



# **Adur and Ouse Abstraction Licensing Strategy**

A strategy to manage water resources  
sustainably

Version 3

March 2019

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Published by:

Environment Agency  
Horizon House, Deanery Road,  
Bristol BS1 5AH

[www.gov.uk/environment-agency](http://www.gov.uk/environment-agency)

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# 1. About the licensing strategy

This strategy sets out our approach to managing new and existing [abstraction](#) and [impoundment](#) within the Adur and Ouse [catchment](#) in the South East river basin district. The Adur and Ouse ALS covers an area of 1073 km<sup>2</sup>. It encompasses the catchments of the River Ouse and River Adur and their tributaries. It also contains the Brighton Chalk aquifer which forms the rolling hills of the South Downs. Much of the area is included within the South Downs National Park, which recognises and provides protection for the character and landscape value of these areas.

The Ouse River system is dominated by one large strategic surface water abstraction operated by South East Water. Due to the flashy nature of the river, summer flows are unable to support high levels of abstraction and so augmentation releases from Ardingly reservoir situated on the Shell Brook at the very top of the catchment are used to support the South East Water abstraction. These reservoir releases fundamentally alter the river's hydrological regime and summer flows are raised well above those that would occur naturally. This has important consequences for water resource availability in the river. In contrast, the River Adur is dominated by discharges from wastewater treatment works. Only a third of the waste water in the area is discharged to surface water, the majority being via long sea outfalls at Shoreham, Portabello and Newhaven. This represents a large net loss of water from the ALS area. These water resources pressures and designations define the context within which the strategy is set.

Our approach ensures that River Basin Management Plan objectives for water resources activities are met and we avoid deterioration within this catchment.

We apply this approach to the [water body](#) in which the abstraction is located. It also applies to all downstream [surface water](#) bodies that may be affected by any reduction in abstraction-related flow, or adjacent [groundwater](#) bodies affected by any reduction in groundwater level.

Please see [Managing Water Abstraction](#) for the technical explanation, legal and policy requirements behind the Abstraction Licensing Strategy ([ALS](#)).

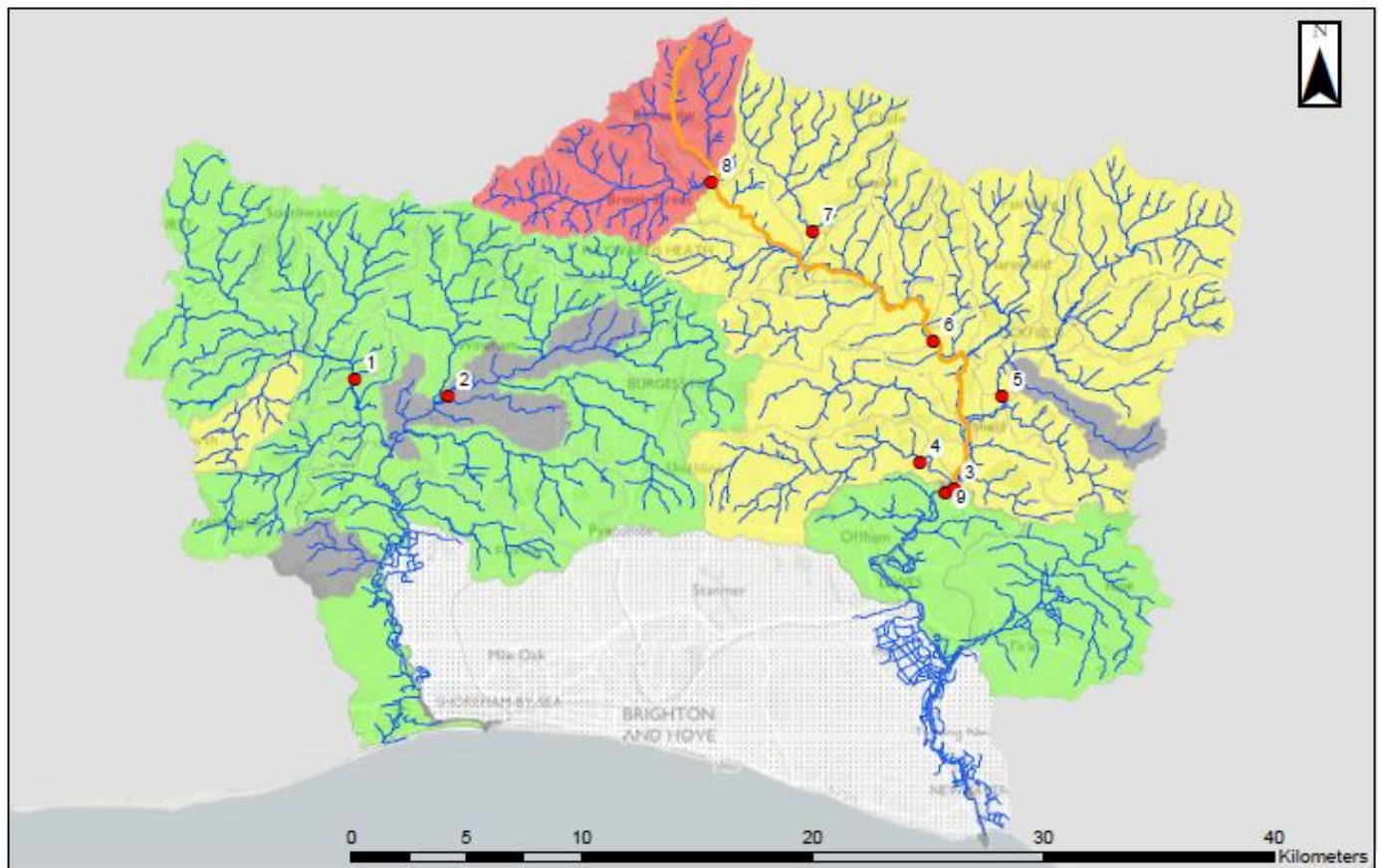
Please see [abstraction pages on gov.uk](#) for advice on who needs an abstraction or impoundment licence, and how to apply.

## 2. Water resource availability of the Adur and Ouse ALS

### 2.1. Resource availability

The water resource availability, calculated at four different flows, Q95 (the flow of a river which is exceeded on average for 95% of the time i.e. low flow), Q70, Q50, and Q30 (higher flow) for this ALS are presented and explained in Maps1 to 4 and section 2.1.1 below.

Map 1: Water resource availability colours at Q30 for Adur and Ouse ALS



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Legend:

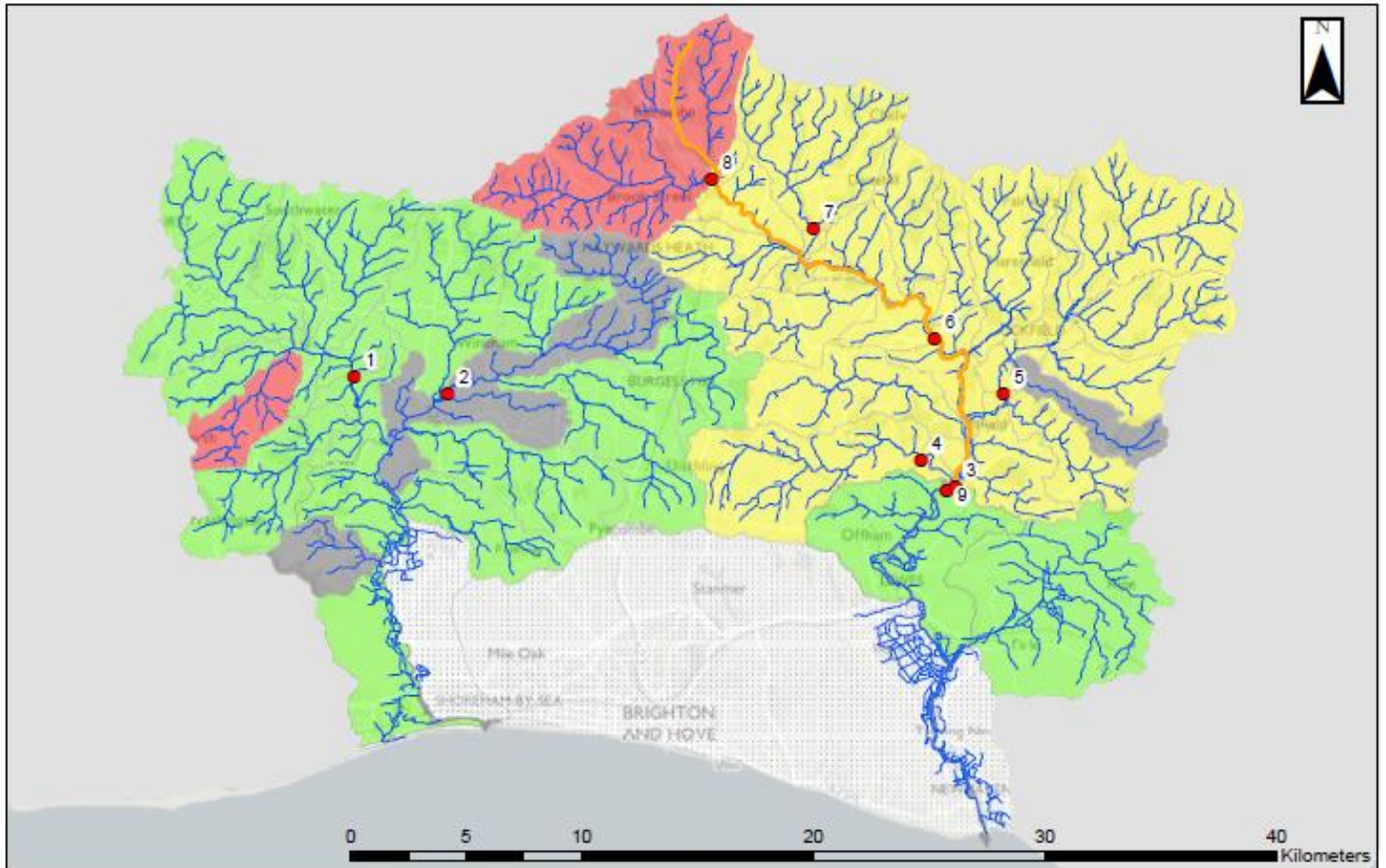
- Assessment Points
- Heavily Modified and Artificial Rivers
- Rivers
- Discharge Rich Waterbodies
- Chalk Block surface water body (licensed separately)

Water Availability at Q30:

- Water available
- Restricted water available
- Water not available



Map 2: Water resource availability colours at Q50 for Adur and Ouse ALS



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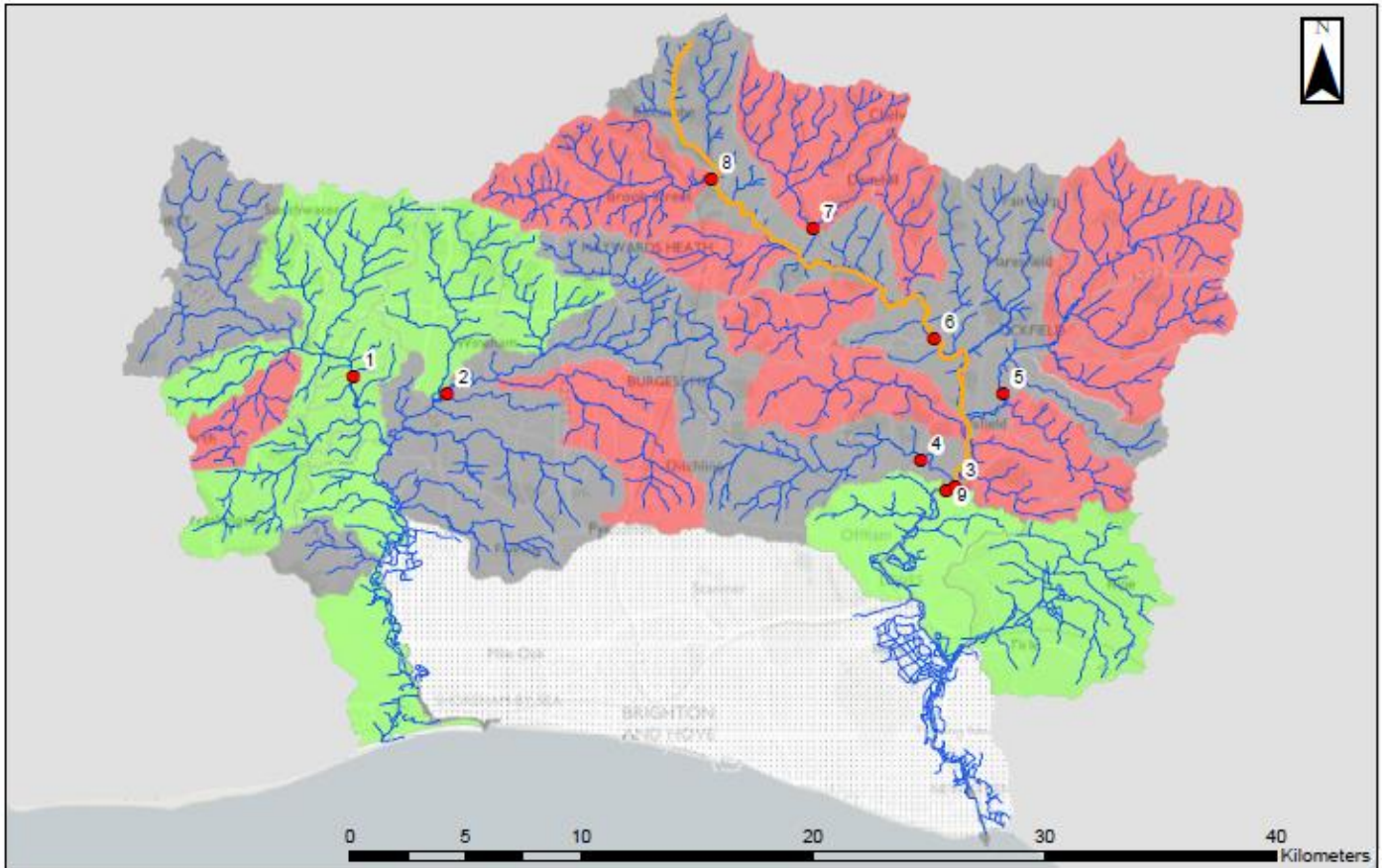
Legend:

- Assessment Points
- Heavily Modified and Artificial Rivers
- Rivers
- Discharge Rich Waterbodies
- Chalk Block surface water body (licensed separately)

Water Availability at Q50:

- Water available
- Restricted water available
- Water not available

Map 3: Water resource availability colours at Q70 for Adur and Ouse ALS.



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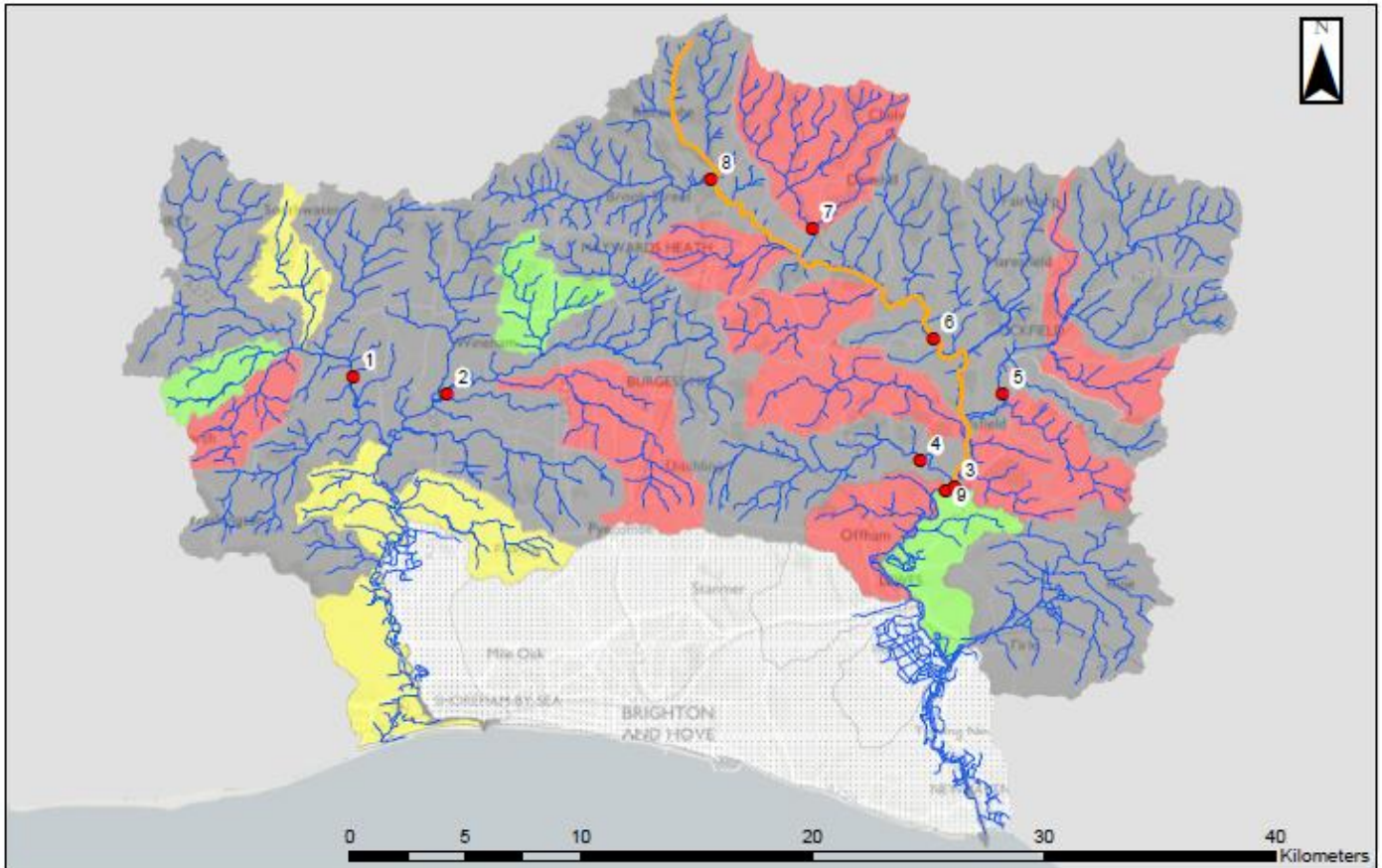
Legend:

- Assessment Points
- Heavily Modified and Artificial Rivers
- Rivers
- Discharge Rich Waterbodies
- Chalk Block surface water body (licensed separately)

Water Availability at Q70:

- Water available
- Restricted water available
- Water not available

Map 4: Water resource availability colours at Q95 for Adur and Ouse ALS



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Legend:

- Assessment Points
- Heavily Modified and Artificial Rivers
- Rivers
- Discharge Rich Waterbodies
- Chalk Block surface water body (licensed separately)


Water Availability at Q95:

- Water available
- Restricted water available
- Water not available



## 2.1.1. Water resource availability colours and implications for licensing

### Water available for licensing

Green 

There is more water than required to meet the needs of the environment.

New licences can be considered depending on local and downstream impacts.

### Restricted water available for licensing

Yellow 

Full Licensed flows fall below the [Environmental Flow Indicators EFIs](#).

If all licensed water is abstracted there will not be enough water left for the needs of the environment. No new consumptive licences would be granted. It is likely we'll be taking action to reduce full licensed risks. Water may be available if you can 'buy' (known as licence trading) the entitlement to abstract water from an existing licence holder.

### Water not available for licensing

Red 

Recent actual flows are below the EFI.

This scenario highlights water bodies where flows are below the indicative flow requirement to help support a healthy ecology in our rivers. We call this 'Good Ecological Status' ([GES](#)) or 'Good Ecological Potential' ([GEP](#)) where a water body is heavily modified for reasons other than water resources.

Note: we are currently taking action in water bodies that are not supporting GES or GEP. We will not grant further licences. Water may be available if you can buy (known as licence trading) the amount equivalent to recently abstracted from an existing licence holder.

### Heavily Modified Water Bodies ([HMWBs](#)) (and/or [discharge](#) rich water bodies

Grey 

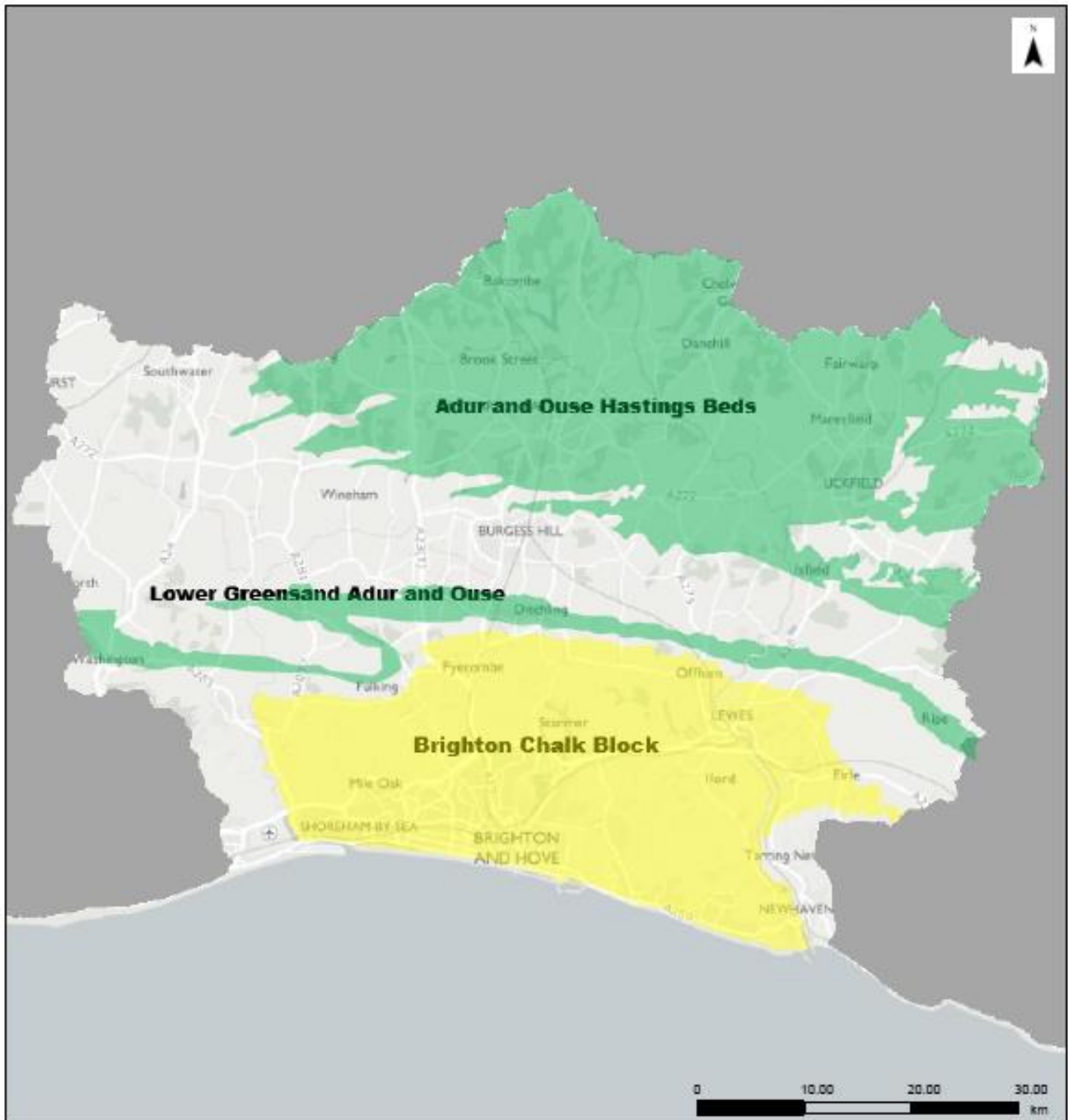
These water bodies have a modified flow that is influenced by reservoir compensation releases or they have flows that are augmented. These are often known as 'regulated rivers'. They may be managed through an operating agreement, often held by a water company. The availability of water is dependent on these operating agreements. More detail if applicable can be found in section 4.2.1 Surface Water

There may be water available for abstraction in discharge rich catchments, you need to contact the Environment Agency to find out more.

## 2.2. Groundwater resource availability

In certain areas, resource concerns over groundwater mean that the standard water resource availability colours have been overridden. Section 2.2.1 explains the groundwater resource availability colours, and Map 5 shows these colours for groundwater in the Adur and Ouse area.

Map 5: Groundwater resource availability colours for Adur and Ouse ALS



Legend:

Groundwater Availability:

- Water available
- Restricted water available

## 2.2.1. Groundwater resource availability colours and implications for licensing

### Water available for licensing

Green 

Groundwater unit balance shows groundwater available for licensing. New licences can be considered depending on impacts on other abstractors and on surface water.

### Restricted water available for licensing

Yellow 

Groundwater unit balance shows more water is licensed than the amount available, but that recent actual abstractions are lower than the amount available OR that there are known local impacts likely to occur on dependent wetlands, groundwater levels or cause saline intrusions but with management options in place.

In restricted groundwater units no new consumptive licences will be granted. It may also be appropriate to investigate the possibilities for reducing fully licensed risks. Water may be available if you can 'buy' (known as licence trading) the entitlement to abstract water from an existing licence holder.

In other units there may be restrictions in some areas, for example in relation to saline intrusion.

### Water not available for licensing

Red 

Groundwater unit balance shows more water has been abstracted based on recent amounts than the amount available.

We will not grant further licences.

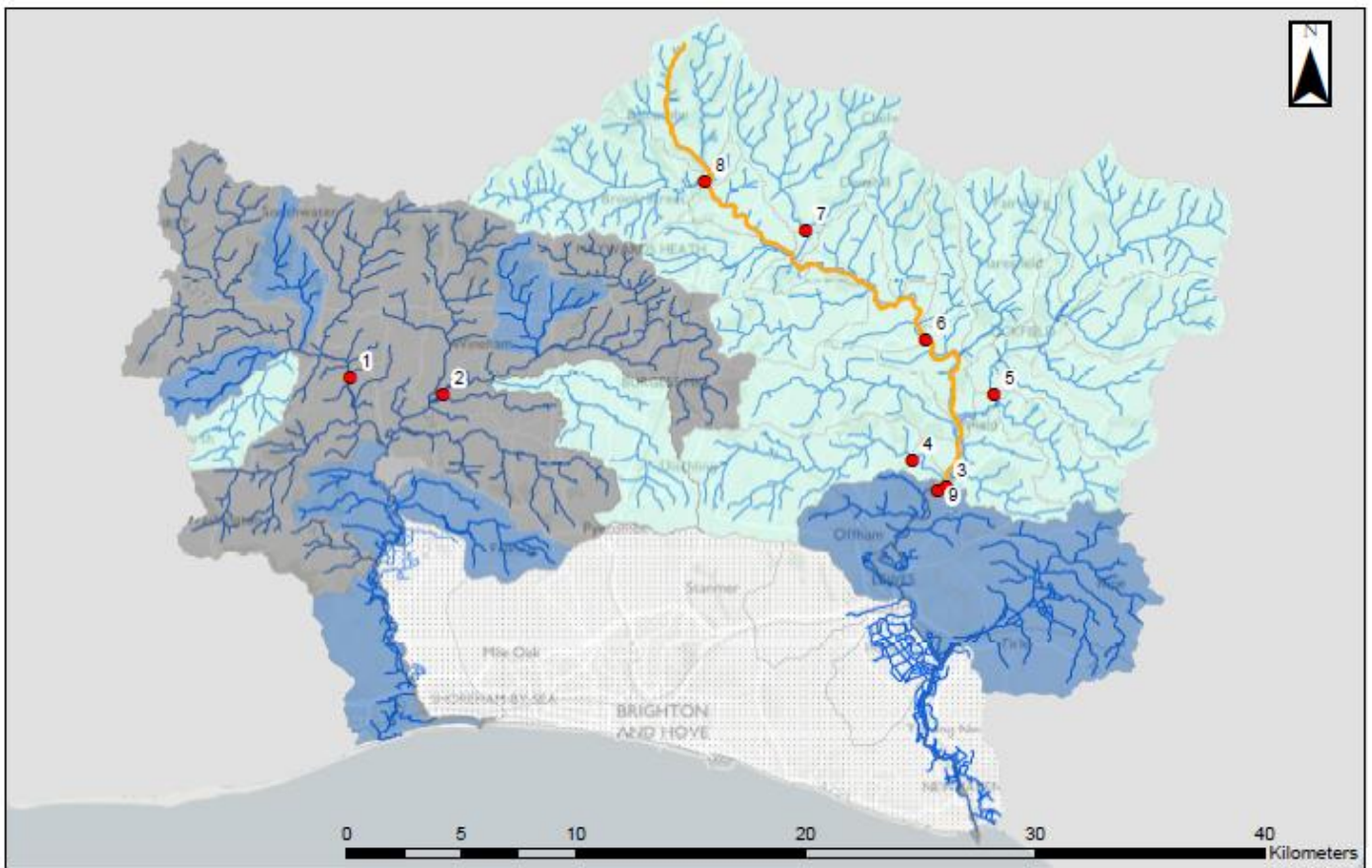
## 2.3. Resource reliability

If you want to apply for a licence, it's worth considering the reliability of your abstraction.

By assessing the quantity of water available at different flows it's possible to see when there is a surplus or deficit of water and the associated reliability of an abstraction. This is an indication only; actual reliability of a licence will be discussed when you apply.

Map 6 gives an indication of the resource availability for [consumptive abstraction](#) in the Adur and Ouse area expressed as a percentage of time.

Map 6: Water resource reliability of the Adur and Ouse ALS expressed as percentage of time available



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Legend:

- Assessment Points
- Heavily Modified and Artificial Rivers
- Rivers
- Discharge Rich Waterbodies
- Chalk Block surface water body (licensed separately)

Percentage of the time additional consumptive resource may be available:

- Consumptive abstraction available less than 30% of the time
- Consumptive abstraction available at least 95% of the time



## 2.4. Other considerations for availability and reliability

We may have to add constraints to licences such as ‘[hands off flow](#)’ (HoF) conditions to protect the environment and the rights of other abstractors. As a result, when we grant a licence, it doesn't mean that we guarantee a supply of water. These conditions specify that if the flow in the river drops below what's needed to protect the environment, abstraction must reduce or stop. So, in dry years, restrictions are likely to apply more often, which will affect the reliability of supply.

Whilst this document may say that water is available for abstraction, this doesn't guarantee that all applications will be successful. This is because we have to determine each application on its own merits, and local factors may mean we're either unable to grant a licence as applied for, or even at all.

New licences within an ALS are usually given a Common End Date ([CED](#)), which allows them to be reviewed at the same time. The next CED for this ALS is 31/03/2030 and the subsequent one is 31/03/2042.

## 2.5. Impoundments

Applications for impoundments will be dealt with on a case by case basis. More information may be found on our [water management web pages on gov.uk](#).

# 3. How we manage abstraction in the Adur and Ouse ALS

## 3.1. Assessment points

We assess surface water flows at [Assessment points](#) (APs), which are significant points on a river, often where two major rivers join or at a gauging station. APs cover multiple surface water bodies.

Where groundwater abstractions directly impact on surface water flows, the impact is measured at the surface water AP.

Table 1 gives an indication of how much water is available for further abstraction and the associated restrictions we may have to apply to new and varied [abstraction licences](#) from the main river. Tributaries to the main river may be subject to different restrictions and quantities and will be assessed locally on a case by case basis.

Each HoF is linked to an AP and is dependent on the resource availability at that AP. In some cases additional restrictions may apply to licences where there is a more critical resource availability downstream to protect the ecological requirements of the river. This is detailed in the last column of Table 1 if applicable.

All abstraction licence applications are subject to an assessment to take account of any local and downstream issues and may be subject to further restrictions.

Reading from top to bottom in Table 1 are the APs in the Adur and Ouse ALS area. Reading across the columns you can see the potential HoF that may be applied to a licence, the number of days water may be available under this restriction and the approximate volume of water in [Ml/d](#) that may be available etcetera. In cases where there is water available at all flows we may apply a Minimum Residual Flow (MRF) to protect very low flows. We'll decide this on a case by case basis.

<b>AP</b>	<b>Name</b>	<b>Water Resource Availability</b>	<b>HOF Restriction (MI/d)</b>	<b>Number of days per annum abstraction may be available</b>	<b>Approximate volume available at restriction (MI/d)</b>	<b>Is there a gauging station at this AP?</b>	<b>Additional restrictions</b>
1	Hatterells Bridge (Western Adur)	Water Available for Licensing	2.6	296 days (81%)	1	yes	Discharge Rich
2	Sakeham (Eastern Adur)	Water Available for Licensing	0.01	365 days (100%)	11	yes	Discharge Rich
3	Barcombe Ultrasonic (River Ouse)	Water Not Available for Licensing	364	95 days (26%)	194.5	yes	HMWB
4	Clappers Bridge (Bevern Stream)	Water Not Available for Licensing	39	95 days (26%)	53	yes	Discharge Rich
5	Isfield River (River Uck)	Water Not Available for Licensing	86	95 days (26%)	83.5	yes	Discharge Rich
6	Gold bridge (River Ouse)	Water Not Available for Licensing	180	95 days (26%)	150	yes	HMWB
7	Holywell (Cockhaise Brook)	Water Not Available for Licensing	44	95 days (26%)	57.5	yes	
8	Ardingly (River Ouse)	Water Not Available for Licensing	22	95 days (26%)	8	yes	HMWB

AP	Name	Water Resource Availability	HOF Restriction (MI/d)	Number of days per annum abstraction may be available	Approximate volume available at restriction (MI/d)	Is there a gauging station at this AP?	Additional restrictions
9	Barcombe Mills (River Ouse)	Water Not Available for Licensing	264	95 days (26%)	194.5	yes	HMWB
<b>"Other" Streams (below APs and/or coastal/marginal</b>		Case-by-case.					

Table 1: Summary of licensing approach for the assessment points of Adur and Ouse ALS.

Table 1 shows that assessment points 1 and 2 on the River Adur are discharge rich so their flows are higher than would occur naturally. The eastern branch has significantly enhanced summer flows because of the large discharge of wastewater treatment works. The western branch has limited abstraction and natural river flows are enough to ensure there is an excess of water above the minimum required by the environment, albeit only a very small volume and enhanced by some small discharges at times of low river flows.

We maintain our policy of encouraging potential abstractors to apply to take water during high flow periods to provide reservoir storage for subsequent re-use during drier months when other surface water resources are unavailable.

The Environment Agency has no control over the continued operation of discharges and so cannot guarantee reliability. At present, we cannot grant licences for water that is made up from discharges. There is therefore no water available for low flow or summer abstraction in the River Adur catchment, and storage of mid to high flows is encouraged. However, decisions about an application will be made on a case-by-case basis and so customers wishing to enquire about the availability of a source should contact the Environment Agency.

Resource availability in the River Ouse is complex as the river system is dominated by a large strategic public water abstraction operated by South East Water. Abstraction in the lower reaches of the river is supported by augmentation releases from Ardingly reservoir situated on the Shell Brook at the very top of the catchment. The river is effectively used as a conduit to move water from the reservoir to the abstraction point. The releases of water from the reservoir fundamentally alter the hydrological regime of the river so that summer flows are raised well above those that would occur naturally. This has important consequences for water resource availability and as a result, the river is designated as heavily modified for water resources from the Ardingly Reservoir to Barcombe.

We recognise that the augmentation releases from Ardingly reservoir should be protected from derogation by new abstraction. HoFs will be used to manage new abstractions to ensure the rights of existing abstractors are protected as well as flows required by the environment.

Small streams without assessment points and located in the tidal or coastal reaches are modelled in the Adur and Ouse ALS, but we have low confidence of resource assessment and reliability in these areas on account of no measured flow data or ecological monitoring. We will therefore consider potential applications in these waterbodies on a case-by-case basis.

## 3.2. Groundwater

For major aquifers we may divide the area into groundwater management units (GWMU). In these cases we use the information and assessments on these units to determine water availability and licence restrictions.

Where groundwater abstractions directly impact on surface water flows, including reduction of base flow, the impact is measured at the surface water AP. In these cases, restrictions may be applied to licences, such as Hands off Level ([HoL](#)) conditions. The HoL is a groundwater level below which an abstractor is required to reduce or stop abstraction.

Other restrictions may apply where availability is limited or to protect the environment, for example to prevent saline intrusion.

The licensing strategy for the unconfined Brighton Chalk Block cannot be based on the surface water assessments because the majority of the water that enters this chalk block



either emerges later in tidal sections of the Adur or Ouse, or goes out to the sea. It does not contribute significantly to the river flow. The tidal limit for the Adur is Sakeham near Partridge Green, and the tidal limit for the Ouse is Barcombe, neither of which are on the Chalk. The Adur and Ouse are fed from areas to the north outside the area of the Brighton Chalk Block, with only small contributions from chalk springs entering these rivers, and these will be mixed in with the tidal input. The only exceptions to this are the northern chalk scarp face springs, and the Lewes Winterbourne.

One of the main abstraction issues for the Brighton Chalk is to prevent saline intrusion.

## **Licence restrictions on groundwater abstractions in the Adur and Ouse ALS area**

### **Lower Greensand Adur and Ouse**

Water available for licensing. There is no specific policy for this aquifer and decisions about an application will be made on a case by case basis. Customers wishing to enquire about the availability of a source should contact the Environment Agency.

### **Brighton Chalk Block**

Restricted water available for licensing. In restricted groundwater units no new consumptive licences will be granted.

### **Adur and Ouse Hastings Beds**

Water available for licensing. We have no specific policy for these secondary aquifers. These aquifers are highly complex due to faulting and geological variability and there is limited information on outflows and water levels. They also only yield comparatively small volumes of water, although it is noted that these can be locally important. Decisions about an application will be made on a case by case basis and so customers wishing to enquire about the availability of a source should contact the Environment Agency.

## **3.3. Coasts and estuaries**

The southern border of the Adur and Ouse ALS is the Sussex Coast. Both the Adur and the Ouse have high inland tidal limits compared with other coastal rivers. The tidal limit of the River Adur is approximately 18km inland with tidal influence affecting both the eastern and western branches of the river.

The Cowfold Stream meets the Eastern Adur just downstream of its tidal limit. Along the tidal reach there are several smaller tributaries that feed freshwater to the tidal river. These southern tributaries - the Chess Stream, Honeybridge Stream, Black Sewer, Herrings Stream and Woods Mill Stream are fed by Chalk springs on the escarpment of the Sussex Downs. The tidal reach itself crosses over Lower Greensand, Gault Clay and then the Upper Greensand just above Beeding before the river finally cuts through the Chalk to Shoreham and out to the English Channel.

The normal tidal limit for the River Ouse is just below Barcombe and the river then flows through Lewes and out to the sea at Newhaven. Like the Adur, there are several small tributaries that feed freshwater to the tidal river, the largest of which is the Lewes Winterbourne which flows from springs off the Chalk escarpment. The Offham Marshes in the lowest reaches of the tidal river also gains water from Chalk springs. Both the Lewes Winter Brook and Offham Marshes are important wetland features of the Lower tidal Ouse.

The current draft ecological status for the tidal reaches of both rivers show they are not very sensitive to abstraction but that freshwater flows entering these reaches must be considered when determining new licences.

### 3.4. Heavily modified water bodies

In the Adur and Ouse ALS, there are four waterbodies along the River Ouse that are heavily modified for water resource purposes. These are related to the strategic water resources scheme associated with the Ardingly Reservoir.

This river is used as a conduit to move water from the Ardingly reservoir to the abstraction in the lower reaches of the river. It is the releases from the reservoir at low to mid flows that makes the river heavily modified for water resources. A compensation flow of 4,000 m<sup>3</sup>/day has to be made from the reservoir to the Shell Brook at all times but when flows are needed for abstraction downstream, the discharge from the reservoir can be far higher.

AP 8 (Ardingly) is also affected by the scheme, as it lies just downstream of an abstraction point that can be used to directly fill Ardingly reservoir. However, this abstraction is rarely used and natural winter flows in the Ardingly Brook and Shell Brook are usually sufficient to fill the reservoir.

### 3.5. Protected areas

UK law provides a very high level of protection to two types of designated sites due to their special environment. These are:

- Special Areas of Conservation ([SAC](#)), which contribute to biodiversity by maintaining and restoring habitats and species;
- Special Protection Area ([SPA](#)), which provides protection to birds and their nests, eggs and habitats

Ramsar sites and Sites of Special Scientific Interest ([SSSI](#)) also carry a high level of environmental importance.

In the Adur and Ouse ALS area, the key protected areas that need to be considered are:

- Beeding Hill to Newtimber Hill (SSSI)
- Ashdown Forest (SAC and SPA)
- Castle Hill (SAC)
- Lewes Downs (SAC)

In addition to these sites, there are also many other SSSIs in the ALS area. In the lower River Ouse catchment there are some high quality wetland habitats, for example Offham Marshes SSSI and Lewes Brooks SSSI. Water Level Management Plans (WLMPs) have been prepared for these sites and their conservation status will be protected in the licensing process.

## 4. Managing existing licences

### 4.1. Water rights trading

We want to make it easier to trade water rights. A water rights trade is where a person sells all or part of their water right, as defined by their abstraction licence(s), to another person on a permanent or temporary basis. In the majority of cases a trade will involve a change in abstraction location and/or use which we will need to approve through the issue or variation of abstraction licences.

In licensing trades, as with new abstraction licences, we need to make sure that we don't cause any deterioration in water body status both within the water body / bodies where the trade will take place and to downstream water bodies. The section below provides a guide to the potential for trading in water bodies of a particular ALS water resource availability colour, as shown previously on Maps 1 to 4.

To find out more about licence trading please go to our [water management web pages on gov.uk](#)

### Guide to the potential trading in water bodies of a particular ALS water resource availability colour

#### Water available for licensing

Green 

Allow trades of recent actual abstraction and licensed abstraction, but little demand for trading expected within water body as water available for new abstractions.

#### Restricted water available for licensing

Yellow 

There may be opportunities for licence holders to trade up to their full licensed quantities, but the quantities of water available to trade may be restricted once levels of actual abstraction reach sustainable limits. We will not permit licence trades in water bodies where we are taking action to prevent deterioration unless the trade is consistent with achieving water body objectives.

#### Water not available for licensing

Red 

We will only trade recent actual abstraction but no increase in recent actual abstraction is permitted in water body. Licensed abstraction will be recovered for the environment.

#### HMWBs

Grey 

Opportunities for trading will depend on local operating agreements and local management.

## 4.2. Taking action on unsustainable abstraction

### 4.2.1. Action being taken on unsustainable abstraction in the Adur and Ouse

There are a series of actions that we are taking to address unsustainable abstraction, as part of our water Abstraction Plan. These include:

- Taking action to reduce or revoke any unused or partially used licences across the area to secure the proper use of water resources.
- Taking actions under the water industry national environment programme to make sure that water companies take a leading role in addressing unsustainable abstraction.
- Reviewing time limited licences, adjusting them as necessary to make sure they do not allow environmental damage now or in the future.

#### Lewes Winterbourne Stream

We have been working with Southern Water to consider the impact of their abstractions on the Lewes Winterbourne. The project will be completed by March 2020. No abstraction licence modifications are likely to be required but adaptive management measures are expected to be implemented on the stretch of the Lewes winterbourne stream that joins the Ouse in Lewes.

## 4.3. Regulating currently exempt abstraction

As the abstraction licensing system in England and Wales developed over the past 50 years, certain abstractions have remained lawfully exempt from licensing control. This meant that unlimited supplies of water could be abstracted, even in areas that are water stressed.

This means that those exempt abstractions could potentially take unlimited amounts of water, irrespective of availability and without regard to impacts on the environment or other abstractors.

Following two public consultations Government have introduced new Regulations to take effect from 1st January 2018. The Water Resources (Transitional Provisions) Regulations 2017 have removed the majority of previous exemptions from licensing control, and current exempt abstractors will now require a licence to lawfully abstract water.

The main activities affected are:

- transferring water from one inland water system to another in the course of, or as the result of, operations carried out by a navigation, harbour or conservancy authority;
- abstracting water into internal drainage districts;
- dewatering mines, quarries and engineering works, except in an emergency;
- warping (abstraction of water containing silt for deposit onto agricultural land so that the silt acts as a fertiliser);
- all forms of irrigation (other than spray irrigation, which is already licensable), and the use of land drainage systems in reverse (including transfers into managed wetland systems) to maintain field water levels;
- abstracting within currently geographically exempt areas, including some rivers close to the borders of Scotland; and
- abstractions covered by Crown and visiting forces (other than Her Majesty the Queen and the Duchies of Cornwall and Lancaster in their private capacity). Where we have



details of these abstractions, we've included them in our assessments to consider how they impact on the catchment

## 5. List of abbreviations

### **ALS**

Abstraction Licensing Strategy.

### **AP**

Assessment Point.

### **CED**

Common End Date.

### **Defra**

Department of Environment Fisheries and Rural Affairs.

### **EFI**

Ecological Flow Indicator.

### **GEP**

Good Ecological Potential.

### **GES**

Good Ecological Status.

### **GW**

Groundwater.

### **HMWB**

Heavily Modified Water Body.

### **HoF**

Hands off Flow.

### **HoL**

Hands off Level.

### **MI/d**

Megalitres per day.

### **SAC**

Special Areas of Conservation.

### **SPA**

Special Protection Areas.

### **SSSI**

Sites of Special Scientific Interest.

## **UKTAG**

United Kingdom's Technical Advisory Group.

## **WB**

Water body.

## 6. Glossary

### Abstraction

Removal of water from a source of supply (surface or groundwater).

### Abstraction licence

The authorisation granted by the Environment Agency to allow the removal of water.

### Assessment point

A significant point on a river, often where two major rivers join or at a gauging station.

### Catchment

The area from which precipitation and groundwater will collect and contribute to the flow of a specific river.

### Consumptive abstraction

Abstraction where a significant proportion of the water is not returned either directly or indirectly to the source of supply after use. For example for the use of spray irrigation.

### Discharge

The release of substances (for example, water, treated sewage effluent) into surface waters.

### Environmental flow indicator

Flow indicator to prevent environmental deterioration of rivers, set in line with new UK standards set by [UKTAG](#).

### Groundwater

Water that is contained in underground rocks.

### Hands off flow

A condition attached to an abstraction licence which states that if flow (in the river) falls below the level specified on the licence, the abstractor will be required to reduce or stop the abstraction.

### Impoundment

A structure that obstructs or impedes the flow of inland water, such as a dam, weir or other constructed works.

### Surface water

This is a general term used to describe all water features such as rivers, streams, springs, ponds and lakes.

### Water body

Units of either surface water or groundwater which we use to assess water availability.

## Would you like to find out more about us or your environment?

### Then call us on

**03708 506 506** (Monday to Friday, 8am to 6pm)

### email

**enquiries@environment-agency.gov.uk**

### or visit our website

**www.gov.uk/environment-agency**

### incident hotline

**0800 807060** (24 hours)

### floodline

**0345 988 1188** (24 hours)

Find out about call charges ([www.gov.uk/call-charges](http://www.gov.uk/call-charges))

### Environment first:

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