorset area. The latest available data relates to 2013.

Following this approach, we estimate that *total economic activity (output)* within the Jurassic Coast area circa £2.86bn (2013 prices). Expressed in current prices the equivalent figure is ***£3.0bn***[4]. This represents our estimate of the *total* value of economic activity that takes place within the defined Jurassic Coast area of influence and should be viewed as the *flow* of economic activity (output) on an *annual* basis. To reiterate, this does not represent the value of the

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[2] Business Register and Employment Survey 2014

[3] We recognise that this adjustment effectively assumes that population is evenly distributed across each LSOA. This will not be the case for some LSOAs but feel the assumption is valid across a wide number of LSOAs.

[4] We have adjusted using national GDP deflators, utilising Q1 2015 figures to estimate a forecast figure for 2015.

designation itself (which we address later). It does show, however, that significant levels of economic activity take place within the area influenced by the Jurassic Coast and it has an important economic role to play.

It is fundamental to note that as part of the overall report we have also undertaken a similar exercise for the Dorset AONB, using the same approach. The two estimates should not simply be added together, given that the two designated areas overlap through a large part of Dorset. There are also areas where the two designated areas do not overlap - the Dorset AONB estimate will contain economic activity inland from those coastal areas, whilst the Jurassic Coast estimate will include activity to the eastern Dorset coastal corridor as well as into East Devon.

This 'overlap' affects many subsequent estimates in this section of the report. However, we attempt to address this issue by looking at those areas where the designated areas overlap and by taking account of the 'overlapped' areas. By doing so, we can make an estimate of the combined impact of the two designated areas and, where appropriate, we highlight this elsewhere in the document. It should be noted however that this exercise has less 'weight' in our approach than understanding the two areas as separate entities.

In employment terms, we estimate that approximately 62,900 people work within the defined Jurassic Coast area. The relatively high employment numbers reflects the major towns located along the coast[5].

In terms of assessing the combined value of economic activity (output) for the Jurassic Coast and Dorset AONB i.e. by excluding those areas where the AONB and Jurassic Coast overlap, we estimate that economic output equates to circa £2.9bn (2013 prices), or £3.0bn in current prices[6]. 63,400 jobs are sustained in the combined area. In effect, the represents the value of economic activity in the Dorset AONB plus those areas of the Jurassic Coast that sit outside the AONB i.e. the eastern Dorset coastal corridor and East Devon. This combined figure represents economic activity in both Dorset and East Devon.

However, if we separate out those areas of the Jurassic Coast within East Devon (as well as those areas in Dorset where the AONB and Jurassic Coast overlap) we estimate that economic activity equates to £2.4bn (2013 prices), or £2.55bn in current prices. To place this into context, ***this broadly represents one-third (32%) of total economic activity within Dorset***. In summary, the combined designated areas represent a significant component of the overall Dorset economy (excluding Bournemouth and Poole). This estimate is broadly comparable to estimates of the economic output in the South Downs National Park[7].

[5] This figure will be an underestimate because the BRES dataset used does not contain self-employment. However, our use of BRES has been driven by the availability of data at a LSOA level. Employment data (including self-employment) is available via the ONS' Annual Population Survey but is not available at an LSOA level – therefore difficult to relate to the designations as defined by LSOAs.

[6] Our approach effectively excludes the area of the Jurassic Coast that lies within the Dorset AONB. Therefore a relatively high proportion of our estimate for the economic activity that lies within the Jurassic Coast is 'excluded'.

[7] 'Valuing England's National Parks' – National Parks England - 2013

Valuation of the environmental economy within the Dorset AONB

The Definitions and Valuations section of the main report contains our estimate of the value of the environmental economy within Dorset, Bournemouth and Poole. By using an employment-share approach specific to our definition of the environmental economy, we can also begin to understand whether there is a greater concentration of that environmental economy in the defined Jurassic Coast area.

To estimate this we have retrieved the number of jobs in those sectors within our definition of the environmental economy – therefore a narrower exercise than the whole economy approach in step 1. Again, we use a 5-year average to address volatility (which is slightly more marked because we are looking at relatively small sectors in some cases)[8].

For the Jurassic Coast, the exercise is complicated by the fact that we have no estimate of the environmental economy within East Devon (which wasn't in the wider remit of this report). We do not hold the source Annual Business Survey (ABS) data to undertake a similar estimate as undertaken in Definitions and Valuations section of the main report. Even if the ABS data were accessible, given that East Devon is a relatively small area it is likely that much of the data at a 3-digit SIC basis will be non-disclosable. Therefore, we have needed to apply a workaround to the limitations in data availability. In effect, we assume that the East Devon economy has the same proportion of its economy defined as the 'environmental economy' as Dorset. Given the lack of data and many similarities between rural Dorset and East Devon, we think this is a reasonable working assumption.

Given these assumptions we make, we estimate that the environmental economy within the defined Jurassic Coast area is worth circa £299mn-£352mn in current (2015) prices. The range represents our narrow and wide definition of the environmental economy applied in Definitions and Valuations section in the main report, and they also include East Devon. It is worth highlighting that this estimate represents the *direct* impact of the environmental economy, and does not include the subsequent *indirect* impact (referring to Definitions and Valuations section in the main report about the scale of that indirect element). Again, it is also worthwhile reiterating the earlier point. These estimates should not be viewed as separate a similar estimate we make for the Dorset AONB, given the geographical overlap between the two areas.

We estimate that between 5,800 & 8,100 jobs are sustained in the environmental economy within the Jurassic Coast defined area. Again, the range represents our narrow and wide definition of the environmental economy.

Again, by accounting for the overlap between the two designated areas, we can also estimate the value of environmental economy within the combined area. We estimate that economic activity relating to the environmental economy in the combined area equates to a range of circa £337mn-£371mn in current prices. In terms of jobs, we estimate that between 6,300 jobs and 8,400 jobs are sustained in the environmental economy in the combined area. These estimates include East Devon.

[8] BRES data can only be accessed as long as the disclosure requirements of the dataset are met. We are able to use BRES data for this work because we aggregate the data in terms of both geography and sector and therefore meet those disclosure requirements.

Valuation of the economic activity influenced by the quality of the environmental assets of Dorset and specifically the Dorset AONB

The difficulty with understanding the economic value of the wider Dorset environment and, specifically, the Jurassic Coast is that they are effectively 'public goods'. That is, they are open and free for anyone to access[9] and understanding the volume and value of use (by residents, visitors and/or businesses) is difficult to capture. Landscape is an archetypal 'public good', delivering services to the public at large through the ecosystems of which it is a constituent part. It is seen as a public good because these services cannot be delivered exclusively to individuals: everybody receives the value, and no-one's enjoyment need reduce someone else's. The absence of any sort of market valuation is a problem for policy formulation (and for economic impact assessments such as this report).

A further complication is that we do not know the 'influence' that those environmental assets have upon people's choices or their economic behaviour. Therefore we have needed to undertake primary research to inform our approach.

To understand the role that the quality of the Dorset environment and the designated areas has on economic activity within the wider area, primary research has been undertaken in the form of surveys. Those surveys have asked respondents to give their views on the importance of the local environment in their decision-making and general well-being. The surveys undertaken were:

- **Visitor survey** – a visitor survey was undertaken focusing on visitor's views of the Jurassic Coast. The survey questioned those who responded on the influence of the environmental assets (coast) on their decision to visit the area, and also interrogated their willingness-to-pay. The surveys were undertaken on a face-to-face basis at a number of sites in each area, the aim being to get a wide profile of visitor types. In total, 146 surveys were completed for the Jurassic Coast. A further 46 surveys were completed for the same exercise for the Dorset AONB and, where appropriate, we combine the findings to ensure a greater level of statistical robustness. The confidence interval associated with the visitor survey responses equates to +/-7% at a 95% confidence level[10].
- **Resident survey** – an online resident survey was undertaken in Dorset focusing on people's views on the importance of the environment on their well-being, decision to live in Dorset and the monetary value they attach to accessing those environmental assets. The survey did not focus specifically on the Jurassic Coast but did ask how frequently they accessed/ enjoyed the different aspects of Dorset's environment. In total, 480 surveys were completed in Dorset and the survey invitation was done on a randomised basis. In addition, there was a further survey undertaken in East Devon that did focus more on resident's opinion on the value of the Jurassic Coast. There were 319 completed surveys in East Devon. Based on an assumption that only one person answered per household[11] and on a combined basis then there is a +/-3.5% confidence interval at a 95% confidence level[12]. We utilise this confidence

[9] Effectively the attributes of public goods being non-excludability (cannot stop someone from benefiting from that good) and non-rivalry (one person's enjoyment does not preclude another's).

[10] This is based on the circa 8mn trips (domestic, overseas and day visits) that we estimate are made in the defined Jurassic Coast/AONB areas.

[11] Those who responded to the survey were asked their postcode location. We have analysed the responses and there are relatively few duplicates – therefore suggesting that only one person answered per household. If more than one person in a household responded to the survey then the numbers are negligible.

[12] Based on 185,000 households in Dorset and 61,200 households in East Devon (2015 estimate - CLG)

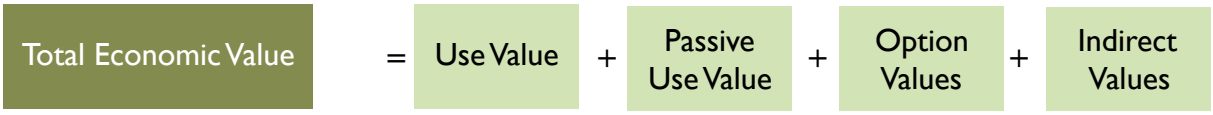
interval in our analysis regarding range of estimates. A map of the residents responses in Dorset are contained in the appendices.

- **Business survey** – an online business survey was undertaken focusing on business's view on the importance of a high quality environment, and each of the designated areas (AONB and Jurassic Coast), on their development/performance. Questions also looked at whether they utilised the branding of the Jurassic Coast in promoting their business, and whether additional visitor numbers had a positive revenue impact. Businesses were also asked about any negative impacts the designation may have had on their business. In total, 155 surveys were completed and the survey invitation was done on a randomised basis. Businesses in both Dorset and East Devon were invited to give their views on the impact of the Jurassic Coast.

The key consistent factor in all of the surveys was an understanding of importance of Dorset's environmental quality in decision-making, and an attempt at understanding the value that people/businesses attach to accessing that environment. Implicit in the responses is that this is value over and above its use value. The principal mechanism for this valuation exercise was willingness-to-pay and, whilst we recognise its limitations, we felt that it was the best approach to understanding the intrinsic value that could be attached to the environment in general, and the Jurassic Coast specifically.

Intrinsic value of Dorset's environment

As discussed previously in this report, the environment has many functions to society, namely production processes, amenity and ecosystem or natural system services. These functions are therefore valuable to society and can be reflected in monetary terms and in non-monetary terms. These functions provide people with utility and can have value. The economic value of an environmental asset can be thought of as the change in utility if the asset is increased or decreased by a given amount. The total economic value of these changes is the sum of all the values and benefits gained.



Where:

Use Values	= the direct use of a resource, either consumptive or non-consumptive
Passive use values	= existence (the resource exists with no actual or planned use) bequest (the resource is available for future generations) and altruistic values (the resource exists to be used by others in the present)
Option values	= the future demand or supply of the resource
Indirect values	= the functional value of the resource

Therefore the values that people attach to the environment have many different strands and encapsulate value above simple use values. The difficulty is that use values tend to be the easiest to measure – albeit far from easy themselves.

Placing a value on all of the above factors is a difficult exercise and has been attempted in numerous previous research studies. These have tended to use different techniques, particularly focusing on the 'use values'. Estimating the 'use value' of access has been primarily done through the application of two main types of economic valuation techniques:

- Stated preference methods – such as the contingent valuation (CV) and choice experiment (CE) methods which use surveys to ask recreational users directly about their willingness to pay (WTP) for access;
- Revealed preference methods – such as the travel cost method – estimate the WTP for visits to the environment by observing the costs (time and travel costs) of users. The assumption is that the cost that people are willing to pay for accessing that environmental asset broadly equates to the benefit/value they attach to environmental asset.

These methods are used to estimate the 'consumer surplus' derived from those visits – i.e. the value of the benefit to the resident/visitor over and above the cost of making that visit. Stated preference methods directly ask recreational users their willingness to pay to visit, while the travel cost method observes the costs incurred by visitors and use this information to construct a demand curve for environmental access, estimating consumer surplus from this. The travel cost method has the advantage that it is based on actual behaviour rather than hypothetical willingness to pay questions. On the other hand, stated preference techniques, because of their hypothetical nature, can be used to capture non-use values (e.g. benefits derived from existence of biodiversity) as well as use values, though care may be needed in interpreting the inter-relationships between these different types of value.

Given the relatively limited resource and scope for this study then it has not been possible to undertake a revealed preference estimate in a robust manner. Our approach has primarily been focused on using the above surveys to understand valuation based on a stated preference technique (willingness-to-pay). It is important to note that given the questions in the survey focus on valuing *access*, then the responses primarily reflect a 'use value'. However, it is possible that responses will also implicitly reflect individuals' views on passive use values i.e. the importance of the environment (of the Jurassic Coast) just being there for the enjoyment of everyone, even if not directly enjoyed by the individual themselves. Analysis of responses from the survey certainly indicates that many people view the Jurassic Coast as a 'public' asset that should be maintained for the enjoyment of everybody.

Values attached to accessing and enjoying the environment will obviously represent an individual's decision and/or circumstance. Factors that will be reflected in any valuation will include site characteristics (e.g. proximity of the site, available facilities and accessibility), socio-economic circumstances and the availability of substitutes. However, by obtaining extensive responses and a wide profile of responses from the surveys we hope that these differences will 'average' out.

Previous relevant research

It is worthwhile briefly highlighting previous studies that have estimated use values through stated preference techniques. There is a wide range of literature available on the subject, although these have been usefully summarised in a relatively recent publication by Natural England[13]. Although there is a significant variation in use values for all types of environmental access, it is possible to identify a range of values for certain activities. For instance, there is general consistency in the literature with regard to woodland/forest recreation values, with evidence suggesting that typical values per visit are likely to fall between £1 and £5.50 per visit (2011 prices). The evidence suggests that per visit recreational use values are potentially higher for coastal sites than for more general visits to the countryside. One study for instance identifies a conservative range of use values for water-based recreation, including recreational visits to the beach, of £11 to £20 per trip (2011 prices).

[13] *'Costs and benefits of public access to the countryside – literature review' – Natural England - 2013*

Case study: HIGHER WISCOMBE FARM

Higher Wiscombe is run by Alistair and Lorna Handyside and provides a series of award winning holiday cottages in East Devon. Each cottage is equipped to give five star gold standard and is located within 3 miles of the Jurassic Coast.

As a tourism business the Jurassic Coast is an extremely important location for attracting visitors to the area and to stay at Higher Wiscombe. It believes that 95% of the people who stay at its cottages access the Jurassic Coast at least once during their stay.

The Jurassic Coast brand is heavily used on its website and through social media and the company believes that it is a brand that is well understood by potential visitors. Higher Wiscombe are interested in the overall experience for the people who stay at their cottages and the fact that they are able to signpost visitors to the whole Jurassic Coast experience has led to a great deal of positive feedback. They believe that the Jurassic Coast increases interest in the coast beyond simply walking to 'discovering'.

The business believes that the World Heritage Site status is an 'accessible' brand and acts as an informal quality mark for those people who may not be aware of what is offered in East Devon and Dorset.

The business provides interpretation material to its visitors which has, in turn, been provided by the Jurassic Coast Trust. Another important part of their business is the referrals it receives as a consequence of being a Jurassic Coast business partner, providing one of the main referral routes for overall enquiries.

Overall, being a tourism company, the Jurassic Coast is an extremely important part of their business. It feels that the Jurassic Coast brand adds to its own marketing approach and helps it access different markets.

The available evidence seems to suggest that visits to the coast tend to involve greater levels of visitor expenditure per trip than visits to the countryside. The vast majority of this spent on food and drink. Therefore it is important to note a fundamental distinction with the primary survey work undertaken for this work. We have asked people the value they attach to accessing the environment, rather than expenditure when they are there. The above figure includes ancillary expenditure (partly explaining the higher figure) and does not solely focus on the use or non-use values.

These estimates can be broadly corroborated against other similar work. For example, a report to UK National Ecosystem Assessment[14] developed and applied a meta-analysis model to estimate the value of visits to a new woodland site in the UK. They estimated a mean WTP of £3.20 per visitor per trip. Therefore our estimate of the WTP through our survey work broadly corresponds to studies undertaken elsewhere (see our WTP analysis of survey responses).

A key part of our analysis is to place these (national) estimates in the context of our survey responses focusing on Dorset. Further valuation work undertaken in 2005 looked specifically at willingness-to-pay for accessing the Jurassic Coast. We include a summary of the findings in Annex A. This work was based on a choice experiment approach and found that on average, people (visitors and residents) were willing to pay £23.69 per household per year (2005 prices) to gain access to the coast with some explanation of the geology, and £62.35 per household per year to gain access with extensive interpretive material (2005 prices). This figure encapsulates both residents and visitors.

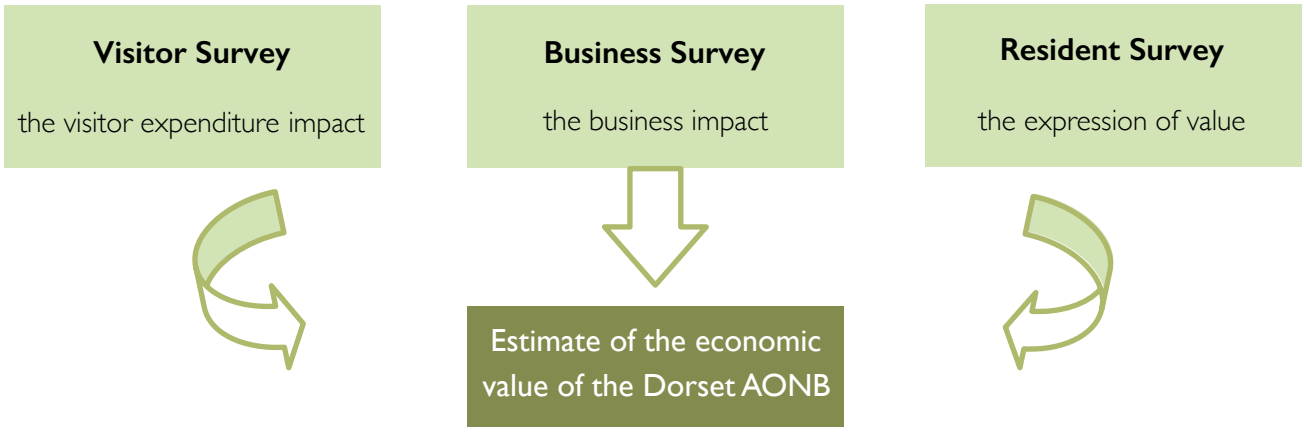
[14] *'Economic analysis for the UK National Ecosystem Assessment: Synthesis and Scenario Valuation of Changes in Ecosystem Services' – Bateman et al - 2013*

Although we recognise that the work is somewhat dated, this research is an important resource for us to compare the responses we have received from the residents and visitors surveys undertaken specifically for this report. This is comparison is detailed in Appendix A. Both surveys have included similar willingness-to-pay questions (although it's important to note that these were not consistent with the choice experiment survey) and our intention is that the outcome of both resources will help us build a 'layered' picture.

A key question in the context of this previous research is how much of the valuation reflects the 'added value' of the designation. The choice experiment approach in this research focused on the provision of interpretation. If it can be argued that the designation – and the activities of the Jurassic Coast team – has specifically increased the provision of interpretative material i.e. through interpretation centres, electronic methods etc. then the added value could be seen as the gap between no interpretative material (or some, as presented in the research) and extensive interpretation. In current prices, this gap was estimated to be approximately £38 per household. This seems a high figure[15] and we investigate this further in the later section focusing on the value of the designation itself.

Approach to estimating value

Our approach to estimating the value attached to the Dorset environment, and specifically to the Dorset AONB, is based on 'triangulating' estimates from the responses we receive though the surveys undertaken. Where appropriate we combine the survey responses with other available data to derive our estimates.



The visitor 'expenditure impact':

This work wanted to understand the impact that the quality of the environmental assets within Dorset (focusing predominantly on its countryside and coast) had upon visitors to the area. To inform this we undertook a visitor survey, as outlined above. As previously stated, we received 146 responses to the survey undertaken in the Jurassic Coast[16].

The majority (85%) of those who responded to the visitor survey were visiting from outside of either Dorset or East Devon, and most (80%) were either on a short break of visiting for a week or longer. The majority were visiting as either a couple or as a family[17]. The type family unit is an

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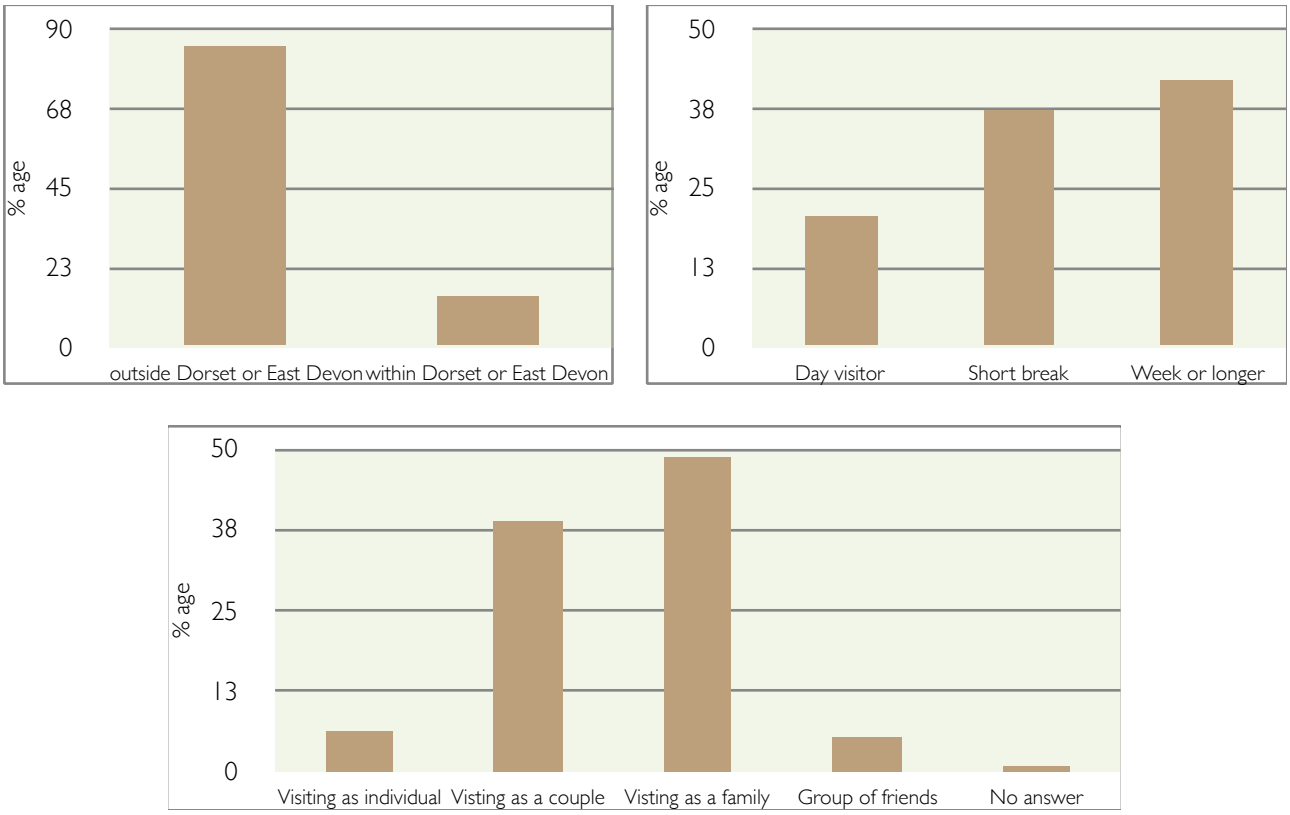
[15] Particularly in the context of the value residents attach to accessing the whole of the Dorset environment – analysed later in this section.

[16] We also received 49 responses specifically looking at the AONB. On occasion these surveys took place in the same location – notably Seatown.

[17] The survey gave them the option of 'visiting as family including children', although some people did respond that they were visiting as a family without children.

important to note. As discussed below, the survey asked people to place a theoretical value on accessing the Jurassic Coast in the absence of free and open entry. It is not clear whether people answered on an individual basis, or in terms of the value of access for the wider family. This has implications for how we view their response.

Charts 1: Dorset AONB visitor survey profile



The three key issues that we wanted to identify in the visitor surveys was:

a) the influence of different aspects of Dorset's environment in attracting people to the area,

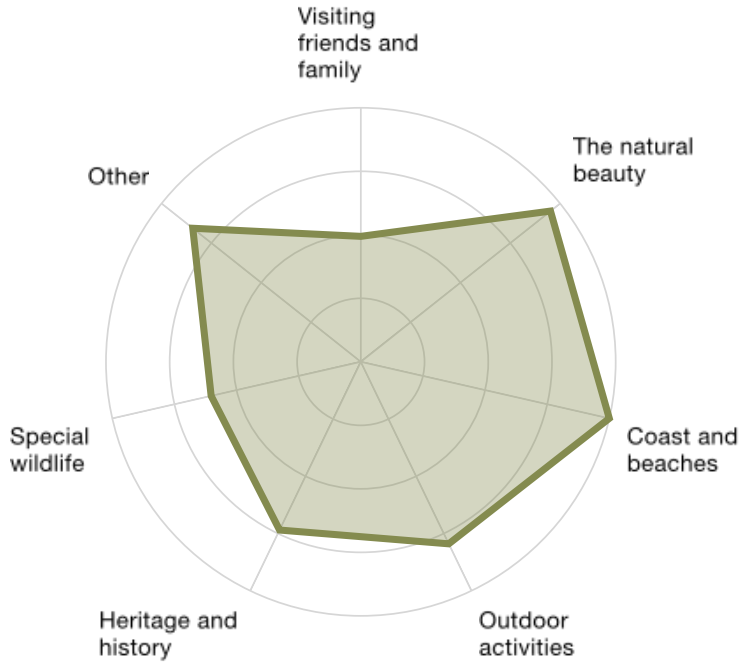
b) the influence of the Jurassic Coast in their decision to visit the area,

c) how much they would theoretically be willing to pay to access the Jurassic Coast in the absence of public support.

a) The influence of different aspects of the Dorset environment in attracting people to the area

In terms of understanding what aspects of the Dorset environment influenced people to visit the area, it is clear from the Jurassic Coast visitor survey (and also the survey undertaken for the Dorset AONB) that the environment is the key factor in attracting people to the area. Visitors were asked to score certain factors on a scale of 0-100 in terms of how important they were in influencing their visit to the area. The chart below shows that the natural environment in general, and the coast and beaches in particular were the primary factors for their visit. The scores on the chart reflect the average response across those who responded to the survey. Immediately we can begin to build a picture of how important the Dorset environment is in attracting people to the area, and that the coast and landscape is also a key determinant in that overall picture.

Chart 2: Factors influencing visitors to visit Dorset and East Devon

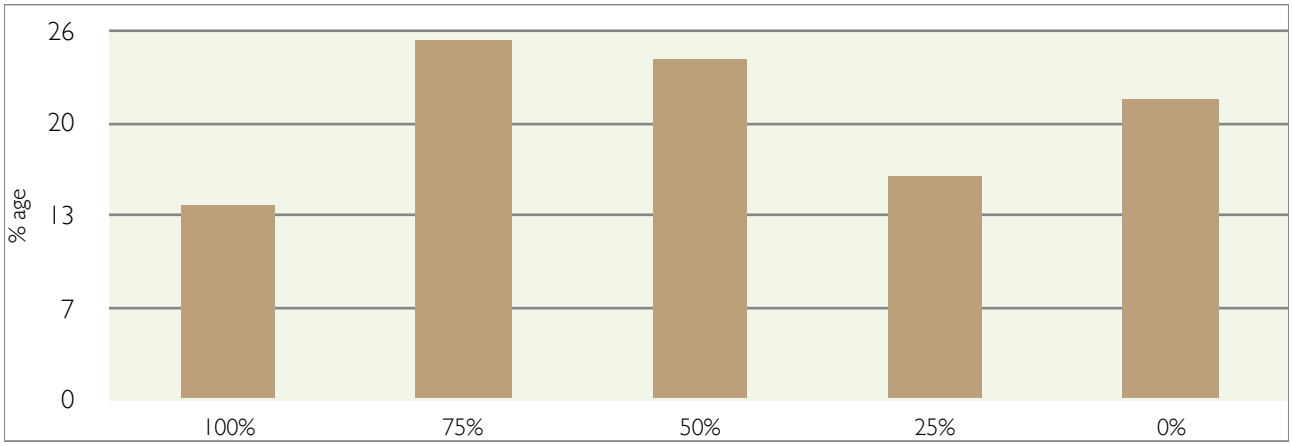


b) The influence of the Jurassic Coast in their decision to visit the area:

It was also important to understand the specific role that visiting the Jurassic Coast may have played in people's decision to visit and holiday in the areas.

Visitors were specifically asked *"How much did your desire to see the Jurassic Coast in particular (rather than Dorset or East Devon in general) influence your choice to visit the area?"* Respondents were given a choice of options between 'wholly influenced (100%)' *to 'did not influence (0%)'.*

Chart 3: The extent of the Dorset AONB influence on visiting the wider area



The chart shows that broadly two-thirds of people stated that visiting the Dorset AONB was partly, greatly, or wholly the reason why they visited the wider area. 21% of people said that it did not play any role in influencing their decision. Over the survey sample, the 'average' response (48% 'influenced') equated to 'partly' playing a role in attracting them to the area. We use this figure in our subsequent analysis.

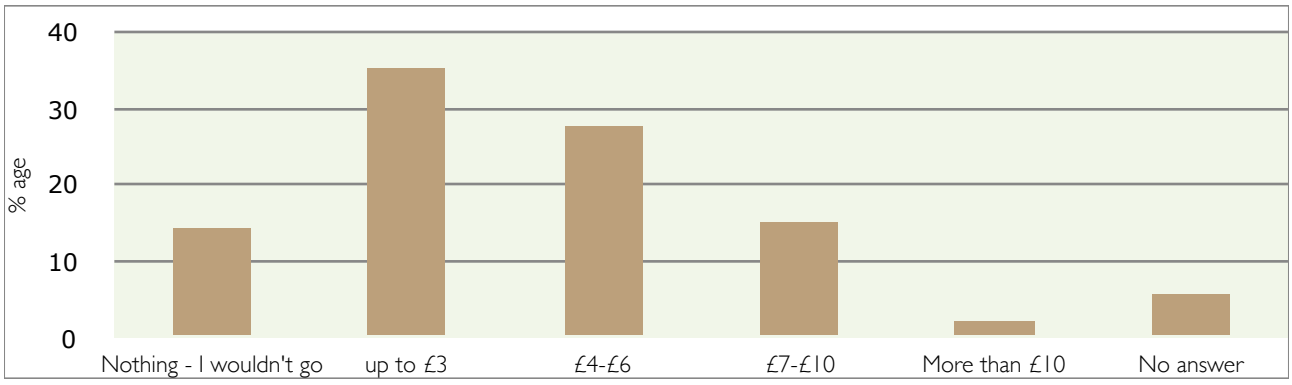
c) Willingness-to-pay to access the Jurassic Coast in the absence of public support.

Visitors were also asked to answer the theoretical question about their willingness-to-pay to visit the Jurassic Coast in the absence of public support. The specific question was *"How much is the Jurassic Coast worth? This is a theoretical question. If you had to pay for access to the coast (including all its aspects – beaches, cliffs, views, fossils etc.) what would be a reasonable price to pay per visit? Or for annual access?* They were given a range of banded options.

The most prevalent answer was that they would be willing-to-pay 'up to £3'. Nearly half (47%) of people said they would be willing to pay more than £4 per visit. 21 people (15%) stated that they would not be prepared to pay anything to access the Jurassic Coast if it were not freely accessible. Again, we are able to calculate the 'average' response, equating to £4.27[18]. We have taken confidence this broadly matches the findings of similar studies taken elsewhere, as previously highlighted.

The WTP findings in terms of annual access need to be treated with some care, not least because those surveyed would have found it difficult to conceptualise how many times they would access the Jurassic Coast. Therefore placing an 'annual' value – when they may not visit Dorset again that year – was a difficult exercise and the results do not exactly correspond to the per visit value i.e. whilst 15% said they would not pay anything on a per visit basis, this increased to 28% for annual access.

Chart 4: Willingness-to-pay for access by visitors to the Jurassic Coast



Estimating the visitor expenditure impact of the Jurassic Coast

The responses to the visitor survey provide us with an *illustrative* basis in terms of understanding the *volume* of visitors and the *value* of their expenditure that has been influenced by the Jurassic Coast. As with most approaches that utilise survey data, we effectively assume that the responses to the visitor survey are representative of the views of a wider population i.e. the whole visitor population within the defined geographical market.

The key survey response that we utilise in our approach is *the extent of influence* the Jurassic Coast has in terms of encouraging people to visit the area (Dorset and East Devon). Our estimate of the average 'influence' is then combined with data that estimates the volume and value of tourism in the area to provide an estimate of the proportion of tourism expenditure that can be claimed to be *influenced* by the attraction of the Jurassic Coast. This is then converted to GVA to be consistent with our measurements contained elsewhere in the report.

[18] *To calculate the average – and because people were given banded options – we attach values to each band. We attach a zero value to those who stated that they would pay nothing, £3 to the 'up to £3' option, £5 (mid-point) for the £4-£6 option, £8.50 (mid-point) for the £7-£10 option, and £15 for the 'more than £10' option. For the latter, we feel this is a pragmatic figure to apply – given that too high a figure would skew the figures.*

There is an important distinction to be made. Our approach effectively identifies the visitor expenditure that is *influenced* by the presence of the Jurassic Coast and people's desire to visit and enjoy it. Whilst it is clear from the visitors survey there was a reasonable proportion of visitors stated that the Jurassic Coast was 'wholly' responsible for visiting the area that view was not consistent. As a consequence, estimating the visitor expenditure *influenced* by the Jurassic Coast is someway short of stating that *all* of that visitor expenditure is *additional* to the area.

Previous work looking at the economic impact of World Heritage Sites across the UK[19] (highlighted in more detail in Annex A argued there was limited evidence in WHS status generating large amounts of additional visitors (indeed, they estimated that on average WHS inscription generated no more than 0-3% additional tourists). Whilst this work was focusing specifically on the impact of the WHS designation itself, and therefore cannot be directly compared to our approach in this section, it does give context to the scale of visitor volume which could be seen as additional Again, this highlights the complexity of separating the impact of the WHS designation itself, from those environmental/cultural/historical attractions that led to the designation in the first place.

The overriding assumption in our approach is that the average level of influence stated by survey respondents directly links through to the proportion of total visitor expenditure in the area surrounding the Jurassic Coast. Clearly, there are limitations in this assumption. Not least because those who were surveyed were visiting locations associated with the Jurassic Coast at the time. Surveying did not take place in locations further afield. Therefore it is likely there will be some 'selection bias' in the survey responses and care is required in interpretation.

To counter this potential bias we base our estimates on a relatively tight geographical focus – those districts where the Jurassic Coast is predominantly located and the specific areas that are within the defined area. We effectively take a proportion of the estimated visitor expenditure in the wider area[20]. By limiting the geographical focus i.e. excluding visitor spend in Bournemouth completely (some of which will have been influenced by the Jurassic Coast) partially negates the bias that will be inherent in the survey responses. It may be that this more than compensates for the potential selection bias.

In a sense, this reinforces our point about the survey probably having a selection bias. Whilst we capture all of the visitor expenditure in Weymouth and Portland, it needs to be recognised that relatively few visitor surveys were completed there. The visitor market is different there than elsewhere (eg Seatown). Therefore extrapolating the findings of the visitor survey onto those areas where a different visitor market exists does introduce further uncertainty. In a similar way, we are capturing the whole visitor expenditure through this approach – including day visitors.

Again, we need to recognise that the visitor survey captured relatively few people who classified themselves as day visitors. It is likely that the level of influence that the Jurassic Coast exerts onto the different market segments (domestic overnight, overseas and day visitor) will differ. By assuming a typical level of Jurassic Coast influence across this spectrum is another area of uncertainty. However, we do take confidence in the fact that the visitor survey undertaken in the Dorset AONB did capture a higher proportion of day visitors and the typical level of influence

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[19] 'The costs and benefits of World Heritage Site Status in the UK' – PricewaterhouseCoopers/Department of Culture, Media & Sport - 2007

[20] We have used visitor expenditure data at a district level as our base data. We then adjust for the proportion of that visitor expenditure that more closely relates to our defined area. To reflect that more visitor activity would be concentrated in more populated areas in each district we have used a hybrid of the proportion of land and population to represent the Jurassic Coast influence

found in the AONB corresponded to the findings in the Jurassic Coast visitor survey. Over the whole visitor survey exercise (encapsulating both the Jurassic Coast and AONB) broadly the same levels of influence and WTP were found, giving more confidence in the survey findings.

However, we have used a pragmatic and workable approach. Fragmenting the Jurassic Coast influence into different geographical locations and types of visitor was just not possible with the surveys numbers obtained. We have managed to gain a workable level of statistical robustness by looking at these factors in an aggregate sense.

The visitor expenditure is taken from data produced on behalf of the Dorset Tourism Partnership, and is based on data from statistics produced by VisitBritain[21] including the International Passenger Survey and the Great Britain Tourism Survey. Visitor expenditure is divided into domestic overnight trips, overseas trips and day visits. The data is available at a district level within Dorset and we have also obtained the same data for East Devon. By accounting for the proportion of that visitor expenditure within, or near, the designated area (i.e. in Weymouth) 100% of visitor expenditure is captured; it then forms the context for understanding the potential visitor expenditure that could have been influenced by the Jurassic Coast. In summary, we focus mostly on visitor expenditure in Purbeck, West Dorset, Weymouth & Portland and East Devon.

Using findings from the visitor survey – in terms of the level of influence that the Jurassic Coast had in encouraging those people to visit (and spend in) the wider Dorset and East Devon area[22] – we are able to estimate the level of total expenditure that is *influenced* by the Jurassic Coast.

Our estimate is that the Jurassic Coast *influences* circa £119mn in current prices. This is expressed as Gross Value Added to be consistent with our measurements elsewhere. Because the number of visitor surveys was relatively small compared to the whole population (estimated number of visitors to the defined area) then the confidence intervals are: +/-7.02% at 95% confidence interval[23]. Using this to inform the uncertainty inherent in this approach gives a range of £111mn to £127mn[24].

Impact on businesses

As part of the overall approach to understanding the economic impact of the Jurassic Coast, it was important to also gain an understanding of businesses' views on the role of the Jurassic Coast on their operations/performance. This was primarily informed by a business survey, as well as a limited set of consultations directly with businesses.

It is an important part of the process of gaining confidence in our overall approach to place our estimates of impact from the business survey against earlier estimates of impact based on visitor expenditure. It is important to note that the impact estimates should not be viewed as separate, many of the businesses who responded to the survey will have benefited from the additional visitor expenditure and, in part, the benefits will already be reflected in the earlier expenditure benefits. The profile of those who responded to the business survey show that the majority

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[21] 'The Economic Impact of Dorset's Visitor Economy 2013' – South West Research Company Ltd – November 2014

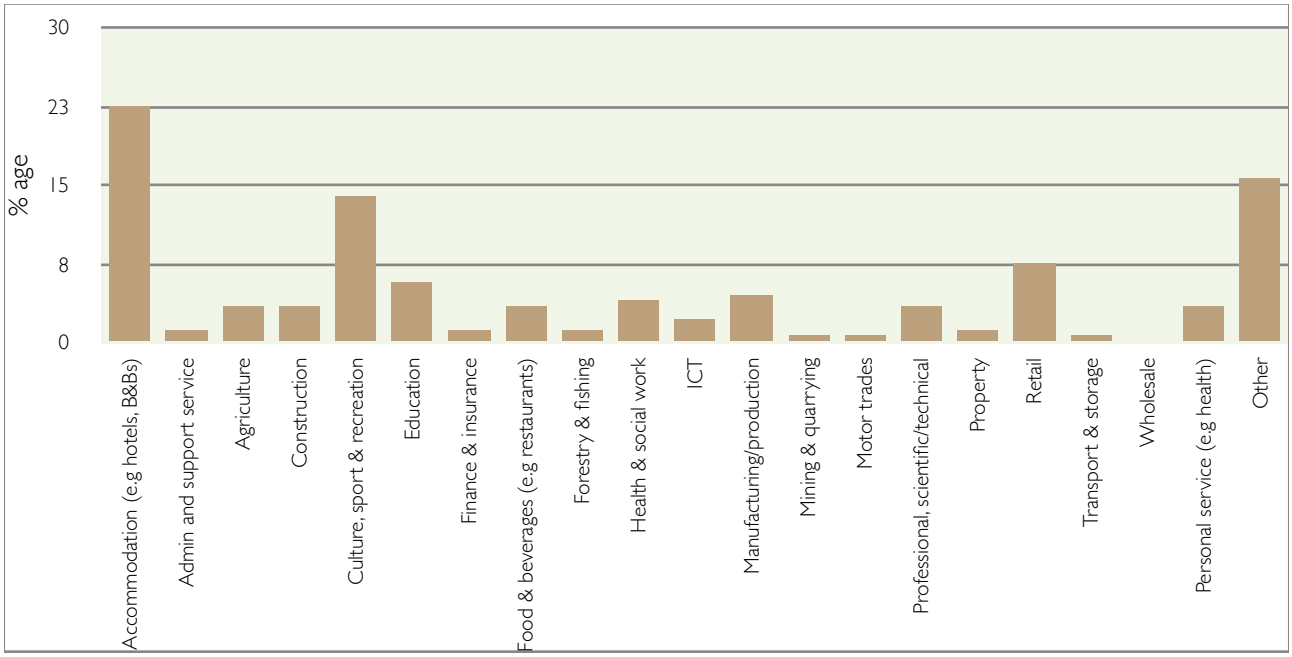
[22] We have not undertaken a separate analysis of the typical influence of the Jurassic Coast for those visitors who answered the survey in East Devon. The numbers from the survey would not have been significant enough for us to form a statistically robust view. Therefore we effectively we assume the typical level of influence is the same in Dorset and East Devon, although recognising there will be localised differences.

[23] The confidence interval is based on the combined findings from the visitor surveys undertaken for both the AONB and Jurassic Coast. Given that the findings broadly match in both surveys then this is a justifiable position to adopt.

[24] We recognise that in reality the confidence interval associated with this estimate will be wider due to the fact that the visitor expenditure information that we use is also a survey-based estimate. Therefore it will also have its 'own' margin of error which isn't reflected in our range.

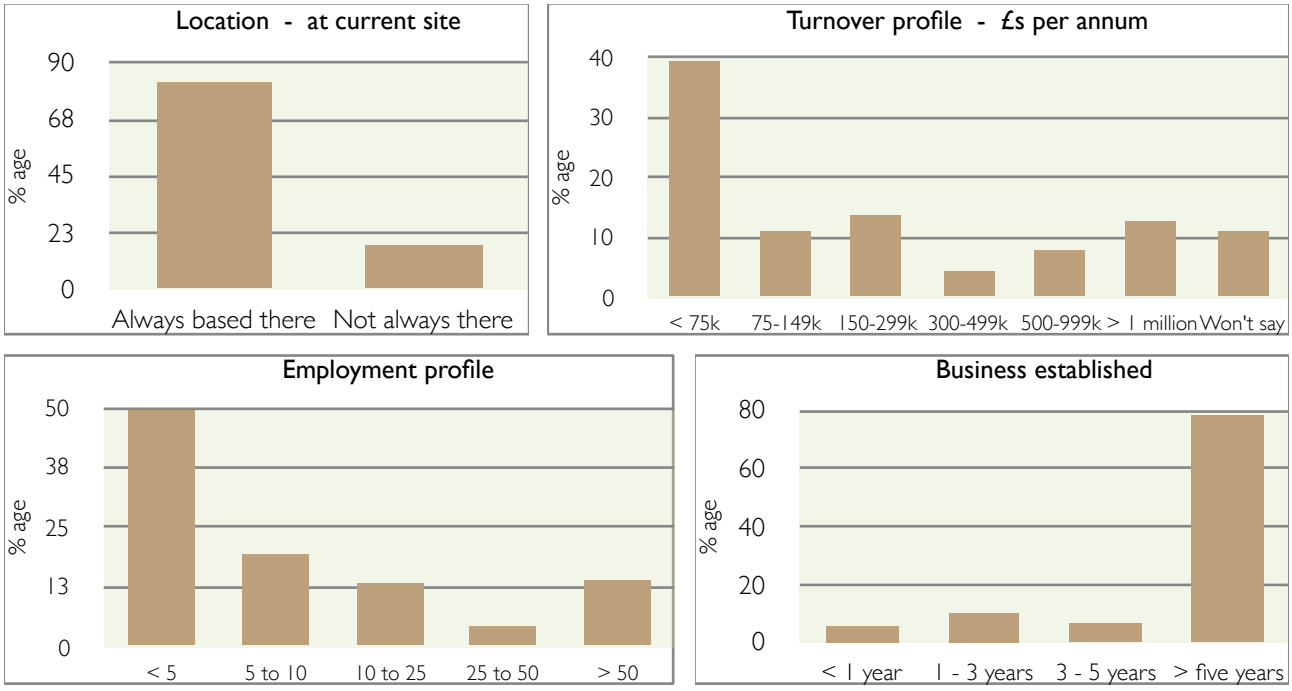
(although certainly not all) are in sectors that are heavily dependent upon visitor expenditure (accommodation, recreation and retail). This may reflect that whilst the survey was randomly sent out to a wide population using a business database, the responses may have some 'selection bias' i.e. those with a vested interest may have responded. Again, it is important to bear that in mind when interpreting the subsequent analysis. The chart below shows the sector breakdown of the businesses who responded to the survey.

Chart 5: Sector profile of respondents to the business survey



The majority of those businesses that responded to the survey were small – reflecting the dominance of SMEs in the local economy – but there was also a reasonable number of responses from those larger businesses (turnover >£1mn and/or more than 50 employees). The majority of businesses had been established for more than 5 years and had always been based at their current site.

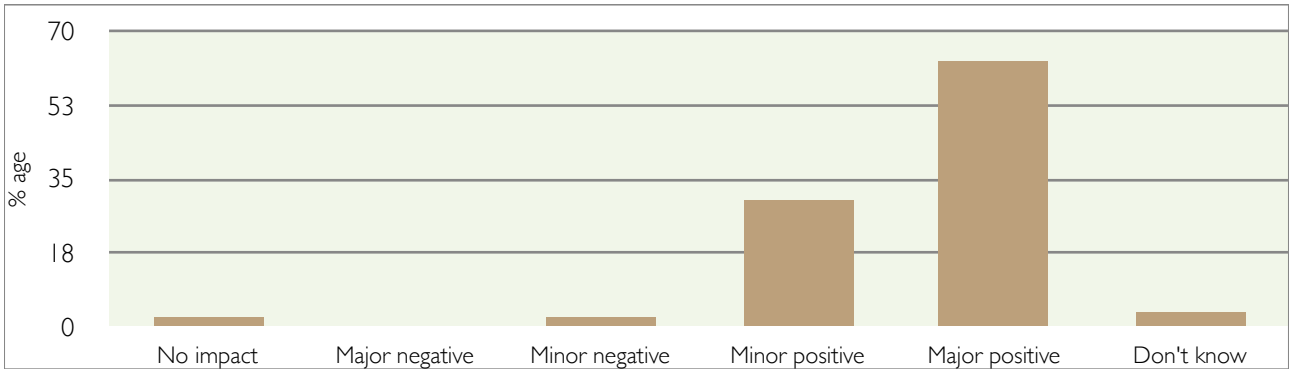
Chart 6: Business survey profile



It is clear that business awareness of the Jurassic Coast is extremely high. All of the businesses that responded to the survey (155) were aware of the Jurassic Coast designation.

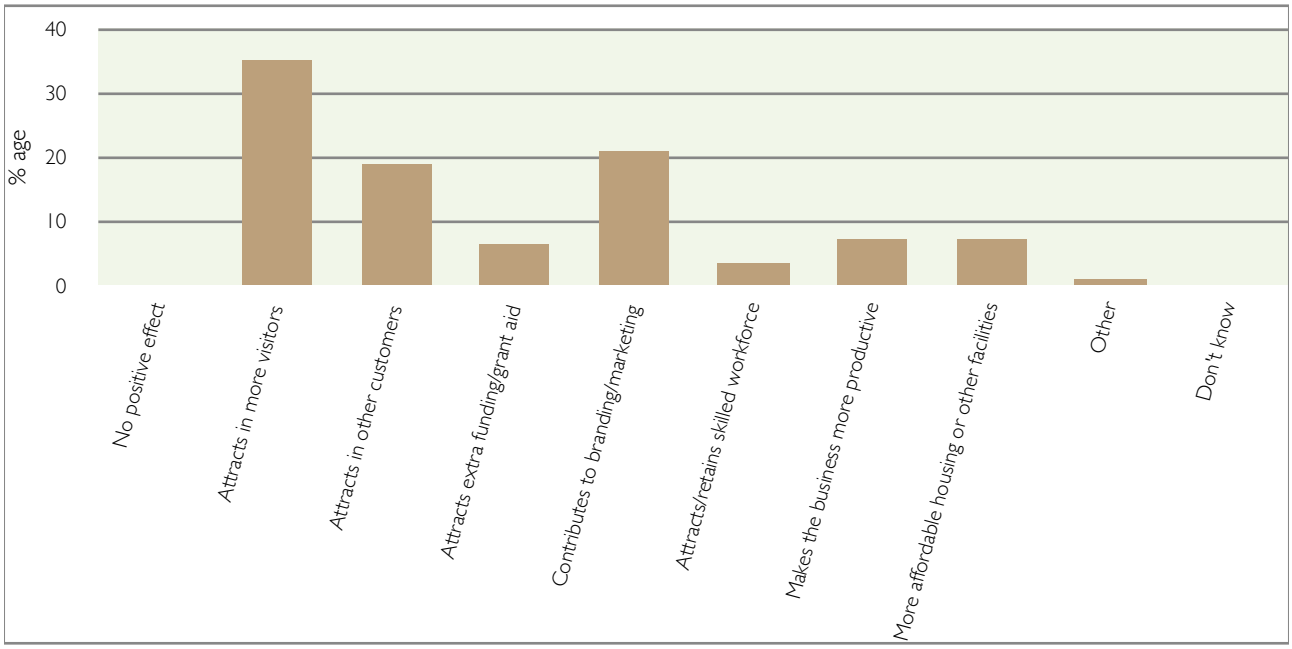
It is also clear that of those that responded to the survey the general view is that the Jurassic Coast has/does deliver significant positive benefits to their business. 70% (108) felt that the Jurassic Coast did have an impact (positive or negative) on their business, with 30% (47) stating that no impact had been felt. Businesses were then asked to give an opinion on the *"value of being located near the Jurassic Coast has on your business."* Only 2% businesses who responded stated that it had any kind of negative impact, and then it was classed as a minor impact. Conversely, 65% of businesses (out of 107 businesses who answered this question) felt that there was a major positive. In many respects, the response to this particular question serves to highlight the importance of the Jurassic Coast.

Chart 7: The value to businesses of being located in or near the Jurassic Coast



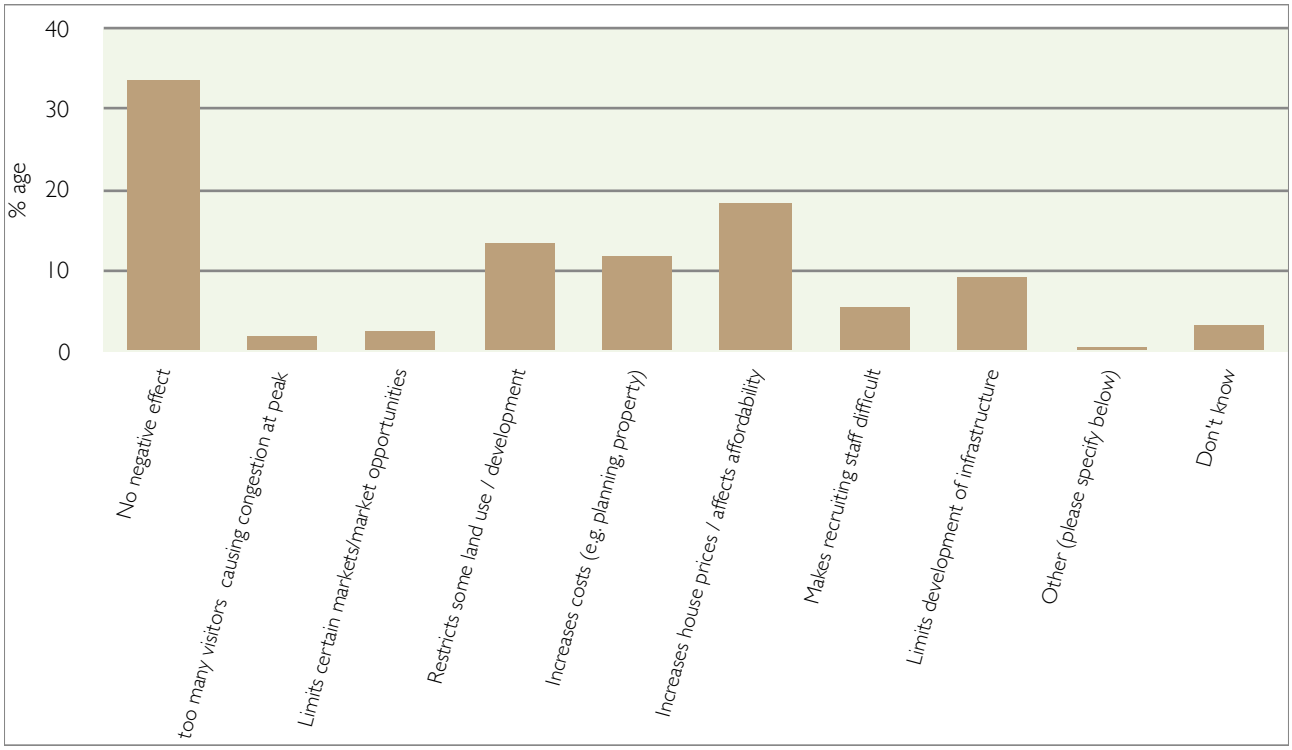
Businesses were then asked to detail the reasons why either a positive or negative impact of the Jurassic Coast had been felt. Business could highlight more than one factor. Encouragingly, not one response highlighted that there was 'no positive impact', whilst 35% of those who responded said there was 'no negative impact'. The charts below highlight that many businesses feel that the key role that the Jurassic Coast plays in helping their business include attracting in more visitors into the area, generating income and contributes to the image/branding/marketing of the business. Whilst 35% of respondents felt that attracting more visitors was a key benefit, only 2% felt that the Jurassic Coast helped attract too many visitors.

Chart 8: Positive effects on business of being located in or near the Jurassic Coast



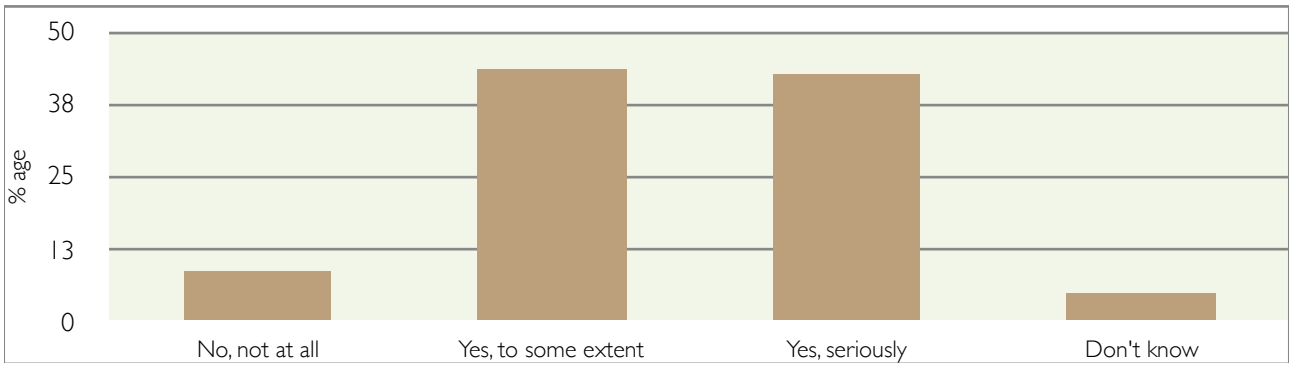
Of the factors that were felt negatively impacted upon businesses, the most prevalent responses related to increasing house prices which affect affordability, restriction of certain land use and increased costs.

Chart 9: Negative effects on business of being located in or near the Jurassic Coast



Following on from the earlier questions, businesses were also asked that *"if the quality of coastal landscape were to deteriorate for any reason, would you expect this to have any impact on the performance of your business?"*. Again, the findings are encouraging and highlight the value that many businesses place on the Jurassic Coast. Only 9% businesses felt there would be no impact upon their business performance, whilst 46% felt it would impact it to some extent and a further 45% felt it would have a 'serious' impact. Again, in some respects, this simple question demonstrates the significant value attached to the Jurassic Coast.

Chart 10: Impact upon business of deterioration of the quality of the landscape

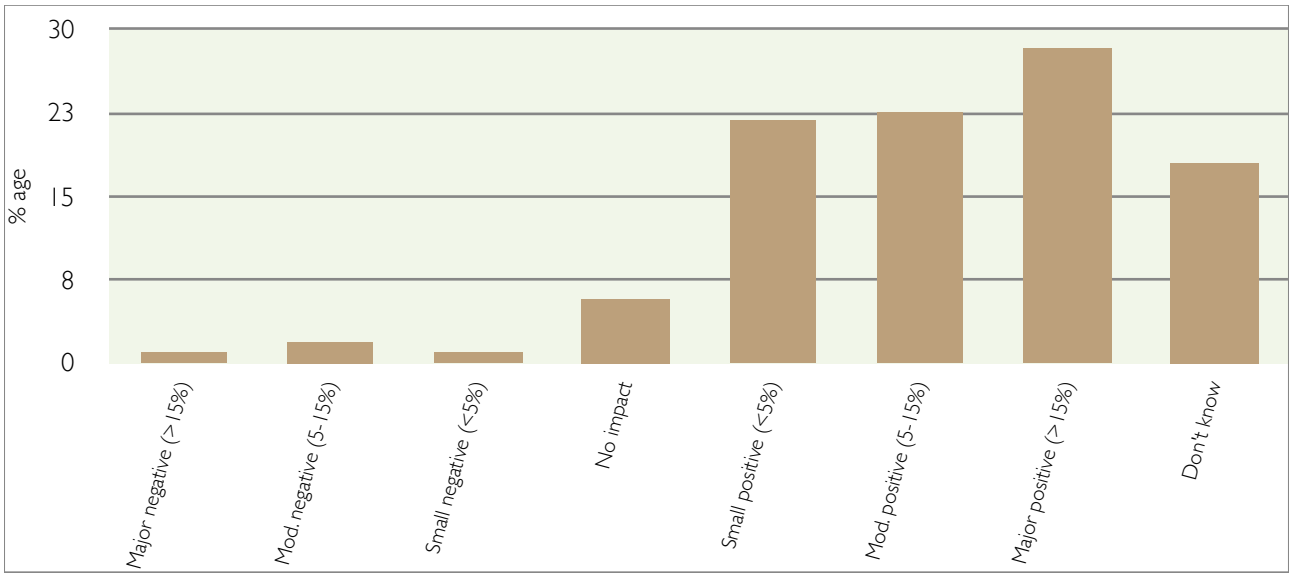


We were also interested to understand whether, and how, those businesses may use the Jurassic Coast (or the World Heritage Site status) and associated branding for their own branding or marketing purposes. This is specifically connected to the value of the designation itself and we discuss this further in the next section.

The survey asked businesses about the influence that the Jurassic Coast may have had upon their business performance - with a focus on the estimated 'uplift' provided to their annual turnover. The options were provided in turnover bands[25]. It is important to note at the outset that whilst 155 businesses completed the survey across Dorset and East Devon, only 87 businesses quantified the estimated turnover impact of the Jurassic Coast. Therefore there are relatively wide confidence intervals associated with these estimates.

Of those that were able to estimate the quantifiable impact, the average uplift for those positively influenced by the Jurassic Coast was 9.9% of annual turnover. This level of influence is higher than seen in comparator studies (for example work looking at the impact of the Antonine Wall – where businesses reported a smaller impact on their performance).

Chart 11: Impact upon annual turnover of being located in or near the Dorset AONB



Case study: Stuart Line Cruises

Stuart Lines was founded almost 50 years ago by Tony Stuart, the father of the current owner, Ian Stuart. It has been offering boat trips along the East Devon Coast and up the Exe Estuary, from its base in Exmouth, ever since. It is now the largest tourism business in East Devon - carrying about 250,000 passengers a year. During the summer season, it employs up to 50 staff directly and on contract.

Ian noticed an immediate difference to the company when the coast became a World Heritage Site status back in 2001. Firstly, it gave the company a new marketing angle and many of the general coastal cruises became focussed on the geology of the coast. Secondly, it brought an increase in demand for the coastal cruise - so much so, that a second, 200 seater boat, was bought to allow more variety during the summer. Although concentrating on the East Devon coastal towns, Stuart Lines do sometimes venture as far east as West Bay and Lyme Regis, in Dorset.

Ian is in no doubt that the Jurassic Coast designation has bought greater awareness of the area among visitors and has driven the demand for more informative trips close into the cliffs. "In the early days, the Jurassic Coast Team helped us with interpretation and the boat commentary and its work continues to raise the profile of my business." http://www.stuartlinecruises.co.uk

[25] As stated previously, where there were banded options in any of our survey questions we have taken the mid-point of that band as a proxy for the average response in that particular band. For the biggest option where there is no 'maximum' i.e. £20+, £1mn+, >15% we have applied what we think is a pragmatic figure – ensuring that our estimate of the average response is not too skewed by too large a figure.

Again, we are looking to utilise the findings of the survey against a wider population and this assumes that the businesses who responded to the survey are broadly representative of the wider business population – both in terms of their views as well as profile i.e. size, sector etc. To reiterate an earlier point, we must recognise that in terms of views on the Jurassic Coast it is likely that the responses will be influenced by the assumption that many of those who responded may have a vested interest in the Jurassic Coast. There may be an element of 'selection bias' in the responses. In terms of profile, we take some reassurance that there is a reasonable spread of businesses in terms of size, but do recognise that there may be a higher proportion of businesses in those sectors most closely associated with the visitor economy. We make no adjustment for any of these factors but highlight them in terms of care needing to be used when interpreting our analysis.

The next methodological step was to determine what turnover represents a 'typical' Dorset business. This data isn't directly published although the number of enterprises in turnover bands is made available. From this we can broadly derive an average turnover figure[26] across the business population. Using this data we estimate that the average turnover equates to circa £595,000 per annum. It is important to note that this estimate is significantly positively skewed i.e. a few businesses of significant turnover size affects this average[27]. If we only look at those districts where the two designated areas principally lie within (Purbeck, West Dorset, Weymouth & Portland and North Dorset) then the average turnover falls to £486,000 per annum. One approach would be to assume that the estimated average turnover uplift as found in the business survey is applied to a wider population that has a typical turnover of either of the above figures.

However, that would probably overstate the potential impact of the designations, not least because analysis of the business survey respondents shows that they typically have smaller turnover than indicated above. 138 of the 155 respondents were prepared to indicate their current turnover levels – as shown in the below chart. Only 25% of respondents stated they had turnover in excess of £500,000, with 45% having turnover below £75,000 (broadly the VAT threshold). We estimate that the average turnover of respondents to the business survey was circa £367,000. Therefore by using this lower estimated figure as a representative proxy for businesses in the wider population is a pragmatic and appropriately conservative assumption.

The next conservative assumption that we make is that we focus only on those areas that correspond most closely to the Jurassic Coast. The reason for this is that analysis of the location of businesses that responded the survey is heavily focused, unsurprisingly, in those local authority districts where the designated areas are found (as shown in the below map)[28].

We do not have sufficient confidence in the survey findings to apply them against a business population in a wider area – for example, assuming the same influence is felt for businesses in Bournemouth. Whilst we recognise that this may understate the overall impact (particularly for the Jurassic Coast) this approach has been driven by the available data and having more confidence in our estimates of impact.

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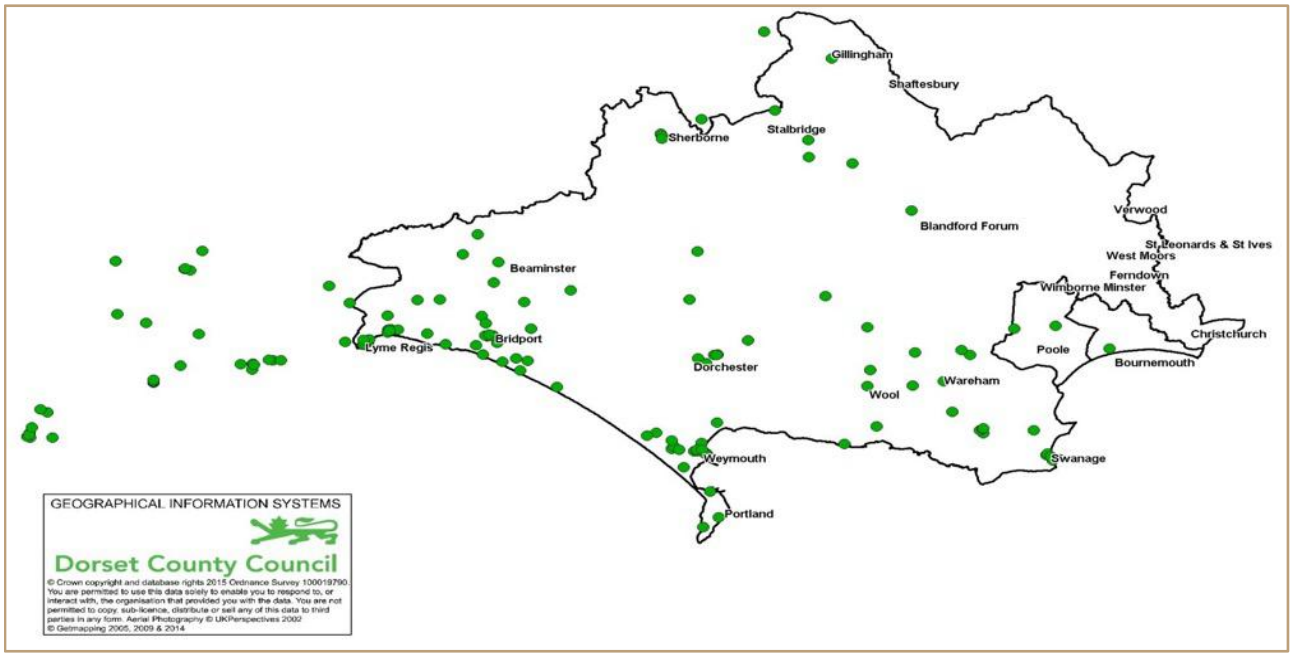
[26] Although this isn't exact because we do not have exact turnover figures for the businesses in each turnover band – therefore we assume that the mid-point is the typical turnover of a business in each respective band.

[27] The median average of Dorset businesses would be turnover between £100,000 and £249,000.

[28] Of the 141 businesses that provided a postcode in their response (out of a total of 155) – 138 of these were located in either North Dorset, Purbeck, West Dorset, Weymouth & Portland or East Devon. Only 3 were located in either Bournemouth or Poole.

Map of respondents to the business survey



Again, to be consistent with the approach taken elsewhere in the report, we adopt a relatively tight geographical focus as defined at the start of this section. Again, we accept that the area of influence will extend beyond these defined areas in many cases. However, this is countered by the overall assumption that we apply here that all businesses will be affected to the same extent as indicated by the relatively few businesses that responded to the survey i.e. the issue of 'selection bias' that we highlight above. By applying a relatively tight geographical focus we negate some of this potential 'bias'.

Finally, to be consistent with our other measurements of economic activity/impact contained elsewhere in this report, we adjust the turnover uplift to GVA using a turnover: GVA ratio[29].

Based on this approach, we estimate that the Jurassic Coast increases business output by circa £103mn (current prices). It is important to note that this represents an annual flow of benefit and should be repeated year-on-year (dependent upon how effectively the Jurassic Coast is managed for the benefit of businesses). Recognising that this estimate is dependent upon survey data, using the estimated confidence interval provides a range of £92mn - £114mn[30].

The outcome of this exercise broadly corresponds to the estimates relating to the benefits generated through visitor expenditure influenced by the Jurassic Coast, albeit lower. Firstly, by looking at the estimated economic impact through two routes this provides a level of confidence in our estimates. We recognise there is significant uncertainty in any method, but the adoption of two pragmatic approaches has led to broadly the same conclusion. Secondly, we reiterate ***that the two estimates should not be viewed separately***, in some respects they are measuring the same thing in different ways. The additional visitor expenditure associated with the Jurassic Coast is captured as higher turnover/income by local businesses.

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[29] This can be derived from the Annual Business Survey provided by the ONS. This shows that typically GVA equates to circa 40% of turnover across the whole business population. Therefore the ratio we apply is 0.4.

[30] The confidence interval has been estimated by using the number of businesses responding to the turnover questions for the respective designated areas and setting this against the number of enterprises in the districts that cover the designated area i.e. whole business population. This wider figure is used in combination with the average turnover uplift to estimate the aggregated uplift figure. For the AONB the confidence interval at 95% confidence is +/-11.36%, whilst for the Jurassic Coast it is +/-10.48%.

Whilst the business survey has captured benefits from some businesses that may not be reliant on the visitor economy – suggesting that benefits extend beyond the attraction of tourists – the majority of respondents to the business survey were in those sectors most reliant. As well as this, the primary benefit of the Jurassic Coast designation cited by businesses was the attraction of more visitors to the area and the associated additional income.

Therefore, in conclusion, we estimate that the influence of the Jurassic Coast *generates* circa £111mn (the mid-point of our estimate using the visitor expenditure and the business turnover approaches) of output in the area (Dorset and East Devon) on an annual basis.

However, due to the Jurassic Coast and the Dorset AONB 'overlapping' in large parts of Dorset, it is equally important to recognise that it has been difficult to separate the impact of the Jurassic Coast from the Dorset AONB (as part of this overall work we have also undertaken a similar exercise for the Dorset AONB). ***Therefore, the estimate of economic impact, or influence, for the two designated areas should not simply be added together.*** It is likely that there will be overlap in the estimates. For example, many visitors coming to the area will visit the outstanding coastline of the Jurassic Coast, as well as the protected landscape of the AONB. 'Attributing' visitor expenditure to one or the other designated areas is not possible at an aggregate level given the data which is available.

Valuation of economic activity associated with the World Heritage Site designation

The final step in considering the economic value that can be associated with the Jurassic Coast is to outline the added value that has been delivered as a consequence of the designation itself.

What we cannot say with any certainty is how much of the above estimate of economic benefit can be associated with the designation itself i.e. the 'World Heritage Site', or simply due to the existence of the 'Dorset and East Devon coast'. **It is highly likely that the existence of the designation itself has helped to significantly increase the scale of benefits to the area.**

To look at the added value that can be more closely associated with the World Heritage Site designation itself we look at a number of elements:

a. The benefits delivered as part of creating the Jurassic Coast brand. The World Heritage Site status led directly to the creation of the 'Jurassic Coast' brand and subsequent work of the World Heritage Site team has sought to strengthen the brand, increase awareness and market the coast on the basis of that branding. Certainly, as seen from the results of the visitor and business surveys, 'brand awareness' of the Jurassic Coast is extremely high and it could therefore be argued that the brand activity delivers worthwhile added value.

b. The additional funding that has been leveraged in as a consequence of the designation. A further key activity that is associated with the designation is focused around leveraging additional funding into the area. A focus in our work has been to understand how the World Heritage Site designation has helped leverage in those additional funds, and the role that the Jurassic Coast team plays in promoting and coordinating schemes.

c. The direct benefits delivered as a consequence of the Jurassic Coast team being in place. We also consider this, although recognise that these expenditure-based impacts will be relatively limited and arguably could be classified as a cost. However, it is a fundamental point to recognise that the benefits in i) and ii) above would not have been delivered without the Jurassic Coast team being in place and the real significant benefits are represented by its activities rather than associated expenditure.

d. We look at the WTP expressed in the visitor survey to comment on how much people value accessing the Jurassic Coast - different than our estimate of value expressed above associated visitor expenditure. We highlight the findings of the WTP question contained in the visitor survey (and East Devon residents survey) and provide additional commentary on the results in terms of helping us inform our view on the value that people attached to having the designation in place (as a consequence of the protection and conservation that it helps deliver).

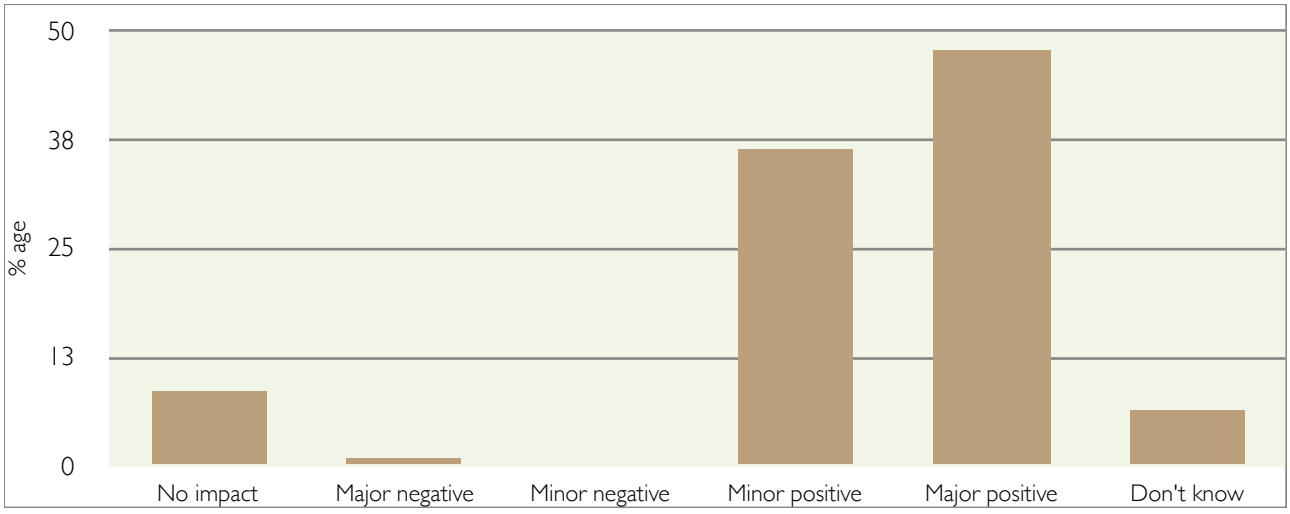
Branding

The Jurassic Coast Brand. Creating a brand has been one of the key activities for the Jurassic Coast. Whilst the purpose of creating a brand has many different elements, a key focus has been to raise awareness and attract people to the area. The creation of a brand is one key area where the value of the designation can be *illustrated*. Without the time and resources devoted to building a brand then it could be argued that any branding approach would have been done in a piecemeal manner, if at all. In discussion with the World Heritage Site team it was clear that without the designation, the Jurassic Coast brand would not exist.

The Jurassic Coast brand is effectively a 'public good' which anybody – principally businesses – can use for their own purposes in stimulating additional activity. The Jurassic Coast name is not protected but the trademark logo is[31].

Through the business survey we wanted to understand whether the 'brand' has been adopted by businesses and, if so, whether it had had a subsequent positive impact. Businesses were asked to give their opinion on the value of the Jurassic Coast/World Heritage Site brand on their business. The majority of those who responded felt that the brand did deliver positive benefits to their business, 39% of respondents classifying it as having a 'minor positive' effect and a further 51% as having a 'major positive' effect. Only 9% businesses felt it had no impact, and 1% saying that it a major negative impact. Overall, 90% of businesses that responded to the survey felt that the Jurassic Coast brand had had a positive impact on their business. Again, the extent of positive responses to this question indicates the value that the majority of businesses place on the creation, development and promotion of the Jurassic Coast brand.

Chart 12: Impact of the Jurassic Coast 'brand' on their business

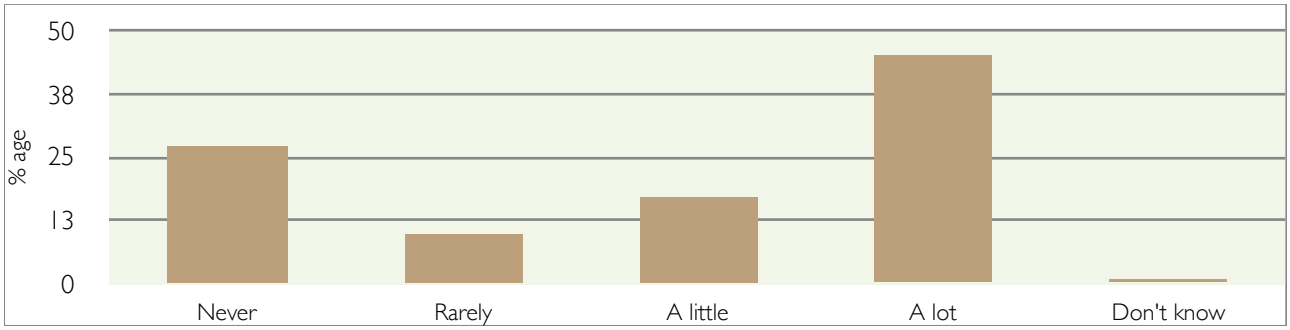


[31] *The Jurassic Coast Trademark (ammonite logo) is legally owned by Dorset County Council, though the brand in the form of the term 31 'Jurassic Coast' is indeed not protected and a public good which anyone can use.*

Through the business survey we also wanted to understand whether the 'brand' has been adopted by businesses and, if so, whether it had had a positive impact on their business. There is a difference between the benefits identified above, which relate more to benefiting from the general branding/marketing of the wider area, and those where the business has directly adopted the 'brand' in its own specific marketing activity.

Businesses were asked whether they refer to the Jurassic Coast when promoting/marketing their goods and services to customers.The results from the survey are encouraging in revealing the extent to which the brand is being adopted and utilised. Approximately 50% of those who responded to the survey said that they use the Jurassic Coast brand 'a lot', with a further 18% using it 'a little'. 27% of respondents said that they never used the Jurassic Coast brand, with 10% 'rarely' using it.

Chart 13: Utilisation of the Jurassic Coast brand for marketing purposes



Case Study: Jurassic Skyline, Weymouth

In 2012, Merlin Entertainments, a major visitor attractions company with headquarters in Poole, Dorset, completed a new operation, called the Weymouth Sea Life Tower, to offer visitors unrivalled views of the Weymouth-Portland area and, specifically, the Jurassic Coastline. Opening was timed to coincide with the UK Olympics. Crucially, an underlying knowledge of the World Heritage (WHS) - Jurassic Coast designation was important to the firm's decision to develop this new attraction on this site.

Indeed, this year, the name of the visitor attraction was changed to Jurassic Skyline, directly taking advantage of the WHS designation in order to promote the business. Tamsin Mutton-McKnight, General Manager of Merlin's Weymouth operations, says "we wanted the name to reflect what our visitors actually see from the tower – Dorset's beautiful and historic coastline – as well as to separate it from our other activities."

The Tower employs three permanent full-time staff directly and up to another 25 people during the summer season. Its market has been growing successfully over the last three years, reaching about 150,000 visitors annually.

Since inception, the WHS designation has been vital to the business. Ms Mutton-McKnight confirms that Merlin specifically chose a site at Weymouth, over other possibilities for a viewing tower, to take advantage of the unique coastal environment offered by the Jurassic Coast. As such, it was a catalyst for starting the whole business. Moreover, the Jurassic Coast is crucial to the on going branding and marketing of the attraction.

Ms Mutton-McKnight states that the very positive effect of the WHS on the business has been well supported by the efforts of the Jurassic Coast Trust. The Trust "has been incredibly helpful with new opportunities to promote the Jurassic Coast and with other aspects of business development." As one example of the close co-operation, Jurassic Skyline has produced a mini-guide to the Jurassic Coast filled with data and insight from the Trust. In return, for every guide sold, the company makes a donation to the Trust.

This business has had a clear, direct and mutually positive relationship with the Jurassic Coast. From inception, through development, and to fruition, Jurassic Skyline has developed with the Dorset environment in mind. This foundation is expected to continue to add value for both the company and the Trust in the future. Jurassic Skyline offers a fine example of how Dorset's environment and its careful preservation, and the WHS designation in particular, can offer real development opportunities for the local economy.

We assume that the benefits associated with the adoption of the wider brand will, in part, be reflected in businesses consideration of the benefit in terms of impact upon their turnover. Therefore it is impossible to separate out the specific benefits provided by the application of the brand from any other benefits the businesses felt about the value of the designation (as outlined elsewhere in this analysis). We do know that 20-25% of those businesses that responded to the survey indicated that the Jurassic Coast designation has positively contributed to the image/brand/marketing of the business. It was seen as the second largest positive benefit to their business (after attracting more visitors to the area – which, in itself, is partly driven by the branding/marketing the area). Therefore, the development of the Jurassic Coast brand is seen by many businesses as an important outcome of the designation and the work of the World Heritage Site team in supporting that development.

Leveraged funding

Another area that highlights the added value of the WHS designation – and particularly the supporting management infrastructure – is the leveraging of additional funds beyond those that sustain that support network (as discussed later in the direct expenditure effect). There are a number of issues that are important to highlight regarding the exercise of identifying those leveraged funds that can be attributed to the Jurassic Coast itself. This affects how we view the 'additionality' in a funding context.

It is clear from discussions with the Jurassic Coast team that the primary role it plays in a funding context is to support other organisations in the area to secure funding, rather than securing large-scale funding themselves. This includes helping those organisations extract 'value' from the WHS designation in funding applications and to also ensure that activity happens in a coordinated manner. Therefore actually identifying all the funding flows that can be associated with the WHS designation would be subjective.

The discussions also highlighted that the WHS designation can have three principle benefits in funding applications.

1. Firstly, the actual Jurassic Coast team acts as a resource that help organisations develop their funding applications (and wider project development). Of course, the teams would largely not be in place without the WHS designation and the associated revenue funding support. The level of input and support by the team varies on a case-by-case basis but the Jurassic Coast team has assisted a large number of organisations. It is important to note that their role will not be purely reactive i.e. reacting to a request for help. In many cases the team (and their wider supporting partnership) will have played a key role in stimulating the idea/concept and been important in the project as it has been developed (pre-application).
2. Secondly, and more intangible, is that there is a value of the WHS designation itself in terms of branding within the fund application process. That is, many funding applications will have been successful because they placed the designation at the core of their funding argument. There are examples of how the World Heritage Site designation has been used and referenced by organisations to a great extent. Many of those organisations feel that the WHS designation has been crucial in their funding success.

> *"The Jurassic Coast has made a huge difference in pushing the subject of palaeontology, and as a museum that tells many stories, it's quite clear that World Heritage Site status is immensely significant. To put it in context – pretty much every funding bid starts with 'Situated at the heart of the Jurassic Coast'. We certainly wouldn't have got the initial impetus without World Heritage Site designation..... later funding bodies might have come on board because we had a clear narrative about what we want to deliver, but our early supporters got the Jurassic Coast message in its entirety."* **Lyme Regis Museum**

3. The third element is the additional 'confidence' that funding organisations may get from knowing that projects in those areas associated with the Jurassic Coast are being developed in a relatively coordinated manner, and that the respective the Jurassic Coast team has played a key role in helping coordinate activity. By having oversight of planned activities in the area, the Jurassic Coast team is able to improve coordination between projects directly (or indirectly through groups such as the JCWHS Museums Partnership) and hopefully to improve complementarity between those projects. The consequence is that projects are developed in a less piece-meal fashion. For example, the Jurassic Coast team are heavily involved in the Jurassic Coast Museum Partnership which aims to coordinate activity across the museums located in the wider Jurassic Coast area.

There is also the additional element that the wider Jurassic Coast partnership structure brings. By showing that a particular project is helping to deliver objectives in the respective management plans demonstrates a wider community buy-in to that project. The World Heritage Site Management Plan goes through a comprehensive community consultation process and by showing that a particular project is helping to deliver that the Management Plan objectives means that demonstrating community support may become 'easier' in funding applications. Again, both effects are relatively intangible, and certainly difficult to quantify, but they do represent another important influence of the WHS designation.

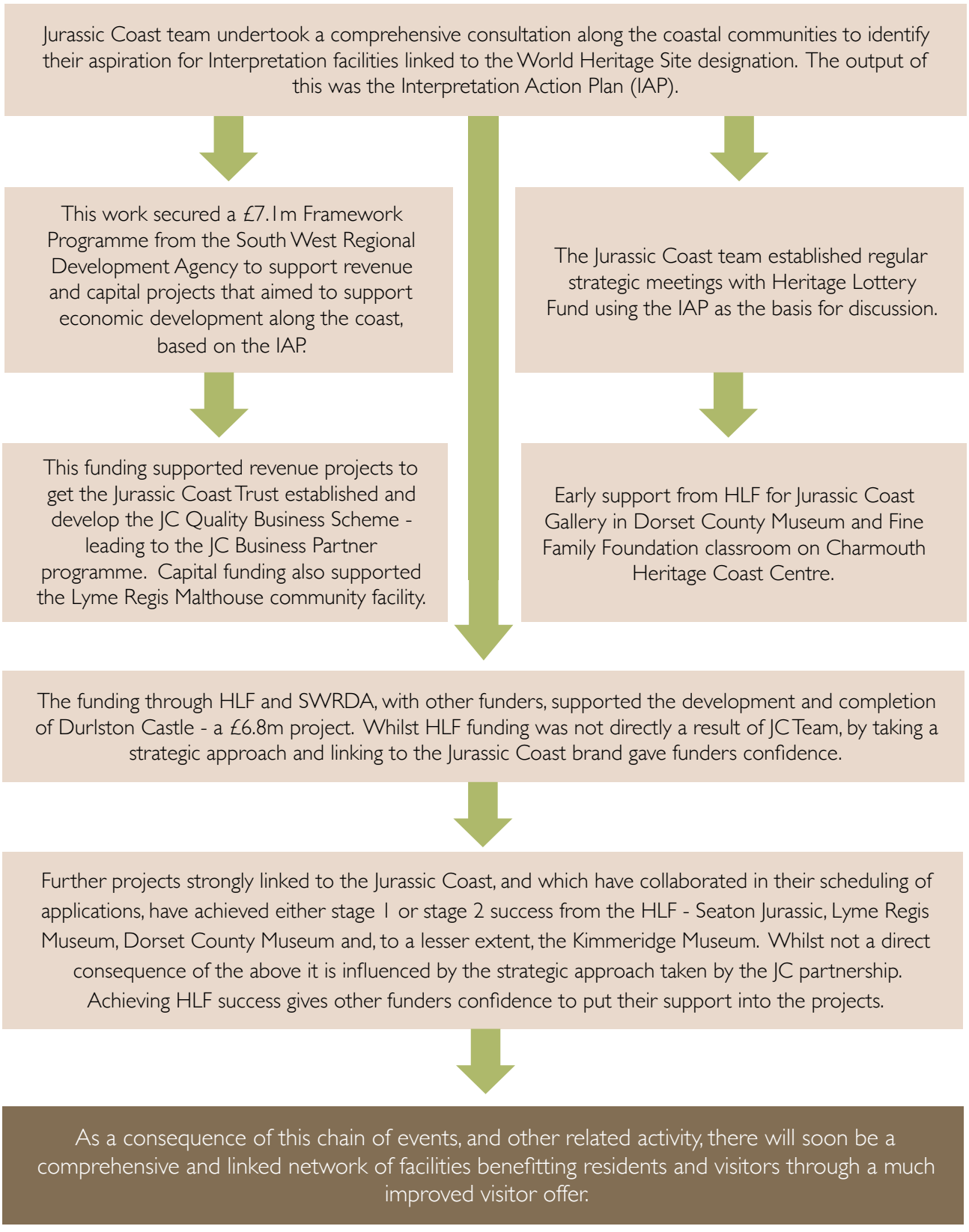
It is clear from the evidence provided that there has been a good flow of external funding leveraged into the wider area to develop, diversity and deepen the Jurassic Coast offer. Many potential projects were identified at the same of the WHS inscription and a large number of these have been delivered. Recent work by the Jurassic Coast team[32] has captured progress over the past 10 years, and this has allowed us to understand the flow of investment into the area.
It is important to note that investment in this context primarily represents public investment. There will have also been significant private investment in the area on the back of the additional visitors attracted to the area, businesses investing in facilities/services as their confidence has grown. This is difficult to capture. Therefore, public investment only represents a partial picture of the total investment flow into the area influenced by the Jurassic Coast.

In relation to the projects that were identified in the Jurassic Coast Interpretation Plan, we have identified circa £20.5mn of public investment into a range of projects delivered across Dorset and East Devon. Significant projects to highlight include the Seaton Jurassic Centre, Fine Foundation Marine Centre, Durlston Castle and the Lyme Regis Museum extension. This estimate does not include investments that are in the near-term pipeline – such as the proposed £10.3mn investment by the Heritage Lottery Fund for Dorset County Museum – or other significant projects such as Jurassica and the Mass Extinction Monitoring Observatory which may have longer timeframes for potential implementation.

The Jurassic Coast team has had involvement in many of the projects that have been developed over the past 10 years. This involvement will vary on a case-by-case basis. Therefore 'attributing' wider investment to the existence of the Jurassic Coast team is another exercise that is fraught with difficulty. The other problem is understanding how much of the investment flow has been *dependent* upon the WHS designation. Our view is that there is a great deal of certainty that a very *high proportion* of the leveraged funding has been associated with the value of the designation although, again, it is extremely difficult to be *exact* in placing a figure on how much can be attributed.

[32] *'Report against the Jurassic Coast Interpretation Plan (2005)' – Jurassic Coast Team - 2015*

To demonstrate that causal chain we set out the below example of how initial Jurassic Coast involvement then led to subsequent further investment into the area.



Direct expenditure impact:

Although we recognise that the economic benefits delivered as a direct consequence of having the team in place is relatively minor in the context of the significant benefits highlighted elsewhere, this element is included in other comparator studies and we include for consistency purposes. It is useful to reiterate the point previously made – that the benefits generated as a consequence of leveraged funding, brand development etc. would certainly not be at the scale without the Jurassic Coast team driving much of that activity.

As would be expected, the economic impact associated with running the management team is relatively minor. The average annual cost of running the Jurassic Coast team over the previous 5 years equates to circa £230,000-£240,000[33] (broadly equivalent to £100,000 expressed as Gross Value Added[34]).

The majority of core costs expenditure relates to staff costs for the organisation – in the range of 80%-90% of total core expenditure. Therefore the supply chain (indirect) impact of the organisations is relatively small. There will be a knock-on benefit of wage expenditure (induced impact) from employees in the local economy; available benchmarks[35] show that this is approximately 0.2 of the direct impact. Therefore for the Jurassic Coast team this would equate to a further £20,000 value added in the local economy.

In terms of the impact of the core expenditure of the Jurassic Coast team, what is not known is the 'opportunity cost' of the funding support provided. All the expenditure may not be seen as additional. However, our discussions with the teams and Dorset County Council indicate that support helps to leverage in further funding and so additionality is not a significant argument in the context of the scale of benefits we have estimated being delivered by the respective teams.

The Jurassic Coast team constitutes approximately 6.5 FTEs. Again, based on our estimate of indirect impact, the wider employment impact would be relatively minor – approximately 1 FTE job supported in the wider economy. There may be other jobs sustained through those projects that the Jurassic Coast team have indirectly supported (as detailed in the above leveraged funding section).

We recognise the core costs of the Jurassic Coast team only represent a partial picture of total costs. There are additional costs borne by the wider partnership which are not captured i.e. time commitments to meetings, project-specific support, hosting costs etc.

As well as the value of paid-employment, volunteers also help to deliver wider activities in support of the overall objective of the Jurassic Coast designation (arts, conservation, education etc.). For example, the Jurassic Coast Trust is an independent registered charity that supports these aims and is largely run on a voluntary basis. There are numerous other volunteer inputs across the area that will also help to promote and interpret the Jurassic Coast for residents and visitors alike.

Unfortunately, capturing the extent of volunteer input to the Jurassic Coast is not possible within the limited scope of this report. Therefore we are not in the position to quantify this additional input which is not captured in any market-based transaction. We simply highlight that volunteer time provides additional value which will not be reflected elsewhere in this report.

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[33] Taking account of some additional indirect costs increases total costs to circa £300,000

[34] Based on a typical turnover: GVA ratio of 0.4.

[35] South West Regional Accounts

Willingness-to-pay

Although fraught with methodological difficulty, willingness-to-pay (see comment on the advantages and disadvantages associated with this methodology in our earlier section) can be used as one of the proxies for estimating the value that people place on accessing an environmental asset. As previously highlighted, the average willingness-to-pay for accessing the Jurassic Coast (in the absence of free and open access facilitated by public support) expressed in the visitor survey was £4.27. This shows that visitors value the Jurassic Coast over and above what they currently pay for accessing it (they will *indirectly* pay through parking charges, taxes, travel costs etc.).

However, it needs to be stressed that the question contained in the surveys was purely theoretical and does not necessarily translate through to a *'preparedness to pay'*. Indeed, many of the comments contained in the East Devon resident survey highlight the widespread feeling that the Jurassic Coast should remain an open and freely accessible resource for the benefit of everyone.

Analysis of the survey responses from the Jurassic Coast visitor survey shows that knowledge of the designation did not lead to a higher WTP. The average of those who were not aware of the designation was £4.71, whilst for those who were aware it equated to £4.17. It should be noted that the sample size for those aware of the designation is much greater than those not aware; confidence in the robustness of these estimates decreases as the sample size grows smaller.

Again, we stress care should be used when interpreting these figures. Our overall conclusion though (across the two designated areas) would be that there is not a discernible positive relationship between awareness of the designation and a greater WTP to access those designated areas. This is someway short of drawing a conclusion that there is no additional value attached to the *designation* by those visiting the area. Further investigation would have required a direct question being asked about the extent of how much the *designation* (rather than the areas themselves) influenced people's decision to visit the area.

Whilst a willingness-to-pay question relating specifically to the Jurassic Coast was not included in the Dorset residents survey (where the WTP question focused on the wider definition of the Dorset environment), it was included in the East Devon resident survey. Given that residents currently tend to indirectly support the Jurassic Coast through their Council Tax contributions (in the form of the financial support provided by Dorset and East Devon District Councils), the WTP expressed as an annual figure seems more relevant. On that basis, the average response was a WTP of circa £37.44 per year. We assume this represents the view of household contribution. Given the number of responses received, the confidence interval associated with this estimate is +/- 5.47% at 95% confidence level. Therefore we can be relatively certain that the WTP is within the range of £35.39 - £39.49.

Simply aggregating this figure across households in Dorset and East Devon (therefore assuming that the responses in the East Devon resident's survey are also representative of households in Dorset) gives an overall WTP of circa £9.2mn. Given the relatively small figure that is currently contributed to the Jurassic Coast from the typical Dorset County Council household tax bill (less than £1 per household) then it could be argued there is considerable consumer surplus. If WTP is a proxy of the benefit that people receive, then the individual benefits of accessing and enjoying the Jurassic Coast are significantly exceeding the indirect costs of doing so.

The WTP approach is useful as an *illustration* of the considerable value that local residents attach to the Jurassic Coast. It should be viewed as an illustration, and *less focus* should be on quantifying that value. We would advocate a more specific, detailed and thorough analysis to

draw any firm conclusions about how much people would actually be willing to pay (either directly or indirectly) to support the ongoing maintenance and improvement of the Jurassic Coast. Factors such as income constraints, alternative choices and mechanism for support would need to be clear to those who respond to any further investigation. The WTP questions contained in our surveys were one part of a wider set of analysis.

CONCLUSION

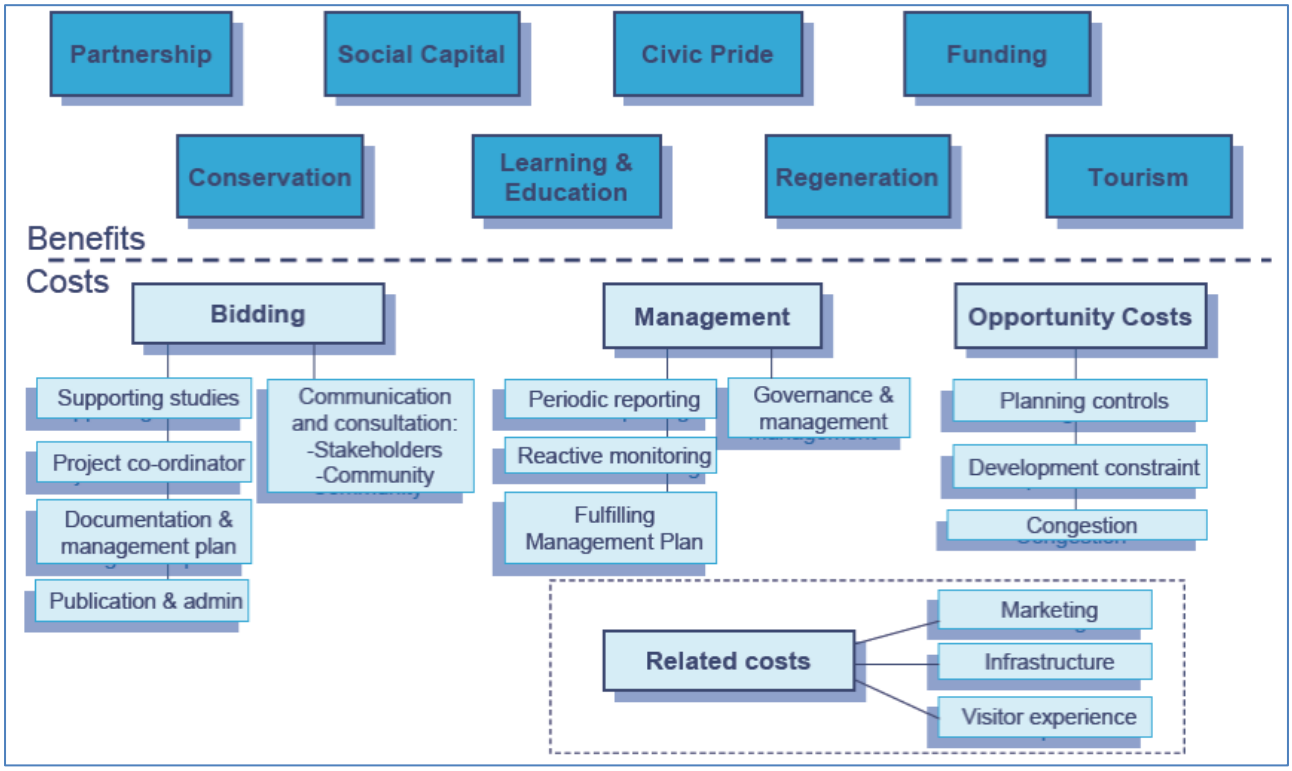
This report has utilised evidence from primary research to inform our view on the influence that the Jurassic Coast exerts on the wider economy. The results from the extensive survey work undertaken shows that visitors, businesses and residents all place a high value on the Jurassic Coast. The extent of survey responses received allows us to have some confidence in the findings being broadly representative of the wider population, although we recognise there will be an element of 'selection bias' in the responses.

The visitor survey showed that the Dorset environment and the Jurassic Coast in particular was highly influential in attracting people to visit Dorset and East Devon and businesses who responded to the business survey recognise that the higher visitor numbers have had a beneficial impact upon their business. Businesses also recognise the value added by the Jurassic Coast brand, and many adopt the brand for their own purposes. The development of the brand has been a key activity for the wider Jurassic Coast team and there is certainly evidence – although difficult to quantify – that it has generated significant benefits for the business community.

The Jurassic Coast is clearly valued by Dorset and East Devon residents. By asking their 'willingness-to-pay' in the absence of continued public support we can begin to understand that the value they attach appears to be greater than the support currently indirectly provided.

The costs and benefits of World Heritage Site Status in the UK' PricewaterhouseCoopers – 2007:

In terms of previous research, a piece of work undertaken by PricewaterhouseCoopers specifically looked at the value of World Heritage Site designations[36]. This report focused sharply on the concept of additionality of the designation itself. Only those costs and benefits directly attributable to WHS status were identified, excluding those which may simply be loosely related. The intention was to separate those outcomes which would have taken place anyway regardless of WHS status from those which would not. Those costs and benefits are set in the below diagram.



The report looked at a number of World Heritage Sites in the UK, all having different attributes (i.e. built historical, natural, geophysical etc.). The 6 case studies included the Jurassic Coast. The report noted that a significant amount of cost is tied up in the time input from partners and these inputs are particularly hard to scale with the total costs being largely related to the number of partners and the nature of their involvement. This means that there are likely to be a significant amount of hidden costs and the existence of these hidden costs suggests that some cost-benefit approaches may underestimate the scale of cost inputs.

The report contained an estimate of typical costs based on the different governance models that could be in place. For the most 'complex' model – which the Jurassic Coast was cited as being – it estimated that annual costs would be in the range of £190,000-£615,000 per annum (2007 prices). This was based on the assumption of a central team being in place (encapsulating a co-ordinator and between 5-9 staff members, 13 steering group partners meeting quarterly for 1 day), 6 working groups involving the 13 members meeting bi-monthly, and a small project budget being in place. As previously highlighted, the estimated direct cost of the Jurassic Coast team was circa £240,000 (14/15). Taking account of some additional indirect costs increases total costs to circa £299,000, therefore near the lower end of the range (particularly taking account of the price differences). However, this cost still does not include some other indirect costs such as time commitment from the wider partners.

[36] *'The costs and benefits of World Heritage Site Status in the UK' – PricewaterhouseCoopers/Department of Culture, Media & Sport - 2007*

The report identified 8 primary benefit areas (highlighted in the above diagram). In summary, in 6 of the 8 areas of potential impact, the PwC/DCMS report finds evidence of positive benefit (partnership working, additional funding, conservation, civic pride, social capital and learning & education). In two thematic areas (tourism and regeneration) PwC suggests that the impact appears to have been overstated. Interestingly, the report highlighted limited evidence for some WHS's regarding the impact of WHS designation on tourism.

"WHS status is suggested to provide a promotional advantage and a 'branding effect' which can encourage additional visitors. However, the evidence indicates that this is likely to have a very marginal effect (c.0-3%) and this will be weaker again for less 'famous' sites. Furthermore if sites do not have adequate infrastructure already, are not marketed effectively and are not currently well linked with the common UK tourism routes then they are unlikely to gain many additional visitors. On its own it is unreasonable to expect WHS status to generate additional visitors."

The estimates of the tourism impact do seem low and it is important to note that they relate to all of the WHS areas in the study, some of which – such as Edinburgh and the Tower of London – would already have received significant tourism volumes before WHS designation. Therefore, even marginal shifts in volumes could still reap significant benefits. The PwC report notes that increases in tourism volumes were partially dependent upon awareness and volumes pre-inscription. This was noted in subsequent work undertaken in the Lake District[37]. The key to payback is the scale of the existing market, and the ability to use the WHS status to attract higher spending cultural visitors. A small shift in visitor numbers/spend on an already established market, could still reap significant economic benefits. The critical point made is that only a significant economic entity can justify the cost of attaining the designation if growth in tourism expenditure is a primary objective.

The estimates of the benefits of WHS status were based on postal surveys sent to residents near the respective WHS areas. For the Jurassic Coast there were 420 survey returns, from a total household population of 50,740 – giving a +/-4.8% confidence interval at 95% confidence level. Overall, across the 6 case studies[38] the confidence interval was +/-2.4%.

Across all of the benefit areas one of the most significant causal effects was identified between WHS status, the direct partnership activities, particularly associated with the management plan and the generation of new and additional funding sources.

With the exception of one significant spike five years prior to inscription, the Jurassic Coast received relatively little funding prior to their inscription as a WHS site. However, the year of WHS inscription corresponds entirely to a significant investment from HLF and in the case of the Jurassic Coast that investment has remained above its previous trend (the report was produced in 2007 and we can see by our previous analysis that the flow of public investment associated with the Jurassic Coast has continued to date).

Other important observations that the report also highlighted included the balance between conservation, economic development and tourism and wider regeneration effects. In terms of the former, for the Jurassic Coast consultees and locals were concerned about the balance between conservation and tourism and that there was an implicit conflict between the two factors. Whilst some groups felt that WHS status provided a framework for conservation, the 'branding' effect of WHS status encouraged more visitors and actually threatened some sites. In terms of regeneration, the report felt the evidence pointed towards the previous status quo at sites (prior to WHS status) and relative economic conditions still being the major influences. WHS designation always takes place within an overall macro-economic framework.

[37] *'World Heritage Status – Is there an opportunity for economic gain?' – Lake District World Heritage Project - 2008*

[38] *The other case studies were Edinburgh, Welsh Castles, Studley Park, Tower of London and Blaenavon.*

'The Social and Economic Value of the UK's geodiversity. English Nature (2006)

This work undertaken in 2006 specifically looked at the social and economic value of the UK's geodiversity[39] and, importantly for the purpose of this report, includes a previous estimate of the value people attach to the Jurassic Coast. This work involved asking people to estimate the value they attach to the Jurassic Coast through a choice experiment survey[40]. It looked at valuing different aspects of the Jurassic Coast. On average, people were willing to pay £23.69 per household per year (2005 prices – £30.37 in current 2015 prices) to gain access to the coast with some explanation of the geology, and £62.35 per household per year to gain access with extensive interpretive material (£79.92 in current prices). This highlights the importance that interpretation of geological features has in terms of enhancing the recreation experience. Maintaining public access to fossil collecting was valued at £57.73 per household per year (2005 prices). The below table shows that value attached to the various 'choices' presented in the survey for this research. Negative values denote with a 'dis-benefit' was associated with the scenario presented.

Attributes of Dorset Jurassic Coast	**Implicit price per household per year (£ - 2005 prices)**
No access to Jurassic Coast	-£86.04
Access to most of Jurassic Coast via beaches with some explanation of geology	£23.69
Access to all of the Jurassic Coast with extensive explanation of geology	£62.35
Coastal defence with hard engineering (concrete walls, pilings etc.)	£14.19
Coastal defence in gateway towns only (none in areas outside of towns)	-£11.28
Allow natural erosion to take place	-£2.91
No fossil collecting	-£42.27
Fossil collecting in all areas by geologists/collectors only	-£15.46
Fossil (controlled) collecting by geologists/collectors, public on beaches	£57.73

(Source: The social and economic value of the UK's geodiversity)

A number of scenarios were presented to examine the public's values for alternative coastal defence strategies. As can be seen from the above table, people tended to have negative values for the option to allow natural erosion to continue, while they had positive values for hard engineering solutions to coastal protection.

Implicit prices were also calculated for the two sub-samples (visitors and residents) – these are shown in the below table. It clearly shows that the value of the Jurassic Coast is much higher to residents than visitors.

	Implicit prices (£ - 2005 prices)
Access to most of Jurassic Coast via beaches with some explanation of geology	£23.69
Access to all of the Jurassic Coast with extensive explanation of geology	£62.35
No access to Jurassic Coast	-£86.04
Coastal defence with hard engineering (concrete walls, pilings etc.)	£14.19

[39] *'The social and economic value of the UK's geodiversity' – English Nature - 2006*

[40] *The survey comprised of 200 interviews (122 visitors and 98 residents). 92% of respondents knew that the area was designated as a World Heritage Site.*

Coastal defence in gateway towns only (none in areas outside of towns)	-£11.28
Allow natural erosion to take place	-£2.91
No fossil collecting	-£42.27
Fossil collecting in all areas by geologists/collectors only	-£15.46
Fossil (controlled) collecting by geologists/collectors, public on beaches	£57.73

These prices were then aggregated to the number of households in Dorset and East Devon at the time (202,400)[41]. The aggregated implicit prices show the willingness to pay for all households in the Dorset and East Devon areas. These prices illustrate the magnitude of the value of the respective attributes and hence how much improvements or changes to these attributes are worth in monetary terms. For example, access to the Jurassic Coast with extensive information was worth £12.4mn to households in Dorset and East Devon (2005 prices – £15.9mn in 2015 prices[42]). Full access with extensive explanation of geology was worth £27.6mn (converted to current prices).

	Implicit prices (£mn - 2005 prices) - Residents
Access to most of Jurassic Coast via beaches with some explanation of geology	£12.4mn
Access to all of the Jurassic Coast with extensive explanation of geology	£22.0mn
No access to Jurassic Coast	£-34.4mn
Coastal defence with hard engineering (concrete walls, pilings etc.)	£5.2mn
Coastal defence in gateway towns only (none in areas outside of towns)	-£4.9mn
Allow natural erosion to take place	-£0.3mn
No fossil collecting	-£11.9mn
Fossil collecting in all areas by geologists/collectors only	-£7.1mn
Fossil (controlled) collecting by geologists/collectors, public on beaches	£19.0mn

The key relevance of citing this previous research is that it broadly corroborates the WTP findings contained in the resident's survey undertaken to support our report. If we assume that the 'baseline' scenario i.e. no WHS designation is represented by the *'Access to most of Jurassic Coast via beaches with some explanation of geology'* scenario i.e. there would be some added value interpretation but done on a piecemeal/ad hoc basis, and the WHS designation is represented by the *'Access to all of the Jurassic Coast with extensive explanation of geology'*, then the gap between the WTP responses could represent the value of the value added provided by the designation.

According to the above results, on an individual household basis the gap between the two scenarios was £38.66 (2005 prices[43]). On an aggregated basis across Dorset and East Devon the WTP was expressed as £9.6mn (2005 prices). Both of these estimates are broadly similar to our findings from the East Devon resident survey.

[41] We have made an estimate that based on a survey of 98 residents and with household numbers totalling 202,400 – the confidence interval associated with these results at 95% confidence level is +/-9.9%. This estimate was not undertaken in the research but included here for interpretive purposes.

[42] Assuming that the number of households remain constant

[43] Even by accounting for price changes then the 'gap' should stay broadly similar – both prices should change at the same rate and therefore price changes should only have a marginal impact on the gap (it would widen slightly).

ANNEX B

Map of survey responses from Dorset resident survey