Report

footprint ECOLOGY

Habitats Regulations Assessment of the North Dorset Local Plan Part 1 (Publication Draft)

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Summary

The Habitats Regulations Assessment undertaken here for the North Dorset Local Plan Part 1 includes a full screening of the publication draft of the plan to check for the likelihood of significant effects. This has resulted in the following:

- Recognition that the majority of the plan adequately meets the requirements of the Habitats Regulations, and provides strong protection for European sites within and in close proximity to the North Dorset District.
- Recognition of measures that have been built into the new local plan since previous recommendations were made for the Habitats Regulations Assessment of the previous core strategy
- Identification of minor wording changes required to rule out the likelihood of significant effects
- An appropriate assessment that revisits and updates previous work, and sets out an updated suite of recommendations to give certainty that for the key issues identified, the plan is able to ensure that adverse effects on site integrity will not occur. Findings are summarised in text boxes.

It is concluded that if all minor text revisions suggested in the screening table are made, and if the mitigation measures recommended in the appropriate assessment for each of the key issues where uncertainties remain are incorporated, it can be concluded that the North Dorset Local Plan Part 1 will not have or contribute to an adverse effect on site integrity.

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1. Introduction

1.1 This document provides a record of Habitats Regulations Assessment for the North Dorset Local Plan Part 1. It has been prepared by Footprint Ecology, on behalf of North Dorset District Council. The Council is responsible for the assessment and implementation of actions within, and this report forms part of the supporting documentation which will be submitted with the North Dorset Local Plan Part 1 when it is ready for Examination. It will be considered by the Examining Inspector as part of his/her scrutiny of the North Dorset Local Plan Part1 and the tests of soundness.

Overview of the progression of the North Dorset Plan to date

1.2 North Dorset District Council has been undertaking extensive preparation for a new Local Plan for a number of years. Initially, the Council embarked on the preparation of a core strategy in 2007 as the central document in its Local Development Framework, which was in accordance with the local plan system in place at that time. Changes to the planning system were brought about with a change of Government, and new legislation and a supporting new National Planning Policy Framework (NPPF) published in 2012 now directs planning authorities to prepare a 'Local Plan.' With a Core Strategy underway when the changes took place, North Dorset District Council decided to pause and take stock of the current situation, and how best to proceed with their spatial planning work for the District.

1.3 After consulting on key areas for revision in order to allow the plan to be remodelled into a local plan, the Council has now prepared a 'publication draft' of the North Dorset Local Plan Part 1, which both takes account of previous consultation input to the old style core strategy and provides an up to date plan in the new local plan style, that also has regard for updated an evidence base. Part 2 will be a subsequent document that will allocate specific sites for development, including both housing and employment. The North Dorset Local Plan Part 1 will cover a 15 year period from 2011 to 2026, but will be the subject of review where necessary during that period. The plan is currently at 'Publication Draft' which allows public consultation before the final plan is submitted to the Secretary of State for Examination, programmed for 2014.

1.4 This Habitats Regulations Assessment has been updated to provide a full record of assessment of the new plan in accordance with the conservation of Habitats and Species Regulations 2010, as amended, the 'Habitats Regulations.' This assessment has had regard for the previous Habitats Regulations Assessment work for the core strategy and any new evidence and information that has recently become available. Although Habitats Regulations Assessments are iterative, and should evolve as a plan progresses, because of the pause in plan progression and remodelling of the plan to fit changes to the planning system, it was deemed beneficial to prepare a new Habitats Regulations Assessment document that serves as a standalone supporting document for the local plan,

rather than having an update that requires continual referral back to previous work. This assessment therefore incorporates all relevant information from the previous assessment: background evidence collated for the previous assessment is set out in Appendix 4. There are a number of other appendices that provide the previous detailed assessment of key issues, in order to reduce the size of the main assessment document, making it more user-friendly and easier to search for key conclusions and recommendations relevant to the new local plan.

What is a Habitats Regulations Assessment and why is it necessary?

1.5 The term 'Habitats Regulations Assessment' refers to the assessment of any plan or project in order to check for its potential implications for European wildlife sites, i.e. to see if progression and implementation of a plan or project would harm the habitats or species for which European sites are classified or designated.

1.6 Under European legislation, which is transposed into domestic legislation and policy, European wildlife sites are afforded the highest levels of legislative and policy protection in the hierarchy of sites designated to protect important features of the natural environment. Legislation sets out a clear step by step approach for decision makers considering any plan or project. Those duties, applying to competent authorities, i.e. any public body individual holding public office with a statutory remit and function, apply where the decision maker is undertaking or implementing a plan or project, or authorising others to do so. A more detailed guide to the step by step process of Habitats Regulations assessment is provided in Appendix 1.

1.7 Habitats Regulations Assessment is an iterative process for plan making, with the development of the plan taking place alongside the assessment of options for their implications for European sites in close proximity to the plan area. In assessing the implications of a plan for European sites in close proximity, it is essential to fully understand the sites in question, their interest features, current condition, sensitivities and any other on-going matters that are influencing the site. Each European site has a set in 'interest features' which are the features for which the site is designated or classified, and the features for which Member States should ensure the site is maintained or, where necessary restored. Each interest feature for each European site has a set of 'conservation objectives' that set out the objectives for the site interest. These objectives are therefore also relevant to any Habitats Regulations Assessment, because they identify what should be achieved for the site, and therefore whether any plan or project may compromise the achievement of those objectives. Further information on European site conservation objectives can be found at Appendix 2.

1.8 As stated in the North Dorset Local Plan Part 1, the new planning system, and particularly the NPPF centres on 'the presumption in favour of sustainable

development.' The NPPF states (paragraph 15) that local plans should echo the presumption and should set out how it will be applied at the local level. The presumption in favour essentially relates to allowing development wherever and whenever it fully accords with planning policy, and meets the three tiers of sustainability (economic social and environmental benefits). Importantly however, the NPPF advises (paragraph 119) that the presumption in favour of sustainable development does not apply where development requires an appropriate assessment under the Birds or Habitats Directives. It is therefore essential that a spatial plan has fully assessed the implications of all aspects of its policy and allocations for European sites, to ensure that the plan does not promote development that cannot be implemented.

1.9 In the same way that a local plan provides the framework for subsequent associated lower tier plans and development proposals, Habitats Regulations Assessment at the local plan level provides the foundations of subsequent lower tier plan or project level Habitats Regulations Assessment. Neighbourhood plans, for example, are prepared by local communities as a lower tier plan focussing on a particular local area. Such plans are required to ensure that there is no likelihood of significant effects arising from their implementation, and the local plan level assessment is therefore essential to steer neighbourhood planning to enable it to meet this requirement.

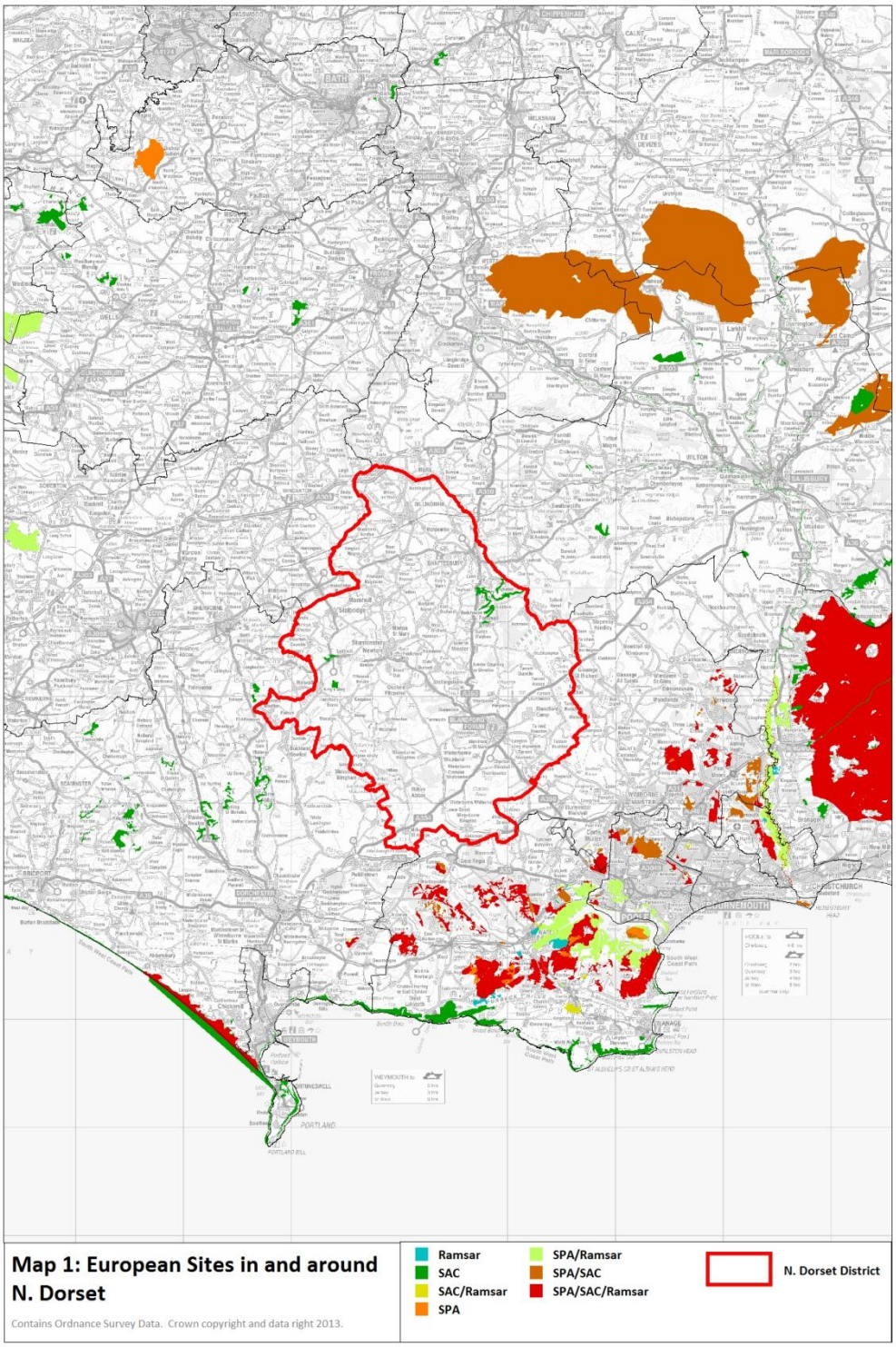
European sites within and in close proximity to North Dorset

1.10 When considering which European sites may be affected by a plan or project, i.e. which should form part of a Habitats Regulations Assessment, the question is essentially where there is the potential for a pathway between impact and receptor. Normally, it is the close proximity of a site to an impact that identifies that there is the potential for effects to occur, but there is also the possibility of effects at some distance away, but where there is still a pathway. This can occur as a result of natural or manmade pathways. For example, a watercourse may carry pollution downstream, or a sewage network may result in the discharge of waste water, some considerable distance from the source of the pollution, but the pathway takes the impact to the European site. The initial Habitats Regulations Assessment of the core strategy used a buffer of 20km from the District boundary, to initially check for the possibility of impacts. Table 1 below lists all European sites that fall within this distance.

Table 1: European Sites in and around North Dorset District, entirely or partly within 20km of the District Boundary. The approximate distance is the shortest distance from the District to the nearest part of the relevant site's boundary. Where multiple designations occur in a row then it is the nearest that is used.

SAC	SPA	Ramsar	Approx. distance from District boundary (km)
Fontmell & Melbury Downs			Within boundary
Rooksmoor			Within boundary
Holnest			0.15
Dorset Heaths, Dorset heaths (Purbeck and Wareham) and Studland Dunes	Dorset Heaths	Dorset Heathlands	2.1
Cerne and Sydling Downs			2.9
	Poole Harbour	Poole Harbour	6.7
Prescombe Down			8.6
West Dorset Alder Woods			8.6
River Avon	Avon Valley	Avon Valley	10.4
Chilmark Quarries			11.8
Isle of Portland to Studland Cliffs			14.3
Bracket's Coppice			13.7
Mendip Woodlands			14.9
Salisbury Plain	Salisbury Plain		16.5
Great Yews			17.2
Mells Valley			17.3
The New Forest	New Forest	New Forest	18.9
Chesil and the Fleet			19.9

1.11 Further information relating to each of the European sites above is provided in appendices. This includes Appendix 3 setting out the interest features of each of the sites, and Appendix 4 providing detailed information on each site in terms of any known background information, current issues and sensitivities. The designated sites above, and the District are shown below in Maps 1 and 2.



Map 1: European Sites in and around N. Dorset

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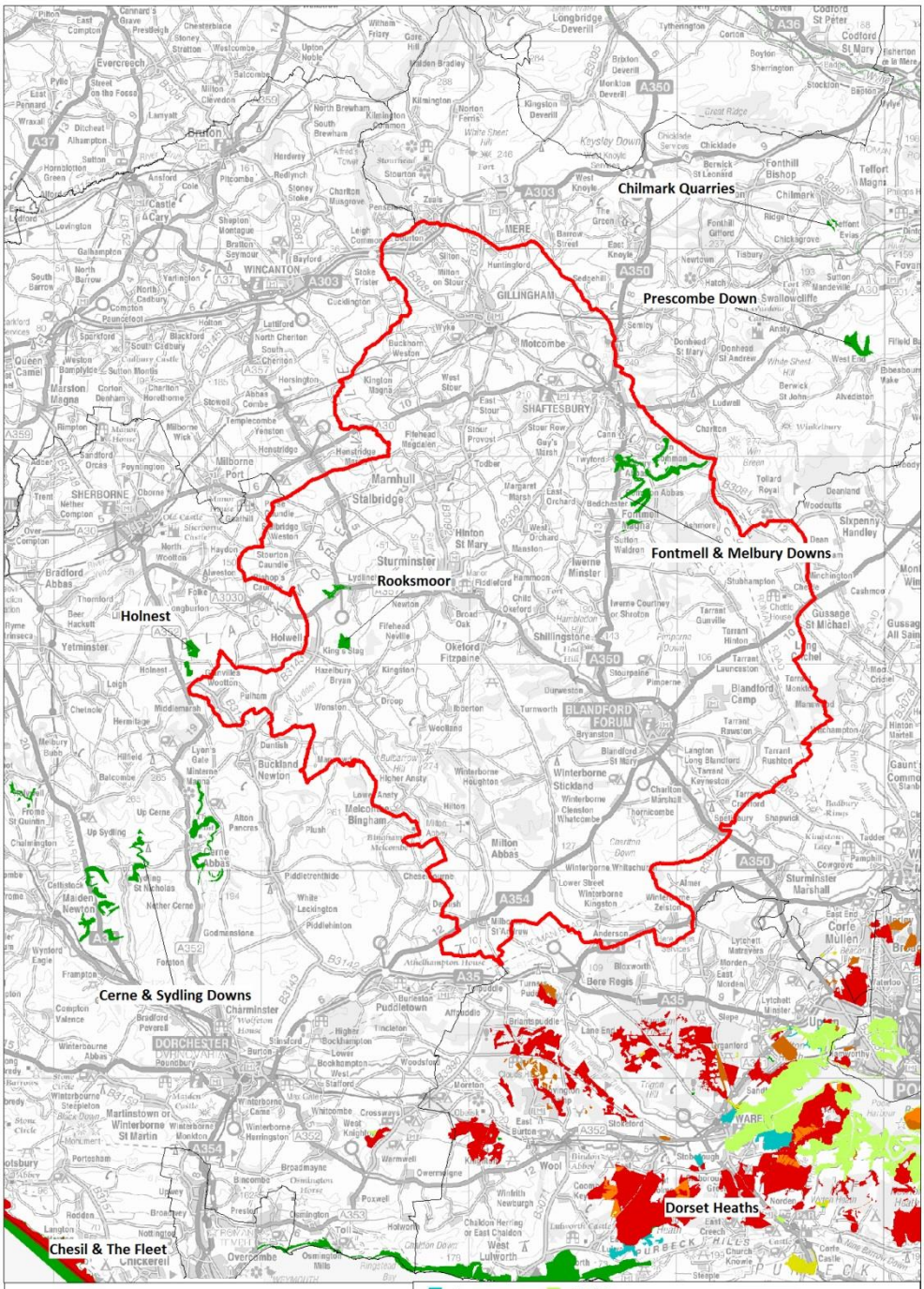

Map 2: European Sites in and around N. Dorset - key sites labelled

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2. Screening the plan for the Likelihood of Significant Effects

2.1 The initial screening stage of Habitats Regulations Assessment is known as the check for the likelihood of significant effects. This stage is a screen of plan or projects, to enable the decision maker to either quickly establish that a plan or project is unlikely to significantly affect a European site, on the basis of information provided within the plan or project, or to conclude that there is a possibility of significant effects, and therefore further information gathering and assessment is necessary, a stage referred to as the 'appropriate assessment.' If further assessment is required because of uncertainties, the plan or project is screened in for further consideration as part of the appropriate assessment.'

2.2 The main thrust of North Dorset's spatial planning in the new local plan remains similar to that previously promoted in the formerly emerging core strategy, being focused on the four main towns within the North Dorset District, which are Blandford, Gillingham, Shaftesbury and Sturminster Newton. The largest individual area for new growth is promoted to the south of Gillingham. Current proposals for neighbourhood plans also reflect the focal areas for growth, with communities bringing forward neighbourhood plans in Gillingham (designated on 20/08/12), Bourton (10/12/12), Shaftesbury, Melbury Abbas and Cann (16/09/13) and Shillingstone (16/09/13). Others are also likely to come forward as communities consider the need for such plans.

2.3 The overall figures for housing growth have however been notably reduced, in response to a reappraisal of housing need, taking into account the economic downturn.

2.4 During earlier Habitats Regulations Assessment work for the core strategy, a screening exercise of the plan identified a number of key issues whereby it was concluded that significant effects were possible, or could not be ruled out. The following points were identified as potential issues:

- Impacts of recreation and housing on the Dorset Heaths (Dorset Heaths SAC/SPA/Ramsar).
- Impacts from recreation on chalk grassland sites (Fontmell and Melbury Downs SAC, Cerne and Sydling Downs SAC and Salisbury Plain SAC/SPA).
- Impacts of recreational pressure on coastal / estuarine sites (Poole Harbour SPA/Ramsar Chesil and the Fleet SAC / SPA; Isle of Portland to Studland Cliffs SAC; Dorset Heaths (Purbeck & Studland) and Studland Dunes SAC).
- Impacts of increased recreational pressure on the New Forest (New Forest SAC/SPA/Ramsar.
- Water issues are identified in terms of both the additional water demand and waste water discharges from sewage treatment works. There is also the potential for any sites adjacent to new development to be affected by contaminated run-off. Sites potentially affected are therefore the Avon

valley sites (water abstraction and water quality), Fontmell and Melbury Downs SAC (water abstraction) and Rooksmoor SAC (water abstraction).

- Air quality is particularly an issue close to roads. Sites that fall within 200m of a road (Rooksmoor SAC and Fontmell and Melbury Downs SAC) have the potential to be significantly affected by increased air pollution.
- Rooksmoor SAC is bisected by two A-roads and it is apparent that this has the potential to pose particular problems for the management of this site.

2.5 The new local plan has been screened for the likelihood of significant effects. This is undertaken on each policy within the plan, and where there is the potential for implementation of the policy to result in impacts on European sites, or there are possible risks or uncertainties, a policy is screened in as likely to have a significant effect. Because the application of the Habitats Regulations is on a precautionary basis, essentially the screening is to identify those policies where a likelihood of significant effects cannot be ruled out with any certainty.

2.6 The screening table provides a policy by policy check for potential effects. Where there is the potential for significant effects, this is noted and the issue is flagged for further assessment. Essentially, the issues identified within the new local plan are the same as those highlighted above, which were the issues identified from the core strategy previously.

2.7 The screening for the likelihood of significant effects found that a number of measures have been incorporated into the plan to strengthen protection of the European sites. It is clear that the evolution of the plan from core strategy to local plan has taken on board a number of recommendations from the previous Habitats Regulations assessment. The new screening exercise for the Publication Draft of the Local Plan Part 1has not identified any additional issues over and above those previously identified, and a number of issues are alleviated.

2.8 Whilst a number of issues have been resolved, given the step from the previous core strategy to the new local plan, it was deemed beneficial for the appropriate assessment of the new local plan to include a revisit of all issues, in order to provide a full record of how mitigation measures have been applied and what remains a potential concern. The following section therefore provides a review of the key potential impacts and is the appropriate assessment of the Local Plan Part 1, alongside the relevant appendices to this report, which provide a record of previous appropriate assessment work for each issue. The screening table records the conclusion of the screening for the likelihood of significant effects, makes recommendations for minor changes to strengthen the plan, and also summarises how the issue has been resolved through the appropriate assessment.

2.9 In addition to the issues identified relating to European sites, the previous Habitats Regulations Assessment highlighted that the North Dorset District holds a number of important populations of species that are protected by

European legislation individually in their own right, or are species of European importance that are listed within the legislation as being species for which SACs are designated. Whilst not directly of concern for a Habitats Regulations Assessment which specifically considers the potential impacts of a plan or project on European sites, it is important to note that the Habitats Directive requires European Member States to contribute to the favourable conservation status of species across their natural range, and in particular identified the need for land use planning and development policies to improve the European site network by managing features of the landscape, especially whether they act as a linear or stepping stone feature.

2.10 Of particular note, although not the only example, is the maternity colony of greater horseshoe bats at Bryanston near to Blandford. Whilst there isn't any clear evidence of the association with an SAC for this colony, greater horseshoe bats are listed on annex II of the Habitats Directive as a feature for which SACs are designated, and do form an SAC feature at sites in the wider area. It is suggested that the Council should be mindful of the wider duties set out within the Habitats Directive when considering development allocations. Development at Blandford, for example will require the use of greenfield land to meet the levels of housing allocated, and foraging habitat used by the maternity colony of greater horseshoe bats represents important habitat contributing to the overall favourable conservation status of the species. Protection and appropriate management of foraging habitat should therefore be a key consideration in the allocation of greenfield sites at Blandford as preparation of Part 2 of the plan is initiated.

Table 2: Screening table checking policy by policy for Likely Significant Effects

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
Plan context and overarching objectives						
Introductory sections setting out issues and challenges	Setting the context of the plan, local characteristics of the district	Natural environment and European sites previously highlighted as a primary issue	No LSE	Plan introduction continues to highlight that European site protection is a plan objective	N/A	N/A
Vision	The vision for the District after the lifetime of the plan – in 15 years	Enhanced natural environment previously included	No LSE	A conserved and enhanced natural environment forms part of the 15 year vision	N/A	N/A
Objectives for the Plan – Objective 1	Meeting the challenge of climate change	Environmentally positive objective	No LSE	Environmentally positive objective, development not promoted	N/A	N/A
Objectives for the Plan – Objective 2	Conserving and enhancing the historic and natural environment	Environmentally positive objective, minor text revisions suggested	No LSE	Environmentally positive objective, development not promoted. Previous recommendation to include 'restoration' but objective now refers to 'well managed' as well as protected, so this covers restoration where required.	N/A	N/A
Objectives for the Plan –	Ensuring the vitality of market towns –	Could not rule out LSE as proposed	LSE	As a key objective of the strategy the focus of	Further detailed assessment required – take	See AA chapter summary boxes to identify

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
Objective 3	main focus of new growth at Blandford, Gillingham, Shaftesbury and Sturminster Newton	growth leading to the potential impacts for which previous AA undertaken		growth continues to be the main towns there is a potential threat to all European sites	to AA. All key issues considered in AA of relevance	recommendations that still need to be put in place to enable conclusion of no AEOI for the plan
Objectives for the Plan – Objective 4	Supporting sustainable rural communities	Previous concerns relating to rural growth in the west of the District near to Rooksmoor SAC	LSE	Objective supports some growth in rural areas and promotes neighbourhood planning	Further detailed assessment required – take to AA. Rooksmoor SAC For neighbourhood planning – see recommendations below for additional policy wording	AEOI ruled out as a result of grazing project undertaken since previous HRA. Rooksmoor SAC now in appropriate management which reduces its sensitivity to new growth.
Objectives for the Plan – Objective 5	Meeting the District's housing needs – provision of housing to meet the needs of the District, focusing on the four main towns	Could not rule out LSE as proposed growth leading to the potential impacts for which previous AA undertaken	LSE	As a key objective of the strategy the focus of growth continues to be the main towns there is a potential threat to all European sites	Further detailed assessment required – take to AA. All key issues considered in AA of relevance	See AA chapter summary boxes to identify recommendations that still need to be put in place to enable conclusion of no AEOI for the plan
Objectives for the Plan – Objective 6	Improving the quality of life	Previously no LSE as a general quality of live objective.	No LSE	Continues to be a qualitative objective, development not promoted	N/A	N/A
Strategic policies - sustainable development strategy						

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
Policy 1	Presumption in favour of sustainable development	New policy following NPPF, not previously assessed	No LSE	Applies the presumption in favour of sustainable development requirement of the NPPF in local context. Caveat in place as refers to material considerations that would defer from the presumption. These would include legislative considerations – Habitats Regulations	N/A	N/A
Policy 2	Core spatial strategy	Previous core policy 3 set out similar overarching strategy for the District and LSE was concluded.	LSE	As the overarching strategy for the District, this policy identifies that the focus of growth continues to be the main towns there is a potential threat to all European sites	Further detailed assessment required – take to AA. All key issues considered in AA of relevance	See AA chapter summary boxes to identify recommendations that still need to be put in place to enable conclusion of no AEOI for the plan
Strategic policies - environment and climate change						
Policy 3	Climate Change	Core Policy 1 previously identified as an environmentally positive policy	No LSE	An environmentally positive policy with measures that will benefit European sites	N/A	N/A
Policy 4	Natural	Previous core policy	LSE	Although a positive policy		Additions to supporting text

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
	Environment	14 assessed as environmentally positive		protecting European sites, this policy is the key area of the plan where mitigation measures are incorporated. Therefore essential that it covers all requirements		and policy should be made as recommended in the appropriate assessment, to ensure that this policy provides the protection measures required.
Policy 5	Historic Environment	Previous core policy 14 assessed as environmentally positive	No LSE	Does not promote development, protective policy for the historic environment	N/A	N/A
Strategic policies - meeting housing needs						
Policy 6	Housing Distribution	Previous core policy 4 set plan overall housing figure at 7,000, primary issue triggering AA.	LSE	Quantifies the overall total of new housing over the plan period (now 4,200). New housing growth is the primary source of potential impacts on European sites, triggering all key issues to be considered at AA	Although overall housing numbers have reduced , all key issues remain of relevance. Further detailed assessment required – take to AA, with consideration of housing numbers proposed for each town.	See AA chapter summary boxes to identify recommendations that still need to be put in place to enable conclusion of no AEOI for the plan
Policy 7	Delivering Homes	Previous core policy 8 previously identified as a qualitative policy only, no LSE	No LSE	Qualitative policy considering the housing needs of particular groups, and the mix and density of development	N/A	N/A

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
Policy 8	Affordable Housing	Previous core policy 9 previously identified as a general policy, no promotion of development, no LSE	No LSE	Policy sets affordable housing requirements for the district as a percentage of overall housing and how it should be delivered, does not promote development	N/A	N/A
Policy 9	Rural Exception Schemes	Previous core policy 10 previously identified as a policy setting parameters for affordable housing exceptions, no LSE	No LSE	Policy clarifies where affordable housing rural exceptions could be applicable, does not promote development in any particular location	N/A	N/A
Policy 10	Gypsies, Travellers and Travelling Showpeople	Previous core strategy did not include a policy for this group	No LSE	Identified a general need for allocations to meet the housing needs of this group, but does not promote locations or quantify development, rather just commits to producing a specific development plan document to examine this need and identify sites.	N/A Note that HRA will be required for the development plan document	N/A
Strategic policies - supporting economic development						

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
Policy 11	The Economy	Previous concerns highlighted regarding increased traffic volumes in close proximity to sites sensitive to air pollution	LSE	Directing employment land to the four main towns. Increased traffic at Shaftesbury and Sturminster Newton possibly affecting Fontmell and Melbury downs SAC and Rooksmoor SAC Some support for tourism given, again focussed on four main towns, but not specifically identified as a need	Further detailed assessment required – take to AA.	The new AA reconsidered impacts of increased traffic and air pollution on the SACs. No AEOI now concluded with considerable focus of the plan on traffic reductions and sustainable transport. However, there are further options to improve air quality within the immediate vicinity of the SACs which should be taken forward through relevant plans and strategies
Policy 12	Retail, leisure and other commercial developments	Previously highlighted issue of additional mixed use regeneration at Sturminster Newton for core policy 7	LSE	Increased traffic leading to potential effects on Rooksmoor SAC	Further detailed assessment required – take to AA.	The new AA reconsidered impacts of increased traffic and air pollution on Rooksmoor SAC. No AEOI now concluded with considerable focus of the plan on traffic reductions and sustainable transport. However, there are further options to improve air quality within the immediate vicinity of the SACs which should be taken forward through

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
						relevant plans and strategies
Strategic policies – infrastructure						
Policy 13	Grey Infrastructure	Previously identified as not LSE, core policy 11 was a general policy without any development identified	LSE	Specific road improvements not referred to, policy is strategic in nature and focuses on sustainable transport improvements. For water infrastructure – does identify need for investment in Gillingham WWTW and sewerage networks that would serve new development at Blandford St Mary.	Further detailed assessment required – take to AA.	The appropriate assessment has considered potential impacts on European sites arising from water resources and water quality issues. Whilst it appears that impacts will not occur or there are measures in place to address them, it is recommended that the plan needs a robust evidence base to support these conclusions. This should be obtained from Wessex Water and the Environment Agency
Policy 14	Social Infrastructure	Core policy 12 previously identified as no LSE, no development promoted.	No LSE	Generally does not identify or support development, rather a commitment to providing the right social infrastrxcuture in the right place. Some specific needs identified re new primary schools. Doctor's surgeries, but no	Opportunity for supporting text to make reference to importance of informal and natural open space to reduce pressure on areas of high wildlife value (7.108)	

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
				LSE		
Policy 15	Green Infrastructure	Positive policy, formerly policy 13	LSE	Although a protective policy this policy should secure some of the mitigation measures required to protect European sites. Further strengthening required in text and policy	The policy should refer to the role of new greenspace as part of the suite of measures that protect European sites	Particularly need to consider the conclusions of the appropriate assessment relating to recreational impacts on the chalk grassland sites, and the role of greenspace at Shaftesbury
Strategic policies - market towns and the countryside						
Note for the HRA that the following policies relate to growth at specific locations. LSE cannot be ruled out for overall impacts of growth across the district, as set out in policies 2 and 6, and the overall impact of growth has been considered in the AA. The screening below therefore only considers any locationally specific issues.						
Policy 16	Blandford	For the previous core policy 15 for Blandford it was concluded no LSE	LSE	Policy identifies the needs and shortfalls for the town, and what should be provided over the plan period in terms of transport, community facilities, but there is a specific need to address recreational pressure issues at Fontmell and Melbury Downs SAC	Further detailed assessment required – take to AA.	Impacts of increased recreational pressure on Fontmell and Melbury Downs SAC is considered in the appropriate assessment and measures are recommended to strengthen text and put monitoring in place
Policy 17	Gillingham	For the previous core policy 15 for Gillingham it was	No LSE	No specific impacts identified from development in this		

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
		concluded no LSE		location. See Policy 21 for consideration of the strategic site allocation		
Policy 18	Shaftesbury	Previous concerns raised for core strategy core policy 17 relating to the outer ring road proposal	LSE	Concerns relating to the scale of development at Shaftesbury and the potential impact on Fontmell and Melbury Downs SAC	It is noted (para 8.121) that the plan is no longer reliant on the outer ring road during the plan period, and the line of the road is now only protected from development to retain future options. It is clear that the plan is no longer reliant and therefore no LSE for this aspect of the policy but it is suggested that para 8.121 refers to the need for HRA for any future allocation or road project. Impacts of recreational pressure do need further consideration in the appropriate assessment.	Impacts of increased recreational pressure on Fontmell and Melbury Downs SAC is considered in the appropriate assessment and measures are recommended to strengthen text and put monitoring in place
Policy 19	Sturminster Newton	Assessment of previous core policy 18 identified potential issues relating to	LSE	Potential impacts of increased traffic arising from new growth at Sturminster Newton on Rooksmoor SAC	Concerns relating to Rooksmoor SAC identify the need to revisit this issue at AA	The AA has considered updated information relating to the potential impact of increased traffic from new growth on Rooksmoor SAC

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
		Rooksmoor SAC				and its management
Policy 20	The Countryside		LSE	Policy describes a 'light touch' approach to rural areas in the plan as the Districts needs are essentially met by growth in the four market towns. Reference to neighbourhood planning taking the lead on local issues and any development needs. The policy does however need to identify the importance of policy 4, and to a lesser extent policy 15 in decisions.	To remove LSE it is recommend that the Table highlighting relevant policies guiding development in the countryside is amended to include Policy 4 on the natural environment and policy 15 on green infrastructure. The cross reference to policy 4 will ensure that it is clear that impacts on European sites will be taken into account in any proposals and also relevant to neighbourhood planning.	
Policy 21	Gillingham southern extension	Previous core strategy did not have a separate policy specifically for the southern extension at Gillingham	LSE	35% of the housing allocated for the plan period is directed to Gillingham, and primarily to the southern extension site	The masterplan for the southern extension should be the subject of HRA, and should seek to rule out LSE. Recommend that supporting text at para 9.20 and para 9.44 should refer to the green infrastructure plan seeking to prevent impacts on	

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
					European sites, with wording that captures wider impacts (e.g. from water resources and discharges, recreation etc) not just those in close proximity. This could be done with minimal additional wording with either specific reference to European sites and the need for a masterplan HRA expanding the sentence relating to ecological interests close to the site to also state 'and those in the wider area where relevant through HRA.'	
Development management policies						
Policy 22	Renewable and Low Carbon Energy	Identified potential impacts from specific renewable energy developments, but no LSE as policy did not identify any development need	No LSE	Policy sets out criteria against which renewable energy development proposals will be assessed including impacts on biodiversity. No specific development promoted.	N/A	N/A

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
Policy 23	Parking		No LSE	Criteria based policy only for parking provision. No specific development promoted.	N/A	N/A
Policy 24	Design		No LSE	Criteria based policy only for quality design. No specific development promoted.	N/A	N/A
Policy 25	Amenity		No LSE	Criteria based policy amenity. No specific development promoted.	N/A	N/A
Policy 26	Sites for Gypsies, Travellers and Travelling Showpeople	Previously concluded for DM policy 6 that this is a general policy, with no specific development proposed	No LSE	Continue to conclude that this is a criteria based policy only.	It is however noted that the policy could refer to impacts on the natural environment	N/A
Policy 27	Retention of Community Facilities		No LSE	Criteria based policy only for retaining facilities. No specific development promoted.	N/A	N/A
Policy 28	Existing Dwellings in the Countryside		No LSE	Criteria based policy only for use of existing dwellings. No specific development promoted.	N/A	N/A
Policy 29	The Re-use of		No LSE	Criteria based policy only	N/A	N/A

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
	Existing Buildings in the Countryside			for use of existing buildings. No specific development promoted.		
Policy 30	Existing Employment Sites in the Countryside		No LSE	Criteria based policy only for use of existing sites for employment. No specific development promoted.	N/A	N/A
Policy 31	Tourist Accommodation in the Countryside		No LSE	Criteria based policy only for tourist accommodation. No specific development promoted and no particular need identified. Requires sustainable locations.	N/A	N/A
Policy 32	Equine-related Developments in the Countryside		No LSE	Criteria based policy only for equine development. No specific development promoted.	N/A	N/A
Policy 33	Occupational Dwellings in the Countryside		No LSE	Criteria based policy only for occupational dwellings. No specific development promoted.	N/A	N/A
Standards for parking - Appendix			No LSE	Criteria based information to supplement the parking	N/A	N/A

Plan section/policy reference	Summary of relevant section/policy content	Relevant points from earlier HRA and previous policy number	Likely Significant Effect and sites affected	Explanation of LSE conclusion	Additional measures required to remove LSE	Appropriate assessment recommendations
				policy. No specific development promoted.		

3. Appropriate Assessment

3.1 As a Habitats Regulations Assessment is being undertaken, the initial check for likelihood of significant effects is a relatively quick exercise to identify where there are potential issues that require further investigation or information gathering. This is then followed by more detailed appropriate assessment. Whilst screening simply identifies whether there is a potential for impacts, an appropriate assessment must specifically consider the ecological integrity of the European site, with the purpose of the assessment being to determine whether adverse effects on site integrity can be ruled out.

3.2 This section and its associated appendices provide the appropriate assessment stage of the Habitats Regulations Assessment of the North Dorset Local Plan, providing further consideration of those issues where the initial screening identified uncertainties. Appropriate assessment provides an opportunity for a decision maker to set out a full record of information gathering, consideration of what that information means and justified conclusions drawn. The appropriate assessment record therefore strengthens the final plan taken forward as the assessment process is an important evidence base for the content of the final plan, and is available for any interested party to view. This document will therefore support the Examination of the plan, providing a record for the Inspector examining the plan, to demonstrate how North Dorset District Council has had full regard for the duties set out within the Habitats Regulations.

3.3 This appropriate assessment consists of two parts. It uses the previous appropriate assessment work as a basis for identifying potential impacts, but then goes on to update that work to ensure that the assessment is fit for purpose for the current local plan. In depth assessment of impacts undertaken previously is not repeated in the main body of the report, but rather it is provided in appendices for each issue in turn. Here within the main body of the report, the refreshed assessment below refers to assessment work undertaken for the previous Habitats Regulations Assessment and the individual appendix to this report where that information can be found. The assessment then focuses on the recommendations previously made and any new information or updates that are relevant to the assessment and provide evidence to inform an up to date conclusion regarding whether adverse effects on site integrity can be ruled out.

3.4 Assessment work was undertaken for the previous Habitats Regulations Assessment and was then used to inform a suite of mitigation measures. Updating this previous work involves a check to see that the issues remain the same, consideration of how previous recommendations have been taken

forward, and then new recommendations for any residual impacts not yet resolved. The latter may be as a result of new issues arising in the new plan, mitigation measures previously recommended not fully implemented to date, or as a result of new information now available. Provided below is the mitigation previously proposed for each issue, with an updated assessment of mitigation requirements to inform the new local plan, highlighting any residual impacts.

Impacts of housing on the Dorset Heaths (Dorset Heaths SPA/SAC/Ramsar site)

3.5 The appropriate assessment of the potential for the impacts arising from new housing to adversely affect the Dorset Heaths is set out in Appendix 5. In summary, the assessment considered the cumulative, in-combination effects of urban development on the heathland sites. Impacts associated with urban development include increased cat predation, higher fire incidence, disturbance to ground nesting birds, increased nutrients from dog fouling and damage from increased footfall (trampling).

3.6 In considering the new local plan, it is advised that potential impacts remain the same. Whilst overall housing figures for the District have been reduced, i.e. the extent of impact may have reduced; there remains the potential for new housing to increase recreational pressure on the heaths. The mitigation measures previously recommended, and an update to those measures, is provided below.

3.7 A strategic approach to avoiding and mitigating for potential impacts arising from recreational pressure as a result of new residential development was first developed for the Dorset Heathlands and Thames Basin Heathlands in response to the significant levels of growth in emerging regional plans. The considerable evidence base gathered to support and develop the two strategic schemes lead to a groundbreaking approach to seeking a region wide solution to enabling growth whilst adequately protecting European wildlife interests. The mitigation strategies now in place for the Dorset Heathlands and Thames Basin Heaths provide best practice examples of strategic approaches for other schemes across the country to build on and adapt to their specific situation.

3.8 The mitigation strategy for the Dorset Heathlands has now been in place since 2006, and is supported by Natural England. The Dorset Heathlands Planning Framework is the joint initiative by local authorities to the south and east of North Dorset (Poole, Bournemouth, Christchurch, E Dorset and Purbeck) and which has been using developer contributions to fund measures which include wardening, new access infrastructure, community work, the creation of new sites (to draw people away from the heaths) and monitoring. The mitigation

measures, funding details and other information are set out in a Supplementary Planning Document[1] (adopted in 2012).

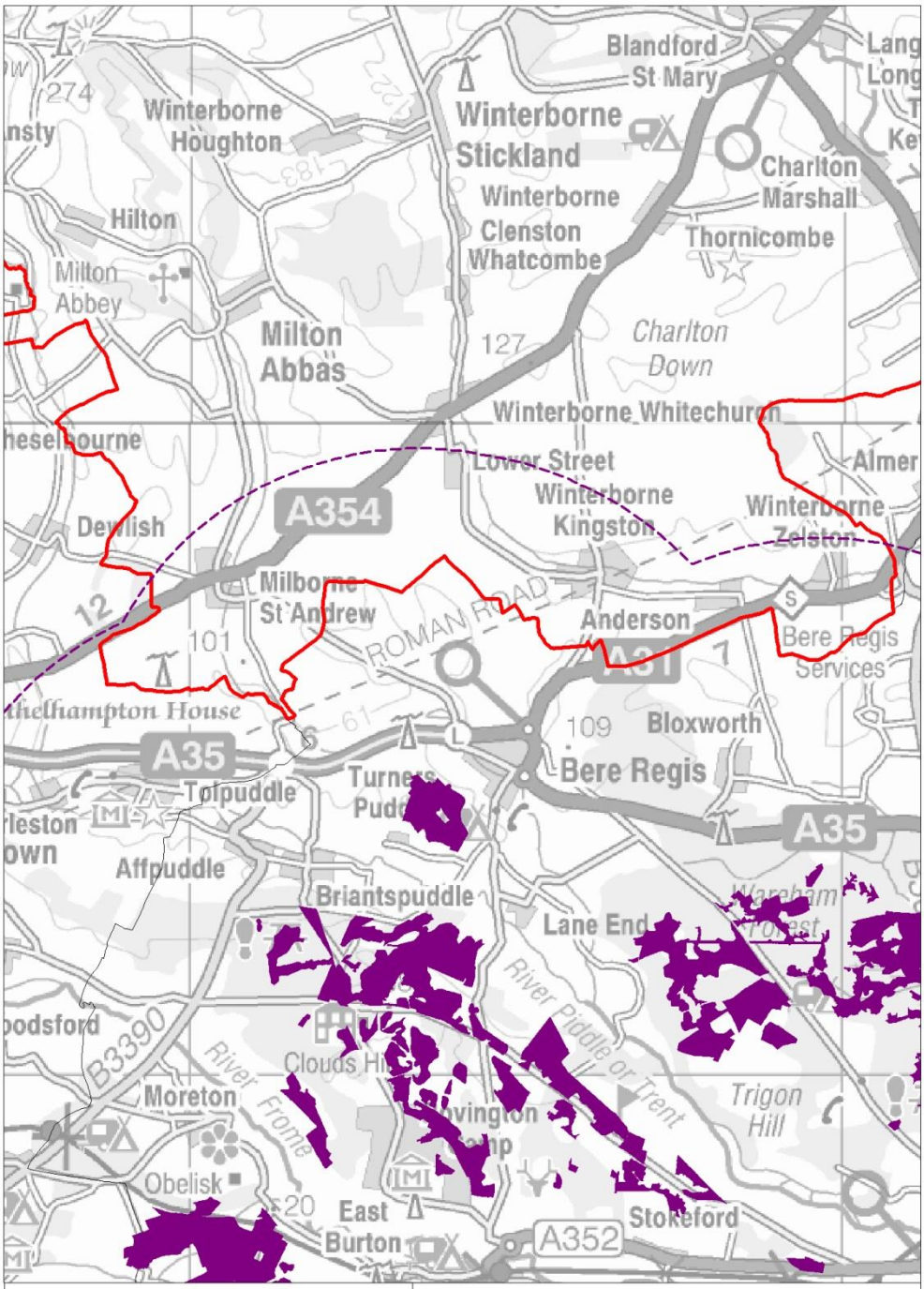
3.9 West Dorset District Council has individually set out a programme of developer contributions to fund works relating to heathland sites and mitigation relating to development pressure. West Dorset District Council provides a suitable model for mitigation as the scheme has been accepted by Natural England, and, like North Dorset, relates to potentially small increases in housing in the area considered to be the 'zone of influence' where a likelihood of significant effects arising from new housing cannot be ruled out. Any mitigation framework for North Dorset would reflect the small increases in recreational pressure in comparison to the other administrative areas around the heaths that are party to the joint approach.

3.10 Relevant heathland SSSIs (and part of the Natura 2000 network) that are within 5km of the North Dorset District are Black Hill Heath (Bere Regis) and parts of Wareham Forest (Morden Bog and Hyde Heath). Map 3 shows the relevant parts of the North Dorset District that fall within the 5km zone of influence, and as the map illustrates, this is a small area to the south of the District, outside the market towns that form the focus of growth for the District in accordance with the local plan.

3.11 Recommendations made previously for the core strategy were for North Dorset District Council to engage with the authorities involved in the joint approach, to gain a broad understanding of the types of measures being developed and implemented, and to establish how specific mitigation for mitigation scheme could be pursued.

3.12 Recommendations for the new local plan remain the same. Policy 4 of the new local plan has taken on board the previous measures recommended for potential impacts on the Dorset Heathlands, clearly stating that within the 5km zone, contributions from developments will be required in order to fund mitigation measures relating to both on and off site measures. It is now recommended that the Council builds upon the policy in place to ensure that the Dorset Heathlands are protected, by giving further consideration to how this aspect of Policy 4 is to be implemented. There are options for either providing contributions to the joint framework, for both on and off site measures, or for the council to use funds to provide off site measures within the North Dorset District. Previously the appropriate assessment made a number of recommendations for the types of measures that could be funded, and these are listed again here below.

[1] http://www.dorsetforyou.com/387392


Blandford St Mary
Winterborne Houghton
Winterborne Stickland
Winterborne Clenston
Whatcombe
Charlton Marshall
Thornicombe
Hilton
Milton Abbey
Milton Abbas
Charlton Down
Winterborne Whitechurch
Lower Street
Winterborne Kingston
Winterborne Zelston
Almer
Dewlish
A354
Milborne St Andrew
ROMAN ROAD
Anderson
A31
Bere Regis Services
Athelhampton House
A35
Bloxworth
Bere Regis
Affpuddle
Briantspuddle
Lane End
Wareham Forest
River Piddle or Trent
B3390
Moreton
River Frome
Trigon Hill
Obelisk
East Burton
A352
Stokeford
Map 3: Dorset Heaths and 5km zone
Contains Ordnance Survey Data. Crown copyright and data right 2013.
Dorset Heaths (SAC, SPA or Ramsar)
N. Dorset Distr
5km zone around heaths

3.13 Suitable measures could include:

- The provision of alternative site(s) of a suitable size and design to draw dog walkers and other visitors that would otherwise visit Wareham Forest or Black Hill Bere Regis. Suitable locations would be in the south of the District around Milton Abbas, Winterbourne Whitechurch or Milborne St. Andrew. A large site to the south of Blandford may also be suitable. In order to be successful site(s) will need to be easily reached by car and provide safe, off-road parking. Sites would need to be agreed by Natural England and secured in perpetuity. Given the likely low level of housing provision that might come forward within the zone indicated in Map 4, costs may need to be disproportionately high to secure such a site (potentially too high to secure through, for example, developer contributions). Sites outside the District (e.g. in the north of Purbeck District or the west of East Dorset District) may also be suitable and it might be possible for North Dorset District Council to work jointly with one of these authorities to contribute towards a new site in a suitable location.
- Additional green infrastructure in the form of cycle routes and dog walking routes that provide attractive, quiet and safe opportunities for recreation. Additional facilities such as parking areas, signage, promotion etc may be required. In order to identify potential opportunities it will be necessary to undertake a review of existing routes etc. in the southern part of the District.
- Provision of a seasonal wardening presence at Black Hill Bere Regis, with the face-to-face contact between the warden and the public providing a means to promote responsible access (such as dogs on leads).

3.14 It will be necessary to monitor and evaluate the success of mitigation measures, to ensure that as a whole they deliver effective mitigation, and to provide an audit trail for the use of developer funding. This would be best achieved through regular review and should complement and feed into any monitoring and review undertaken by the joint framework, so that a consistent and usable evidence base continues to be developed. The review should establish the number of new developments that have come forward in the period, project expenditure, and check on the progress and effectiveness of the mitigation projects adopted.

3.15 The list of measures above would be sufficient to allow small developments to proceed with reasonable confidence of no adverse effect on integrity of the European Sites. It is possible that any large developments within 5km of a European designated heathland would be able to provide adequate mitigation measures as part of the development alone, rather than providing developer contributions towards a co-ordinated approach. However, as the zone of influence within the District is not the focus of growth within the plan, large developments able to deliver their own mitigation may be unlikely. It is recommended however that this possibility is considered by the Council, and

that an appropriate reference is made within the plan text to support such a possibility. Clear cross-reference to information on the mitigation required or the level of contribution within supporting text would perhaps add clarity for developers.

Summary: Urban effects and the Dorset Heaths

Appropriate assessment findings

The appropriate assessment identified a potential adverse effect on integrity to the Dorset Heathlands SPA/Dorset Heathlands Ramsar/Dorset Heaths SAC as a result of cumulative, in-combination, urban development within 5km of the heaths. The five kilometres covers a small (and rural) part of North Dorset District.

Measures currently within the plan

Policy 4 within the plan contains a section on the Dorset Heaths and there is supporting text regarding current strategic mitigation measures. Policy 4 specifically identifies the 5km zone and states the need for developer contributions towards mitigation.

Additional recommendations

Supporting text could highlight the level of developer contributions expected from within the 5km zone and cross reference to the SPD (which gives details of mitigation measures). It could also mention the possibility for large developments within 5km of the Heaths (which are not likely to come forward) to provide their own mitigation.

Impacts of recreation on chalk grassland sites (Fontmell and Melbury Downs SAC, Cerne and Sydling Downs SAC and Salisbury Plain SAC/SPA)

3.16 The previous appropriate assessment (Appendix 6) raised some concern about increased recreation pressure at Fontmell and Melbury Downs SAC as a result of development on the edge of Shaftesbury. These concerns related to impacts from trampling, dog fouling etc. on the chalk grassland interest. We suggested that targeted monitoring should be established to provide an early warning of any impacts, and development on the outskirts of Shaftesbury should include adequate and attractive greenspace.

3.17 Turning now to the proposals in the new local plan, it is worth noting that some large scale development in Shaftsbury has taken place in the intervening period between the previous Habitats Regulations Assessment of the core strategy and the publication of the proposals in the new local plan. Correspondence between North Dorset Council and Natural England indicates that Natural England have advised the council of no likely significant effects with respect to recreation impacts on the chalk grassland and development in Shaftesbury[2].

3.18 The previous assessment highlighted that the sites did not appear to be particularly suffering from current recreational pressure, but that with the focus of growth in areas such as Shaftsbury, there was a need to take a careful and proactive approach to protecting these sites, given their sensitivity to recreational pressure. There is little or no infrastructure or management in place at Fontmell and Melbury Downs SAC to manage access.

3.19 Specific targeted monitoring of the condition of chalk grassland at the Fontmell and Melbury Downs SAC, including the presence of indicators of decline in quality due to trampling and/or enrichment was recommended, and that this should focus on vulnerable locations such as steep slopes or new desire lines leading out from main access points.

3.20 It was advised that the features to be monitored need to be agreed with Natural England and to be sufficiently sensitive that early warning of adverse effect can be recognised. The purpose of this monitoring would ensure that if deterioration starts to appear then actions should then follow to contain or divert such pressure before long-term damage is sustained. Importantly, the set of monitoring thresholds should be developed in order to provide an early warning before it is considered that adverse effects have occurred, otherwise the measures do not perform their function of protecting the interest features.

3.21 We still recommend that early warning monitoring should be put in place: it would not necessarily be complex or costly to establish. It will need to be supported by a set of actions that could be implemented if the monitoring

[2] Email from Charles Routh (Natural England) to Terry Sneller (North Dorset District Council), 17th April 2013.

indicated the potential for recreational pressure to affect the site interest. The actions to implement at the trigger of early warning could include amongst other initiatives:

- path diversions if necessary, accompanied by on-site interpretation and rationale to explain the reasons
- closure of some car parking opportunities
- enforcement of the need to pick up dog mess, accompanied by the provision of sacrificial areas not within the SAC where such a policy need not apply
- provision of additional greenspace on the edge of Shaftesbury to attract some pressures away from the SAC

3.22 A strategy to provide adequate, attractive green space should be an essential part of any new housing development. Those development sites close to the SAC – and in particular therefore at Shaftesbury– are especially likely to generate recreational pressures on the downlands. Green space and suitable alternative routes for walking and dog walking in those settlements should be a key priority, in order to divert extra pressures away from the SAC. Such greenspace must be ready and available when new housing is first occupied so that patterns of visitor use to sensitive sites are not established.

3.23 If this monitoring and mitigation is adopted and put in place ahead of or at least at the same time as new development, the potential for adverse impacts in relation to the Fontmell and Melbury Downs SAC arising from the new housing proposals in Shaftesbury would be avoided.

Summary: Impacts of recreation to chalk grassland sites

Appropriate assessment findings

The previous assessment raised concerns about increased recreational pressure at Fontmell and Melbury SAC. These concerns related to development in Shaftesbury, and the original assessment failed to rule out an adverse effect on the SAC.

Measures currently within the plan

Supporting text for Policy 4 recognises the issue but states that several measures are in place to control recreational pressure. These measures should be clarified or reference removed.

Additional recommendations

It is suggested that the Council liaise with Natural England and site managers (Dorset Wildlife Trust/National Trust) in order to ensure monitoring is in place and that – should any problems arise in the future relating to increased recreational pressure from local users – mechanisms are in place to resolve the problems.

Assessment of impacts arising from recreational pressure on coastal / estuarine sites (Poole Harbour SPA/Ramsar, Chesil and the Fleet SAC / SPA; Isle of Portland to Studland Cliffs SAC; Dorset Heaths (Purbeck & Studland) and Studland Dunes SAC)

3.24 The appropriate assessment of the potential for the impacts arising from recreational pressure to result in adverse effects on the coastal and estuarine European sites is set out in Appendix 7. In summary, the assessment found that adverse effects on Poole Harbour SPA/Ramsar could not be ruled out. The principal concern related to relatively specialist activities such as water sports and the impacts to wintering and passage waterfowl, and the proportional contribution that North Dorset will make to the overall impact of increased housing in the vicinity of the harbour.

3.25 Since the last assessment, Poole Borough Council have started collecting money through CIL for mitigation measures relating to Poole Harbour and there has been a detailed study (commissioned by Natural England) looking at disturbance impacts in Poole Harbour (Liley & Fearnley 2012). Poole Harbour is only likely to draw residents from N. Dorset for particular specialist activities, such as birdwatching or watersports, and the distance is probably too great for regular use by a large number of residents. Any increase in use associated with development in North Dorset is therefore likely to be small. The results of the disturbance study[3] highlight dogs in particular as a cause of disturbance, and

[3] which involved 300 hours of survey work spread at 15 different survey points around the harbour

the number of observations relating to watersports was relatively low – no windsurfers, four observations of kite surfers and twenty-eight observations of canoeists.

3.26 Additional, useful evidence can be drawn from the Solent. The Solent Disturbance and Mitigation Project[4] has been considering the issues of cumulative development on the wintering bird interest of the three SPAs in the Solent. There are many similarities with Poole Harbour, and the evidence-base in the Solent has included detailed visitor work, both on-site and off-site (collected through a postal survey). The results of this work have led to Natural England to advise the local authorities of current issues and a likely significant effect of new development – within 5.6km of the SPA boundary. No part of North Dorset District lies within 5.6km of Poole Harbour – the closest part of the District is around 6.7km from the SPA boundary.

3.27 Inform[5]al advice from Natural England has suggested that they have few concerns relating to development in North Dorset and recreation in Poole Harbour. Correspondence between Natural England and North Dorset District Council confirms Natural England's view of no likely significant effect in relation to this issue.

Summary: Impacts of Recreation to Coastal Sites

Appropriate assessment findings

The appropriate assessment could not rule out adverse effects on integrity to Poole Harbour SPA as a result of increased recreation causing disturbance to the wintering bird interest. The original assessment recognised that the District was some distance away from the Harbour and that impacts would in-combination and only be from specialist activities. More recent evidence and informal advice from Natural England allows us to now rule out an adverse effect on integrity to Poole Harbour.

Measures currently within the plan

The plan mentions Poole Harbour and recreation impacts in the supporting text of Policy 4. No further text or measures are necessary.

[4] http://www.solentforum.org/forum/sub_groups/Natural_Environment_Group/Disturbance_and_Mitigation_Project/

[5] Email dated 17th April 2013 sent by Charles Routh (Natural England) to Terry Sneller (North Dorset District Council).

Impacts of increased recreational pressure on the New Forest (New Forest SAC/SPA/Ramsar)

3.28 The previous appropriate assessment considered impacts arising from recreational pressure on the New Forest and is set out in Appendix 8. In summary, the assessment raised concern relating to the in-combination effects of cumulative development within 20km of the SPA/SAC/Ramsar. An adverse effect on integrity of the New Forest SAC/SPA/Ramsar, from increased recreational pressure (disturbance to ground nesting birds, trampling, dog fouling etc.) could not be discounted.

3.29 Since the previous assessment the New Forest National Park has been conducting detailed ornithological survey work (nightjars surveyed across the Forest in 2013) and will be continuing to do so with further surveys of Annex I bird species scheduled in 2014. These data will provide a useful check as to how well the New Forest SPA is functioning.

3.30 The considerable distance[6] from North Dorset District to the New Forest means visit patterns from N. Dorset residents will be occasional. Informal discussion with Natural England (N. Squirrell *pers. comm.*) indicates that Natural England are not currently concerned about this issue in relation to North Dorset and we therefore suggest no likely significant effect to the New Forest as a result of development in North Dorset District. In the spirit of joint working, North Dorset District Council could liaise with neighbouring authorities and remain 'in the loop' if monitoring data highlights any issues or if/ when any strategic measures or solutions that are developed for the SPA/SAC/Ramsar.

[6] Blandford is around 25km from the edge of the National Park

Summary: Impacts of recreation to the New Forest

Appropriate assessment findings

The previous appropriate assessment highlighted issues relating to recreational pressure on the New Forest and impacts from development within 20km. Only a small part of the District falls within 20km. Current advice from Natural England would suggest that there are no likely significant effects.

Measures currently within the plan

The plan includes no mention of the New Forest and no wording or changes are required.

Additional recommendations

We recommend that North Dorset District Council does maintain contact with neighbouring local authorities and Natural England regarding the New Forest. It may be that at some stage in the future some strategic measures or joint working will be required.

Impacts relating to water resources and water quality

3.31 The appropriate assessment of the potential for the impacts arising from new growth in terms of water resources and water quality affecting European sites is set out in Appendix 9. In summary, the assessment identified that Wessex Water is responsible for the supply of water to the North Dorset District and that the resource zone that North Dorset falls within has some potential issues with water supply, although the issues are known to Wessex Water and the Environment Agency and a number of measures have been considered for future management of resources. The measures are dependent on a number of factors, including agreement through the Asset Management Plan (AMP) process for new water infrastructure to be progressed. It is not fully understood how water abstraction may affect European sites and a number of potential risks and issues were previously highlighted by the Habitats Regulations Assessment, including uncertainty as to whether abstraction in North Dorset could affect the aquifers linked to the River Avon catchment. The River Avon is an SAC river. There are also possible indirect effects from over abstraction on sites with habitats sensitive to water loss, such as Rooksmoor SAC.

3.32 In terms of water quality, the previous appropriate assessment identified potential pollution issues, but that further consideration of these issues was reliant on information from Wessex Water and the Environment Agency regarding the waste water treatment works that serve the district, and where they discharge their treated water to. It is understood that the majority of the

district is likely to be served by waste water treatment works that discharge into the River Stour, which then flows into Christchurch Harbour. This would be unlikely to affect any European site interest. However, the Avon catchment does come close to the Shaftesbury area and there is the potential therefore for waste water treatment works serving some or all of Shaftesbury to discharge into the adjacent Avon catchment rather than into the Stour. Furthermore, it is understood that a small area to the south of the district is served by waste water treatment works that discharge treated water into Poole Harbour SPA and Ramsar site.

3.33 Whilst the volume of growth proposed has reduced from that previously promoted in the core strategy, the new local plan must still seek certainties regarding water resources and water quality from those specialist bodies, who are themselves competent authorities, charged with protecting and sustainably managing the water environment.

3.34 Whilst it is probable that there may not be any other water resource and water quality issues relating to European sites over and above the need to mitigate for the area to the south of the district known to discharge to Poole Harbour, it continues to be recommended that North Dorset District Council should seek assurances from Wessex Water and the Environment Agency regarding water abstraction and discharge across the district. It is suggested that these discussions should be held prior to the Examination of the North Dorset Local Plan Part 1, in order to provide evidence to back up the assumptions being made.

3.35 North Dorset District Council should seek additional and specific information from the Environment Agency and Wessex Water, looking at each European sites in turn. It is recommended that this may be most appropriately undertaken with a meeting and agreed minutes, supplemented by technical information, strategies and programmes from the Environment Agency and Wessex Water. As both are competent authorities, the Council should request the relevant Habitats Regulations Assessment information that should support any plans or projects. Together this would provide a suitable evidence base to support the local plan.

3.36 In terms of water quality impacts relating to Poole Harbour, since the original appropriate assessment work a 'Strategy for Managing Nitrogen in the Poole Harbour Catchment to 2035' has been produced by the Environment Agency and Natural England (Bryan & Kite 2013). This plan sets out a strategy for managing nitrogen in the catchment and restoring the European site with a two pronged approach; tackling both diffuse agricultural pollution and securing no further deterioration from new development. A small area of the North Dorset District falls within the catchment area, and any development of any kind within this zone must therefore adhere to the requirements of the strategy. Any new development will be required to be nitrogen neutral, and the strategy sets out

ways in which this may be achieved. North Dorset District Council therefore needs to make clear within the local plan that any new development in this zone must meet the requirements of the strategy. It is recommended that the most appropriate location may be within policy 4 relating to the natural environment, but could also be referred to in the early sections of the plan where overall development needs for the district are described. Policy 4 does include a reference to Poole Harbour but currently does not specifically refer to adherence to the strategy. The relevant zone is clearly set out in Figure 1 within Bryan and Kite (2013)[7].

Summary: water resource and water quality impacts

Appropriate assessment findings

The appropriate assessment found that whilst it is probably that European sites will not be affected in terms of water resources or water quality, there is an evidence need to support the plan to provide certainty that this is the case.

Measures currently within the plan

The plan includes a reference to the need to take into account nitrogen issues for Poole Harbour at policy 4, but does not specifically refer to the Strategy for Managing Nitrogen.

Additional recommendations

It is recommended that urgent discussions take place between the Council and the Environment Agency and Wessex Water to build the necessary evidence to support the conclusion that the proposed growth over the plan period will not contribute to any impacts on European sites in terms of water quality and water resources.

The plan needs to specifically refer to the Strategy for Managing Nitrogen for Poole Harbour and secure policy wording that commits development within the catchment area to adhering to the nitrogen neutral requirements, primarily within policy 4 but also in introductory sections describing overall growth for the plan period.

[7] Page 18: http://environment-agency.wales.gov.uk/static/documents/Leisure/Strategy_for_Managing_Nitrogen_in_the_Poole_Harbour_Catchment_Final_06_06_13.pdf

Impacts on air quality as a result of new growth (Fontmell and Melbury Downs and Rooksmoor SACs)

3.37 The appropriate assessment of the potential for the impacts arising from new growth in terms of air quality affecting European sites is set out in Appendix 10. In summary, the assessment found that the general level of nitrogen deposition at both Fontemell and Melbury Downs SAC and Rooksmoor SAC already exceeds the minimum critical load, and at Rooksmoor, where acid deposition is also high, the maximum critical load.

3.38 Both sites are therefore vulnerable to increased air pollution arising from traffic which could occur as a result of new growth. Based upon information available and best practice, it was previously recommended that the Council should seek ways to rectify the current impact upon these European sites, and that this should be undertaken primarily by ensuring no further increases in traffic within 200m of the site boundaries, but also through the plan as a whole, working to achieve improvements in air quality across the District, tying in the need to protect European sites with other national and international commitments to reducing air pollution. The previous list of recommendations were as follows:

- Plan new development such that additional traffic is not generated between home and workplace by providing employment opportunities close to new and existing housing
- Set high standards for public open space provision with new developments so that new and existing residents can find opportunities for outdoor recreational activities without travelling by car
- Encourage the provision of adequate public transport links, particularly on those roads crossing or adjacent to the SACs (the SAC roads) and adopt measures to encourage greater use of public transport
- Discuss with the County Council as Transport Authority whether traffic control measures on the SAC roads, together with measures to restrict or discourage heavy vehicles would be possible. (There could be other reasons for discouraging heavy vehicles from the B3081, including the narrow Z bends and steep hills in and to each side of Melbury Abbas).

3.39 In assessing the new plan, it is apparent that there is a notable focus on traffic reduction and improvements to sustainable transport, green networks and development design and location to minimise car use. It is therefore concluded that the recommendations have been incorporated. It is suggested that there still remains merit in considering traffic control measures on the roads closest to the SACs, and it is therefore recommended that this is taken forward through the most appropriate means, including consideration as part of the forthcoming Part 2 of the plan.

3.40 With a particular need to ensure that air pollution does not increase within 200m of the SACs, the previous appropriate assessment advises that there is a need to gather baseline information to establish traffic patterns and possible

effects, particularly at Rooksmoor SAC. The following mitigation measures were therefore suggested:

- Commission traffic studies to establish the origins, destinations and purpose of travelling by current users of the SAC roads and monitor the effectiveness of measures to discourage greater use of these roads. It may be possible to obtain a good idea of the make-up of the traffic from conventional axle counters, which would give flows per hour, day, month etc, indicating whether flows are seasonal or peaking at commuting or school times, for example.
- Contribute to any regional measures relating to air quality that have been recommended in the Appropriate Assessment for the South West Plan.
- Ensure that modelling of the transport effects of any larger developments which could generate increased traffic on the SAC roads takes place at an early stage to allow potential effects on the SACs to be fully assessed and counteracting measures applied as necessary.

3.41 Baseline information continues to be a recommendation of this Habitats Regulations Assessment, and the Council should therefore consider how this may be implemented, and which partners may need to be involved.

3.42 It is recognised that some mitigation measures can be directly met by North Dorset District Council and relevant partners, but also that the effects arising from wider traffic movement are complex and air quality issues need to continue to be addressed at a national level, and there is only so much that can be implemented at a local level. It is considered that the recommendations above represent an achievable and proportionate approach to maximising what can be achieved at the local level.

Summary: air quality impacts

Appropriate assessment findings

The appropriate assessment found that the general level of nitrogen deposition at both Fontemell and Melbury Downs SAC and Rooksmoor SAC already exceeds the minimum critical load, and at Rooksmoor, where acid deposition is also high, the maximum critical load. Both sites are therefore vulnerable to further traffic increased in close proximity.

Measures currently within the plan

The plan now includes a notable focus on traffic reduction and improvements to sustainable transport, green networks and development design and location to minimise car use.

Additional recommendations

It continues to be suggested that further traffic control measures should continue to be investigated for roads in close proximity to the SACs. Furthermore, the benefits of baseline information for assessing impacts and seeking appropriate mitigation measures continue to be emphasised and the Council should seek opportunities to work with relevant partners to develop more comprehensive baselines for the two sites.

Long term management of Rooksmoor SAC in relation to roads and traffic

3.43 The appropriate assessment of the potential for the impacts arising from new growth in terms of how it may affect the long term management of Rooksmoor SAC is set out in Appendix 11. In summary, the assessment found that adverse effects on the integrity of Rooksmoor SAC could not be ruled out. The issues related to increased traffic levels on the roads bisecting Lydlinch Common, which is a component part of the SAC. At the time of the assessment suitable grazing management (essential to maintain favourable condition of the SAC) could not be achieved due to the issues of fencing a common split around a busy road junction. The assessment identified risks from increased traffic levels (as a result of development in Sturminster Newton) reducing further the potential to graze the site or move livestock safely around the site.

3.44 Since the last assessment, the Secretary of State has approved a scheme to establish road-side fencing on the common and grazing was reinstated in 2010. Prior to the grazing commencing an ambitious programme of scrub clearance was undertaken to open the site and increase the area of grassland. The consent for the fencing was for 15 years (to 2025). Checks with Natural England staff[8] indicate that the site is being grazed and they are satisfied with the

[8] Sean Cooch, pers. comm.

current management. Recent marsh fritillary data[9] does not indicate that the species is doing well on the site – for example no larval webs were counted at all in September 2012. Fluctuations in butterfly numbers are however to be expected and will relate to a range of factors such as the weather (2012 was a very wet summer). Longer term monitoring will be necessary to inform the effectiveness of the current management for marsh fritillaries.

3.45 It would appear that suitable management is in place and secured – at least until 2025. Continued monitoring of the site will be necessary and is currently undertaken by Natural England (SSSI condition monitoring) and by Butterfly Conservation volunteers. Prior to a new fencing application for 2025 it will be necessary to review and consider options or modifications to the fencing. The only caution that remains is post 2025, and the long-term options for managing the site, as increases in traffic may make any options for free-ranging cattle and cattle grids on the roads (this would be the ideal management for the site) difficult to achieve.

[9] Ian Middlebrook, Butterfly Conservation, pers. comm.

Summary: Long-term management of Rooksmoor SAC

Appropriate assessment findings

The appropriate assessment raised concerns regarding the long term management of the SAC and impacts of increased traffic levels. The original assessment was unable to rule out an adverse effect on the integrity of the site, due to possible traffic increases on the roads bisecting Lydlinch Common. Since the last assessment the Secretary of State has approved an application for fencing on Lydlinch Common. Natural England has funded extensive scrub clearance on the common and fencing is now in place, allowing grazing (the ideal management) to be reinstated. The fencing is approved to 2025. Given that a grazing scheme has now be implemented on the site, we can rule out an adverse effect on integrity.

Measures currently within the plan

The plan mentions issues relating to securing management at Lydlinch Common in the supporting text to Policy 4. No further text or measures are required.

Additional recommendations

Prior to 2025 it will be necessary for the management at Lydlinch Common to be reviewed. The issues are therefore not entirely resolved and there may be implications for the Council to consider in the longer term.

4. Conclusions

Ensuring that the plan adequately prevents adverse effects on European site integrity

4.1 The Habitats Regulations Assessment undertaken here for the North Dorset Local Plan Part 1 includes a full screening of the publication draft of the plan to check for the likelihood of significant effects. This has resulted in the following:

- Recognition that the majority of the plan adequately meets the requirements of the Habitats Regulations, and provides strong protection for European sites within and in close proximity to the North Dorset District.
- Recognition of measures that have been built into the new local plan since previous recommendations were made for the Habitats Regulations Assessment of the previous core strategy
- Identification of minor wording changes required to rule out the likelihood of significant effects
- An appropriate assessment that revisits and updates previous work, and sets out an updated suite of recommendations to give certainty that for the key issues identified, the plan is able to ensure that adverse effects on site integrity will not occur. Findings are summarised in text boxes.

4.2 It is concluded that if all minor text revisions suggested in the screening table are made, and if the mitigation measures recommended in the appropriate assessment for each of the key issues where uncertainties remain are incorporated, it can be concluded that the North Dorset Local Plan Part 1 will not have or contribute to an adverse effect on site integrity.

4.3 Habitats Regulations Assessments should check for impacts on European sites that could occur as a result of the plan or project, or where impacts are not deemed significant alone, as a result of a combination of individual elements of the plan or project acting together, or as a result of the plan or project when considered together with other plans or projects elsewhere. This Habitats Regulations Assessment does not provide a separate section on the consideration of in-combination impacts, because that consideration has been made as an integral part of the screening for the likelihood of significant effects and the detailed appropriate assessment. The assessment undertaken considered individual elements of the plan, such as specific locations for development, the combined effects of individual elements, such as the recreational effects of housing across the District, and the combined effects of development when considered alongside growth in neighbouring districts, such as the water quality impacts on Poole Harbour.

5. Appendix 1 – Legislative Background to Habitats Regulations Assessment

5.1 The designation, protection and restoration of European wildlife sites is embedded in the Conservation of Habitats and Species Regulations 2010, as amended, which are commonly referred to as the 'Habitats Regulations.' Recent amendments to the Habitats Regulations were made in 2012. However, the recent amendments do not substantially affect the principles of European site assessment as defined by the 2010 Regulations or the focus of this report.

5.2 The Habitats Regulations are in place to transpose European legislation set out within the Habitats Directive (Council Directive 92/43/EEC), which affords protection to plants, animals and habitats that are rare or vulnerable in a European context, and the Birds Directive (Council Directive 2009/147/EC), originally in force on 1979, which protects rare and vulnerable birds and their habitats. These key pieces of European legislation seek to protect, conserve and restore habitats and species that are of utmost conservation importance and concern across Europe. Although the Habitats Regulations transpose the European legislation into domestic legislation, the European legislation still directly applies, and in some instances it is better to look to the parent directives to clarify particular duties.

5.3 European sites include Special Areas of conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) classified under the Birds Directive. The suite of European sites includes those in the marine environment as well as terrestrial, freshwater and coastal sites. European sites hold the highest level of biodiversity legislative protection. Member states have specific duties in terms of avoiding deterioration of habitats and species for which sites are designated or classified, and stringent tests have to be met before plans and projects can be permitted, with a precautionary approach embedded in the legislation. The overarching objective is to maintain sites and their interest features in an ecologically robust and viable state, able to sustain and thrive into the long term, with adequate resilience against natural influences.

5.4 The UK is also a contracting party to the Ramsar Convention, which is is a global convention to protect wetlands of international importance, especially those wetlands utilised as waterfowl habitat. In order to ensure compliance with the requirements of the Convention, the UK Government expects all competent authorities to treat listed Ramsar sites as if they are part of the suite of designated European sites, as a matter of government policy, as set out in Section 118 of the National Planning Policy Framework. Most Ramsar sites are also a SPA or SAC, but the Ramsar features and boundary lines may vary from those for which the site is designated as a SPA or SAC.

5.5 It should be noted that in addition to Ramsar sites, the National Planning Policy Framework also requires the legislation to be applied to potential SPAs and possible SACs, and areas identified or required for compensatory measures where previous plans or projects have not been able to rule out adverse effects on site integrity, yet their

implementation needs meet the exceptional tests of Regulation 62 of the Habitats Regulations, as described below.

5.6 The step by step process of Habitats Regulations Assessment is as follows. Within the Habitats Regulations, local planning authorities, as public bodies, are given specific duties as 'competent authorities' with regard to the protection of sites designated or classified for their species and habitats of European importance. Competent authorities are any public body individual holding public office with a statutory remit and function, and the requirements of the legislation apply where the competent authority is undertaking or implementing a plan or project, or authorising others to do so. Regulation 61 of the Habitats Regulations sets out the Habitats Regulations Assessment process for plans and projects, which includes development proposals for which planning permission is sought. Additionally Regulation 102 specifically sets out the process for assessing emerging land use plans.

5.7 The step by step approach to Habitats Regulations Assessment is the process by which a competent authority considers potential impacts on European sites that may arise from a plan or project that they are either undertaking themselves, or permitting an applicant to undertake. The step by step process of assessment can be broken down into the following stages, which should be undertaken in sequence:

- Check that the plan or project is not directly connected with or necessary for the management of the site
- Check whether the plan or project is likely to have a significant effect alone
- Check whether the plan or project is likely to have a significant effect in-combination
- Carry out an Appropriate Assessment
- Ascertain whether there will be an adverse effect

5.8 Throughout all stages, there is a continual consideration of the options available to avoid and mitigate any identified potential impacts. For projects, the project proposer may identify issues and apply particular mitigation measures to the project to enable the likelihood of significant effects to be ruled out. A competent authority may however need to undertake further levels of assessment and may add to project as a result of their appropriate Assessment, but imposing particular restrictions or conditions. When preparing a plan, a competent authority may go through a continued assessment as the plan develops, enabling the live assessment to inform the development of the plan. For example, a competent authority may choose to pursue an amended or different option where impacts are avoided, rather than continue to assess an option that has the potential to significantly affect European site interest features.

5.9 After completing an assessment a competent authority should only approve a project or give effect to a plan where it can be ascertained that there will not be an adverse effect on the integrity of the European site(s) in question. Where adverse effects cannot be ruled out, there are further exceptional tests set out in Regulation 62 for plans and

projects and Regulation 103 specifically for land use plans. Exceptionally, a plan or project could be taken forward for imperative reasons of overriding public interest where adverse effects cannot be ruled out and there are no alternative solutions. It should be noted that meeting these tests is a rare occurrence and ordinarily, competent authorities seek to ensure that a plan or project is fully mitigated for, or it does not proceed.

5.10 In such circumstances where a competent authority considers that a plan or project should proceed under these Regulations, they must notify the relevant Secretary of State. Normally, planning decisions and competent authority duties are then the responsibility of the Secretary of State, unless the planning authority is directed to authorise the plan or project by the Secretary of State. The decision maker, whether the Secretary of State or the planning authority, should give full consideration to any proposed 'overriding reasons' for which a plan or project should proceed, despite being unable to rule out adverse effects on European site interest features, and ensure that those reasons are in the public interest and such that they override the potential harm. The decision maker will also need to secure any necessary compensatory measures if such a plan or project is allowed to proceed.

6. Appendix 2 – European Site Conservation Objectives

6.1 As required by the Directives, 'Conservation Objectives' have been established, which should define the required ecologically robust state for each European site interest feature. All sites should be meeting their conservation objectives. Where they are not, plans should be in place for adequate restoration. Natural England has embarked on a project to renew all European site Conservation Objectives, in order to ensure that they are up to date, comprehensive and easier for developers and consultants to use to inform project level Habitats Regulations Assessments in a consistent way. In 2012, Natural England issued now a set of generic European site Conservation Objectives, which should be applied to each interest feature of each European site. These generic objectives are the first stage in the project to renew conservation objectives, and it is anticipated that further, more detailed and site specific objectives will follow shortly.

6.2 The new list of generic Conservation Objectives for each European site include an overarching objective, followed by a list of attributes that are essential for the achievement of the overarching objective. Whilst the generic objectives currently issued are standardised, they are to be applied to each interest feature of each European site, and the application and achievement of those objectives will therefore be site specific and dependant on the nature and characteristics of the site. Subsequent to this first stage of the project, the more detailed site specific information to underpin these generic objectives will provide the necessary detail regarding the attributes for each site interest feature, thus giving greater clarity to what might constitute an adverse effect on a site interest feature.

6.3 In the interim, Habitats Regulations Assessments should use the generic objectives and apply them to the site specific situation. This is aided by comprehensive and up to date background information relating to the site.

6.4 For SPAs the overarching objective is to:

6.5 'Avoid the deterioration of the habitats of qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.'

6.6 This is achieved by, subject to natural change, maintaining and restoring:

- The extent and distribution of the habitats of the qualifying features.
- The structure and function of the habitats of the qualifying features.
- The supporting processes on which the habitats of the qualifying features rely.
- The populations of the qualifying features.
- The distribution of the qualifying features within the site.

6.7 For SACs the overarching objective is to:

'Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the

integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.'

6.8 This is achieved by, subject to natural change, maintaining and restoring:

- The extent and distribution of the qualifying natural habitats and habitats of qualifying species.
- The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species.
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely.
- The populations of qualifying species.
- The distribution of qualifying species within the site.

7. Appendix 3 – Reasons for Designation/Classification/Listing of European sites within 20km of the District

+ indicates a primary reason for designation as SAC, ,* indicate a priority SAC feature

Site	Reason for designation/classification/listing:		
	SAC	SPA	Ramsar
Fontmell and Melbury Downs	Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) Early gentian *Gentianella anglica*+		
Rooksmoor	*Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *aurinia*+		
Holnest	Great crested newt *Triturus cristatus*+		
Dorset Heaths SAC, Dorset Heaths (Purbeck and Wareham) and Studland dunes SAC, Dorset Heathlands SPA and Ramsar	Northern Atlantic wet heaths with *Erica tetralix*+, temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*+, European dry heaths+, depressions on peat substrates of the *Rhynchosporion*+, *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils, Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae**, Alkaline fens, Old acidophilous oak woods with *Quercus robur* on sandy plains, Embryonic shifting dunes+, shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes") +, Atlantic decalcified fixed dunes*, humid dunes slacks+, oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) +, Southern damselfly+; great crested newt.	Breeding nightjar, Dartford warbler, woodlark. Wintering hen harrier, merlin.	Ramsar criterion 1: Contains particularly good examples of (i) northern Atlantic wet heaths with cross-leaved heath *Erica tetralix* and (ii) acid mire with *Rhynchosporion*, largest example in Britain of southern Atlantic wet heaths with Dorset heath *Erica ciliaris* and cross-leaved heath *Erica tetralix*. Ramsar criterion 2: Supports 1 nationally rare and 13 nationally scarce wetland plant species, and at least 28 nationally rare wetland invertebrate species. Ramsar criterion 3: high species richness and ecological diversity of wetland habitat types and transitions; lies in one of the most biologically-rich wetland areas of lowland Britain.
Cerne and Sydling Downs	Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) + Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *aurinia*+		
Poole Harbour SPA		Breeding common tern, and	Ramsar criterion 1: best and largest example of

Site	Reason for designation/classification/listing:		
	SAC	SPA	Ramsar
and Ramsar		Mediterranean gull. Passage aquatic warbler and little egret. Wintering avocet, little egret. Internationally important wintering populations of Icelandic population of black-tailed godwit and the North-western European population of wintering shelduck. A wetland of international importance by regularly supporting at least 20,000 waterfowl.	a bar-built estuary with lagoonal characteristics in Britain. Ramsar criterion 2: 2 species of nationally rare plant, 1 nationally rare alga, at least 3 British Red data book invertebrate species. Ramsar criterion 3: Mediterranean and thermo Atlantic halophilous scrubs, dominated by shrubby seablite *Suaeda vera;* calcareous fens with great fen sedge *Cladium mariscus*; transitions from saltmarsh through to peatland mires. Nationally important populations of breeding waterfowl including common tern, and Mediterranean gull, and of wintering. avocet. Ramsar criterion 5: internationally important assemblages of waterfowl. Ramsar criterion 6: Internationally important populations of common shelduck, black-tailed godwit..
Prescombe Down	Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) Early gentian *Gentianella anglica* [+], Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *aurinia*		
West Dorset Alder Woodlands	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) *, *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*), Old acidophilous oak woods with *Quercus robur* on sandy plains Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *aurinia*[+], Great crested newt *Triturus cristatus*		
River Avon/Avon	Water courses of plain to montane levels with the	Internationally important over-wintering	Ramsar criterion 1:The site shows a greater

Site	Reason for designation/classification/listing:		
	SAC	SPA	Ramsar
Valley	*Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation[+] Desmoulin`s whorl snail *Vertigo moulinsiana*[+], Sea lamprey *Petromyzon marinus*[+], Brook lamprey *Lampetra planeri*[+], Atlantic salmon *Salmo salar*[+], Bullhead *Cottus gobi*[+].	populations of Bewick's Swan (135 individuals, at least 1.9% of the wintering population in Great Britain [5 year peak mean 1991/2 - 1995/6]) Overwintering populations of European importance of Gadwall (135 individuals representing at least 1.9% of the wintering population in Great Britain [5 year peak mean 1991/2 - 1995/6])	range of habitats than any other chalk river in Britain, including fen, mire, lowland wet grassland and small areas of woodland. Ramsar criterion 2:The site supports a diverse assemblage of wetland flora and fauna including several nationally-rare species. Ramsar criterion 6: Internationally important populations of wintering Gadwall , *Anas strepera strepera*, 537 individuals, average of 3.1% of the GB population (5 year peak mean 1998/9-2002/3)
Chilmark Quarries	Greater horseshoe bat *Rhinolophus ferrumequinum*[+], Barbastelle *Barbastella barbastellus*[+], Bechstein`s bat *Myotis bechsteinii*[+], Lesser horseshoe bat *Rhinolophus hipposideros*		
Portland to Studland Cliffs	Vegetated sea cliffs of the Atlantic and Baltic coasts[+], Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia[+], annual vegetation of drift lines. Early gentian *Gentianella anglica*[+]		
Bracket's Coppice	*Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) Bechstein`s bat *Myotis bechsteinii*[+]		
Mendip Woodlands	*Tilio-Acerion* forests of slopes, screes and ravines*		
Salisbury Plain	*Juniperus communis* formations on heaths or calcareous grasslands[+], Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) [+], Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites)*, Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *aurinia*[+]		
Great Yews	*Taxus baccata* woods of the British Isles *		

Site	Reason for designation/classification/listing:		
	SAC	SPA	Ramsar
Mells Valley	Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) , Caves not open to the public Greater horseshoe bat *Rhinolophus ferrumequinum*[+]		
The New Forest	Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [+], Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*[+], Northern Atlantic wet heaths with *Erica tetralix*[+], European dry heaths[+], *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [+], Depressions on peat substrates of the *Rhynchosporion*[+], Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrub layer (*Quercion robori-petraeae* or *Ilici-Fagenion*) [+], *Asperulo-Fagetum* beech forests[+], Old acidophilous oak woods with *Quercus robur* on sandy plains[+], Bog woodland[+], Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [+], Transition mires, quaking bogs and Alkaline fens. Southern damselfly *Coenagrion mercuriale*[+], Stag beetle *Lucanus cervus*[+], Great crested newt *Triturus cristatus.*	Breeding Dartford warbler, nightjar, woodlark, honey buzzard, wood warbler *Phylloscopus sibilatrix*, hobby. Wintering hen harrier	Ramsar Criterion 1: Valley mires and wet heaths of outstanding scientific interest. The largest concentration of intact valley mires of their type in GB. Ramsar Criterion 2: Supports a diverse assemblage of wetland plants and animals. Ramsar Criterion 3: Mire habitats of high ecological quality and diversity. Invertebrate fauna important due to the concentration of rare and scarce wetland species. Whole site complex is essential to the genetic and ecological diversity of southern England.
Chesil Beach and The Fleet	**Coastal lagoons*, Annual vegetation of drift lines, perennial vegetation of stony banks[+], Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) [+], Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*).**	**Internationally important overwintering population of dark-bellied Brent goose (Western Siberia/Western Europe) 1.1% of the GB population (5 year peak mean 1991/92-1995/96)**	**Ramsar criterion 1: outstanding example of rare lagoon habitat, largest of its kind in the UK. The site also supports rare saltmarsh habitats. Ramsar criterion 2: Supports 15 specialist lagoonal species – more than any other UK site – and five nationally scarce wetland plants, ten nationally scarce wetland animals. Chesil Bank**

Site	Reason for designation/classification/listing:		
	SAC	SPA	Ramsar
			is one of the most important UK sites for shingle habitats and species. **Ramsar criterion 3:The site is the largest barrier-built saline lagoon in the UK, and has the greatest diversity of habitats and of biota.** **Ramsar criterion 4: important for a number of species at a critical stage in their life cycle including post-larval and juvenile bass *Dicentrarchus labrax*.** **Ramsar criterion 6: 2 species/ populations occurring at levels of international importance.** **Ramsar criterion 8: nursery for bass *Dicentrarchus labrax*.**

8. Appendix 4 – European Site Background and Evidence Gathering

8.1 The information within this Appendix is taken from previous versions of the assessments. We have updated text that refers to condition assessments.

Sites within the District

Fontmell and Melbury Downs SAC

8.2 This site is designated for its calcareous grassland and the presence of large populations of early gentian *Gentianella anglica*, numbering many thousands of plants. The SAC covers 261ha, while the SSSI is slightly larger, covering 287.9 ha. The site is part owned by the National Trust and part managed as a nature reserve by the Dorset Wildlife Trust. The grassland shows wide variety related to variation in soil type, aspect and grazing pressure.

8.3 SSSI condition assessment information for the site indicates that 68% of the site is in favourable condition and 32% is in unfavourable recovering condition. A public right of way crosses the site which is designated as open country under the 2001 CRoW Act.

Rooksmoor SAC

8.4 Rooksmoor SAC is part of the Blackmore Vale Commons and Moors SSSI. The SAC designation applies to all of Rooksmoor SSSI and the units at Lydlinch that include the common rather than Stock Wood. The reason for the international designation is the presence of *Molinia* purple moor-grass meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) and also for the presence of the marsh fritillary for which this is considered to be one of the best areas in the United Kingdom.

8.5 The SSSI condition assessment indicates that 16% of the site is in favourable condition, 75% is in favourable recovering condition and 8% is in unfavourable condition (no change). The unfavourable (no change) assessment relate to problems with grazing and scrub control.

8.6 Public rights of way run through parts of both sites. Lydlinch also has open access as a registered common under the 2001 CRoW Act. Use of the sites is likely to be mainly local.

Sites outside the District

8.7 The following European sites are outside the boundary but are potentially relevant to the assessment. They are listed in order of distance from North Dorset District, with the closest sites first.

Holnest SAC

8.8 This 55ha site is designated solely for great crested newts *Triturus cristatus*. The site encompasses around 20 ponds set in a matrix of terrestrial habitats, comprising areas of semi-improved grassland, scrub, associated semi-natural habitats and woodland bounded by fences and hedgerows. The ponds exhibit a range of sizes, profiles and origins, and include some recently-created ornamental ponds as well as traditional farm ponds. A large population of great crested newts is present, with over 200 individuals having been recorded at one pond in spring 2003. The woodland areas provide ideal hibernation habitat.

Dorset Heaths SAC, Dorset Heathlands SPA/Ramsar site and Dorset Heaths (Wareham and Purbeck) and Studland Dunes SAC

8.9 The Dorset Heaths SAC covers a complex of heathland sites centred around Poole Harbour. It encompasses 5,730 ha of heathland reaching from Warmwell in the west to Cranborne in the north east and Hengistbury Head in the south east and includes all or part of 37 SSSIs. The Dorset Heaths (Wareham and Purbeck) and Studland Dunes SAC encompasses most of the remaining area of heathland within the eastern half of the Isle of Purbeck (south of the river Frome, plus Morden Bog and part of Sandford Heath) with the addition of the beach and dunes at Studland. It covers a further 2,222ha. The SPA and Ramsar designations largely include the same area as the two SACs and cover 8169ha and 6730ha respectively.

8.10 Within the Dorset Heaths European sites a full range of heathland communities is represented with transitions from dry heaths to wet lowland heathland and mires; all habitats restricted to the Atlantic Fringe of Europe and among the best of their type in the UK. There are also transitions to coastal wetlands and floodplain fen habitats, plus woodland, grassland, and pools. The whole complex has an outstanding fauna in a European context, covering many different taxa. Many species have a specialist ecology, strongly associated with, or restricted to, heathland.

8.11 The heaths lie on infertile soils derived from the sands and clays of the Bagshot Beds and include shallow peat in wetter areas. Wet heath and mires support a diverse range of rare species including include Dorset heath *Erica ciliaris*, brown beak-sedge *Rhynchosphora fusca*, marsh gentian *Gentiana pneumonanthe*, marsh clubmoss *Lycopodiella inundata*, great sundew *Drosera anglica* and bog orchid *Hammarbya paludosa* and the moss *Sphagnum pulchrum*. They are a stronghold for invertebrates, including Southern damselfly *Coenagrion mercuriale*, for which the site is designated as an SAC (together with great crested newt). Some of these invertebrates are restricted to the Dorset heaths within the UK.

8.12 The dry heath occurs on very infertile soils and is not very diverse botanically, but locally some nationally scarce plants occur, such as mossy stonecrop *Crassula tillaea* and yellow centaury *Cicendia filiformis*. In places, where heather *Calluna vulgaris* occurs in mature stands, lichens of the genus *Cladonia* are very abundant. The dry heaths support populations of European importance of several species, including rare butterflies (e.g. silver-studded blue *Plebejus argus*), grasshoppers and spiders. Among birds, the dry heath is very important for woodlark *Lullula arborea*, European nightjar *Caprimulgus europaeus*, Dartford warbler *Sylvia undata* and some migrants such as hen harrier *Circus cyaneus* and merlin *Falco columbarius*. All six species of native British reptiles, including the Annex IV species sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*, occur within the Dorset Heaths.

8.13 The Dorset Heaths contain small pockets of wet woodland within valley mires but most of these appear to be of recent origin. However, at Morden Bog a bog woodland stand is of ancient origin, as shown by its pollen record and old maps. The woodland is dominated by downy birch *Betula pubescens* with a ground flora consisting of greater tussock sedge *Carex paniculata* and purple moor-grass *Molinia caerulea*. There is a rich epiphytic lichen assemblage, again indicating the persistence of this area of bog woodland.

8.14 The Dorset heaths represent some of the biggest and finest remaining areas of lowland heathland in the UK. However, the area of heathland has been reduced and fragmented, with about 86% lost since the mid-18th century to agriculture, forestry and urban development. In recent years these land use changes have been almost halted through changes in national and local policy, but the scale of previous fragmentation and development has left a number of adverse pressures, including those relating to recreational use of heaths. The decline in use for traditional agriculture has resulted in a successional trend to scrub and woodland together with invasion by conifer and introduced scrub species, especially Rhododendron. Financial support schemes and management initiatives which aid the removal of scrub and encourage the re-establishment of traditional management in the form of extensive grazing now cover much of the heath area.

8.15 The heaths around Wareham and to the west of the Dorset Heaths tend to have a more rural feel. Many of the sites are particularly large and are well known visitor sites, attracting both local people and tourists. There are tourist facilities such as visitor centres at both Arne (RSPB) and Studland (National Trust).

8.16 Studland dunes form part of the South Haven Peninsula, a complex spit feature located on the south side of the entrance to Poole Harbour comprising a series of shallow lakes and acidic dunes. The surface features have developed partly on the

site of a former shallow sea since the seventeenth century (Diver, 1933), although some dune ridges may have been present at least as far back as the Domesday Book (May, 2003). The structure and function of the dunes are well-represented with dune-building processes still active. The site supports a number of vegetation communities which are rare in this part of the UK (partly owing to intensive recreational use of the coast) and comprises the only large dune heath site in the south and south-west of Britain.

8.17 The coastal elements of the Studland heath and dune site comprise "embryonic shifting dunes" with sand couch *Elytrigia juncea* and lyme grass *Leymus arenarius* as the key pioneer species. In some seasons good populations of sea rocket *Cakile maritima* and saltwort *Salsola kali* also occur in this restricted community, along the toe of the fore dunes. This embryonic dune feature is rare in southern England, due in part to recreational pressures. It is continuous with and grades into "shifting dunes along the foreshore", with marram grass *Ammophila arenaria* as the dominant species, along with other local dune flora. At Studland, these classic fore-dune communities grade into "Atlantic decalcified dune heath" which is a priority feature and confined in south and south-west UK to the Studland site. This community is dominated by heather *Calluna vulgaris* with sand sedge *Carex arenaria* and bell heather *Erica cinerea* and occupies a series of dune ridges, which have developed over a period of several hundred years and represent successive eastwards growth of the dunes. The occurrence in this community of rare and protected reptiles eg sand lizard *Lacerta agilis* is especially noted for this SAC. The Studland dunes and heath are the most important single locality for this species in UK. There is no dune grassland at this site, with the fore-dunes merging directly into dune heath and then other heath communities and this has a direct relevance to vulnerability of the SAC to impacts from human pressure. The dry open heath is an important habitat for rare reptiles such as sand lizard. At the western margin of the dune ridges the dry dune heath grades into wet heath in which cross-leaved heath *Erica tetralix* is prominent, while at the northern end it grades into the southern heathland types of inland Dorset.

8.18 Acidic humid dune slack communities with a high water table lie in the parallel hollows between the dune ridges. In these slacks, acidic fen and reedbeds have developed with some areas of scrub. The dune slacks are linked to an area of open fresh water known as the Little Sea on the western edge of the dune ridges. This is of recent origin (<500 years old), formed as a large body of seawater became landlocked by the growing sand dunes. This water is now fresh and is replenished by acidic, nutrient-poor water draining off the adjacent heathland, which then flows through the dune slacks and into the sea. The submerged vegetation is characterised by alternate water-milfoil *Myriophyllum alterniflorum*, shoreweed

Littorella uniflora and spring quillwort *Isoetes echinospora*, together with bladderwort *Utricularia australis* and less frequently six-stamened waterwort *Elatine hexandra*.

8.19 The heaths have been the focus of many detailed, long term, ecological studies, mainly led by the ITE/CEH research station, which for many years was located locally at Furzebrook, in Purbeck. Of particular note are the successive heathland surveys that have documented the changes in extent, fragmentation and area of different heathland habitats within Dorset (Rose et al., 2000, Webb, 1990).

8.20 Recreational use of the heaths has become a key issue in recent years. There has been a number of visitor studies addressing visitor behaviour, access patterns and use of lowland heathland sites (Atlantic Consultants, 2003, Atlantic Consultants, 2005, Clarke et al., 2006, W.S.P. Environmental, 2004, Liley et al., 2006c, Liley et al., 2006e, Tourism South East Research Services and Geoff Broom Associates, 2005, Underhill-Day and Liley, 2007). These studies have been targeted at sites of nature conservation importance and in some cases the visitor data subsequently used to explore nature conservation impacts (Clarke et al., 2008a, Liley et al., 2006a, Sharp et al., 2008). The study by Clarke et al. 2006 focused on the Dorset Heaths SPA.

8.21 These visitor studies typically show high levels of recreational use, involving a wide range of different activities, with dog walking typically the most common reason for visiting. In the Dorset Heaths SPA study 80% of visitors were dog walkers, and other reasons for visiting included walking, jogging, cycling and horse riding (Table 3).

Table 3: Percentage of visitors undertaking different activities on the Dorset Heaths SPA. Data are from 632 interview carried out at 20 different access points in a SPA wide visitor survey conducted in 2004 (Clarke et al., 2006).

Type of activity	Percentage of visitors
Dog walking	80
Walking	10
Jogging	2
Cycling	2
Horse riding	1
Other	5

8.22 'Urban effects' such as fly tipping, increased fire incidence, use of heaths for motor biking and off-road vehicles etc. tend to be particularly focused around the conurbation of Poole and Bournemouth.

8.23 The majority of the heaths are designated as open country under the Countryside and Rights of Way (CRoW) Act, 2001, and have a long history of access by local people.

8.24 Studland Dunes and beach are used extensively by tourists and also by students studying the ecology and coastal geomorphology of the site. Three car parks totalling over a thousand car park spaces are provided by the National Trust, with Ferry Road used extensively for further parking. Part of the beach is a designated naturist beach. Overall this easily accessed, sandy, and relatively sheltered site receives over a million visitors per year (Dickinson, 2006). Holiday visitors tend to be concentrated around the cafes and car parks at Middle and Knoll beachs and the car park at Shell Bay. The one access route through the dunes and slacks from Ferry Road also has a concentration of visitors where it reaches the beach, midway along the dunes. The site is popular with dog walkers throughout the year. Just offshore, the sea is used extensively by pleasure craft including jet skis. In the past, visitor pressures have caused serious damage to the dunes, especially in the Knoll Beach car park area. In recent years several areas have been 'restored' for conservation purposes, however, visitor pressure is seen in the absence on embryo dunes in the southern area of the bay and incipient blowout development in the foredune ridge. At the extreme southern end of the bay, near Knoll Beach car park, the frontal dunes have experienced significant erosion in recent decades (Pye et al., 2007).

8.25 Studland Dunes are vulnerable to sea-level rise related to climate change. Erosion at the Knoll and Middle Beaches began to threaten infrastructure in the early 1990's. Research commissioned by the National Trust from Bournemouth University in 1996 showed that the annual rate of erosion had significantly increased in recent years. The main causes of erosion were identified as an increase in easterly winds, an increase in stormy weather and a rise in sea level. Other factors included reduced local sediment supply to the system due to cliff protection measures at the southern end of the Bay, and interruption of littoral drift by the construction of groynes.

8.26 The National Trust's long-term policy for the dune system is to permit natural processes to operate. At the present time, beach erosion is not a sufficiently widespread problem to require large-scale relocation of visitor facilities or other infrastructure, but this may be required in the future. It is unlikely that the frontal dunes in this area will roll back and maintain their present size, especially in the

face of sea level rise. Ultimately washover and breakthrough is likely on a timescale of 50 to 100 years.

Cerne & Sydling Downs SAC

8.27 This 370ha site on the west Dorset chalk consists of a large area of semi-natural dry grassland **(***Festuca –Brometalia***)** for which the site is designated. Dry valley slopes with a variety of aspects support extensive examples of CG2 sheeps festuce *Festuca ovina* – meadow oat grass *Avenula pratensis* grassland in the south-west of its UK range. A particular feature of this site is the presence of the devil's bit scabious *Succisa pratensis* – ox-eye daisy *Leucanthemum vulgare* sub-community, especially on south- and west-facing slopes. This type of calcareous grassland is almost entirely restricted to parts of Wiltshire and Dorset.

8.28 Cerne & Sydling Downs is also designated for the presence of the marsh fritillary butterfly *Euphydryas aurinia*, an Annex 2 species. The larger sub-populations regularly expand into other nearby areas in favourable years. These calcareous downland colonies complement the wet grassland habitats of the other Dorset strongholds for the butterfly.

8.29 Cerne & Sydling Downs is a composite site comprising a number of steep downland scarps around Cerne Abbas, including Sydling Valley Downs; Black Hill Down; Court Farm, Sydling; Giant Hill; and Hog Cliff. .

8.30 Public rights of way run through the sites, but visitor pressure is focussed around the Cerne Abbas giant, a 55m high figure into the chalk of the hillside which attracts a large number of visitors. However the giant is best viewed from the opposite side of the valley where a car park is provided. Some areas of the site are designated as open access land under the 2000 CRoW Act. There is also a paragliding site within the SAC just east of Sydling St Nicholas.

Poole Harbour SPA and Ramsar

8.31 Poole Harbour is a bar-built estuary of nearly 4,000ha occupying a shallow depression towards the south-western extremity of the Hampshire Basin which has flooded over the last 5,000 years as a result of rising sea levels. The unusual micro-tidal regime means that a significant body of water is retained throughout the tidal cycle and the Harbour therefore exhibits many of the characteristics of a lagoon. There are extensive intertidal mud-flats and, away from the north shore that has become urbanised through the growth of Poole, there are fringes of saltmarsh and reedbed. Parts of the Harbour, especially along the western and southern shores, adjoin the Dorset Heathlands SPA. Where the two areas meet, there are rare transitions from saltmarsh and reedbed to valley mire and heath habitats. The Harbour is separated from Poole Bay by the Studland Dunes (part of the Dorset

Heaths [Purbeck and Wareham] and Studland Dunes SAC) and the SPA includes Littlesea, a large oligotrophic dune-slack lake of importance for wintering wildfowl.

8.32 As a whole, the Harbour supports important numbers of waterbirds in winter and is also an important breeding site for terns and gulls, whilst significant numbers of little egret *Egretta garzetta* and aquatic warbler *Acrocephalus paludicola* occur on passage. Several river valleys converge on the Harbour, notably the Frome and the Piddle, and these support grazing marshes that contribute to the importance of the area for wintering waterbirds.

8.33 There is a considerable amount of data on the birds of Poole Harbour. Work funded by BP Ltd. and conducted by the RSPB in the mid 1980s provides useful context (Collins, 1985, 1986). The Harbour is surveyed annually as part of the national Wetland Bird Survey (WeBS). These data have been collated and analysed to provide comparative assessments of the important bird species within Poole Harbour (Pickess and Underhill-day, 2002, Pickess, 2007). Dedicated surveys of roost sites within the Harbour were conducted by Morrison (2004), and detailed mapping and surveying of the invertebrates that are the main prey of the key bird species was conducted by CEH (Thomas et al., 2004), the latter work to provide a baseline against which future verification of favourable condition could be established. A condition assessment of the Harbour was conducted by Footprint Ecology in 2006 (Underhill-Day, 2006).

8.34 The bird data are summarised in Underhill-Day (2006), which shows that populations of those bird species for which the harbour was designated as an SPA are mostly stable or increasing. Breeding numbers of common terns and Mediterranean gulls have been rising and the wintering populations of black-tailed godwits and avocets have also been increasing. Shelduck numbers have declined but at a lower rate than those nationally. The size of the overall assemblage of wintering waterfowl has declined, but wader numbers excluding lapwings (which have fallen considerably) have risen and wildfowl numbers show no clear trend. Some wader roosts are threatened by saltmarsh erosion and disturbance from people and boats. The fact that overall wader numbers are rising can mask impacts that prevent numbers increasing to their full potential within the protected site.

8.35 The site includes examples of natural habitat types of European interest and the transitions from saltmarsh through to peatland mires are of exceptional conservation importance as few such examples remain in Britain. The site supports nationally important plant species including Viper's grass *Scorzonera humilis*, sharp-leaved pondweed *Potamogeton acutifolius*, bulbous foxtail *Alopecurus bulbosus*, narrow-leaved water-dropwort *Oenanthe silaifolia*, mousetail *Myosurus minimus*,

shrubby seablite *Sueda maritima*, spiny quillwort *Isoetes echinospora* and six-stamened waterwort *Elatine hexandra*, and the marine flowering plants narrow-leaved eelgrass *Zostera angustifolia* and dwarf eelgrass *Zostera noltei*. There are also at least three British Red data book invertebrate species.

8.36 The conservation objectives for Poole Harbour include the maintenance in favourable condition of the shallow inshore waters, intertidal sediment communities, saltmarsh and reedbed for the internationally important populations of regularly occurring Annex I and migratory bird species and the internationally important assemblage of waterfowl.

8.37 There are a number of marinas and boat havens along the northern shore of the Harbour, and some 2000 swinging moorings within the site. Poole Harbour is heavily used for water sports recreation, mainly boating but water skiing, jet skiing, wind surfing, canoeing and angling also occur, particularly during the summer. Most of the north shore of the site is urbanised and there is a caravan site adjacent to the Harbour at Rockley Sands. The site is not heavily used for bathing and beach recreation, although there are numerous accesses for bird watching along the northern shore. Public access on the quiet southern shore is largely limited to Studland National Nature Reserve and a controlled access at Arne RSPB Reserve. There is also easy public access along the River Frome at Wareham allowing good viewing of birds on the grazing marsh.

8.38 At a few places along the shoreline where there is good access the site is well used for bait-digging and angling. The eastern part of the site is a bass nursery area. All wildfowling on the intertidal areas is under the control of the Dorset Wildfowling Association. Private estates also shoot on their own land i.e. on saltmarsh above high water but much of the shoreline above MHW is controlled by conservation organisations.

8.39 Poole Harbour has been impacted by the growth of a conurbation along its north shore, together with associated infrastructure, and by development of a commercial port, marinas and moorings. In recent years, further encroachment by development has been almost halted by changes in national and local policy. Most of Poole Harbour falls under the authority of Poole Harbour Commissioners and management policies have been in place since 1987. Recreation pressures on the site are being addressed by an Aquatic Management Plan which has directed certain uses to areas where impacts on nature conservation are thought to be minimal. The plan is supported by a steering group of almost wholly statutory bodies, and consists of Borough of Poole, Dorset County Council, Natural England, Environment Agency, Poole Harbour Commissioners, Purbeck District Council, Southern Sea Fisheries District Committee and Wessex Water Services Ltd. A

'Navigate with nature' project, funded by the Department of the Environment, promoted best practice amongst Harbour users to reduce water pollution and disturbance to wildlife. Dredging to provide navigation may impact on intertidal habitat and will be addressed through national policy requirements on sustainable coastal management. There is recent evidence that Manilla clam is becoming naturalised within the Harbour following small scale commercial introduction and any potential problems will be examined by the steering group. Die back of common cord-grass *Spartina anglica* is also affecting the site and has been monitored by the Centre for Ecology and Hydrology.

8.40 Footprint Ecology produced a monitoring strategy for Poole Harbour in 2009 (Liley and Underhill-Day, 2009), which sets out the monitoring measures needed to address increases in access and quantify potential impacts to the SPA.

8.41 Several sewage treatment plants discharge into the Harbour and the effect of these on water quality is monitored by the Environment Agency. Wytch Farm oilfield has facilities within the site; their maintenance and any risks from oil spills are dealt with according to agreed method statements and oil spill contingency plans. Recent studies have addressed the effects of bait digging in the Harbour which has local impacts. Most of the wildfowling is regulated by a management plan that identifies non shooting areas. The impact of drainage on grazing marshes is being addressed through Water level Management Plans.

Prescombe Down SAC

8.42 Prescombe Down is a botanically rich downland site (c.76 ha) with a flora characteristic of the south and south-west chalk grassland. The site consists of a deep, forking, coombe system eroded into an escarpment of the Upper Chalk, lying to the west of Salisbury. The SAC designation is for the calcareous grassland ("Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)") and the presence of early gentian. Marsh fritillary is an additional annex II species present (but not a primary reason for designation).

8.43 Management issues at the site revolve around ensuring scrub encroachment is kept in check and grazing intensities are appropriate. The site has very little in the way of access facilities, but there is public access to the entire site as it is mapped as open country and therefore included as open access land under the Countryside and Rights of Way (CRoW) Act (2001).

West Dorset Alder Woods SAC

8.44 This SAC covers some 329ha and includes the following component SSSIs: Aunt Mary's Bottom, Frome St. Quentin, Mapperton and Poorton Vales, Powerstock Common, Toller Porcorum, Woolcombe.

8.45 The SAC interest and name of the SAC relates to the Mixed ash-alder *Fraxinus excelsior - Alnus glutinosa* woods which are a characteristic feature of the sinuous valley woods developed along the headwaters of alkaline streams and seepages (which have their origin in the chalk downland and issue from the underlying Upper Greensand at its junction with the Gault Clay). The woods vary from those with greater tussock-sedge *Carex paniculata*, remote sedge *C. remota*, hemlock water-dropwort *Oenanthe crocata*, opposite-leaved golden-saxifrage *Chrysosplenium oppositifolium* and alternate-leaved golden-saxifrage *C. alternifolium*, to transitions to drier oak-ash woodland with ramsons *Allium ursinum*. Several of the component sites are associated with valley mires with transitions to fen, reedswamp, fen meadow and acid grassland. Characteristic features of the woods are the shallow silty peats and tufa deposits which support an important assemblage of specialised invertebrates. The streams have natural meanders, back channels and debris dams, features that are otherwise rare in the lowlands. Ancient stands of ash-alder woodland have developed some 'old growth' characteristics with associated old forest lichens.

8.46 Other Annex I habitats present as a qualifying feature (but not a primary reason for selection of this site) are *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) and Old acidophilous oak woods with *Quercus robur* on sandy plains.

8.47 Marsh fritillaries occur at Powerstock and Toller Porcorum SSSIs and are a qualifying interest feature of the SAC. The population is small but stable and has the potential to expand over a wide area of favourable habitat. Great crested newts are also present within the SAC (but are not a qualifying interest feature).

8.48 The vulnerability of the sites is linked principally to the surrounding land-use and the management of the water environment in the catchment, particularly where sites are small and isolated. The alder woods are mainly unmanaged stands of former coppice and cutting would now only be appropriate in larger, more robust sites. Deer browsing and game management are a concern and these impacts need to be monitored. Removal of conifer plantations at Powerstock has extended the area of the open habitats.

8.49 Dorset Wildlife Trust manages two nature reserves within the SAC, at Kingcombe and Powerstock. These areas form a core part of the SAC. Visitor facilities include a small visitor centres, two car-parks and a series of walks within the two sites. Visitor numbers are typically fairly small.

River Avon SAC/Avon Valley SPA/Ramsar

8.50 The Avon is a large, lowland river system running through chalk and clay, with transitions between the two. It displays wide fluctuations in water level and parts

of the valley are regularly flooded in winter. The Avon valley has a greater range of habitats and a more diverse flora and fauna than any other chalk river in Britain. The valley includes one of the largest expanses of unimproved floodplain grassland in Britain, including extensive areas managed as hay meadow. The SAC covers almost 500ha in Wiltshire, Hampshire and Dorset, and includes the tributary rivers Wylye and Bourne. The SPA and Ramsar site encompass 20km of the lower reaches of the River Avon and its floodplain between Bickton and Christchurch. The SPA and Ramsar are therefore considerable distances (c.18km) from the North Dorset District.

8.51 The River Avon is particularly important for its water-crowfoot species, and the SAC is designated for water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. Five such species occur within this habitat, but stream water-crowfoot *Ranunculus penicillatus* ssp. *pseudofluitans* and river water-crowfoot *R. fluitans* are the main dominants, with *R. peltatus* dominant in some winterbourne reaches. The Avon has an excellent mosaic of aquatic habitats, which include extensive areas of gravel, sand and silt essential for spawning and growth of juvenile fry. The site is also designated for Desmoulin`s whorl snail *Vertigo moulinsiana*, sea lamprey *Petromyzon marinus*, brook lamprey *Lampetra planeri,* Atlantic salmon *Salmo salar*, bullhead *Cottus gobi*. There has been limited modification of the river course by comparison with many other southern lowland rivers in England.

8.52 The extensive floodplain grasslands support wintering Bewick's Swans *Cygnus columbianus bewickii* in numbers of European importance (though this winter flock has declined markedly in recent years), and Blashford Lakes Gravel Pits within the SPA are particularly important for wintering Gadwall *Anas strepera.*

8.53 Key issues with the site relate to water quality (particularly P levels) as a result of agricultural run-off and also from discharge, water abstraction, inappropriate water levels, invasive freshwater species, siltation and inappropriate weirs, dams and other structures.

8.54 The Avon valley is used for informal walking and birdwatching, and access by people and dogs both on and off public rights of way is a significant cause of disturbance in some areas. Coarse-fish and game-fish angling and wildfowling and game shooting and associated activities also take place, but the extent and intensity are unknown although thought to be considerable. Localised sailing and watersports are carried out at Blashford Lakes; and Hampshire Wildlife Trust manages a visitor centre here.

8.55 There are issues arising from the decline in traditional pastoral agriculture and lack of maintenance of ditch network. Management of water levels driven partly by agriculture but also urban flood risk management continues to have adverse effect on habitats. High levels of silt in the river continue to degrade its interest, especially aquatic species but also contribute to silting-up ditches and deterioration of grasslands after flood events. The invasive introduced species *Crassula helmsii* is an increasing problem in Blashford Lakes following restoration of the gravel pits.

Chilmark Quarries SAC

8.56 This SAC is a complex of abandoned stone mines, covering a total of 10.4ha to the north-east of Tisbury. The site is used as a hibernation site by a range of bat species. The SAC designation is specifically for the following Annex II bat species: Greater horseshoe bat *Rhinolophus ferrumequinum*, Barbastelle *Barbastella barbastellus* and Bechstein`s bat *Myotis bechsteinii*. An additional Annex II species present as a qualifying feature, but not a primary reason for site selection is the Lesser horseshoe bat *Rhinolophus hipposideros*.

8.57 The long-term safeguard of the hibernacula entails preventing the collapse of the underground voids and restricting unauthorised access. The entrances to the mines have been grilled and the underground bat hibernacula are well protected from development and disturbance.

Isle of Portland to Studland Cliffs SAC

8.58 Isle of Portland to Studland Cliffs, together with St Albans Head to Durlston Head forms a discontinuous unit of cliffed coastline and associated calcareous grassland stretching some 40km. The Isle of Portand to Studland Cliffs SAC (1447.5ha) includes the cliffed coast of the Portland peninsula, a stretch of coastline from just north-east of Weymouth to St Alban's Head, from Durlston to Peveril Point south of Swanage, and Ballard Down and Cliff. Most of the SAC is located within Purbeck District, with the section west of Ringstead within 20km of the district. Some parts of the SAC also fall within the Dorset and East Devon Coast World Heritage Site.

8.59 The great range of rock types has given rise to a varied coastline of vertical cliffs, undercliffs and landslips which support an outstanding array of local and maritime species. Some of the cliffs are formed of hard limestones, with chalk at the eastern end and central section, interspersed with slumped sections of soft cliff of sand and clays. The cliffs support "vegetated sea cliffs of the Atlantic and Baltic regions" for which it is also one of the best localities in the UK. The Portland peninsula, extending eight kilmetres south of the mainland, demonstrates very clearly the contrast between the exposed western and southern coasts, with sheer rock faces and sparse maritime vegetation, and the sheltered eastern side, with sloping cliffs

supporting scrub communities, where wood spurge *Euphorbia amygdaloides* grows in grassland.

8.60 Semi-natural dry grasslands and scrub on calcareous substrates, among the best examples in the country, occur at this site in both inland and coastal situations on both chalk and Jurassic limestone. The site contains extensive species-rich examples of tor grass *Brachypodium pinnatum* grassland in the southern part of its UK range. Smaller areas of the typical chalk grassland type sheep's fescue *Festuca ovina* – meadow oat-grass *Avenula pratensis* grassland occur on shallow soils on steeper slopes. Transitions from calcareous grassland to both chalk heath and acid grassland are also present. The site has well-developed terricolous (ground dwelling) and saxicolous (rock dwelling) lichen and bryophyte communities associated with open turf, chalk rock and pebbles, and flinty soils. Among the many scarce and localised plants and animals of the chalk and limestone are the largest national populations of two rare species – early spider orchid *Ophrys sphegodes* and Lulworth skipper butterfly *Thymelicus acteon*.

8.61 The site also supports annual vegetation of drift lines, here associated with the intermittent occurrence of shingle beaches beneath the cliffs which are subject to periodic displacement or overtopping by high tides and storms. The distinctive vegetation, which may form only sparse cover, is therefore ephemeral and composed of annual or short-lived perennial species such sea mayweed *Matricaria maritima*, oraches *Atriplex species*, and sea beet *Beta vulgaris* ssp. *maritima*. Level or gently-sloping, high-level mobile beaches, with limited human disturbance, support the best examples of this vegetation.

8.62 Together with St Albans Head to Durlston Head, Isle of Portland to Studland Cliffs SAC, supports important long-standing populations of early gentian numbering several thousands of plants in floristically-rich calcareous grassland.

8.63 The main forces active here are natural processes, so that erosion/deposition and cliff slumping occur widely (in the absence of any significant coast protection works) and grazing, where the same challenges arise with tor grass turf as in the St Alban's to Durlston SAC.

8.64 The south-west coast path runs the length of this site. Over 1 million people walk some of the South West Coast Path between Poole and Lyme Regis each year. Visitor numbers for individual locations are not generally available, although it is estimated that 500,000people visit Lulworth Cove annually. Erosion is a key concern in some areas, particularly where it is not clear who should shoulder the burden of repair and maintenance costs.

8.65 The hard limestone cliffs of Purbeck and Portland are also increasingly popular for climbing. Season and route restrictions are in place in Purbeck to help avoid conflict with nesting birds – the scheme appears to be accepted by the majority of climbers, and is monitored through an annual climbing forum. Portland is experiencing rapid growth in sports climbing, following national publication of new climbing guides: over 300 routes with fixed bolts have been put in place in the last few years, and this is set to increase further. Issues include impacts on cliff vegetation (particularly the nationally important Portland sea-lavender *Limonium recurvum*).

8.66 Hang-gliding has been a localised minority activity on the coast for over 10 years, and has been joined recently by paragliding (gliding using a parachute). The main clubs use sites in Portland, Kimmeridge, St Aldhelm's and Ballard Down when weather conditions are suitable. Erosion at launch sites and disturbance to cliff-nesting birds is a concern on Portland, and a zoning scheme has been agreed with the main association who use the Island.

Bracket's Coppice SAC

8.67 Bracket's Coppice SAC is a 55ha site that covers Bracket's Coppice and Ryewater Farm SSSI. The SAC is managed in part by the Dorset Wildlife Trust (their Bracket's Coppice reserve) and also by Plantlife (Ryewater Farm). The site lies 2 km north of Corscombe in the vales of West Dorset and comprises oak and ash woodland, wooded stream valleys, herb rich grassland and fen-meadow with a diverse fauna. The area is also geologically important. The SAC designation is for the presence of Bechstein's Bat; one of the first maternity colonies to be found in the UK was discovered within bat boxes within the woodland. The SAC designation also includes (although not a primary reason for designation) the grassland which falls under the Annex I habitat type "*Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)".

8.68 There is limited public access to the Plantlife reserve and the Dorset Wildlife Trust reserve has limited visitor facilities, with a small car-park and footpaths within the reserve.

Mendip Woodlands SAC

8.69 The Mendip Woodlands SAC is designated for the Annex I habitat "*Tilio-Acerion* forests of slopes, screes and ravines". The SAC is comprised of a cluster of ash-dominated woods on Carboniferous limestone. A rich variety of other trees and shrubs are present, including elm *Ulmus* spp. and, locally, small-leaved *lime Tilia cordata*. At Ebbor Gorge elm rather than lime is mixed with ash *Fraxinus excelsior* in a steep-sided gorge; at both Rodney Stoke and Cheddar Wood lime and ash are found on rocky slopes with patches of deeper soil between the outcrops.

8.70 The different woods that comprise the SAC are widely spaced, with five different fragments (totalling some 254ha), with the linear distance between the two farthest fragments being some 40km. Asham Wood, which lies to the south of Coleford, is the only part of the SAC that is at all close to North Dorset District, lying c.15km to the north-west of the District. The other parts of the SAC lie much further to the north-west. Asham Wood is the largest and most diverse of the ancient semi-natural woods in the SAC. The wood has been badly affected by quarrying in the past with up to 20% lost but this has now ceased and no major threats are apparent.

Salisbury Plain SAC / SPA

8.71 Salisbury Plain SAC covers over 2000ha and is believed to be the largest surviving semi-natural dry grassland within the EU (and is therefore the most important site for this habitat in the UK). The SAC is designated for the following Annex I habitats that are a primary reason for selection of this site:

- *Juniperus communis* formations on heaths or calcareous grasslands
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites)

8.72 The Plain is the best remaining example in the UK of lowland juniper scrub on chalk. The juniper is juxtaposed with extensive semi-natural dry grassland and chalk heath. In some cases the scrub has developed recently by invasion of open chalk grassland and contains few typical shrub species. However, most of the scrub is of the southern mixed scrub type and is enriched by roses Rosa spp., wild privet *Ligustrum vulgare*, dogwood *Cornus sanguinea*, wayfaring tree *Viburnum lantana* and other species characteristic of the type. The Plain also support extensive examples of *Bromus erectus* grassland, which is the most widespread and abundant calcareous grassland found in the UK. Alongside this are extensive areas of the rare *Festuca ovina – Hieracium pilosella – Thymus praecox* grassland, and one of the largest examples of CG6 *Avenula pubescens* grassland. The orchids include the largest UK population of the nationally scarce burnt orchid *Orchis ustulata*, together with significant populations of green-winged orchid *Orchis morio* and frog orchid *Coeloglossum viride*. Marsh fritillaries occur within Salisbury Plain and are a further primary reason for the SAC designation.

8.73 The SPA designation reflects important populations of two species: stone curlew *Burhinus oedicnemus* (22 pairs representing 12% of the breeding population in

Great Britain in 1998) and hen harrier *Circus cyaneus* (14 individuals representing 2% of the wintering population in Great Britain in 1996/7).

8.74 This site comprises three landholdings: a military training area, a military research area and a National Nature Reserve. The interests of all three sites require low intensity grazing and scrub management which on the military areas has occurred as a by-product of military use over many years and on the NNR has been maintained through traditional farm management. Changes in military use, particularly the use of increased numbers of vehicles and the construction of roads and tracks to accommodate those vehicles have the potential to damage the qualifying interests, but are subject to prior assessment and are strategically addressed through an integrated land management plan. An EU funded LIFE project, involving various partners, ran for four years in the mid 2000s with the aim of improving the management across the Plain. Disturbance from military use and recreation is an issue for stone curlews and extensive research on these issues have been conducted at Salisbury Plain (see Taylor, 2003, Taylor et al., 2007). Public access to most of the military training area is strictly limited, though there is access to the eastern area, near Tidworth, around 40km from North Dorset District.

Great Yews SAC

8.75 Great Yews near Coombe Bisset in Wiltshire is a 29ha site supporting *Taxus baccata* woods of the British Isles. Although it is the smallest example of this habitat within the SAC series, it is important for the presence of about 300 old yew trees. It probably originated as yew wood following beech *Fagus sylvatica* or ash *Fraxinus excelsior*. It has some regeneration and so has the full structural and functional range expected of yew stands. There are no public rights of way through the site, although a public footpath runs along its southwest corner.

Mells Valley SAC

8.76 Mells Valley is a composite site comprising four individual units spanning some 10km west of Frome in Somerset. The 29ha site is designated an SAC on the basis of the size of its exceptional breeding population of greater horseshoe bat *Rhinolophus ferrumequinum*. It contains the maternity site associated with a population comprising about 12% of the UK population. A proportion of the population also hibernates at the site, though other hibernation sites remain unknown. Other qualifying features present (but not primary reasons for designation) include semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) and caves not open to the public. There is a public right of way through one of the four component sites (Vallis Vale SSSI) near Frome, the closest part of the site to North Dorset.

The New Forest SPA / SAC / Ramsar

8.77 The New Forest is a composite site covering some 29,626ha, almost entirely within Hampshire but with 1% in Wiltshire. The Ramsar and SPA sites cover a similar area. The vast majority of the site lies beyond 20km of North Dorset District, but a small fraction of the SAC lies within this boundary a couple of kilometres north-west of Ringwood.

8.78 It comprises a complex mosaic of habitats overlying mainly nutrient-poor soils over plateau gravels. The major components are the extensive wet and dry heaths with their rich valley mires and associated wet and dry grasslands, the ancient pasture woodlands and inclosure woodlands, the network of clean rivers and streams, and frequent permanent and temporary ponds.

8.79 The area supports a diverse assemblage of wetland plants and animals including (at the time of designation)at least 29 nationally important plant species, including small fleabane *Pulicaria vulgaris*, slender cottongrass *Eriophorum gracile* and pennyroyal *Mentha pulegium*. Invertebrates include two species with internationally important populations (southern damselfly *Coenagrion mercuriale* and stag beetle *Lucanus cervus*). 180 other species of invertebrate range from butterflies such as the high brown fritillary *Argynnis adippe* to ground bugs such as *Nysius helveticus*, freshwater invertebrates such as the tadpole shrimp *Triops canriformis* and insects such as the New Forest cicada *Cicadetta montana*, the latter two species only known from the New Forest in the UK. Other important species occurring include great crested newt and two fish brook lamprey and bullhead. The area supports important populations of breeding birds, including nightjar, woodlark and Dartford warbler**.** Breeding honey buzzard *Pernis apivorus* and wintering hen harriers are also notable.

8.80 The site is subject to recreational pressure including informal walking, horse-riding, cycling, birdwatching and shooting, and steps are being taken to deal with recreational pressures. A recent decline in waders such as redshank, lapwing, curlew and snipe may in part be due to the effects of walkers and particularly those with dogs, as well as low water levels affecting the wetland habitats. Most of the valley mires in the Forest have been damaged in the past by drainage which has caused drying out of the peat layers. Prevention of further erosion has already been tackled on some sites but a more extensive programme of infilling drainage ditches is currently being discussed with the landowners and commoners. The work to restore valley mires systems is expected to influence these bird populations in time.

Chesil and the Fleet SAC

8.81 The SAC includes Chesil Bank, the Fleet and the shore of Portland Harbour, and extends to some 1630 hectares. Almost all of this large site falls beyond 20km from

North Dorset district. The Chesil and the Fleet Ramsar site covers a smaller areas than the SAC (748ha), including Chesil Bank, but not the entire beach.

8.82 Chesil Bank is a large (28 km-long), relatively undisturbed shingle bar, one of the three major shingle structures in the UK. It encloses the Fleet, by far the largest saline lagoon in the country. The salinity gradient, peculiar hydrographic regime and varied substrates, together with associated reedbed and intertidal habitats and the relative lack of pollution in comparison to most other lagoons, have resulted in the Fleet being extraordinarily rich in wildlife. It contains outstanding communities of aquatic plants and invertebrates, and supports large numbers of wintering waterbirds, including Dark-bellied Brent Goose *Branta bernicla bernicla***.** In spring and summer, Chesil Bank is an important breeding site for Little Terns *Sterna albifrons* which feed in the shallow waters of the lagoon, as well as adjacent waters outside the SPA. The plant life includes 150 species of algae and the lagoon is best known for the most extensive mixed populations of eelgrass Zostera and tasselweeds *Ruppia* in Britain including two species of eelgrass and three species of tasselweed, one of which is the rare spiral tasselweed *R. cirrhosa*. The Fleet also supports distinct and highly unusual mollusc associations and other notable invertebrates. It is an important breeding area for fish and is a bass nursery. In all, 23 species of fish have been recorded.

8.83 On the landward, more stable side of Chesil Bank, large, internationally and nationally important populations of shingle plants occur (perennial vegetation of stony banks), mostly relatively undisturbed by human activities. Much of the shingle bar is subject to wash-over and percolation in storm conditions and is therefore sparsely vegetated. It supports the most extensive occurrences of the nationally scarce sea-kale *Crambe maritima* and sea pea *Lathyrus japonicus* in the UK, together with other grassland and lichen-rich shingle plant communities typical of more stable conditions, especially towards the eastern end of the site.

8.84 An almost continuous belt of shrubby seablite *Suadea vera* and sea-purslane *Atriplex portulacoides (*Mediterranean and thermo-Atlantic halophilous scrubs *[Sarcocornetea fruticosi*]) forms a clear zone between the Fleet and the shingle vegetation of Chesil Bank. It appears to exist in a dynamic equilibrium with annual vegetation of drift lines dominated by sea beet and oraches which replaces the scrub in areas subject to disturbance, and is in turn displaced by the scrub after disturbance ceases.

8.85 The Fleet and much of Chesil bank are privately owned and managed as a nature reserve. Part of Chesil is Crown Common land. Whilst the majority of the site is largely inaccessible to casual visitors, the south western part of the site known variously as Ferrybridge or Ham beach is subject to considerable visitor recreational

pressure, and receives an estimated 100,000-150,000 visitors per annum. The purpose of visits to the area is wide ranging from local people dog walking, to those engaged in specialist sports or activities. The Coast Path runs alongside the inland boundary of part of the site, which is used year round for walking. Large numbers of migrating birds pass through the area in spring and autumn, attracting bird watchers. The beach is used for swimming and sunbathing in the summer. There are moorings within part of the site and windsurfing, kite surfing and sailing occur adjacent to the site year round (including international competitions). The height restriction of Ferrybridge itself mean that only canoes and other small craft can use the Fleet, and numbers are monitored. Diving occurs both within and adjacent to the site - all year but mainly April to October. Bait-digging is carried out by recreational fisherman on the intertidal mudflats of the Fleet. Angling is popular off Chesil Beach, which hosts national competitions and litter and discarded and lost tackle remains an issue.

8.86 The adjacent Portland Harbour through which much of the water exchange for the Fleet takes place is the site of a new commercial port, following departure of MOD several years ago. Routine or accidental discharges arising from activities within the Harbour could affect water quality in the Fleet and there is potential for recreational uses to 'spill over' into the Fleet. The land use of the Fleet hinterland is largely intensive agriculture and agricultural run-off is a potential source of eutrophication within the Fleet itself. There are also small domestic sewage discharges into the Fleet. There is a shellfish farm within the Fleet which cultivates oysters and cleanses mussels and other species. Introduction of non-native species remains a potential concern. Japanese seaweed is cut on an annual basis. The site is close to one of the world's busiest shipping lanes and consequently there is a risk of accidental oil pollution. Contingency plans exist for dealing with oil spills.

9. Appendix 5: Assessment of the impact of housing on the Dorset Heaths (Dorset Heaths SAC/SPA/Ramsar): text taken from previous assessment in 2010

9.1 This appendix contains the previous appropriate assessment work for the core strategy, considering the impacts of housing on the Dorset Heaths. The appropriate assessment section in the main report provides an update and current recommendations to enable a conclusion of no adverse effects on site integrity for the new local plan.

Introduction

9.2 New housing can result in an increase in the pressure on heathland sites through a wide range of impacts including: increased access, increased incidence of deliberate and accidental fires, litter, predation from people and pets, eutrophication and dumping/fly tipping. Attention was formally drawn to these issues in a report on the Dorset heaths to the Council of Europe in 1998 (De Molinaar, 1998), which prompted the UK Government to commission a study of heathland fires in the county (Kirby and Tantrum, 1999). Various authors have since reviewed and summarised the various impacts (see Haskins, 2000, Liley et al., 2006b, Underhill-Day, 2005); we provide a summary in Table 4 and further discussion below. We view these urban effects as potentially operating synergistically to influence the conservation interest of sites surrounded by high densities of housing.

Table 4: Summary of key negative impacts (besides disturbance to birds) of development close to European heathland sites. Table is adapted from Liley *et al.* (2006b)

Effect	Description and Impact	Examples of species / species group affected	Key references
Fragmentation	Loss of supporting habitats	Nectar feeding invertebrates; nightjar, woodlark	Alexander & Cresswell (1990)
	Lack of connectivity between sites preventing movement / genetic exchange between sites	Invertebrates, plants, reptiles, birds and mammals	
	Smaller site size increases edge effects from non-heathland species	Invertebrates and plants	Webb (1989); Webb & Vermaat (1990); Webb (1990); Webb & Thomas (1994)
Predation and increased	Access by pet cats, some of which feed on the heath	Birds, invertebrates, reptiles and amphibians	Woods *et al.* (2003); Sims *et al.* (2008)

Effect	Description and Impact	Examples of species / species group affected	Key references
mortalities			
	Different densities of mammalian predators such as foxes present on more urban heaths	Birds, reptiles, mammals.	Taylor (2002)
	Increase in crows and magpies on sites with greater human activity	Birds, invertebrates, reptiles and amphibians	Marzluff & Neatherlin (2006)
Roads	Road kills from traffic	Birds, invertebrates, reptiles and amphibians	Erritzoe (2002)
	Increased levels of noise and light pollution	Birds, Invertebrates	Reijnen *et al.* (1997)
	Roads are barriers to species mobility	Invertebrates	Mader *et al.* (1990)
Pollution / Hydrology	Ground and surface water pollution from roads and hard surfaces, spills and dumping.	Vegetation communities, macroinvertebrates in watercourses	Armitage *et al.* (1994)
	Air pollution from industrial uses, fires and vehicles	Vegetation communities	Bobbink *et al.* (1998); Angold (1997); Bignal *et al.* (2007)
Trampling	Soil compaction	Plant communities and species. Invertebrates	(Taylor et al., 2006)
	Soil erosion from walkers, cyclists and horse riders	Plant communities and species, some invertebrates benefit	
	Damage to breeding and wintering sites	Invertebrates and reptiles	
	Creation of extensive path network increases spatial disturbance	Birds, reptiles	
Vandalism	Damage to signs, fences, gates		
Eutrophication	Enrichment of soils from dog excrement.	Plant communities and species, invertebrates	Bonner & Agnew (1983); Taylor *et al.* (Taylor et al., 2005)

Effect	Description and Impact	Examples of species / species group affected	Key references
	Dumping of household and garden rubbish.		Liley (2004)
	Enrichment along road corridors, effects of dust, salt, run-off	Plant communities and species, invertebrates	Angold (1997)
Fires	High fire incidence on urban heaths. Direct mortality of fauna. Temporary removal of breeding and foraging habitat	Birds, invertebrates, reptiles and amphibians	Kirby & Tantrum (1999)
	Long term vegetation change from repeated fires	Vegetation communities	Bullock & Webb (1994)
Restrictions on management	Stock grazing, gates left open, dogs chasing animals, injury to stock		
	Objections to management eg. tree clearance		Woods (2002)
	Increased costs of wardening		
Negative public perception	**Disregard of access and activity restrictions, hence trampling, dog fouling, fire lighting, illegal motorcycling etc**	**Vegetation communities, birds, invertebrates, reptiles and amphibians**	

Disturbance to Annex I birds

9.3 There is a strong evidence-base showing impacts of new housing and recreational access on the three Annex I breeding bird species associated with lowland heathland. This material has been rigorously tested at various public inquiries and underpins much of the recent policy and planning initiatives such as the Thames Basin Heaths Delivery Plan and the Dorset Interim Planning Framework.

Nightjars Caprimulgus europaeus

9.4 Several recent studies have demonstrated clear links between human disturbance and both density and breeding success in European nightjars (Liley and Clarke, 2003, Langston et al., 2007b, Clarke et al., 2006, Clarke et al., 2008a, Liley and Clarke, 2002b, Liley and Clarke, 2002a, Langston et al., 2007c, Murison, 2002).

9.5 Modelling using data from the last national survey (in 2004) suggests that the nightjar population on the combined Dorset Heaths and Thames Basin Heaths SPAs would be 14% higher were there no nearby housing or visitor pressure (Clarke et al., 2008a). On the Thames Basin Heaths (where visitor pressure is higher than Dorset), nightjars demonstrate a general preference for areas away from access points and site edges. There is a clear trend for nightjar density to decline with increasing visitor pressure, with nightjars appearing to avoid highly disturbed areas within sites. This decline is gradual, and there is not a clear cut-off point at which a marked change in nightjar density occurs. The trend is similar but less clear on the Dorset Heaths (Liley et al., 2006a, Langston et al., 2007c). However, on the Dorset Heaths a negative correlation was shown for urban development or people density and nightjar density, regardless of the size of heathland studied (Liley and Clarke, 2002a, Liley and Clarke, 2002b); urban development density could be considered a rough proxy for recreational access levels.

9.6 Studies on 10 Dorset heaths revealed that nightjars had significantly higher breeding success at sites with no public access than those with open access. Nests had a greater chance of failure on open access sites with more surrounding urban development and increasing proximity to a greater density of footpaths (Murison, 2002). Nightjar nests that failed were significantly closer to paths (45 m compared to 150m for successful nests) and tended to be closer to the main access points. Nightjar territories had fewer paths within 100m than did random points. No significant differences in levels of path usage and nest failure were detected. Incubating nightjars sit tight unless disturbed; in 2,000 hours of camera observations of eight nests, nightjars never left the nest unattended during the day unless disturbed (Langston et al., 2007a).

9.7 Humans and dogs flush nightjars from their nest, the flushing rate being positively associated with height of the vegetation around the nest (presumably because nightjars cannot see the cause of the disturbance); and negatively correlated with the extent of nest cover (Murison, 2002, Langston et al., 2007a, Langston et al., 2007c). Flushing during daylight leaves nightjar eggs or chicks vulnerable to predation, the proximate cause of nest failure (Murison, 2002). Use of remote cameras fixed on nests documented a single instance of predation: The predator was a carrion crow *Corvus corone* (Woodfield and Langston, 2004), but this species may be responsible for 60% of nest failures (Murison, 2002).

9.8 As most nightjar breeding failures happen during incubation (Murison, 2002, Woodfield and Langston, 2004), a single dog running off-path into the heather could disturb large areas of nightjar breeding habitat. Disturbance may be of greater significance during breeding seasons that, for other reasons (e.g. weather), are less favourable.

Woodlark Lullula arborea

9.9 Across 16 sites in southern England, including the Dorset Heaths, woodlark population density was found to be significantly lower at sites with higher disturbance levels (Mallord et al., 2006, Mallord et al., 2007a). This supported previous findings that density of woodlark territories is significantly reduced on sites with open access compared to those with restricted access (Liley and Clarke, 2002b). This pattern was thought to be due to birds not nesting (but nevertheless still foraging) in the most heavily visited areas.

9.10 At sites with recreational access, woodlarks were found to be less likely to colonise suitable habitat in areas with greater disturbance; eight disturbance events per hour reduced the probability of colonisation to below 50%. However, the lower woodlark density at more highly disturbed sites resulted in greater breeding success, in terms of more fledged chicks per pair, i.e. high disturbance levels produced a strong density-dependent increase in reproductive output (Mallord et al., 2006, Mallord et al., 2007a).

9.11 A model has been developed to predict the consequences for the woodlark population of a range of visitor access levels (Mallord et al., 2006). Recreational disturbance is thought to be having a major adverse effect on woodlark populations in Dorset already. Any further population impact is likely to depend on the spatial distribution of visitors as well as overall numbers. Under current access arrangements, a doubling of visitor numbers is predicted to reduce population size by 15%. If visitor levels doubled and visitors spread equally across sites, a 40% population decline is predicted (Mallord et al., 2006, Mallord et al., 2007b). If disturbance at 16 heathland sites were to be removed, it is predicted that the breeding population of woodlarks would increase by 13–48% (Mallord 2005).

Dartford warbler *Sylvia undata*

9.12 Initial analysis based on data from the Dorset heaths suggested no statistically significant difference in the number of Dartford warbler territories on sites with open access compared to those with restricted access (Liley and Clarke, 2002b). Subsequent studies, however, have refined this view. Clear impacts on breeding ecology have been demonstrated: Disturbance at territories was higher where these were located close to car parks (Murison, 2007, Murison et al., 2007). Dartford warblers are particularly susceptible to disturbance when nest-building, halting or even abandoning activities when interrupted (Murison, 2007, Murison et al., 2007). The nearer the centre of the warbler territory is to an access point (e.g. car park), the later the first brood is likely to be raised. Disturbance appears to delay hatching dates and so prevent chick growth from coinciding with periods of optimal invertebrate prey density, and also to interrupt adult foraging and chick feeding (Murison, 2007, Murison et al., 2007). Dog-walkers accounted for 60–72% of all disturbance events, with dogs off-lead and off-path likely to have the greatest adverse impact on Dartford warbler breeding productivity (Murison, 2007, Murison et al., 2007). Moreover, for such a short-lived species in which there is also low over-winter

survival of young birds, increased disturbance could limit population recovery by reducing annual breeding productivity and hence the numbers of potential recruits to new areas (Langston et al., 2007a).

9.13 Research on Dartford warblers shows that disturbance may vary to different extents in different habitats (Murison, 2007, Murison et al., 2007). Dartford warblers occupy territories dominated by heather *Calluna vulgaris*, heather territories with significant areas of European gorse *Ulex europaeus* and territories containing western gorse *Ulex gallii*. However, only in the first habitat type did disturbance have significant impact on breeding productivity, delaying breeding by up to six weeks which, in turn significantly reduced the number of broods raised and the average number of chicks raised per pair. In heather territories, an average of 13–16 people passing through per hour each day delayed pairs sufficiently to prevent them raising multiple broods; most heather territories fell below this threshold. The lower impact of disturbance in territories with gorse may be due to this impenetrable habitat offering some protection from disturbance, as it is known to provide from harsh weather and predators. Dogs were seen to move up to 45 m off-path in heather, but never into gorse-dominated vegetation (Murison, 2007, Murison et al., 2007).

Trampling and disturbance to other species

9.14 Bare ground and early successional habitats are a very important for a suite of plants, invertebrates and reptiles on heaths (Byfield and Pearman, 1996, Moulton and Corbett, 1999, Key, 2000, Kirby, 2001, Lake and Day, 1999). On the Dorset Heaths it is bare ground habitats, rather than heather-dominated ones, that support the most rare species (Key, 2000) and of the 90 Biodiversity Action Plan species associated with lowland heathland, 39% depend on bare ground and early successional habitats (Alonso pers. comm.). Many plants are only associated with such habitats (e.g. tiny annuals such as slender centaury *Cicendia filiformis*, which occurs alongside the B3075 and is associated with wetter hollows, including vehicle ruts and hoof prints (Lake et al., 2001).

9.15 Some kind of physical disturbance is usually required to create these bare ground habitats, and hence a certain level of physical disturbance can be beneficial. Localised erosion, the creation of new routes and ground disturbance may all contribute to the maintenance of habitat diversity within sites. However, the level of disturbance required is difficult to define and is likely to vary between sites (Lake et al., 2001). There are likely to be optimum levels of use that maintain the bare ground habitats but do not continually disturb the substrate. Unfortunately such levels of use have never been quantified, nor is it known whether sporadic use is likely to be better at maintaining bare ground habitats than low level, continuous use.

9.16 Heavy use of sandy tracks, particularly by horses or mountain bikes, causes the sand to be loose and continually disturbed, rendering the habitat of low value to many invertebrates (Symes and Day, 2003) and sand lizards that need to lay their eggs in bare sand. Species which burrow into flat surfaces (i.e. the centres of paths) are likely to be particularly vulnerable, as loose sand may not support their burrows and the churning may make it impossible for them to relocate their burrows once dug. The friable nature of heathland soils makes them particularly vulnerable to these impacts.

9.17 Path surfacing to divert people along particular routes or contain access problems such as erosion can often be detrimental to invertebrates (S. Miles pers. comm.) and sand lizards. Surfacing with gravel, hoggin, chips or similar material can entomb invertebrates within their burrows and can render the path useless in the future as the invertebrates can no longer burrow through the capping.

Dog fouling

9.18 A number of reviews have addressed the impacts of dog fouling (Taylor et al., 2006, Taylor et al., 2005). Dogs will typically defecate within 10 minutes of a walk starting, and as a consequence most deposition tends to occur within 400m of a site entrance (Taylor et al., 2005) though any walker in the countryside will know to their cost that this not invariably the case. Similarly, dogs will typically urinate at the start of a walk, but they will also urinate at frequent intervals during the walk too. The total volume deposited on sites may be surprisingly large. At Burnham Beeches NNR over one year, Barnard (Barnard, 2003) estimated the total amounts of urine as 30,000 litres and 60 tonnes of faeces from dogs. Limited information on the chemical composition of dog faeces indicates that they are particularly rich in nitrogen (see work cited in Taylor et al., 2006).

9.19 Nutrient levels in soil are important factors determining plant species composition and on heathland sites the typical effect will be equivalent to applying a high level of fertilizer, resulting in a reduction in species richness and the presence of species typically associated with more improved habitats. A lush green strip is often evident alongside paths as nutrient enrichment can also lead to more vigorous growth and flowering (Taylor et al., 2006).

9.20 The interface between heather and open bare ground is important for many species, especially invertebrates. The emriched grassy strips alongside paths result in a direct loss of an important micro-habitat and the effect is therefore often disproportionate to the amount of land affected.

Fire risk to heathland

9.21 The main source of information on fire on the Dorset heaths was a report commissioned by DETR (Kirby and Tantrum, 1999) which analysed 3333 separate fires and evaluated these in relation to built up areas. This report noted that of the 26 lowland heathland SSSIs in Dorset with the highest number of fires, 1990-1998, 70% were located in or adjacent to urban areas, including the top nine. Similar clustering around the urban fringe was noted by Liley based on earlier work by Hall on Yateley Common, one of the Thames Basin Heaths in N Hants (Liley, 2004). In a later study, Murison found that there was a strong causative relationship between measures of human recreational disturbance and the incidence of wildfires on heaths (Murison, 2007). Kirby & Tantrum also noted that fires were more likely to occur at weekends than weekdays, during school holidays than term time, and during the afternoon and early evening than at other times of day (at times when children have been let out of school but working parents may not have arrived home) (Kirby and Tantrum, 1999). They reported that there was a widespread belief amongst professional heathland managers that most fires were deliberate and that children were often responsible.

9.22 Heathland fires can kill mature heather plants, and, where it is hot enough to penetrate the top layers of the soil, can damage seed banks (Hobbs and Gimingham, 1987). On organic soils the soil itself can be damaged by fire delaying the re-establishment of vegetation, sometimes for many years, and causing soil erosion (Maltby et al., 1990, Legg et al., 1992).

9.23 The effects of wild fires on invertebrates is variable, with invertebrates with restricted niches, e.g. on old heather the most susceptible to uncontrolled burning (Bell et al., 2001). Old heather stands are also valuable for reptiles, in Dorset particularly rare sand lizards and smooth snakes, and wild fires not only kill many reptiles and leave survivors vulnerable to increased predation, but it can take between 5-25 years before the vegetation has recovered sufficiently to allow re-colonisation (Braithwaite, 1995, Nature Conservancy Council, 1983). No studies have been carried out on nightjars and woodlarks, but it has been found that on a number of wild fire sites on urban heaths in Dorset, after a year 20% of territories remained unoccupied (Murison, 2007).

Other urban effects

9.24 There is a range of other urban effects on heathland ecosystems including pollution, vandalism, fly tipping, littering, introduction of alien plants and animals, trampling and predation.

9.25 There is considerable evidence from the records of a number of heathland managers of a range of undesirable activities by members of the public including use of vehicles off paths and tracks, dumping of chemicals, setting fire to abandoned vehicles, collecting wildlife and indirect effects of barbecues and camping (De Molinaar, 1998, Haskins, 2000, Underhill-Day, 2005, Munns, 2001).

9.26 No systematic studies have been attempted on the introduction of alien plants and animals to heathland, but one study recorded over 40 non-native plants and another the introduction of alien plants and fish into heathland ponds (Liley, 2004, Munns, 2001).

9.27 A number of studies have estimated the number of cats in Britain and these suggest a figure of about 8 million domestic cats and over 800,000 feral cats (Harris et al., 1995). An analysis of the Target Group Index survey of 25,000 adults from across GB in 2000, suggested that 13% of British households own one cat and 10% own two or more cats (Saul, 2000). Although cats differ widely in the amount of hunting they do and the distances they will travel to hunt, studies have shown that some cats will travel at least a kilometre from home; that they hunt both during the day and at night; and that they catch a wide range of mammals, birds and reptiles (Barratt, 1995, Barratt, 1997, Woods et al., 2003). Cats have been seen on most of the urban heaths in Dorset (Urban Heath Life Project pers comm.), and in 2004, Murison (2007) recorded that out of a marked population of young Dartford warblers, 16% had been predated by cats within 2-4 weeks of leaving the nest. No similar studies have been carried out on woodlarks or nightjars both of which are ground nesting.

9.28 Heathlands can be damaged by trampling, with heather dominated heath and communities with a high cover of lichens and mosses, and bog communities all being particularly susceptible (Harrison, 1981, Anderson and Radford, 1992). Wet and humid heathland are damaged by trampling with summer trampling generally being more harmful than winter trampling and

repeated tramples causing more damage than single events (Gallet and Roze, 2001, Gallet and Roze, 2002, Gallet et al., 2004). These results show that most damage to heathland plant communities is likely to occur in summer when visitor numbers are greatest and that new paths can be rapidly created from desire lines by walkers on heathland.

Functional links and the connectivity between North Dorset and the European Heathland Sites

9.29 There are various relevant visitor surveys that can be used to indicate whether people living within North Dorset District visit the Dorset Heaths.

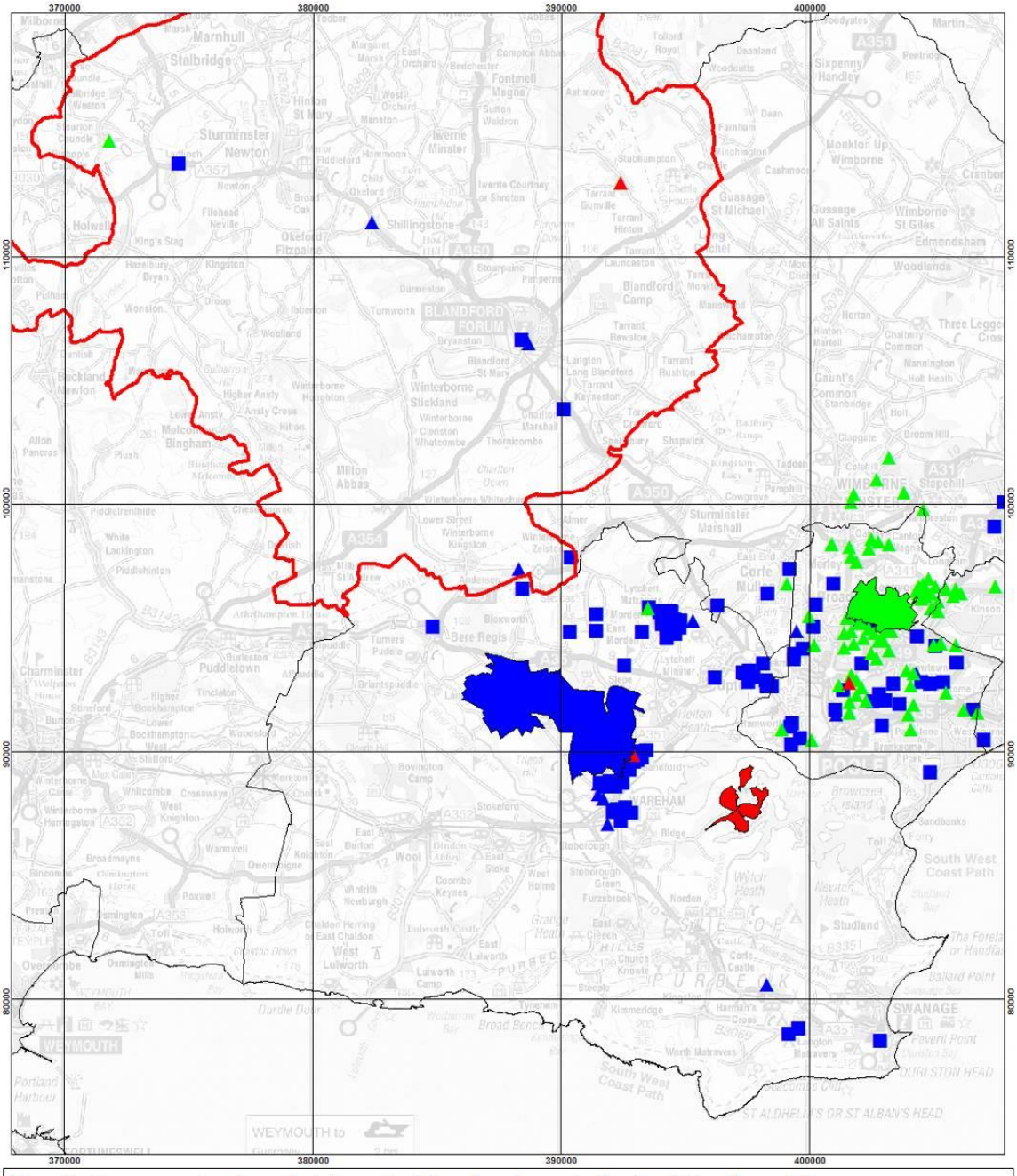
9.30 As part of Natural England's monitoring of the use of open access land, 37 days of surveys were conducted on Dorset Heathland sites in 2007, with 349 questionnaires being completed on 12 heaths. Five of the questionnaires (1.4%), representing 13 people, involved people that lived within North Dorset District (see Map 3). These interviews took place at the following locations:

- At Coombe Heath (part of Arne RSPB nature reserve) there were visitors from Tarrant Gunville,
- At Decoy Heath (part of Wareham Forest) there were visitors interviewed from Shillingstone, Blandford Forum and Winterbourne Tomson
- Canford Heath (a Borough of Poole Nature Reserve) there were visitors interviewed from Stourton Caundle.

9.31 As part of work for Purbeck District Council, Footprint Ecology conducted visitor surveys in the eastern part of Wareham Forest in 2008. This small survey was conducted over four days at two locations and 123 interviews were conducted with visitors. Of those, there were four groups (3.2 %) of people interviewed who lived in North Dorset District (See Map 3). These visitors came from Lydlinch, Blandford Forum, Charlton Marshall and Winterbourne Zelston.

9.32 Within the visitor survey of the Dorset Heaths SPA / SAC / Ramsar, conducted in 2004 (Clarke et al. 2003), none of the interviewees (that gave valid, whole postcodes) were from North Dorset District. The survey involved 40 days of questionnaires with visitors and covered a range of sites.

9.33 It would therefore seem that there is evidence of a low use of Dorset Heath sites by residents of North Dorset, born out by data from at least two visitor surveys. The number of dwellings involved (much of North Dorset is a long way from the Dorset Heaths), and the locations where the interviews are conducted is clearly important. Wareham Forest is likely to be one of the sites visited, due to its extensive scale and proximity. An adverse effect on the integrity of the Dorset Heaths SAC, Dorset Heathlands SPA and the Dorset Heathlands Ramsar site cannot therefore be ruled out.



Map 3: Home postcodes of visitors to Warehm Forest, Canford Heath and Arne

Habitats Regulations Assessment of the North Dorset Core Strategy and Development Management Policies DPD

footprint ECOLOGY

21 August 2009

Scale 1:209000

North Dorset District

District Boundaries

Square symbols from Footprint Ecology Visitor Monitoring

Visitors to:

Canford Heath

Wareham Forest

Arne

Triangle symbols from Natural England Open Access Monitoring

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10. Appendix 6: Assessment of impacts arising from recreation on chalk grassland sites (Fontmell and Melbury Downs SAC, Cerne and Sydling Downs SAC and Salisbury Plain SAC/SPA): text taken from previous assessment in 2010

10.1 This appendix provides the previous appropriate assessment work for the core strategy, considering the impacts of recreation on the chalk grassland European sites. The appropriate assessment section in the main report provides an update and current recommendations to enable a conclusion of no adverse effects on site integrity for the new local plan. SAC interest features

10.2 The chalk grassland SACs where it is considered there may be impacts from recreational uses, arising from the increase in housing proposed in N Dorset district are Fontmell and Melbury Downs (within the district boundary), Cerne and Sydling Downs (some 3km to the nearest part, from the western edge of the district) and Salisbury Plain (some 16.5 km NW of North Dorset District).

10.3 They are all designated SACs for their occurrence of semi-natural dry grasslands and scrub on calcareous substrates. In each case they are among the best examples in the country and for the latter site, the orchid-rich chalk grassland is a priority feature. Another primary reason for the SAC designation in the case of Fontmell and Melbury Downs is the large population of the endemic early gentian Gentianella anglica. Both at Cerne and Sydling, and at Salisbury Plain the presence of strong populations of the Annex 2 marsh fritillary butterfly is another reason for SAC designation.

Impacts

10.4 The impacts on the chalk grassland SACs likely to arise from proposals in the Core Strategy are mainly from the effects of trampling and possibly erosion caused by walking or cycling, and the addition of nutrients. In the latter case, atmospheric deposition from traffic emissions is covered in Section 10, but eutrophication from dog faeces is also a real if localised threat, especially to habitats that are necessarily naturally low in nutrients, such as calcareous grassland/

Effects of trampling

10.5 The SAC habitats are vulnerable to some extent to the impacts from the passage of walkers or cyclists. Those parts that are steep and with thin soils, especially near access points where pressures are more concentrated, are particularly vulnerable. These plant communities are fragile and already under environmental stress, from among other factors, summer drought, thin soils and natural sub-aerial erosion. Such stresses from natural causes can be exacerbated by human pressures.

10.6 Because of the location generally on the steeper downland slopes, the richest grassland turf, though highly susceptible to such wear, is by its position comparatively safe. The steeper

ground makes walking relatively difficult and thus fewer people venture onto the steep slopes. However, where such walking does occur, the impact through erosion and trampling is potentially greater. There are some localities where the high quality turf is relatively close to access points, such as at the foot of Giant Hill, Cerne, and here erosion is very clearly apparent, albeit locally. For the most part however, and especially where the main access is at the top of the downland, as at Fontmell, the immediate turf is on flatter ground and is as a consequence more robust, growing on deeper soils and comprising grasses and herbs of more fertile ground.

10.7 The chalk downlands of the Fontmell and Cerne SACs are open to public access and there are also footpaths and bridleways, some linking back to access points, and some with small-scale car parking available. There is thus existing walking pressure especially at the top of the downs at Fontmell where the views across the Blackmore Vale are very impressive, but also across some of the downland slopes.

10.8 At Fontmell and Melbury the main access is from several small, and in some cases informal, parking spots along or adjoining the C13 high road. In all some 25 spaces are available in several locations, to the south of Melbury Abbas. There is some availability of informal parking at the far eastern end of the minor road that joins the B3081 at Ashmore Down, but this is further from settlements and does not offer the same degree of walking routes on the downland, or such commanding views.

10.9 The main focus for car parking and access at Cerne and Sydling Downs SAC is in the villages of Cerne Abbas and Sydling St Nicholas. From these places, the downland slopes are relatively distant – 250-500m along roads and pathways; and access is to the foot of the downs. The main viewpoint for the chief feature – the Cerne Giant chalk figure – is separated by agricultural land from the downland slopes and is alongside the A352 road. There are limited parking opportunities for the other parts of the SAC complex, each only accommodating a few cars, and/or distant from the main downland slopes.

10.10 Many studies on the effects of trampling, by feet, cycles and vehicles, and on the impacts of soil enrichment including from dog fouling are cited in the literature. A useful and recent compendium of this varied research is given in the Natural England commissioned Report NERC012, 2009, and the Supplementary Guidance (NERC013) also 2009. Findings from a variety of experiments and research, and in various localities, support the view that low productivity turf (eg calcareous grassland) is more prone to trampling and enrichment damage than more productive grassland and that recovery from such damage is slower. Even quite modest pressure can result in changes in plant composition, reduction in biodiversity, reduction in soil invertebrates, and in soil compaction. And where diversity appears to be maintained, there can be a shift to more resilient and generalised species rather than the characteristic species of calcareous grassland. There is some evidence however that already grazed sites are less prone to dramatic change since to some extent the grassland communities have already adapted to the effects of grazing animals, which are comparable in some respects.

Effects of nutrient input

10.11 Low nutrient sites, typical of many semi-natural habitats including chalk grassland, are especially susceptible to the addition of fertiliser, whether from atmospheric deposition (mainly nitrogen) or dog faeces and urine (phosphorus and nitrogen). There are many studies and reports of the observed effects of dog fouling on vegetation and also on the volume of faeces and urine deposited. A very useful assembly of the literature on this topic is provided in the English Nature Research Report 649, Taylor et al 2005. This cites evidence of a strong correlation between soil phosphorus and faeces deposition; and levels can far exceed those of fertile farmland. Nitrogen is the main nutrient in urine and adding nitrogen results in loss or reduction in botanical diversity. It is estimated that 1000 tonnes of dog faeces are deposited every day in UK; and for every tonne, 500 litres of urine is deposited. Such deposition tends to be concentrated near entry points and along path sides, though any walker in the countryside will know to their cost that this not invariably the case.

10.12 The number of dogs in UK is estimated to be some 2.1 – 2.3 million; and there may be 1 dog for every 2 to 4 walkers (25-50%) on sites close to residential areas. In some cases, the ratio of dogs to people was more than 1 dog per walker on average. A study by C Westgarth et al, (BMC Veterinary Research 2007, 3:5) in a semi-rural community in Cheshire, found that 24% of households own at least one dog and that the average rate was 1.3 dogs per household. Liley et al, (in the report Access Patterns in SE Dorset, 2008, based on household surveys) found that the dog ownership level in SE Dorset was 19% of households.

10.13 Dog walking is a daily discipline and in many cases may mean one or more walks with the dog every day. Thus the impact of dog walkers is comparatively much more frequent than for other walking. This effect is thus likely to be much more linked to the impacts from housing, with a decidedly local focus.

10.14 The 2008 SE Dorset Access Study found that the most frequently visited type of outdoor site by a considerable margin was the coast with 46% of respondents saying they had visited within the last week. (The next most frequently visited type of site was “parks” with 30% visiting within the last week.) However, the proportion of those owning a dog and visiting any outdoor site within the last year was higher than for non-dog owning households (96% cf 89%); and the proportion of dog owners that said they had visited a particular kind of site was higher for all types of site.

Summary of Impacts

10.15 No visitor surveys have been conducted at the downland SACs but casual observation (eg by DWT Site managers) confirms that the main access at Fontmell is from the small car parks off the C13; and that walkers, many with dogs, are the main users. This location is only 2km from east Shaftesbury where there is likely to be a focus of new housing provision. Though actual numbers of additional walkers/dog walkers visiting Fontmell and Melbury Downs, from new housing, especially from Shaftesbury because it is so near, may be quite small, this could represent a relatively high proportional increase. Full visitor surveys would be needed to enable prediction (and confirmation) of this, but in the absence of such information it must remain a distinct possibility and thus the likelihood of adverse impact cannot be ruled out. Trampling and

especially increased enrichment from dog fouling on essentially low-nutrient habitat are the main impacts. Riding, cycling and other recreational pursuits are unlikely to be a significant impact, based on current practices.

10.16 The Cerne and Sydling sites are at significantly greater distance from new housing in NDDC and here an increase in visitors arising as a result of the Core Strategy housing provisions is unlikely. This fact, coupled with the relatively low access provision and no very obvious attraction feature, such as a viewpoint, means that no adverse effect on integrity to Cerne and Sydling Downs SAC is expected, as a result of increased recreational pressure arising from development in North Dorset.

10.17 Salisbury Plain is a considerable distance from North Dorset and it would therefore seem unlikely that there would be any direct link or impacts from recreation. Visitor data does support this. In work by Footprint Ecology in 2006 (Liley et al., 2007a) a total of 169 visitors to Salisbury Plain were interviewed about their visit. These were all visitors using the eastern part of the military training area (i.e. the part with public access), mostly accessing the area from informal parking locations (such as track gateways or lay-bys). Of the 169 interviewees, 133 were willing/able to provide a valid postcode. By comparing this data to the grid reference of the point at which they accessed the Plain (i.e. started their walk) it was found that 50% of these visitors had travelled under 7 kilometres. The majority (89%) of visitors had come from within 15 kilometres. Notable exceptions were the group of motorcyclists who regularly tow their bikes 65km from Hungerford to ride around the Plain and a pair of archaeologists who had travelled 124km from Exeter. None of the interviewees had come from North Dorset. We therefore assume no adverse effect on integrity, as a result of increased recreational pressure to Salisbury Plain SAC or SPA, arising from development in North Dorset.

11. Appendix 7: Assessment of impacts arising from recreational pressure on coastal / estuarine sites (Poole Harbour SPA/Ramsar, Chesil and the Fleet SAC / SPA; Isle of Portland to Studland Cliffs SAC; Dorset Heaths (Purbeck & Studland) and Studland Dunes SAC)): text taken from previous assessment in 2010

11.1 This appendix provides the previous appropriate assessment work for the core strategy, considering the impacts of recreation on the chalk coastal and estuarine European sites. The appropriate assessment section in the main report provides an update and current recommendations to enable a conclusion of no adverse effects on site integrity for the new local plan.

Introduction

11.2 An increase in people living within North Dorset is likely to result in an increase in recreational use of coastal sites. Coastal sites tend to draw people from a considerable distance and, besides the attraction of a family day out or walk along the coast the water also provides a venue for water based activities such as jet skiing, boating, kite surfing etc. We highlight some locations that are likely to particularly attract visitors in Table 5.

Table 5: Coastal sites which might attract visitors from North Dorset. Distances and travel times are from the centre of Blandford Forum. Drive times calculated using AA route planner[10]

Name of visitor location	European designation	Distance from Blandford (km)	Drive time from Blandford (mins)	Draw / Attraction
Lulworth Cove	Portland to Studland Cliffs SAC	25	50	Beach, coastal scenery
Poole Harbour, Sandbanks	Poole Harbour SPA / Ramsar	24	32	Harbour views, watersports (kite surfing adn windsurfing)
Poole Harbour, Ham Park	Poole Harbour SPA / Ramsar	20	25	Harbour side, launching point for windsurfing and kayaks
Arne RSPB Reserve	Dorset Heaths (Purbeck and Studland) & Studland Dunes SAC, Dorset Heathlands SPA	21	46	Harbour side and heathland walks, beach

[10] http://www.theaa.com/route-planner/index.jsp

Name of visitor location	European designation	Distance from Blandford (km)	Drive time from Blandford (mins)	Draw / Attraction
	/ Ramsar, Poole Harbour SPA / Ramsar			
Studland Peninsula	Dorset Heaths (Purbeck and Studland) & Studland Dunes SAC, Dorset Heathlands SPA / Ramsar, Poole Harbour SPA / Ramsar	27	50	Harbour side access and heathland walks, large sandy beach, coastal scenery
Ferrybridge	Chesil and the Fleet SAC / SPA	38	45	

Poole Harbour: current use and likely impacts

11.3 The Harbour shoreline is used for a variety of land-based recreational activities. The shoreline paths are popular with families, dog walkers, cyclists, joggers, walkers and fishermen. There is currently little information on levels of recreational use of the harbour frontage, but (particularly around Poole) these areas are very well used. The only studies looking specifically at Poole Harbour and access/disturbance issues involve work on bait diggers (Dyrynda & Lewis, 1994; Morrisson, 2006), work at Studland (Liley, Pickess & Underhill-day, 2006c) and a study comparing night time and diurnal use of the northern shore by birds during the winter (Liley et al., 2008 in press).

11.4 The southern shore is rural in character and access opportunities directly to the shore within the District are limited. There is foot access to the shoreline near Wareham, at Arne and at Studland. At Arne and Studland access levels are high. At Arne there is an RSPB car-park and bridleway and the Shipstal area is popular with walkers, birdwatchers families and others, with sandy beaches and fine views. Similarly at Studland the Poole Harbour shoreline is often sandy and is used by walkers, dog walkers, fishermen and others. At Studland the area of heath adjacent to the shore is CRoW access land and therefore there is no potential to control, limit or redirect access. At both locations there are important bird roosts and feeding areas (Collins, 1985, Liley, 2007, Liley and Underhill-Day, 2007, Liley et al., 2007b, Morrison, 2004, Thomas et al., 2004, Underhill-Day, 2006). The western and northern shore of the harbour have much more access. At Upton Country Park theshoreline is quite wooded and there are viewing facilities (a bird hide) over-looking Holes Bay. There is a path running along the shoreline around Holes Bay and another from Lilliput round to Sandbanks. There are parks at Hamworthy (Ham Park) and in the centre of Poole (Poole Park, Baiter and Whitecliff). Ham Park is relatively close to Upton and contains beach huts, a children's play area and the rest of the area is largely mown grass. A tarmac path runs along the shore.

11.5 Levels of existing recreational boating activity are high (see Underhill-Day, 2006 for counts). There are currently c.2500 swinging moorings and c.2300 pontoon and marina berths within the Harbour. There are 7 marinas with dry storage for c.2000 craft. With approximately eight yacht clubs (combined membership c.7500 members), some 5000 yachts visit the harbour each year (Underhill-Day, 2006). There are two public slipways. Other waterborne activities include windsurfing, kite-surfing, water-skiing, jet skis and other personal watercraft, wildfowling, motor boating and canoeing.

11.6 There are designated zones for water-skiing and personal watercraft within the Harbour both of which require permits. An area off Whitley Lake is set aside for wind surfers but they are not confined to this, and the area to the south of the harbour is designated as a quiet area, although this is only enforced in relation to activities taking place outside permitted areas or violations of the speed limits. Generally speed limits are 10 knots, but with six knots in some enclosed parts of the Harbour. Kite surfing appears to be increasingly common within the Harbour and is particularly concentrated in the area around Whitely Lake.

11.7 The number of wet moorings provided by pontoons and marinas has increased in recent years, but the policy of the Harbour Commissioners has been to reduce swinging mooring numbers as other wet berths become available. This policy has resulted in a small reduction in wet berths in the Harbour since 1994 (Underhill-Day, 2006). Based on a questionnaire survey, Southgate (2006) estimated the popularity of various water borne activities within the Harbour. The mean figures of daily use suggest some increase in harbour usage from 1994, and although the number of wet berths has declined slightly, there is an increasing trend in the number of visiting boats being launched from the public slipway at Baiter (Underhill-Day, 2006).

11.8 Water-based recreation also spreads out from Poole Harbour into Poole Bay, particularly in the area just outside the harbour mouth, around Shell Bay and Studland. These areas are also very important for birds and many species move freely between the harbour and this part of the bay. Water-based activities in these areas could therefore also have an impact.

11.9 There are existing concerns about recreational disturbance to the northern shoreline and its impacts upon the SPA (Underhill-Day, 2006). There is the potential for disturbance to result in birds avoiding using certain feeding areas and birds being repeatedly flushed, resulting in increased energy expenditure. Such effects can have population consequences (see Stillman & Goss-Custard, 2002; Stillman et al., 2001; Stillman et al., 2007; West et al., 2002). Both water based and shore based activities can result in similar impacts and compound the issues. It is likely that the main effect of boating in the Harbour on the SPA interest will be to cause disturbance to birds on the adjoining flats, saltmarshes, shingle and other habitats, particularly during the winter months. The boats can provide access to parts of the Harbour that are otherwise inaccessible.

11.10 It is during the winter that disturbance is likely to have the greatest effect as there are more birds present within the harbour and the weather conditions can mean additional stress (Clark et al., 1993). Although boat traffic is likely to be reduced in winter (although there is no available data on boat use in the most important areas of the Harbour on the south shore

during the year), other activities increase. Wildfowling is a winter activity, legally permissible from September 1st to February 20th on foreshore below mean high water, while the licensed clam fishery runs from October to January. Some fishermen collect cockles in winter both from dredging and hand raking, and bait digging takes place all the year round. While these activities taken individually may engender acceptable levels of disturbance under normal tidal and weather conditions, when birds can move to undisturbed areas to feed, taken in combination they could have a profound effect, particularly during hard weather.

11.11 Disturbance at times in the tidal cycle or in freezing weather could bear particularly hard on avocet or grey plover which have a limited distribution, linked to the patchy occurrence of their main prey species, or birds such as oystercatcher and curlew where the abundance of their prey species is in places too low to meet their winter energy requirements. There is no data on the in-combination disturbance from various activities for the Harbour, or on the likely effects. In the medium to longer term, milder winters could encourage greater year-round recreational activities with consequent disturbance both alone and in-combination with other activities. Existing in-combination effects have been little studied, and the increases in a number of wintering species in the Harbour may simply reflect changes in distribution due to factors elsewhere. These may mask effects of changing distribution and intensities of activities within the Harbour about which little is known. Moreover, any effects may take some time to influence population trends, and further time may elapse before causes can be identified.

11.12 There are no visitor data on recreational use of Poole Harbour and it is not known how far people travel to undertake different watersports or use the shoreline. Given the distances involved it is unlikely that residents in most of North Dorset District will visit the Harbour routinely. However, particularly within the southern parts of the District and up to Blandford it is likely that people may be drawn to the Harbour for specialist pursuits, such as kite surfing, windsurfing and kayaking. In the absence of any information on these activities within the Harbour it is not possible to conclude no adverse effect.

Studland Dunes

11.13 Studland attracts well over a million visitors per year, drawn to the extensive sandy beaches and coastal scenery. There are over 1000 car-parking spaces on the peninsula and a series of visitor facilities that include cafes, restaurants and way-marked routes. There are facilities for various water-sports and part of the beach is a naturist area. Some estimates of visitor numbers and visitor survey data are available (Dickinson, 2006, Liley et al., 2008, Purbeck Heritage Committee, 2002, The Market Research Group, 2007).

11.14 Concern about the impacts of recreation at the site were raised in the 1960s (Teagle, 1966). The issues are complex. The embryonic and fore-dune communities at Studland are vulnerable to trampling damage. The sparse vegetation of the upper strand line, with scattered fleshy plants like sea rocket, is especially susceptible to foot traffic and beach users, including the increasing amount of vehicle patrols. In addition to this zone being the often-preferred location for sunbathing, the daily passage of ATVs for litter collection and beach patrols several times a day during the summer makes this very localised and scarce vegetation highly susceptible to damage. A single traverse of two ATVs travelling side by side along the upper strand line at the

toe of the dunes was observed to flatten and crush several sea rocket plants (J. White pers. obs). Earlier in the season, the establishment of seedlings of these annual plants would be equally vulnerable to such damage. Moreover, the gradual trend of sea level rise is exerting a "squeeze" on this vegetation community.

11.15 The shifting (fore) dunes, though appearing tough with apparently resilient grasses like marram, are also very vulnerable to trampling damage. Much of the published research on the effects of trampling on dunes relates to fixed or stable dune grassland but it seems that the earlier stages in the succession – the fore and shifting dunes – are disproportionately adversely affected, with even small levels of trampling having a marked effect (Coombes, 2007). The review by Bonte and Hoffman (2005), records that restricting recreation had a positive impact on species diversity within such dune vegetation in every case reported.

11.16 The dune heath, with marram, sand sedge and heathers is also vulnerable to trampling. Here the dwarf shrubs can be damaged and broken; and the diverse lichen and bryophyte turf is also easily dislodged and fragmented. The Studland dunes support a significant proportion of the UK's sand lizard population and their feeding and sheltering habitat is vulnerable to damage as is the bare sand used for egg laying. Sand which is trampled and loosened by excessive foot traffic is unsuitable and any eggs laid here are more likely to be lost. Sand lizards are mentioned as a component of this SAC.

11.17 The issues from access at Studland Dunes are therefore very real, however it is difficult to determine to what extent development in North Dorset will result in an increase in recreational pressure. There is little data on the home postcodes of visitors to the area. While relatively close in terms of distance, travel time from North Dorset is considerable (c.50 minutes drive from Blandford) as the drive entails circumnavigating Poole Harbour. It is therefore likely that Studland will only attract occasional visits and these, within the context of the existing very large number of visitors, are not considered likely to have an adverse effect on the integrity of the SAC. The existing facilities and access infrastructure, managed by the National Trust is mostly successful at reducing the impacts.

Other Coastal Sites

11.18 Ferrybridge (near Weymouth and part of the Chesil and Fleet SAC/SPA) draws people from a wide area to partake in kite surfing, windsurfing and other water-based activities. The impacts from such activities are discussed above. We consider there to be no adverse effect on the integrity of the SAC/SPA as it is likely that anyone living in North Dorset and wanting to undertake such activities is likely to go to Poole Harbour or the seafront at Sandbanks rather than travel the additional distance to Chesil. Getting to Ferrybridge involves having to drive round Dorchester and going through the centre of Weymouth. Such journeys are likely to be infrequent and, given the existing level of use at the site (already very considerable) we consider there to be no adverse impacts here.

11.19 The other coastal sites which may draw visitors from North Dorset and that might be relevant to this assessment are those sites within the Portland to Studland Cliffs SAC. This SAC includes sites such as Durlston Country Park, Old Harry and Lulworth Cove. Such locations are popular

tourist and day-visitor destinations, with existing visitor infrastructure and facilities. Visitors come to these sites for the attractive scenery and landscape, and undertake activities such as walking, visiting the beach, rock climbing and boating. The south-west coast path provides a long distance route along the entire SAC.

11.20 Impacts are mainly from the effects of trampling and possibly erosion caused by walking or cycling, and the addition of nutrients (e.g. dog-fouling). These impacts on grasslands are discussed in Section 5, in relation to Fontmell and Melbury Downs.

11.21 Given the existing visitor infrastructure, the volume of visitors (with high proportion of tourists) and the distance from North Dorset, we consider there to be no adverse effect on the integrity of Portland to Studland Cliffs SACs from additional recreational pressure arising from new development in North Dorset District.

12. Appendix 8: Impacts of increased recreational pressure on the New Forest (New Forest SAC/SPA/Ramsar): text taken from previous assessment in 2010

12.1 This appendix provides the previous appropriate assessment work for the core strategy, considering the impacts of recreation on the New Forest. The appropriate assessment section in the main report provides an update and current recommendations to enable a conclusion of no adverse effects on site integrity for the new local plan.

12.2 Southern England's extensive motorway and trunk road system puts more than 15 million people within 90 minutes drivetime of the New Forest. Good rail links further improve ease of accessibility. This, coupled with the unique mosaic of extensive, high quality habitats, is probably the main reason for the appeal of the New Forest as a tourist destination.

12.3 Various studies highlight the high levels of recreational use currently taking place within the New Forest (Tourism South East Research Services and Geoff Broom Associates, 2005, Gallagher et al., 2007, University of Portsmouth, 1996). Total visitor volumes within the New Forest are estimated at over 13 million visitor days (Tourism South East Research Services and Geoff Broom Associates, 2005). This total includes holidaymakers staying within the National Park (12% of visitor days), day trips from home by New Forest residents (14% of visitor days) and people living outside the Park and visiting for the day from home (64% of day visits).

12.4 Visitor data from the New Forest is drawn largely from the work conducted as part of the PROGRESS Project (Tourism South East Research Services and Geoff Broom Associates, 2005). The New Forest appears to be the third most frequently visited National Park in England. However, the large size of the New Forest means that visitor densities are equivalent to those experienced on the Dorset Heaths. Visitor distribution within the New Forest may be largely governed by the distribution of car parks since this is the primary mode of transport for visitors. The New Forest has a far larger catchment area than the Dorset Heaths and attracts a far higher proportion of tourists (40%). Dorset forms the second largest visitor origin, contributing 29% of 'other day-visitors'. Most of the visitors from Dorset come from Bournemouth and Poole.

12.5 In contrast to the Dorset Heaths, where there appears little seasonal variation in visitor numbers, the New Forest exhibits a clear peak during summer. This peak is in large part due to the arrival of holidaymakers. Visitor pressure is thus greatest during the most ecologically vulnerable period of the year (i.e. during the vertebrate and invertebrate breeding season). New Forest visitors spend more time and travel further on site than visitors to the Dorset Heaths. Dog-walking is a far less and walking a far more important activity in the New Forest than in the Dorset Heaths. Local day visitors to the New Forest are more likely to walk dogs than non-locals, but the proportion is still comparatively low.

12.6 It has been estimated that housing development as outlined in the southeast and southwest Regional Spatial Strategies within 50km of the New Forest National Park may result in an additional 1.05 million visits to the National Park per year (Sharp et al., 2008). However, 73% of

these additional visits will be made by visitors living within 20 km. As the crow flies, North Dorset District is approximately 19 - 49 km away from the New Forest National Park, however, by road, the district is considerably further. Visitors are attracted to the New Forest due to its scenery, tranquillity, suitability for outdoor activities, and wildlife, characteristics that are similar to other greenspaces within and closer to North Dorset than the New Forest.

12.7 Impacts from recreation within the National Park are similar in many ways to those already described above for the Dorset Heaths (see section 9.17). Access can result in disturbance to Annex I breeding birds, trampling, and eutrophication. Impacts of access to the New Forest are discussed in more detail in (Sharp et al., 2008).

12.8 Considering the distance to the New Forest and the availability of high quality greenspace within and close to North Dorset, it is unlikely that the proposed housing developments and tourism policies within the North Dorset District's Core Strategy alone will result in significant increases to the number of visitors to the New Forest National Park. However, the in-combination effects of the housing development and tourism policies within the core strategies of all other districts surrounding and close to the New Forest National Park may result in significant increases in the number of visits made to the Park, especially where new development is within 20km of the National Park (Sharp et al., 2008). Such an increase is likely to have an adverse effect on the integrity of the New Forest SPA and SAC. Proposed development at Blandford does fall within the 20km radius and it is therefore not possible to conclude no adverse effect on integrity.

13. Appendix 9: Impacts of increased housing on water resources and quality): text taken from previous assessment in 2010

13.1 This appendix provides the previous appropriate assessment work for the core strategy, considering the impacts of increased housing on water quality. The appropriate assessment section in the main report provides an update and current recommendations to enable a conclusion of no adverse effects on site integrity for the new local plan.

13.2 Water throughout the North Dorset District Council area is supplied by Wessex Water (WW) who also supply parts of Somerset, Wiltshire and Avon across four water Resource Zones (RZ). These are defined as "the largest possible zone in which all resources, including external transfers, can be shared and hence the zone in which all customers experience the same risk of supply failure from a resource shortfall". North Dorset District council area falls within the south, east and north RZs, with Gillingham in the North RZ and Shaftesbury and Blandford in the east RZ.

13.3 WW have estimated the future household demand for water in each resource zone by examining each use of water by households and forecasting future use based on changing attitudes and behaviours and expected changes to domestic equipment; by allowing for projected increases in population and from a forecast of the increase in the use of meters. They have also made an estimate of the future changes in non-household demand. These estimates have been converted into forecasts of demand in a dry year and for the peak week in a dry year when demand would be expected to be at its highest (Wessex Water, 2008c).

13.4 The company has then adjusted these figures to allow for the promotion of water efficiency measures to customers, a reduction in leakage and the effect of climate change on demand, to forecast the total demand for water until 2035.

13.5 Currently some 75% of supply comes from groundwater sources, of which two thirds comes from groundwater sources which are limited in a drought, and with four sources identified where abstraction is believed to have a significant effect on groundwater levels (none are believed to be in North Dorset). The company has also calculated surface water yields, and allowed for the import of water from adjoining suppliers. Calculations have then been made on the effect of climate change on supply using three scenarios, dry, mid and wet. In the north and south RZs, wetter winters are expected to slightly increase future average and peak groundwater yields while in the east RZ the effects are expected to be negligible for both average and peak yields.

13.6 These figures have then been adjusted to allow for outage (a temporary reduction in the achievable output from water treatment works due to unforeseen circumstances i.e. a breakdown in equipment, or a foreseen event such as maintenance) and headroom, an allowance for the uncertainties of demand and supply.

13.7 The balance between demand and supply has then been calculated as:

Balance = Yields –Outage – Target headroom – Demand + imports – Exports.

13.8 Without low flow reductions (see below), all the resource zones have a surplus of resources to meet foreseeable demand. However, anticipated low flow reductions and increases in population will result in predicted deficits in the North and east RZs, although these are outside the North Dorset area.

13.9 In the early 1990s there were concerns about the effects of abstraction during low flows on three rivers. WW proposed a major project to address these concerns but this was not approved by the water regulator OFWAT on the grounds of cost. An agreement between WW, EA, OFWAT and NE was then put in place to minimise the use of water sources which affected the three rivers, and formalised in a statement of Intent in 2002 which was renewed in 2007 for a further three years. However, these measures have not been confirmed as a long term solution, water might still need to be extracted up to typical current abstraction rates in dry years, when the streams would be most vulnerable, and further investigations and monitoring are necessary.

13.10 For the current Abstraction Management Plan (AMP5) period, 2005-2010, another fourteen low flow sites have been identified as at risk from abstraction. WW embarked on an option study and appraisal to identify options that could help to meet a growth in peak demand across the region and allowing for a potential reduction in licenced abstraction to address low flows. They began by listing an unconstrained list of options and undertaking an assessment of, and consultation on, each one. The schemes were then ranked according to their social, environmental, economic and carbon costs and categorised into those that reduced demand for water; those that increased average and peak water availability, those that catered for peak demands only and those that were only applicable with low flow licence reductions. The optimal schemes identified were all in the East and North RZs and are to address problems primarily in the Bath/Trowbridge and South Somerset/Yeovil areas. Although no figures have yet been agreed, a deficit of 20Ml/d has been identified in the north resource zone and 12Ml/d in the east resource zone by 2035. These are due to a growth in demand in the north and sustainability reductions in both zones likely to be imposed by EA as a result of the low flows studies (Wessex Water, 2008a).

13.11 WW have opted for a strategy that integrates their water supplies such that customers will be able to receive their water from more than one source. This would provide more security of supply, allow the movement of water around the region in the event that some supplies became unsuitable (for example due to high levels of nitrate), give greater robustness of supply against the effects of climate change and improve the connections between areas in deficit and those in surplus. However this also means that supply shortages in one area could impact on other areas as water is moved around the region to ease the deficits. They anticipate that the measures they take will remove the supply/demand balance deficits in the north and east resource zones until 3034. However, the achievement of this will also depend on the construction of additional pipelines, pumping stations and reservoirs, increasing the proportion of metered customers, continuing to reduce wastage from leaks and continued wise use of water by customers.

13.12 Groundwater quality is an important issue for the Company with elevated levels of nitrates found in some locations, coming largely from agricultural sources. In many areas groundwater quality is getting worse, and between 2010 and 2015 it is expected that abstracted raw water will exceed the drinking water standard for nitrate at eight water supply sources. Where the nitrate level exceeds this standard of 11.3mg/l the law requires that the water is not put into the public supply. Using a modelling approach, based on historic rates of nitrate fertiliser application, variations in groundwater levels and intense groundwater recharge events, the company has extrapolated nitrate levels into the future for sources at risk, none of which appear to be in North Dorset. This has shown that for most sources, nitrate levels will continue to rise for a few years and then decline. If nitrate concentrations exceed permitted levels, the company can close the source of supply or install treatment processes to remove nitrates as has been done recently for two sources near Salisbury.

13.13 Abstraction, whether from reservoirs, rivers or groundwater sources has to be licenced by the Environment Agency (EA), and these licences set a limit to the amount of water that can be abstracted from any given source per annum or per day in order to protect the environment. In some places there is stream support, in others, the level of abstraction from groundwater sources can depress river flows.

13.14 The Environment Agency is required to produce Catchment Management Strategies for river catchments setting out the availability of water and their strategy for managing this resource now and in the future. Dorset Stour Catchment Abstraction Management Strategy (CAMS) covers an area of approximately 1300km². The River Stour and its dense network of tributaries includes the whole of north Dorset district as well as surrounding areas. The River rises at Stourhead and flows 96 k down to Christchurch Harbour (Environment Agency, 2004). There are 330 abstraction licences within the CAMS and 50% of the water abstracted is used for public water supply or stream support.

13.15 Parts of the CAMS area have been designated a Nitrate Vulnerable Zones (NVZs), mostly in the south–west of the area, due to high or rising levels of nitrates and action programme measures must therefore be implemented in the CAMS area to reduce nitrate pollution. Both surface and groundwaters have enhanced levels of nitrates mostly due to the historic application of fertilisers. The middle sections of the Stour in North Dorset district have been put forward as a candidate sensitive area (eutrophic) under the Urban Waste Water treatment directive. If public water supply sources are polluted by nitrates, alternative sources may have to be used that effectively reduce the available supplies.

13.16 The CAMS has assessed the availability of supplies used for consumptive purposes in terms of availability status as in Table 66.

Table 6: Indicative resource availability status.

Indicative resource availability status	Definition
Water available	Water likely to be available at all flows including low flows. Restrictions may apply
No water available	No water available for further licensing at low flows, although water may be available at higher flows with appropriate restrictions
Over-licensed	Current actual abstraction is resulting in no water available at low flows. If existing licences were used to their full allocation they would have the potential to cause unacceptable environmental impact at low flows. Water may be available at high flows with appropriate restrictions.
Over-abstracted	Existing abstraction is causing unacceptable environmental impact at low flows. Water may still be available at high flows with appropriate restrictions

13.17 The CAMS area has been subdivided into smaller Water Resource management Units for the purposes of assessment and the relevant management units in North Dorset are:

13.18 Unit 1. Upper Stour (Surface water). This unit includes the middle parts of the River Stour catchment including its tributaries. At low flows some 80% of water comes from the chalk and greensand, and there is concern that if abstraction rises to the full licensed limits, environmental deterioration would occur. The unit has therefore been classified as “over licensed”.

13.19 Unit 2 Middle Stour (Surface and groundwater). This unit includes the River Stour and its tributaries down to the edge of Poole, excluding the Rivers Crane, Allen and the Moors river, About 80% of water is extracted for public water supply, and the unit is assessed as “no water available”.

13.20 Unit 5 Middle Stour (Groundwater). This major chalk aquifer under lies much of the area and supports a number of rivers and streams around Blandford Forum. There is concern that if abstraction rises to the full licensed limits, environmental deterioration would occur. The unit has therefore been classified as “over licensed”.

13.21 Since the CAMS was published there has been a published review and no changes have been made in the water availability status of either surface or groundwater management units (Environment Agency, 2007)

13.22 The district adjoins the catchment of the Hampshire Avon, and most of this river and its tributaries have been designated as SAC and much of the Avon Valley as an SPA and Ramsar site.

13.23 The closest part of the Avon catchment is at Shaftesbury, where the headwaters of the River Nadder and River Sem, both tributaries of the Hampshire Avon, rise within about 3km of the town, although outside North Dorset district.

13.24 The CAM for the Hampshire Avon has shown that the river and all the main tributaries are either over-licensed or over abstracted and that the for the nearest groundwater unit (GWMU1) there is no water available (Environment Agency, 2006). It is not known whether any abstraction of groundwater within North Dorset District could affect the aquifers linked to the River Avon catchment. Wessex Water, in consultation with the Environment Agency and Natural England are carrying out an investigation into the effects of public water supply abstraction on the Avon Catchment during AMP 4 (2005-2010).

13.25 WW have opted for a strategy over the next 25 years of developing a more integrated water supply grid. This involves a network of pipelines to supplement the existing system. The proposed scheme will connect all major areas so that deficits in one area can be accommodated from surpluses elsewhere by moving water around. Such deficits may arise from water shortages in some years, the need to maintain flows in streams and rivers by reducing abstractions and stream support and the possibility of cutting supplies from sources with high nitrate levels or high pathogen levels (Wessex Water, 2008b).

13.26 For North Dorset this means that all areas will be on the extended network of water mains. It will, however, take WW some time to put a fully operative network in place and there could therefore be some short term issues of supply if further development places additional burdens on surface or groundwater sources which have no water available during dry years or at dry peaks, and if some local sources are closed due to high nitrate levels.

13.27 The Environment Agency's abstraction licensing system and Review of Consents should serve to protect the European sites from the negative effects of over-abstraction. The River Lydden drains the area around the Rooksmoor SAC, and although it is part of the WRM Unit 2 designated as no water available, this is due to the status of a more critical unit downstream. However, the Lydden is subject to rapid run-off and low levels during dry periods. Should the downstream unit change in status there is a possibility of the Lydden being re-assessed as water available. Should this occur, an appropriate assessment would be needed on the effect on the SAC of increased abstraction from the river.

13.28 Although there are concerns that abstraction could be affecting chalkwater springs, the springs at Fontmell and Melbury Downs are below the chalk grassland downs and therefore downstream extraction is unlikely to affect the SAC.

Sewage discharges

13.29 A total of 58 sewage treatment works (STWs) discharge into the Stour catchment, with three having permitted discharges greater than 10,000m³/d, all in the lower catchment. No

designated European sites within the District are likely to be affected by these discharges as the River Stour (and Christchurch Harbour into which it discharges) are not European Sites. However it is not known whether any STWs in North Dorset District discharge into or are pumped across to the Avon Valley where the river and its tributaries are all within the European site. This needs to be checked.

13.30 It is concluded that further information gathering from the Environment agency and Wessex Water is necessary in order to have confidence that the proposed growth can be taken forward and accommodated within sewer infrastructure and waste water treatment works without adverse effects on the integrity of European site interest, and that plans are in place to secure such protection.

14. Appendix 10: Air quality (with particular reference to Rooksmoor SAC and Fontmell & Melbury Downs SAC): text taken from previous assessment in 2010

14.1 This appendix provides the previous appropriate assessment work for the core strategy, considering the impacts of increased growth on air quality. The appropriate assessment section in the main report provides an update and current recommendations to enable a conclusion of no adverse effects on site integrity for the new local plan.

14.2 Airborne nitrogen arising from the burning of fossil fuels in industry, traffic, aviation and agriculture poses a considerable threat to naturally impoverished systems such as semi-natural grasslands. Many grassland plant species can only survive and compete successfully on neutral to calcareous soils with low nitrogen availability. In these situations, plant species composition is adapted to nutrient poor conditions, with low productivity. Enhanced nitrogen supply from atmospheric deposition tends to favour the growth of some grasses at the expense of other herbs, bryophytes and lichens, which may be of more conservation interest (e.g. Bobbink and Roelofs 1995, UBA 1996). The addition of nutrients in rain or dust particles increases the nitrogen in the vegetation, litter and upper soil layers, and this builds up over time.

14.3 The most serious pollutant affecting heathland is nitrogen due to nitrogen oxides (NOx) mostly from traffic and industry emissions and ammonia (NH3) mainly from agriculture.

14.4 Nitrogen compounds also increase acidification in more acid soils, which because of their low base status have poor buffering capacity, leading to dominance by the most acid resistant species and a reduction on biodiversity. High acid deposition can lead to direct damage to lower plants which receive their nutrients direct from the atmosphere. Acidification can also be caused by deposition of sulphur dioxide SO2, mostly derived from electricity generation and industry. A widely adopted international standard for setting acceptable levels of air pollutants is the use of critical loads and levels defined as: “quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge” (Nilsson and Grennfelt, 1988). Critical levels identify acceptable levels of pollutants in the atmosphere while critical loads identify acceptable deposition levels on different habitats. The calcareous and neutral grassland SACs at Fontmell and Melbury Down and at Rooksmoor are likely to be sensitive to atmospheric nitrogen and Rooksmoor is likely to be mildly acidic and therefore moderately sensitive to acid deposition[11] (Rorison, 1990). The critical and recorded loads for both sites are shown in Table 7.

[11] http://www.apis.ac.uk

Table 7 Critical loads and actual loads of nitrogen and acid deposition at Fontmell & Melbury downs and Rooksmoor SACs

	Fontmell & Melbury SAC	Rooksmoor SAC
Nitrogen critical Load	15-25kg/ha/yr	15-25 kg/ha/yr
Nitrogen actual load	23.9 kg/ha/yr	25.5 kg/ha/yr
Exceedance	-1.1 - +8.9	+10.5 - +0.5
Acid deposition critical load	4.0 keq/ha/yr	1.5 keq/ha/yr
Acid deposition actual load	1.93 keq/ha/yr	2.05 keq/ha/yr
Exceedance	**- 2.07 keq/ha/yr**	**+ 0.55 keq/ha/yr**

14.5 The results show high levels of nitrogen at both sites and high levels of acid deposition at Rooksmoor in relation to the recommended critical loads[12.]

14.6 The difficulty in dealing with air pollution issues lies in identifying their source. Air pollution is a product of industry, agriculture, transport and a host of other activities causing emissions, at local, regional and national levels. Responsibility at a national level is for national Government, and at a regional level with regional authorities. The role of the local authority is more limited. This has been well summarised in a letter from English Nature to Runnymede Borough Council, that suggests that local authorities should focus on local air pollution impacts (Levett-Therivel, 2006):

"The Local Development Framework-Core Strategy can only be concerned with locally emitted and short range locally acting pollutants. In terms of pollution from vehicular emissions the concentrations decline exponentially from the road edge. Though it varies with a range of factors and from pollutant to pollutant the concentrations of pollutant from roads can be said to have localised impacts up to 200m from the road side. Therefore for the LDF-CS effects of vehicular atmospheric emissions should be considered if the roads on which the vehicles travel are closer than 200m from the Natura 2000 site."

14.7 The main sources of pollutants at both SAC sites are likely to be from traffic levels in the surrounding area. The main concern is therefore any increase in emissions either as a result of the general increase in traffic levels or from new housing and employment developments within the district or from localised effects from increased traffic on the roads crossing the SACs. Another cause for concern would be any increase in traffic as a result of the use of the roads as a 'rat run', particularly the A 350, B3081 and C13 from new populations living in Shaftesbury and working in Blandford Forum or vice-versa, and on the A357 crossing Lydlinch Common.

14.8 An assessment of future traffic levels (provided by Buro Happold Ltd) based on existing dominant flows during peak times, 0800-0900 and 1700-1800 shows an increase in traffic levels

[12] Kg/ha/yr: kilogram per hectare per annum Keq/ha/yr: 1 keq equivalent to 14 Kg N /ha/yr

between 2008 and 2026 on the A350 and C13 of 7% and on the A357 at Lydlinch Common of 16%.

14.9 Under the Environment Act 1995, local authorities are required to carry out a periodic assessment of air quality within their areas. In North Dorset a review in 1999 found no evidence of excess of any of the regulated pollutants. In 2003 a second assessment was made and concluded that the air quality objectives were unlikely to be exceeded for any of the measured pollutants and that further detailed assessment were not required (Air Quality Research Group, 2003). A further assessment carried out in 2006 came to the same conclusion. No traffic measurements were quoted for the A3030 but the A357 West of Shillingstone (crossing Lydlinch Common, part of Rooksmoor SAC) had an average annual daily traffic (AADT) figure of 6800 in 2003 and 6700 in 2004. Similarly, the B3081 south of Shaftesbury had an AADT of 7140 in 2003 and 7500 in 2004, an increase of 5% (North Dorset District Council, 2006). These assessments are based on public health criteria and do not specifically deal with air pollution issues and European sites.

14.10 The general level of nitrogen deposition at both SACs already exceeds the minimum critical load, and at Rooksmoor, where acid deposition is also high, the maximum critical load. This is highly likely to be due to traffic emissions as studies have shown that an effect on vegetation from local traffic can extend up to 200m from the road edge (Angold, 1997), a standard which has been adopted generally by Natural England (see earlier). Additional development in the areas currently responsible for traffic across or around the SACs will generate additional traffic and increase emissions. It is therefore not possible to conclude that the increased traffic levels both regionally and locally will not have a significant adverse effect on the integrity of Fontmell and Melbury or Rooksmoor SACs.

14.11 It would be of considerable value to know where most of the existing traffic travelling through or past the SAC sites comes from and its destination and purpose. For example, if much of the traffic was the result of tourists coming to the area, then measures to counteract this would be quite different to those used to control or reduce traffic from local commuters. In the absence of data, a precautionary approach would assume that much of the traffic is local and that additional housing will increase this.

15. Appendix 11: Long term management of Rooksmoor SAC in relation to roads and traffic: text taken from previous assessment in 2010

15.1 This appendix provides the previous appropriate assessment work for the core strategy, considering the impacts that increased growth and traffic generation may have on the long term management of Rooksmoor SAC. The appropriate assessment section in the main report provides an update and current recommendations to enable a conclusion of no adverse effects on site integrity for the new local plan.

15.2 Rooksmoor SAC contains two component SSSIs: Lydlinch and Rooksmoor. Lydlinch is markedly different to Rooksmoor in that it is smaller and bisected by two A roads. It is the impact of these roads on the site that we consider here, and in particular the difficulties of long term management that are associated with a site split into small fragments by busy roads. We do not consider there to be any likely significant effects arising from direct mortality of butterflies as a result of traffic nor any effect of isolation of the different populations and reduced gene flow. There is clear evidence, from Dorset, that these issues are irrelevant with respect to butterflies and roads (Munguira and Thomas, 1992). The impact of air-borne pollutants from traffic we address in the air quality section.

Marsh Fritillaries at Lydlinch

15.3 Lydlinch Common is comprised of neutral grassland and fen meadow (a scarce habitat in the UK), with associated scrub, a habitat supporting a diverse range of flowers and insects. There are some 200 species of flowering plants recorded, more than 175 species of moths, including 3 that are nationally notable and 34 species of butterflies including marsh fritillary. This last species is rare on a European scale and is the principal reason for the designation of Lydlinch as SAC. The population of marsh fritillary here and on the nearby Rooksmoor is one of the largest on wet grassland surviving in England, and the designation is applied to both sites as they are believed to support the same umbrella population or 'metapopulation'.

15.4 The Lydlinch population of marsh fritillaries has been declining for some years. Marsh fritillaries choose large devil's-bit scabious plants for egg-laying sites and a decline both in vigour and frequency of the food plant, as coarse tussocky grasses take over, has led to a contraction and reduction of the butterfly population. Whilst there are always fluctuations in insect populations, influenced by annual climatic variation, a consistent downward trend in the numbers of butterflies and of their caterpillar webs has occured at Lydlinch. The distribution of marsh fritillary within the common has also changed, with a marked reduction in the spatial distribution of the insect across the site. This has come about due to scrub encroachment and lack of suitable management.

Options for management

15.5 The best and most sustainable management for this area of national and international nature conservation interest is low-intensity grazing by traditional cattle or ponies (at a level of about 1 beast per 3 hectares during the summer plant growth period). The animals should be able to wander freely, reducing the height of herbaceous vegetation in a gradual and patchy way, maintaining an uneven turf of grasses and herbs, essential for the majority of the special wildlife of Lydlinch.

15.6 In this respect it is in very marked contrast to any other form of vegetation harvesting, such as cutting or burning where the removal of the growth is sudden and drastic. Cutting or burning would not produce the right sward and would be very damaging to many of the most important insects. It would be impossible to create a small-scale mosaic of open fen and grassland, interspersed with scrub, by burning which could only be conducted in a restricted period in order not to destroy insect larval stages and is also difficult to guarantee in any season due to the unpredictability of weather. The heavy wet soils do not lend themselves to the use of machinery for regular cutting and removal of annual vegetation growth. Sudden harvesting is unacceptable for the dependent insects while leaving the cut grass would cause immense damage to the sward composition. An intricate pattern of open grassland glades with clumps of sheltering scrub and with a gradual edge, rather than a hard, sharp divide between herbaceous and woody growth, would be impossible under a cutting-only regime.

15.7 Grazing is therefore the most appropriate grassland management system at Lydlinch because it would best cope with the heavy, wet soils and allow for the scatter of scrub patches that are needed to provide for other key insect and bird species. The scrub, managed in this way to prevent its dominance and coalescence, will also assist open grassland species, such as marsh fritillary, by providing sheltered, warm pockets of suitable habitat.

15.8 The common has traditionally been grazed and historic photographs (see Figure 1) show an open common with cattle moving freely across the site. The grazing ceased long ago as a result of the road traffic, reduced financial viability and the cessation of traditional practices carried out by older members of the community.

15.9 Volunteer management by Butterfly Conservation and others managed to keep the scrub at bay in some limited areas of the site, but since the cessation of grazing, securing the long term management of the site has been an intractable problem. The road traffic is now considerable, essentially splitting the site into small units that, in isolation, are mainly small and difficult to graze and there are numerous practical difficulties such as water provision. The two roads are the A3030 which runs to Sherborne and the A357, which forms a route from Blandford Forum, eventually joining with the A30 and heading north-west to Wincanton.

15.10 In order to address the problems, Natural England (and its predecessor English Nature) commissioned various studies investigating and consulting upon management options (Liley, 2005, Liley et al., 2006d). The best option for grazing the common in an

extensive, low-intensity manner would have been to enclose the whole site as one unit, using cattle grids to keep livestock within the site. This option was ruled out, at least for the foreseeable future, on road safety grounds, following informal consultation with the Highway Authority. A decision was therefore made to permanently fence the common, excluding the roads (to ensure secure enclosure of stock and their safety, and that of traffic on the A roads). An application for fencing the common was made to the Secretary of State in 2008 and an ambitious programme of scrub management was commenced, dramatically scaling back the amount of scrub on the site with heavy machinery.

15.11 It is hoped (assuming that the application for fencing is successful) that the combination of scrub clearance followed by grazing will allow the common to recover and marsh fritillaries to regain their former numbers and distribution within the site. However, the proposed fencing is not the ideal solution, as it creates small grazing units between which the livestock cannot move at will. There should be a marked improvement in the fortunes of marsh fritillaries, but completely fencing the common and allowing livestock to graze extensively within the entire site would have been much preferred. The proposed fence lines will mean that there are a number of different blocks of the site, and it will be necessary to move stock between them. Potential problems / issues could be:

- There are some parts of the site that are not fenced and will not be grazed and it may not be possible to achieve favourable condition status on these areas
- The livestock will be fenced into relatively small sections meaning it could be easier for the site to become overgrazed if the stock are enclosed in a small area for too long
- There could be difficulties moving stock in and out of the different parts of the common due to the difficulties in moving them across the roads
- It may be more difficult to create the required sward diversity within small units, as grazing will be more uniform.

Figure 1: Historic (undated) pictures of Lydlinch Common and more recent (2005 and 2006) views of the same area. Historic images scanned from postcards provided by A. Langmead.

The future and links to North Dorset forward planning

15.12 The changes to the management of Lydlinch Common will hopefully bring a marked improvement in the condition of the site and the abundance of marsh fritillaries, and time will tell the extent to which the measures have been successful and how easy the site will be to graze. The current levels of traffic have forced the management of the site down a particular route and it is hoped that this management will be suitable to resolve the issues on the site. The management should however be seen as a compromise, and further improvements could be made. The fencing design could be easily changed in the long term to create a more extensive unit: for example the current design (as proposed to the Secretary of State) puts fencing either side of the A3030. As this road joins the A357 at a T junction, where traffic must stop or slow down when using the junction, it could be possible to put cattle grids along a section of the A3030 and hence join two of the units into a single block.

15.13 With additional housing at Sturminster Newton and Blandford, there is the potential for increases in road traffic alongside the SAC. Proposals within the Core Strategy may therefore directly result in increases in traffic along both the A roads that bisect the common. The consequences of this traffic increase could be:

- Reducing the long term potential to extend the fencing to encompass the entire site (or even simply placing cattle grids across the A3030) and achieve the ideal management.
- Enhanced difficulties in moving stock between different sections of the site.

15.14 The level of increased traffic flow on the relevant roads are set out in Table 8, provided by Buro Happold Ltd. These figures show an increase in the dominant am flows over the period 2008 – 2026 of 12% on the A357 (Sturminster Newton – Lydlinch), 16% on the A357 (Lydlinch – Henstridge) and 21% on the Henstridge – A303 section of the A357. These figures suggest a marked increase in traffic levels. It is not possible to determine to what extent these increases are directly attributable to measures within the North Dorset Core Strategy.

Table 8: Traffic flow data for roads close to Lydlinch Common. Data provided by Buro Happold Ltd, and reflect peak hour (0800 – 0900 and 1700 – 1800) dominant directional vehicular flows.

Location	Dominant Flow AM			Dominant Flow PM		
	2008	2016	2026	2008	2016	2026
Sturminster Newton - Lydlinch (A357)	578	616	645	564	590	620
Lydlinch - Henstridge (A357)	122	128	142	115	116	120
Henstridge - A303 (A357)	100	112	121	97	107	119

15.15 At this stage it is not known how serious an impact these issues will be. This is because:

- It will be a few years before the success of the recent management work at Lydlinch and the impact of grazing can be assessed. It may take many years for the marsh fritillary numbers to reach former levels.
- There is little evidence to identify to what extent development within the core strategy will result in an increase in traffic levels on roads that are already busy.
- It is difficult to predict how much of an additional problem the increased traffic might be.

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