



# **CAMS: London abstraction licensing strategy**

A strategy to manage water resources sustainably

January 2020

We are the Environment Agency. We protect and improve the environment.

We help people and wildlife adapt to climate change and reduce its impacts, including flooding, drought, sea level rise and coastal erosion.

We improve the quality of our water, land and air by tackling pollution. We work with businesses to help them comply with environmental regulations. A healthy and diverse environment enhances people's lives and contributes to economic growth.

We can't do this alone. We work as part of the [Defra](#) group (Department for Environment, Food & Rural Affairs), with the rest of government, local councils, businesses, civil society groups and local communities to create a better place for people and wildlife.

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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 London [catchment](#) in the Thames river basin district. This catchment covers tributaries of the River Thames, with most of the area enclosed within the M25, with the northern boundary stretching to Hoddesdon and to the North Downs in the South. The Estuary and the area upstream of Teddington Lock are assessed under the Thames Corridor Catchment Abstraction Management Strategy ([TCAMS](#)).

The hydrology across most of the catchment is influenced by the impermeable London Clay. In these areas, rivers like the Brent and Crane, are very responsive to rainfall. Flows and water levels increase quickly following heavy and/or prolonged rainfall as water cannot percolate through the clay to recharge the Chalk beneath. As a result, the Chalk groundwater aquifer in these areas is considered to be confined.

The Confined Chalk underneath London is designated as a principal aquifer. The groundwater flow within this water body is drawn towards central London. The source of this groundwater comes from the unconfined upstream areas, mainly outside the London ALS catchment.

The South London Rivers, the Hogsmill, Wandle have sources that interact with the Chalk groundwater. As a result this groundwater aquifer is considered unconfined. Rainfall falling onto the North Downs is able to penetrate the soils recharging the Chalk aquifer. The rising groundwater table forms the headwaters of these watercourses. Map 5 shows the geology of the ALS area.

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](#)).

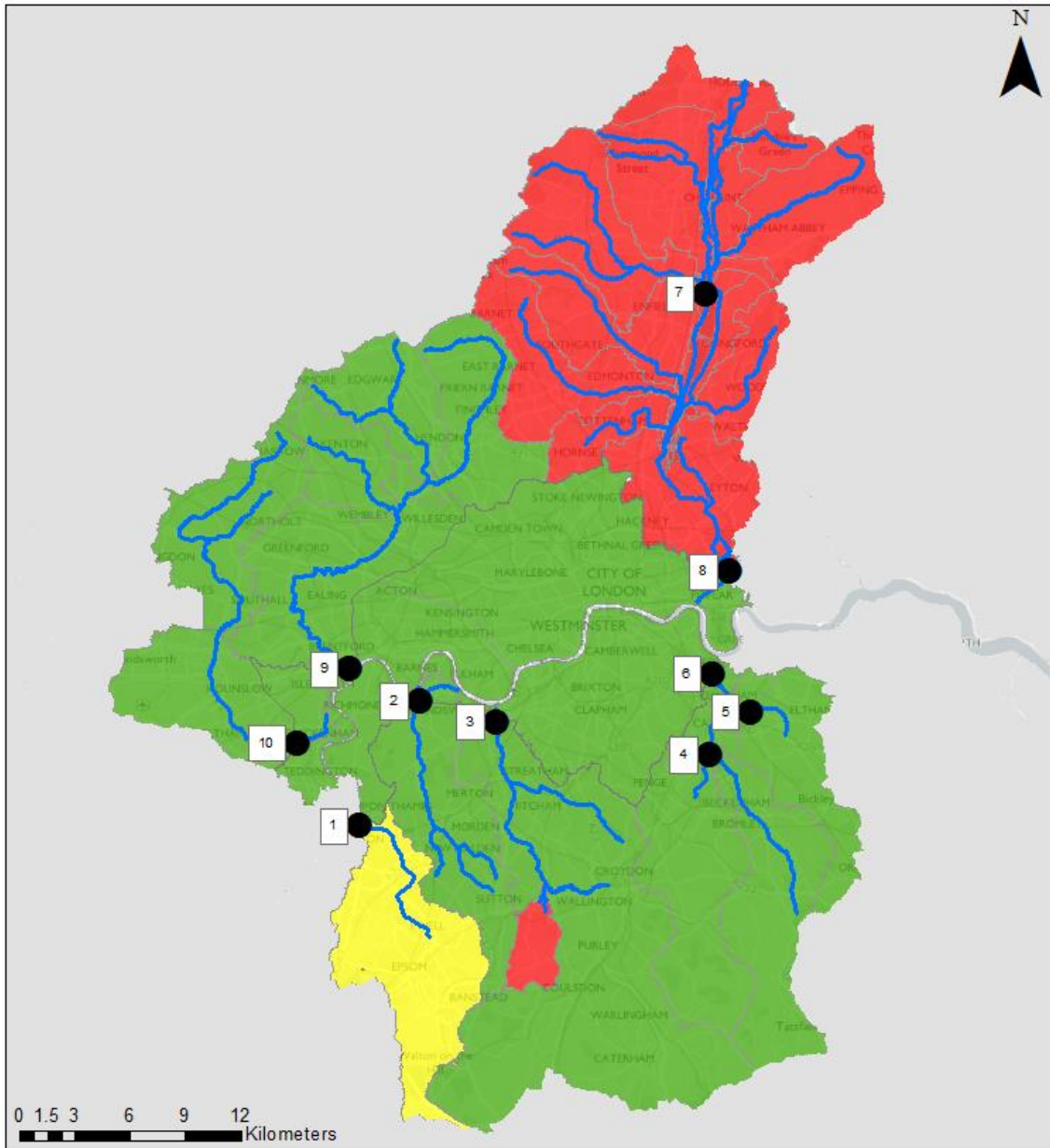
Please see [abstraction pages on gov.uk](#) for advice on who needs an abstraction or impoundment licence, and how to apply.

## 2. Water resource availability of the London ALS

### 2.1. Surface water resource availability

River flows change naturally throughout the year, so we want to protect flow variability in our rivers from low to high flow conditions. We use flow statistics to help to do this. Flow statistics are expressed as the percentage of time that flow is exceeded. The water resource availability is calculated at four different flows, Q95 (lowest), Q70, Q50, and Q30 (highest). A Q95 is the flow of a river which is exceeded on average for 95% of the time. A Q95 value is normally taken as a low flow, a Q70 is considered a summer flow, a Q30 is a winter flow, and Q50 is the mean flow. The water resource availability for this ALS are presented and explained in Maps 1-4 and section 2.1.1 below.

Map 1: Surface water resource availability colours at Q30 for London ALS.



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Legend:

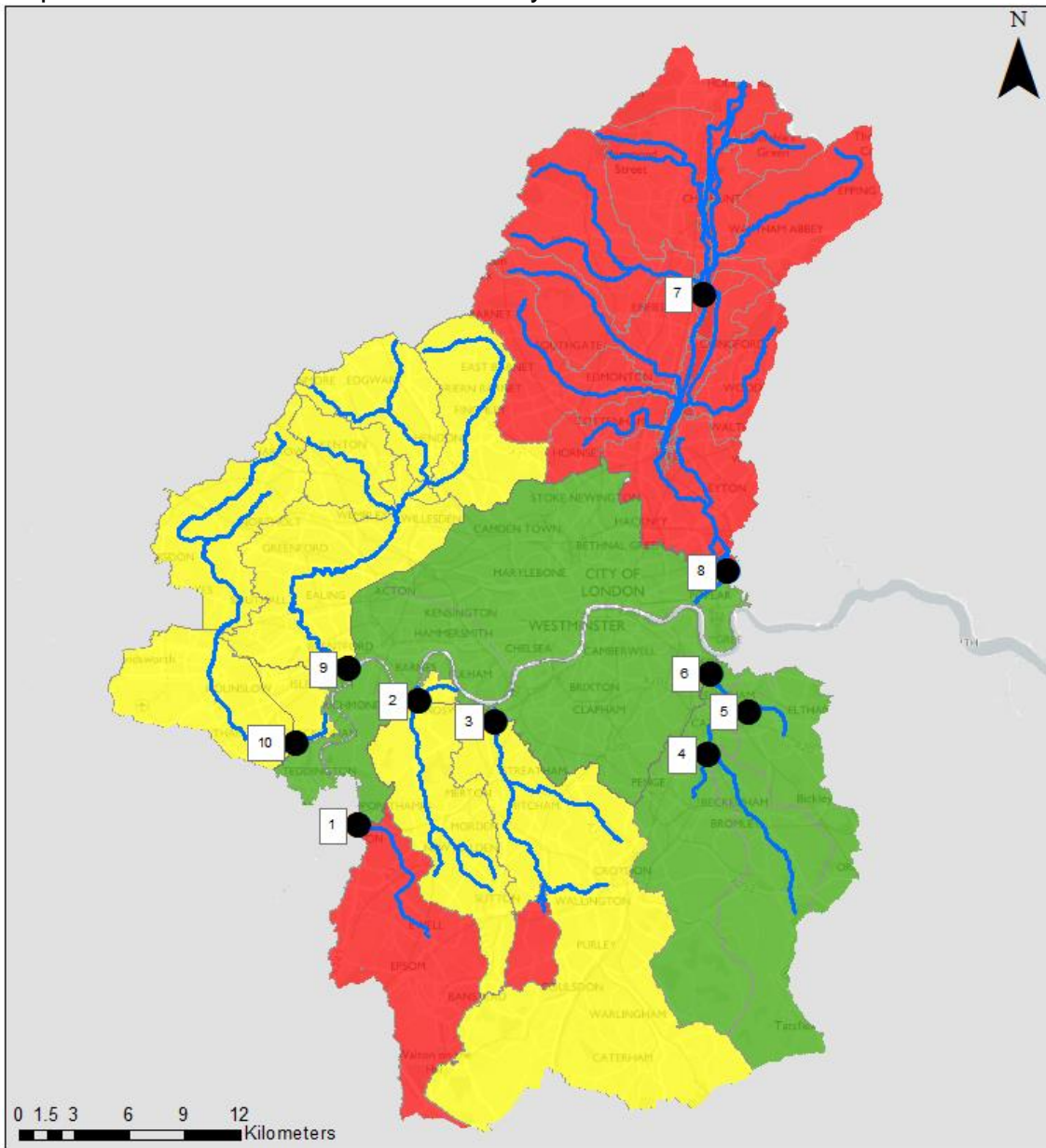
● Assessment Points (names can be found in Table 1)

— Rivers

Water Availability at Q30:

- Water available
- Restricted water available
- Water not available

Map 2 Surface water resource availability colours at Q50 for London ALS.



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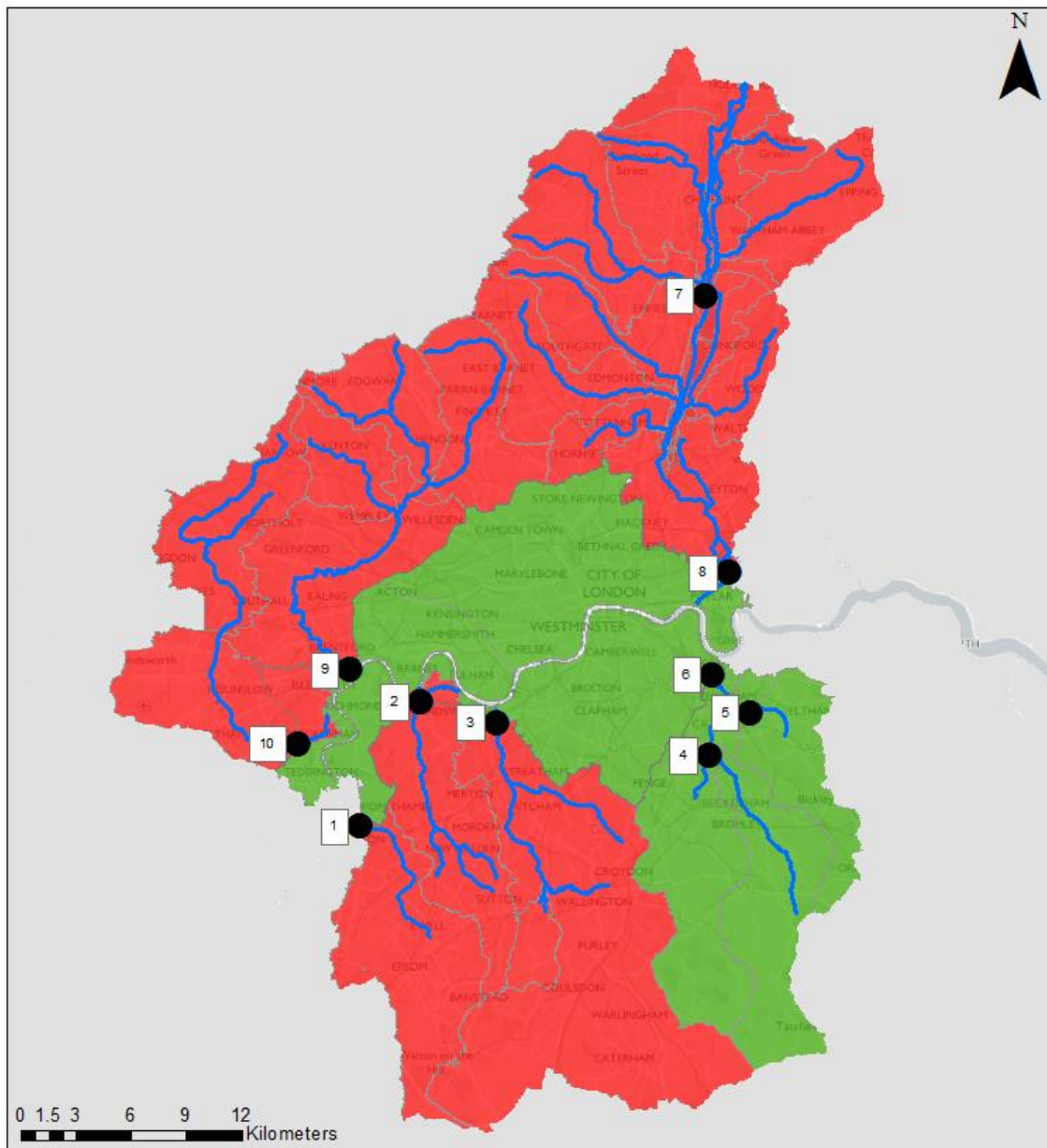
● Assessment Points (names can be found in Table 1)

— Rivers

Water Availability at Q50:

- Water available
- Restricted water available
- Water not available

Map 3 Surface water resource availability colours at Q70 for London ALS.



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Legend:

● Assessment Points (names can be found in Table 1)

— Rivers

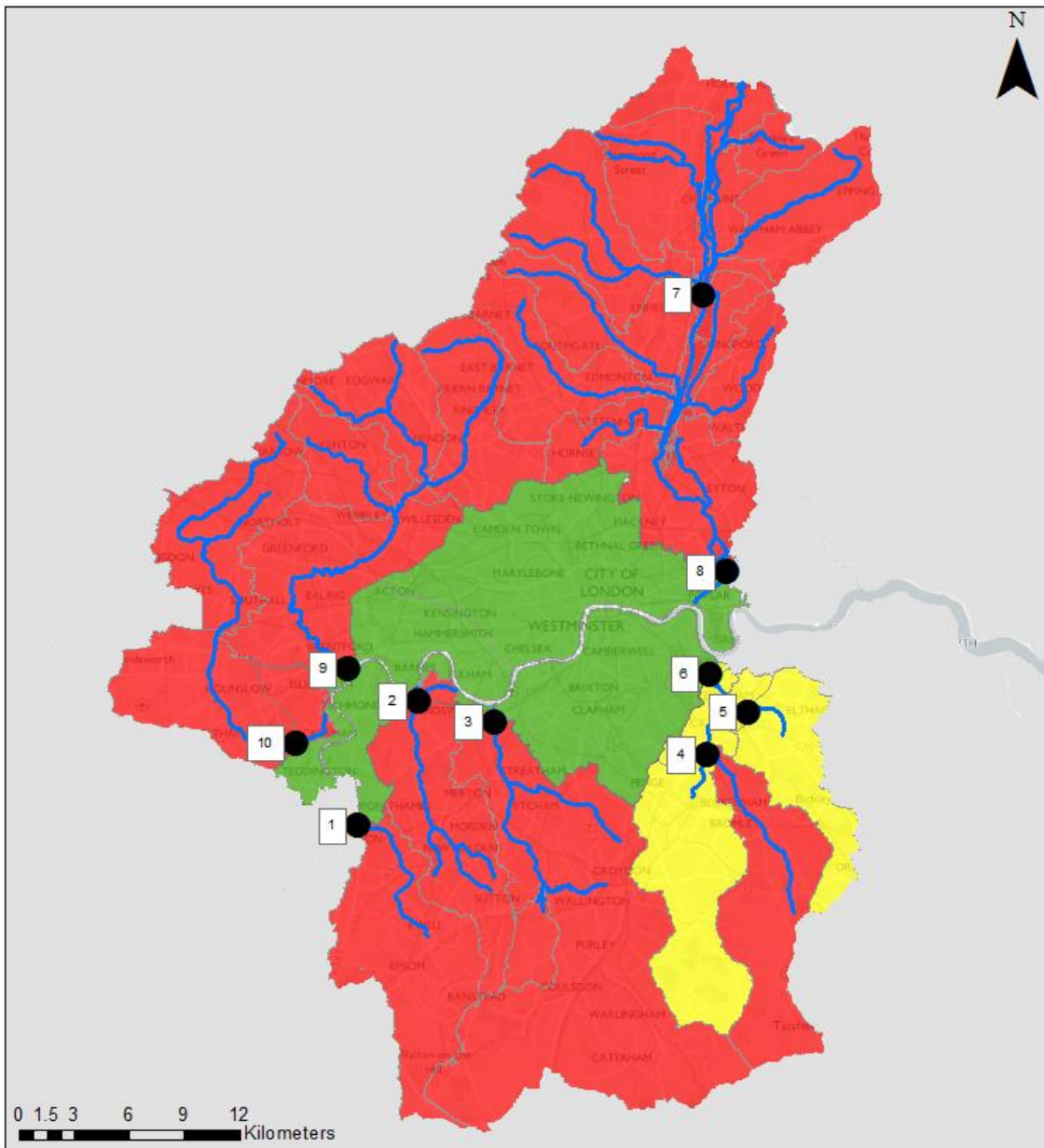
Water Availability at Q70:

■ Water available

■ Restricted water available

■ Water not available

Map 4 Surface water resource availability colours at Q95 for London ALS



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Legend:

● Assessment Points (names can be found in Table 1)

— Rivers

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.

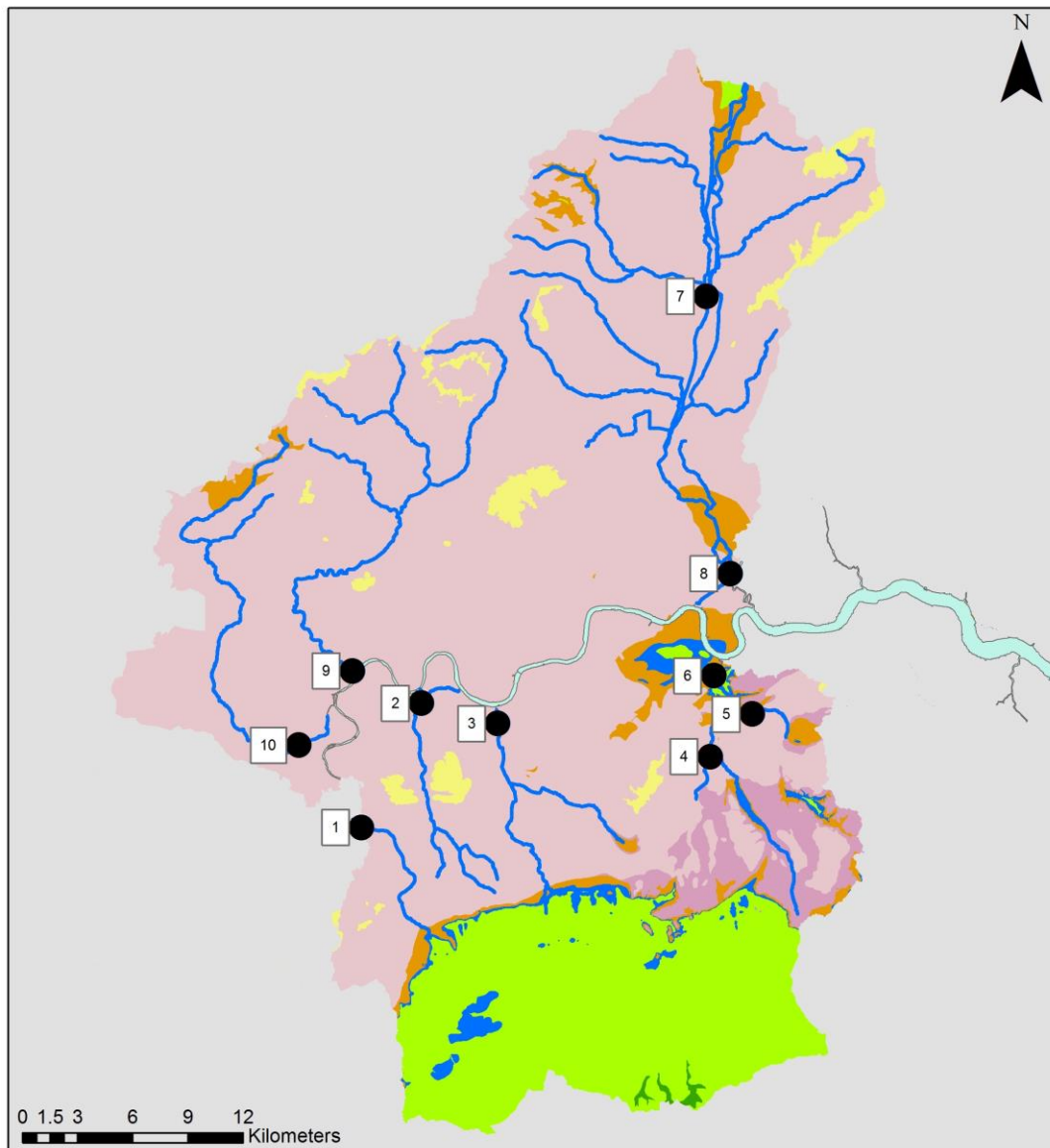
## 2.2. Groundwater resource availability

Groundwater availability is guided by the surface water resource availability colours in locations where chalk aquifer is unconfined, which are found in the Hogsmill, Wandle and Ravensbourne catchments. The same principle applies to the shallow deposits, like Bagshot Formation and Gravels. Map 5 shows geology of the London ALS. Maps 1-4 show the surface water resource availability colours in the London area.

The Confined Chalk is the part of the Chalk aquifer overlain by London Clay. It gains water transmitted underground within the Chalk from the North Downs and from the Chilterns. Resources were considered available in the 1990s when rising groundwater was identified as a danger to deeper underground structures in central London. Resources stabilised in the late 2000s and new consumptive abstractions will be limited to areas where groundwater levels are above the Thanet Sands and/ or into the London Clay base. Water availability within the Confined Chalk aquifer underneath the London ALS area is annually assessed. Details on management of the Confined Chalk are detailed in the [London Basin Chalk Aquifer Annual Status Report](#).

Abstractions from the Gravels, where groundwater is in continuity with the surface water, will be managed as a surface water abstraction. Abstractions from the Gravels, which do not have direct impact on the river system, may be permitted, but may be subject to restrictions such as prescribed groundwater levels. Restrictions will be determined on a case-by-case, based upon the nature and scale of the abstraction.

## Map 5 Geology of the London Catchment



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### Legend:

- Assessment Points
- Rivers
- Bagshot Formation & Claygate Member
- London Clay Formation
- Harwich Formation
- Lambeth Group
- Thanet Formation
- White Chalk Subgroup
- Grey Chalk Subgroup

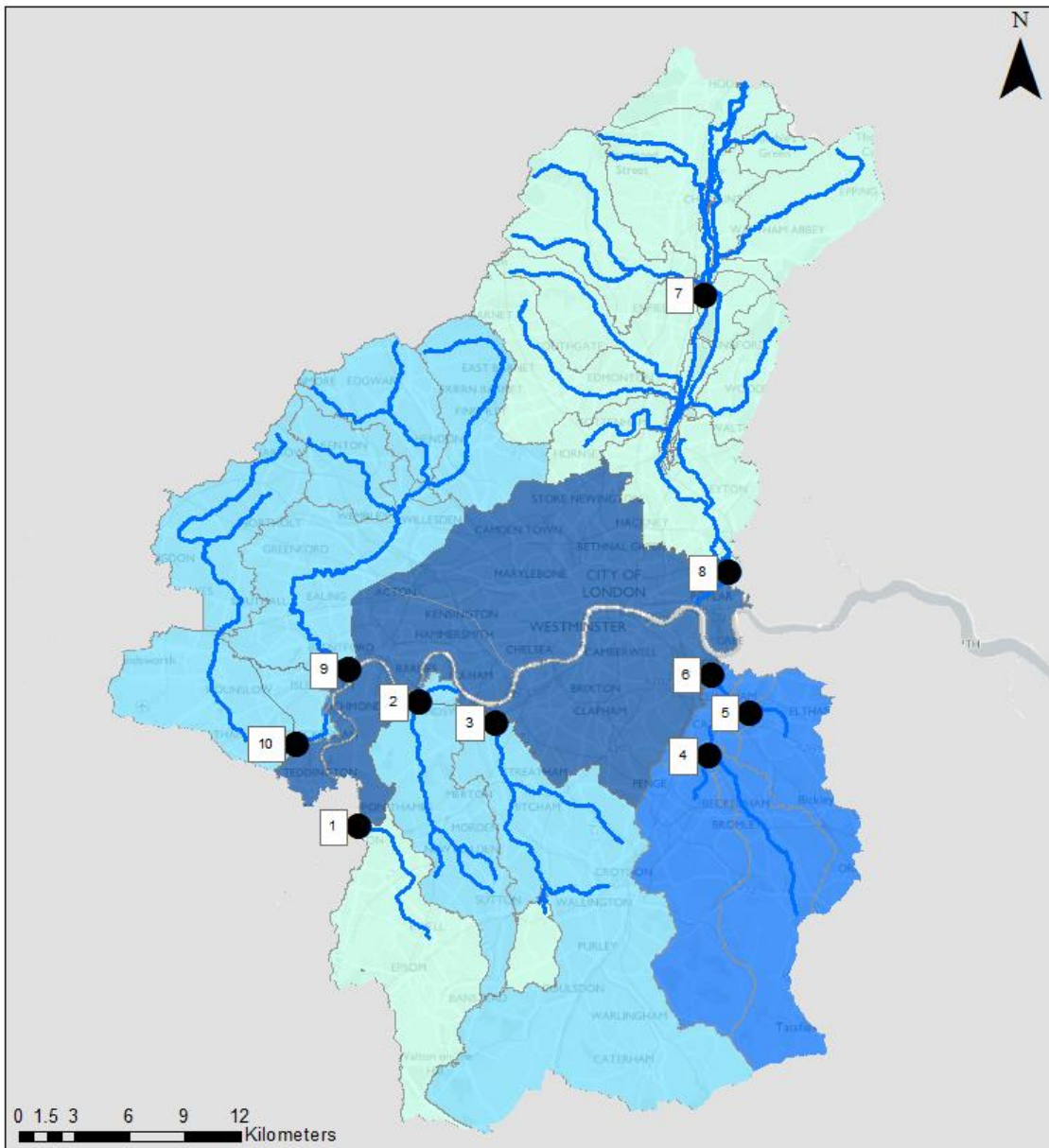
## 2.3. Surface water resource reliability

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 London area, surface water bodies, expressed as a percentage of time. This is not applicable to the Confined Chalk.

Map 6 Surface water resource reliability of the London ALS expressed as percentage of time available



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Legend:

● Assessment Points

— Rivers

Percentage of the time additional consumptive resource may be available:

- Consumptive abstraction available less than 30% of the time
- Consumptive abstraction available at least 30% of the time
- Consumptive abstraction available at least 50% of the time
- Consumptive abstraction available at least 70% 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 2025 and the subsequent one is 2037. When the CED is less than 6 years, new licences will be given the 2037 date. As these licences will have a licencing period of over 12 years, they will require a Minimum Value Condition (MVC), to be applied to the licence as per the legislation. A Minimum Value Condition will state a value to which abstraction may be reduced when we notify a licence holder. We will not be liable to pay compensation to the licence holder for implementing the reduction. Where we are uncertain about the long term impacts of an abstraction we will grant a short term licence during which time potential impacts are monitored and reviewed.

## 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 London 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. Where groundwater abstractions are from the confined Chalk reference should be made to section 3.2.

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 London 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. 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.

Licence Strategy for new and varied licences (Please see Table 1):

- Where the HoF at the AP has been over-ridden by a more restrictive River Thames Q50 flow constraint (AP's 1, 2, 3, 9, 10), water is likely to only be available in the wetter winter period. It is likely a storage system would be required to make use of this licence. In addition to the River Thames flow constraint, it is likely all consumptive surface water abstractions will be subject to a further local HoF constraint to protect flows within the local watercourse.
- For AP's 4, 5 and 6, the HoF is restricted to protect the flows at the downstream Ravensbourne AP6. Due to the size of these rivers and protective constraints, this means the amount of water available to abstract would be extremely low, and that water would only be available in the higher flow periods, typically wet winters.
- New consumptive surface water abstractions for the Middle and Lower Lee AP's will only be considered at time of very high flows. Abstraction at very high flows will not provide a reliable source of water, as they may not occur every year. There are potential flood risks when taking water under these conditions which an applicant will need to consider along with the suitability of the water for the intended purpose.
- On the Middle Lee high flows are diverted down a flood relief channel. The quoted figures in Table 1 for this AP7 do not take account of the split in flows between the River Lee and the flood relief channel. The HoF value will be very restrictive to when abstraction is permitted.
- On the Lower Lee high flows are split between a number of different channels. The quoted figures in Table 1 do not take account of this split in flow down the different channels. The HoF value will be very restrictive to when abstraction is permitted.
- Abstractions that are considered [non-consumptive](#) or small scale consumptive licences that result in an overall net benefit to the water environment may be considered beyond the stated restrictions, subject to a local impact assessment.
- Licence variations that could result in an increase in actual abstraction, but remain within existing licensed volumes will be considered in line with our licensing strategy for surface or groundwater abstractions, and subject to a local impact assessment.

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
1	Hogsmill	Restricted Water available for licensing	1780	182	53	Yes	This is the only river in the London ALS that flows into the non-tidal Thames which is heavily over abstracted. The HoF at Hogsmill AP 1 has been overridden by a more restrictive flow constraint to protect the Thames. See Thames Corridor ALS for further details.
2	Beverly Brook	Restricted Water available for licensing	39	182	8	No - gauging station 4km upstream	The HoF at Beverley Brook AP 2 has been overridden by a more restrictive flow constraint to protect the Thames below the Teddington Weir. See Thames Corridor ALS for further details.
3	Wandle	Restricted Water available for licensing	170	182	3.4	No - gauging station	The HoF at Wandle AP 3 has been overridden by a more restrictive

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
						4km upstream	flow constraint to protect the Thames below the Teddington Weir. See Thames Corridor ALS for further details.
4	Pool	No water available for licensing	12	266	3.4	Yes	These catchments are assessed as 'restricted water available for licensing' to protect the downstream flows of AP6.
5	Quaggy	No water available for licensing	3.9	266	0.3	Yes	These catchments are assessed as 'restricted water available for licensing' to protect the downstream flows of AP6.
6	Ravensbourne	No water available for licensing	17	266	0.8	No	
7	Middle Lee	No Water Available for Licensing	770.6	44	206.9	Yes	Please see licence strategy for this AP explained in Section 3.1



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
8	Lower Lee	No Water Available for Licensing	928.7	44	206.9	Yes	Please see licence strategy for this AP explained in Section 3.1
9	Brent	Restricted water available for licensing	57.3	182	15	No	The HoF at Brent AP 9 has been overridden by a more restrictive flow constraint to protect the Thames below the Teddington Weir. See Thames Corridor ALS for further details.
10	Crane	Restricted water available for licensing	68.3	182	7.01	No	The HoF at Crane AP 10 has been overridden by a more restrictive flow constraint to protect the Thames below the Teddington Weir. See Thames Corridor ALS for further details.

Table 1 Summary of licensing approach for the assessment points of London ALS.

## 3.2. Groundwater

Where groundwater (GW) abstraction directly impact on surface water flows, the impact is measured at the surface water AP. Restrictions may be applied to these licences, see section 2.1.1. 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.

The confined Chalk underneath London is a principal aquifer. This aquifer is artificially managed with the two guiding principles:

- Prevent flooding infrastructure under London, like the London Underground and the foundations of buildings.
- Maintain the groundwater levels above the Chalk to keep the Chalk always fully saturated and reduce risk of derogation.

Our licensing strategy for London Chalk Aquifer:

- No new consumptive licences will be granted in areas where the water table is already in Thanet Sands or Chalk.
- Water might be available for further consumptive use in the areas where the water table is in the Lambeth Group and/ or into the London Clay, subject to local assessment.
- In East London, where the Chalk outcrops around the River Thames, regular water quality sampling condition may be attached to the licence document as a result of increased risk of saline intrusion, due to the abstraction of groundwater.
- New Licences may have a hands-off groundwater level where, depending on the nature of the induced drawdown, abstraction may have to cease if it leads to dewatering of the Thanet Sands, or the Chalk, where the Thanet Sands is locally absent.
- If there has been recent abstraction development in the same area, further licences may not be granted in this area, if groundwater levels have not yet responded to the recent changes in abstraction.
- If any other proposals in the area have been refused for water resource reasons in the last five years, this will be taken into account.
- How close the proposal is to an existing or proposed Artificial Recharge Scheme will also be considered.
- New licences issued will usually have a condition for the borehole to be dipped to measure the groundwater level. Licence Holder will be expected to collect regular dip readings. This will require new boreholes to be constructed to include a dip tube. This will enable the Environment Agency to properly manage water resources in the London Chalk underground strata.
- Licences issued for any ground source heat pump scheme (GSHP) will have attached conditions that will require licence holders to monitor and record water abstraction volume, water levels and temperature of the groundwater on a daily basis (water abstraction for GSHP is only considered non-consumptive, when total volume of the abstracted water is returned to the source of supply, i.e. the same aquifer which water is abstracted from). GSHP schemes will need to be installed in accordance with best practise. Schemes which consider discharging water to foul sewer and/or different source of supply are considered consumptive and will not be looked upon favourably.

- In order to protect the Chalk and/or Thanet Sands from further desaturation in all zones, where a licence is issued, we will apply a hands-off level condition as necessary. These hand-off level conditions will be subject to regular review, and will be amended as may be required at the time of such reviews.
- The assessment of an application for GSHP will need to consider the following:
  - Any impacts on nearby abstractors and the aquifer from the abstraction and re-injection of groundwater;
  - The spacing and thermal performance of the system and how that may change over time;
  - Any underground structures and services that could be impacted through the proposed re-injection.
- All proposals will be subject to a local hydrogeological assessment, and licences will not be granted if the assessment shows the abstraction to be unsustainable or have unacceptable impacts. Potential applicants are advised to contact us at an early stage to discuss any proposals.

We base our decisions on water availability within the aquifer using the water table geology map, which is updated as appropriate in the report 'Management of the London Basin Chalk Aquifer'. Accordingly, the strategy is flexible as water can become available to address areas of water table rise. You can read the report on our [website](#).

### 3.3. 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.

The London catchment contains many nationally important Sites of Special Scientific Interest (SSSI) designated under the Wildlife and Countryside Act 1981. There are 12 water-dependent SSSI's, all of which support an abundance of species. There are four SACs and one SPA and Ramsar Site in the London catchment. Sites that are dependent on the water resources of the area and could be affected by a change to water levels and water usage are:

- Wimbledon Common (SAC) is designated for Northern Atlantic wet heath, *Erica tetralix* (a wetland terrestrial feature) and stag beetles.
- Richmond Park (SAC) is designated for acidic grassland and collections of invertebrates (mainly saproxylic) and stag beetle (*Lucanus cervus*).
- Lee Valley SPA and Ramsar Site (partially located in the London ALS) is made up of a series of wetlands and reservoirs. It comprises Rye Meads SSSI, Turnford and Cheshunt Pits SSSI and Walthamstow Reservoirs SSSI. These wetland habitats support wintering wildfowl, in particular gadwall and shoveler. Areas of reedbed within the site also support significant numbers of wintering bittern.

## 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 on maps 1-4. This would solely relate to surface water abstractions, and would exclude the confined Chalk. Potential trading of groundwater will be investigated on a case by case basis but would need to be in agreement with the London Chalk Aquifer management policy, explained in section 3.2.

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

### Guide to the potential trading in surface 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. Potential trading of groundwater would be subject to investigation but would need to be in agreement with the London Chalk Aquifer management policy, explained in section 3.2.

#### 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.

## 4.2. Taking action on improving flows in rivers

### 4.2.1. Action being taken on improving flows in the rivers in the London ALS All rivers in London ALS

Actions under the Water Industry National Environment Programme (WINEP)

Revocations of licences for non-use

Reductions of under-used and unused licence quantities

Changes to time limited licences where: abstraction quantities are no longer justified, renewal of licence could pose a risk of deterioration in ecological status, and not all sustainability issues in the catchment are resolved.

#### **AP3: Wandle**

The water resource availability colour is yellow.

Following investigations into the impacts of water company abstraction on the Carshalton and Croydon branches of the River Wandle, Thames Water and SES Water have carried out an appraisal of several options. The options are intended to mitigate the low flows exacerbated by abstraction impacts, by using recirculation, habitat improvement and changes to current operation.

#### **AP7 and 8: Middle and Lower Lee**

The water resource availability colour is red.

Investigation to understand the influence of abstraction on the Lower Lee river system, being undertaken by Thames Water Ltd.

#### **AP 10: River Crane**

The water resource availability colour is red.

Investigation to ensure more consistent flow in the River Crane, including potential lowering of Mereway Weir.

(The hydrological regime for the River Crane is at Does Not Support Good status, which means that there are issues with flow in certain parts of the river. This project is aiming to improve the flow for this reach of the river.)

## 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.

### **MRF**

Minimum Residual Flow

### **SAC**

Special Areas of Conservation.

### **SPA**

Special Protection Areas.

**SSSI**

Sites of Special Scientific Interest.

**TCAMS**

Thames Corridor Abstraction Licensing Strategy.

**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.

### Non-consumptive abstraction

Abstraction where all the water is returned to the same source of supply after use. There can only be a relatively short environmentally acceptable distance between the abstraction and discharge points.

### 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.

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