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The Swansea Bay Abstraction Licensing Strategy

May 2014

A licensing strategy to manage water resources sustainably



On 1 April 2013 Natural Resources Wales brought together the work of the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales, as well as some functions of Welsh Government.

Our purpose is to ensure that the natural resources of Wales are sustainably maintained, used and enhanced, now and in the future.

We work for the communities of Wales to protect people and their homes as much as possible from environmental incidents like flooding and pollution.

We provide opportunities for them to learn, use and benefit from Wales' natural resources.

We work for Wales' economy and enable the sustainable use of natural resources to support jobs & enterprise.

We help businesses and developers to understand and consider environmental limits when they make important decisions.

We work to maintain and improve the quality of the environment for everyone.

We work towards making the environment and natural resources more resilient to climate change and other pressures.

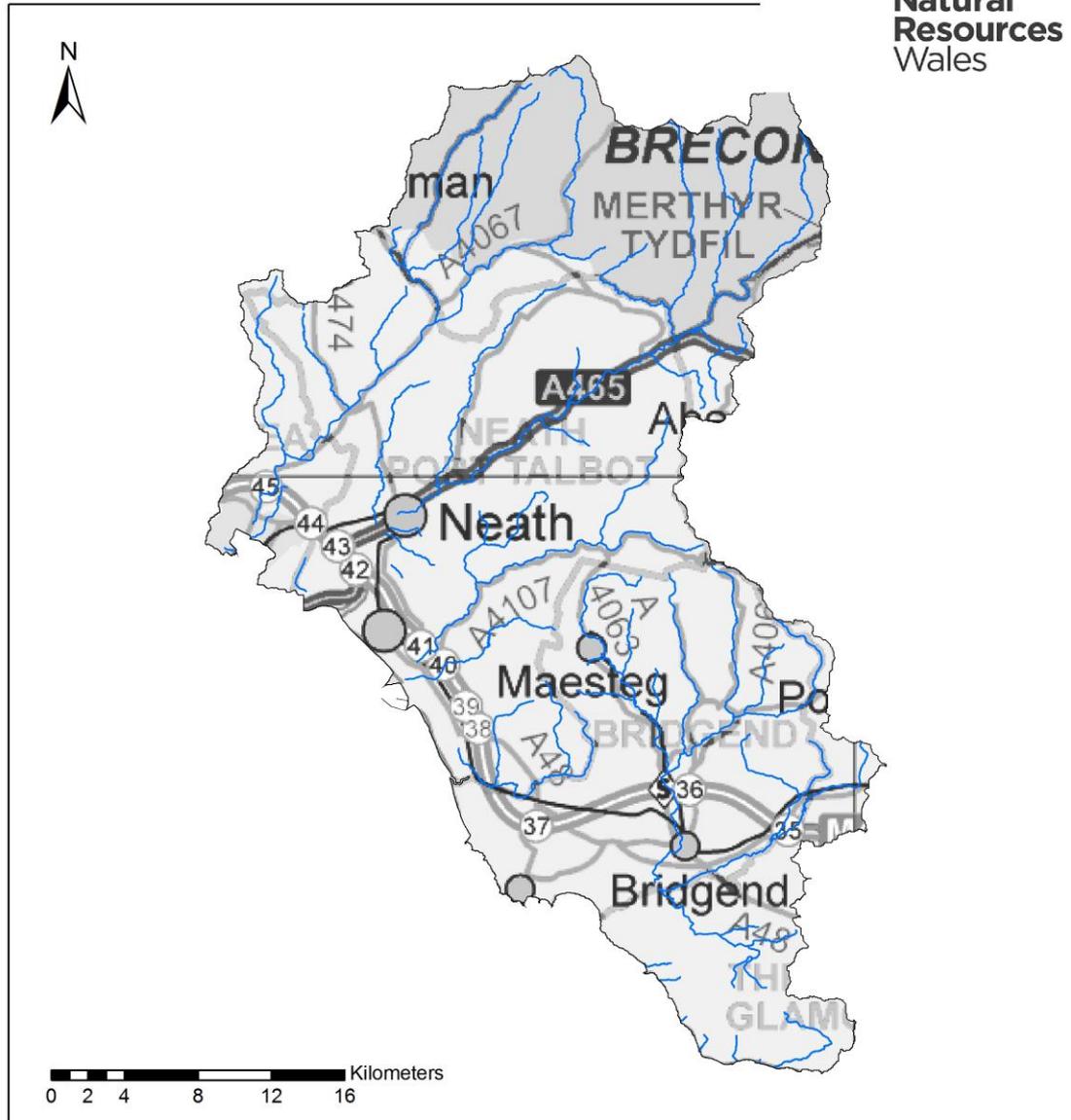
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Swansea Bay CAMS Area

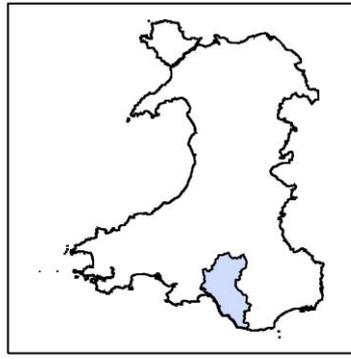


- Legend**
- Swansea Bay CAMS Area
 - Swansea Bay CAMS rivers

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Creation date 27th February 2013



Map 1 - The Swansea Bay 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. 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 balancing the needs of society, the economy and the environment.

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

Martyn Evans Ecosystems Planning and
Partnerships Manager,
South

1. About the Licensing Strategy

This **Licensing Strategy** sets out how water resources are managed in the Swansea Bay Catchment Abstraction Management Strategy (CAMS) 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 May 2014 and it supersedes the Tawe, Loughor & Gower strategy issued in September 2007 (for the Tawe only) and the Neath, Afan & Ogmore strategy issued in October 2005.

The revised CAMS process

We have developed a more streamlined CAMS process. The new process includes a number of changes to how we produce CAMS:

- We now use CAMS as a “live” assessment which is continuously updated rather than reviewed on a six year cycle;
- We will incorporate consultation on water resource issues into the Water Framework Directive (WFD) River Basin Planning process. However, we will still undertake any targeted consultation for CAMS as required;
- We will produce more concise, customer focused documents in-house and publish these on the internet. Anyone wishing to receive a paper copy of the document may still do so;
- We can now report the results of the resource assessment at a more local level, based on water bodies defined by the WFD. This approach will help us to meet WFD objectives and contribute to River Basin Management Plans (RBMPs);
- We have regrouped the river catchments into fewer CAMS areas. This means less duplication of general information and better use of our resources in producing CAMS.

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

The WFD’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 RBMPs.

When is an abstraction licence required?

You need a licence from us if you want to abstract more than 20 cubic metres (m³) (4,400 gallons) of water per day from:

- a river or stream;

- a reservoir, lake or pond;
- a canal;
- a 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 0300 065 3000
- by email at enquiries@naturalresourceswales.gov.uk
- or visit our website at www.naturalresourceswales.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 Swansea Bay 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 overarching 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. The Swansea Bay CAMS area

Since the first CAMS were published we have changed the CAMS areas. The Swansea Bay CAMS covers the area formerly included in the Neath, Kenfig & Ogmore CAMS (2005) and the Tawe from the Tawe, Loughor & Gower CAMS (2007).

The river catchments included in this CAMS are the Tawe, Neath, Afan, Kenfig, Ogmore and Ewenny. All of these rivers are surface water-dominated catchments. In the upper river catchments the streams are fast flowing and steep, while the lower river catchments are moderately flat. In these lower reaches the riverbed gradient, and consequently flow velocities, slacken significantly compared to the upper catchments.

The CAMS area ranges from Swansea in the west to the east of Bridgend and up to the Brecon Beacons in the north. It covers parts of four local authority areas; the City & County of Swansea, Neath Port Talbot, Bridgend, and a small part of the Vale of Glamorgan. The main towns within the CAMS area are Swansea, Neath, Port Talbot and Bridgend. There are many smaller towns and villages throughout the valleys.

The CAMS area supports a diverse range of natural habitats and species. This is reflected in the number of designated sites of European and National importance within the area, including Special Sites of Scientific Interest (SSSI) Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Part of the Brecon Beacons National Park is also within the CAMS area. All of the rivers in the CAMS area support important fisheries and conservation interests.

The catchments within this CAMS area are predominantly rural with some substantial tracts of urban and industrial development, as well as retail parks, particularly around the larger towns and in the river valleys. While agriculture generally dominates the land use, industry is very important in the area. The larger industries are concentrated along the M4 corridor between Swansea and Bridgend with smaller industries located on industrial estates throughout the area.

There are dairy, sheep and beef farms throughout the area. Areas of common land are used for grazing, predominantly in the upper reaches of the Tawe and Neath catchments. There is a high level of forestry cover in the upper Neath and Afan catchments, the latter having the highest level of forestry cover in the UK. There has been significant residential development in recent years in the Ogmore catchment around the Bridgend area.

Water resources within this CAMS area are of major economic, social and environmental importance. The key issue in the area is to improve environmental protection at abstraction-related low flow sites without causing a detrimental impact on existing industry and the local economy, or deterring investment and new development.

The Neath catchment hosts two canal networks, the Neath Canal and the Tennant Canal, while the Tawe hosts the Swansea Canal. These were originally built to support coal mining in the area. The Neath Canal is undergoing restoration work and is used in parts for navigation. Neither the Swansea Canal nor the Tennant Canal are currently used for navigational purposes. All three canal systems are used to provide water to other abstractors.

The largest abstractions are for industrial use, including abstractions by Tata steelworks and SCA Hygiene Products Tissue Ltd papermill, and a number of abstractions by Dŵr Cymru Welsh Water for public water supply as well as direct supply to industry.

There are 71 licensed abstractions within the Swansea Bay CAMS area, 47 from surface waters and 24 from groundwaters. Over 97% of the total licensed volume is abstracted from surface waters. Abstraction for hydropower accounts for nearly 40% of the water licensed. Abstraction for process water by industry is the main consumptive use and accounts for over 34% of the water licensed.

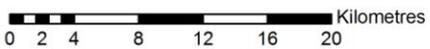
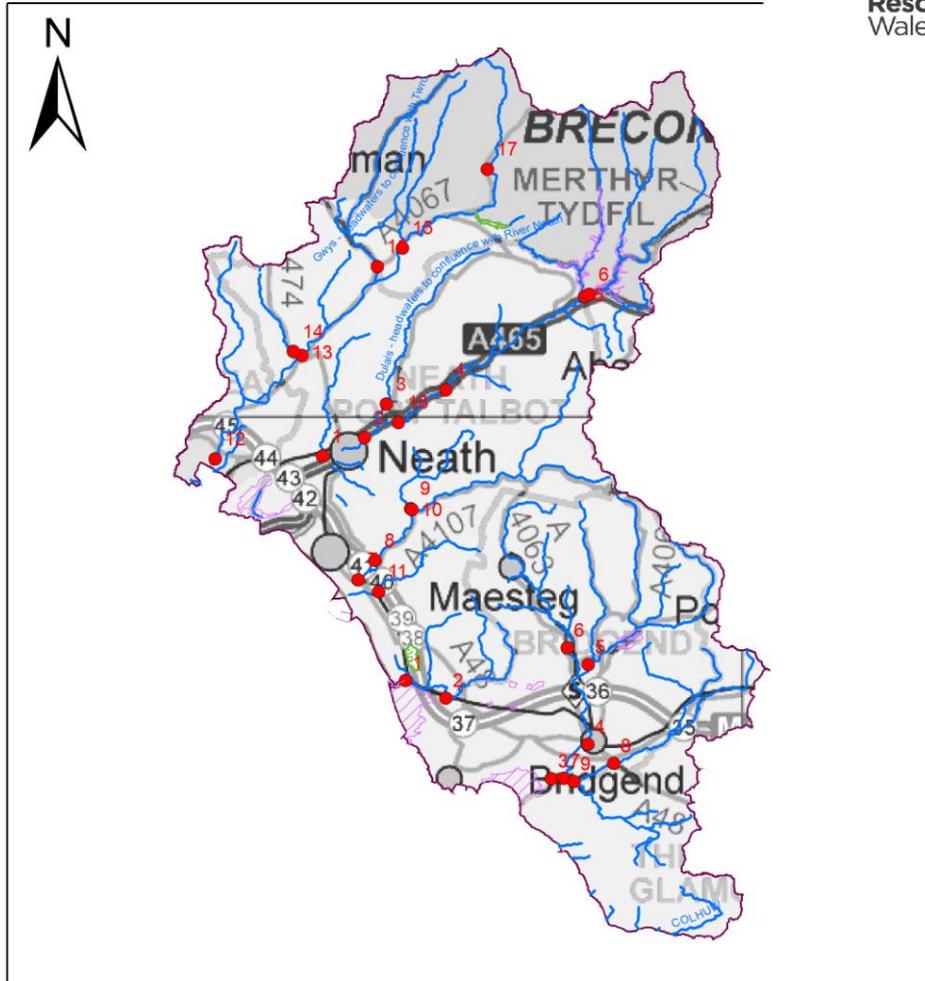
ABP has the second largest use of water within the CAMS area. This is from the Afan for navigation, to maintain the level in the docks and to supply the water licensed for abstraction from the docks by Tata and Civil & Marine Slag & Cement.

The Tawe Barrage Hydropower Scheme is sited in the tidal reach of the Tawe. To protect the abstraction for this scheme, consumptive abstraction in the whole Tawe catchment is restricted under the terms of the abstraction licence consent to derogate. Section 4.2.1 explains how existing abstractions affect current water availability.

Groundwater is used extensively throughout the area to support large numbers of small domestic and agricultural abstractions. Although these may be numerous, the quantities are not significant.

Map 2 shows the Swansea Bay CAMS area.

Swansea Bay CAMS Area



Legend

- Swansea Bay CAMS Assessment Points
- Swansea Bay CAMS Rivers
- Designated sites
 - SAC
 - SPA
 - SSSI

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Map 2 - The Swansea Bay CAMS area

3. Water resource availability of the Swansea Bay CAMS 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, which builds into a picture for the catchment. The main components that help us to understand the availability of water resources in this assessment 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. 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 flows), Q70, Q50 and Q30 (highest flows).

This information gives a realistic picture of the current resource availability 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 resources 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 having '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.

Map 3 shows the water resource availability colours in the Swansea Bay CAMS area. There are no water bodies of 'high hydrological status' in this CAMS area.

Another category of water bodies 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). Table 1 lists the implications for licensing for each water resource availability colour.

In cases where there is a flow deficit (RA is below the EFI) or risk of a flow deficit (FL is 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 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	Full 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.
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 or Good Ecological Potential (GEP). No further consumptive licences will be granted. Water may be available if you can buy (known as licence trading) from an existing licence holder the amount of water equivalent to that recently abstracted.
HMWBs	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 us to find out more.

Table 1 - Implications of water resource availability colours.

3.2.2 Groundwater

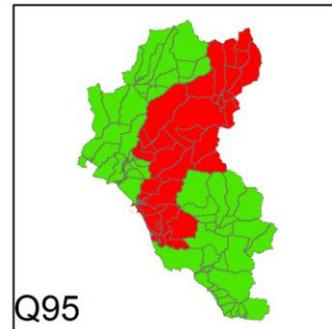
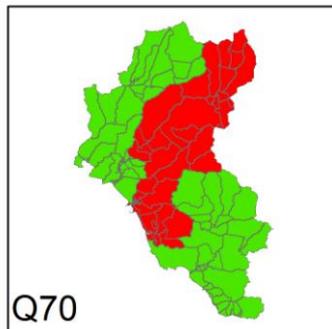
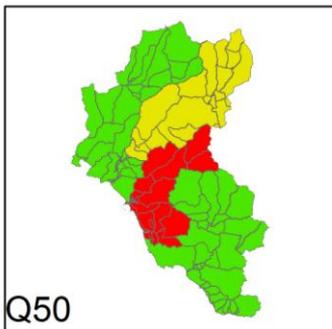
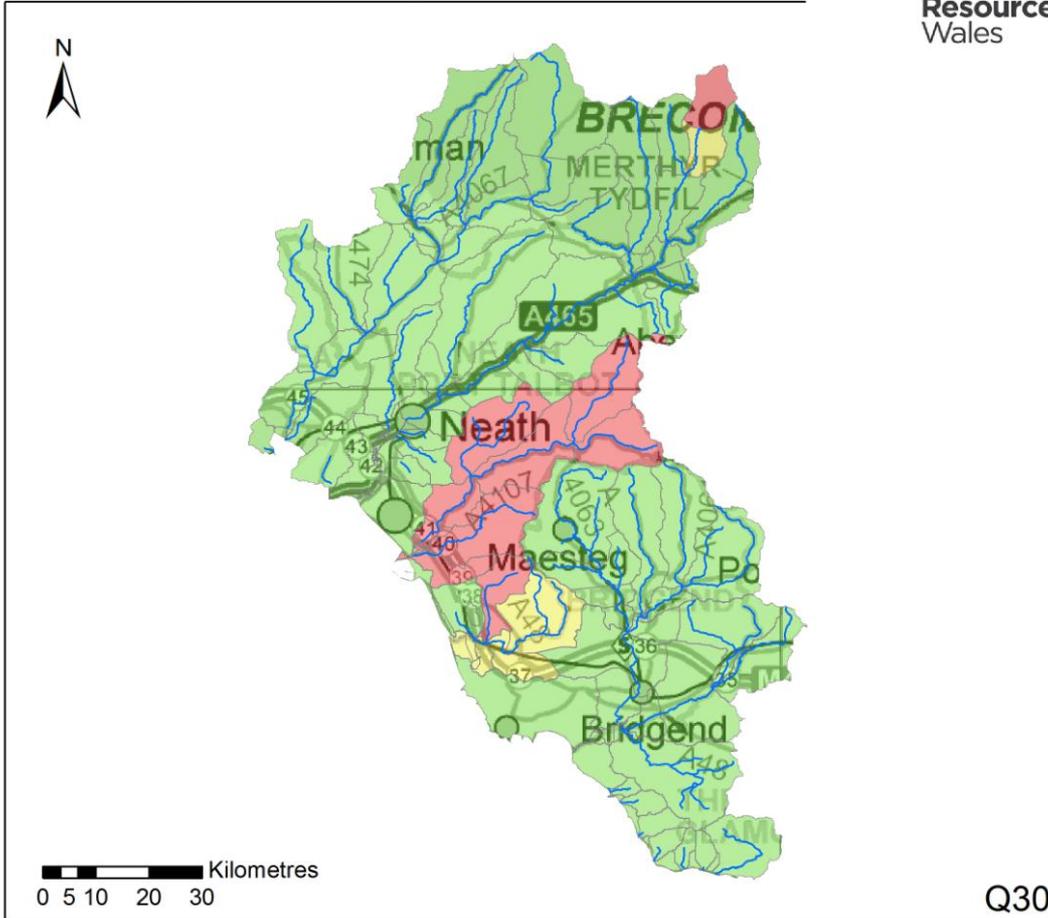
Groundwater availability is guided by the surface water resource availability colours unless we have better information on principle aquifers or are aware of local issues we need to protect.

Please refer to section 4.2.2 for further information.

Map 3 shows the water resource availability colours in the Swansea Bay CAMS area. The same availability is applied to groundwater and surface water.

GWMU resource availability colour	Implication for licensing
Water available for licensing	Groundwater unit balance shows groundwater available for licensing. New licences can be considered depending on impacts on other abstractors and on surface water.
Restricted water available for licensing	<p>Groundwater unit balance shows more water is licensed than the amount available OR that there are known local impacts likely to occur on dependent wetlands or groundwater levels, or cause intrusions but with management options in place.</p> <p>In restricted groundwater units no new consumptive licences will be granted. It may also be appropriate to investigate the possibilities for reducing fully licensed risks. Water may be available if you can ‘buy’ (known as licence trading) the entitlement to abstract water from an existing licence holder.</p> <p>In other units there may be restrictions in some areas e.g. in relation to saline intrusion.</p>
Water not available for licensing	Groundwater unit balance shows more water has been abstracted based on recent amounts than the amount available.
	No further consumptive licences will be granted.

Swansea Bay CAMS
Water Resource Availability Colours



Legend

-  Swansea Bay CAMS rivers
-  Water Available
-  Swansea Bay CAMS WBs
-  Limited Water Available
-  No Water Available

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Map 3 Water resource availability colours for the Swansea Bay 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.

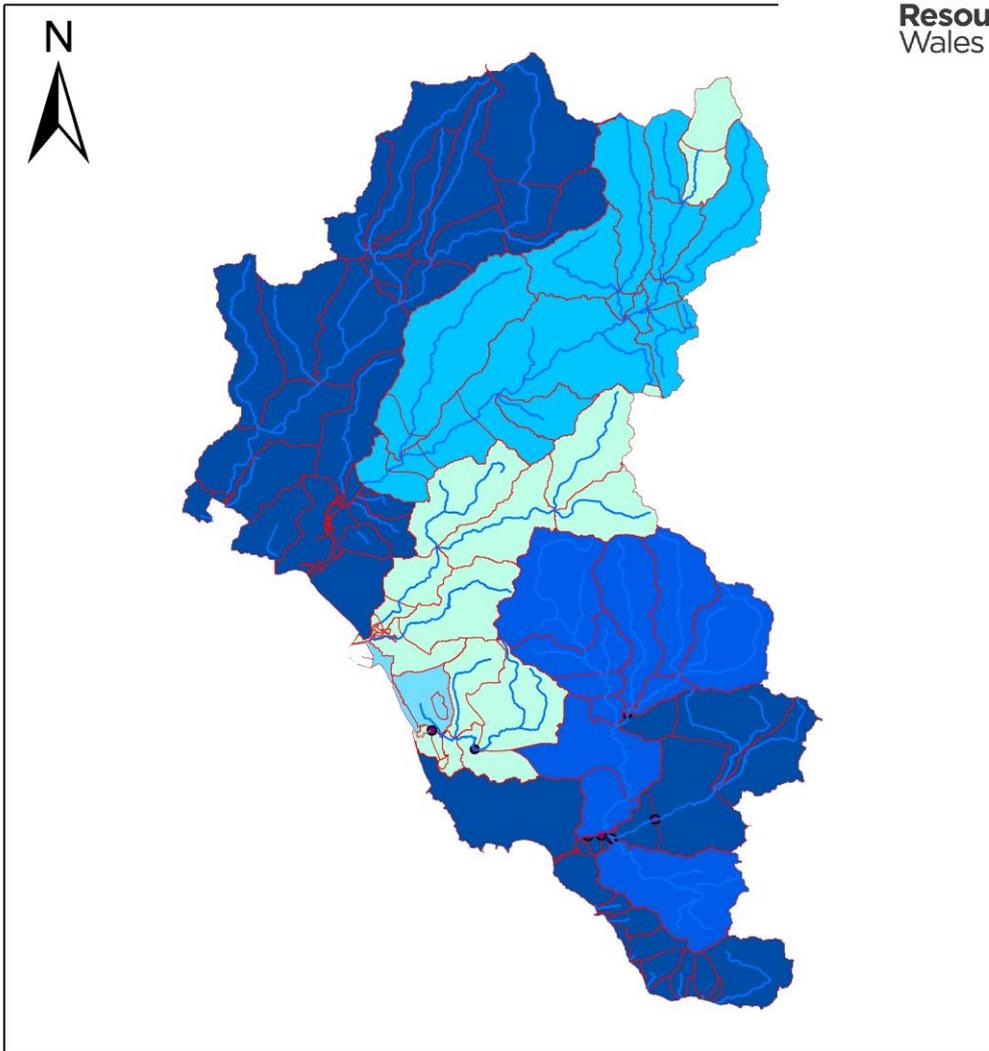
The availability of water for abstraction within a river varies greatly from high to low flows. By assessing the quantity of water available at different flows it is possible to see when there is a surplus or deficit of water and the associated reliability of an abstraction. This is an indication only; 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 4 gives an indication of the resource reliability in the Swansea Bay CAMS area expressed as a 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.

Swansea Bay CAMS
Resource Reliability (% of the time)



 Kilometres
0 1.5 3 6 9 12 15

Legend

-  The Swansea Bay CAMS water bodies
-  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%

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Map 4 - Water resource reliability expressed as a percentage of time available.

4. How we manage abstractions in the Swansea Bay CAMS area

4.1 Principles

The document [Managing Water Abstraction](#) outlines the overarching principles that we follow in managing our water resources. How we apply these principles in the Swansea Bay CAMS 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 (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 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 based on 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 need to understand the implications of this as it affects the reliability of supply. For example, in drier years it's more likely that these constraints 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 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 abstraction-related reduction in 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 to 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 environment. For further details on our general approach to licensing please see the document [Managing Water Abstraction](#).

Impoundments

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

Hydropower

Water abstraction for hydropower schemes is non-consumptive, with all water used usually returned to the watercourse. HOF and maximum abstraction volumes are determined in line with our guidance and based on the assessment of environmental risk for each scheme. For further information please refer to the hydropower section on 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 the periodic review of 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 that they can be reviewed at the same time. CEDs are assigned on a 12 year cycle. 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 duration will then usually be 12 years.

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.

Thirty of the licences in the Swansea Bay CAMS area are time-limited. The next CED for the Swansea Bay CAMS is 2029, and the subsequent one is 2041.

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.

Tables 3a and 3b give 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. River flows in the

headwaters or on unassessed tributaries may be much lower than at CAMS APs. Abstractions from these river reaches may be subject to different restrictions and quantities than those stated below.

Each HOF is linked to an AP and is dependent on the resource availability at that AP. In some cases additional restrictions may apply to licences where there is a more critical resource availability downstream, to protect the ecological requirements of the river. This is detailed in the last column of Table 3 if applicable.

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

Tables 3a and 3b detail the APs in the Swansea Bay CAMS area with corresponding potential HOFs that may be applied to a licence, the average number of days water may be available under this restriction and the approximate volume of water in megalitres per day (MI/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 assess this on a case-by-case basis.

Considerations specific to each AP for water availability, restrictions, etc, are detailed in the section below the tables.

AP	Name	Water Resource Availability Colour at Q95	HOF Restriction (MI/d) and percentile flow (Q)	Number of days per year abstraction may be available	Approximate volume available with restriction (MI/d)	Is there a gauging station at this AP?	Additional restrictions
1	Kenfig at tidal limit	No water available for licensing	N/A	N/A	0	No	See licensing strategy below.
2	Kenfig upstream of confluence with Castle Stream	No water available for licensing	N/A	N/A	0	No	See licensing strategy below.
3	Ogmore at tidal limit	Water available for licensing	HOF2 138.1MI/d (Q85)	310	7.1	No	See licensing strategy below.
4	Ogmore at Bridgend gauging station	Water available for licensing	HOF2 134.4MI/d (Q85)	310	7.1	Yes	Results overridden to protect flows in AP3 which is the critical AP. See licensing strategy below.
5	Ogmore at Brynmenyn gauging station	Water available for licensing	HOF2 84.2MI/d (Q85)	310	7.1	Yes	Results overridden to protect flows in AP3 which is the critical AP. See

							licensing strategy below.
6	Llynfi at Coytrahen gauging station	Water available for licensing	HOF2 40.3MI/d (Q85)	310	6.8	Yes	See licensing strategy below.
7	Ewenny upstream of Schwyll / tidal limit	Water available for licensing	MRF 25.8MI/d	365	0.8	No	See licensing strategy below.
8	Ewenny at Keepers Lodge gauging station	Water available for licensing	MRF 20.1MI/d	365	1.4	Yes	See licensing strategy below.
9	Alun upstream of Ewenny confluence	Water available for licensing	HOF2 5.2MI/d (Q85)	310	2.1	No	See licensing strategy below.

Table 3a - Water availability for the assessment points of the Kenfig, Ogmore and Ewenny catchments.

AP	Name	Water Resource Availability Colour at Q95	HOF Restriction (MI/d) and percentile flow (Q)	Number of days per year abstraction may be available	Approximate volume available with restriction (MI/d)	Is there a gauging station at this AP?	Additional restrictions
1	Clydach upstream of confluence with the Neath	Water available for licensing	MRF 2.5MI/d	365	0.2	No	See licensing strategy below.
2	Neath at tidal limit	Restricted water available for licensing	HOF4 352.7MI/d (Q65)	237	19	No	See licensing strategy below.
3	Dulais at Cilfrew gauging station	Restricted water available for licensing	N/A	N/A	0	Yes	See licensing strategy below.
18	River Neath upstream of Tonna	Restricted water available for licensing	HOF4 287.6MI/d (Q65)	237	19	No	Results overridden to protect flows in AP2 which is the critical AP. See licensing strategy below.
4	Neath at Resolven gauging station	Restricted water available for licensing	HOF4 271.9MI/d (Q65)	237	19	Yes	
5	Nedd Fechan upstream of confluence with the Neath	Restricted water available for licensing	HOF4 53.9MI/d (Q65)	237	13.7	No	

6	Mellte upstream of confluence with the Nedd Fechan	Restricted water available for licensing	HOF4 104.0MI/d (Q65)	237	14.5	No	
7	Afan at weir downstream of Docks Feeder Canal	No water available for licensing	N/A	N/A	0	No	See licensing strategy below.
8	Afan at Marcroft gauging station	No water available for licensing	N/A	N/A	0	Yes	Results overridden to protect flows in AP7 which is the critical AP. See licensing strategy below.
9	Pelenna upstream of confluence with the Afan	No water available for licensing	N/A	N/A	0	No	
10	Afan upstream of Pelenna confluence	No water available for licensing	N/A	N/A	0	No	
11	Ffrwd Wylt at discharge to Docks	No water available for licensing	N/A	N/A	0	No	See licensing strategy below.
12	Tawe at Beaufort Weir downstream of Ynystanglwys gauging station	Water available for licensing	MRF 84.9MI/d	365	9.4*	Yes	While there is water available under the CAMS assessment, any new abstractions will require a derogation agreement with the downstream licence holder. See licensing strategy below.
13	Tawe upstream of upper Clydach confluence	Water available for licensing	MRF 45.1MI/d	365	1.1*	No	
14	Upper Clydach at Tawe confluence	Water available for licensing	MRF 4.6MI/d	365	0.7*	No	
15	Tawe at Teddy Bears Bridge level station	Water available for licensing	MRF 25.0MI/d	365	1.0*	No	
16	Twrch at Gurnos level station	Water available for licensing	MRF 17.5MI/d	365	1.5*	No	
17	Tawe at Graig y Nos level station	Water available for licensing	MRF 9.8MI/d	365	0.4*	No	

Table 3b - Water availability for the assessment points of the Neath, Afan and Tawe catchments.

Kenfig, Ogmore & Ewenny catchments

AP1, Kenfig at tidal limit
AP2, Kenfig upstream of confluence with Castle Stream

There is no water available for licensing within these assessment points. This means that:

- Licences will only be considered for consumptive abstractions at the highest flows.
- Licences for non-consumptive abstractions would be considered.
- Any new licences will be issued with appropriate HOF conditions.
- Groundwater licences would not normally be available unless appropriate constraints are included as part of the conditions.

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.
- Renewals may be subject to change depending on WFD assessments, determined by the ecological status of the waterbody. This will be discussed at as early a stage as possible with the licence holder.

Through the first round of CAMS we identified the importance of water resources to local industry and the need to balance this with protection of the environment. We will explore the possibility of improving fish passage and water management via a voluntary agreement with licence holders.

AP3, Ogmore at tidal limit
AP4, Ogmore at Bridgend gauging station
AP5, Ogmore at Brynmenyn gauging station
AP6, Llynfi at Coytrahen gauging station

There is water available for licensing in these assessment points. This means that:

- New licences will be issued, with HOF conditions where appropriate.
- New licences for groundwater abstractions will be subject to the same conditions as surface water abstractions.

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.
- Renewals may be subject to change depending on WFD assessments, determined by the ecological status of the waterbody. This will be discussed at as early a stage as possible with the licence holder.

There are geological features called sinks or swallow holes in the lower parts of the Ogmore catchment. River flows are lost to groundwater through these features. This may lead to abstractions being less reliable and low flow restrictions coming into force more frequently.

AP7, Ewenny upstream of Schwyll / tidal limit
AP8, Ewenny at Keepers Lodge gauging station
AP9, Alun upstream of Ewenny confluence

There is water available for licensing in these assessment points. This means that:

- New licences will be issued, with HOF conditions where appropriate.
- Groundwater licences would not normally be available unless appropriate constraints are included as part of the conditions.

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.
- Renewals may be subject to change depending on WFD assessments, determined by the ecological status of the waterbody. This will be discussed at as early a stage as possible with the licence holder.

The need to support forecast growth whilst offering a high level of environmental protection are considered a priority within these catchments.

There are geological features called sinks or swallow holes in the lower parts of the Ewenny and Alun catchment. River flows are lost to groundwater through these features. This may lead to abstractions being less reliable and low flow restrictions coming into force more frequently.

Neath, Afan & Tawe catchments

AP1, Clydach upstream of confluence with the Neath

There is water available for licensing in this assessment point. This means that:

- New licences will be issued, with HOF conditions where appropriate.
- New licences for groundwater abstractions will be subject to the same conditions as surface water abstractions.

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.
- Renewals may be subject to change depending on WFD assessments, determined by the ecological status of the waterbody. This will be discussed at as early a stage as possible with the licence holder.

AP2, Neath at tidal limit

AP3, Dulais at Cilfrew gauging station

AP18, River Neath upstream of Tonna

AP4, Neath at Resolven gauging station

AP5, Nedd Fechan upstream of the Neath confluence

AP6, Mellte upstream of the Nedd Fechan confluence

There is restricted water available for licensing in these assessment points. This means that:

- Due to the fine balance between the requirement to support new and prospective developments in the area and the environmental impact, including its socio-economic value, the sustainability of proposals will need to be considered in further detail at the time of the determination.
- Applications for new abstraction licences will need to be supported by an appropriate business case outlining such benefits of the proposed development.

- New licences will be issued with appropriate HOF conditions.
- Issues have been raised relating to fish migration at the bottom end of the River Neath during prolonged dry periods and mitigation measures, appropriate and proportionate to the frequency and significance of such events, would need to be considered with regard to any future licences.
- Groundwater licences would not normally be available unless appropriate constraints are included as part of the conditions.

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.
- Renewals may be subject to change depending on WFD assessments, determined by the ecological status of the waterbody. This will be discussed at as early a stage as possible with the licence holder.

It is recognised that there will be significant social and economic benefits from potential development within the lower Neath catchment. Therefore water will be made available to support such development, providing it is in balance with the environment and its socio-economic value. This assessment will be made through the licence determination process. Abstractions from the Tennant and Neath Canals, in particular for the supply of water to the Baglan Bay development, already play an important part in the local economy.

Future licensing of resources will ensure that water is available for abstraction while remaining within the current water resource availability colour, supporting development, with the associated potential social and economic gains, without unacceptable impact on the natural environment.

There is an abstraction from the Dulais for hydropower which is downstream of the AP, AP3 Dulais at Cilfrew Gauging Station. The CAMS resource assessment was not taking this licensed abstraction into account when calculating the resource availability for AP3. To ensure that the water required from the Dulais to support this abstraction is protected, we have overridden the CAMS results as detailed in the tables above. To ensure that this abstraction is not derogated, there will be no water available for further consumptive abstractions from the Dulais. Non-consumptive abstractions would be considered on a case-by-case basis dependent on location.

AP7, Afan at weir downstream of Docks Feeder Canal

AP8, Afan at Marcroft gauging station

AP9, Pelenna upstream of the Afan confluence

AP10, Afan upstream of the Pelenna confluence

There is no water available for licensing within these assessment points. This means that:

- Licences will only be considered for consumptive abstractions at the highest flows. These will be considered due to the economic importance of development in the area.
- Applications for new consumptive abstractions will be considered on a case-by-case basis and would need to be supported by an appropriate business case.
- Licences for non-consumptive abstractions would be considered.
- Any new licences will be issued with appropriate HOF conditions.
- Groundwater licences would not normally be available unless appropriate constraints are included as part of the conditions.

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.
- Renewals may be subject to change depending on WFD assessments, determined by the ecological status of the waterbody. This will be discussed at as early a stage as possible with the licence holder.

The first CAMS assessment considered it a priority to secure sufficient resources to support forecast development, whilst at the same time offering an improved level of protection to the environment. It was identified that improving the level of environmental protection could only be achieved by reducing existing abstracted volumes during the lower part of the flow regime.

Through our Restoring Sustainable Abstraction (RSA) programme (see section 4.5) we have worked in partnership with local stakeholders to quantify the impacts on the River Afan at Green Park Weir. We have also identified a number of potential solutions to improve water management and fish passage. Through the partnership approach we have now installed a revolutionary new fishpass at Green Park Weir. We have also set up the Afan Water Management Group to look at voluntary solutions to the issues here. The group has identified that the installation of a control structure on the Docks Feeder Canal, combined with improvements to the weir structure, will allow the optimisation of water entering the docks. This will help to meet the needs of local industry and the environment. The group will continue to work together to seek funding for the weir improvement and control structure.

AP11, Ffrwd Wylt at discharge to Docks

There is no water available for licensing within this assessment point. This means that:

- Licences will only be considered for consumptive abstractions at the highest flows.
- Applications for new consumptive abstractions will be considered on a case-by-case basis and would need to be supported by an appropriate business case.
- Licences for non-consumptive abstractions would be considered.
- Any new licences will be issued with appropriate HOF conditions.
- Groundwater licences would not normally be available unless appropriate constraints are included as part of the conditions.

For existing licences:

- There are no time-limited licences within this assessment point and therefore no licences due for renewal.

AP12, Tawe at Beaufort Weir downstream of Ynystanglwys gauging station

AP13, Tawe upstream of upper Clydach confluence

AP14, Upper Clydach at Tawe confluence

AP15, Tawe at Teddy Bears Bridge level station

AP16, Twrch at Gurnos level station

AP17, Tawe at Graig y Nos level station

There is water available for licensing within these assessment points. This means that:

- New licences will be issued, with HOF conditions where appropriate.
- New licences for groundwater abstractions will be subject to the same conditions as surface water abstractions.

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.

- Renewals may be subject to change depending on WFD assessments, determined by the ecological status of the waterbody. This will be discussed at as early a stage as possible with the licence holder.

Consumptive abstraction from the river Tawe is restricted under the terms of the Tawe Barrage Hydropower Scheme abstraction licence consent to derogate. Any new or increased abstractions will require a derogation agreement with the licence holder.

We are not allowed to issue a licence that will impact on the rights of a licensed abstraction downstream, without receiving such a consent to derogate from the licence holder. Please contact us if you wish to abstract from the Tawe catchment.

4.2.1.1 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 high conservation value. These are:

- Special Areas of Conservation (SAC), which contribute to biodiversity by maintaining and restoring habitats and species;
- Special Protection Areas (SPA), which provide 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.

There are a number of designated sites within South West Wales with water-related features. All new licence applications near or within these sites will be subject to assessment under the Habitats Directive. This will involve assessing their potential impact on the designated species and habitats, alone and in combination with other licences.

If our assessment shows that a new application could potentially have an impact on a SAC/SPA we have to follow strict rules when determining that licence. These include:

- 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.

The Environment Agency completed its review of all existing abstraction licences in 2010 to establish their potential impact on the designated species and habitats. They identified a number of licences where changes are needed to comply with the Habitats Directive. We are working with licence holders to implement these changes by 2015.

Developers in catchments near or within a designated site should contact us to discuss water availability and conditions which may be applied to licences.

4.2.2 Groundwater

Where groundwater abstractions directly impact on surface water flows, the impact is measured at the surface water AP. Licences may be issued with conditions relating to surface water flows, such as the same HOF conditions which would apply to a surface water abstraction (see Tables 3a and 3b). This would require the groundwater abstraction to cease when surface water flows are low.

Where groundwater abstractions are likely to impact surface water features, or reduce baseflow to a river, a Hands off Level (HOL) condition may be applied to the abstraction. This is a groundwater level below which an abstractor is required to reduce or stop abstraction.

On major 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. We have one groundwater management unit in this CAMS area; Schwyll spring.

Applications for groundwater abstractions are subject to the normal determination criteria. This includes investigations such as pump tests to assess yield and localised impacts. Any licences would be issued with restrictive conditions where appropriate. Consent to drill and test pump groundwater abstractions must be obtained before any works commence. Please contact us for further information on groundwater availability and licensing requirements.

4.2.3 Estuaries & coast

Estuaries are not included in the CAMS resource assessment as tidal influences cannot be assessed in the same way as inland waters.

Many coastal streams within this CAMS area have not been assessed using the CAMS resource assessment methodology. Compared to the CAMS assessed rivers, these smaller streams provide a relatively small resource. They generally have a catchment area of less than 20km² and lack hydrological and ecological data to support any assessment of resources. The CAMS resource assessment is undertaken at a catchment scale with catchment significant resources. It is not a tool for smaller local assessments of smaller resources.

However, the WFD has made an assessment of these smaller catchments and an indication of water availability from these resources is included in Map 3.

Applications for abstractions from resources in catchments outside those assessed by the CAMS will be assessed on a case-by-case basis through the licence determination process.

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 3.

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 is 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 the water body. Licensed abstraction may be recovered for the environment.
HMWBs	Opportunities for trading will depend on local operating agreements and local management.

To find out more about licence trading please go to the gov.uk 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, 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 currently exempt abstractions we have included them in our assessments to consider how they impact on the catchment.

4.5 Restoring Sustainable Abstraction

Where water abstractions cause or potentially cause environmental damage, we may need to change or even revoke existing abstraction licences. We investigate abstraction licences causing such issues through the Restoring Sustainable Abstraction (RSA) programme. We can then work with licence holders to develop options on how to improve sustainability. Information on how licences in the RSA programme are dealt with can be found in the Environment Agency's guide, Changing Water Abstraction & Impoundment Licences, available on the gov.uk website.

The RSA programme has provided us with a framework for undertaking both the Habitats Directive review of consents and the WFD water resources investigations. We also identified a number of RSA schemes through the first round of CAMS.

Glossary of terms

Abstraction	Removal of water from a source of supply (surface or groundwater).
Abstraction licence	The authorisation granted by Natural Resources Wales (or the Environment Agency in England) to allow the removal of water.
Assessment Point Unit	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	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	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; <ol 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); <p>without intervening use.</p>
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
EFI	Ecological 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
MI/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