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Ribble, Douglas and Crossens abstraction licensing strategy

February 2013

A licensing strategy to manage water resources sustainably

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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. The latest population growth and climate change predictions show that pressure on water resources is likely to increase in the future. In light of this, we have to ensure that we continue to maintain and improve sustainable abstraction and balance the needs of society, the economy and the environment.

This licensing strategy sets out how we will manage water resources in the Ribble, Douglas and Crossens catchment and provides you with information on how we will manage existing abstraction licences and water availability for further abstraction.

Key issues within the catchments include:

- the strategic significance of public water supply sources in the catchment for the North West
- agriculture of fertile lowlands demands large abstraction for irrigation, primarily from groundwater
- water quality is under pressure from urban, industrial and agricultural influences
- river flows need to be protected to maintain the habitats and flow requirements for species designated under conservation legislation, including salmon
- barriers to fish migration caused by weirs as part of the industrial legacy
- potential for hydropower generation in the area, but this must be developed with care to avoid creating barriers to fish passage and environmental degradation
- substrate not moving naturally through the channel network due to weirs and abstraction points, thus preventing development of spawning habitat
- urban development has left many reaches as heavily modified channels or culverts. Future licensing must ensure that sufficient water remains in these reaches to support biodiversity in anticipation of habitat improvements

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1. About the Licensing Strategy

This **Licensing Strategy** sets out how water resources are managed in the Ribble, Douglas and Crossens area. It provides information about where water is available for further abstraction and an indication of how reliable a new abstraction licence may be. The Ribble, Douglas and Crossens Catchment Abstraction Licensing Strategy supersedes the Integrated Catchment Management Plan for the Ribble (June 2007) and Douglas Catchment Abstraction Strategy (April 2003).

How CAMS contributes to achieving environmental objectives under the (WFD) Water Framework Directive

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. Catchment Abstraction Management Strategies (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 (RBMP)

When is an abstraction licence required?

You need a licence from us if you want to abstract more than 20m³/day (4400 gallons) of water per day from a:

- river or stream
- reservoir, lake or pond
- 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
- whether the justification for the abstraction is reasonable
- the abstractor has considered water efficiency measures

If you want to apply for an abstraction licence or make changes to a licence that you already have, 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 Catchment Abstraction Management Strategy (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 Ribble, Douglas and Crossens 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 refer to Managing Water Abstraction alongside this licensing strategy document.

2. Ribble, Douglas and Crossens CAMS area

The Ribble, Douglas, Crossens CAMS area is a large diverse area, bringing together three separate catchments into one large management unit.

The Ribble and its major tributaries rise in the open sheep-grazed moors and fells in the north Pennines, then flow down through improved lower pastures, and are joined by the lower tributaries from the more industrial urban areas of East Lancashire. The Ribble then flows through the urban centre of Preston and discharges into Morecambe Bay via the Ribble Estuary.

The Douglas rises in the Pennines, but rapidly becomes more urban and industrial further downstream, before moving out onto flat fertile agricultural land prior to joining the Ribble Estuary.

The Crossens catchment is located to the west of the CAMS area. The area is very flat and low-lying, used for intensive arable farming. This requires water to be pumped out of the catchment to the sea in order to avoid flooding. Prior to the development of the complex land drainage system a large part of the catchment used to form an inland lake. This lake was drained in order to realise the agricultural potential of the good quality peat soils within the catchment.

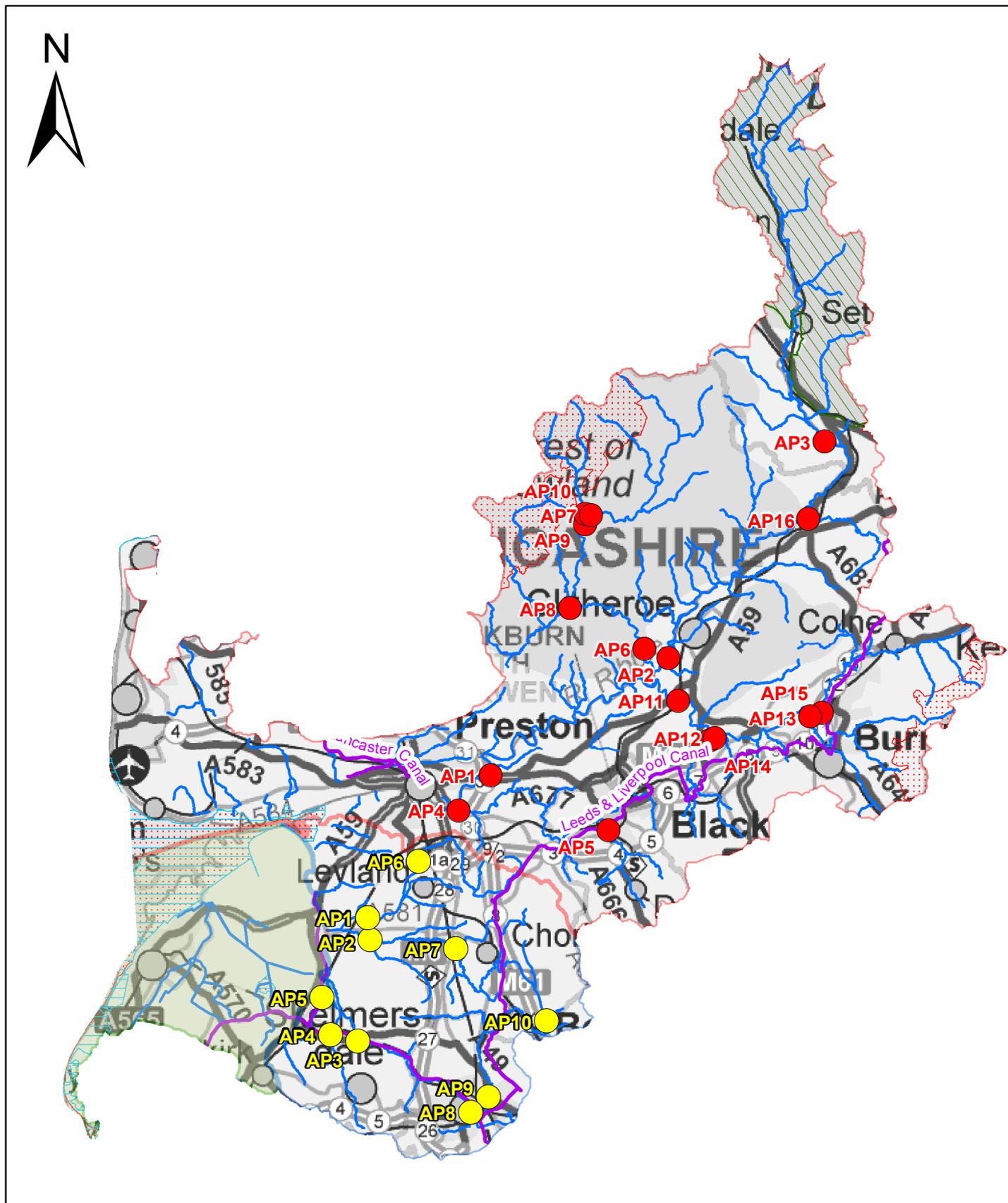
The CAMS area covers a range of aquatic habitats. The steep gradients of the clean Ribble headwaters support salmon and trout spawning grounds and populations of the endangered native white-clawed crayfish. The slower-flowing lower reaches support a diverse coarse fish population that includes eels and lampreys. The Douglas also has a thriving population of brown trout and coarse fish. The intensively managed Crossens supports a coarse fishery, and, where management allows, a rich macrophyte community and populations of water voles.

The area includes some dense areas of population, including Preston, Wigan, Chorley, the mill towns such as Blackburn and Colne of east Lancashire, and the coastal resort of Southport. The rural northern area incorporates the upland areas of the Forest of Bowland and part of the Yorkshire Dales. These provide green open spaces used for tourism and recreation.

There is significant abstraction for public water supply from surface and groundwater supplies, primarily from the Upper Hodder catchment and Stocks Reservoir, and a complex of reservoirs on the Pennines spanning the Ribble and Douglas catchments.

Map 1 shows the Ribble, Douglas and Crossens catchment.

Map 1 Ribble, Douglas & Crossens CAMS Area



Legend

- Douglas CAMS Assessment Point
- Ribble CAMS Assessment Point
- Crossens CAMS area
- Canal
- River
- Ramsar
- SPA
- National Park



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3. Water resource availability of the Ribble, Douglas and Crossens 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). For example, Q95 is flow that is equalled or exceeded for 95% of the time. It's termed a low flow because only 5% of the time is flow less than this.

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 is Heavily Modified Water bodies (HMWB). These can be classified for many reasons but for water resources they are classified if they may contain a modified lake and/or reservoir that influence the downstream flow regime of the river.

We'll add any conditions necessary to protect flows to a new licence during the licence determination procedure. We'll base these on the water resource availability colours from high to low flows. Table 1 lists the implications for licensing for each water resource availability colour.

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	There is more water than required to meet the needs of the environment. New licences will be considered depending on local and downstream impacts.
Restricted water available	Full Licensed flows fall below the EFI. 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.
Water not available	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 (GES) 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.
HMWB	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; please contact us to find out more.

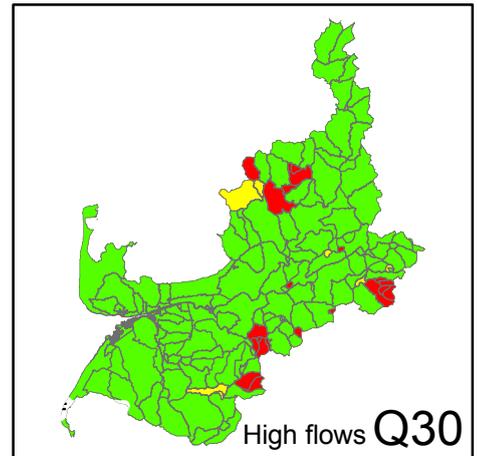
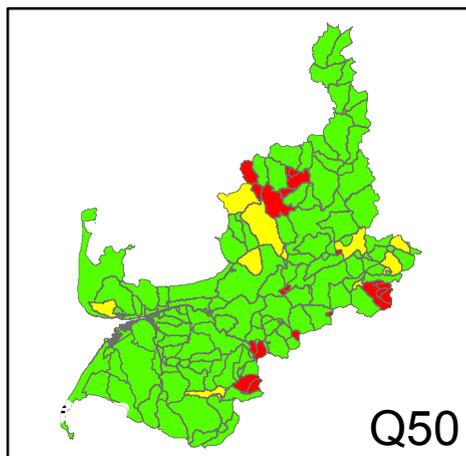
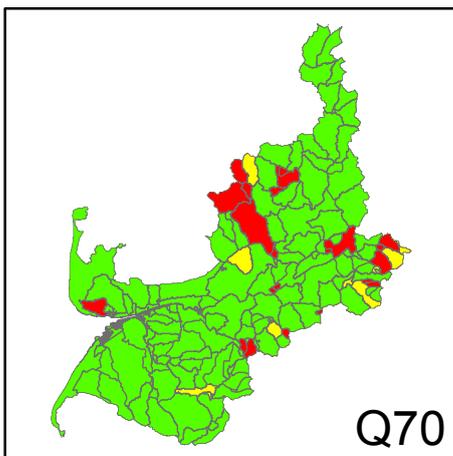
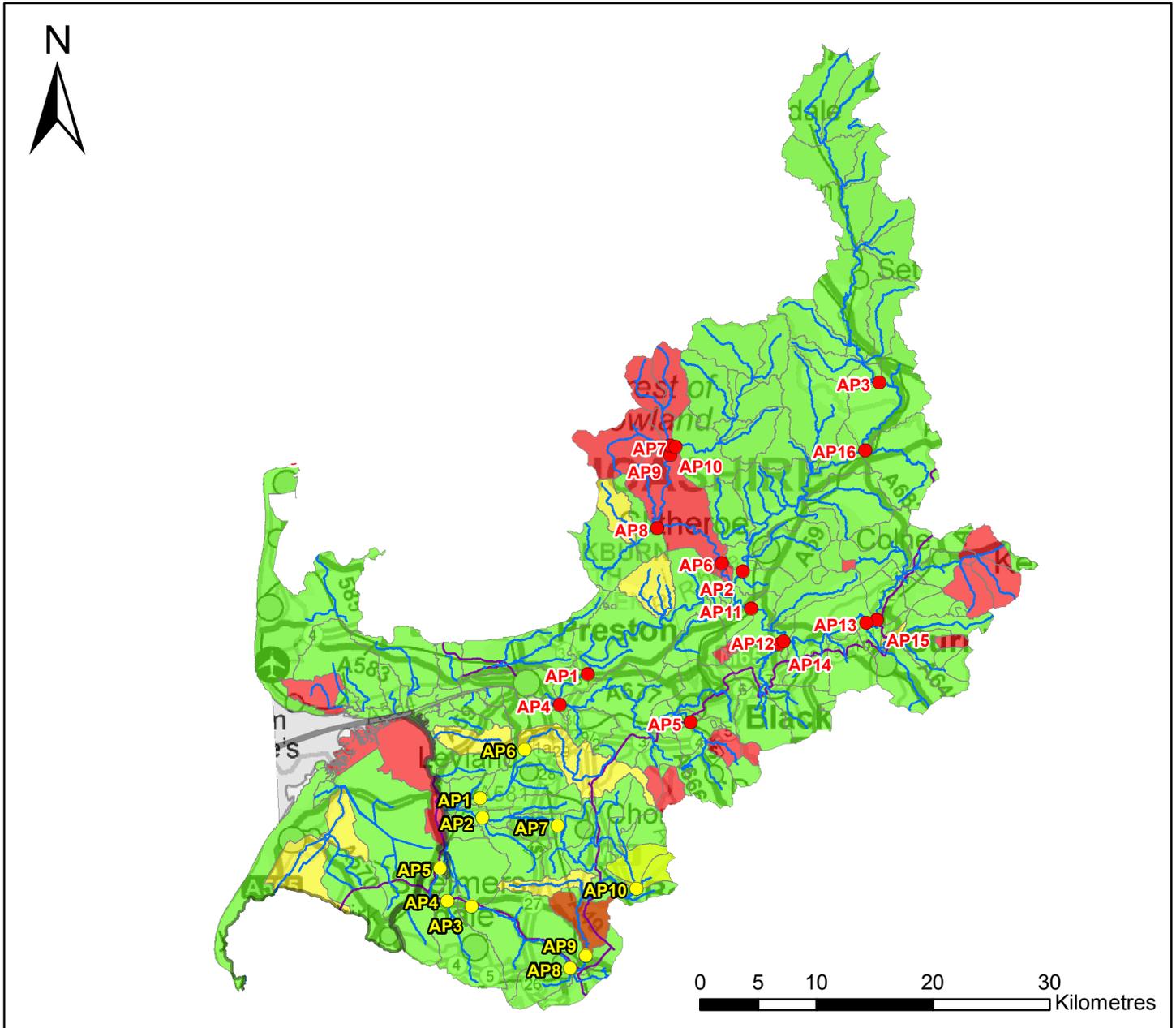
Table 1: Implications of water resource availability colours (surface water)

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.

At some water bodies it may appear that water is available at low flows (Q95) but unavailable at high flows (Q30). This may be due to existing abstractions that take large volumes of water, within their licensed limits, during times of high flow but at low flows may be subject to Hands off Flow conditions. These conditions require that abstraction stop when a specified flow occurs in the river in order to protect existing users and the environment. Also, some reservoirs are required to release a specific amount of water at all times, known as a compensation flow. During times of low flows, this compensation flow supports the river and can maintain flow in the river at times when it may have naturally run dry.

Map 2 shows the water resource availability colours in Ribble, Douglas and Crossens area.

Map 2 Ribble, Douglas & Crossens CAMS Resource Colours



Legend

- Douglas CAMS Assessment Point
- Ribble CAMS APs
- Rivers
- Canals
- CAMS Waterbodies
- Water Available
- Restricted Water Available
- Water Not Available

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3.2.2 Groundwater

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

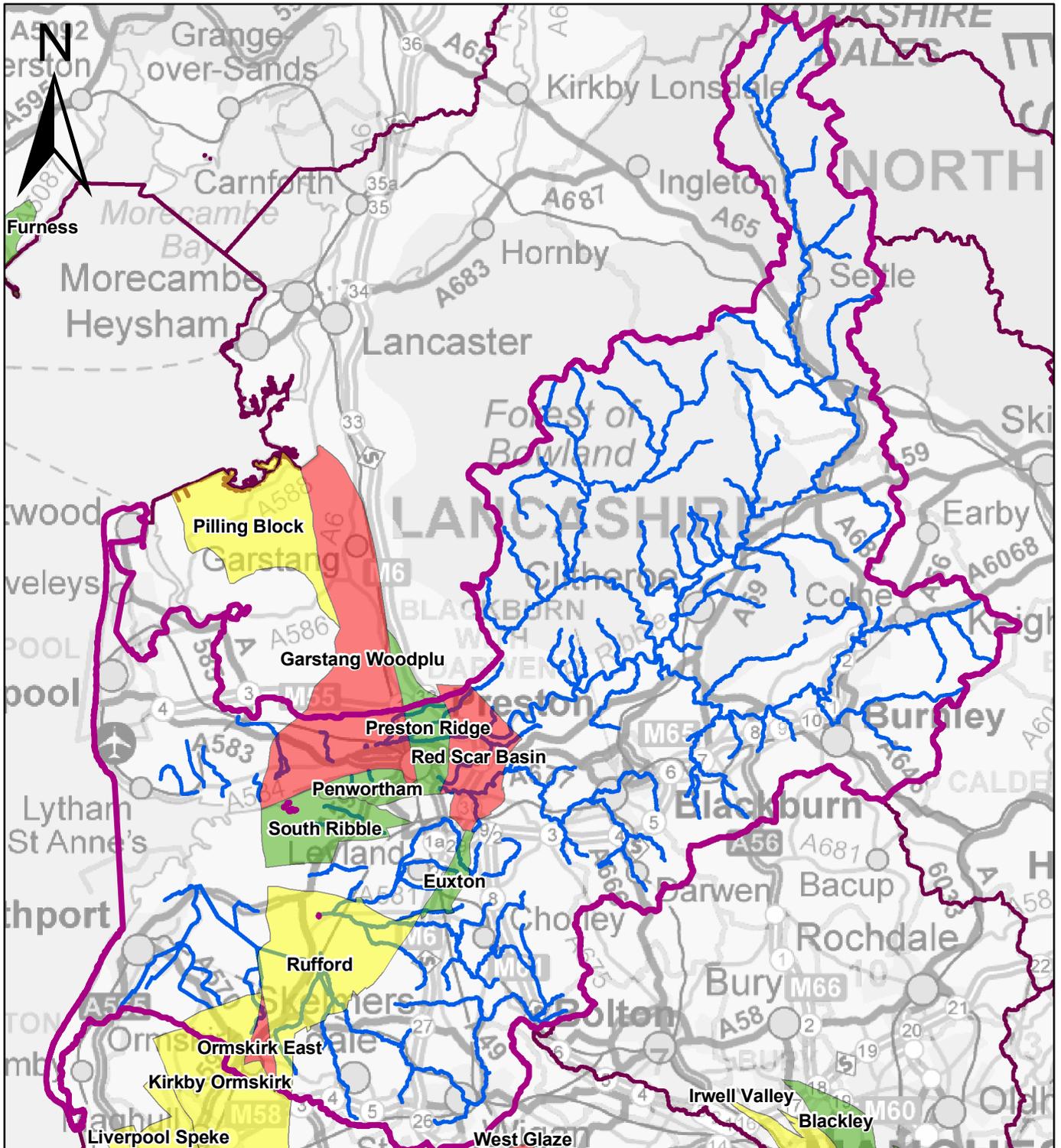
Please refer to section 4.3.2 for licence restrictions on groundwater abstractions.

Map 3 shows the water resources availability colours in Ribble, Douglas and Crossens area, specifically for groundwater.

Groundwater resource availability colour	Implication for licensing
Water available	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	<p>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 intrusions but with management options in place.</p> <p>Water may be available if you can 'buy' (known as licence trading) the entitlement to abstract water from an existing licence holder.</p> <p>In other units there may be restrictions in some areas e.g. in relation to saline intrusion</p>
Water not available	<p>Groundwater unit balance shows more water has been abstracted based on recent amounts than the amount available.</p> <p>No further consumptive licences will be granted.</p>

Table 2: Implications of water resource availability colours (groundwater)

Map 3 Ribble, Douglas & Crossens CAMS
Groundwater Management Unit
Resource Availability

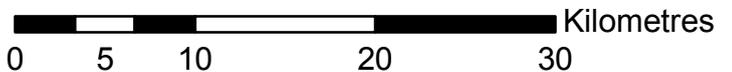


Legend

-  Ribble, Douglas, Crossens CAMS area
-  Rivers in Ribble, Douglas & Crossens CAMS area

CAMS Groundwater Units

-  Restricted Water Available
-  Water Available
-  Water Not Available



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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. This is because there may be significant periods of time when flows are low so you will not be able to abstract due to the likely HOF conditions that we will place on your new/varied licence. 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 3 shows the resource availability colour associated with the percentage reliability of consumptive abstraction. Map 4 gives an indication of the resource reliability in Ribble, Douglas and Crossens area expressed as percentage of time.

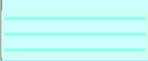
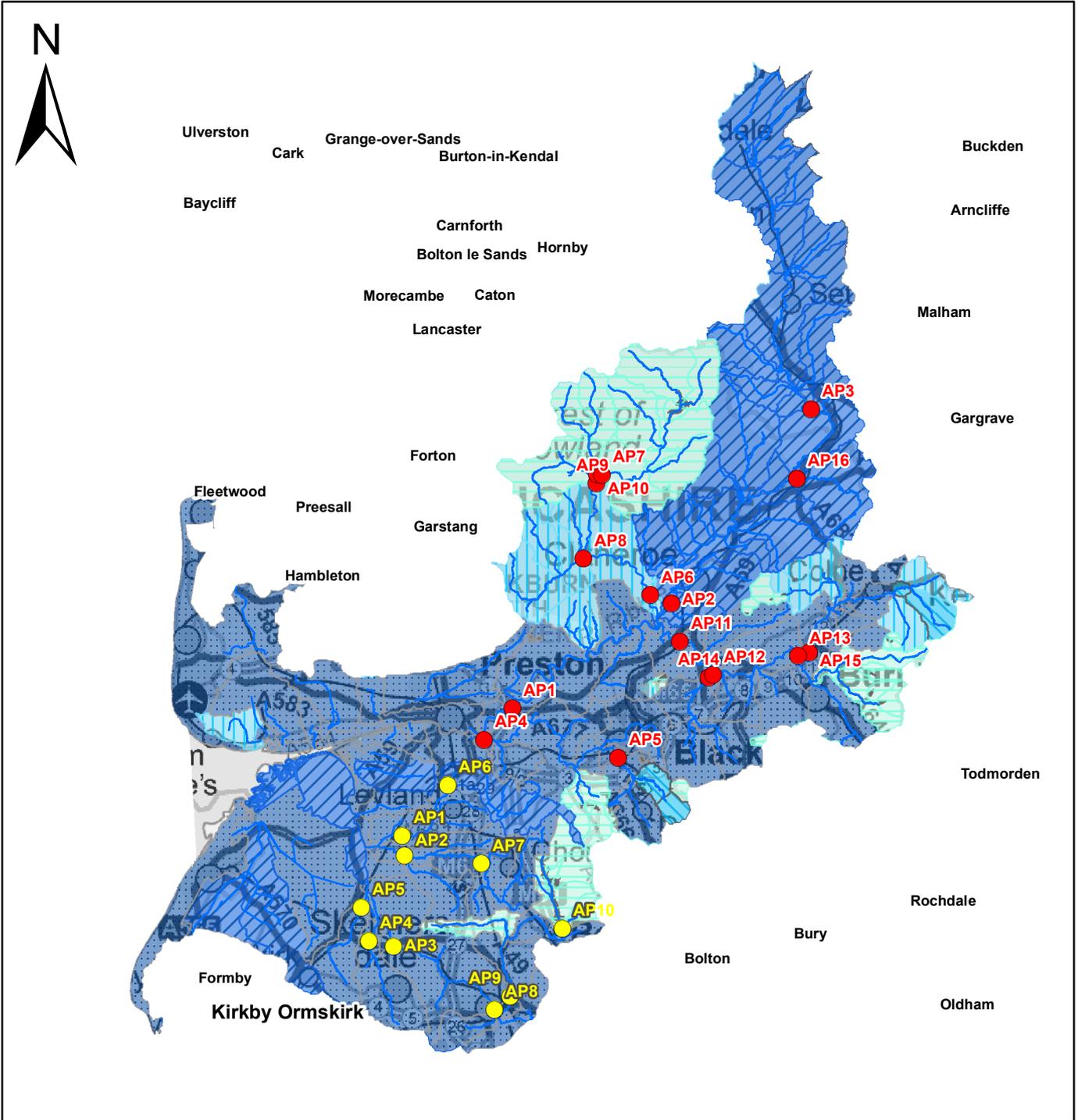
Resource	Percentage of the time additional consumptive resource may be available
	Consumptive abstraction available less than 30% of the time
	Consumptive abstraction available at least 30% of the time
	Consumptive abstraction available at least 50% of the time
	Consumptive abstraction available at least 70% of the time
	Consumptive abstraction available at least 95% of the time
	Not assessed

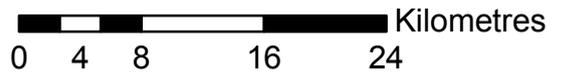
Table 3: Percentage reliability of consumptive abstraction

Map 4 Ribble, Douglas & Crossens CAMS Resource Reliability (% of the time)



Legend

-  Douglas CAMS Assessment Point
-  Ribble CAMS Assessment Point
-  Water Resources available less than 30%
-  Water Resources available at least 30%
-  Water Resources available at least 50%
-  Water Resources available at least 70%
-  Water Resources available at least 95%
-  River
-  Heavily Modified and Artificial Rivers
-  Heavily Modified and Artificial Lakes



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4. How we manage abstractions in the Ribble, Douglas and Crossens catchment

4.1 Water abstraction in the Ribble, Douglas and Crossens CAMS area

Water is abstracted throughout the area from surface waters and groundwater for agriculture, power generation, spray irrigation, canal supply, industry, environmental and public water supply purposes.

Although power generation accounts for the largest abstraction from the Ribble catchment, it is non-consumptive with virtually all water returned locally. The most significant consumptive abstractions within the Ribble CAMS area are for public water supply, including from Stocks Reservoir and several of the rivers.

Likewise in the Douglas CAMS area, the most significant abstractions are for public water supply. The Rivington Reservoir complex in the headwaters of the Douglas catchment provides an important source of public water supply to the region. The reservoirs capture and store run-off from the high areas on Rivington Moor and Winter Hill. Under statute, specific volumes of compensation water must be discharged into the watercourses downstream. These compensation releases are located on the River Douglas, River Yarow, Black Brook and Brinscall Lodges. This pattern of releases has long been a characteristic of the Douglas catchment, providing a consistent baseline flow since the construction of the reservoirs in the mid-nineteenth century.

Within the Crossens CAMS area, the majority of surface water and some of the groundwater abstraction is for agriculture. Other surface water abstractions are for environmental use, including a non-consumptive abstraction by Wildfowl and Wetland Trust at Martin Mere. The majority of the groundwater abstracted is used in public water supply.

Homes and industries within this CAMS area receive their water supply from United Utilities Water Plc. All of the public water supply abstractions within the area feed into the water company integrated system. This system supplies water to 95 per cent of customers in the north west of England. Water is sourced from as far afield as Haweswater and Thirlmere Reservoirs in the Lake District and Lake Vyrnwy in mid-Wales to meet the demand for water in the north west.

There are two abstractions within the Douglas CAMS area which are used to supply the canal network operated by the Canal & Rivers Trust.

There are many wastewater treatment work discharges throughout the Ribble, Douglas and Crossens CAMS area. These contribute to flows; in many sections of the river network flows are higher than they would otherwise be.

4.2 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 Ribble, Douglas and Crossens 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

Anyone wanting to take more than 20m³/day 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'll determine each application upon its own merits and any local impacts.

A licence does not guarantee that water is available

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

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

For existing licences, where current abstraction is less than licensed i.e. more water could be legally abstracted, we may take action to limit such an increase if we think this will lead to deterioration of the ecology of 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 flow caused by abstraction. 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](#).

Impoundments

An impoundment is a construction in an inland waterway that obstructs or impedes flow and/or raises water levels. These structures include weirs, dams, fish passes and sluices. You normally need an impoundment licence to construct, alter, repair or remove an impoundment structure.

We will consider every case on its individual merits. We will normally only approve an application to install new structures in a watercourse if one or more of the following apply:

- it is demonstrated to our satisfaction that there are over-riding social or economic reasons for the structure(s) in line with our sustainable development remit and there is no reasonable alternative
- we agree that the impacts on flood risk, ecology and morphology will not be significant or will be adequately mitigated against or compensated for
- we accept that the watercourse or floodplain has been modified or degraded, and restoration or enhancement using in-channel structures is justified and acceptable to flood risk management and ecological interests
- there are important strategic or operational reasons to monitor or regulate river levels and flows, and alternative methods are not technically or financially viable

We will seek mitigation or compensation to ensure environmental impacts and residual damage are minimised, where appropriate.

We may seek the removal or modification of structures that have an adverse effect on flood risk or on the ecology, morphology and visual amenity of a river if we believe it is justified, practical and economic.

Hydropower

Hydropower schemes harness the energy from flowing water to generate electricity, using a turbine or other device. Sustainable, small scale hydropower has a small but important part to play in meeting UK renewable energy targets.

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](#).

4.3 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 will have a time limit imposed, apart from downward variations or minor variations having no environmental impact. This allows for the periodic review and changes 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.

The next CED for Ribble, Douglas and Crossens CAMS are **31 March 2016** and the subsequent CED is **31 March 2028**.

However, 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. 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 Hand 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.

Please refer to Table 4 for Hands Off Flows for each assessment point.

4.3.1 Surface water

We assess surface water flows at Assessment Points (AP) 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 HOF.

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. We may apply a Minimum Residual Flow (MRF) where there is water available at all flows to ensure very low flows are protected.

Table 4 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.

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.

Where there is no gauging station at an AP or an abstraction is from another point, a local Hands Off Flow will be calculated to ensure licence holders are able to measure and comply with any HOF that we may stipulate on a licence.

In discharge rich catchments, available water could include discharges over which the Environment Agency has no control over their continued operation. Therefore these inputs of water are considered unreliable and are currently unavailable for licensing. An update on the situation is due to be announced in 2013.

Please note: the numbers in the tables below are given as a guide only. Customers wishing to enquire about the availability of a source should contact us for further details.

Ribble CAMS area

AP	Name	Water Resource Availability Colour	HOF Restriction (MI/d)	Days per annum abstraction may be available	Approximate volume available at restriction (MI/d)	Is there a gauging station at AP?	Discharge rich?
1	Lower Ribble	Water available	183.4	365	58.5	Yes	Yes
2	Middle Ribble	Water available	38.9	365	22.0	Yes	
3	Upper Ribble	Water available	15.3	365	3.7	Yes	
4	Lower Darwen	Water available	18.5	365	117.6	Yes	Yes
5	Upper Darwen	Water available	7.6	365	12.5	Yes	Yes
6	Lower Hodder	Water not available	Over licensed			Yes	
7	Upper Hodder	Water not available	Over licensed				
8	River Loud	Restricted water available	119.1	105	79.2		
9	Langden Brook	Water not available	Over licensed				
10	River Brennand	Water not available	Over licensed				
11	Lower Calder	Water available	42.1	365	118.9	Yes	Yes
12	Middle Calder	Water available	35.1	365	52.8		Yes
13	Upper Calder	Water available	301.7	36	102.7		
14	Hyndburn Brook	Water available	9.1	365	0.9	Yes	
15	Pendle Brook	Water available	15.6	365	5.3	Yes	
16	Stock Beck	Water available	0.6	365	6.9		Yes

Douglas CAMS area

AP	Name	Water Resource Availability Colour	HOF Restriction (MI/d)	Days per annum abstraction may be available	Approximate volume available at restriction (MI/d)	Is there a gauging station at AP?	Discharge rich?
1	Lower Lostock	Water available	4.1	365	13.2	Yes	Yes
2	Lower Yarrow	Water available	8.8	365	30.0	Yes	Yes
3	Lower Douglas	Water available	20.0	365	26.8		
4	River Tawd	Water available	4.3	365	0.4		
5	Eller Brook	Water available	1.7	365	6.9		Yes
6	Upper Lostock	Restricted water available	7.7	292	7.8		
7	Upper Yarrow	Water available	5.4	365	10.6		
8	Poolstock	Water available	2.9	365	0.4		
9	Middle Douglas	Restricted water available	100.8	91	12.4	Yes	
10	Upper Douglas	Water not available	Over licensed				

Table 4: Water availability and Hands Off Flows for Ribble and Douglas assessment points

4.3.2 Groundwater

On principal aquifers we have divided the area into groundwater management units. We use the information and assessments on these units to determine water availability and licence restrictions (see Table 5). The impact on the surface water catchment may also be taken into account.

Outside of these units, and where groundwater abstractions directly impact surface water flows, the surface water assessment of the relevant AP is used. Restrictions may be applied to the abstraction, such as a hand off level condition. This is a groundwater level below which an abstractor is required to reduce or stop abstraction.

Groundwater Management Unit	Licence Restriction	Amount available (Ml/d)	Reason for restriction
Penwortham	Water available	1.4	N/A
South Ribble	Water available	1.0	N/A
Euxton	Water available	0.5	N/A
Rufford	Restricted water available	N/A	Aquifer fully committed due to local conditions and very limited recharge
Ormskirk East	Water not available	N/A	Over abstracted on water balance

Table 5: Licence restrictions on groundwater abstractions in the Ribble, Douglas and Crossens CAMS area

4.2.3 Level Dependent Environment

Crossens is unique among CAMS catchments as it is entirely level-dependent and has no defined CAMS Assessment Points. We have divided the area into units, known as level dependent management units (LDMU).

The catchment is dominated by farmland and more than a third of the area is below the level of high spring tides. The sand dunes of the Sefton Coast (a Special Area of Conservation) help protect against flooding from the sea.

The water levels in the Crossens CAMS catchment are primarily managed with a summer and winter setting, reflecting a compromise between the requirements of flood risk management and water resources. The system acts like a short-term reservoir storing recent rainfall in the soils and the channels. The network of pumping stations manages land drainage for agriculture whilst maintaining water levels to facilitate spray irrigation. For water resources, it is important to maintain higher water levels in the system during summer months to provide water for irrigation of the many valuable agricultural crops grown in the area.

This strategy is based upon the outputs of a bespoke Resource Availability calculation for the Crossens LDMU in the CAMS area. The Summer Water Resource Availability is the result for the 'worst case' month for the period April to September. The Winter Resource Availability is the result for the 'worst case' month in the period October to March.

Table 6 lists whether restrictions may be applied to the different level dependent management units. Map 5 shows the location of the level dependent environments in the Crossens CAMS area.

Crossens CAMS area

Unit	Name	Summer Water Resource Availability	Winter Water Resource Availability
LDMU 0	Tidally Influenced	Restricted water available	Water available
LDMU 1	Banks Marsh Pumping Station	Restricted water available	Water available
LDMU 2	Sluice	Water available	Water available
LDMU 3	Holmswood Pumping Station	Water not available	Water available
LDMU 4	Back Drain	Water not available	Water available
LDMU 5	Middle Drain	Restricted water available	Water available
LDMU 6	Three Pools	Water not available	Restricted water available
LDMU 7	Kew Pumping Station	Restricted water available	Water available
LDMU 8	Boundary Pumping Station	Restricted water available	Water available
LDMU 9	Sandy Brook	Restricted water available	Water available

Table 6: Licence restrictions on abstractions in relation to Level Dependent Environments in Ribble, Douglas and Crossens CAMS area

Map 5 Crossens CAMS Units



Legend

-  Crossens CAMS area
-  Level Dependent Environment Units
-  River



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4.2.4 Abstraction restrictions at assessment points

The information below gives an indication of whether licences will be renewed or granted for each assessment point.

Water available

The following surface water assessment points have water available for licensing:

Ribble

- AP1 Lower Ribble*
- AP2 Middle Ribble
- AP3 Upper Ribble
- AP4 Lower Darwen*
- AP5 Upper Darwen*
- AP11 Lower Calder*
- AP12 Middle Calder*
- AP13 Upper Calder
- AP14 Hyndburn Brook
- AP15 Pendle Brook
- AP16 Stock Beck*

Douglas

- AP1 Lower Lostock*
- AP2 Lower Yarrow*
- AP3 Lower Douglas
- AP4 River Tawd
- AP5 Eller Brook*
- AP7 Upper Yarrow
- AP8 Poolstock

Crossens (summer)

- LDMU2 Sluice

Crossens (winter)

- LDMU0 Tidally Influenced
- LDMU1 Banks Marsh Pumping Station
- LDMU2 Sluice
- LDMU3 Holmswood Pumping Station
- LDMU4 Back Drain
- LDMU5 Middle Drain
- LDMU7 Kew Pumping Station
- LDMU8 Boundary Pumping Station
- LDMU9 Sandy Brook

* these are discharge rich AP. As such, the available water includes discharges over which the Environment Agency has no control as to their continued operation. Therefore these inputs of water are considered unreliable and are currently unavailable for licensing. An update on the situation is due to be announced in 2013.

This means that for **new** licences:

- there is water available for unconstrained abstraction
- we will continue licensing the available resource and then implement the Hands Off Flow (HOF) constraints
- the time limit will be the relevant CED

For **existing** licences:

- there is a presumption of renewal, subject to the other renewal criteria and local considerations. Renewals may be subject to minor changes including the addition of water efficiency conditions

Within the groundwater management unit of Penwortham, South Ribble and Euxton, new licences can be considered depending on impacts on other abstractors and on surface water.

As an example in the Douglas CAMS area, Assessment Point 3, Lower Douglas, there is approximately 28.6 Megalitres per day of water available for licensing every day of the year. This would be available after a Hands Off Flow restriction of the Minimal Residual Flow of 20MI/d.

Restricted water available

The following surface water assessment points have restricted water available for licensing:

Ribble

- AP8 River Loud

Douglas

- AP6 Upper Lostock
- AP9 Middle Douglas

Crossens (summer)

- LDMU0 Tidally influenced
- LDMU1 Banks Marsh Pumping Station
- LDMU5 Middle Drain
- LDMU7 Kew Pumping Station
- LDMU8 Boundary Pumping Station
- LDMU9 Sandy Brook

Crossens (winter)

- LDMU6 Three Pools

This means that for **new** licences:

- no new unconstrained licences will be granted
- water is only available during periods of medium to high flows with HOF conditions
- the time limit will be the relevant CED

For **existing** licences:

- no impact on existing licence holders

The Rufford Aquifer is considered to be fully committed because of local conditions and very limited recharge. Additional abstraction could lead to a derogation of existing abstraction and lead to environmental problems within the Rufford area. Therefore, no new consumptive licences will be granted. This recognises the importance of water resources for the agricultural community, by protecting existing abstractors, and of maintaining discharges to streams and rivers which support surface features, such as Mere Sands Wood SSSI. Water may be available if you can 'buy' (known as licence trading) the entitlement to abstract water from an existing licence holder. There will be a presumption of the renewal of time-limited licences and time-limited variations, where the applicant meets the tests of renewal.

Water not available

The following surface water assessment points have no water available for licensing:

Ribble

- AP6 Lower Hodder
- AP7 Upper Hodder
- AP9 Langden Brook
- AP10 River Brennand

Douglas

- AP10 Upper Douglas

Crossens (summer)

- LDMU3 Holmswood Pumping Station
- LDMU4 Back Drain
- LDMU6 Three Pools

We will not consider any further consumptive upstream of these Assessment Points. A new licence could be considered as the result of a trade.

For **existing** licences:

- no impact on existing licence holders

For the Ormskirk East groundwater management units, balances based on recent amounts show that more water has been abstracted than the amount available. Therefore no further consumptive licences will be granted for these units.

Further Information

For further information about the availability of water at specific locations and any restrictions likely to apply, please enquire using the following contact details:

by telephone on 03708 506 506

by email at enquiries@environment-agency.gov.uk

or visit our website at www.environment-agency.gov.uk.

4.3.4 Estuaries/Coast

The tidal limit for the River Ribble is at Walton-le-Dale in Preston (SD5648228431). The river flows from here into the Ribble estuary at Lytham and thus the Irish Sea.

The tidal limit for the River Douglas is at Rufford (SD4711614552). Downstream of this point the tidal river meanders across the flat low-lying arable land past before discharging into the Ribble estuary from the south bank between Hesketh Bank and Longton, some 8 kilometres west of Preston.

The Crossens catchment discharges into the outermost Ribble estuary via Banks pumping station.

Abstractions from the sea are not licensable unless they are clearly in a dock, channel, creek, bay, estuary or arm of the sea.

For all estuarine abstractions, we require abstraction intakes to be fitted with screens (to 3mm) to prevent eels and elvers being abstracted from the estuary. This is because the estuaries are an obvious migratory route for eels and is required under the Eels (England and Wales) Regulations 2009.

Applications made in designated sites (SAC, SPA, SSSI) will be given further scrutiny to avoid impacts on habitats and the environment.

4.4 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	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	Initially, we will allow trades of recent actual abstraction and licensed abstraction but post trade recent actual abstraction must remain sustainable. The current level of recent actual abstraction means there is a risk that in the future we may only be able to trade recent actual abstraction.
Water not available	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.
HMWB	Opportunities for trading will depend on local operating agreements and local management.

Table 7: Environment Agency approach to water trading

To find out more about licence trading please go to our [website](#).

4.5 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 coming into the licensing regime.

As a result we'll 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 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.

4.6 Restoring Sustainable Abstraction (RSA)

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. The abstraction licences within these water bodies that cause these issues are being investigated as part of the RSA programme. Investigations into the impact caused by these licences, individually or cumulatively, will result in options being developed with licence holders on how to improve sustainability. Investigations will include a cost/benefit analysis. Information on how licences in the RSA programme are dealt with can be found in our [Step by Step guide](#) on our website.

Within the current RSA programme, 11 water bodies in the Ribble, Douglas and Crossens CAMS area have been investigated.

A scheme has been completed at Brennand and Whitendale to ensure an appropriate Hands Off Flow at the Brennand Main and Whitendale Main intakes, to close eight minor intakes and to implement a Hands Off Flow condition on the borehole licence to prevent abstraction when the adjacent River Dunsop is flowing at or below Qn95. This was a Local Priority site and affects AP10 River Brennand within the Ribble catchment.

Investigations have been completed for nine sites within the Ribble, Douglas and Crossens CAMS area. Eight investigations were for WFD sites to determine the impact of abstraction on hydrology as a supporting element for biology. One investigation was to determine whether flows have an adverse impact on ecology at a Local Priority site. All of these investigations have shown that the abstractions are causing no adverse impact.

There are continuing discussions about management of the Crossens level dependent management units.

4.7 Heavily Modified Water Bodies

Some water bodies have been designated as artificial or heavily modified if they are substantially modified or constructed to be used for water supply, urban purposes, flood protection or navigation.

Under the River Basin Management Plan for the North West, private, public and voluntary/third sector organisations will work together to ensure that these water bodies can achieve their full environmental potential.

4.8 Habitats Directive

Under the Habitats Regulations¹ we have assessed the effects of existing abstraction licences and will assess new applications to make sure they are not impacting on internationally important nature conservation sites. These sites are known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). If your current licence has been reviewed under this legislation to assess its impact 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 impact on these sites. If our assessment shows that a new application could have an impact 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 impact 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 impact on the site we will manage the application according to the principles in this document.
- When assessing new licence applications, we will consider any impacts on the Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA) and Ramsar sites as displayed in Map 1.

5. Strategy actions

In the first licence strategy documents we published actions to assist in water resource management. The progress on the actions from first round of the Ribble, Douglas and Crossens CAMS is shown in Table 7.

Table 8 shows new actions for the Ribble, Douglas and Crossens CAMS proposed as a result of the latest assessment of resources.

Action	Unit	Partner	Start	Finish	Progress
Work with the Water Company to promote demand management with customers	Hodder catchment	United Utilities	2007	2013	On-going action
Implement Restoring Sustainable Abstraction Scheme	Brennand and Whitendale	United Utilities	2007	2013	Scheme complete
Continue to work with abstractors to promote water efficiency	All	United Utilities	2006	2011	On-going action
Carry out additional ecological monitoring to gain a better understanding of the impacts of abstraction at mid and high flows	Langden Brook	N/A	2007	2013	On-going action

Table 7: Progress on the actions from published Ribble, Douglas and Crossens CAMS

Measures	Unit	Partner	Start	Finish
Investigate reducing fully licensed abstraction volumes in over-licensed groundwater units	Ormskirk East	N/A	2013	2020
Continue monitoring groundwater levels and review groundwater licence applications	All groundwater units	N/A	2013	2020
Investigate waterbodies where recent actual flows have fallen below EFI. We may seek to reduce licensed quantities as part of the renewal process	Where applicable	N/A	2013	2014
Continue to investigate waterbodies that are over-licensed and consider options to improve sustainability	Where applicable	N/A	2013	2020
Review Environmental Flow Indicators to ensure the correct Hands Off Flow constraints are in place to protect the river ecology	All	N/A	2013	2014

Table 8: New measures arising from the latest assessment of resources in the Ribble, Douglas and Crossens CAMS

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 from a river.
Assessment Point (AP)	Point at which the flow from 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 (EFI)	Flow indicator to prevent ecological 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.
Gauging Station	A point along a river or lake where river flows and levels are measured.
Groundwater	Water that is contained in underground rocks.
Hands Off Flow (HOF)	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 level below which an abstractor is required to reduce or stop abstraction.
Impoundment	An impoundment is a structure that obstructs or impedes the flow of inland water, such as a dam, weir or other constructed works.
Protected right	Means 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	This is 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; <ul style="list-style-type: none"> 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);
Water body (WB)	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	Ecological Flow Indicator
FL	Full Licensed (scenario)
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
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)
Ramsar	Convention on Wetlands of International Importance
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
WB	Water body
WFD	Water Framework Directive

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