



Environment  
Agency

1996  
2006

# managing flood risk



**Dorset Stour**

**Catchment Flood Management Plan**

– summary of draft plan

October 2006

# Introduction

**We are the Environment Agency. It's our job to look after your environment and make it a better place – for you, and for future generations.**

This publication is a summary of our draft Dorset Stour Catchment Flood Management Plan (the 'draft plan').

It will never be possible to prevent flooding entirely. But what we can do is work with local authorities and others to *manage* floods. This means we can reduce both the chance and the impact of flooding.

The draft plan contains policies and guidance which will help us and our partners decide the best ways to manage future flood risk. Climate change, urban development and land use management all have a big influence on these decisions.

It is vital that the draft plan has widespread support. That's why we need the views of all sorts of people: planners, environmental organisations, land managers, farmers and local communities.

**You can find out how to comment on the back page.**

## What's the draft plan about?

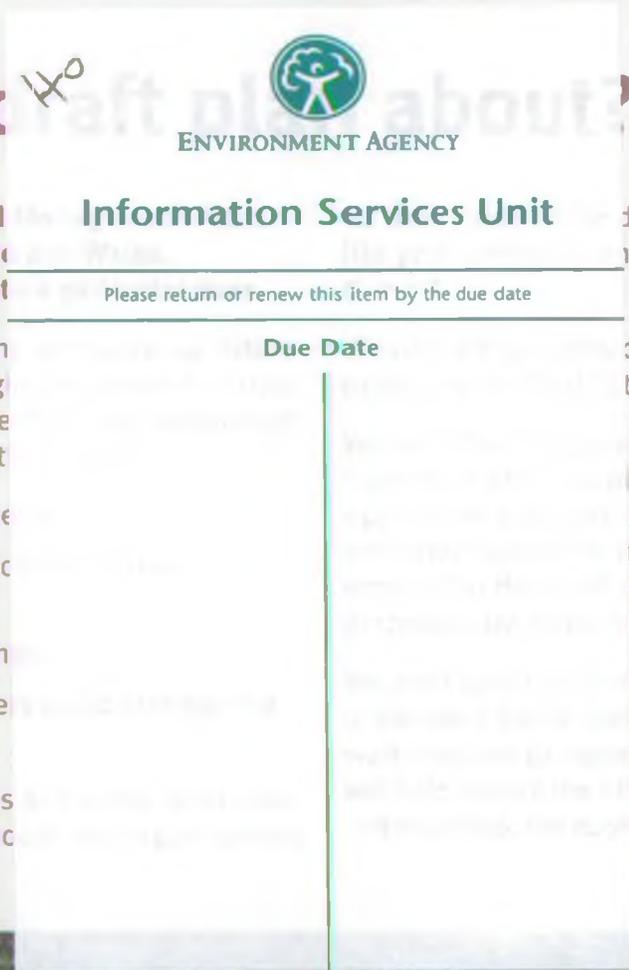
**We are producing Catchment Flood Management Plans that will cover the whole of England. Catchments are areas that drain into a single point of discharge.**

Catchment Flood Management Plans will set out investment and activities in managing flood risk in each catchment. They will help us decide what floods now will still be effective in the future.

The draft plan for the Stour catchment:

- sets out what we know about flood risk in the catchment;
- looks at how that risk might change over the next 100 years;
- identifies how we and our partners can reduce flood risk over the next 100 years.

We have consulted local authorities and other partners and are now asking a wider range of people to comment on the draft plan.



**Firefighters rescue a driver trapped in freezing floodwaters from the River Stour at Hammoon near Sturminster Newton in December 2004**

Photo: Dorset Fire & Rescue Service

# Catchment description

The Stour catchment covers an area of about 1,300 square kilometres (500 square miles), mostly in Dorset but with parts in Wiltshire and Somerset.

The Stour rises at St Peter's Pump in Stourhead Gardens and flows 100 kilometres (62 miles) south-east to Christchurch Harbour.

The river is fed by many tributaries including the rivers Crane, Allen, Tarrant, Winterborne, Lydden, Cale, Shreen and Lodden, Caundle Brook and the Moors River.

The topography – the lie of the land – and geology vary considerably along the Stour's course. This influences both the river's characteristics and the causes of flood risk across the catchment.

In the upper catchment the river passes through a small number of settlements, including Gillingham and Blandford Forum. The lower catchment is dominated by the urban areas of Bournemouth and Poole with parts of Christchurch and other conurbations.

There are designated nature conservation sites across the catchment, and these – with the area's historically rich and picturesque character – are a great attraction for tourists.

**Area:** 1,300 sq km (500 sq miles).

**Population:** 400,000.

**Annual rainfall:** Up to 1,000mm (40in).

**Tidal influence:** Extends up to Iford.

**Land use:** 8% urban, 52% arable, 34% managed grassland and 6% other.

**Environmental designations:** one Special Protection Area, three Special Areas of Conservation, two National Nature Reserves, one Ramsar site and 13 Sites of Special Scientific Interest.

**Geology:** Varied, including impermeable clays of the Blackmore Vale, permeable chalk of the Cranborne Chase and semi-permeable sands, clays and gravels of the Dorset Heaths.

**Topography:** Varied according to geology. Shallow valleys with wide floodplains on the impermeable soils and rock of the upper and lower catchments. Steeper valleys and narrow floodplains in the central chalk band.

**Hydrology (movement of water):** 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 which are fed by groundwater.



Map of the catchment of the Stour and its tributaries showing main towns

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Bournemouth, Poole & Christchurch

# Flood risk now and how it's managed

We work with local authorities, Wessex Water and other organisations to manage flood risk in the Stour catchment. We spend a significant amount each year on this work, but people, property and the environment remain at risk from flooding in many areas.

Flooding in the Stour catchment is due to a variety of causes:

**Intense rainfall** can lead to local surface water flooding. This occurs both in rural areas where water can run off recently-ploughed or compacted fields and in urban areas such as Bournemouth where water runs off hard surfaces.

**Heavy rainfall** at the top of the catchment over a couple of days can cause river levels to rise in the sensitive tributaries, such as the Cale at Wincanton, and in the Stour itself.

**Heavy rainfall** over a longer period can raise levels in rivers fed by groundwater. This can be a major problem on some watercourses, such as those draining Cranborne Chase and the Winterborne. Raised groundwater levels can also cause flooding away from the river itself, especially on the chalk band, affecting settlements such as Sixpenny Handley and Wimborne Minster.

**High tides** can slow river flows, leading to flooding upstream, a particular problem up to Iford.

With our professional partners and the public, we aim to reduce the flood risk to people, property and the environment across the catchment. This can be done using one – or a combination – of the following:

- **Building new flood defences** and maintaining existing ones. For example, the Lower Stour scheme protects properties from river and tidally-influenced flooding in Bournemouth and Christchurch. In Blandford Forum, the walls, embankments and pumping station are designed to prevent large-scale flooding.
- **Maintenance of the river channel** and surrounding area, for example clearing vegetation and removing silt.
- **Providing a flood warning service** across the catchment.
- **Refining the flood map** which shows the areas at risk of flooding. This can be found at [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)
- **Influencing new developments**, ensuring the floodplain is protected and that flood risk is not increased.



River Stour in flood: Sturminster Newton Mill in November 2002

# What the future could bring

We have investigated possible future changes in the catchment and looked at the effects of alternative land use, urban growth and climate change.

Our conclusions from these studies are that:

- Flood risk will increase significantly as a result of climate change. Sea level rise will contribute to more floods on the Lower Stour. Higher river flows across the rest of the catchment will increase the flood risk to people, property and the environment.
- Urbanisation – the spread of housing, roads and industry – is unlikely to increase flood risk on a wide scale. But there may be more flooding in the River Crane and Moors River catchments and further downstream if increases in rainwater run-off from new developments are not correctly managed.
- Flood risk in the lower catchment is affected by run-off in the upper and middle catchments. Run-off can be reduced by improving how the land is managed,

changing unfavourable farming and forestry practices, creating wetlands, increasing flooding of riverside watermeadows or building ponds. These options can also create extra opportunities for wildlife.

- Planning and development control have critical roles to play in reducing the impact of flooding and the damages that result.
- Landscape and the historic environment could be endangered by flooding.

By looking at the most likely changes, we've been able to study how flood risk may increase with time. We have then used this picture of the future to come up with what we think are the right ways to tackle the increased risk.

**We outline our objectives and action plan on pages 6-7.**



Rowing to the rescue: Floods in Blandford Forum in 1979

# Our objectives for the catchment

We have worked closely with local authorities and many others to develop objectives for the Stour catchment. They cover the broad areas of flood risk to people, the environment and the economy.

Our objectives for the catchment are to:

- Manage the impact of groundwater flooding on villages and isolated properties.
- Manage the impact of river flooding on villages and isolated properties, through a range of local measures.
- Minimise the impact of our works in areas of social, cultural and heritage significance.
- Limit the increase in flood risk due to climate change to an acceptable level.
- Identify opportunities to improve the natural environment.
- Reduce the impact of flood risk from land-use change.
- Minimise the impact of development.

We have divided the catchment into policy units with similar characteristics. The policy units are shown below and the actions for each are listed on p7.



Policy units in the Stour catchment – the actions for each are listed on p7

# How we plan to manage flood risk

We have drawn up an action plan – summarised below – of what we will do, often working with others, to manage flood risk in the Stour catchment.

## Catchment-wide actions

- Work out ways of recording, identifying and dealing with surface water flooding.
- Promote land use management initiatives to reduce downstream flows and surface water flooding.
- Provide development control advice, including reducing run-off and avoiding floodplains.
- Improve flood warning.

## Bournemouth, Christchurch and Corfe Mullen

- As climate change increases flood risk, develop a strategy to reduce this risk.

## Verwood, St Leonards and West Moors

- Promote initiatives, including Environmental Stewardship, to reduce downstream flows.
- Provide advice on water levels to improve the Moors River system Site of Special Scientific Interest (SSSI).

## Sturminster Marshall, Wimborne Minster, Dorset Heaths, rivers Stour and Allen

- As climate change increases flood risk, develop a strategy to reduce this risk in Sturminster Marshall and Wimborne Minster.
- Investigate benefits of creating wetlands in the Upper Allen.

## Winterborne

- Look at the impact of land use management on

catchment-wide flooding.

- Develop local opportunities to reduce flood risk in the Winterborne villages.

## Blandford Forum

- Monitor and review the effectiveness of existing flood defences.

## River Stour and the Tarrant

- Review the influence of groundwater on flooding.

## Hambledon Hill

- Check existing drainage and consider improving drainage of key roads.

## Upper Stour and Blackmore Vale

- Consider increasing floodplain storage to reduce flooding downstream.

## Gillingham and Wincanton

- Ensure the floodplain stays free from inappropriate development.
- Investigate the capacity of Bay Road Bridge and other restrictions on the rivers' capacity.

## Stourhead Gardens

- Investigate the impact of climate change on flood risk around the source of the Stour.



Park homes at Iford were flooded by the River Stour in November 2002



**Tributary of the Stour: Plants on the River Winterborne come under close scrutiny during a community event organised by Dorset Area of Outstanding Natural Beauty staff**

Photo: Alison Tumock/Dorset AONB

## How to find out more

The Dorset Stour Catchment Flood Management Plan is available on a CD from Felicity Liggins – to obtain a copy, email [felicity.liggins@environment-agency.gov.uk](mailto:felicity.liggins@environment-agency.gov.uk), call her on 01258 483392 or write to her at the address below.

You can also study a printed copy of the complete draft document at our South Wessex Area office at Rivers House, Sunrise Business Park, Higher Shaftesbury Road, Blandford Forum. The office is open Monday to Friday, 9am to 5pm. Further information is available from our website [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

## We want your views

Your views are vital for our public consultation on the draft plan. We will consider all comments we receive before 5 January 2007 in producing the final Dorset Stour Catchment Flood Management Plan. This is due to be published in March 2007.

Please **email** your comments to: [felicity.liggins@environment-agency.gov.uk](mailto:felicity.liggins@environment-agency.gov.uk)

Or you can **post** your comments to:

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