Welland Catchment Abstraction Licensing Strategy

A strategy to manage water resources sustainably

March 2021

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

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

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

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

Published by:

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

www.gov.uk/environment-agency

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Contents

1. About the licensing strategy

This strategy sets out our approach to managing new and existing abstraction and impoundment within the Welland catchment in the Anglian river basin district. The River Welland rises near Market Harborough in Leicestershire and passes through Stamford to drain into the Wash on the Lincolnshire coast. The major tributaries of the River Welland include the River Glen, River Gwash and River Chater.

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

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

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

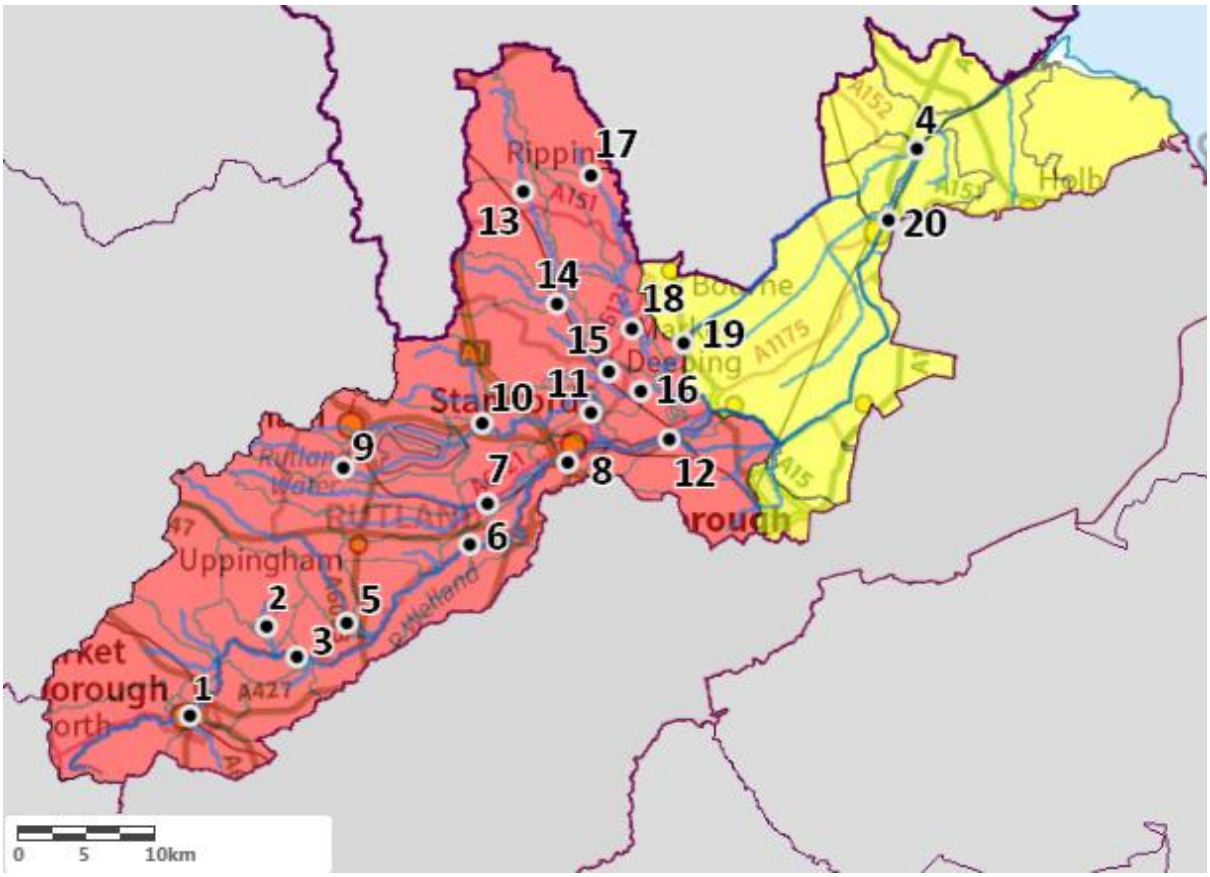
Please see abstraction pages on gov.uk for advice on who needs an abstraction or impoundment licence, and how to apply.

2. Water resource availability of the Welland ALS

2.1. Resource availability

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

Map 1: Water resource availability colours at Q30 for the Welland ALS.



For some APs showing as 'Water not available', depending on details, there may be opportunities for new high flow abstraction licences to fill storage reservoirs to be considered. We will only consider this where we are confident that the water environment is protected and the interests of existing water users will not be affected. See Table 1 for further information.

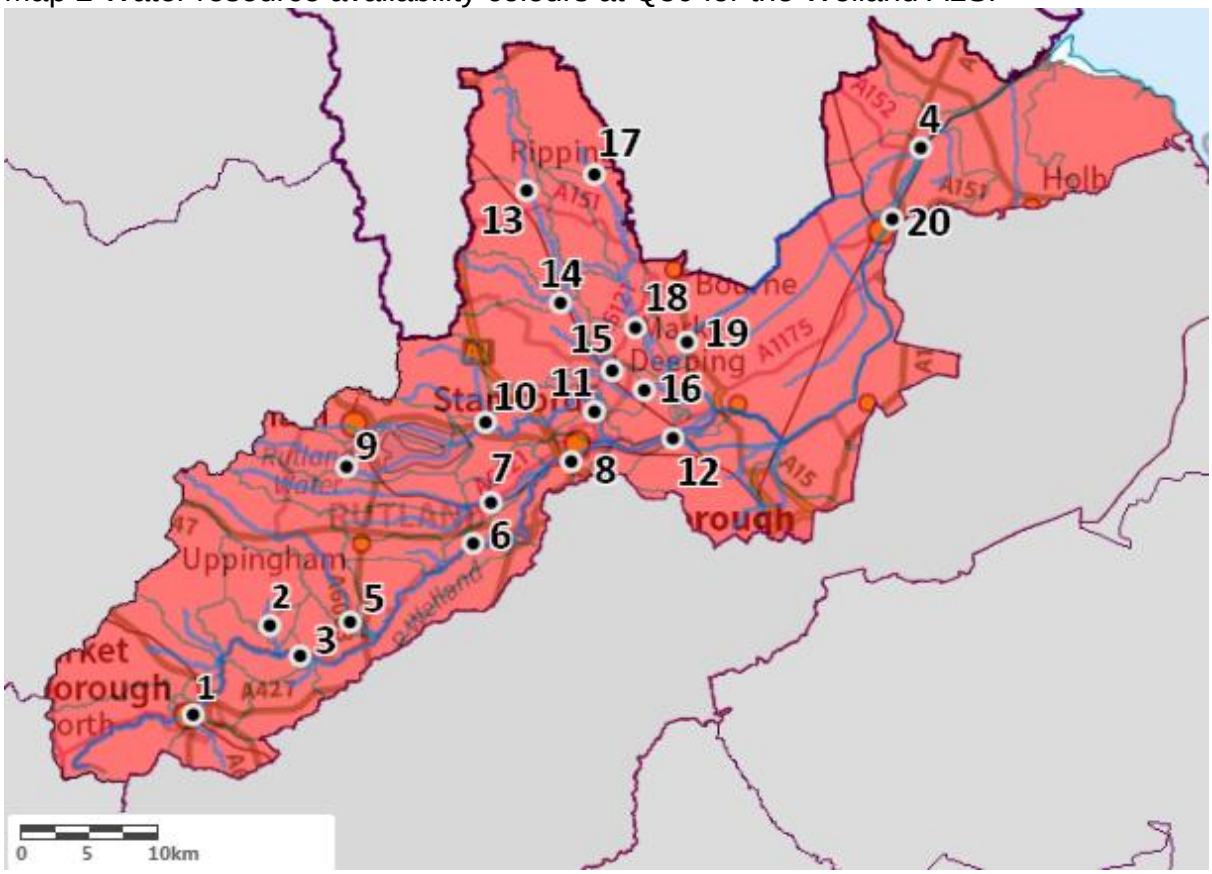
Legend:

- Assessment Points
- Rivers

Water Availability at Q30:

- Water available
- Restricted water available
- Water not available

Map 2 Water resource availability colours at Q50 for the Welland ALS.



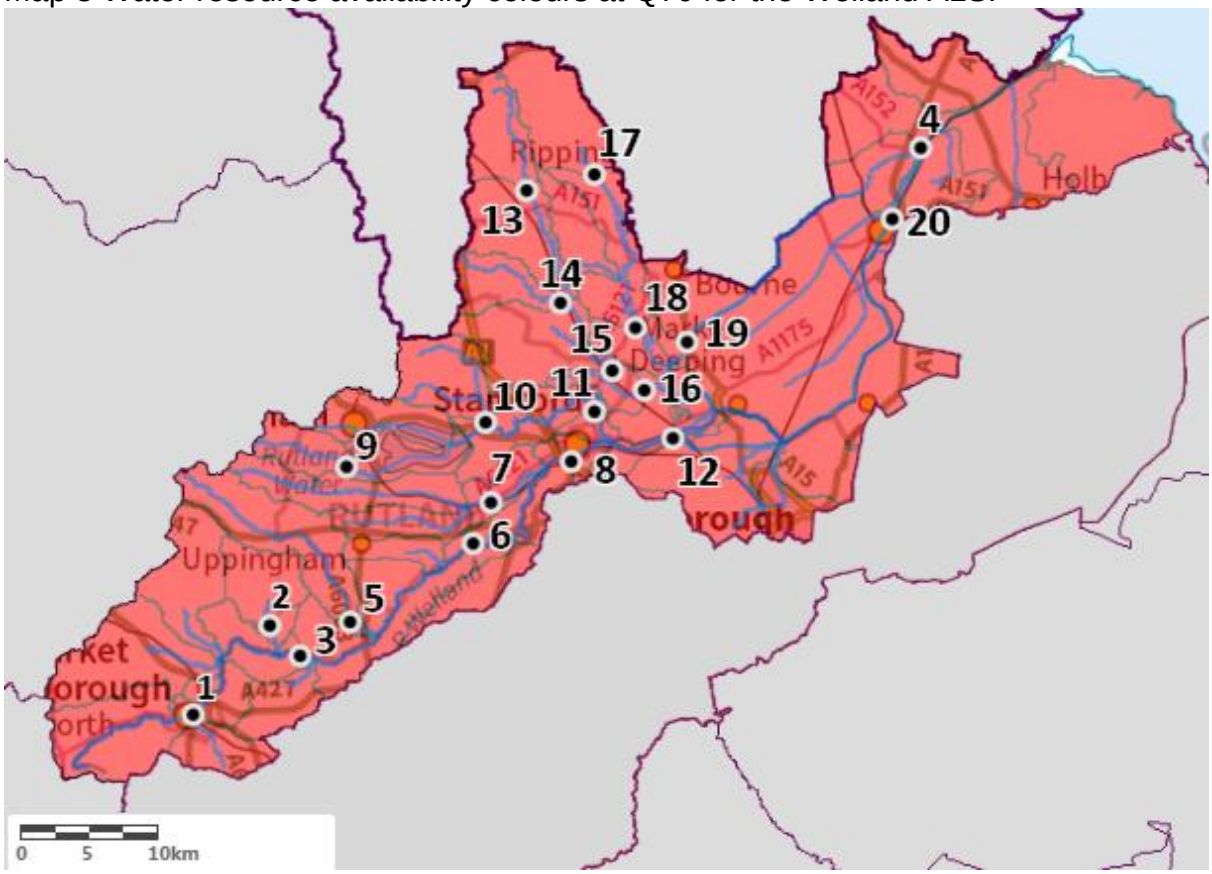
Legend:

- Assessment Points
- Rivers

Water Availability at Q50:

- Water available
- Restricted water available
- Water not available

Map 3 Water resource availability colours at Q70 for the Welland ALS.



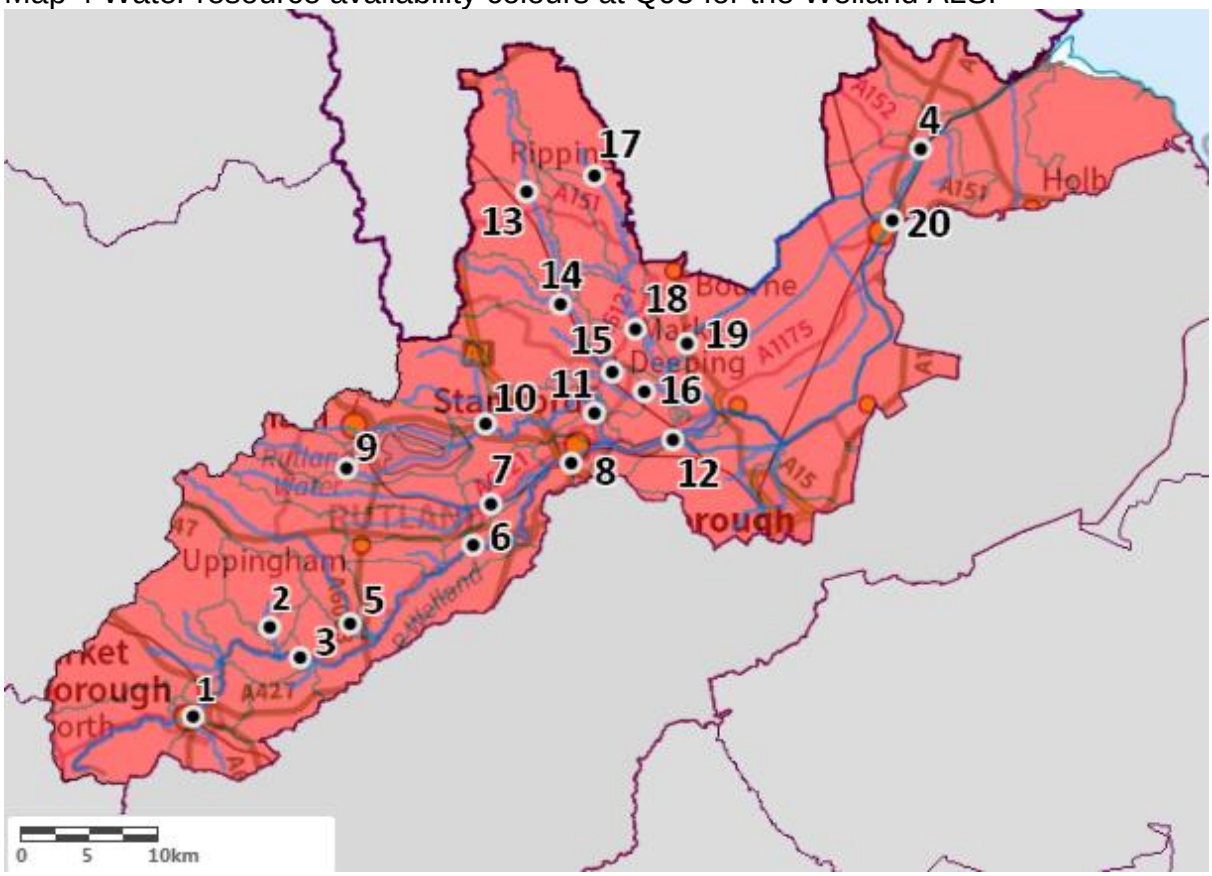
Legend:

- Assessment Points
- Rivers

Water Availability at Q70:

- Water available
- Restricted water available
- Water not available

Map 4 Water resource availability colours at Q95 for the Welland ALS.



Legend:

- Assessment Points
- Rivers

Water Availability at Q95:

- Water available
- Restricted water available
- Water not available

2.1.1. Water resource availability colours and implications for licensing

Water available for licensing

Green 

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

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

Restricted water available for licensing

Yellow 

Full Licenced flows fall below the Environmental Flow Indicators EFIs.

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

Water not available for licensing

Red 

Recent actual flows are below the EFI.

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

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

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

Grey 

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

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

2.2. Groundwater resource availability

Section 2.2.1 explains the groundwater resource availability colours, and Map 5 shows these colours for groundwater in the Welland area.

Map 5: Groundwater resource availability colours for the Welland ALS.

2.2.1. Groundwater resource availability colours and implications for licensing

Water available for licensing

Green

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

Restricted water available for licensing

Yellow

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

In restricted groundwater units no new consumptive licences will be granted. It may also be appropriate to investigate the possibilities for reducing fully licensed risks. Water may

be available if you can ‘buy’ (known as licence trading) the entitlement to abstract water from an existing licence holder.

In other units there may be restrictions in some areas e.g. in relation to saline intrusion

Water not available for licensing

Red 

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

We will not grant further consumptive licences. Non-consumptive licences will be considered on a case-by-case basis.

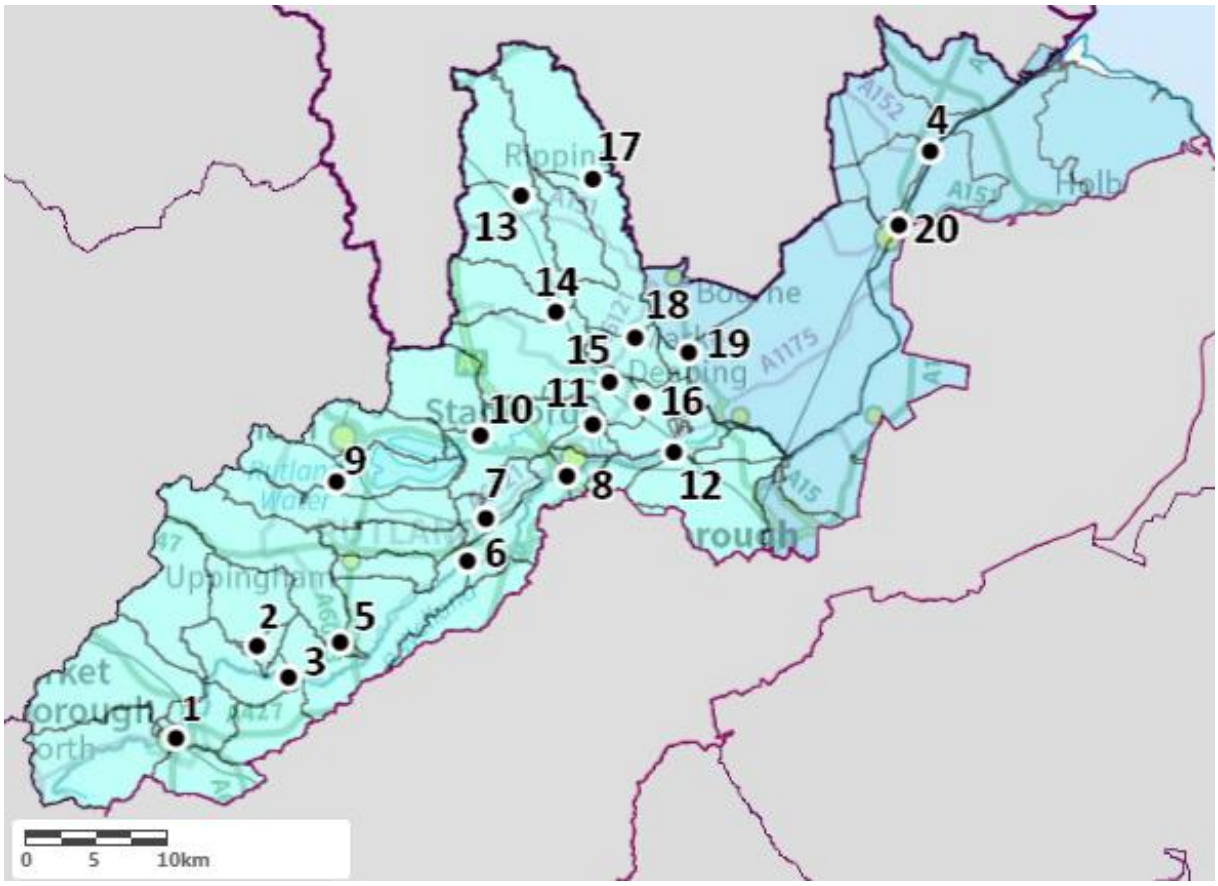
2.3. Resource reliability

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

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

Map 6 gives an indication of the surface water resource availability for consumptive abstraction in the Welland area expressed as a percentage of time.

Map 6: Water resource reliability of the Welland ALS expressed as percentage of time available



Legend:

- Assessment Points
- Rivers

Percentage of the time additional consumptive resource may be available:

- Consumptive abstraction available less than 30% of the time
- Consumptive abstraction available at least 30% of the time
- Consumptive abstraction available at least 50% of the time
- Consumptive abstraction available at least 70% of the time
- Consumptive abstraction available at least 95% of the time

2.4. Other considerations for availability and reliability

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

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

New licences within an ALS are usually given a Common End Date (CED), which allows them to be reviewed at the same time. The next CED for this ALS is 31 March 2026 and the subsequent one is 31 March 2038.

2.5. Impoundments

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

3. How we manage abstraction in the Welland ALS

3.1. Assessment points

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

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

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

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

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

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

AP	Name	Water Resource Availability	HOF Restriction (Ml/d)	Number of days per annum abstraction may be available	Approximate volume available at restriction (Ml/d)	Is there a gauging station at this AP?	Additional restrictions
1	Market Harborough	No water available	n/a	n/a	n/a	Yes	
2	Medbourne Brook	No water available	n/a	n/a	n/a	Yes	
3	Ashley	No water available	n/a	n/a	n/a	Yes	
4	Surfleet	Restricted water available	105.5	98	56.1	No	Additional LDE restrictions - see section 3.5
5	Eye Brook downstream	No water available	n/a	n/a	n/a	Yes	
6	Tixover	No water available	n/a	n/a	n/a	Yes	
7	Fosters Bridge	No water available	n/a	n/a	n/a	Yes	
8	Tinwell	No water available	n/a	n/a	n/a	Yes	
9	Manton	No water available	n/a	n/a	n/a	Yes	
10	North Brook	Restricted water available*	n/a	n/a	n/a	Yes	*Water may be available at high flows
11	Belmesthorpe	Restricted water available*	n/a	n/a	n/a	Yes	*Water may be available at high flows
12	Tallington	Restricted water available*	n/a	n/a	n/a	Yes	*Water may be available at high flows

AP	Name	Water Resource Availability	HOF Restriction (Ml/d)	Number of days per annum abstraction may be available	Approximate volume available at restriction (Ml/d)	Is there a gauging station at this AP?	Additional restrictions
13	Burton Coggles	Restricted water available	10.1	98	12.9	Yes	
14	Little Bytham Main	Restricted water available	13.3	98	11.2	Yes	
15	Essendine	Restricted water available	15.1	98	6.9	No	
16	Shillingthorpe	Restricted water available	51.4	98	39.9	Yes	
17	Irnham	Restricted water available	12.1	98	14.6	Yes	
18	Manthorpe	Restricted water available	19.8	98	25.5	Yes	
19	Kates Bridge	Restricted water available	91	98	47.2	Yes	
20	Marsh Road Sluice	Restricted water available*	719	32	231.6	No	*Water may be available at high flows Additional LDE restrictions - see section 3.5

Table 1 Summary of licensing approach for the assessment points of the Welland ALS. The information in this table is correct at the time of publishing but is subject to change.

We are in the process of improving our assessment of available water in the Welland catchment where the resource situation is dominated by Rutland Water. The table above sets out our current assessment. If our water resources assessment changes we will update this ALS during 2021.

Any application for abstraction would need to be considered on a case by case basis in this catchment.

River Welland

Water availability upstream of Tallington is dominated by abstraction for Public Water Supply. Water availability in the main River Welland is therefore overridden by the more critical water resource availability at Tallington (AP12). In the River Welland upstream of Tallington there is no water available for abstraction except potentially at extremely high flows (occurring less than 1% of the time).

For APs marked with a * in Table 1, depending on details, there may be opportunities for new high flow abstraction licences to fill storage reservoirs to be considered. We will only consider this where we are confident that the water environment is protected and the interests of existing water users will not be affected.

Eye Brook

Water availability in the Eye Brook is driven by operation of the Eyebrook Reservoir. There is no water available for abstraction at any flow.

Upstream of Rutland Water

Water availability upstream of Rutland Water is driven by the operation of Rutland Water. There is no water available for abstraction at any flow.

3.2. Groundwater

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

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

Licence restrictions on groundwater abstractions in the Welland ALS area

Lincolnshire Limestone

The Lincolnshire Limestone is the principal aquifer in the Welland ALS area. The Lincolnshire Limestone can be up to 40m thick, and groundwater movement within the aquifer is generally west to east. In the west of the area the limestone outcrops at the ground surface allowing rainfall to recharge the aquifer. The limestone becomes confined as it is overlain by younger deposits to the east. Although abstraction takes place mainly from the confined region, the aquifer becomes too deep and the quality is considered to be too poor to exploit more than a few kilometres east of the outcrop area.

The resources in the Lincolnshire Limestone are fully committed to existing users and the environment. Consequently, no new consumptive licences will be considered. New non-consumptive licences will be considered on a case-by-case basis, and will be time-limited.

Secondary aquifers

There are secondary aquifers within the Welland ALS boundary, which lie mainly to the west of the area. These include Northampton Sands Formation, Marlstone Rock Formation and secondary limestone formations, as well as drift glaciofluvial sands and gravels. These do not hold the same resource as the Lincolnshire Limestone but support small abstractions and surface water features. There may be the opportunity for consumptive abstraction from these secondary aquifers providing there is no hydraulic connectivity with the Lincolnshire Limestone or surface water features.

Sands and Gravels

There are several superficial deposits of sands and gravels which are being used for groundwater abstraction within this catchment. Groundwater in sands and gravels is relatively close to the ground surface, and so can be easily accessed through catchpits or shallow wells.

There may be the opportunity for consumptive abstraction from Sands and Gravels providing there is no hydraulic continuity with surface water features or with the Lincolnshire Limestone.

3.3. Quarries

The Water Resources (Transitional Provisions) Regulations 2017 have removed the majority of previous exemptions from licensing control, and previously exempt abstractors will now require a licence to lawfully abstract water. This includes the dewatering of quarries.

To support a formal application for dewatering of quarries, potential abstractors are likely to be required to:

- Undertake an environmental survey to determine the presence of any environmental features which may require protection.

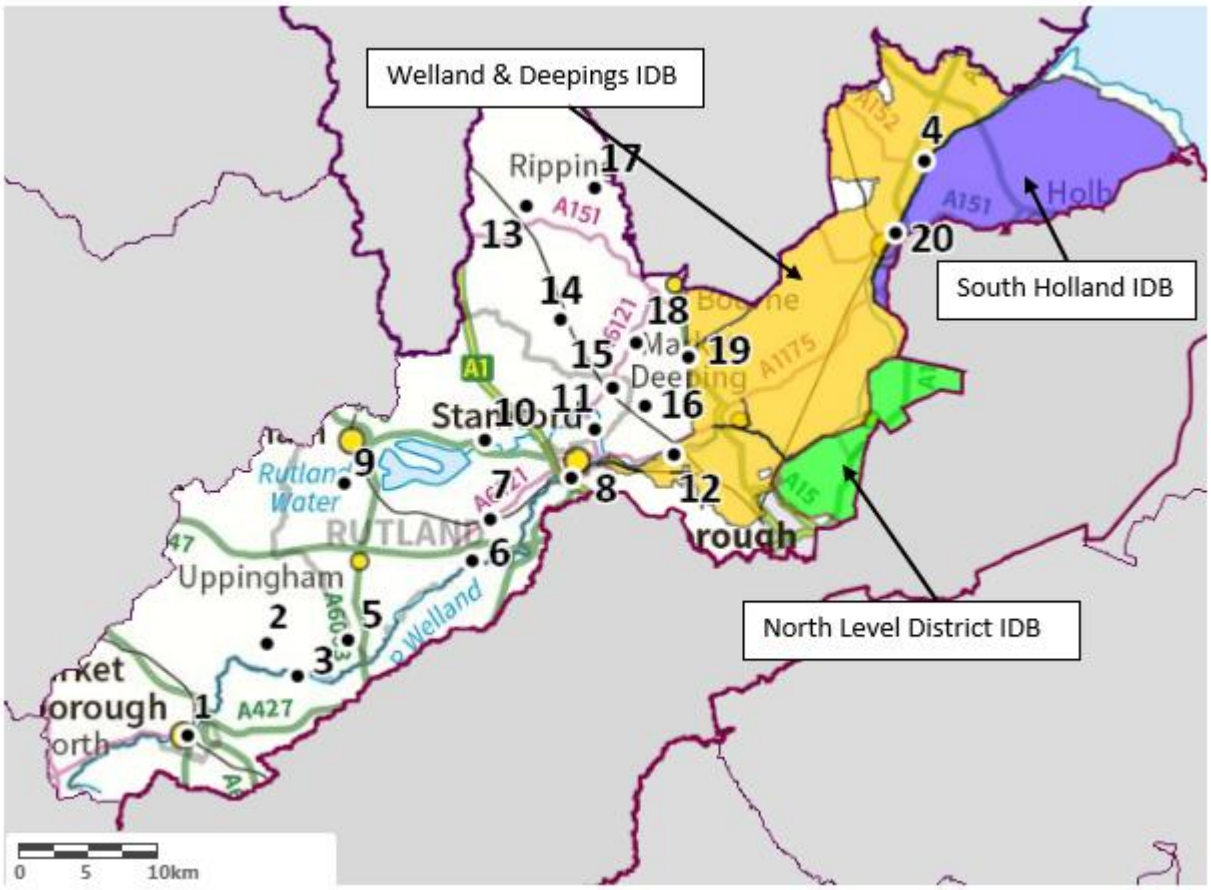
- Undertake a pump test to demonstrate that operations won't adversely affect any other water users or features.
- Demonstrate that they are maximising local groundwater recharge before water is discharged to the local surface water environment.
- Show that where discharge to surface water is taking place that the location of the discharge point is upstream of any potential impacts. This can help with mitigating any impacts.

It is recommended that you discuss your proposed abstraction and confirm necessary requirements with us before commencing.

3.4. Internal Drainage Boards (IDBs)

The Welland ALS area contains the Welland & Deepings IDB, South Holland IDB and a small part of North Level District IDB.

Map 7: Internal Drainage Boards in the Welland ALS.



We will consult the relevant IDB for any licence that is considered in an IDB area.

In most cases licences for abstraction within an IDB area will require a HoL condition relevant to the local level management system agreed following liaison with the relevant IDB. This will be in addition to a HoF on the main river. See section 3.5 for further information.

3.5. Level dependent environments

Level dependent environments are characterised by a network of river channels flowing above the level of the surrounding land. The low-lying land has a network of drainage ditches, which remove water from the low-lying land into the main river channels during the winter/high flows and provide an irrigation resource during the summer/low flows (see Figure 1).

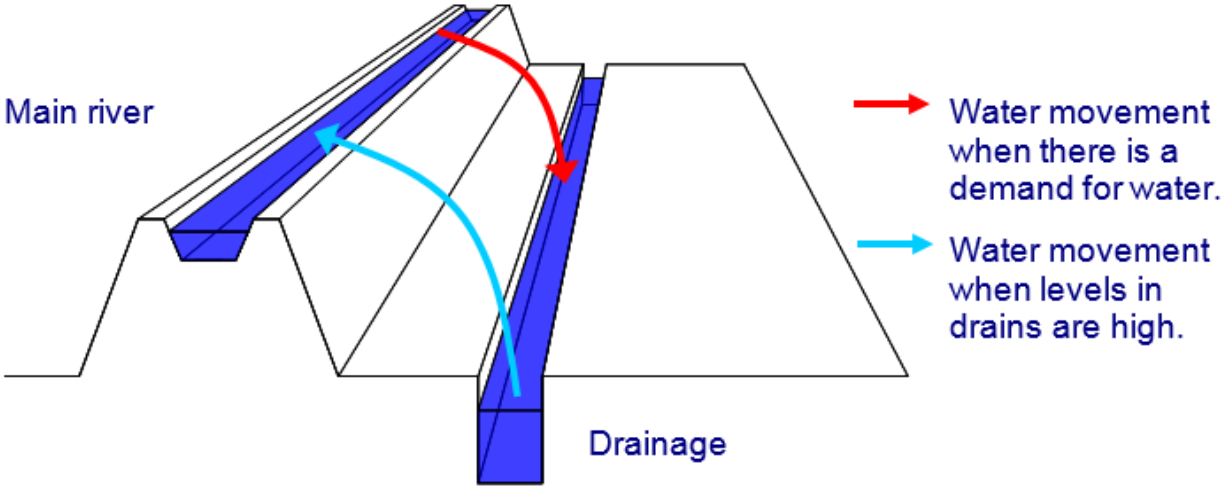


Figure 1 The main features of a characteristic level dependent environment

The Welland ALS contains two level dependent environments (LDE); Lower Welland and Lower Glen (see Map 7). We have divided these areas into units, known as level dependent management units (LDMU's) (see Table 2). We have completed an assessment on each of these units.

Licence restrictions on abstractions in relation to the LDEs in the Welland ALS area

Level Dependent Environment	Associated Level Dependent Management Units
Lower Welland	Newborough
Lower Welland	Postland
Lower Welland	Podehole
Lower Welland	Crowland and Cowbit Washes
Lower Glen	Bourne Fen
Lower Glen	Pinchbeck and Fourth District
Lower Glen	Risegate Eau and Surfleet Village

Table 2 Level dependent environments and management units in the Welland ALS area

We will consult the relevant IDB for any licence that is considered in an IDB area. Our assessment of water resources in the LDEs is linked to the assessment of the main river channels (highland carriers). When considering applying for an abstraction licence in an LDE reference should be made to the water resource assessment in the main river channel (see Table 3).

Level Dependent Environment	Refer to assessment point
Lower Welland	AP 20 Marsh Road Sluice (see Section 3.1)
Lower Glen	AP 4 Surfleet (see Section 3.1)

Table 3 Level dependent environments and associated water resource assessment points in the Welland ALS area

Further information on each of these level dependent environments and the additional licence restrictions which may apply to new licences in these areas is provided below. Licence restrictions in the LDMUs will be determined on a case-by-case basis. Information is also provided for the area north of Long Sutton which forms part of the Holbeach Marsh area and is managed by the South Holland IDB.

LDE unit 1: Lower Welland LDE

Levels in the Lower Welland are governed by the retention level at Marsh Road Sluice which is the tidal limit. Low-lying fen areas both upstream and downstream of the tidal limit are drained by gravity and by pumping stations operated mainly by the Welland and Deepings, and South Holland IDBs. A small portion of the North Level District IDB area drains to the Lower Welland.

There are large summer demands for spray irrigation abstraction in the low-lying fen areas adjacent to the Lower Welland. To meet this demand water is diverted into the fens by slackers in the bank of the main river Welland.

In most cases licences for abstraction from the Lower Welland LDE will contain the following conditions:

- A HOL condition set at the main river at Marsh Road Sluice, and/or
- An upstream HOF condition set at Tallington (surface water assessment point 12), and,
- A site specific HOL condition relevant to the local level management system to be agreed following liaison with the relevant IDB.

Through the use of the above conditions (1 and/or 2 and 3) the resources of the main river and local IDB network are protected in addition to the rights of other water users.

LDE unit 2: Lower Glen LDE

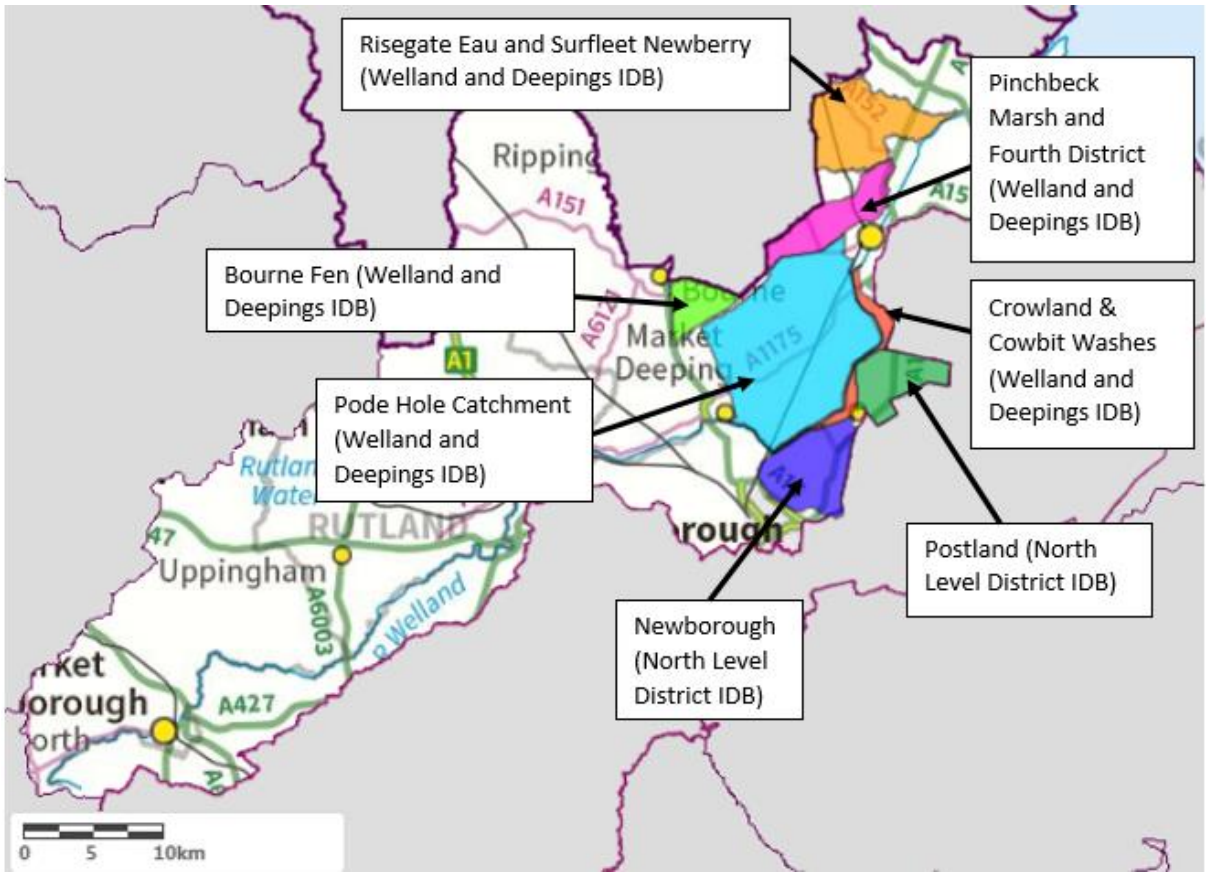
Levels in the Lower Glen are governed by the retention level at Surfleet Lock and Sluice, which is the tidal limit. River banks are raised above the low-lying fen where the Welland and Deepings and Black Sluice Internal Drainage Boards have responsibility for land drainage. There are large summer demands for spray irrigation abstraction in the low-lying fen areas which are met by the diversion of water from the Lower Glen via slackers.

In most case licences for abstraction from the Lower Glen LDE will contain the following conditions:

- A HOL condition set at the main river at Surfleet Sluice, and/or
- An upstream HOF condition set at Kates Bridge (surface water assessment point 19), and,
- A site specific HOL condition relevant to the local level management system to be agreed following liaison with the relevant IDB.

Through the use of the above conditions (1 and/or 2 and 3) the resources of the main river and local IDB network are protected in addition to the rights of other water users.

Map 8: Level Dependent Management Units in the Welland ALS.



Legend:

Rivers

3.5.1. Holbeach Marsh

Surface water in the Holbeach Marsh area is primarily derived from rainwater or land drainage sources. Holbeach Marsh is characterised by a network of drainage ditches. However, the drains do not receive water from highland carriers and consequently the area is not considered to be a true level dependent area. Consequently, the area has not previously been assessed as part of the ALS process. The area does however lie within the South Holland IDB who manage a number of drains in the area. For further information about water resource availability and the abstraction licensing strategy in this area please consult our Holbeach Marsh ALS.

3.6. Coasts and estuaries

The River Welland discharges to The Wash embayment via the Marsh Road sluice and Fulney Lock. The Wash is the largest estuarine system in the UK, a mostly shallow embayment where the Rivers Ouse, Nene, Welland and Witham drain into the North Sea. Between them these rivers drain an area of approximately 15,000 km^2.

The Wash Site of Special Scientific Interest (SSSI) is located within the embayment and forms landward borders with Lincolnshire (to the west and south) and Norfolk (to the east). The SSSI is 63,135 ha, comprising mainly of sandflats and mudflats. The Wash SSSI also forms part of The Wash and North Norfolk Coast marine Special Area of Conservation (SAC), The Wash Special Protection Area (SPA) and The Wash RAMSAR.

The tidal range of The Wash is 6.5 metres, the highest on the North Sea coast of Britain. Despite freshwater inputs from the large catchment area, marine processes dominate the physical and biological character of the embayment. The Wash plays an extremely important role in relation to the wider coastal and marine environment of the region. The value of freshwater flows to The Wash from the smaller drains and creek systems is recognised.

Any new abstraction licences with the potential to affect The Wash SPA/SAC will need assessing under the Habitats Directive.

3.7. Heavily Modified Water Bodies

Some water bodies may be designated as 'artificial' or 'heavily modified'. This is because they have been created or modified to suit a particular purpose such as water supply, flood protection or navigation.

There are three heavily or artificial water bodies (see Table 4) in the Welland ALS area designated for water supply and regulation.

Water Body ID	Water Body name
GB105031050490	North Gwash
GB105031050720	Glen
GB30536479	Rutland Water

Table 4 Heavily modified and artificial water bodies in the Welland ALS area.

Rutland Water

Water can be discharged from the reservoir into the River Gwash to meet demands for water downstream. These releases are regulated to meet the statutory compensation flow requirement. Furthermore, additional compensation water is released in dry periods to support the Gwash Glen Transfer Scheme. The Gwash to Glen transfer scheme operates in dry periods to support low flows in the lower West Glen.

3.8. Protected areas

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

• Special Areas of Conservation (SAC), which contribute to biodiversity by maintaining and restoring habitats and species;

• Special Protection Area (SPA), which provides protection to birds and their nests, eggs and habitats

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

There are a number of designated water dependant conservation sites in the Welland catchment. Within the catchment there are many SSSIs including Rutland Water which is also designated as a SPA and Ramsar site. There is also The Wash described in section 3.6 above.

Any new abstraction licences with the potential to affect The Wash SPA/SAC will need assessing under the Habitats Directive.

4. Managing existing licences

4.1. Water rights trading

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

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

To find out more about licence trading please go to our water management web pages on gov.uk

Guide to potential water rights trading in the Welland ALS

Water available for licensing

Green 

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

Restricted water available for licensing

Yellow 

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

Water not available for licensing

Red 

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

HMWBs

Grey 

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

4.1.1. Water rights trading in Groundwater bodies

There may be opportunities for licence holders to trade. Applications will be determined on a case-by-case basis.

4.2. Taking action on unsustainable abstraction

4.2.1. Action being taken on unstainable abstraction in the Welland

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

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

The Glens

We have been working with Anglian Water to reduce the impact of their abstraction on the East and West Glen. After undergoing an options appraisal the preferred solution for this scheme was to reduce licence quantities, carry out river restoration on both the East and West Glen and implement river support on the East Glen. The licence changes and river restoration will be implemented by March 2025.

4.3. Regulating previously exempt abstraction

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

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

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

The main activities affected are:

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

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

5. List of abbreviations

ALS
Abstraction Licensing Strategy.

AP
Assessment Point.

CED
Common End Date.

Defra
Department of Environment Food and Rural Affairs.

EFI
Ecological Flow Indicator.

GEP
Good Ecological Potential.

GES
Good Ecological Status.

GW
Groundwater.

HMWB
Heavily Modified Water Body.

HoF
Hands off Flow.

HoL
Hands off Level.

Ml/d
Megalitres per day.

MRF
Minimum Residual Flow.

SAC
Special Areas of Conservation.

SPA
Special Protection Areas.

SSSI

Sites of Special Scientific Interest.

UKTAG

United Kingdom's Technical Advisory Group.

WB

Water body.

6. Glossary

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

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

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

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

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

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

Environmental flow indicator
Flow indicator to prevent environmental deterioration of rivers, set in line with new UK standards set by UKTAG.

Groundwater
Water that is contained in underground rocks.

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

Hands off level
A river or borehole (groundwater) level below which an abstractor is required to reduce or stop abstraction.

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

Minimum Residual Flow
The flow set at a river gauging station to protect downstream uses. When flow falls below this level controlled abstractions are required to cease.

Surface water

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

Water body

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

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