Teme Abstraction Licensing Strategy

February 2013

A licensing strategy to manage water resources sustainably

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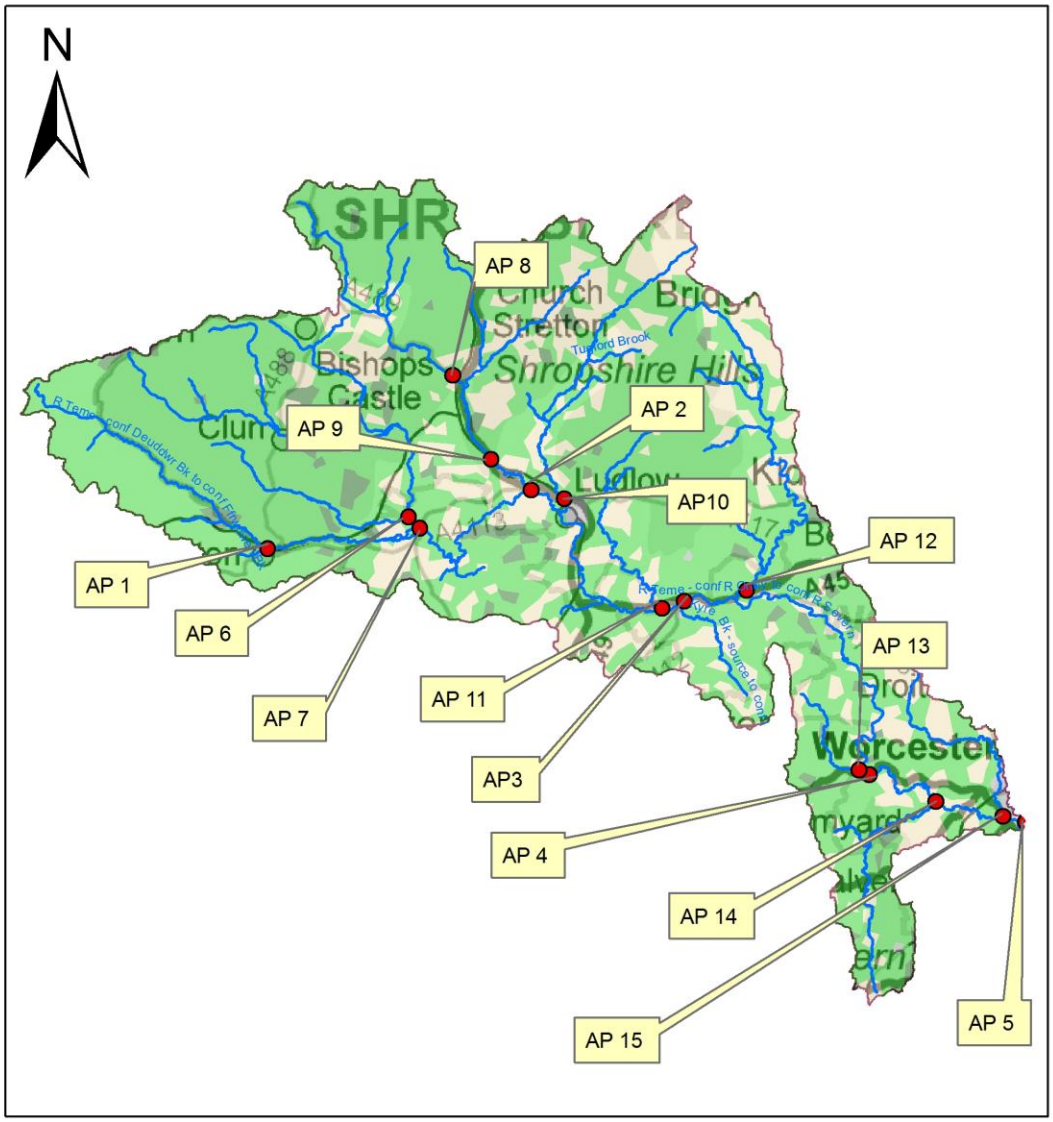
Published by:

Environment Agency
Horizon House
Deanery Road
Bristol BS1 5AH
Tel: 0370 8506506
Email: enquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

Teme CAMS Area



Creation date 3rd January 2013

Map 1: Teme CAMS (Catchment Abstraction Management Strategy) area.

Foreword

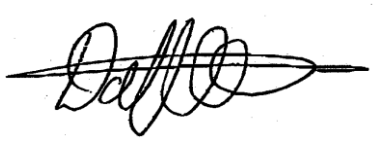
Water is the most essential of our natural resources, and it is our job to ensure that we manage and use it effectively and sustainably.

Our rivers and groundwater resources support a diverse range of wildlife and habitats, yet with population growth and the latest climate change predictions, our water resources are under increasing pressure to support the needs of society, the economy and the environment.

This licensing strategy sets out how we will manage water resources in the Teme catchment, provides information on how existing abstraction is regulated and if water is available for further abstraction. The plan will also detail how it protects our requirements under the Water Framework Directive, ensuring no ecological deterioration to our rivers.

It is important that our activities today do not damage the environment or water supplies of the future. We have a shared responsibility to use water wisely, in the home, at work and for recreational activities, a challenge this licence strategy will help us to meet.

Dafydd Evans



Area Manager- Midlands West

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1. About the Licensing Strategy

This **Licensing Strategy** sets out how water resources are managed in the Teme area. It provides information about where water is available for further abstraction and an indication of how reliable a new abstraction licence may be.

This strategy was produced in February 2013 and it supersedes the strategy issued in September 2005.

How Catchment Abstraction Management Strategies (CAMS) contribute to achieving environmental objectives under the Water Framework Directive (WFD)

The Water Framework Directive's main objectives are to protect and enhance the water environment and ensure the sustainable use of water resources for economic and social development.

CAMS set out how we will manage the water resources of a catchment and contribute to implementing the WFD.

CAMS contribute to the WFD by:

- providing a water resource assessment of rivers, lakes, reservoirs, estuaries and groundwater referred to as water bodies under the WFD;
- identifying water bodies that fail flow conditions expected to support good ecological status;
- preventing deterioration of water body status due to new abstractions;
- providing results which inform River Basin Management Plans (RBMPs).

When is an abstraction licence required?
In most situations you need a licence from us if you want to abstract more than 20m^3/day (4 400 gallons) of water per day from a:

- river or stream
- reservoir, lake or pond
- canal
- spring or
- an underground source

Whether or not a licence is granted depends on the amount of water available after the needs of the environment and existing abstractors are met and whether the justification for the abstraction is reasonable.

If you want to apply for an abstraction licence or make changes to a licence that you already have then, please contact us:

- by telephone on 03708 506 506
- by email at enquiries@environment-agency.gov.uk
- or visit our website at www.environment-agency.gov.uk.

Sustainable abstraction

This licensing strategy has been produced using evidence and information gathered during the CAMS process. Through this process we consider the impact of abstraction at all flows. This helps to manage future abstraction more sustainably.

We now assess water resources at a sub-catchment level called water bodies. This means that we can provide more detailed information on the availability of water resources in the Teme CAMS area compared to the scale used in the previous strategy.

Within this strategy we also outline where we may need to reduce current rates of abstraction and our approach on time limiting licences.

The background, aims and principles of CAMS, the over arching principles we use when managing abstraction licences, and links with other initiatives, are detailed in our document: Managing Water Abstraction. You should read Managing Water Abstraction when reading this catchment specific licensing strategy.

2. Teme CAMS area

2.1 Catchment Overview

The Teme CAMS area covers the whole of the River Teme catchment situated within the counties of Shropshire, Herefordshire, Worcestershire and Powys and is the second largest tributary of the River Severn. The River Teme itself rises in the Kerry Hills in Mid-Wales from a small spring in Bryn Coch quarry on Cilfaesty Hill at 460 metres above sea level. The Teme is a rural river, passing through only three market towns before it joins the River Severn some 122 kilometres downstream south of Worcester. The north of the area is bordered by the Stiperstones, Long Mynd and Wenlock Edge, and to the south east by the Suckley Hills and the ridge of the Malvern Hills.

Hydrology
The Teme CAMS covers an area of 1650 km^2 and includes the major tributaries of the Clun, Onny, Corve and the Rea, and larger brooks such as the Kyre, Leigh and Laughern. The rural nature of the area is reflected by high quality rivers supporting high class fisheries and providing a variety of habitats for a wide range of flora and fauna. The whole of the River Teme itself (including the bottom section of the River Clun) is classed as a Site of Special Scientific Interest (SSSI) as it represents a near natural and biologically rich river. The Teme often experiences low flows during the summer months, and in the upper reaches of the catchment there can be significant water movement between the river channel and the adjoining gravel deposits. This is a natural process which under very low flow conditions leads to some short sections of the river channel running dry before water re-emerges from the gravel deposits. Examples of this natural phenomenon have been recorded upstream of Leintwardine.

Geology and Hydrogeology
The geology underlying the River Teme catchment area is complex and varied due to the large range of different rock types present and the high degree of faulting and structural alteration that they have undergone. There are no principal aquifers within the area and as such groundwater resources within the catchment are limited.

Land Use
The area is predominantly rural, making agriculture the main land use. Urban development within the area is characterised mainly by market towns and local administrative centres many with business parks and light industrial estates. The population density is low.

Topography
The region is an extension of the Welsh Plateau and a continuation of the Kerry Hills. The Teme River cuts the plateau forming a series of broad-backed ridges divided by steep narrow valleys. The Teme and the Clun drain the region in the south and centre, the Onny and the Camlad in the north. Slopes vary from moderate to steep, and the higher summits join up with the old plateau surface. The landscape becomes softer in the east, breaking into a series of isolated rounded hills.

Main Water Resource Pressures
The main demand for water within the Teme catchment comes from public water supply and agriculture, with very little industrial use. The River Teme has become an important source of water for irrigation and more recently as a source of water for Hydroelectric Power Schemes. Hydroelectric Power Schemes are classed as a non consumptive use of water as all of the abstracted water is returned to the watercourse.

Pressure is also placed on water quality due to the potential impacts from the use of fertilisers, general land management and sewage treatment discharges.

Map 1 shows the Teme catchment area.

3. Water resource availability in the Teme area

3.1 Resource assessment

Resource assessment is at the heart of abstraction management. To manage water effectively we need to understand how much is available and where it is available, after considering the needs of the environment. We have a monitoring network to measure river flows and groundwater levels. We use this data along with our knowledge of human influences and environmental needs to establish a baseline of water availability for each water body that builds into a picture for the catchment. The main components of this assessment that help us to understand the availability of water resources are:

- a resource allocation for the environment defined as a proportion of natural flow, known as the Environmental Flow Indicator (EFI);
- the Fully Licensed (FL) scenario - the situation if all abstraction licences were being used to full capacity;
- the Recent Actual (RA) scenario - the amount of water which has actually been abstracted on average over the previous six years.

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. Resource availability is calculated at four different flows, Q95 (lowest), Q70, Q50 and Q30 (highest).

This information gives a realistic picture of what the current resource availability is within a given water body. Water bodies are sub-catchment surface water units or groundwater units on which we carry out assessments and map results.

3.2 Resource availability

3.2.1 Surface water

If you want to abstract water, you need to know what water resources are available within a catchment and where abstraction for consumptive purposes is allowed. To show this we have developed a classification system which indicates:

- the relative balance between the environmental requirements for water and how much is licensed for abstraction;
- whether water is available for further abstraction;
- areas where abstraction may need to be reduced.

The availability of water for abstraction is determined by the relationship between the fully licensed and recent actual flows in relation to the EFI. The results mapped onto these water bodies are represented by different water resource availability colours showing the availability of water resource for further abstraction. The water resource availability colours are explained in Table 1.

In addition to these water resource availability colours we've classified some surface water bodies as 'high hydrological status' which are coloured blue on the maps. In these water bodies very little actual abstraction occurs and they show virtually undisturbed, or close to natural, flow conditions.

Another category of water body are Heavily Modified Water Bodies (HMWB). These can be classified for many reasons but for water resources they are classified if they contain a lake and/or reservoir that influences the downstream flow regime of the river. The downstream 'flow modified' water bodies are also classified as heavily modified.

We will add any conditions necessary to protect flows to a new licence during the licence determination procedure. We will base licence conditions on the water resource availability at different flows (high to low).

In cases where there is a flow deficit (RA is below the EFI) or risk of a flow deficit (FL below the EFI), there may be water available for abstraction at higher flows. This means that water may be scarce at low flows, but may be available to abstract at medium or high flows. A licence may still be granted but with conditions which protect the low flows. This usually takes the form of a Hands off Flow (HOF) condition on a licence which requires abstraction to stop when the river flow falls below a certain amount. A river may also be heavily supported by flows from a reservoir and may have unnaturally high 'low' flows which means that the river environment is most vulnerable at medium flows.

Water resource availability colour	**Implication for licensing**
High hydrological regime	There is more water than required to meet the needs of the environment. However, due to the need to maintain the near pristine nature of the water body, further abstraction is severely restricted.
Water available for licensing	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	Fully Licensed flows fall below the 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 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. Further information is available on the Environment Agency website.
Water not available for licensing	Recent actual flows are below the EFI. This scenario highlights water bodies where flows are below the indicative flow requirement to help support Good Ecological Status (as required by the Water Framework Directive Note : we are currently investigating water bodies that are not supporting GES / GEP). No further consumptive licences will be granted. Water may be available if you can buy (known as licence trading) the amount equivalent to recently abstracted from an existing licence holder. Further information is available on the Environment Agency website.
HMWBs (and /or discharge rich water bodies)	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.

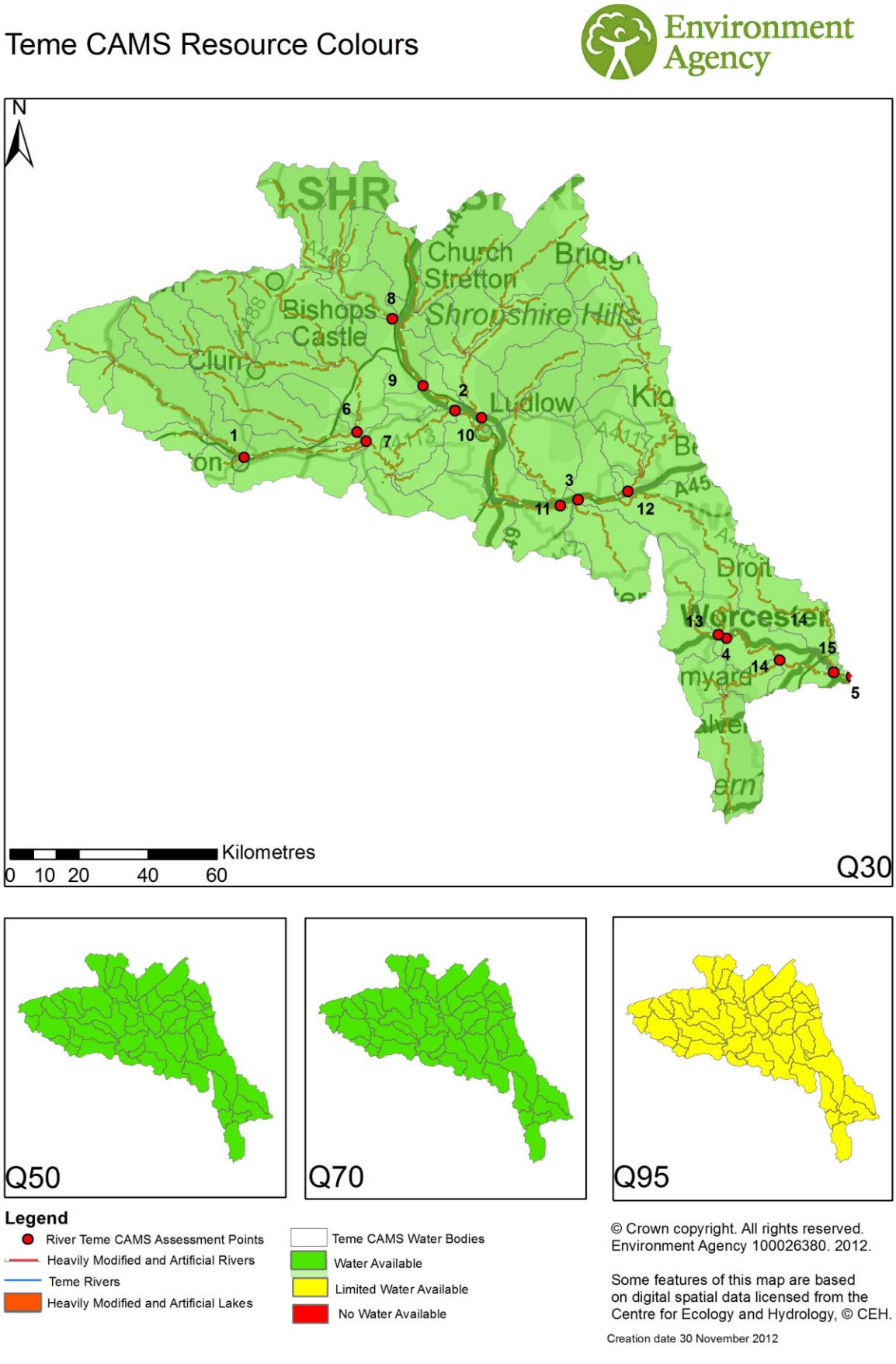
Table 1: Implications of water resource availability colours.

3.2.2 Groundwater

Groundwater availability is guided by the surface water resource availability colours unless we have better information on principal aquifers or are aware of local issues we need to protect.

Please refer to section 4.2.2 for further information

Map 2 shows the water resource availability colours in the Teme CAMS area. The same availability is applied to groundwater and surface water.



Map 2: Water resource availability colours for the Teme CAMS.

3.3 Resource reliability

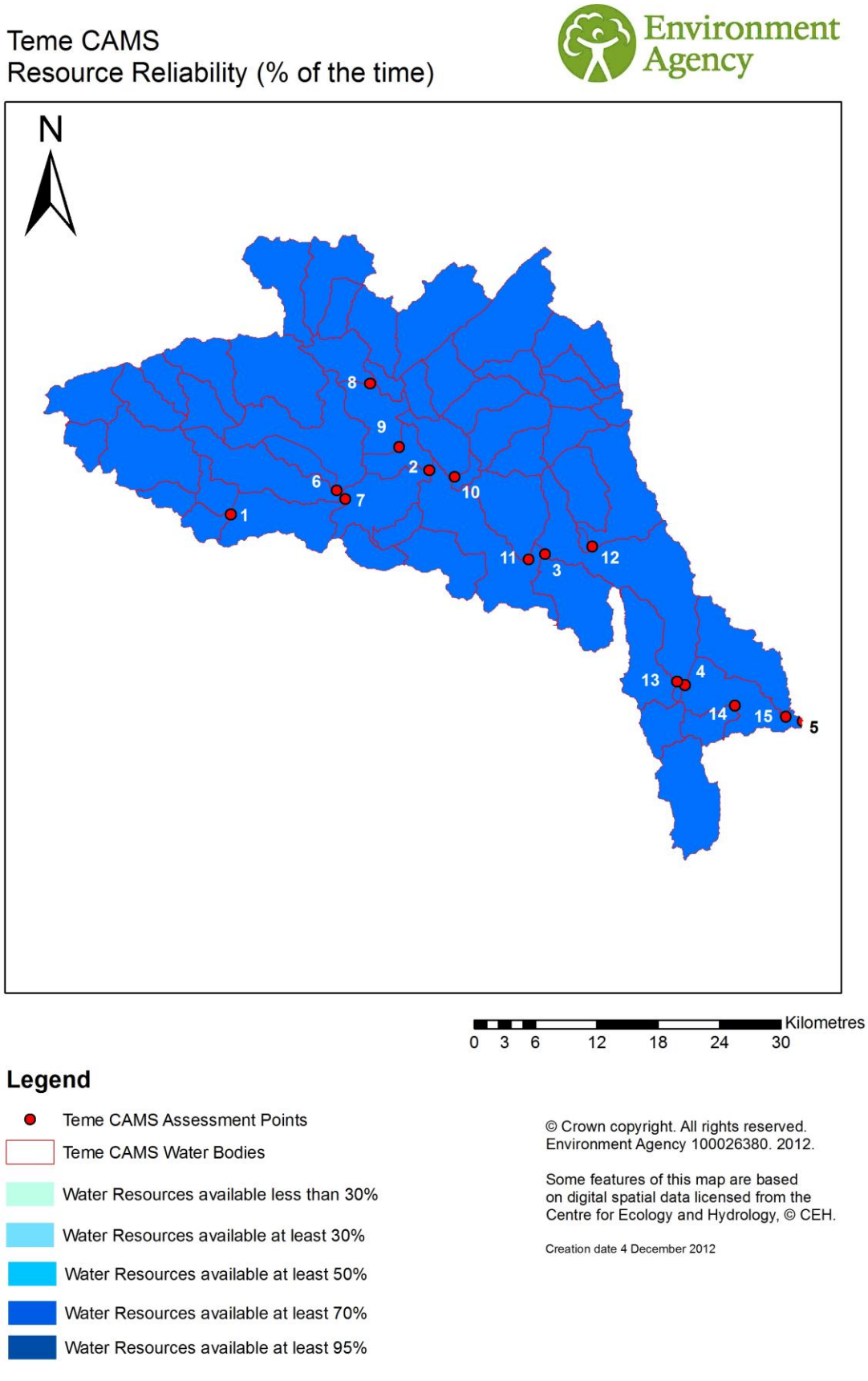
If you want to apply for a licence, it is worth considering that in some areas a new, consumptive abstraction may not be 100% reliable. Reliability information is based on CAMS resource availability colours and is a way of presenting the reliability of new abstractions at all flows.

The availability of water for abstraction within a river varies greatly from high to low flows. By assessing the quantity of water available at different flows it is 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 on application.

Table 2 shows the resource availability colour associated with the percentage reliability of consumptive abstraction. Map 3 gives an indication of the surface water resource reliability in the Teme area expressed as percentage of time.

Resource	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.
	Not assessed

Table 2: Percentage reliability of consumptive abstraction.



Map 3: Surface water resource reliability expressed as percentage of time available.

4. How we manage abstractions in the Teme area

4.1 Principles

The document Managing Water Abstraction outlines the over-arching principles that we follow in managing our water resources. How we apply these principles in the Teme area is outlined in this section. If you want to abstract water it outlines where water is available for further abstraction and the principles we follow in assessing your application for a licence.

Abstraction licence application process

In most situations anyone wanting to take more than 20m^3/day (4 400 gallons) from a 'source of supply' (river, stream, lake, well, groundwater, etc) must have an abstraction licence. The application process for abstraction is similar to the planning process in that we may require the application to be advertised and may require supporting environmental information. When considering the application we check that the quantities applied for and the purpose of the abstraction are reasonable, that there is sufficient water available to support it and that the potential impacts on the environment and other water users are acceptable. Depending on the outcome of our investigations we will issue a licence either as applied for, or with conditions that restrict the abstraction to protect the environment or other users. In certain cases we may have to refuse the application. Any applicant who is not happy with our determination (decision) has the right to appeal against it.

Each application is determined on its own merits

Whilst this document may say that water is available for further abstraction, this does not guarantee that all applications will be successful. We will determine each application upon its own merits and any local impacts.

A licence does not guarantee that water is available

It is important to understand that when we issue a licence we do not guarantee the supply of water. We have to protect the environment and the rights of other abstractors. To do this we may add constraints to licences. Licence holders need to understand the implications of this as it affects the reliability of supply. For example, in drier years it is more likely that Hands off Flow conditions will come into effect and abstraction is restricted.

Abstractions are managed to protect the environment.

No ecological deterioration

We assess the impact of new applications for water to make sure that the resultant river flows:

- will maintain a good ecology or if the ecology is not good, will not deteriorate the ecology of our rivers further;
- will maintain the near pristine condition of high hydrological regime water bodies.

We will also take action if necessary to limit the increase in current abstraction if we think this will lead to deterioration of the ecology or the near pristine condition of our high hydrological regime water bodies.

These principles apply to the water body in which the abstraction is located and also to all downstream water bodies that may be affected by any reduction in abstraction related flow. Doing this means that we will maintain the water body status as reported in the River Basin Management Plans (2009) and ensure compliance with the European Union Water Framework Directive.

Water efficiency and demand management

We need to make the best use of our existing water resources. Adopting water efficiency and demand management measures can help us achieve this goal. Water efficiency is one of the tests that will need to be satisfied before we grant a new licence or renew a time limited licence. We will promote the wise and efficient use of water and actions to limit demand (and reduce leakage) to curb the

growth in abstraction and limit the impact on flows and any consequent impact on the ecology. For further details on our general approach to licensing please see the document Managing Water Abstraction.

There are various water efficiency and demand management measures being implemented throughout the Teme catchment, which can be summarised as follows:

- The Environment Agency continues to work closely with the agricultural community to increase water efficiency and improve resilience to climate change. Partnership work with organisations such as the British Potato Council, Natural England and the NFU has been undertaken to promote water efficiency in agriculture in the East and West Midlands through farm events and demonstration days. A suite of publications is also available covering many aspects of water use within the agricultural sector. For example the 'Rainwater Harvesting: an on-farm guide' and 'Thinking about an irrigation reservoir?' booklets.

- The Environment Agency is working with the NFU and abstractors to promote and set up Water Abstractor Groups. These enable a forum for abstractors to share ideas and set up arrangements to share the limited water resources which may be available within a catchment.

- Environment Agency staff undertaking compliance and enforcement checks will look for evidence of water being used efficiently.

- Winter storage reservoirs are encouraged and general water efficiency measures are strongly promoted as part of any abstraction licence application discussions.

- At times of limited resource we engage with spray irrigators and encourage them to use water as efficiently as possible. We promote voluntary restrictions to reduce demand and prevent or delay formal licence restrictions.

Impoundments
Applications for impoundments will be dealt with on a case-by-case basis. An impoundment is a dam, weir or other construction in an inland waterway that obstructs or impedes flow and/or raises water levels.

Hydropower
Water abstraction for hydropower schemes is non-consumptive, with all water used returned to the watercourse. Hands off Flows and maximum abstraction volumes are determined in line with the Environment Agency's Hydropower Good Practice Guidelines and based on the assessment of environmental risk for each scheme. For further information please refer to our website.

4.2 Abstraction restrictions

When issuing a licence we have to protect the environment and rights of other abstractors. To do this we may add conditions to licences.

Time limited licences
In recognition of changing pressures on water resources all new licences and variations (other than downward variations or minor variations having no environmental impact) will have a time limit imposed. This allows for a periodic review and changes to be made to abstraction licences where circumstances have changed since the licence was granted.

All new licences within a CAMS area have a **common end date** (CED) so they can be reviewed at the same time. When an application is made within six years of the CED, we will generally apply the subsequent CED to any licence granted. This is to avoid issuing shorter and shorter duration licences as the CED approaches. This means that the initial CED on a licence may be between six and 18 years duration. On replacement, the normal duration will then usually be 12 years.

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.

23% of the licences in the Teme CAMS are time-limited. CEDs occur every twelve years. The next CED for the Teme CAMS is 31 March 2013 and the subsequent one is 31 March 2025.

Additional information about the replacement of time limited licences is available in Managing Water Abstraction.

Hands off flow conditions

To protect the environment we may issue a licence with a condition referred to as a 'Hands-Off Flow' (HOF). This specifies that if the flow in the river drops below that which is required to protect the environment abstraction must stop, hence 'Hands-Off Flow'.

4.2.1 Surface water

We assess surface water flows at Assessment Points (APs) which are significant points on the river, often where two major rivers join or at a gauging station. Where flows fall below the EFI, new abstractions may be subject to HoFs.

Table 3 gives an indication of how much water is available for further abstraction and the associated restrictions that we may apply to new and varied abstraction licences from the main river. Tributaries to the main river may be subject to different restrictions and quantities.

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.

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 3 are the APs in the Teme CAMS 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 will decide this on a case by case basis.

Table 3: HOFs for the assessment points of the Teme CAMS.

AP	Name	Water Resource Availability Colour	HOF Restriction (Ml/d)	Number of days per annum abstraction may be available	Approximate volume available at restriction (Ml/d)	Is there a gauging station at this AP?
1	River Teme at Knighton	Restricted water available for licensing	240 Ml/d at Tenbury gauging station on the Teme	**292**	**See AP 3**	**Yes**
2	River Teme at Bromfield	Restricted water available for licensing	240 Ml/d at Tenbury gauging station on the Teme	**292**	**See AP 3**	**No**

3	River Teme at Tenbury	Restricted water available for licensing	240 Ml/d	**292**	**29 Ml/d is available upstream of Tenbury and 33 Ml/d is available downstream of Tenbury**	**Yes**
4	River Teme at Knightsford	Restricted water available for licensing	226 Ml/d at Tenbury gauging station on the Teme	**310**	**See AP 3**	**Yes**
5	River Teme at Worcester	Restricted water available for licensing	226 Ml/d at Tenbury gauging station on the Teme	**310**	**See AP 3**	**No**
6	River Clun at Redlake	Restricted water available for licensing	240 Ml/d at Tenbury gauging station on the Teme	**292**	**See AP 3**	**No**
7	River Clun at Clunton	Restricted water available for licensing	240 Ml/d at Tenbury gauging station on the Teme	**292**	**See AP 3**	**No**
8	Quinney Brook	Restricted water available for licensing	240 Ml/d at Tenbury gauging station on the Teme	**292**	**See AP 3**	**No**
9	River Onny at Onibury	Restricted water available for licensing	240 Ml/d at Tenbury gauging station on the Teme	**292**	**See AP 3**	**Yes**
10	River Corve at Ludlow	Restricted water available for licensing	240 Ml/d at Tenbury gauging station on the Teme	**292**	**See AP 3**	**Yes**
11	Ledwyche Brook	Restricted water available for licensing	240 Ml/d at Tenbury gauging station on the Teme	**292**	**See AP 3**	**No**
12	River Rea	Restricted water available for licensing	226 Ml/d at Tenbury gauging station on the Teme	**310**	**See AP 3**	**Yes**
13	Sapey Brook	Restricted water available for licensing	226 Ml/d at Tenbury gauging station on the Teme	**310**	**See AP 3**	**No**
14	Leigh Brook	Restricted water available for	226 Ml/d at Tenbury gauging	**310**	**See AP 3**	**No**

		licensing	station on the Teme			
15	Laughern Brook	Restricted water available for licensing	226 Ml/d at Tenbury gauging station on the Teme	**310**	**See AP 3**	**No**
** The volumes of water stipulated as being available apply to the whole of the catchment so less will be available at upstream assessment points due to the lower flows. Likewise tributaries to the main River Teme may be subject to different restrictions and quantities.						

Assessment point descriptive

River Teme catchment upstream of Tenbury
AP1, Knighton, AP2, Bromfield, AP3, Tenbury, AP6, Redlake, AP7, Clun, AP8, Quinney B, AP9, Onibury, AP10, Corve and AP11, Ledwyche,

For these assessment points there is restricted water available for licensing.

For new surface water licences upstream of the Tenbury assessment point on the River Teme and associated tributaries this means:

- There is no water available for unconstrained abstraction i.e. abstraction with no HOF restriction.
- Water is only available during periods of medium to high flows subject to a HOF condition.
- The HOF condition applied will state that abstraction must cease when flow in the river Teme falls below 240 Ml/d as measured at the Environment Agency gauging station at Tenbury.
- A time limit of 31 March 2025 will be imposed on the licence.
- The licence would obtain a presumption of renewal, subject to the renewal criteria and local considerations.

For existing licences on the River Teme and associated tributaries, this means:

- Any existing licence which the holder applies to have formally varied to increase the volume abstracted will be subject to the same conditions as new licences on the increased part of the licence only.
- Licences due for renewal in this area will have a presumption of renewal, subject to the renewal criteria and local considerations. Renewals may be subject to minor changes including the addition of water efficiency conditions. We will endeavour to give six years notice if a licence will not be renewed or is to be renewed but on more restrictive terms.

River Teme catchment downstream of Tenbury
AP4, Knightsford, AP5, Worcester, AP12, Rea, AP13, Sapey Brook, AP14, Leigh Brook, AP15, Laughern Brook

For these assessment points there is restricted water available for licensing.

For new surface water licences downstream of the Tenbury assessment point on the River Teme and associated tributaries this means:

- There is no water available for unconstrained abstraction i.e. abstraction with no HOF restriction.
- Water is only available during periods of medium to high flows subject to a HOF condition.
- The HOF condition applied will state that abstraction must cease when flow in the river Teme falls below 226 Ml/d as measured at the Environment Agency gauging station at Tenbury.
- A time limit of 31 March 2025 will be imposed on the licence.
- The licence would obtain a presumption of renewal, subject to the renewal criteria and local considerations.

For existing licences on the River Teme and associated tributaries, this means:

- Any existing licence which the holder applies to have formally varied to increase the volume abstracted will be subject to the same conditions as new licences on the increased part of the licence only.
- Licences due for renewal in this area will have a presumption of renewal, subject to the renewal criteria and local considerations. Renewals may be subject to minor changes including the addition of water efficiency conditions. We will endeavour to give six years notice if a licence will not be renewed or is to be renewed but on more restrictive terms.

High Ecological status water bodies.

High ecological status water bodies are those that are close to a natural condition. We restrict abstraction in these water bodies to maintain their close to natural condition.

Important local features that may affect water availability

European 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. Further information can be found in Section 4.5 – Restoring Sustainable Abstraction.

Table 4 lists the water related environmentally designated sites in this CAMS.

Feature	Present
Water related Sites of Special Scientific Interest (SSSI)	Catherton Common Cuckoopen Coppice Downton Gorge Dumbleton Dingle Hanley Dingle Hill House & Crumpsbrook Meadows Leigh Brook Valley Lord's Wood Meadow Nine Holes Meadows Osebury Rock River Teme (including bottom section on Clun) Shelve Pool Titterstone Clee The Long Mynd
Water related Special Area of Conservation (SAC)	Bottom section of River Clun Downton Gorge
Water related Special Protection Area (SPA)	None in CAMS area.
Water related Ramsar sites	None in CAMS area.

Table 4: Presence of features that may affect water availability

4.2.2 Groundwater

There are no principal aquifers within the Teme CAMS area, and only parts of two secondary aquifer units. Consequently a large proportion of the Teme CAMS catchment falls within the area classed as 'exempt' whereby abstraction from groundwater does not require a licence. At present the Environment Agency has no control over such groundwater abstractions but this will change when certain parts of the 2003 Water Act are implemented. Nevertheless, where water-bearing rocks are present, small abstractions can be supported.

Secondary Aquifers

New groundwater licence applications for abstraction from secondary aquifers will continue to be assessed on a case by case basis.

Existing licences

Existing groundwater licences which are due for renewal in this area will have a presumption of renewal, subject to the renewal criteria and local considerations. Renewals may be subject to minor changes including the addition of water efficiency conditions. We will endeavour to give six years notice if a licence will not be renewed or is to be renewed but on more restrictive terms.

4.3 Opportunities for licence 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 do not cause any deterioration in WFD water body status both within the water body / bodies where the trade will take place or to downstream water bodies. The table below provides a guide to the potential for trading in water bodies of a particular CAMS water resource availability colour, as shown on map 2.

CAMS water resource availability colour	Our approach to trading
High hydrological regime	Opportunities for trading water rights will be limited
Water available for licensing	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	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
Water not available for licensing	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	Opportunities for trading will depend on local operating agreements and local management.

Table 5: Potential for licence trading.

To find out more about licence trading please go to our website.

4.4 New Authorisations

The Water Act 2003 brought all significant water abstraction under licensing control. This will result in trickle irrigation, dewatering of mines, quarries, engineering works and construction sites, abstractions related to Internal Drainage Districts, navigation abstraction and abstraction for ports and harbour authorities and other local exemptions such as the groundwater exemption zone coming into the licensing regime.

As a result we will be able to manage water resources more effectively by ensuring that all significant activities influencing the availability of water and its impact on the environment are undertaken in a sustainable manner.

Government are still developing their policies as to how to resolve some of the issues raised during the consultation process. Government will publish their proposals before new regulations are implemented and expect to do this at least 3 months before commencement so that we can issue guidance to those affected by the changes.

Where we have details of these abstractions we have included them in our assessments to consider how they impact on the catchment.

4.5 Restoring Sustainable Abstraction

RSA is the Environment Agency's programme of work to review unsustainable abstraction. Where water abstractions cause or potentially cause actual flows to fall short of the EFIs and result in environmental damage, we may need to change or even revoke existing abstractions in order to achieve a sustainable abstraction regime. This programme helps to deliver the River Severn River Basin Management Plan, and therefore meet the requirements of the Water Framework Directive.

Within the Teme CAMS there are no water bodies in which recent actual flows have fallen below the EFI. There are therefore no RSA investigations being undertaken within this catchment. Further information on the RSA programme can be found in our Step by Step guide on our website.

Habitats Directive

Under the Habitats Regulations we have assessed the effects of existing abstraction licences and will assess new applications to make sure they do not have a likely significant effect on internationally important nature conservation sites. These sites are known as Special Areas of Conservation (SAC's) and Special Protection Areas (SPA's). If your current licence has been reviewed under this legislation to assess its effect you will already know about the review. If we haven't contacted you yet then your licence is either not near a SAC/SPA or isn't having an effect on these sites. If our assessment shows that a new application could have an effect on a SAC/SPA we have to follow strict rules in setting a time limit for that licence. These are:

- we may be able to grant the licence but only with a short time limit. This allows us to monitor the effect of the abstraction on a SAC/SPA and change the licence if necessary;
- if we can't determine that your application will not affect the site we have to either put conditions on the licence so that it cannot affect the site or refuse the application. If we grant the licence we may ask you to monitor its impact;
- if our assessment shows that there isn't an effect on the site we will manage the application according to the principles in this document.

The Severn Estuary

The Severn Estuary is a significant Habitats Directive site, which receives the majority of its flow from the River Severn catchment. All of the rivers within the Teme CAMS area are tributaries of the River Severn.

We have an obligation to protect all Habitats Directive sites, and this means that every tributary of the River Severn must be managed using appropriate flow restrictions to protect the environmental needs of the Estuary. In the Teme CAMS we will manage this by ensuring that all new or upwardly varied surface water licences granted on the River Severn tributaries will have a local condition that is equal to or more restrictive than the HOF proposed for Deerhurst on the River Severn. This is a HOF of 1,800 Ml/d at Deerhurst Gauging station, and is the flow that is equalled or exceeded for 90% of the time.

Glossary of terms

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 Unit	Point at which the flow from the upstream catchment is assessed.
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 (i.e. water, sewage, etc.) into surface waters.
Environmental flow indicator	Flow indicator to prevent environmental deterioration of rivers, set in line with new UK standards set by UKTAG.
Full licence	A licence to abstract water from a source of supply over a period of 28 days or more.
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.
Hands off level	A river flow or borehole (groundwater) level below which an abstractor is required to reduce or stop abstraction.
Impoundment	A structure that obstructs or impedes the flow of inland water, such as a dam, weir or other constructed works.
Protected right	A right to abstract, which someone has by virtue of the small abstractions exemptions defined in the Water Act 2003 or by virtue of having an abstraction licence. The right protected is the quantity that can be abstracted up to that allowed by the exemption or the terms of the licence. The small abstraction exemptions defined by the Water Act 2003 are for domestic and agricultural purposes (excluding spray irrigation) not exceeding 20 m^3/d.
Surface water	A general term used to describe all water features such as rivers, streams, springs, ponds and lakes.
Transfer licence	A licence to abstract water from one source of supply over a period of 28 days or more for the purpose of; 1. transferring water to another source of supply; or, 2. transferring water to the same source of supply, but at another point, in the course of dewatering activities in connection with mining, quarrying, engineering, building or other operations (whether underground or on the surface); without intervening use.
Water body	Units of either surface water or groundwater at which assessments are completed for WFD.

List of abbreviations

AMP	Asset Management Plans
AP	Assessment Point
ASB	Abstraction Sensitivity Bands
AWB	Artificial Water body
CAMS	Catchment Abstraction Management Strategies
CED	Common End Date
Defra	Department of Environment Fisheries and Rural Affairs
EA	Environment Agency
EFI	Environmental Flow Indicator
FL	Full Licensed (scenario)
GEP	Good Ecological Potential
GES	Good Ecological Status
GW	Groundwater
HES	High Ecological Status
HMWB	Heavily Modified Water Body
HoF	Hands off Flow
HoL	Hands off Level
LDE	Level Dependent Environment
Ml/d	Megalitres per day
maOD	Metres above ordnance datum
Q95	The flow of a river which is exceeded on average for 95% of the time.
RA	Recent Actual (scenario)
RSA	Restoring Sustainable Abstraction
RBMP	River Basin Management Plans
SAC	Special Areas of Conservation
SPA	Special Protection Areas
SSSI	Sites of Special Scientific Interest
SW	Surface water
UKTAG	United Kingdom's Technical Advisory Group
WB	Water body
WFD	Water Framework Directive
WRGIS	Water Resources Geographical Information System

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