Appendix 1: Topic Papers

Topic Paper 1 Climate change

Topic Paper 2 Air Quality, Noise and Contaminated Land

Topic Paper 3 Biodiversity and Geodiversity

Topic Paper 4 Water and Flooding

Topic Paper 5 Historic Environment

Topic Paper 6 Traffic and Transport

Topic Paper 7 Landscape and soils

Topic Paper 8 Population and Gypsy and Traveller Needs

Topic Paper 9 The Economy and Employment

1 Climate change

1.1 Climate change is a cross-cutting sustainability issue with implications for all other aspects of delivering sustainable development. Furthermore, the implication of a changing climate has to be addressed to ensure the security and longevity of any development taking place in the Dorset, Bournemouth and Poole.

1.2 The relationship of the Gypsy and Traveller DPD with climate change is both in terms of:

- **Mitigation** - aiming to reduce carbon dioxide emissions and therefore help play a part (however small) in reducing the global impacts of climate change
- **Adaptation** – Gypsy and Traveller accommodation will have to ensure it is adaptable to the impacts of climate change, this will include changing weather patterns and flood risk.

1.3 Relationships of climate change with the other topics include:

- Water: in times of hotter weather and lower rainfall, water availability may be limited. To ensure water supplies for all, new development should be designed to minimise water use and wastage.
- Flood: Increase winter rainfall, likelihood of storms and sea level rise may increase the risk of flood. Caravans are very vulnerable to flood risk and harm to residents and therefore should be located away from high risk zones.
- Transport: Using fossil fuels for travel by car, van and lorry increases carbon dioxide emissions contributing to climate change. Therefore, new Gypsy and Traveller sites should have good access to services, such as schools, jobs and health centres by car alternatives, such as bus, foot and cycling.
- Landscape and biodiversity: Impacts of climate change, including changes in water availability, can have an adverse impact on the landscape and wildlife of Dorset. Therefore, helping to mitigate against climate change and use water more efficiently will help protect these assets.
- Health and wellbeing: Protecting vulnerable people, including the elderly, from the health risks of climate change is essential.

Baseline

1.4 There is compelling evidence that levels of carbon dioxide in the atmosphere is increasing. This increase is most likely the result of human activity, notably the burning of fossil fuels. The physical structure of carbon dioxide means it acts as a 'greenhouse gas' trapping heat in the Earth's atmosphere. The increased warming will undoubtedly have an effect on the Earth's climate and weather patterns.

1.5 Figure 1.1 and 1.2 show the latest UK climate change predictions for the south west (UKCP09). The figures show predications for the factors that could have the greatest impact on Gypsy and Traveller sites. These are changes in summer temperatures that would impact on the comfort of residents and the winter rainfall change that may have flooding implications.

1.6 Figure 1.1 and 1.2 indicates that under a medium emissions scenario there is likely to be some increase in mean summer temperatures even by the 2020s, by the 2080s this could be as much as 5-6^{0}C in Dorset. The winter precipitation may also increase in

Dorset, but the 2080s reaching 30% more under the medium emissions scenario, although in the shorter term changes may not be noticeable. Paragraph 1.7 shows the range of possible outcomes for the south west.

Figure 1.1: Change in summer mean temperature (^{0}C) Medium Emissions and 50% probability level (central estimate)

2020s **2050s** **2080s**

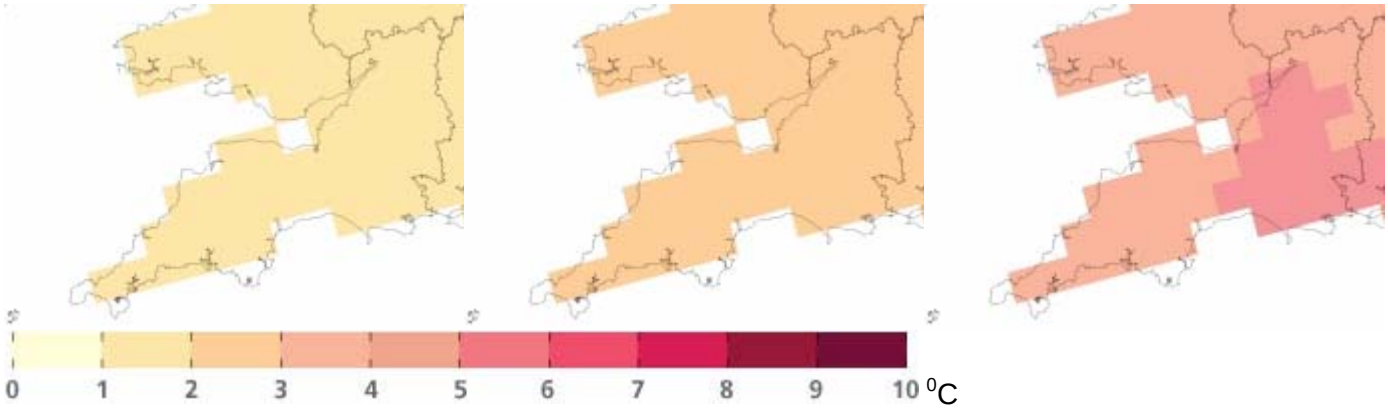
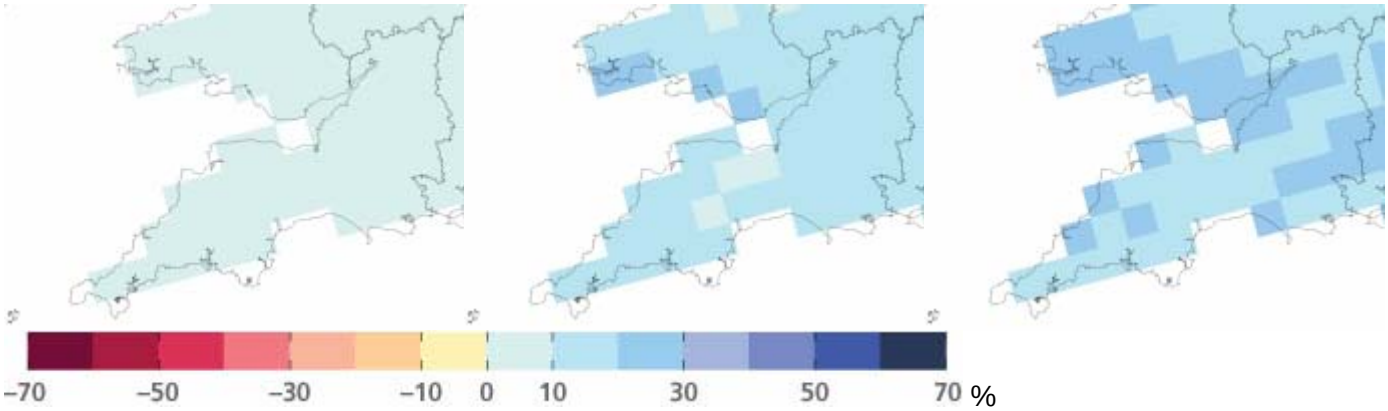


Figure 1.2: Change in winter precipitation (%) Medium Emissions Scenario and 50% probability level (central estimate)

2020s **2050s** **2080s**



1.7 The wider range is from the lowest to highest value for all emissions scenarios and three probability levels (10, 50, and 90%) for each 30-year time period. This is for the scenario where greenhouse gas emissions are at a medium level (opposed to a low or high scenario). The estimates of change for the south west are:

- increase in winter mean temperature of 2.1ºC
- increase in summer mean temperature of 2.7ºC
- increase in summer mean daily maximum temperature of 3.8ºC
- increase in winter mean precipitation of 17%
- decrease in summer mean precipitation of 20%.

Emissions

1.8 Data is available on the carbon dioxide emissions from each of the eight local authorities that cover the plan area. Table 1.1 shows this data in Kt of CO_2 as well as the percentage derived from the three sources: industry and commerce, domestic and road transport. The absolute differences in quantities is largely due to the population

size of the district and proportional differences related to industry, public transport availability and road length. The more rural areas have higher proportions from road transport due to reliance on car use. Per capita emissions are highest in Purbeck at 9.5 tonnes, with over 40% of this coming from industrial and commercial sources. West Dorset also has high carbon dioxide emissions although here the greatest contributor is from road transport, reflecting the dispersed rural settlement pattern.

Table 1.1: Estimated carbon dioxide emissions emitted (2007) (kt CO_2 (%))

	Industry and commercial	Domestic	Road Transport	Total	Emissions per capita (tonnes)
Christchurch	97 (32.7)	110 (37)	90 (30.3)	297	6.6
East Dorset	154 (28.1)	230 (42)	196 (35.8)	580	6.7
North Dorset	134 (31.1)	170 (39.5)	126 (29.3)	430	6.5
Purbeck	178 (42.4)	118 (28.1)	124 (29.5)	420	9.5
West Dorset	241 (30.9)	263 (33.7)	277 (35.5)	781	8.5
Weymouth and Portland	84 (28.1)	140 (46.8)	74 (24.7)	299	4.6
Poole	427 (44.9)	332 (34.9)	191 (20.1)	950	6.9
Bournemouth	308 (34.8)	388 (43.8)	189 (21.4	885	5.4
Plan area total	1,623	1,751	1,267	4,642	7.0

Flood impacts

1.9 There is the potential for increased flooding as a result of changing climate and weather patterns. This includes the predictions for increased rainfall resulting in a higher risk of fluvial flooding. Fluvial flood risk may be amplified by an increased frequency in high rainfall events and storms. Risks could also come from sea level rise making tidal inundation a greater threat as well as reducing run-off rates from rivers at times of high tide.

1.10 The UK Climate Projections *Marine and Coastal Projections Report* (June, 2009) indicates that around the south England coast sea levels could rise around 50cm by the end of the 21st century (medium emissions scenario and using a central estimate (50% probability)).

1.11 More information on flood risk can be found in the water section of the scoping report.

Summary of relevant policy documents – Climate Change

Policy Documents	Relevance to Gypsy and Traveller DPD
Key International Policy • Kyoto Protocol	• Ensure that the location of new Gypsy and Traveller sites are accessible by lower carbon transport modes. • Ensure new development is not located in areas at risk from tidal or fluvial flooding. • Ensure all new build Gypsy and Traveller development takes into account the need to mitigate (reduce energy use) and adapt to climate change, including any permanent buildings on site and on-site drainage.
Key National • Climate Change – the UK programme • PPS: Planning and Climate Change – Supplement • PPS25: Planning and Flood Risk	
Local Policy • Bournemouth, Dorset and Poole Energy	

Efficiency Strategy (2007) • The West Dorset Climate Change Strategy	

Issues related to the Gypsy and Traveller DPD

1.12 The baseline and review of plans and programmes identifies key issues for the climate change in Dorset, Bournemouth and Poole related to the DPD. This is to:

- Identify climate change as a cross-cutting issue integrated into all other aspects of delivering sustainability
- Deliver new sites that help in mitigating against climate change
- Ensure new sites are not at risk from the impacts of climate change and are adaptable to a changing climate, this includes the risk of flood and the potential risk from hotter summers.

Suggested Sustainability Objectives related to this topic

1.13 To aid with the assessment the following are suggested as objectives for climate change. This topic is taken as cross-cutting across the majority of other sustainability topics covered in this scoping report. Where other sustainability objectives have been identified as relevant to climate change these are shown marked with an asterisk in the relevant section of the scoping report.

Cross-cutting objective for Climate Change
Ensure development responds to the impacts and causes of climate change by integrating mitigation and adaptation approaches in new development

Energy*	To secure energy efficiency and renewable energy where beneficial on site	• *promote energy generation from renewable resources, including micro-generation as part of the energy requirements of new development* • *ensure that energy is used more efficiently, including in the design of new permanent structures on-site* • *help to reduce energy use in new development*

2 Air Quality, Noise and Contaminated Land

Air quality

2.1 Poor air quality is a contributory factor and cause of respiratory disease. It has an adverse impact on the wildlife and habitats, including those protected under national and international policy. Emissions also have impacts related to climate change.

2.2 Emissions arise from a variety of sources, such as energy generation, waste, industry and agriculture, but the largest contribution to air quality issues in Dorset is from road transport derived emissions.

2.3 Nationally (and internationally) there has been a tendency to allocate sites for Gypsy and Traveller communities near busy roads, near railways, or under elevated roads. These areas are usually characterised by poor air and noise quality creating an unhealthy and socially inequitable place to live. Policy and good practice should ensure that these sites are not allocated if there will be adverse amenity impacts. The National Air Quality Strategy (NAQS) sets objectives for nine main air pollutants to protect health. There are benzene, 1.3-butadene, carbon monoxide, lead, nitrogen dioxide, polycyclic aromatic hydrocarbons (PAHs), ozone, particulate (PM_{10}) and sulphur dioxide. According to the National Society for Clean Air and Environmental Protection, road traffic is responsible for 46% of total UK emissions of nitrogen oxides, 75% of carbon monoxide and 20% of carbon dioxide.

2.4 Volumes of traffic across the geographical area (Dorset, Bournemouth and Poole) have risen substantially in the last 30 years, in particular on the trunk roads. Other areas of high traffic are near Sherborne and Dorchester & Bridport.

2.5 PM_{10} are very fine dust emissions and can be caused from a variety of sources, although diesel exhaust is a major contributor. These can cause major health effects, especially associated with the respiratory tract and breathing. They also have adverse impacts on wildlife as they settle out of the air on leaves and other vegetation reducing photosynthesis and putting flora under stress. Particulate can also cause pollution of water bodies and nutrient enrichment of soils changing habitat characteristics.

2.6 Dorset has generally good air quality and this is anticipated to improve as vehicles get cleaner, although there will be more cars. However, assessments of air quality are carried out regularly to identify areas where action may be needed to improve air quality. In these areas of poor quality Air Quality Management Areas (AQMA) are identified and action plans drawn-up to find ways of improving air quality.

2.7 In West Dorset monitoring work looked in detail at nitrogen dioxide and particulates in the air. The results indicated that the level of air pollutants were within specified limits, apart from a steep section of the A35 at Chideock and in central Dorchester on High East Street to Swan Bridge, due to levels of nitrogen dioxide (NO_2) exceeding those set in the Air Quality (England) Regulations, 2002.

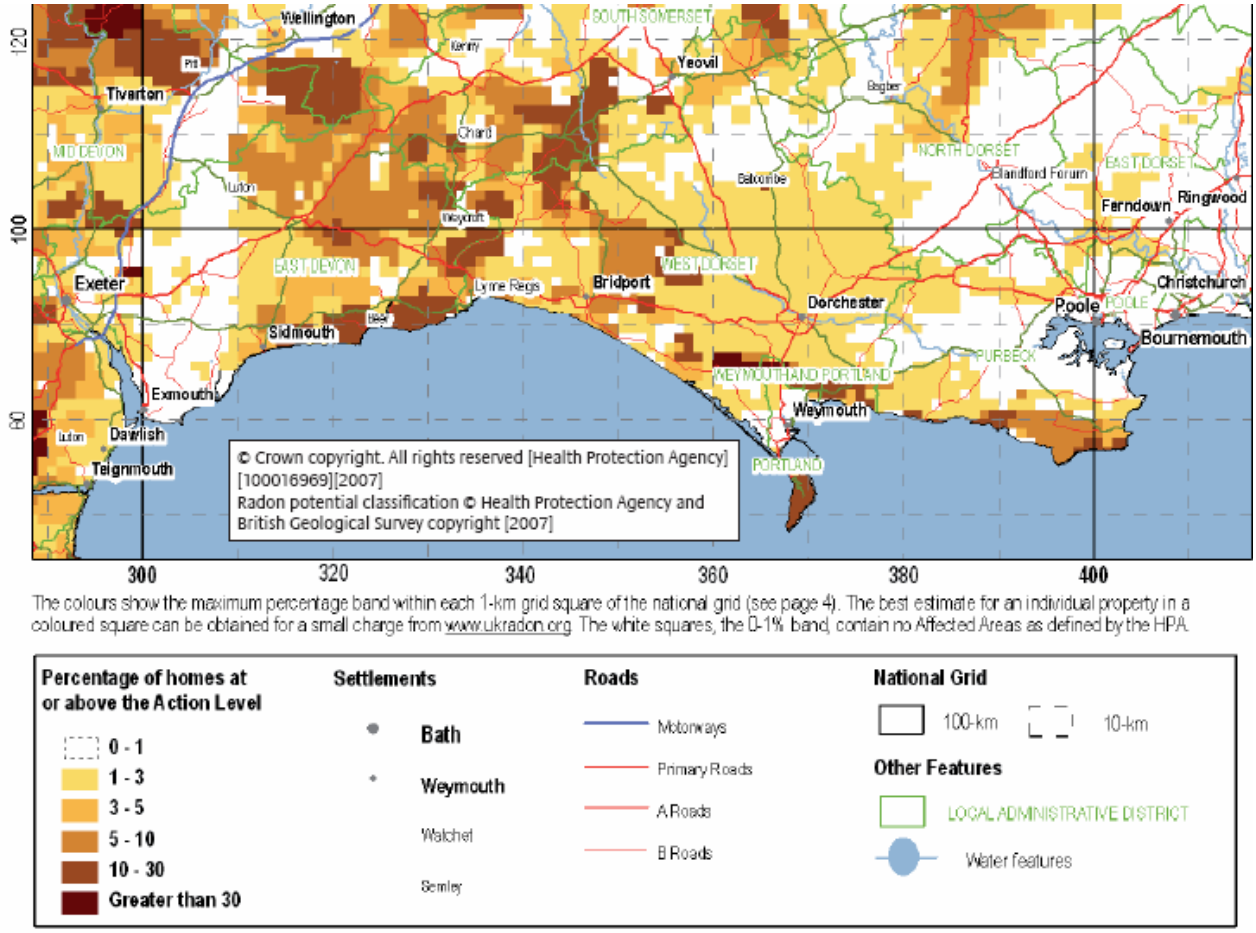
2.8 However, it is unlikely the Gypsy and Traveller sites will have any impact on these AQMA as the additional traffic they will create will be negligible compared to general increases. However, placing new Gypsy and Traveller sites in areas of poor air quality should be avoided.

2.9 Bournemouth has a short stretch of road designated a AQMA on Wimbourne Road for car exhaust pollutants.

Radon

2.10 There are also natural risks from radon in Dorset. Radon comes from the groundrock and is a carcinogenic gas that can cause lung cancer. The risk arises from a combination of the geological characteristics of the ground under buildings, details of construction and the habits of occupants. The risks can be managed through appropriate housing design and the characteristics of Gypsy and Traveller homes may further reduce the risk. Figure 2.1 shows that parts of the County may have greater than 30% of homes above the action level, this includes parts of Weymouth and Portland and West Dorset.

Figure 2.1: Dorset and surrounding area showing the percentage of homes at or above the Action Level for radon



The colours show the maximum percentage band within each 1-km grid square of the national grid (see page 4). The best estimate for an individual property in a coloured square can be obtained for a small charge from www.ukradon.org. The white squares, the 0-1% band, contain no Affected Areas as defined by the HPA.

Source: Indicative Atlas of Radon in England and Wales (Health Protection Agency and British Geological Survey, 2007)

Noise

2.11 The quality of much of Dorset is the tranquillity offered by the countryside and in smaller settlements. The development of Gypsy and Traveller sites is unlikely to have a major impact tranquillity. However, on a local scale Gypsy and Traveller development, as with any other type of residential development, there may be a general increase in noise for instance from cars, people and everyday activities.

2.12 More importantly the impact of noise may have an affect on finding appropriate locations for new Gypsy and Traveller sites. There is an need to ensure that these

communities do not suffer inequitably from noise pollution through the allocation of sites. The 'Designing Gypsy and Traveller Sites: Good Practice Guide, (May 2008) states that:

"When considering sites adjacent to main roads, flyovers and railway lines, careful regard must be given to:

- *The health and safety of children and others who will live on the site*
- *The greater noise transference through the walls of trailers and caravans that through the walls of conventional housing, and the need for design measures (for instance noise barriers) to abate the impact on quality of life."*

2.13 PPG24: Planning and Noise covers noise control and development policy. The PPG states that noise sensitive development should be located away from existing sources of significant noise (or programmed development). Noise-sensitive development should not normally be permitted where high levels of noise will continue throughout the night, especially in the hours when people are normally sleeping. All residential development is defined as 'sensitive'. Although, the PPG does not specify caravans and trailer homes specifically as having any greater noise sensitivity than bricks and mortar development, it is likely that noise insulation levels will be lower on them and therefore more sensitive to noise.

Contaminated land

2.14 New Gypsy and Traveller sites must not put new residents at risk of harm from contaminated land. If a site is found to be contaminated the site should not be occupied until necessary land remediation has been completed. Contamination is most likely to be from former use of the site for industrial process, such as wood processing, gasworks, or uses such as tipping or by transport routes.

2.15 Proposed sites for development should be investigated for contamination potential according to legislative requirements and the relevant planning policy.

2.16 Each local authority will keep a record of the sites with known contamination. The local authorities also need to establish who is responsible for the remediation of the land and what type of remediation is required. The extent of risk of contamination depends on the characteristics of the site, the receptors (people and wildlife), the pathways for contamination amongst other matters.

Summary of relevant policy documents – air quality and noise

Policy Documents	Relevance to Gypsy and Traveller DPD
Key International Policy: • European Air Quality Framework Directive (96/62/EC) • Integrated Pollution Prevention and Control Directive	• Avoid locating new Gypsy and Traveller sites in areas subject to poor air quality, in particular AQMA. • Help make sure new development will not have a disproportionate adverse impact on local air quality • Locate sensitive development away from existing sources of significant noise, or any programmed developments that would give rise to significant noise. • Ensure development is not located so as to
Key National • PPS23: Planning and Pollution Control • PPG24: Planning and Noise • Environment Protection Act 1990	
Key local policy • Local Plan and LDF Policies from the Dorset	

districts, Bournemouth and Poole. • Local authority contaminated land registers	give rise to unacceptable noise impacts • Ensure sites are not located on contaminated land or that suitable remediation has been completed to remove unacceptable risk to human health

Issues related to the Gypsy and Traveller DPD

2.17 The baseline and review of plans and programmes identifies key issues for air quality and noise in the county, Bournemouth and Poole. This is to:

- Protect new residents of Gypsy and Traveller sites from unacceptable or inequitable noise and air quality impacts
- Avoid locating new Gypsy and Traveller sites in locations with AQMA
- Help make sure that new Gypsy and Traveller sites do not exacerbate existing poor air quality, especially in the current AQMAs.
- Ensure new Gypsy and Traveller sites in areas of higher radon risk are compatible with good practice guides for reducing risks.
- Ensure new Gypsy and Traveller sites do not put residents at risk from contaminated land.

Suggested Sustainability Objectives related to this topic

2.18 To aid with the assessment the following are suggested as objectives for air quality, contaminated land and noise pollution. The objectives also integrate with a cross-cutting objective for addressing climate change, these are marked with an asterisk* and sub-objectives in italics.

Headline	Objective	Sub-objectives
Air*	To reduce all forms of air pollution in the interests of local air quality and the integrity of the atmosphere to protect from climate change	• help reduce reliance on car travel by making sure there are real viable alternatives available for all people • help to reduce energy use in new development • *help reduce greenhouse gas emissions through reducing car travel, waste management and reduce energy demand from non-renewable resources*
Health, safety and security*	To improve health and wellbeing by encouraging more healthy lifestyles, and protecting people from risk that may impact on their health and/or safety	• ensure equitable access to health services • ensure that new sites are designed in such a way as to reduce crime and fear of crime • protect people from the risks of unstable or contaminated land • ensure new sites are not in areas at known risk of flood • avoid locating development in areas adversely impacted by noise (existing or planned), especially at night • *protect people for the negative impacts of climate change, such as increased summer temperatures, adverse weather and flooding, through the design and location of new development.* • *ensure that appropriate flood risk protection measures are in place to protect residents well-being*

3 Biodiversity and geodiversity

3.1 Natural England (then English Nature and the Countryside Agency) undertook a project to gain a better understanding of the broad characteristics of England's natural environment. This divided England into broadly homogenous 'Natural Areas'. These are descriptive character areas related to the landscape and habitats of the area and have no statutory protection. The Natural Areas covering Dorset and the unitary authorities are shown in table 3.1.

3.2 The Natural Areas in Dorset show the high quality and diversity of the landscapes and habitats of the county. Much of Dorset is dominated by chalk geology, influencing the cliffs and valleys. However, there are also the sands and gravels that give the characteristic healthland habitats around Bournemouth and Poole.

Table 3.1: Dorset's Terrestrial Natural Areas

Ref	Name	Brief description
80	South Wessex Downs	The most notable habitats of the South Wessex Downs are chalk grassland, chalk rivers, woodland and arable land, with smaller areas of meadow land and wetland habitats, with a wide variety of associated and characteristic species. The Natural Area is internationally important for its chalk grassland and its chalk rivers, and for a range of associated species. Many chalk rivers and streams drain off the plateaux. The main geological features are chalk plateaux, scarp and dip slopes, clay with flints deposits and valleys, both dry and occupied by rivers and streams. Whilst chalk dominates the land and water there are local influences from more neutral soils especially on flatter ground on hill tops and valley bottoms.
81	Dorset Heath	This Natural Area encompasses the internationally important Dorset heathlands and mires on the free-draining Tertiary sands and gravels. The core of the Natural area, which was once all heath, is now a complex mixture of heathland with its associated habitats. Valley mires are a particular feature of heathland in Dorset and fen vegetation of different types occur in some of the river valley wetlands and on the edge of the heathland where the water is affected by the nearby chalk. Four significant rivers flow within floodplains through the Dorset Heaths and these support important plant and dragonfly communities. The floodplains are important for wintering wildfowl and waders. To the north of the Natural Area, ancient woods survive in an intensively farmed landscape, and are rich in epiphytic lichens and butterflies.
82	Isles of Portland and Purbeck	The Isles of Portland and Purbeck Natural Area is a unique coastal region of southern England. Its warm climate, chalk and limestone rocks, cliffs and land use history have combined to create a distinctive landscape character and special nature conservation interest. A measure of the visual attractiveness of the landscape is that all of the Purbeck portion of the Natural Area falls within the boundaries of the Dorset Area of Outstanding Natural Beauty.

		The nature conservation interest of the Isles of Portland and Purbeck Natural Area lies in its exceptional geology, its wide range of habitats including internationally important types, and its diversity of rare and uncommon flora and fauna. Calcareous grassland is the most extensive semi-natural habitat and many fine examples occur on the chalk and limestone of Purbeck and Portland, both inland and along the coast. Woods of various sizes are scattered within the Natural Area, and many of these are of ancient origin. Disused quarries and tunnels left behind by the stone quarrying industry provide valuable refuges for wildlife, for example quarries on Portland are particularly important for rare mosses, liverworts and lichens, and disused tunnels are used by hibernating bats, including the rare greater horseshoe bat and Bechstein's bat.
83	Wessex Vales	The Wessex Vales comprises the undulating ground lying between the chalk escarpment of Dorset and Wiltshire to the east, the Somerset Hills to the west and the Oxford Clay Vale to the north. The sea cliffs and shingle ridge of the Dorset coast form the southern boundary. The Natural Area is characterised by its abundance of small ancient woods linked by a network of species-rich hedges enclosing pastures and meadows. Deeply incised valleys contain streams and wet woodlands that are rich in invertebrates. Lowland wood pastures and parklands of international importance contain rare epiphytic lichens. The diverse range of habitats present are important for bats, notably lesser horseshoe bat, and the mines and quarries of the Vale of Wardour provide important winter hibernacula. Jurassic and Cretaceous rocks outcrop in quarries and cuttings, illustrating the stratography and palaeontology of the Natural Area. Landslips are an important geomorphological feature.
89	Blackdown	The Blackdowns Natural Area constitutes one of the finest and most extensive plateaux in England and includes much of the catchments of the Rivers Culm, Axe and Otter. Many of the valleys have a network of small, hedge-lined fields that are generally used for pasture, although other land uses include forestry and tourism. The majority of the Natural Area is characterised by Cretaceous Upper Greensand, although some of the westernmost outcrops of Chalk in England also occur. A number of sites are of great geological importance for the fossil reptiles and fossil fish they yield. Blackdowns is of national importance for a variety of habitats including lowland heathland, wet heath and acid grassland, purple moor-grass and rush pastures and other mires. This is probably one of the most important Natural Areas in the country for ancient and species-rich hedgerows. In all, 30 key species for conservation action have been identified, including some which are globally threatened and some which are still widespread such as the dormouse and bullfinch. Blackdowns contains one of only two sites in the United Kingdom for spring snowflake, and a disused quarry is of international importance for hibernating bats.

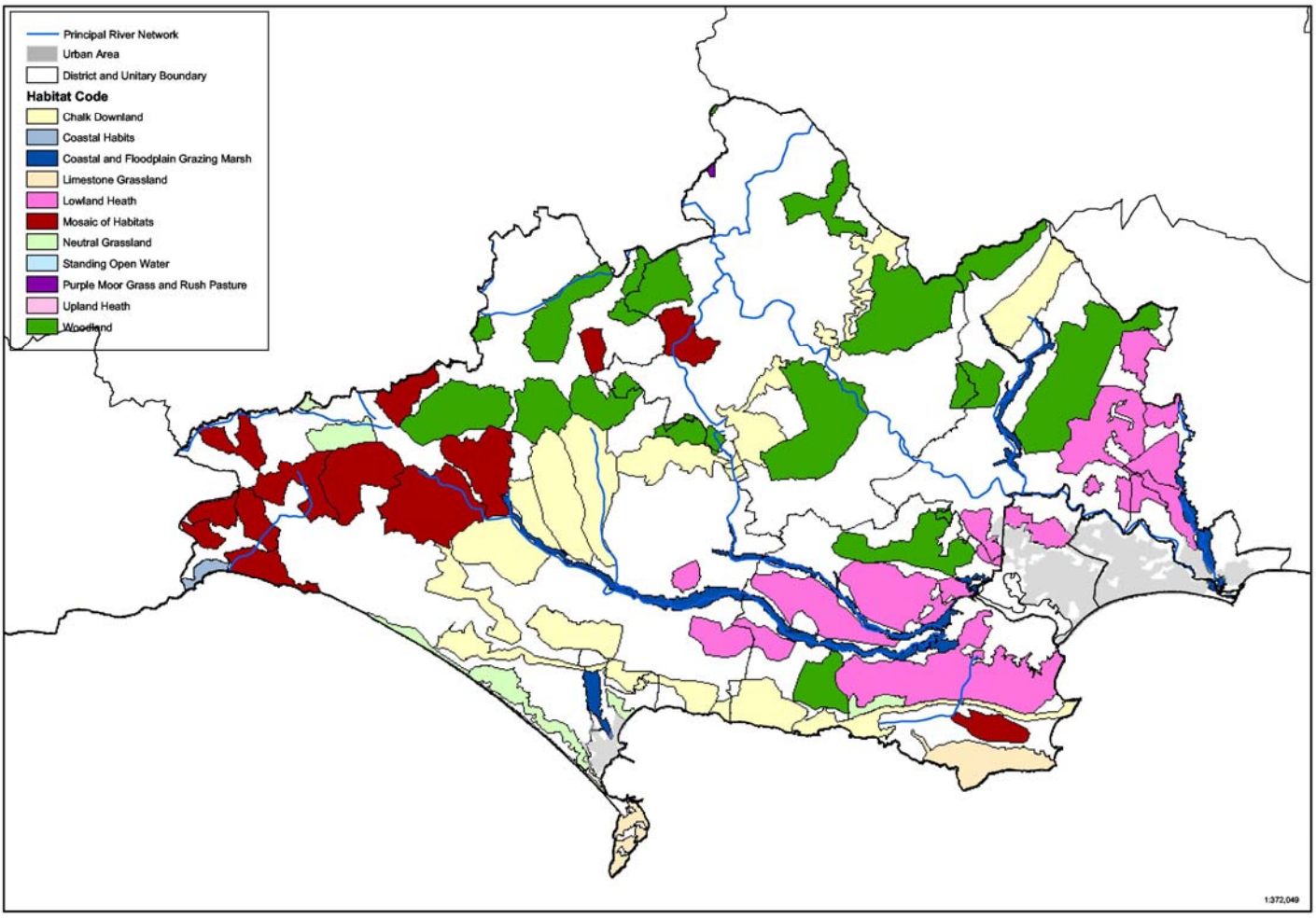
Biodiversity in Dorset

3.3 Reflecting the diverse habitats and ecological characteristics of the Natural Areas, Dorset has a rich and diverse geology and landscape. This has resulted in a significant proportion of the area being locally, nationally or internationally designated for its nature conservation value.

3.4 The county contains a diverse mosaic of habitats, including chalk downland, heathland, ancient woodland, river valleys and coastal habitats. The Dorset Nature Map goes into more area specific detail than the Natural Areas on the wildlife habitats and landscape character at a landscape scale.

3.5 The Nature Map is a useful resource for understanding the habitats characteristics of the wider countryside of Dorset, beyond those areas covered by a formal nature conservation designation. Figure 3.1 shows the Nature Map for Dorset, including Poole and Bournemouth.

Figure 3.1: Nature Map showing the Dorset area



3.6 The map in figure 3.1 shows the main areas of woodland (dark green), chalk downland (yellow), lowland heath (pink), habitat mosaics (red), natural grassland (light green), limestone grassland (peach) and coastal and floodplain grazing marsh (dark blue).

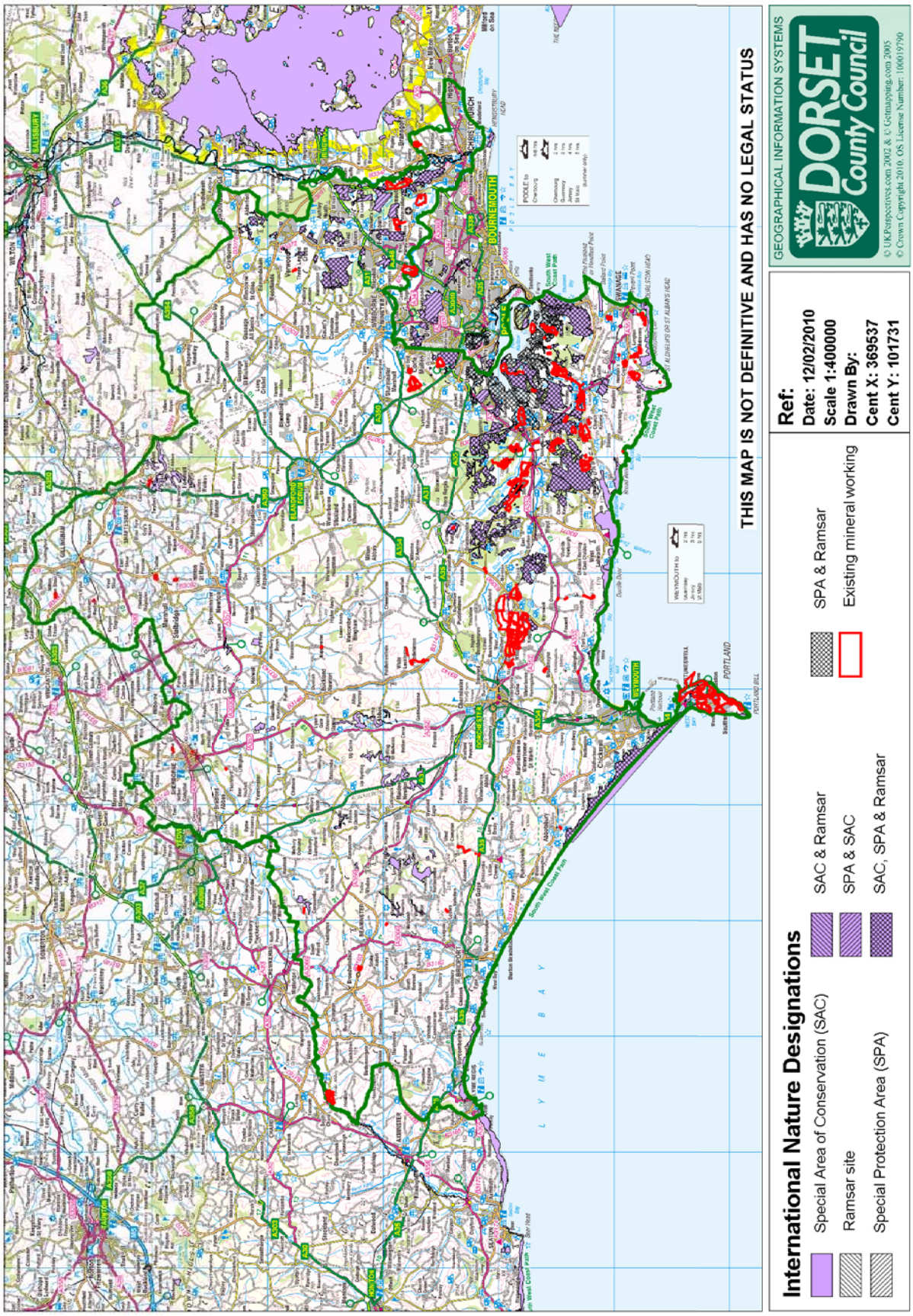
3.7 A large amount of this area is designated for its wildlife value. The designated sites include those that have been identified as being of international importance for nature

conservation. There are 14 Special Areas of Conservation (SAC) as well as one pending designation (pSAC), 4 Special Protection Areas (SPA) and 4 sites designated under the Ramsar convention, these are shown in Figure 3.2. A further 141 sites are nationally designated as Sites of Special Scientific Interest (SSSI), shown in Figure 3.3, and 11 National Nature Reserves (NNR), in addition, there are 49 locally designated Local Nature Reserves (LNR). There are also locally designated sites, Sites of Nature Conservation Interest (SNCI), in Dorset, Figure 3.4. Despite many of these designations covering the same areas of land a significant proportion of Dorset is covered by a designation.

3.8 The internationally designated areas have special protection under European legislation from harm. The DPD is required to undergo a Habitats Regulations Assessment screening to make sure none of the proposals will have an adverse impact on these sites. Where the potential for negative impacts are identified further assessment and adjustment to the plan may be needed to avoid or fully mitigate adverse effects. Only in very limited circumstances can development can proceed where an impact is identified. Screening for Habitats Regulations Assessment will also be completed to make sure the plan complies with the Habitats Directive and will not harm internationally designated 'Natura 2000' nature conservation sites.

3.9 Information is available on the condition of all of the SSSI in the county. Data collected in 2007 shows that of all the land designated as SSSI in Dorset, Bournemouth and Poole around 9,500 ha was in favourable condition, however a greater amount (10,500 ha) was in unfavourable condition or condition was declining. The location of new Gypsy and Traveller sites will need to make sure there they do not risk further harm to these protected sites.

Figure 3.2: Map of the international nature conservation designations in Dorset, Bournemouth and Poole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International Nature Designations
Special Area of Conservation (SAC)
Ramsar site
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SAC & Ramsar
SPA & SAC
SAC, SPA & Ramsar
SPA & Ramsar
Existing mineral working
LYME BAY

Figure 3.3: Map of the SSSI sites in Dorset, Bournemouth and Poole

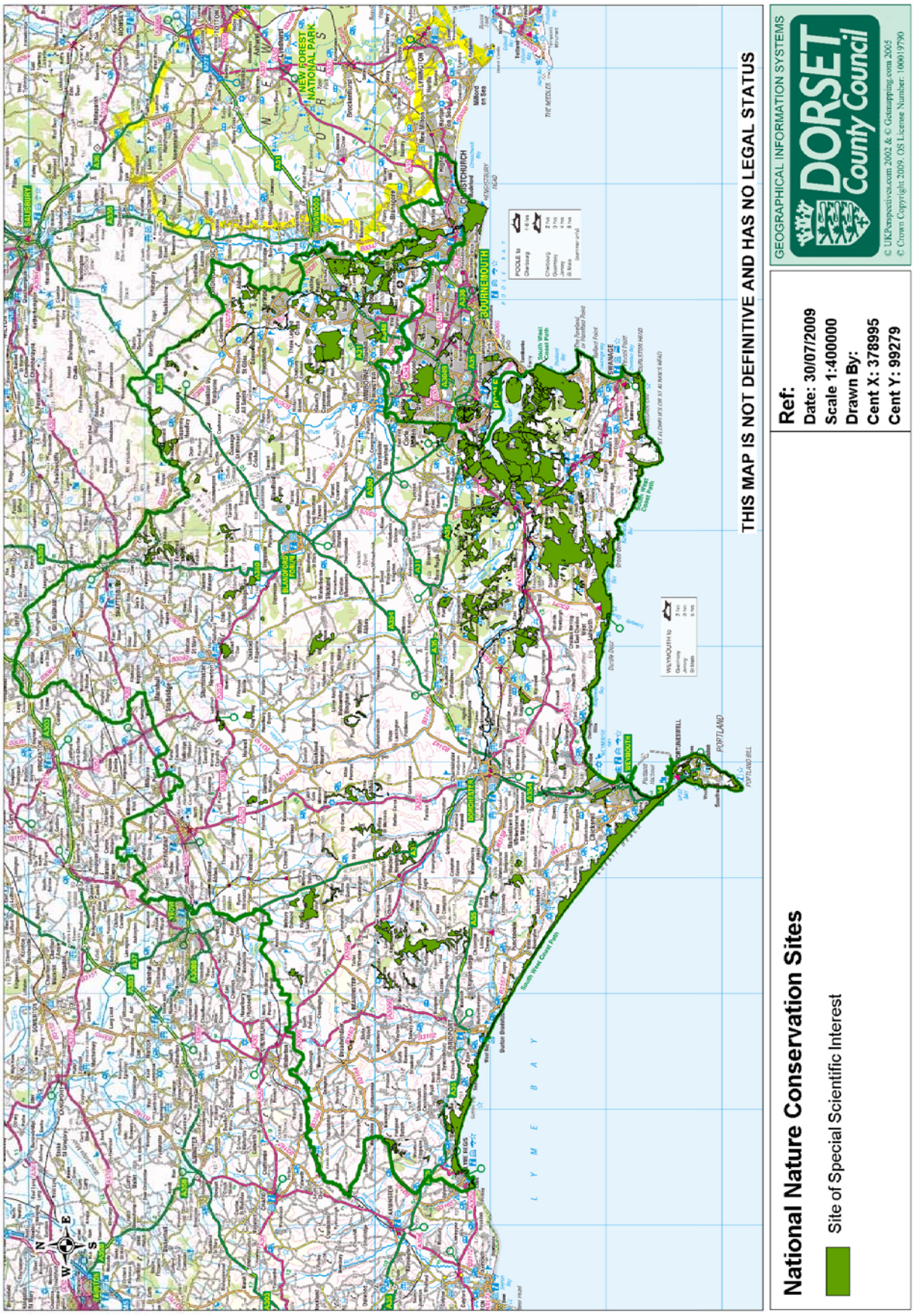
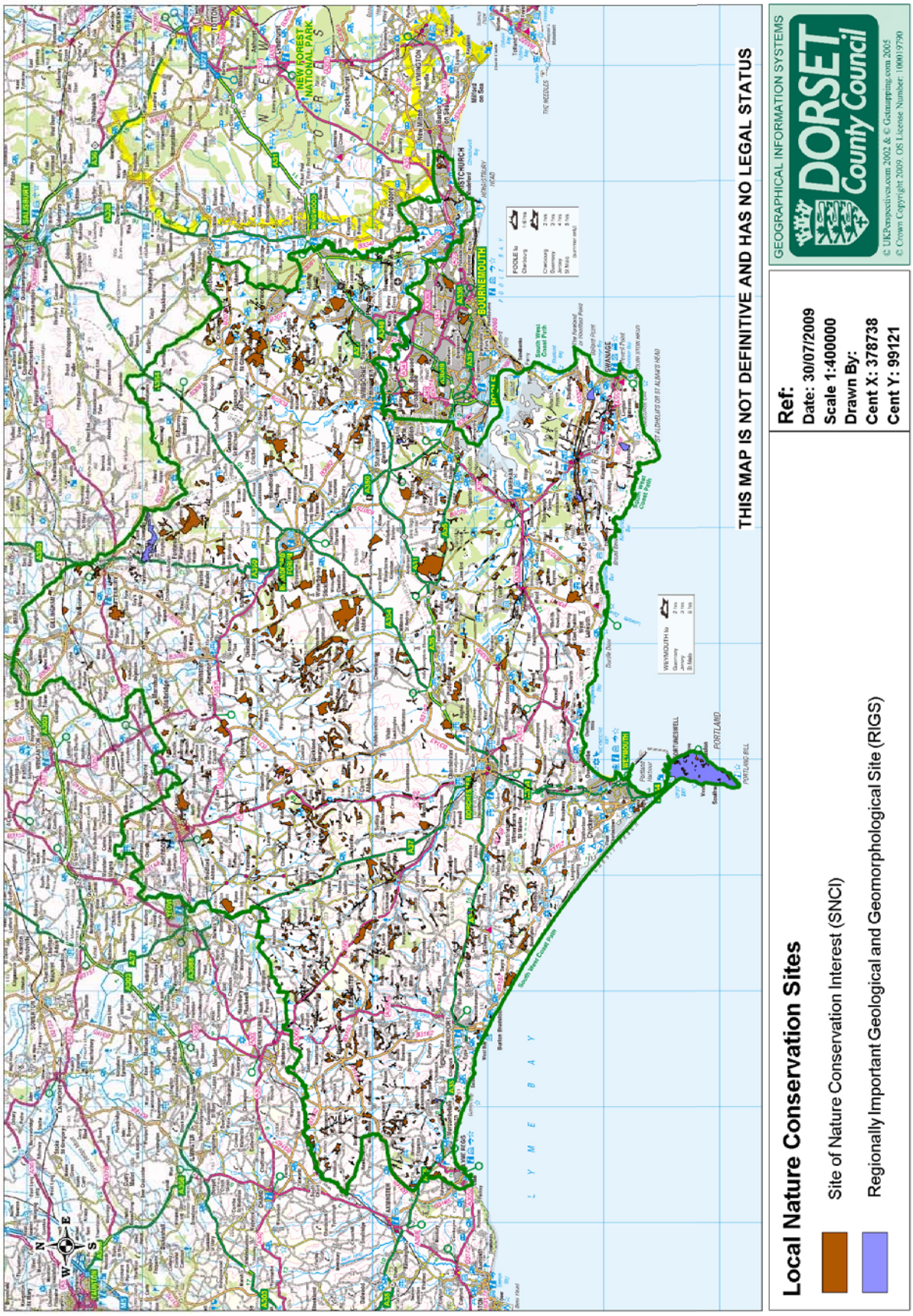


Figure 3.4: Local nature conservation and geological sites in Dorset, Bournemouth and Poole



Priority Habitats

3.10 A UK Biodiversity Group has identified 27 broad habitat types in the UK. Dorset contains 21 of these habitat types.

3.11 Out of these 27 habitats there are 45 more closely defined 'priority habitats' that are in special need of protection. 'Habitats Action Plans' have been prepared for these 45 habitats that set out the measures required to protect and enhance them.

3.12 The priority habitats were selected using one or more of the following criteria:

- Habitats for which the UK has international obligations
- Habitats at risk, such as those which are rare or have a high rate of recent decline
- Habitats that are functionally important for species inhabiting wider environments
- Habitats important for species of particular conservation concern.

3.13 Dorset contains 32 of these priority habitats, these are the focus for action in the Dorset Biodiversity Strategy. These include:

- Lowland calcareous grassland
- Lowland dry acid grassland
- Lowland heath
- Lowland meadows
- Lowland wood pasture and parkland
- Wet woodland
- Lowland mixed decidous woodland.

3.14 In addition to these 32 habitat types the Dorset Biodiversity Partnership has selected ponds and two marine habitats as local priorities.

3.15 Based on the data available for SSSIs and Sites of Nature Conservation Interest (SNCI), priority habitats represent approximately 12% of the land area of Dorset, Bournemouth and Poole.

3.16 The location of any new Gypsy and Traveller site will need to take into account impacts on the priority habitats, widening the consideration of biodiversity assets beyond protected sites designated boundaries.

Species

3.17 The UK Biodiversity Programme has identified 1288 'species of conservation concern'. Of these species 560 are priority species of particular concern and in most need of conservation action. 33% of these priority species are found in Dorset. Despite many of the designated protected areas providing habitats for protected species the location of individuals will clearly not respect designated boundaries, and there is a need to protect priority species wherever they are found.

3.18 Species Action Plans (SAPs) have been prepared nationally for the UK protected species. From the long-list of species a list of locally important species has been identified. The continued conservation of these species will need to be addressed through the choice of sites for Gypsy and Traveller pitches, as well as in the development of sites for this use.

3.19 Other species such as bats and badgers are protected under their own legislation. Where there is the potential for adverse effects on individuals of these species through the development of Gypsy and Traveller sites avoidance or mitigation measures will need to be put in place.

Geological interest

3.20 Dorset has a diverse and important geodiversity asset that helps form the landscape, culture and biodiversity of the area.

3.21 The Jurassic Coast running between Sidmouth in East Devon and Lyme Regis in West Dorset is a designated UNESCO World Heritage Site for its geological importance. It is a protected site of importance to the understanding and learning about geology as well as a cultural resource.

3.22 Much of the sites of geological importance are protected as SSSIs. Dorset and east Devon's coastline has 66 Geological Conservation Review Sites all of national and international importance within earth science.

3.23 On a more local scale 'Regionally Important Geological Sites' are designated, these are show in Figure 3.4.

Other plans and policies

Policy Documents	Relevance to Gypsy and Traveller DPD
Key international policy • Directive 79/409/EEC on the conservation of wild birds (The Birds Directive) • Ramsar Convention on Wetlands of International Importance • Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (The Habitats Directive)	• The various policy documents establish the principles of protecting and enhancing designated nature conservation sites. • Internationally designated sites have the greatest level of protection, it is very unlikely that Gypsy and Traveller pitch sites would be permitted if there are shown to have any potentially harmful impact on this type of site. • The need for cumulative impacts needs to be considered • Policy wording and the selection of sites will need to ensure the avoidance or mitigation of potential impacts • Habitats Regulations Assessment screening is necessary, with further assessment if required. • There is a need to look beyond site designations and ensure conservation of habitats and species in the wider
Key national • PPS9: Biodiversity and Geological Conservation • Wildlife and Countryside Act 1981 • Natural Environment and Rural Communities Act 2006 • Countryside and Rights of Way Act 2000 • The Conservation (Natural Habitats	

etc.) Regulations • A 50 Year Vision for Wetlands (RSPB) • Southwest Biodiversity Implementation Plan (South West Regional Biodiversity Partnership, 2007) • The Southwest Nature Map and Building Biodiversity in the Southwest (Biodiversity South West, 2005)	environment. • Connectivity and reduction of fragmentation is essential to avoid cumulative or secondary impacts of development.
Key Local Policy • Dorset Biodiversity Strategy (Dorset Biodiversity Partnership, 2003) • Dorset Local Geodiversity Action Plan	

Issues related to the Gypsy and Traveller DPD

3.24 The baseline and review of plans and programmes identifies key issues for biodiversity in the county, Bournemouth and Poole. This is to:

- Avoid direct disturbance to internationally, nationally or locally important nature conservation assets
- Avoid indirect disturbance on nearby protected areas from recreational pressure or impacts on certain species from domestic animals
- Consider how new Gypsy and Traveller sites can contribute to improving local biodiversity, such as enhancing priority habitats
- Avoid impacts related to water use, for example indirect and cumulative impacts on biodiversity from changes in water quality and availability
- Avoid In-combination effects leading to incremental loss of biodiversity or fragmentation of habitats and loss of links, such as hedgerows or access to stream banks.

Suggested Sustainability Objectives related to this topic

3.25 To aid with the assessment the following are suggested as objectives for biodiversity. The objectives also integrate with a cross-cutting objective for addressing climate change, these are marked with an asterisk* and sub-objectives in italics.

Headline	Objective	Sub-objectives
Biodiversity*	Protect, value, manage and enhance healthy functioning ecosystems, habitats and natural species diversity, valuing nature conservation interests wherever they are found.	• provide a strong level of protection to sites designated for the national or international importance for nature conservation • site development should lead to no net loss in biodiversity • statutory and non-statutory designated nature conservation sites should be afforded a level of protection appropriate to their status • ensure the location and design of sites does not cause the further fragmentation of habitats and protect and enhance network routes for flora and fauna movement • support landscaping that makes use of species that will support native biodiversity • *protect habitats that provide migration routes for species in response to a changing climate*

4 Water and Flooding

4.1 This topic covers three principle areas:

- Water availability and quantity
- Water quality
- Flood risk.

4.2 The focus is on surface waters (rivers and inland water bodies) as the greatest impact from Gypsy and Traveller sites is likely to be on this type of water. Consideration is also given to coastal and groundwaters where impacts might be possible.

Surface water

4.3 The major rivers in Dorset are the Frome, Piddle and Stour, with smaller rivers and catchments covering the county.

4.4 Catchment Flood Management Plans (CFMP) have been prepared for each catchment. In each CFMP the whole catchment has been divided into broadly homogenous flood risk areas where similar measures to protect against flood apply.

Frome and Piddle

4.5 The Frome and Piddle catchment area is around 900 square kilometres. It is a mainly rural catchement area with the exception of Poole near the mouth. Overall urban areas make up only two percent of the total area, and include Dorchester, Wareham and Swanage.

4.6 The Frome and the Piddle catchment (Figure 4.1) is characterised in the upper reaches of the North Dorset Downs by open chalk downland with steep scarp slopes, sheltered valleys, chalk hills, ridges and limestone plateaux, leading to flat-bottomed open valleys with clay and alluvial deposits at the lower end. The rivers Frome and Piddle discharge into Poole Harbour.

4.7 The steep sided valleys at the top of the catchment lead to fast run-off times, slowing as the gradient flows. However, the upper area of the catchment is underlain by chalk that readily absorbs rainfall into the groundwater. The chalk aquifer is used for public water supplies. The middle and lower areas of the catchment are overlain by up to 100m of mixed geology including clays that, in contrast with chalk, do not readily absorb water allowing it to remain on the surface before discharging into the rivers. There are large low-lying wetland areas, the site of important habitats, around Poole Harbour.[1]

4.8 Information from the CAMS (Catchment Area Management Strategy) for the Frome, Piddle and Purbeck area indicated that in 2004 there where 308 water abstraction points. Approximately 72% of these abstraction points are in the chalk area of the catchments, but this is less than 50% of extracted water volume. Most abstraction is for fish farming, although most of this water is returned downstream to the catchment. For uses that do not return the water the greatest volume of abstraction is for public water supply (80% of volume).

[1] Frome and Piddle Catchment Flood Management Plan – Environment Agency

4.9 Figure 4.2 shows the level of supply in the 2004 catchment plan. The key shows the water availability. Where there is 'no water available', the CAMS states that:

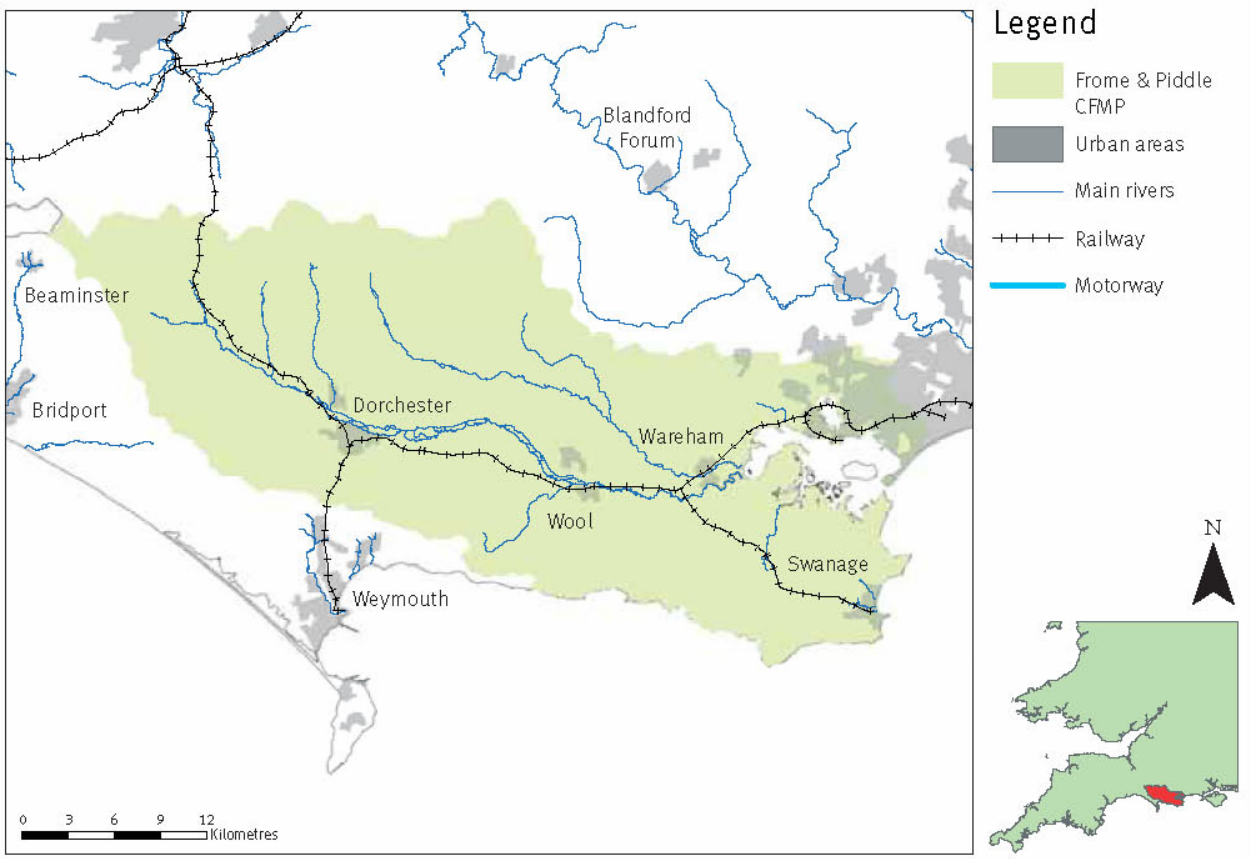
"No water is available for further licensing at low flows although water may be available at higher flows with appropriate restrictions.'

4.10 Where the CAMS states that there is water available this means that:

"Water is likely to be available at all flows including low flows. Restrictions may apply".

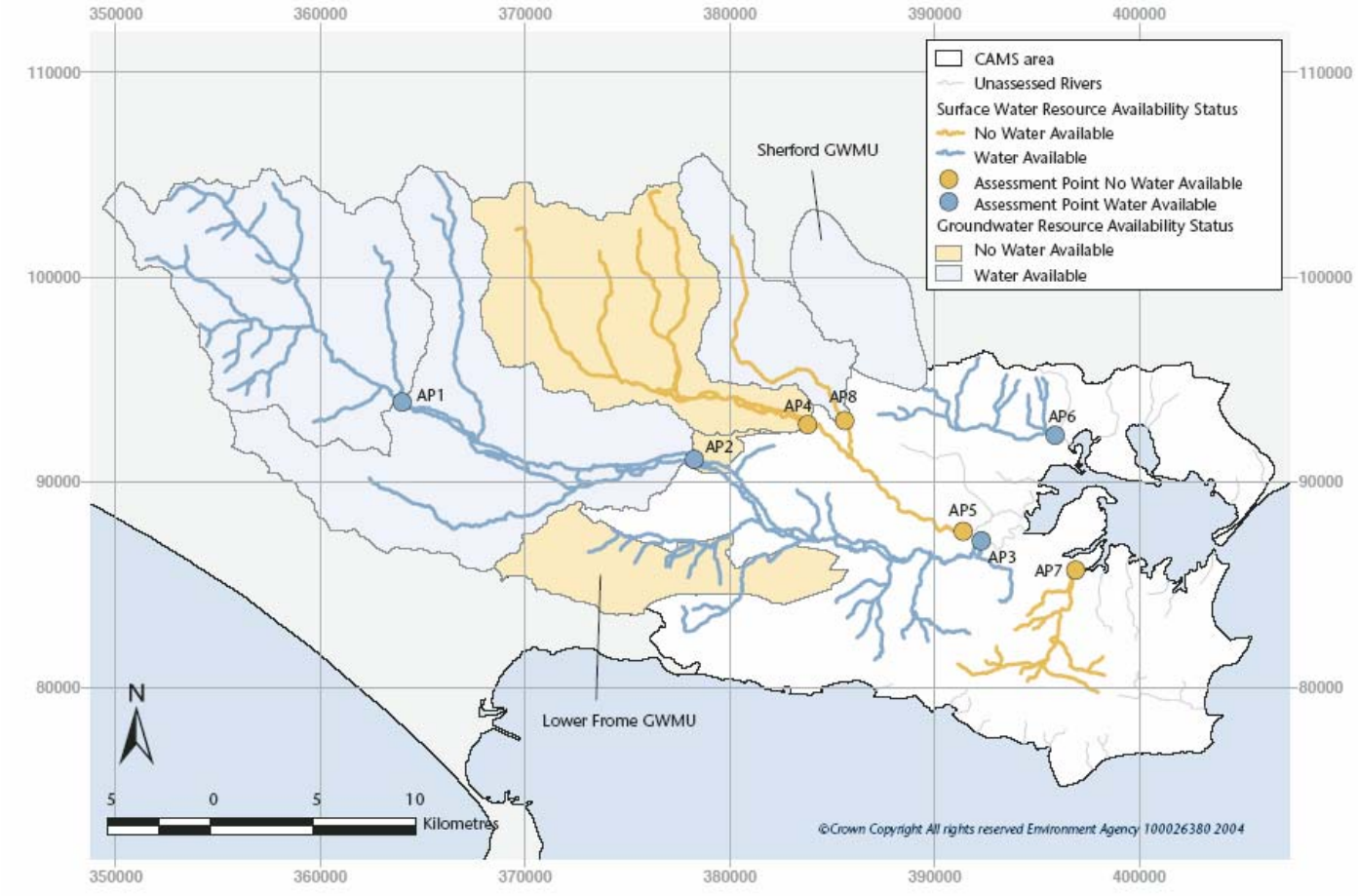
4.11 The CAMS also identifies that 98% of the volume of licensed discharges to the surface water is from Wessex Water sewage treatment works. The biggest of these works are at Wood, Dorchester and Blackheath.

Figure 4.1: Location and extent of the Frome catchment flood management area



Source: Environment Agency Frome and Piddle Catchment Flood Management Plan December 2009

Figure 4.2: Low flow resource availability status of ground water management units and river reaches



Source: Environment Agency The Frome, Piddle and Purbeck Catchment Abstraction Management Strategy March 2005

Dorset Stour

4.12 The Dorset Stour catchment (Figure 4.3) extends from the headwaters of the River Stour at Stourhead flowing south east through Gillingham and Blandford Forum to Christchurch Harbour where it enters the English Channel.

4.13 The overall catchment areas is about 1,2400 square kilometres and has a population of around 400,000. Almost three quarters of these people live in the Bournemouth, Poole and Christchurch conglomeration in the south of the catchment. Apart from this urban areas the catchment is largely rural.

4.14 The landscape of the Dorset Stour catchment varies considerable with the varying geology along the Stour's course. This influences the river's characteristics and the causes of flood risk across the catchment. The upper catchment consists of impermeable clays of the Blackmore Vale resulting in shallow valleys with wide floodplains. The central band of permeable chalk on the Cranborne Chase results in steeper valley sides and narrow floodplains. The lower catchment has the semi-permeable sands, clays and gravels of the Dorset heaths.

4.15 Run-off and changes in water levels are rapid in the many streams on the clays. Water levels rise more slowly in the rivers across the chalk, the rivers being fed by groundwater. Within the River Stour catchment there are a number of sites designated

for their environmental importance including Special Areas of Conservation, Special Protection Areas and Ramsar sites. Important environmental sites in the catchment include Dorset Heath (Ramsar, Site of Special Scientific Interest (SSSI)) and Environmentally Sensitive Areas and the Cranborne Chase and Wiltshire Downs AONB.

4.16 The Dorset Stour CAMS assess available water resources in the catchment (Figure 4.4). The full strategy prepared in 2004[2] identifies the greatest water abstraction is for public water supply. The majority of discharge licences are for sewage treatment works with the largest found on the coast where the population is highest. There are 52 discharging more than $10m^3/d$. The largest are at Holdenhurst in Bournemouth, Palmersford in Ferndown and also the Kinson site in Bournemouth. These three all have greater than $10,000m^3/d$ permitted discharge.

4.17 The CAMS for the Dorset Stour shows that:

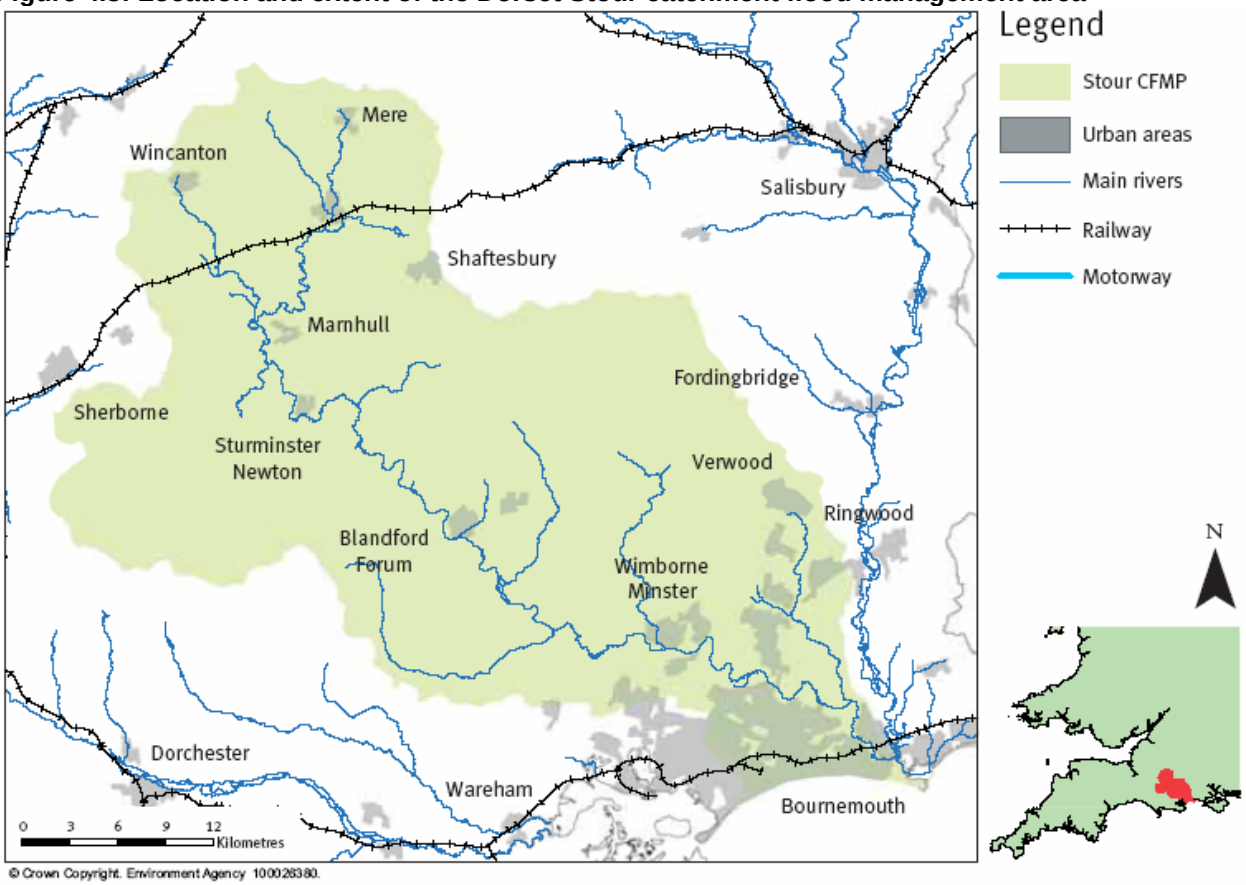
- WRMU (Water Resource Management Unit)1: Upper Stour – no change remains over-licensed
- WRMU2: Middle Stour – no change remains as no water available
- WRMU3: River Allen – no change remains as no water available
- WRMU4: Moors/Crane and Lower Stour – changed from no water available to water available
- WRMU5: Middle Stour Groundwater – no change remains as over-licensed

4.18 As with the Frome, Piddle and Purbeck catchments areas that have no water available can still be licensed for abstraction subject to certain restrictions. Water available areas have fewer restrictions on new abstraction licenses. Where the unit is identified as over-licensed then the CAMS states:

"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."

[2] Environment Agency (January 2004): *The Dorset Stour Catchment Abstraction Management Strategy*

Figure 4.3: Location and extent of the Dorset Stour catchment flood management area



Source: Environment Agency Dorset Stour Catchment Flood Management Plan January 2004

Figure 4.4: Dorset Stour CAMS resource availability status

Source: Environment Agency Dorset Stour CAMS Annual Update 3 – March 2007

West Dorset

4.19 The river catchments covering West Dorset are (from west to east) the Char, Brit, Bride and Wey, each flowing directly into the sea on the South coast. All of these catchments are small with a total river length of between 10km and 20km and catchment areas of 50 square kilometres and 115 square kilometres (figure 4.5). The River Char and River Brit have a very rapid response to rainfall. The Rivers Bride and Wey are fed from chalk aquifers which tend to dampen the response time unless heavy rainfall happens after a long wet spell.

4.20 The geology of the West Dorset areas is high distinctive and has a profound influence on the landscape, hydrology and land use with the catchment. In general, the geology becomes progressively younger from west to east. Lower Jurassic sandstones and clays in the west give way to Middle Jurassic clays and limestone's further to the east. Overlying the Jurassic strata to the west and the north east are outcrops of Cretaceous Greensand and the remnant of the overly Chalk. These are major aquifers providing baseflow to the River Bridge and River Wey during the summer months[3].

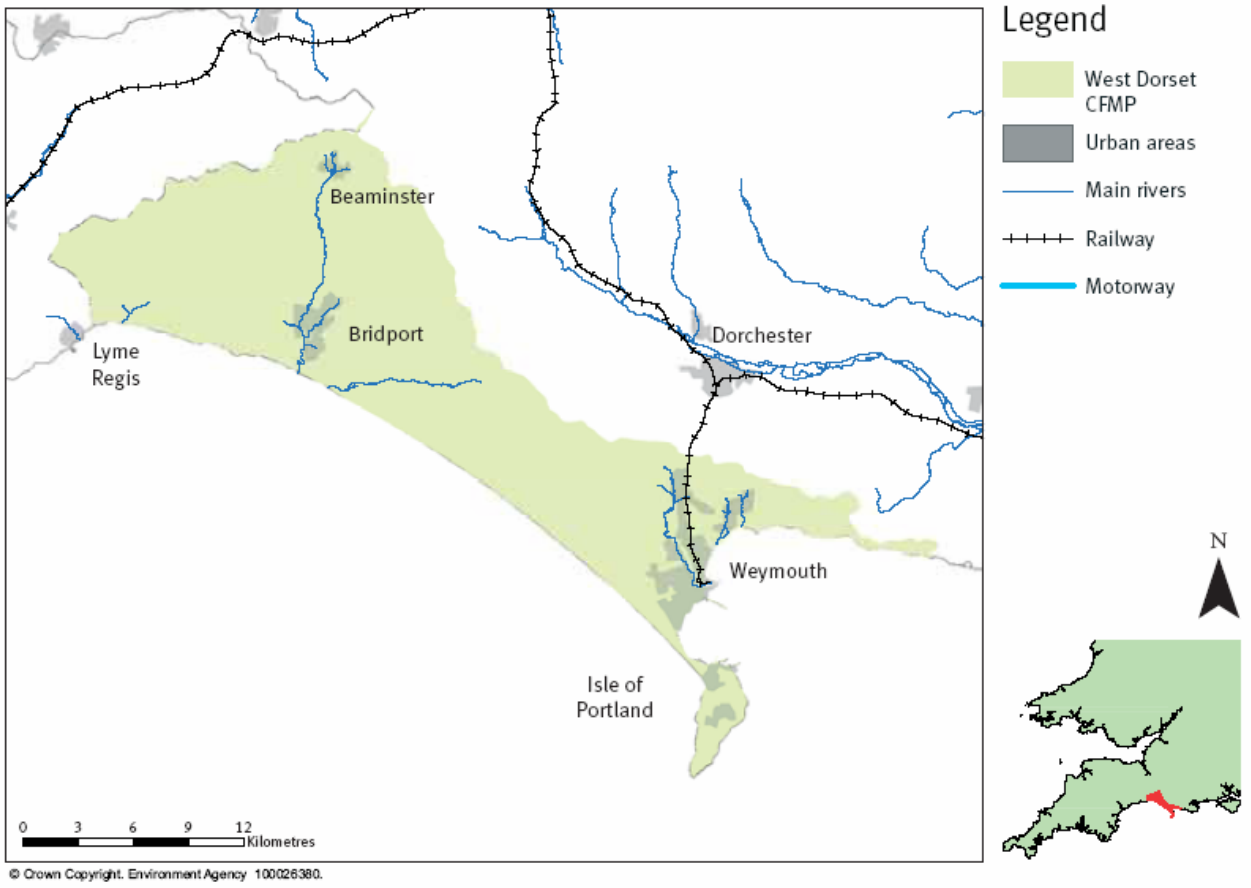
4.21 For the West Dorset streams the CAMS shows that there are 41 abstraction licences. Most of the licensed abstraction, unlike the other rivers in the County, is for hydroelectric power generation (82%). However, like fish farming, this is not a consumptive use with water returning to the river. For consumptive abstraction again the most common use is for public water supply (93%), with 90% from surface water sources. The water availability is shown in Figure 4.6. Information is not available in this CAMS on discharge sites.

4.22 The CAMS for the West Dorset Streams shows that the:

- WRMUs 1, 2 and 3 covering the Rivers Char, Brit and Asker 'remains at water available'. Here: "New abstraction licenses are likely to be issued, although they will have conditions limiting or stopping abstraction when river flow is very low. This will ensure that we remain within the status of water available."
- WRMU 4 covering the River Bude the strategy is 'remain at no water available'. For these areas the CAMs states that: there situation here is the same as where no water is available: *"New abstraction licenses are likely to be issued, although they will have conditions limiting or stopping abstraction when river flow is very low. This will ensure that we remain within the status of water available."*
- WRMU 5 covering the River Wey 'remains at over-abstracted'. Here the CAMS states that: "New licences may be issued but they will have restrictions limiting abstraction to periods of higher flow (typically the winter months)."
- Finally, GRMUs 6 and 7 covering groundwater at Litton Cheney and Portesham Chalk states that it 'remains at no water available'. Here the CAMS states that: *"New abstraction licences are likely to be issued, but where appropriate will have restrictive conditions to protect the outflow into the rivers. This will ensure that the status of the associated rivers is maintained.*

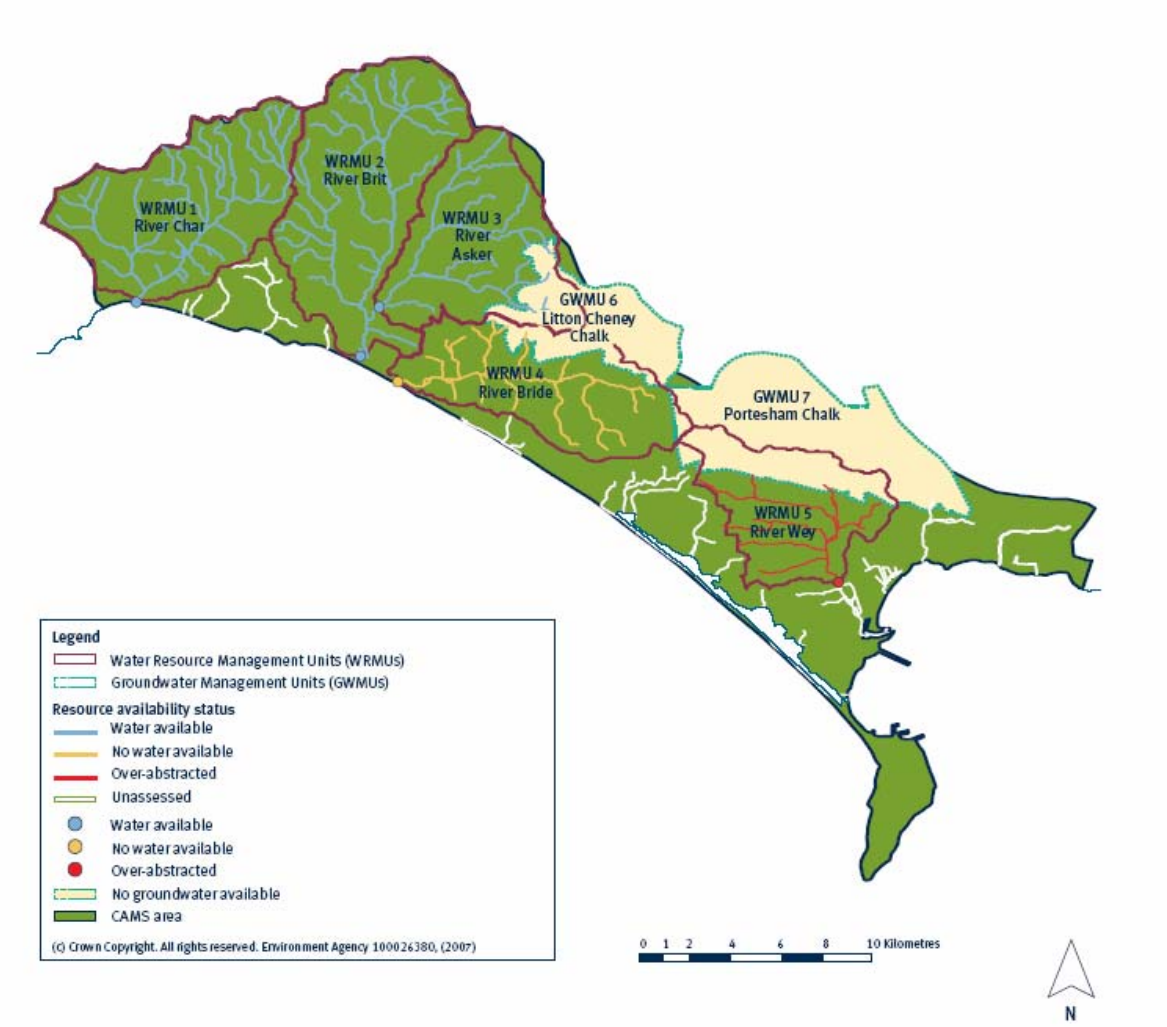
[3] Environment Agency *West Dorset Catchment Management Plan* December 2009

Figure 4.5: Location and extent of the West Dorset catchment flood management area



Source: Environment Agency West Dorset Catchment Flood Management Plan 2009

Figure 4.6: Integrated resource availability status of the West Dorset streams



Source: Environment Agency: The West Dorset Streams Catchment Abstraction Management Strategy, December 2009

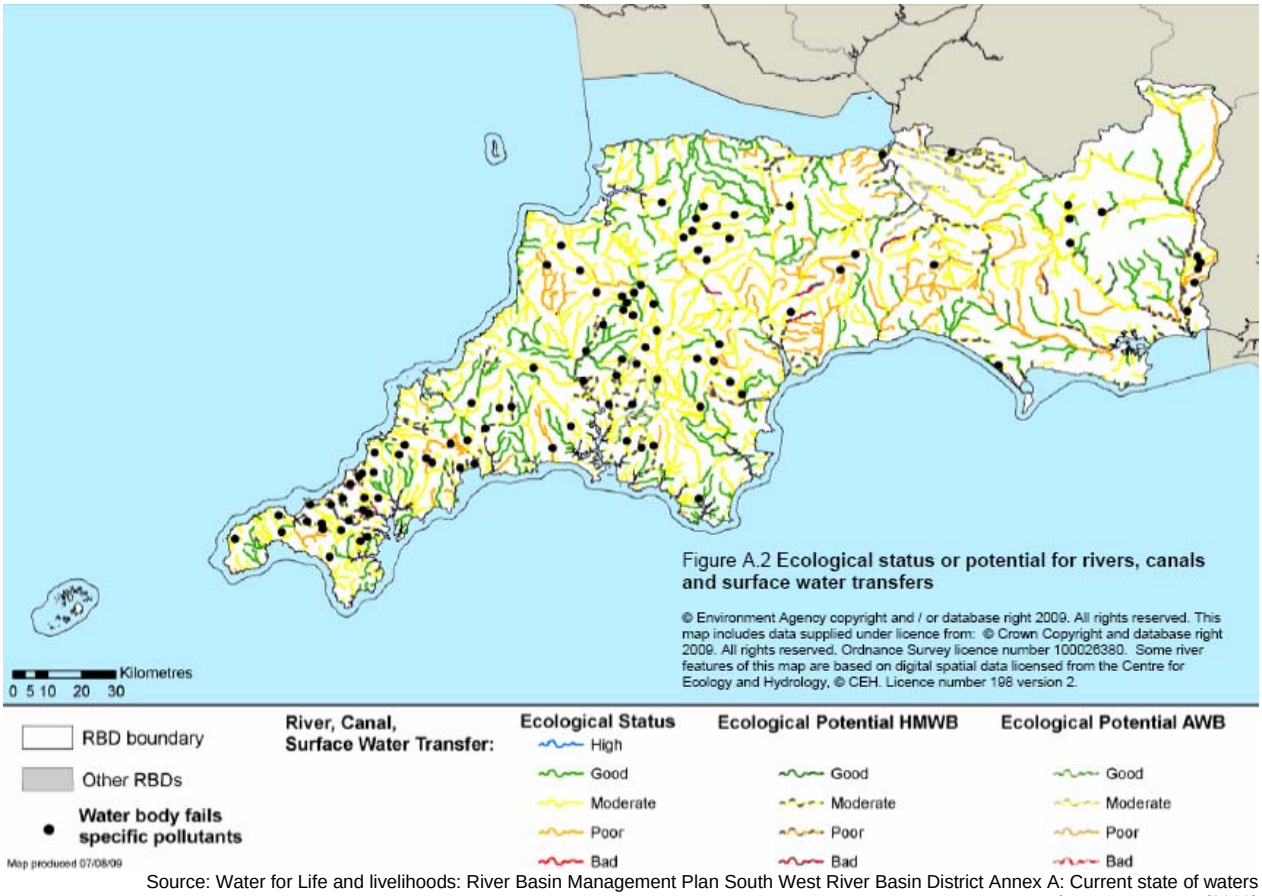
River Water Quality

4.23 The water quality of river stretches in Dorset in show in table 4.1. This indicates that although well over three quarters of water in the county is at good chemical quality it still lags behind the region as a whole. The biological water quality is shown in Figure 4.7, this indicates some river stretches are of poor quality, particularly along the River Frome.

Table 4.1: River water quality in Dorset

River water quality	Dorset	South West Region	England	Source
Chemical river water quality	78.6% Good (2005)	81% Good (2005)	64% Good (2005)	Environment Agency
Biological water quality	97% Good (2005)	91% Good (2005)	71% Good (2005)	Environment Agency

Figure 4.7: Ecological status or potential for rivers, canals and surface water bodies in the South West



Source: Water for Life and livelihoods: River Basin Management Plan South West River Basin District Annex A: Current state of waters Environment Agency (2009)

Coastal waters

4.24 The bathing water results announced by Defra for 2009 showed a significant improvement on the previous year with 186 (97.3%) of the bathing waters in the South West passing the water quality standard. Five bathing waters failed to meet the mandatory (basic) standard, compared to 10 in 2008. 84% of waters in the South West met the more stringent EC Guideline coastal water status compared with 75.4% compliance in 2008.

Groundwaters

4.25 In Dorset the Environment Agency monitor groundwater for the Dorset Stour and Frome Piddle. The principle diffuse contaminant is nitrate, the source of which is likely to be the application of nitrate fertilisers and manure on agricultural land. Herbicides have also been detected in groundwater, again probably related to agricultural uses.

4.26 To minimise the potential impacts on groundwater, the Environment Agency have designated Source Protection Zones (SPZs) which take into consideration the position of aquifers and the flow of groundwater through them.

Water consumption

4.27 Some matters related to water resource availability are covered in the sections relating to the three CAMS on the three main catchments in Dorset. In addition Wessex Water

prepare a water resource management plan[4]. The two resource zones that cover most of Dorset are the Wessex Water south and west zones. The resource plan concludes there is enough available water resource to meet demands over the coming years.

Flooding

4.28 Flood risk has two components: the change (probability) of a particular flood and the impact (or consequence) that the flood would have if it happened. The probability of a flood relates to the likelihood of a flood of that size occurring within a one year period. It is expressed as a percentage, for example a 1% flood has a 1% chance or 0.01 probability of occurring in any one year, and a 0.5% chance of 0.005 probability of occurring in any one year.

4.29 The Environment Agency publishes Flood Zone Maps. Flood Zones are based on annual probabilities of flooding, and show the flooding that would occur without the flood defences. Figure 4.8 shows:

4.30 The risk zones are defined in PPS25: Development and Flood Risk (December 2006). The zones are:

- Flood Risk Zone 1 – Low Probability: This zone comprises land assessed as having a less than 1 in 1000 annual probability
- Flood Risk Zone 2 – Medium Probability: This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding or between a 1 in 200 and a 1 in 1000 annual probability of sea flooding in any year
- Flood Risk Zone 3 – High Probability: This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding or a 1 in 200 or greater annual probability of flooding from the sea
- Flood Risk Zone 4 – The Functional Floodplain: This zone comprises land where water has to flow or be stored in times of flood. SFRAs should identify this Flood Zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme flood).

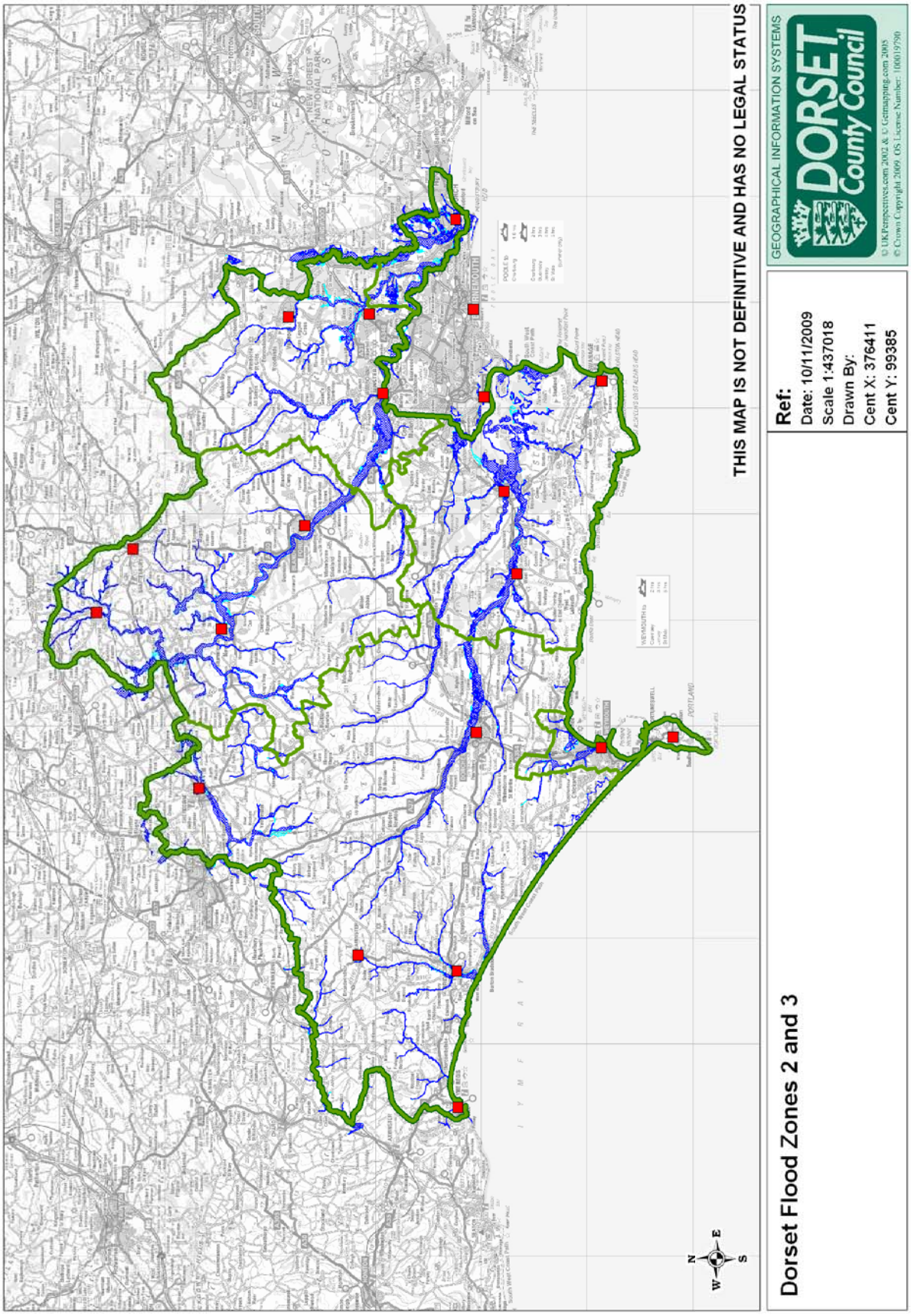
4.31 PPS25 defines 'caravans, mobile homes and park homes intended for permanent residential use' as *highly vulnerable* uses. This will include sites for Gypsy and Traveller pitches. PPS25 clearly states that this highly vulnerable use can only take place in the lowest risk zone Flood Zone 1 and in Flood Zone 2 where following an exceptions test (i.e. showing the site is otherwise a sustainable choice and there are no sites of a similar quality available in Zone 1). Highly vulnerable uses can not be located in Flood Zones 3a and 3b.

4.32 The **Dorset Stour** catchment has a long history of flooding. The most significant event in recent years occurred in Ilford and Longham and other hamlets in November 2002 when 80 properties were affected by flooding after a period of heavy rainfall on a saturated catchment.

4.33 Overview of the current flood risk: At present there are around 1500 people and 800 commercial and residential properties at risk in the whole catchment from a 1% annual probability river flood taking into account current flood defences. This means that 1% of the total population living in the catchment are at risk from flooding.

[4] Wessex Water Services Ltd (May 2008) *Water Resources Management Plan: draft for consultation*

Figure 4.8: Dorset Flood Zones 2 and 3



4.34 The **Frome and the Piddle** catchment also has a long history of flooding. The most significant event in recent years occurred in Piddletrenthide, Maiden Newton, Sydling St Nicholas and other hamlets in October 2000 to January 2001 when 90 properties and two caravan parks were affected by groundwater, surface water and river flooding after periods of heavy rainfall.

4.35 Currently the main sources of flood risk for people, property, infrastructure and land in the Frome/Piddle catchment are:

- River flooding from the River Frome in Dorchester and Maiden Newton, River Piddle in Wareham, River Carne in Cerne Abbas and River Swan in Swanage
- Tidal flooding in Wareham and Swanage
- Surface water drainage flooding, which has occurred in Frampton, Swanage and Wareham
- Other towns have the potential to be at risk from surface water flooding
- Groundwater flooding which has occurred in Milborne St Andrew, Cerne Abbas, Dorchester and other isolated locations throughout the catchment.

4.36 Overview of the current flood risk: At present there are around 1900 people and 1160 commercial and residential properties at risk in the whole catchment from a 1% annual probability river flood taking into account current flood defences. This means that 1% of the total population living the catchment are currently at risk from flooding.

4.37 Sources of flood risk within the **West Dorset** catchment include fluvial, surface water and tidal flooding. Fluvial flood risk is associated with the Rivers Char, Brit, Asker, Bride and Wey. Over half of all properties at risk of economic damage due to flooding are in Bridport. There are also significant numbers of properties at risk in Beaminster, Burton Bradstock and Nottington. Several designated environmental sites and historical features are also at risk of flooding.

4.38 However, the number of caravan, camping and holiday parks at risk is a particular issue in this area. Although a flood warning system is in place for the River Char, Brit, Asker, Bride and Wey, in some areas, particularly upstream, there is less than two hours warning of an impending flood. There is no flood warning for many locations next to smaller watercourses.

4.39 Overview of the current flood risk: Today there are approximately 700 properties across the catchment at risk of flooding from rivers and the tide, at a 1% annual probability (rivers of 0.5% annual probability (tidal) event). Also at risk are a water treatment works, two sewage treatment works, a fire station, two police stations, a care home, two health centres and a school. The area includes a number of caravan, camping and holiday parks that represent highly vulnerably uses at risk of flood.

4.40 In East Devon and Christchurch there is a fluvial flood risk from the Hampshire **River Avon**. There have been flooding incidents in the Lower Avon area in 2000 and 2003. The Dorset areas within this River floodplain are identified as locations of low, moderate or high flood risk where risk is being actively managed but further action may be needed to take into account changing climate. Some of the flood risk is attributable to groundwater levels.

4.41 In the Christchurch area the risk is higher and further action can be taken to reduce this risk. The greatest risk comes on reliance on raised defences in Christchurch, where predicted sea level rise and increasing flood flows could lead to overtopping with severe impacts.

4.42 There is also flood risk for **tidal inundation** along the coast. Predicted sea level rise will increase the pressure on sea defences increasing the chances of tidal inundation. Locations at particular risk are at Weymouth, Christchurch and Poole.

Strategic Flood Risk Assessment

4.43 As required by PPS25, Dorset County Council is currently preparing a Strategic Flood Risk Assessment (SFRA). The Districts within the county, Bournemouth and Poole are already covered by their own SFRAs.

Relevant policy documents

Policy documents	Relevance to Gypsy and Traveller DPD
Key international policies: • EU Water Framework Directive (2000/60/EC) • EC Groundwater Directive (80/68/EEC)	• The location of Gypsy and Traveller sites will need to take into account available water resources and in-combination impacts with other development in the area • No Gypsy and Traveller sites can be located in Flood Zones 3a and 3b, and only in Zone 2 following a sequential test. • Gypsy and Traveller sites need to be developed to avoid harm to surface or groundwaters, including from pollution impacts during use and at construction. • To avoid exacerbating the risk of flood new Gypsy and Traveller pitch sites may need to incorporate sustainable drainage systems and permeable surfaces.
Key national: • PPS23: Planning and pollution control • PPS25: Flood Risk • PPG20: Coastal Planning • Water for Life and Livelihoods - River Basin Management Plan South Wets River Basin District (EA)	
Key Local Policy • EA Catchment Abstraction Management Plans and annual reviews and Catchment Flood Management Plans: **Dorset Stour; Frome, Piddle; West Dorset** • Local Strategic Flood Risk Assessment	

Potential impacts related to gypsy and traveller sites

4.44 The baseline and review of plans and programmes identifies key issues for water quality and flood in Dorset, Bournemouth and Poole related to the DPD. This is to:

- Ensure Gypsy and Traveller sites are not permitted in locations with an unacceptable risk of flood
- Ensure Gypsy and Traveller sites do not put surface or ground water quality at risk of contamination.
- Ensure the design of Gypsy and Traveller sites achieves greenfield water run-off rates through sustainable drainage systems
- Identify sites that can be connected to mains sewerage systems where possible

- Ensure the design and location of Gypsy and Traveller sites avoids run-off from site to surface water bodies.

Suggested Sustainability Objectives related to this topic

4.45 To aid with the assessment the following are suggested as objectives for water quality, supply and flooding. The objectives also integrate with a cross-cutting objective for addressing climate change, these are marked with an asterisk* and sub-objectives in italics.

Headline	Objective	Sub-objectives
Water quality and supply*	To maintain and improve the quality of ground, surface and coastal waters and maintain the quantity of water available including potable water supplies, and ground water and river levels.	• ensure new development has sufficient sewerage and waste water treatment to avoid harm to water quality • ensure contaminated land is suitability remediated to avoid water quality impacts • implemented suitable SUDS to avoid run-off of potential polluted water to water courses or aquifers • reduce diffuse pollution • help to meet objectives of achieving good ecological status for surface waters; good status for groundwaters; and no deterioration across all water bodies • *ensure new development makes the best use of potable water, incorporating re-use of grey water in new development*
Flood risk*	Ensure that new development is designed and located to avoid the risk of flooding, and ensure the risk of flooding is not increased elsewhere	• *ensure that new development is located so as to avoid the risks of fluvial and tidal flooding associated with climate change* • *aim for greenfield water run-off rates from new development* • *make use of SUDS to avoid run-off to rivers*