

Devon Strategic Partnership

stronger together

Sustainable Community Strategy for Devon

Theme Analysis

Environment

Draft for consultation

January 2007

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Devon Strategic Partnership Sustainable Community Strategy

Strategic Analysis Template for Evidence Base

Environment theme analysis

Context: the DSP is producing a new Sustainable Community Strategy by mid 2007. One part of this document is to be a web based evidence base to be developed by early 2007. This document contributes to the evidence base by taking the statistical data that has been identified for every theme, and providing an expert strategic analysis that ideally has the backing of key agencies and organisations in the theme. When this information is added to the views of residents, agencies and organisations regarding current issues and a vision for the future, a clear mandate will be established for the issues that the Devon Strategic Partnership should be pursuing in the Sustainable Community Strategy.

Theme: ENVIRONMENT
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Link to theme/ Devon Strategic Partnership Environment theme co-lead

Please list the key people/ organisations this response has been discussed & agreed with:	
Devon Rural Network	
Natural England	
Devon Wildlife Trust	
Climate Change Officer, DCC	
Waste Regulatory team, Environment Agency	

Signed on behalf of the theme:

Date:

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ISSUE No: One

TITLE OF ISSUE: Flood Risk

1 Identification of Issue

a What is the issue for Devon? Flooding, from all sources, is a natural process which can, however, endanger lives, damage buildings, adversely affect health and change the characteristics of landscapes and habitats – as well as disrupting lives and livelihoods.

9% of properties in Devon (33,824) are in Flood Zone 2, which puts them at 0.1% or greater risk of flooding. 6.6% of properties (24,551) are in Flood Zone 3, which puts them at 1% or greater risk of flooding. Wetter winters (including increased intensity of rainfall) and rising sea levels, both caused by climate change, will add to the risk.

10% of those who live in the highest flood risk areas in Devon currently subscribe to the Environment Agency's automatic warning system

Changes in agricultural practices and a degree of urbanisation throughout the county will change the capacity of the soil to absorb water, so increasing the frequency and severity of flooding events. Increasing pressure for development has to be balanced against exacerbating flood risk.

b Who does it affect? All those who live in flood risk areas (greater or lesser) in Devon: more than 15% of properties.

c Does it affect all of Devon geographically or certain parts? Dependent on flood risk across the county; for example: Tiverton, Exeter, Dawlish, Bideford have problems.

2 Justification/ demonstration of Issue

a How do you know the issue is there?

i Datasets/ indicators

National Flood Zone Maps (Environment Agency)

Rainfall data

Local historic flooding records (Environment Agency); numbers subscribing to automatic warning system in Devon

Interesting facts:

- Sea level around the Devon coast is expected to rise approximately cm per decade
- Winters are expected to be up to 20% wetter by 2050s

b Links to other strategies

Document or author	Title of document and web address?	How is issue raised?	Implications for Devon
National Flood Warning Investment Strategy for England and Wales 2003/04-2012/13	www.defra.gov.uk		New flood warning system introduced
Map illustrating estimated sea-level changes	www.Ukcip.org.uk		More coastal flooding
Regional Spatial Strategy	SW Regional Spatial Strategy	'Enhancing distinctive environments and cultural life'	Development must take account of flood risk
State of the Environment in the South West 2006	www.swenvo.org.uk/	'Flooding'	Raising awareness

c Links to / impact on other themes / issues

Theme / issue	Possible links to/ impact of this issue on:
Environmental sustainability, including climate change and sustainable energy	Climate change will exacerbate the problems Impact on coastal habitats
Economic sustainability	Damage to lives and livelihoods Flood restitution and repair Increased insurance premiums Costly flood defences (new build and maintenance)
Rural issues	Environmental damage e.g. erosion
Housing	No development permitted in the floodplain Integration of sustainable drainage systems will be necessary Flood Risk Assessments will be required
Health	Danger to life in a severe flood Resulting ill-health problems arising in the aftermath
Older people	Difficulty of evacuation in extreme events (health as before)

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Safer Devon	Extreme events can endanger life
Transport and accessibility	Infrastructure must be secure from flooding Disruption in a major event

3 Drawing on the above, what therefore is/ are the challenge(s) Devon must meet to address this issue?

Issue: Risk from flooding

Challenge: Prevent and mitigate flood risk

- no development in areas at risk of flooding
- no development which increases the risk of flooding to others
- provide flood defences where appropriate
- maintain existing flood defences
- increase use of sustainable drainage schemes
- extend flood warning system to cover more of those at risk

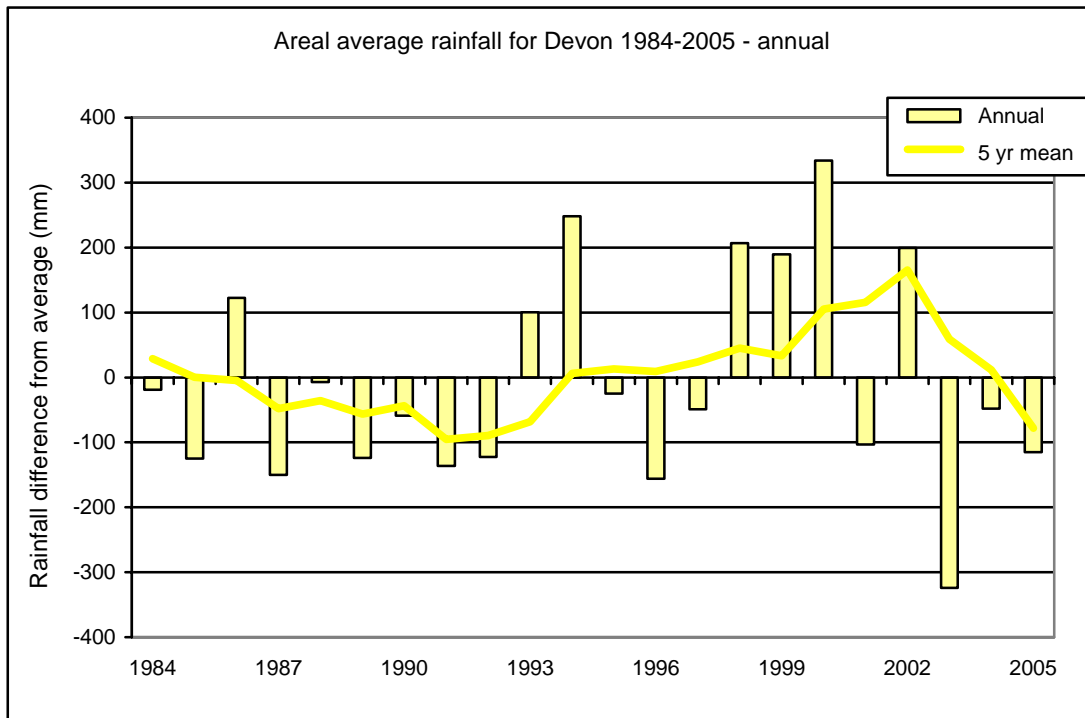
Flood Risk

Indicator 1 - Environment Agency - National Flood Zone map for Devon



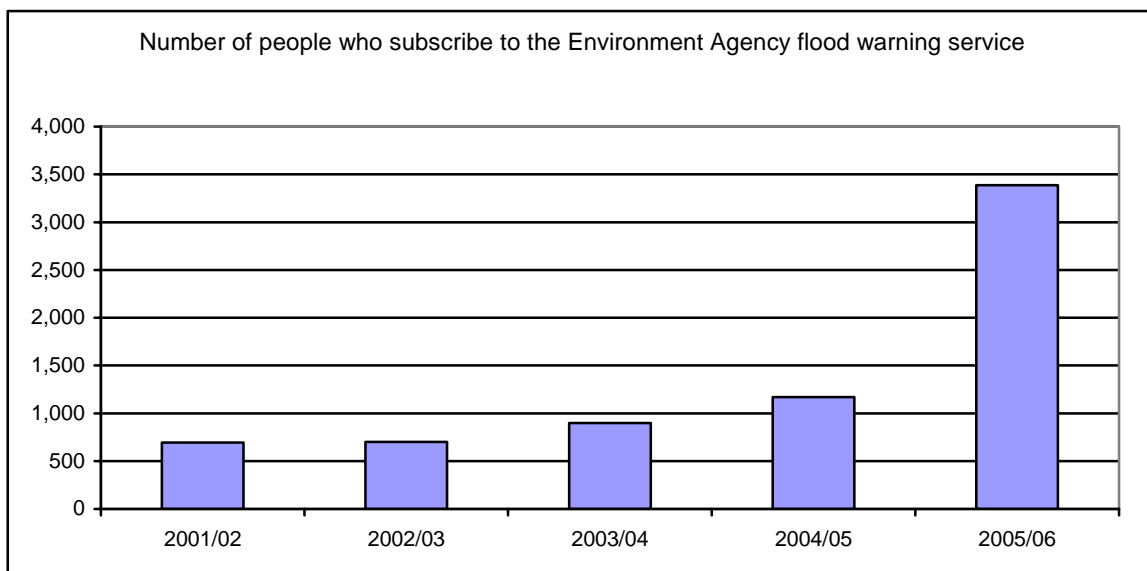
Source: Environment Agency

Indicator 2 – Average rainfall (winter & summer)



Source: Environment Agency

Indicator 3 – Number of people who subscribe to the Environment Agency flood warning service



Source: Environment Agency

Note: The above data relates to the number of people who subscribe to the Environment Agency flood warning service. The numbers who subscribe over the years has risen. It can not be confirmed by the Environment Agency that the risk of flooding has increased, but the data demonstrates the number of people being warned has increased.

This is the number of properties registered to receive a direct flood warning in the Devon area. Please note there were no new subscribers allowed between December 2004 and January 2006 because the system changed.

ISSUE No: Two

TITLE OF ISSUE: The waste problem

1 Identification of Issue

- a What is the issue for Devon?** The government has set landfill allowances for local authorities so that the whole country reaches the targets set by the Landfill Directive for reducing the amount of biodegradable municipal waste going to landfill. By 2010 this must be reduced to 75% of 1995 levels. Landfill remains the major method of waste disposal in Devon. There are currently 232 waste management facilities (of all types) in Devon. With a growing amount of waste produced each year and with the capacity of landfill sites diminishing, this is a challenge. Sustainability, waste of natural resources and pollution are also factors of the waste disposal problem. There were over 6000 reported fly-tipping incidents in Devon in 2005/06.

Figures for Devon County Council's recycling and composting performance (2005/06) show a combined recycling and composting rate of 40.6%, which exceeds the revised target for this period. This improvement should continue. Individual district councils' performance within Devon are less consistent, with targets not being met. The unitary councils of Torbay and Plymouth have figures of 25.6% and 22.3% respectively.

Eliminating and reducing waste are 'top' of the waste hierarchy. Everybody has a responsibility to reduce the volume of waste created, to produce less hazardous waste and to comply with waste regulations. Commercial and industrial premises in Devon produced 20% of the regional total for such waste in 2002/03 (1.13 million tonnes). In terms of industrial waste, Devon produced 519 thousand tonnes, more than in Dorset, Wiltshire or 'Former Avon', for example.

- b Who does it affect?** All who live in Devon.
- c Does it affect all of Devon geographically or certain parts?** All.

2 Justification / demonstration of Issue

- a How do you know the issue is there?**

i Datasets/ indicators

- National/ regional: Municipal Waste Survey 2004/05 (DEFRA, 2006);
- some 'facts and figures' easy read information

Interesting facts

- The household waste that Devon's councils have to deal with each year could cover a football pitch up to a height of 1 km.
- In the redevelopment of Exeter's Princesshay area, 43,000 tonnes of demolition waste was reused on site.
- Harbour users in Salcombe now have a recycling facility for boat waste on the pontoons

b Links to other strategies

Document or author	Title of document and web address?	How is issue raised?	Implications for Devon
Regional Spatial Strategy	Section 7 relating to 'environment'	Outlines strategy to reduce waste so that 'by 2020 less than 20% of waste produced in the region will be landfilled'. Speaks of the need to accommodate new treatment facilities to meet recovery targets.	Need to further reduce waste going to landfill. Need to look at provision of new treatment facilities?
From Rubbish to Resource (Regional Waste Strategy, 2004)	www.southwest-ra.gov.uk	Whole document	Do what is necessary to deliver required results
DCC	Municipal Waste Management Strategy for Devon (2005) devon.gov.uk	Details how Devon's domestic waste will be dealt with over next 30 years	Strategy specifically for Devon to be implemented
Low Waste South West	Oursouthwest.com	Outline of key info resources for business including: Sustainable Business; Pioneers of Packaging; Future Foundations	Devon businesses work towards a sustainable approach to waste
State of the South West report 2006	www.swo.org.uk	Headline facts	Compare with other counties in SW

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State of the Environment in the South West 2006	www.swenvo.org.uk/	Chapter on waste	
Creating a Better Place: Improving the environment in the South West region	Environment-agency.gov.uk	Section on waste	

c. Links to/ impact on other themes/ issues

Theme/ issue	Possible links to/ impact of this issue on:
Environmental sustainability, including climate change and sustainable energy	Better use of natural resource; sustainable construction & waste to energy technology
Economic sustainability	Business in Devon implements a more sustainable approach to waste (commercial and industrial) which reduces costs New technologies and treatments provide economic opportunities Using Landfill Allowance Trading Scheme
Social sustainability e.g. community cohesiveness and individual well being	
Rural issues	
Housing	Sustainable construction re-using demolition waste
Health	Impact on those living in proximity to landfills
Older people	
Children and young people	Waste Education Steering Group: recycling and composting into the schoolyard

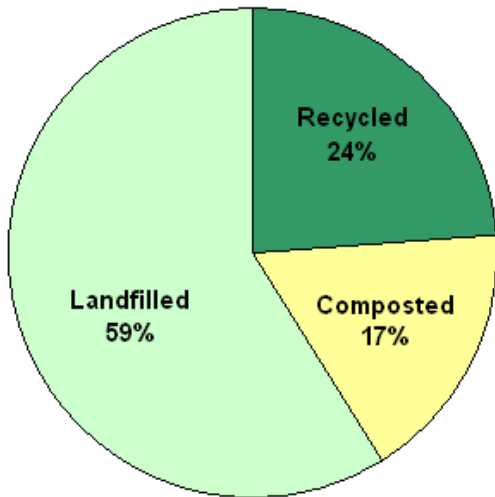
3 Drawing on the above, what therefore is/ are the challenge(s) Devon must meet to address this issue?

- Reduce commercial/industrial waste production
- Hit government-set targets
- Educate wider public to reduce waste production (and if not reduce, then recycle and compost)
- Councils introduce commercial and industrial collections
- Develop markets for recycled and recovered materials
- Lack of recycling plants within Devon is a barrier to increasing recycling
- Need for a waste exchange in the county for businesses?

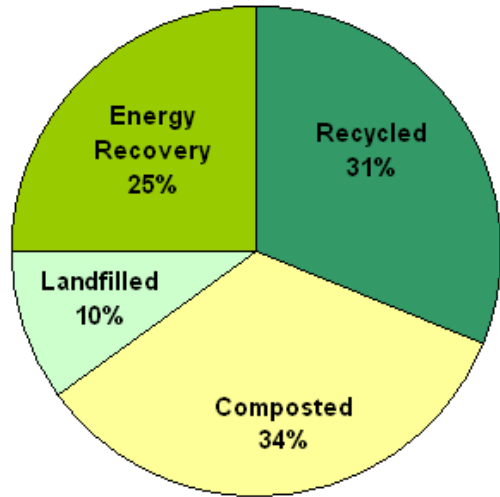
The waste problem

Indicator 4 – Management of household waste

Management of household waste
2005/06



Proposed
Management of household waste
2025/26



Source: Devon County Council

ISSUE No: Three

TITLE OF ISSUE: Soils and run-off

1 Identification of Issue

- a What is the issue for Devon?** Centuries of farmland and woodland management in Devon have shaped the landscape and wildlife. However, the large amount of agricultural land in the county, and the way it is farmed, can cause a range of detrimental impacts.

Agricultural pollution is the single biggest cause of water quality problems in Devon, particularly in the Axe, Exe, Taw and Torridge catchments. It also contributes to failures in Bathing Water Quality standards and impacts on shellfisheries.

Run-off from land can increase flood risk, pollute rivers and harm aquatic wildlife, for example by smothering fish spawning gravels e.g. those in the River Torridge. Nitrate levels in groundwater have been steadily rising as a result of the increased application of fertilisers to agricultural land. (Levels of nitrate in the Lower Otter sandstone in East Devon have increased by 80% since 2004). Livestock access causes erosion e.g. bankside erosion by cattle in Rivers Torridge and Otter, and by pigs in River Otter.

Pesticides such as atrazine have an impact both on human health and sites of nature conservation importance e.g. Exe Estuary SPA. Agricultural drainage results in the loss of key habitats and species e.g. loss of South Dartmoor blanket bog and valley mires.

- b Who does it affect?** The human population, wildlife and habitats.
- c Does it affect all of Devon geographically or certain parts?** Named areas/examples in **a)** above.

2 Justification/ demonstration of Issue

a. How do you know the issue is there?

i. Datasets/ indicators

- Defra.gov.uk/environment – annual Agricultural Census
- Catchment Sensitive Farming initiative defra.gov.uk & fwag.org.uk
- South West Observatory swo.org.uk
- Environment Agency environment-agency.gov.uk
- some ‘facts and figures’ easy read information

Interesting facts:

- The herbicide atrazine, which has been detected in groundwater, can feminize male frogs
- Water companies spend millions of pounds removing both nitrate and agricultural chemicals from our water to make it fit to drink

ii. Research

Work carried out by Farming and Wildlife Advisory Group (FWAG) fwag.org.uk. Example: Cycleau project in Axe/Char

b. Links to other strategies

Document or author	Title of document and web address?	How is issue raised?	Implications for Devon
Regional Spatial Strategy	Various sections	E.g. the importance of the environment as an economic driver	Compliance with stated RSS's aims
Our environment, our future	Southwest-ra.gov.uk		
Devon Rural Strategy	Devon – Towards a strategy, an agenda for 2007 www.drn.org.uk	The Environment – an Opportunity?	Stats on rural Devon; linking rural activity and the promotion of the rural environment with the economy of the county
State of the Environment in the South West 2006	www.swenvo.org.uk/	Agriculture and soils	Complete projects underway in Devon; Devon farmers take advantage of new grants etc
Creating a Better Place Improving the environment in the south west region	Environment-agency.gov.uk	Encourage farming practices which protect soils and water	Implementation

c. Links to/ impact on other themes/ issues

Theme/ issue	Possible links to/ impact of this issue on:
Environmental sustainability, including climate change and sustainable energy	Wetter winters mean more run-off (climate change) which leads to increased flood risk and pollution of rivers and bathing waters. Habitats and wildlife are affected (unsustainable). Protection and enhancement of natural resources. Low impact farming; afforestation in reducing run-off.
Economic sustainability	Better farming practices mean better economic performance
Social sustainability e.g. community cohesiveness and individual well being	Community projects to look after rivers and surrounding areas. Possible tension between community and farmers.
Health	Increased levels of pesticides and herbicides. Less use of rivers for recreational/healthy activities, such as rowing and canoeing.

3 Drawing on the above, what therefore is/ are the challenge(s) Devon must meet to address this issue?

Challenges:

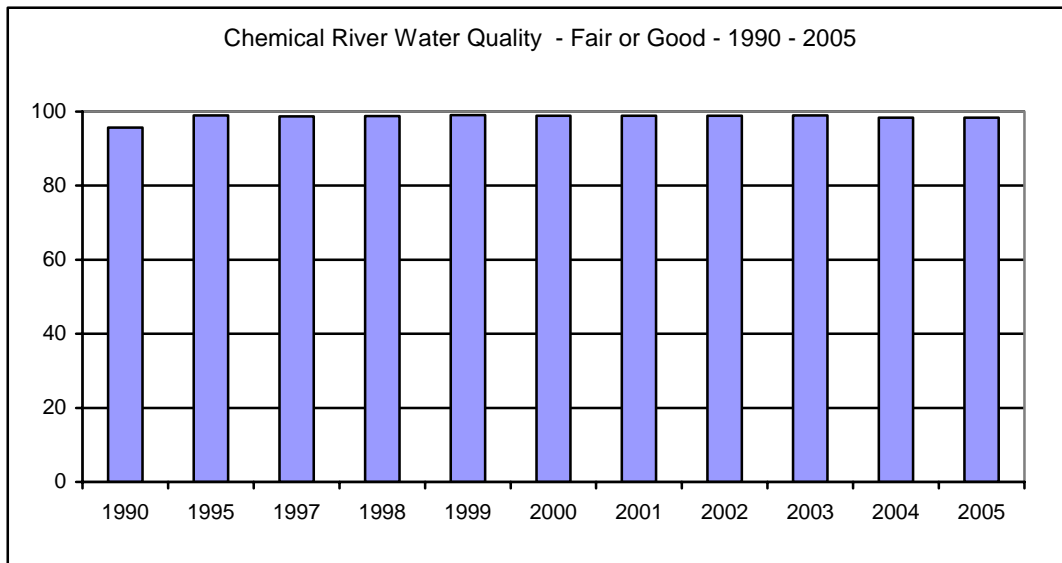
- Establish farming practices which protect soils and water
- Farmers take advantage of available schemes (e.g. Single Payment Scheme; Entry and Higher Level Stewardship schemes). These schemes require land to be kept in Good Agricultural and Environmental Condition as a minimum.
- Well managed agricultural land enhances the environment for wildlife and also provides an opportunity for tourism as an additional income

Soils and run off

Indicator 5 – Percentage of surveyed sites with poor soil structure

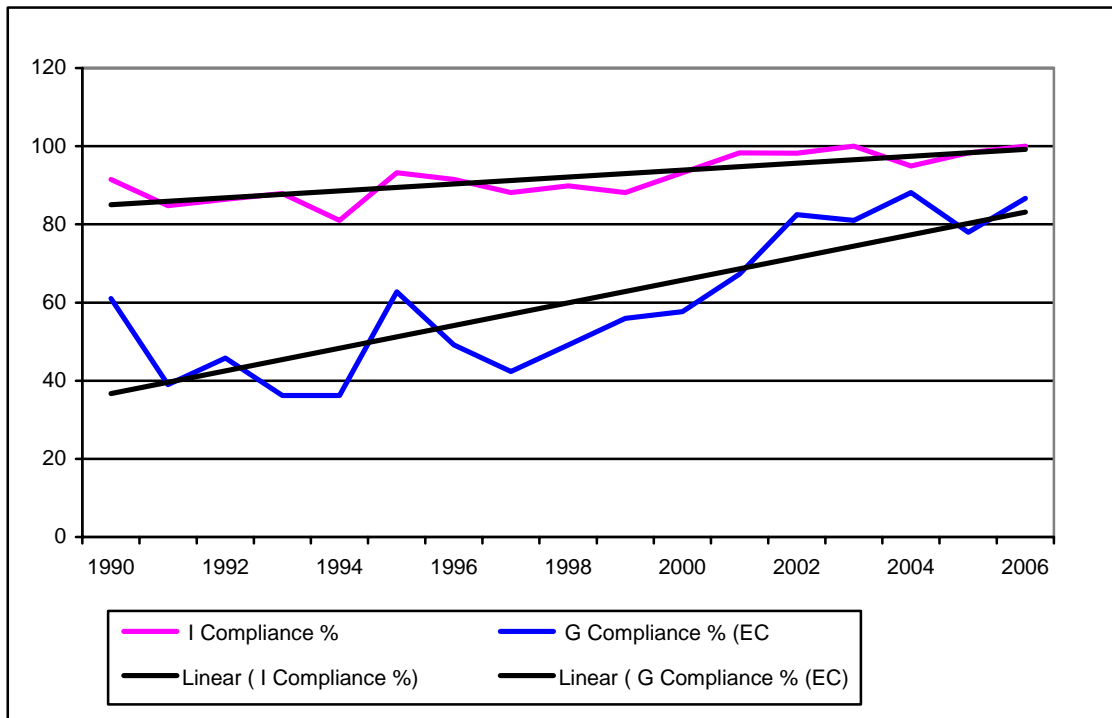
Survey conducted by the National Soils Resources Institute on behalf of the Environment Agency in a number of specific South West river catchments between 2002 and 2005. These surveys found that in all of the catchments surveyed, a proportion of the sites had poor soil structure sufficient enough to cause enhanced runoff.

Indicator 6 – Percentage of chemically good/fair river stretches



Source: Environment Agency

Indicator 7 – Percentage compliance with Bathing Water Quality Standards



Source: Environment Agency

Devon Historic Bathing Water Compliance

Bathing Waters have improved against the mandatory standards since 1990. However since 1999 there has been a steady rise from a low of 88% to 100% compliance in 2006. Assessment against Guideline standards show a significant improvement particularly from 1997 when we recorded 42% compliance up to 2006 when 87% was recorded.

ISSUE No: Four

TITLE OF ISSUE: Habitat fragmentation

1 Identification of Issue

a What is the issue for Devon?

- Devon still contains a significant number of wildlife rich sites, but they are mostly fragments of a historically much richer, more extensive and largely contiguous suite of habitats. The issues are:
- They are not all recorded – the CWS survey is incomplete, so we don't even know where all the fragments are
- They are not all protected – below NNR/SSSI level, management is patchy. The likely decline in the number of sites in protection/good management resulting from the new improved Environmental Stewardship scheme (it is rumoured that 50% at least of sites currently in CS and ESA agreements will not get renewal) is set to make the situation worse.
- There is no overall blueprint for management. In particular, bodies which hold and manage land for biodiversity (LAs, NGOs etc) haven't established a common understanding.
- Fragmented habitat will be particularly vulnerable to climate change

b Who does it affect? Everyone. There is a huge (and generally unrecognised and unquantified) public benefit. There is a particular benefit to the Tourism industry.

c Does it affect all of Devon geographically or certain parts? All of Devon

2 Justification/ demonstration of Issue

Any comparison of contemporary information with historical data will serve. The [Devon BAP](#) sets it out pretty starkly.

a How do you know the issue is there?

i Datasets/ indicators

- national/ regional – [UK BAP](#) is the most obvious
- trend data – There are many examples. The Culm data set shows an alarming downward trend (and so do most of the others)
- some 'facts and figures' easy read information

Interesting facts:

- 74.7% of SSSI land is in target condition in Devon
- Devon is a very important county for many declining species and habitats eg Cirl Bunting; Brown Hare; Fresh Water Pearl Mussel; Marsh Fritillary; Rhos pasture.

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- gaps in data – the County’s failure collectively to invest in DBRC means we have only partial info on which to base any solution.
- ii **Practitioner and expert experience of issue** - DWT has first hand experience of declines on the Culm, in Lyme Bay (it is a marine issue too), on Bovey Basin heaths – to mention but a few.

b Links to other strategies

Document or author	Title of document and web address?	How is issue raised?	Implications for Devon
South West Nature Map	www.swenvo.org.uk/	N/a	Shows best areas to conserve, create and connect wildlife habitats
Devon Biodiversity Action Plan	www.devon.gov.uk		Implementation
State of the Environment in the South West 2006	www.swenvo.org.uk/	See Biodiversity section	Bird populations; state of salmon rivers; state of designated conservation sites
State of the South West report	www.swo.org.uk	Environment section: links to other reports eg RSPB	
Land Between the Moors	www.southwestforest.org.uk	Project to test the Local Land Management Framework (LLMF) within the Culm area	Supported by DCC

c Links to / impacts on other themes / issues

Theme/ issue	Possible links to/ impact of this issue on:
Environmental sustainability, including climate change and sustainable energy	Impact on wildlife and habitats of climate change; non-sustainable development & land management impact on habitat;
Economic sustainability	Tourism; Devon's environment as its USP?
Social sustainability e.g. community cohesiveness and individual well being	Local distinctiveness; cultural heritage
Rural issues	Rural regeneration
Health	There is increasing evidence of the wellbeing value of access to the natural environment

3 Drawing on the above, what therefore is/ are the challenge(s) Devon must meet to address this issue?

Challenges:

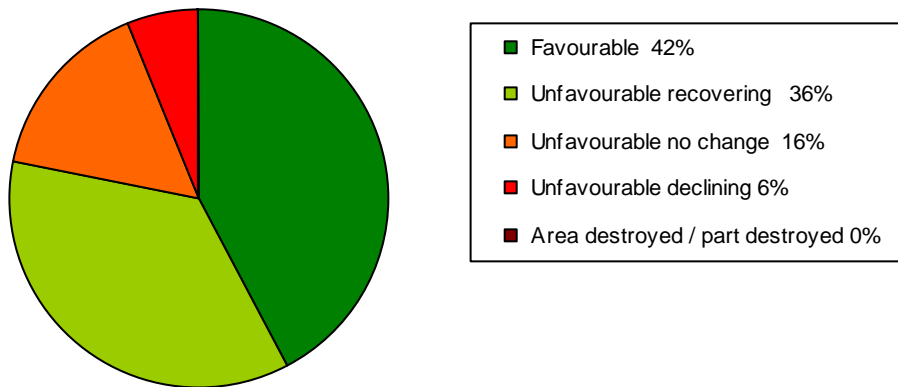
- To produce a full survey of County Wildlife Sites to aid monitoring and strategic planning
- To undertake a programme of Rebuilding Biodiversity which will optimise the biodiversity of existing wildlife rich habitat fragments, extend them through habitat restoration and creation, link them with wildlife rich corridors and create an economic framework which will support them in the long term.

Habitat fragmentation

74.7% of SSSI land is in target condition in Devon

Devon is a very important county for many declining species and habitats e.g. Cirl Bunting; Brown Hare; Fresh Water Pearl Mussel; Marsh Fritillary, Rhos Pasture

Indicator 8 – Percentage of Sites of Special Scientific Interest (SSSIs) that are in favourable conditions



Source: English Nature October 2006

Indicator 9 – Specific habitat types found in DevonData drawn from [Devon Biodiversity Action Plan](#)

Broad Habitat	Specific Habitat type	Approx. area (in hectares)	% land cover
Woodland (1&2)	All Woodland	58,813	8.0
	Ancient Woodland	14,922	2.2
	Ancient Semi-Natural Woodland	8,791	1.3
	Parkland	1,753	0.3
	Dense Scrub	3,619	0.5
Grassland (2, 3, 4, 5 & 6)	Chalk and Limestone Grassland	240	0.04
	Neutral Pastures and Meadows	2,000	0.30
	Rhos Pasture and Marshy Grassland	5,140	0.76
	Coastal Grassland (including mosaics of grassland, scrub and bracken)	3,300	0.49
	Upland and Acidic Grassland (includes grass Moorland and associated bracken / scrub)	26,400	3.92
Heathland (2, 3, 4 & 5)	Heather Moorland	15,650	2.32
	Upland Mire / Blanket Bog	13,800	2.05
	Lowland Heathland	2,850	0.42
Freshwater Systems (2 & 3)	Rivers, Streams and Other Watercourses	c. 13,400km	
	Watered Canal	c. 30km	
	Reedbed (Freshwater) [Only sites > 0.5 ha]	58	
	Reedbed (Brackish) [Only sites > 0.5 ha]	34	
Coastal Habitats (2)	Intertidal Shore	4,950	0.74
	Saltmarsh	350	0.05
	Dunes	1,200	0.18
	Cliff and Scree	1,200	0.18

Source: The figures shown above are estimates based on a wide range of published and unpublished information sources, prominent amongst which are the following:

1. Devon Inventory of Ancient Woodland
2. Phase 1 Land Use and Habitat Survey of Devon
3. Devon Biodiversity Record Centre information based on District-wide Wildlife Surveys
4. Silsoe College figures on Landscape Change in the National Parks of England and Wales
5. Dartmoor National Park figures from survey of Duchy Newtakes
6. Somerset Trust for Nature Conservation Report on Grasslands in Exmoor National Park

Indicator 10 – Percentage change in bird populations

Data is available for the South West Region only in the following categories – Wild Birds (including woodland and farmland), Native Birds, Farmland, Woodland – 1994 – 2004

Example of chart – South West Bird Indicator 1970 – 2000 (population index 1970 = 100)

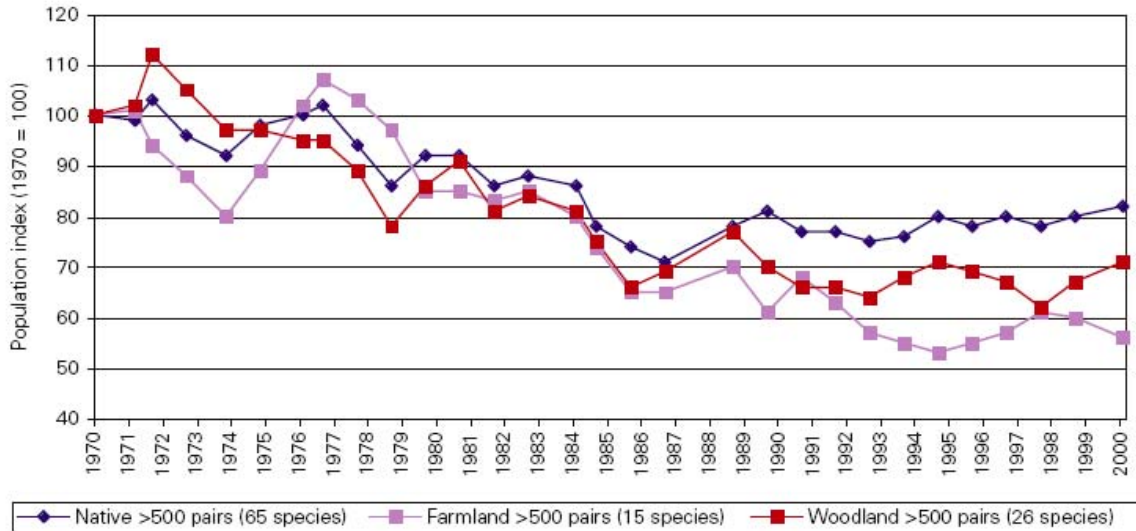


Figure 4: South West Bird Indicator 1970 - 2000
Source: RSPB, BTO, DETR 2000

ISSUE No: Five

TITLE OF ISSUE: Impacts of Climate Change

1 Identification of Issue

- a What is the issue for Devon?** Climate change is the number one environmental challenge that we face over the next five years and beyond. It is real and it is happening now. The scientific evidence is irrefutable and the impacts are already being felt. Temperatures are increasing, sea levels are already rising and there are changes in seasonal rainfall patterns, increasing the risk of flooding. Climate change will have a major impact on the environment and has the potential to undermine the environmental improvements that have been achieved in recent years.

Scientific understanding is improving rapidly and providing greater clarity about the nature and extent of impacts. The latest research suggests that the challenge to restrain temperature rises to two degrees Celsius, and thus avoid dangerous impacts, may be even greater than we thought.

A low carbon energy future is essential to try to limit the extent of climate change. But whatever our success with mitigation measures, the UK will have to adapt to the unavoidable impacts of climate change. Our climate, weather and the state of the atmosphere are of great importance to the economic, social and environmental health of Devon.

- b Who does it affect?** The whole community, businesses, wildlife, habitats
- c Does it affect all of Devon geographically or certain parts?** All of Devon

2 Justification/ demonstration of Issue

- a How do you know the issue is there?**

i Datasets/ indicators

- 'Warming to the Idea' - Regional UKCIP Scenarios for the SW describing how climate will change for the 2020's, 2050's and 2080's

Within the South West

- Average temperatures in the 2050s may be as much as 3.5°C warmer in summer.
 - Winters may be 5 - 20% wetter.
 - Summers 10 - 40% drier.
 - Heavy winter precipitation could be about twice as frequent by the 2080s.
 - Sea level rise could be as much as 80 cm.
 - Extreme sea levels are already being experienced more frequently, and could occur up to 20 times more frequently than they do now by the 2080s.
- More detailed info is not yet available; a new set of scenarios (UKCIPnext) which will be available on a smaller grid scale should be out next year.

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- National data shows that temperatures are increasing within the UK so we are having warmer summers and milder winters. We are experiencing increased winter rainfall, with a trend over the past few decades to a greater proportion of winter rainfall falling in extreme 3-day events. Sea level is increasing within the SW.
- 'Warming to the Idea report produced by the SWCCIP available on www.oursouthwest.com/climate

ii Research There is discussion underway about undertaking research in this area in the form of a Local Climate Profile (CLIP) and work on sub-regional climate indicators.

b Links to other strategies

Document or author	Title of document and web address?	How is issue raised?	Implications for Devon
Regional Spatial Strategy	SW Regional Spatial Strategy	Recognises climate change as a cross-cutting issue 'Climate change is a serious global issue already affecting the South West'	Will affect a number of areas within Devon e.g. development, increasing renewables etc.
Major Research	UKCIP Hadley Centre, (Met Office) conducting research into climate change as well as many others (Met-office.gov.uk)	Research into effects	More information on climate changes and sea level rise to be expected
UK Climate Impacts Programme (funded by DEFRA)	www.Ukcip.org.uk	National programme	Tools for local use
Stern review on the economics of climate change (2006)	www.hm-treasury.gov.uk	Climate change and the economy	
State of the South West report	www.swo.org.uk	Climate change section, covering impact on the environment, society and the economy	Understanding the implications

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SW Climate Change Impact Scoping Study	Warming to the idea www.oursouthwest.co.uk/m/climate	SWCCIP CC Scenarios and indicators	Better understanding; tools for local use
State of the Environment in the South West	www.swenvo.org.uk/	In 'Atmosphere' section: climate change and carbon dioxide	Includes local examples

c Links to / impact on other themes / issues

Theme/ issue	Possible links to/ impact of this issue on:
Environmental sustainability, including climate change and sustainable energy	Impact on wildlife and habitats; flooding; drought; food production i.e. overall sustainability of human lifestyle/life
Economic sustainability	Climate change will affect the economy unless we ensure we are adapting (see Stern Report). Some examples: cost of coastal defences; impact on fisheries and agriculture (although may be opportunities to grow new crops); effect on insurance industry (more flooding) etc. etc.
Social sustainability e.g. community cohesiveness and individual well being	Lifestyle changes for individuals and communities
Rural issues	Increasing fuel prices will affect rural people. Increasing demand for renewables may impact on some areas.
Housing	New regulations on reducing C emissions will affect development
Health	Climate change will affect health e.g. more heatwaves, skin cancer, malaria
Older people	Excess deaths due to heatwaves
Children and young people	Climate change will affect everyone (see 'Warming to the Idea' report, SWCCIP)
Transport and accessibility	Increasing fuel prices will affect rural people

3 Drawing on the above, what therefore is/ are the challenge(s) Devon must meet to address this issue?

- Need to produce a strategy for reducing Carbon emissions throughout the county.
- Need to identify areas vulnerable to Climate Change within in Devon and produce an adaptation strategy.

Impacts of climate change

Indicator 11 - Carbon equivalent (tonnes) emitted from Devon, by sector

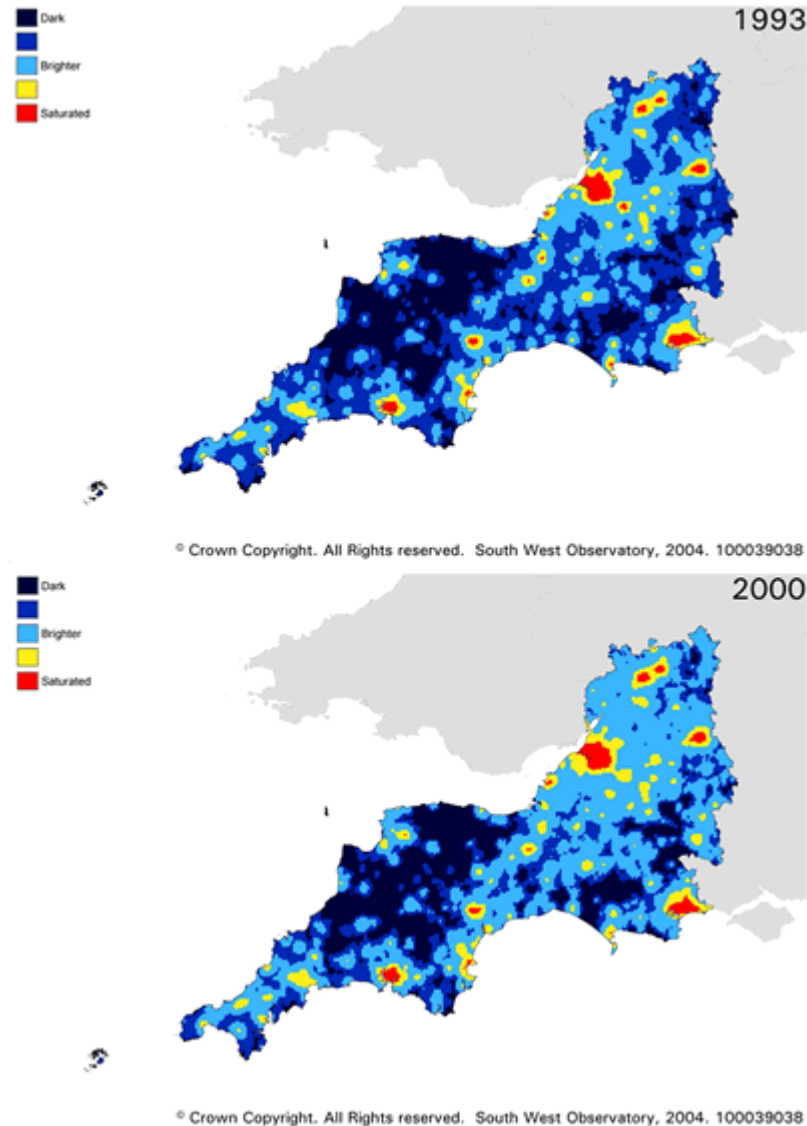
Area	CO2 emissions (kt CO2) 2003						
	Industry	Agriculture	Domestic	Transport	Land Use Change	Total	%
East Devon	227	8	382	395	54	1,066	16.9%
Exeter	287	0	235	118	2	641	10.2%
Mid Devon	206	9	191	338	56	799	12.7%
North Devon	297	9	233	222	39	800	12.7%
South Hams	298	7	289	263	49	907	14.4%
Teignbridge	250	5	314	436	29	1,034	16.4%
Torridge	130	9	163	147	54	503	8.0%
West Devon	156	7	150	196	53	563	8.9%
Devon	1,850	55	1,956	2,114	338	6,313	
As %	29.3%	0.9%	31.0%	33.5%	5.3%		
South West	14,397	216	13,442	11,443	1475	40,972	
As %	35.1%	0.5%	32.8%	27.9%	3.6%		
Devon as % of SW	12.9%	25.5%	14.5%	18.5%	22.9%	15.4%	

Source: AEA Energy and Environment (formerly Netcen)

Other

Indicator 12 – Percentage of total land area where starry skies can be enjoyed.

Satellite data shows that light pollution is rapidly increasing in the region, leaving less and less countryside where we can still enjoy starry, starry nights.



Source: Campaign to protect Rural England - <http://www.cpre.org.uk/>

Devon has the highest proportion of truly dark skies in the South West in 2000 (37% compared to 20% regional average & 11% UK average). There was a 1% decline between 1993 and 2000.