FLOOD RISK AND WATER MANAGEMENT IN WESSEX

use the available maps to identify the main towns and cities within the Wessex Water region.

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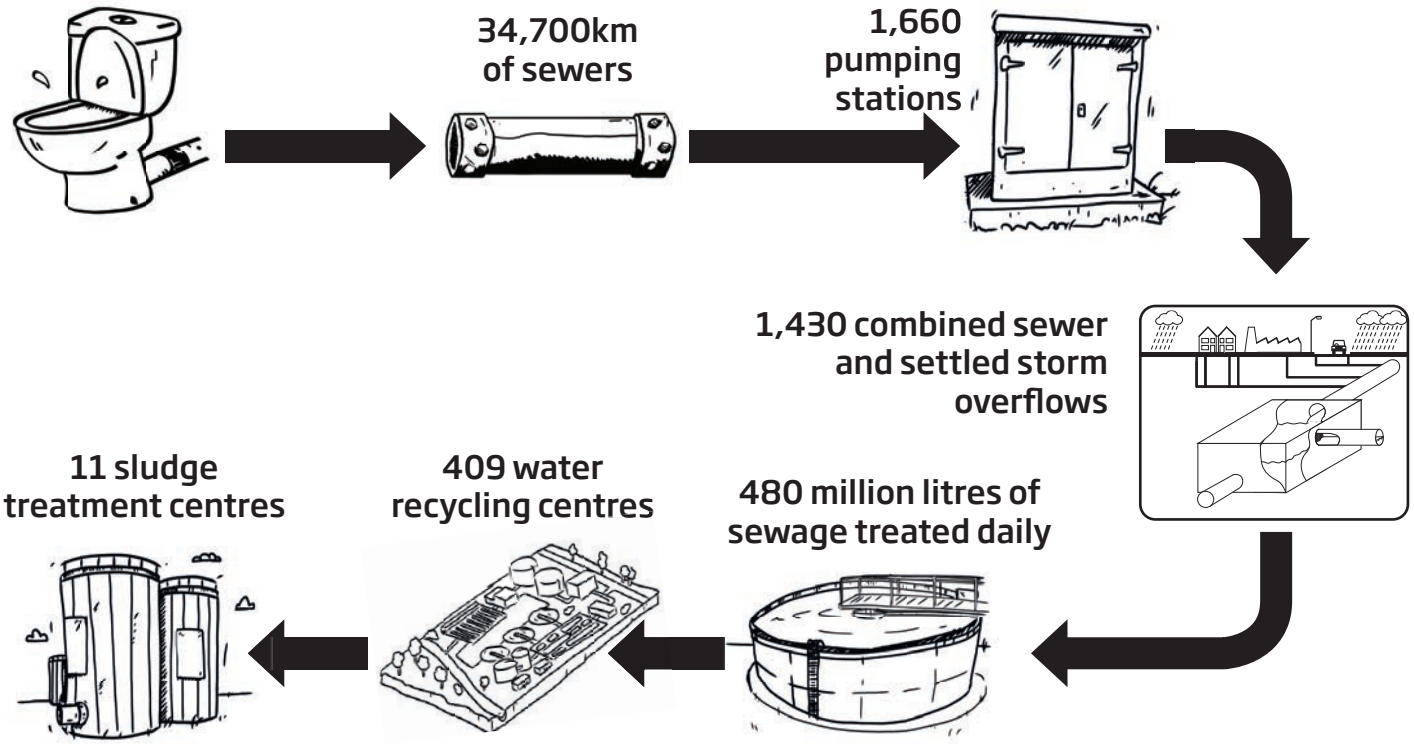
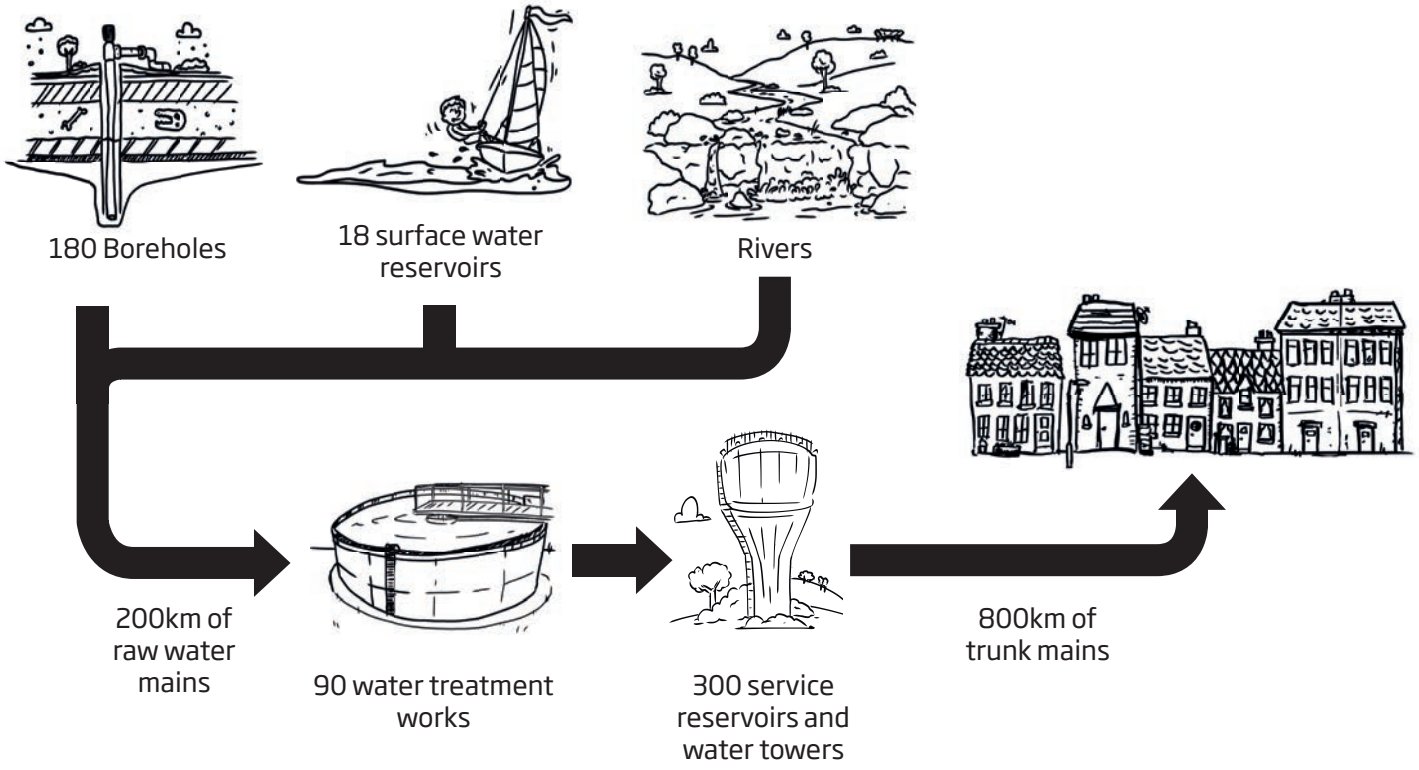
W_ _ _ _ _ -_ _ _ _ _ -_ _ _ _	W_ _ _ _ _ _ _	Y_ _ _ _ _

Wessex Water provides sewerage for the majority of homes and businesses in this region.
That's about 2.8 million people.



We provide drinkable water to about 1.3 million customers who use around 280m litres/day. Bristol Water and Bournemouth Water are separate companies that serve their two cities.



The water that's treated to become drinking water, comes from the natural environment. There are three sources.

1 **Rivers** – we can only abstract a certain amount of water according to limits imposed by the Environment Agency.

2 **Reservoirs** – these man-made lakes store fresh water to ensure supplies are available all year round.

3 **Groundwater** – about 77% of our water is obtained from aquifers (water retained underground which has infiltrated porous and permeable bedrock). This is pumped out using boreholes drilled deep underground

What advantages or disadvantages are there to these water sources?

Water source	Advantages	Disadvantages
River		
Reservoir		
Groundwater		

There are a number of rivers within our region – can you use any maps to identify where they flow? Just to confuse you, there are some rivers that have the same name! Mark them on the map.

Parrett, Tone, Yeo

Brue

Axe

Avon, Frome

Avon, Bourne, Lydden, Nadder, Stour, Wylye

Piddle, Frome

What do we call a river or stream that flows into another river?

T _ _ _ _ _ _ _ _

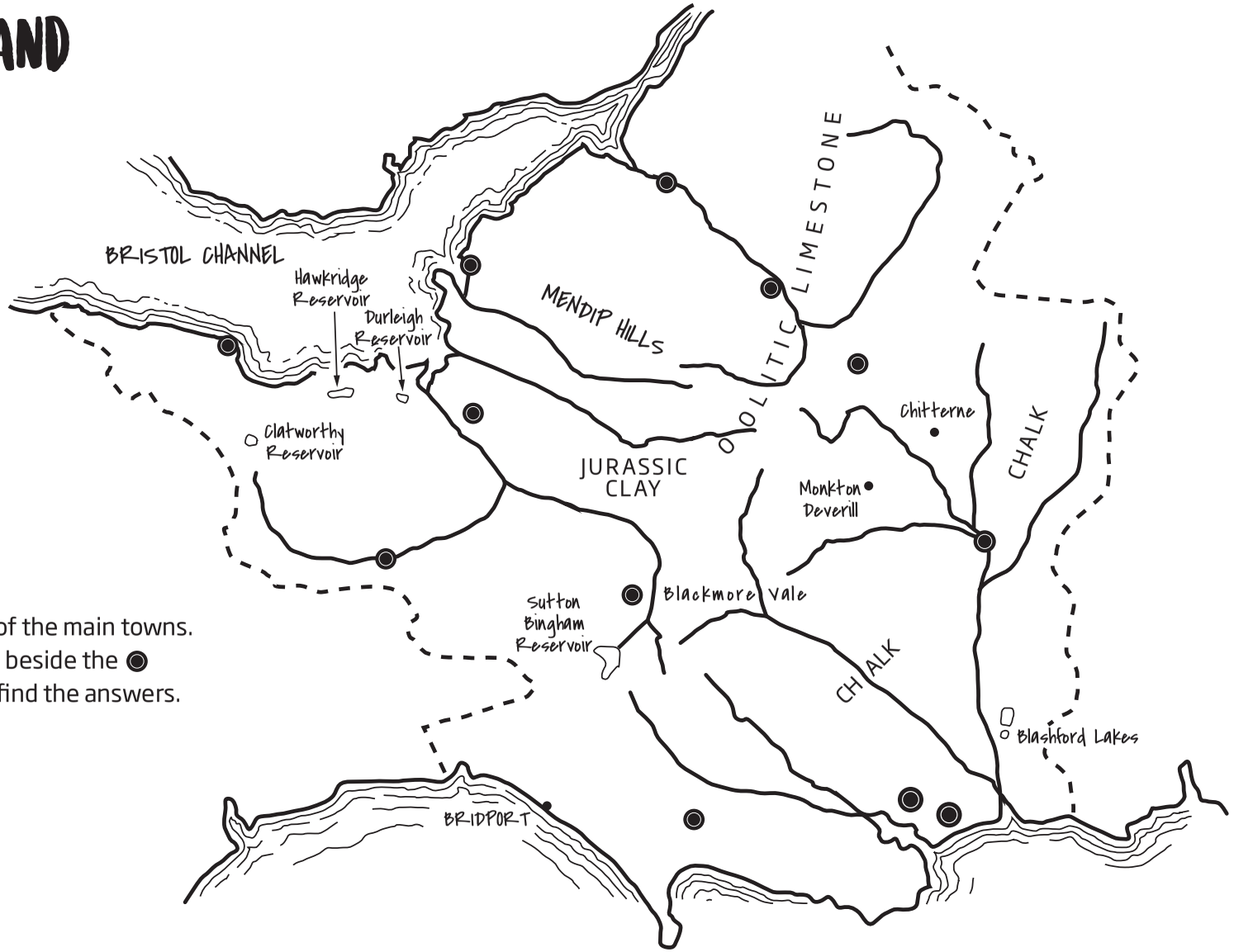
Wessex Water divides our region into 10 catchments. Create a key and colour your map to show these catchments.

- ☐ **Bristol and Avon**
- ☐ **Brue**
- ☐ **Parrett and Tone**
- ☐ **Axe and North Somerset streams**
- ☐ **Dorset Stour**
- ☐ **Poole Harbour**
- ☐ **Hampshire Avon**
- ☐ **South Gloucestershire streams**
- ☐ **West Somerset streams**
- ☐ **Dorset coastal streams (small streams not shown on map)**

Why do you think this is a useful way of dividing up the region?

Clue: think about where the drinking water supply comes from and where the treated water is returned to the water cycle.

SETTLEMENTS AND MAIN TOWNS

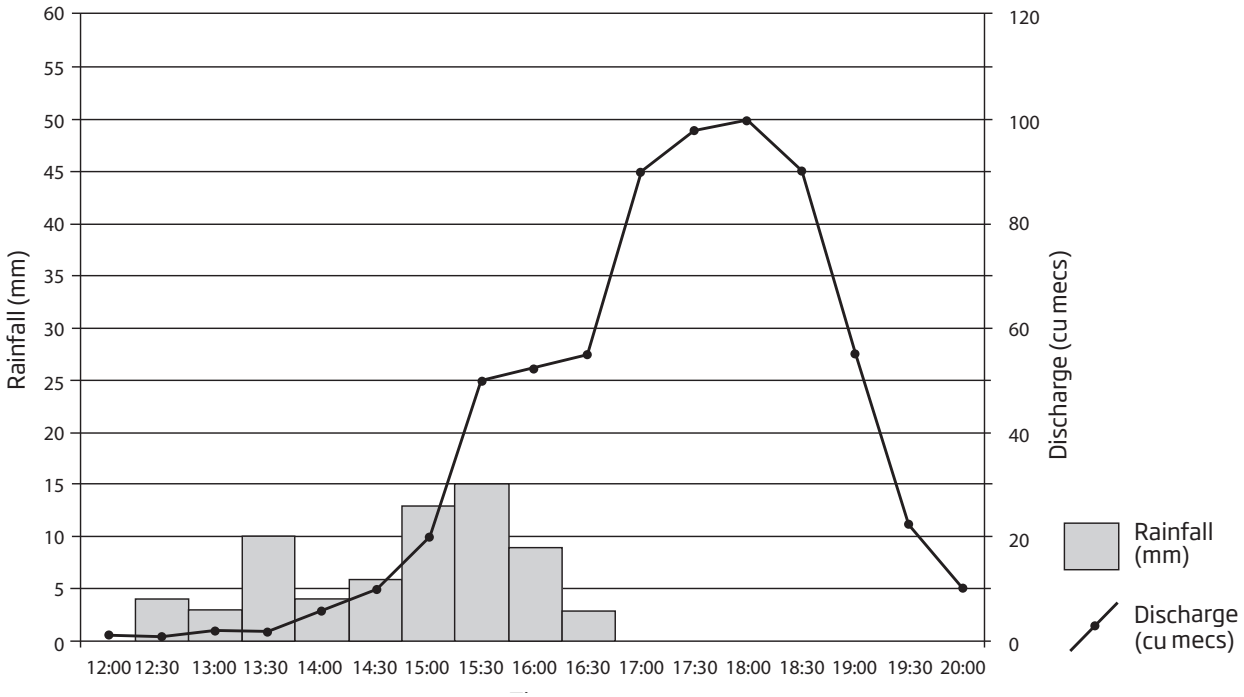


Find the names of the main towns.
Write the names beside the ◉
Use the atlas to find the answers.

Storm Hydrographs

Storm hydrographs show how rivers respond to rainfall. The Cornish village of Boscastle suffered catastrophic flooding following a severe storm in 2004.

Flood hydrograph for Boscastle, 16 august 2004



There are a number of factors that will affect the discharge (amount of water) of a river. Here are some key ones.

Intensity of rainfall **Length of rainfall** **Width and depth of channel**

Previous river level **Shape of river catchment** **Vegetation/land use**

Rock type

The data below shows how three rivers in the Wessex Water region might respond to a heavy storm.

Saltford (Avon), North Somerset													
Time (hours)	0	2	4	6	8	10	12	14	16	18	20	22	24
Rainfal (mm)	0	3	7	13	9	2	1	0	1	0	0	0	0
Discharge (cumecs)	47	47	48	48	50	51	53	54	56	56	55	53	52
Christchurch (Stour), Dorset													
Time (hours)	0	2	4	6	8	10	12	14	16	18	20	22	24
Rainfal (mm)	0	3	7	13	9	2	1	0	1	0	0	0	0
Discharge (cumecs)	28	29	30	32	35	39	43	48	50	48	45	43	40
Allerford (Aller), West Somerset													
Time (hours)	0	2	4	6	8	10	12	14	16	18	20	22	24
Rainfal (mm)	0	3	7	13	9	2	1	0	1	0	0	0	0
Discharge (cumecs)	6	7	9	12	17	24	22	17	12	10	0	9	8

Use this data to construct your own storm hydrographs, then consider these questions.

How did the rivers vary in their response to the same amount of rainfall?

Why do you think they responded in these ways? (Consider the factors given earlier)

Which of these rivers could be at risk of flooding? Explain your answer using the data and hydrographs.