



Lower Trent and Erewash

Abstraction Licensing Strategy

A strategy to manage water resources sustainably

September 2020

LIT 3309

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1. About the licensing strategy

This strategy sets out our approach to managing new and existing water [abstraction](#) and [impoundment](#) licensing within the Lower Trent and Erewash [catchment](#) in the Humber river basin district. It provides information about where water is available for further abstraction and how reliable a new abstraction licence may be. The following sub-sections provide further information about our licensing approach as well as an introduction to the Lower Trent and Erewash Abstraction Licensing Strategy ([ALS](#)) area.

We apply this approach to the [water body](#) in which the abstraction is located. Water bodies are sub-catchment surface water units or groundwater units on which we carry out assessments and map results. 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 [ALS](#).

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

This strategy was updated in March 2020 and it supersedes the strategy issued in February 2013.

1.1. Water abstraction licensing principles and process

Our licensing approach ensures that River Basin Management Plan (RBMP) objectives for water resources activities are met and we avoid deterioration within this catchment in line with the Water Framework Directive (WFD). The WFD seeks environmental objectives of protecting and enhancing the water environment and ensuring the sustainable use of water resources for economic and social development. The ALS sets out how we will manage the water resources of a catchment and contribute to implementing the WFD.

The document [Managing Water Abstraction](#) outlines the over-arching principles that we follow in managing our water resources. How we apply these principles in the Lower Trent and Erewash ALS area is outlined in this document. 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 20 m³/day (4,400 gallons/day) of water from a source of supply (i.e. river, stream, lake, well, groundwater, etc.) must have an abstraction licence. In dealing with abstraction applications 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 rights of 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.

Applying for impoundment

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

Applying for hydropower

Water abstraction for hydropower schemes is non-consumptive, with almost all water used returned to the watercourse. Maximum abstraction volumes are determined in line with the Environment Agency's Hydropower Good Practice Guidelines and based on the assessment of environmental risk for each scheme (this [website](#) on gov.uk provides further information in regard to applying for abstraction for hydropower).

1.2. Abstraction considerations

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 every application will be successful. We will determine each application upon its own merits and any local impacts. This may mean we are either unable to grant a licence as applied for, or even at all.

Water resources reliability

It is important to understand that when we issue a licence we do not guarantee the supply of water at all times. 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 is more likely that conditions will come into effect and abstraction is more likely to be stopped.

Abstractions are managed to protect the environment

We assess the impacts of new water abstraction applications to make sure that they comply with the WFD and water bodies will maintain a healthy ecology or if the ecology is not good, abstraction will not deteriorate their ecology further. If the water body is of high hydrological regime, we need to make sure that the river flows will maintain the near pristine condition of the water body.

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

1.3. Abstraction restrictions

When issuing a licence we have to protect the environment and rights of other abstractors. To do this we may add conditions to licences. These could be limitations on the time of year when abstraction can take place and the period of time a licence is valid, as explained below.

Hands off flow (HoF) and hands off level (HoL) conditions

To protect the environment and the right of other abstractors we may issue a licence with conditions referred to as '[hands off flow](#)' (HoF) and / or '[hands off level](#)' (HoL) to respectively protect surface water and groundwater resources. These specify that if the flow in the river or groundwater level drops below that which is required to protect the environment, abstraction must stop. As a result, when we grant a licence, it does not mean that we guarantee a supply of water. Therefore, in dry years, restrictions are likely to apply more often, which will affect the reliability of supply.

See section 3.1 for details relating to licence restrictions within the Lower Trent and Erewash catchment.

Time limited licences

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

All new licences within an ALS area have a common end date ([CED](#)) so they can be reviewed at the same time. The normal duration of a licence is usually 12 years. 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. 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. We have the discretion to apply short or long time limits to a licence and this will be done on a case by case basis, following discussion between the applicant and ourselves. Additional information about the replacement of time limited licences is available in [Managing Water Abstraction](#).

See section 2.5 for such conditions in the Lower Trent and Erewash ALS area.

1.4. An overview of the Lower Trent and Erewash catchment

The River Trent is one of the three largest rivers in the United Kingdom. From its source to the Humber confluence, its length is 274 km and including all tributary ALS catchments, drains an area of more than 10,000 km². Within the Lower Trent and Erewash ALS area, the River Trent is 174 km long with its main tributaries including the rivers Derwent, Soar, Erewash, Leen, Greet, Devon, Idle, Torne, Eau and the Dover Beck. It enters the catchment immediately downstream of its confluence with the River Dove and flows steadily north eastwards until Newark where it turns northwards and continues until it flows into the River Humber at Trent Falls (Map1).

Nottinghamshire is the principle county, with parts of Derbyshire, Leicestershire, Lincolnshire, South Yorkshire and North Lincolnshire incorporated. Nottingham in the south of the catchment is the principal urban area with a population estimated at 306,000 for the City and 786,000 in the greater Nottingham area (source: Office for National Statistics, 2011 Census). Other significant urban areas include Scunthorpe, Newark, Gainsborough and parts of greater Derby.

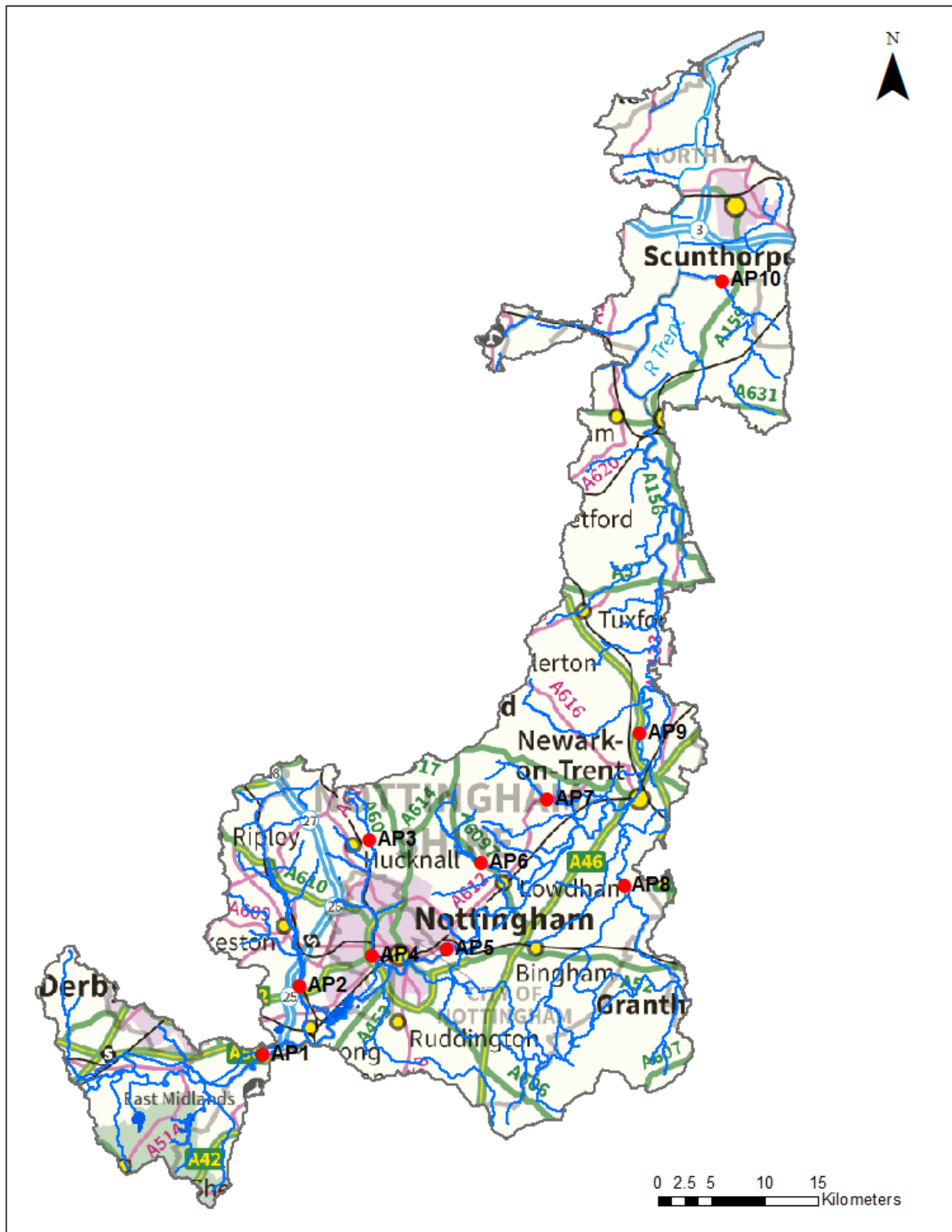
Sources of water across the Lower Trent and Erewash catchment

The Lower Trent and Erewash catchment is a predominantly moderate to lowland catchment. Its highest areas are located around Kirkby in Ashfield (11 km north of Nottingham) and around the Swadlincote area close to the catchment's southern boundary. Initially, the River Trent flows through an area of wide floodplain where the rivers Derwent and Soar and the Trent and Mersey Canal join. The floodplain narrows through the conurbation of Nottingham before starting to widen having received the waters of the rivers Leen, Greet and Dover Beck. The floodplain widens greatly and at Averham the natural river bypasses Newark. However, an artificial section flows through Newark collecting the water from the Devon catchment. Downstream of Newark, the two river sections converge and the floodplain continues to widen and the river becomes tidal downstream of Cromwell Weir. The river continues northwards until the confluence with the River Humber with much of the area at sea level.

There are sources of groundwater (aquifers) across the Lower Trent and Erewash catchment. The Environment Agency classifies aquifers as principal, secondary and unproductive strata. Principal aquifers are important for strategic water supplies and baseflow to rivers. Secondary aquifers hold less significant water resources. Unproductive strata do not typically contain usable quantities of groundwater. The geology of the catchment is dominated by the Mercia Mudstone classed as secondary aquifer. There are significant outcrops of Sherwood Sandstone and Lower Magnesian Limestone that are classified as principal aquifers, utilised for public water supply and agriculture. There are also significant deposits of Coal Measures alluding to the rich mining past of the Erewash catchment. Superficial deposits have historically been excavated all along the main River Trent corridor as can be seen from the extensive number of existing quarries and old quarry lagoons, particularly downstream of Nottingham and Newark.

Throughout the catchment, agriculture is the dominant land use accounting for more than 63% of the catchment area. Consequently, agriculture is vitally important to the ALS area economy. Agriculture relies heavily on local surface and groundwater abstraction as part of its process, principally for irrigation. Potato growing was popular on the banks of the River Trent until the bacterium that causes brown rot (a disease of potatoes) was found in the river. There are many small areas of managed grasslands in the more elevated parts of the catchment supporting livestock including stock rearing and dairying activities.

Public water supply abstracts water from both the groundwater (Sherwood Sandstone) and surface waters. However, this is limited to the River Trent. The catchment also receives imported water from Derbyshire. While industry, agriculture and water for public water supply places the biggest pressure on groundwater levels, the power generation sector exerts the biggest pressure on surface water. There are numerous power stations along the banks of the River Trent at various sites using vast quantities of water. There is a large export of water out of the catchment to supply the neighbouring Anglian region (Lincolnshire) with extra resource.



Legend

- Assessment Points
- Rivers
- Lakes

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Map 1. The catchment of the Lower Trent and Erewash including the network of major rivers and the location of major cities across it.

2. Water resource availability of the Lower Trent and Erewash ALS area

2.1. Resource assessment

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

- The Environmental Flow Indicator (EFI); a resource allocation for the environment defined as a proportion of natural flow
- 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 and we need to protect flow variability in our rivers from low to high flow conditions. We use flow statistics to help to do this. Flow statistics are expressed as the percentage of time that flow is exceeded. Resource availability is calculated at four different flows, Q95 (low flow, the flow of a river which is exceeded on average for 95% of the time), Q70, Q50 and Q30 (higher flow). This information gives a more realistic picture of what the current resource availability is within a given water body.

2.1.1. Water resource availability colours and implications for licensing

In order to communicate water resources availability across catchments, we usually use a colour coding system. Table 1 defines the colour codes used for presenting resource availability (of surface water) with the licensing implication associated to each colour. However, not all of them necessarily apply to any individual catchment.

Table 1. Surface water resource availability colours and associated implications for abstraction licensing.

Surface water resource availability colour	Implication for abstraction 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.

Surface water resource availability colour	Implication for abstraction licensing
Water available for licensing	<p>There is more water than required to meet the needs of the environment.</p> <p>New licences can be considered depending on local and downstream impacts.</p>
Restricted water available for licensing	<p>Full Licensed flows fall below the Environmental Flow Indicators (EFIs).</p> <p>If all licensed water is abstracted there will not be enough water left for the needs of the environment. No new consumptive licences would be granted. It is likely we will 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.</p>
Water not available for licensing	<p>Recent actual flows are below the EFI.</p> <p>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.</p> <p>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.</p>
Heavily Modified Water Bodies (HMWBs) (and/or discharge rich water bodies)	<p>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 3.1 Surface Water.</p> <p>There may be water available for abstraction in discharge rich catchments, you need to contact the Environment Agency to find out more.</p>

2.1.2. Groundwater resource availability colours and implications for licensing

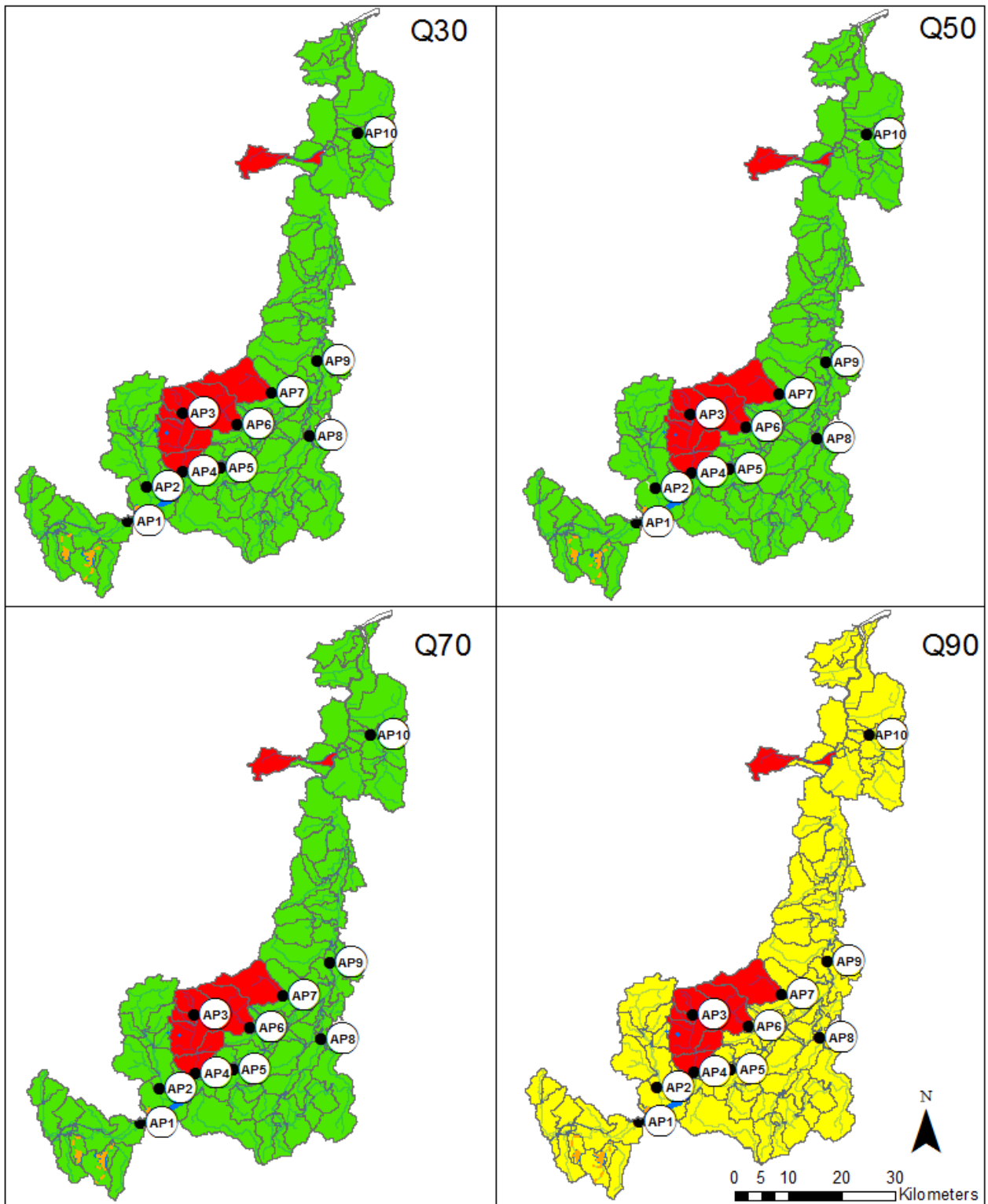
For groundwater availability there are only three colour codes. Table 2 presents these colours with the licensing implication associated to each colour.

Table 2. Groundwater resource availability colours and associated implications for abstraction licensing.

GWMU resource availability colour	Implication for abstraction 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 providing there will be no significant impact on surface water flows, dependent wetlands, groundwater levels or cause of saline intrusions.
Restricted water available for licensing	<p>Groundwater unit balance shows more water is licensed than the amount available, but that recent actual abstractions are lower than the amount available OR that there are known local impacts likely to occur on dependent wetlands, groundwater levels or cause saline 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	<p>Groundwater unit balance shows more water has been abstracted based on recent amounts than the amount available.</p> <p>We will not grant further consumptive licences. It will be appropriate to take action to reduce fully licensed risks. Water may be available if you can 'buy' the entitlement to abstract water from an existing licence holder (known as licence trading).</p>

2.2. Resource availability

The water resource availability, calculated at four different flows, Q95 (low flow), Q70, Q50, and Q30 (higher flow) for this ALS is presented in Map 2 with the definition of availability colours and associated licensing implication explained in Section 2.1. For further licensing information about surface water, please refer to Section 3.1.



Legend

- Assessment Points
- Rivers
- Lakes
- - - HMWB / Artificial Rivers
- HMWB / Artificial Lakes

Water Availability

- Water available
- Restricted water available
- Water not available

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Map 2. Water resource availability colours at different flow rate for Lower Trent and Erewash ALS area.

2.3. Groundwater resource availability

Groundwater availability is guided by the surface water resource availability unless we have better information on principal aquifers or we are aware of local issues we need to protect. Map 2 shows the water resource availability colours for surface water in the Lower Trent and Erewash ALS area.

Under the WFD, aquifers are designated as named groundwater bodies (GWBs). We may divide GWBs into groundwater management units (GWMUs). In the case of principal aquifers, we use the information and assessments on these units to determine water availability and licence restrictions. In certain areas, resource concerns over groundwater mean that the standard water resource availability colours have been overridden. Within the Lower Trent and Erewash catchment, groundwater has been assessed using both GWBs and GWMUs to represent the water resource status for groundwater.

The Sherwood Sandstone is a strategically important principal aquifer and outcrops in the middle of the catchment, north of the River Trent and also in the south in the proximity of East Midlands Airport. It is represented by three GWMUs called the Wollaton, Ravenshead South and Diseworth units.

The Lower Magnesian Limestone is also a principal aquifer, but not on the scale as the Sherwood Sandstone. It provides water for local agricultural abstractions. It outcrops to the west of the Sherwood Sandstone and is represented by a single GWMU called the Hucknall unit.

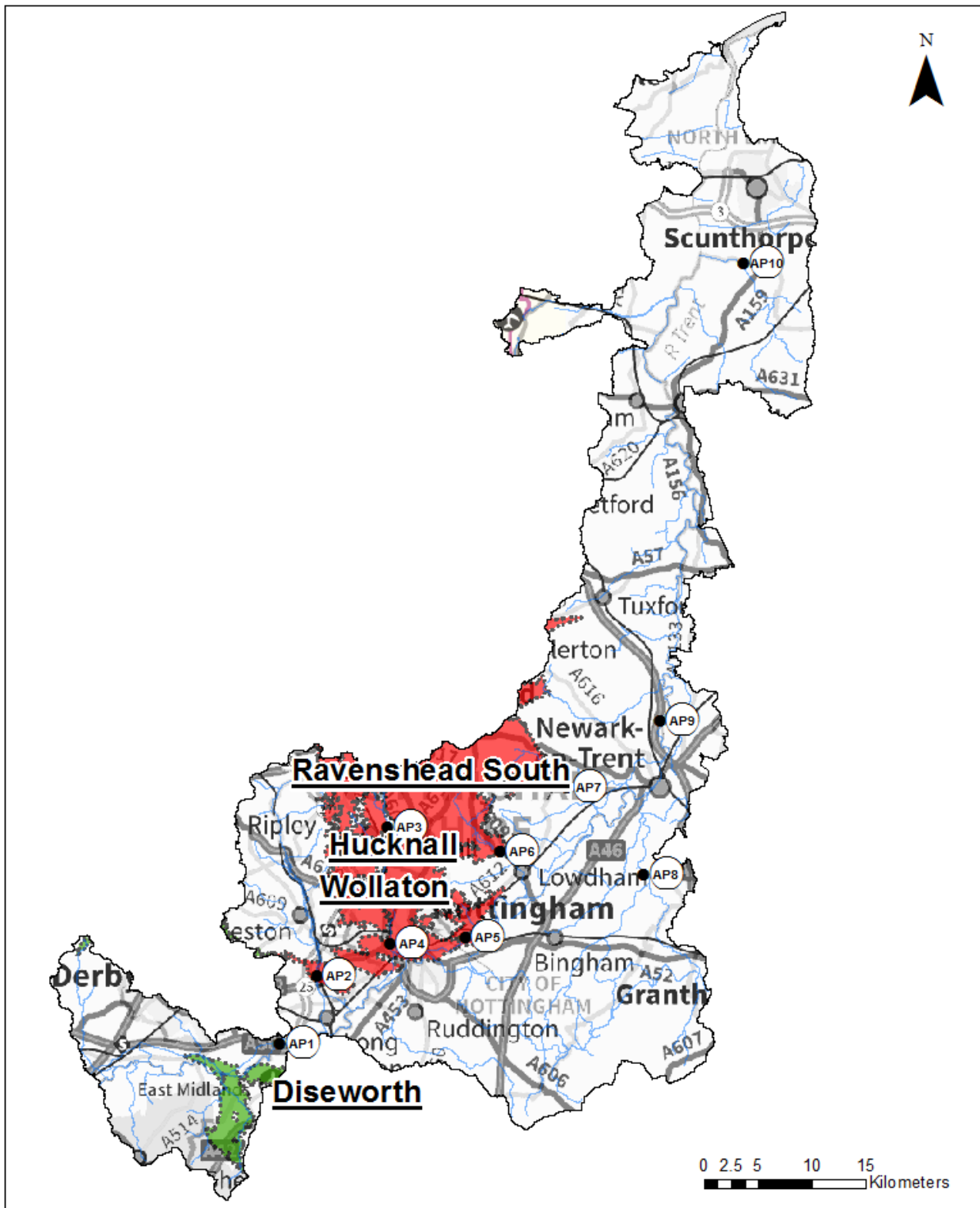
There also extend parts of the Idle and Torne Sandstone aquifer (Hatfield, Blyth, Retford and Ravenshead North GWMUs) and Burton GWMU into the Lower Trent and Erewash ALS area. These GWMUs are quantified as not having water available for licensing and therefore closed. While they are geographically extended into the Lower Trent and Erewash ALS area, the first four units are wholly managed within the Idle and Torne ALS area and Burton unit within the Tame Anker and Mease ALS area managed by the West Midlands Office of the Environment Agency.

Section 2.1.2 explains the groundwater resource availability colours, and Map 3 shows these colours for GWMUs the Lower Trent and Erewash ALS area. The same resource availability colours applied for surface water are applied to groundwater. In cases where this is different, Map 3 shows water resource availability colours in the Lower Trent and Erewash area. For further licensing information about each GWMU, please refer to section 3.2.

2.4. Resource reliability

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

Map 4 gives an indication of the resource availability for [consumptive abstraction](#) in Lower Trent and Erewash ALS area expressed as a percentage of time.

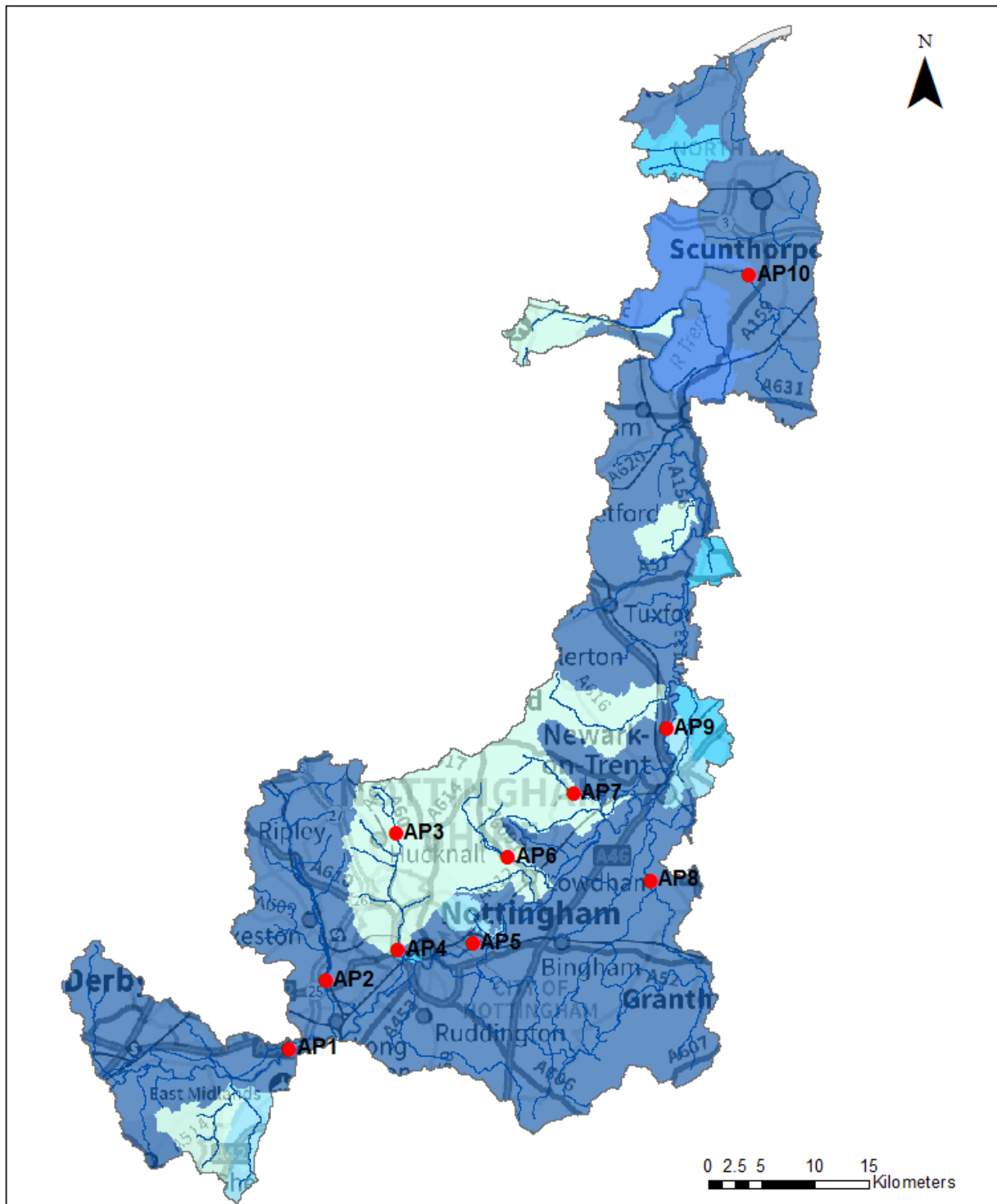


Legend

- Assessment Points
- Rivers
- GW Resource availability**
- Restricted water available
- Water available
- Water not available

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Map 3. Groundwater resource availability colours for Lower Trent and Erewash ALS area.



- Legend**
- Assessment Points
 - Rivers
- Resource Reliability (% of the time)**
- less than 30%
 - at least 30%
 - at least 50%
 - at least 70%
 - at least 95%

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Map 4. Water resource reliability of the Lower Trent and Erewash ALS area expressed as percentage of time available.

2.5. Other considerations for availability and reliability

As explained in the Introduction section, we may have to add constraints to licences such as '[hands off flow](#)' (HoF) conditions to protect the environment and the rights of other abstractors. HoF values applicable to watercourses across the Lower Trent and Erewash catchment are stated in Table 3.

In addition, 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 31st March 2027 followed by 31/03/2039 as the second next CED.

2.6. 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 Lower Trent and Erewash ALS area

3.1. Assessment points (surface water)

We assess surface water flows at [Assessment point](#) (AP), 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.

For the Lower Trent and Erewash Table 3 gives an indication of how much water is available for further abstraction and the associated restrictions we may have to apply to new and varied [abstraction licences](#) from the main river. Tributaries to the main river may be subject to different restrictions and quantities and will be assessed locally on a case by case basis.

Each HoF is linked to an AP and is dependent on the resource availability at that AP. In some cases additional restrictions may apply to licences where there is a more critical resource availability downstream to protect the ecological requirements of the river. This is detailed in Table 3 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. In cases where there is water available at all flows we may apply a Minimum Residual Flow (MRF) restriction to protect very low flows. We will decide this on a case by case basis.

Reading from top to bottom in Table 3 are the APs in the Lower Trent and Erewash 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](#) (Mega litres per day) that may be available.

Table 3 details the approximate volume available for the individual assessment points in the Lower Trent and Erewash catchment. For the sub-catchments that are not closed, water availability at their AP is subject to a HoF. Across the Trent catchment the water resource strategies are driven by the need to protect flows at the fluvial end point of the River Trent at Cromwell Weir for navigational purposes. This requires that in the fluvial River Trent a HoF of 2,650 Ml/d measured at North Muskham be maintained.

To meet this requirement, throughout the catchment all HoFs have been set at local gauging stations but at flows which are equivalent to or higher than 2,650 MI/d at North Muskham gauging station. Where watercourses need further protection of flows due to unfavourable local water resource situations or other local considerations, we have set their HoFs at a suitable higher flow or closed the catchment. We will be continuing to investigate the water requirements and the HoFs needed.

As a result of the above HoF set, there would be 130 MI/d water resources available for further licensing in the fluvial section of the catchment to AP9. However, this amount has been assigned to the whole of the parts of the catchment that are not closed (i.e. APs 1, 2, 5, 8 and 9). This does not guarantee that this quantity is available at any one particular assessment point and applications will be assessed on a case by case basis. Resource availability in the Tidal Trent and our strategy across the catchment are explained more detailed on Pages 20 and 21.

Groundwater licences which are not from the principal aquifers described in 3.2 will be individually assessed. Where they are linked to surface water, the surface water restrictions detailed in Table 3 may be applied.

Parts of the River Trent catchment are discharge rich so the strategy outlined below depends on the resource situation remaining as it is currently. Any changes to major abstractions from or discharges to the catchment may result in a change in this licensing strategy and to the volumes of water available.

In addition, we may ask applicants to provide additional information about any likely environmental impact of the proposed abstraction. This will be assessed on a case by case basis.

We have also an obligation to protect all Habitats Directive sites and implement the needs of the Eels Regulations 2009, as amended in 2011. Conditions may be added to new licences and variations to ensure the protection of fish, other aquatic wildlife and protected sites.

Table 3. Summary of licensing approach for the APs of Lower Trent and Erewash ALS area (continued on the next page).

AP	Name	Water Resource Availability	HoF Restriction (MI/d) and critical AP	No of days per annum abstraction may be available	Approx. volume available at restriction (MI/d)	Additional restrictions	Is there a gauging station at this AP?
1	Trent to Shardlow	Conditional availability (See 1 & 2 on Page 20)	2,650 at AP9	On average 329	See AP9	NA	Yes
2	Erewash to Sandiacre	Conditional availability (See 1 & 2 on Page 20)	50 at AP2	On average 329	See AP9	NA	Yes
3	Leen to Papplewick	Closed to new abs. (See 2 & 3 on Page 20)	-	-	-	NA	No
4	Leen to Triumph Road, Nottingham	Closed to new abs. (See 2 & 3 on Page 20)	-	-	-	NA	Yes
5	Trent to Colwick	Conditional availability (See 1 & 2 on Page 20)	2,650 at AP9	On average 329	See AP9	NA	Yes
6	Dover Beck to Lowdham	Closed to new abs. (See 2 & 3 on Page 20)	-	-	-	NA	Yes
7	River Greet to Southwell	Closed to new abs. (See 2 & 3 on Page 20)	-	-	-	NA	Yes
8	River Devon to Wensor Bridge	Conditional availability (See 1 & 2 on Page 20)	2,650 at AP9	On average 329	See AP9	NA	Yes
9	Trent to North Muskham	Conditional availability (See 1 & 2 on Page 20)	2,650 (Q90) at AP9	On average 329	130	NA	Yes

AP	Name	Water Resource Availability	HoF Restriction (MI/d) and critical AP	No of days per annum abstraction may be available	Approx. volume available at restriction (MI/d)	Additional restrictions	Is there a gauging station at this AP?
10	Upper River Eau	Conditional availability (See 1 & 2 on Page 20)	2,650 at AP9	On average 329	0.7	NA	No
Tidal River Trent	River Trent, Cromwell to Gainsborough (CRT operated)	Conditional availability (See 4 on Page 20)	1,700 at AP9	On average 365	29 and a further 34 MI/d subject to additional restriction relating to an existing abstraction	A HoL that corresponds to a depth of water of 2.5m at the edge of the navigational channel in the river at the abstraction point	
	River Trent, Gainsborough to Trent Falls (ABP operated)	Conditional availability (See 4 on Page 20)	1,700 at AP9	On average 365		HoL dependent on scheme	
				or			
	Whole tidal reach	Conditional availability (See 4 on Page 20)	2,650 at AP9	On average 329	To be assessed	NA	

3.1.1. Our licensing strategy in Lower Trent and Erewash

In addition to the above considerations, below is our strategy referred to in Table 3 when processing new abstraction applications or renewing the existing licences depending on water availability status of each AP catchment and in which AP catchment the location of abstraction lies.

(1) Availability of water in the catchment upstream of the APs other than AP9 is overall subject to the HoF at AP9 and the following conditions:

- No new unconstrained abstraction will be granted
- Water may only be available during periods of medium to high flow subject to a HoF condition
- There is a time limit of 31st March 2027 and 31st March 2039 as the next time limit.

(2) For existing licences, the renewal of licences will be considered subject to the following criteria and local considerations, in addition to the HoF condition:

- Environmental sustainability is not in question
- There is a continued justification of need for the water
- The water is used efficiently

We will also take into account any objections received to renewal of the licence.

(3) This means the catchment is closed to new licensing for any further consumptive abstraction from both surface water and groundwater.

(4) Our licensing strategy for the tidal River Trent

The tidal River Trent (from Cromwell Weir to Trent Falls, confluence with River Humber) is managed by two different operators; the Canal and Rivers Trust (CRT) and Associated British Ports (ABP), with the A631 road bridge at Gainsborough as the divide of their operation extent. The CRT operates the section upstream of Gainsborough to Cromwell weir and ABP operate the section downstream of Gainsborough to the confluence with the River Humber (Trent Falls). Through consultation with the involved parties, the agreed abstraction restrictions are set out below.

For the tidal River Trent, there is water available for licensing. There is a further 29 MI/d available for constrained abstraction subject to HoF and HoL conditions (see Table 3) dependent on which section of the tidal river the proposed abstraction is. Further to the 29 MI/d, there is 34 MI/d available with an additional restriction related to an existing abstraction. This means that if the licence holder of this abstraction does not need whole or part of this volume of water throughout the year, the remnant would be granted to other applicants.

Generally, new abstractions from the tidal River Trent will be subject to the above water availability and HoF and HoL conditions mentioned in Table 3, or an applicant could choose to apply for a new abstraction subject to the single quantity restriction of 2,650 MI/d (as measured at North Muskham). However, more water may be available with the 2,650 MI/d North Muskham HoF restriction.

All proposals in the tidal reach of the River Trent will be required to meet the needs of the Eels Regulations 2009, as amended in 2011 and the Habitats Directive in relation to fish screens. Consultation may be required with External organisations to ensure the protection of the Humber Estuary Marine Site.

Tidal Trent (Cromwell Weir to Gainsborough)

For new licences:

- No new unconstrained abstraction will be granted
- There is a time limit of 31st March 2027
- A HoF of 1,700 MI/d measured at North Muskham and an associated HoL of a level that corresponds to a depth of water of 2.5 m at the edge of the navigational channel in the river at the abstraction point.

or

- A HoF of 2,650 MI/d as measured at North Muskham

For existing Licences:

The renewal of existing licences will be considered subject to the following criteria and local considerations:

- Environmental sustainability is not in question
- There is a continued justification of need for the water
- The water is used efficiently

Tidal Trent (Gainsborough to Trent Falls)

For new licences:

- No new unconstrained abstraction will be granted
- There is a time limit of 31st March 2027
- A HoF of 1, 700 MI/d measured at North Muskham
- A Local HoL that may be required and which will be assessed on a case by case basis, subject to agreement with other authorities

or

- A HoF of 2,650 MI/d as measured at North Muskham

For existing Licences:

The renewal of existing licences will be considered subject to the following criteria and local considerations:

- Environmental sustainability is not in question
- There is a continued justification of need for the water
- The water is used efficiently

3.2. Managing Groundwater

Principal aquifers are designated as named groundwater bodies (GWB). We may divide GWBs into smaller groundwater management units (GWMU). In these cases, we use the

information and assessments on these units to determine water availability and licence restrictions.

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](#)) or Hands off Flow ([HoF](#)) conditions. The HoL is a groundwater level below which an abstractor is required to reduce or stop abstraction. The HoF is applied when flows fall below a certain rate in a connected watercourse. 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 Lower Trent and Erewash ALS area

As mentioned previously there are four GWMUs within the boundary of the Lower Trent and Erewash catchment. Table 4 details water availability status for these GWMUs and the Superficial Deposits, and the restrictions that might be applied to abstractions likely to impact on groundwater dependent environments.

Table 4. Licence restrictions on groundwater abstractions in the Lower Trent and Erewash ALS.

Groundwater Body and Status	GWMU	Water Resource Status	Licence Restriction
Lower Trent Erewash - PT Sandstone Wollaton (considered to be poor quantitative status)	Ravenshead South	No Water Available for licensing	Opportunities to reduce fully licensed risks will be taken. Time limited licence renewals will require changes to reflect historic usage in order to manage the risk of future deterioration to the environment, See Table 6 for trading options.
	Wollaton	No Water Available for licensing*	Opportunities to reduce fully licensed risks will be taken. Time limited licence renewals will require changes to reflect historic usage in order to manage the risk of future deterioration to the environment, See Table 6 for trading options.
Soar - PT Sandstone (considered to be good quantitative status)	Diseworth	Water Available for licensing	A HoF of 2,650 MI/d will be applied to applications found to be in continuity with the river.
Lower Trent Erewash - Magnesian Limestone	Hucknall	No Water Available for licensing	Opportunities to reduce fully licensed risks will be taken. Time limited licence renewals

Groundwater Body and Status	GWMU	Water Resource Status	Licence Restriction
(considered to be good quantitative status)			will require changes to reflect historic usage in order to manage the risk of future deterioration to the environment, See Table 6 for trading options.
Lower Trent Erewash - Secondary Combined (considered to be good quantitative status)		Water Available for licensing	Further abstraction from these deposits is available in the catchments that have water available (AP1, 2, 5, 8-10). A HoF of 2,650 Ml/d will be applied to applications found to be in continuity with the river.

* An exception to this exists in the area around Basford and the city centre in Nottingham. Reductions from historic levels of abstraction have caused groundwater levels to rebound resulting in flooding problems in sub-surface structures in some locations. In this area water may be available for additional consumptive abstraction to alleviate this issue. Applications will be considered individually and assessed within the context of the wider water resource status of the groundwater body. It may be possible to renew Time Limited Licences on the same terms, until the Common End Date in this area, subject to justification of need.

3.3. Level dependent environments

The Lower Trent and Erewash ALS contains level dependent environments (LDE). The area has been divided into units, known as level dependent management units (LDMUs); they are named the Left bank and the Right Bank. These are divided by the tidal River Trent and are elongated and narrow in nature. We have completed an assessment on each of these units. Table 5, gives the resource status and licence restrictions associated with the Left and Right bank LDMUs. An exception to this part of the catchment is Snow Sewer Waterbody which is closed to protect level dependent environments.

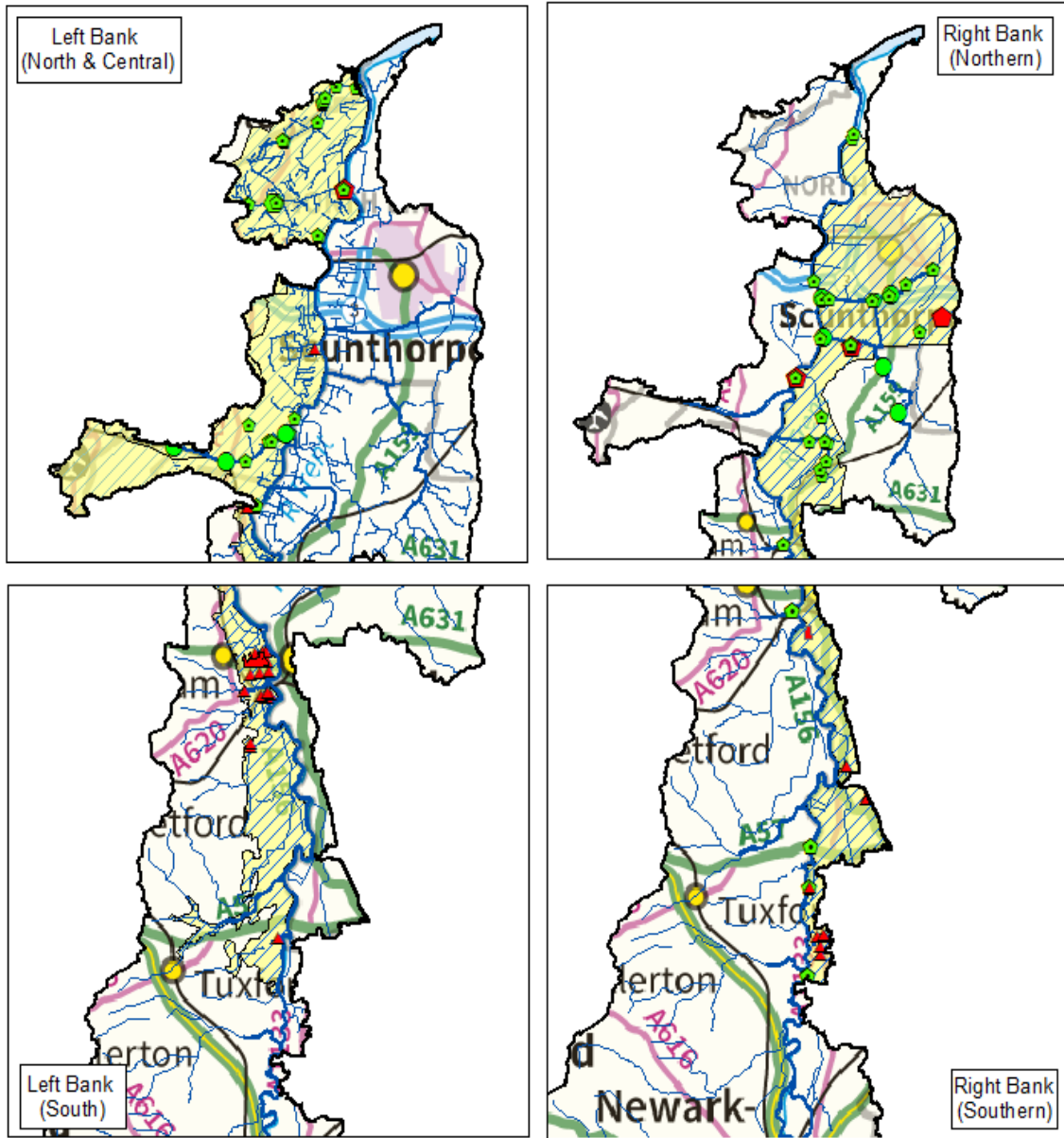
Within the Lower Trent and Erewash region, the vast majority of the low lying land is found either side of the banks of the River Trent within the tidal section of the river, downstream of Cromwell Weir. These areas primarily consist of land that is at, or below sea level. These areas rely on a comprehensive land drainage system made up of pumping stations, drainage ditches and flood embankments. The water is moved from the lower levels either directly into the River Trent or via high level carriers into the River Trent. Water is pumped or released under gravity into the Trent at low tide. Within the Lower Trent, the water levels are controlled for the benefit of highly fertile agricultural land that allows for arable crop production.

We assess the Ecological Value (EV) of an LDMU by using elements such as fish, invertebrates, macrophytes, birds and mammals at monitored and specially designated sites such as SACs, SPAs and SSSIs (see Section 3.6). Where we find high and diverse populations, we class these areas as high in EV. Conversely, where we find areas with little or no diverse features, we class these areas as low in EV. Map 5 gives details of where the LDMUs are geographically and indicates the ecological value of the LDMUs. Elements that are red on the map indicate a high EV, green indicates a moderate EV and

blue indicates a low EV. We will steer proposed abstraction away from areas of HV towards areas with a lesser EV.

Table 5: Licence restrictions on abstractions in relation to Level Dependent Environments in Lower Trent & Erewash CAMS area.

Level Dependent Management Unit	Water Resource Availability	Licence restriction
Left Bank	Water Available for licensing	HoF at AP9, 2,650 MI/d and a HoL which will be assessed on a case by case basis depending on the existing abstractions. As an exception Snow Sewer Waterbody is closed to further abstraction to protect level dependent environments.
Right Bank	Water Available for licensing	HoF at AP9, 2,650 MI/d and a HoL which will be assessed on a case by case basis depending on the existing abstractions.

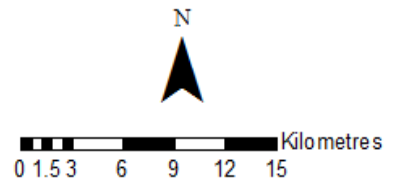


Legend

- ▲ Water Voles (Positive)
- Fish
- Otter (Other)
- Macrophytes
- ◆ Otter (Positive)
- Rivers
- ▨ Macroinvertebrates
- Nature Reserve & SSSIs
- LDMU Area
- LDMUs

Definition of Ecological Value

Ecological Value (EV) is defined using three categories (high, Medium & low). To define on the map, items that are red are high EV, green are moderate EV & blue are low EV.



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Map 5: Level dependant environments in the Lower Trent and Erewash ALS area

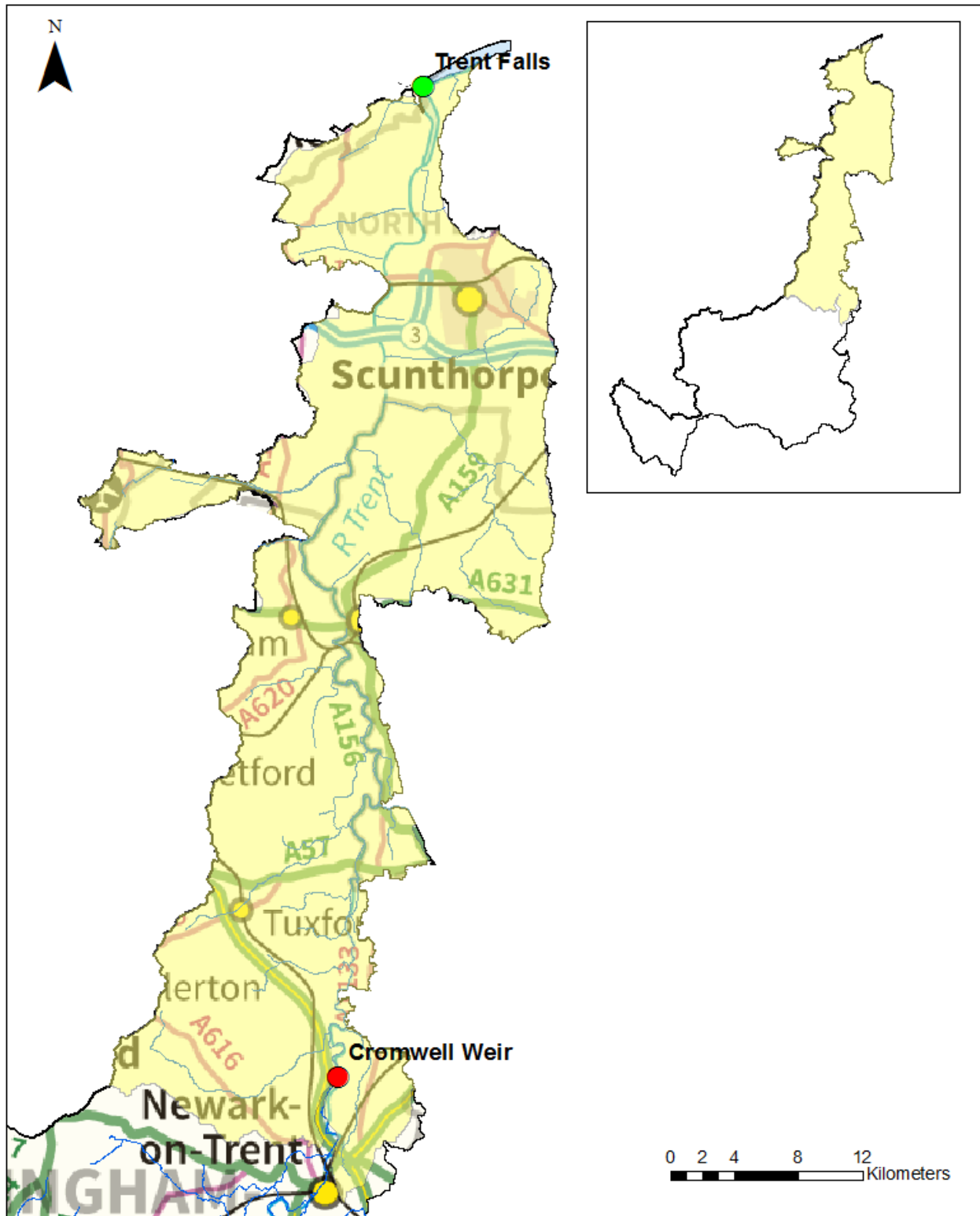
3.4. Coasts and estuaries

The fluvial River Trent in the Lower Trent and Erewash ALS area runs from the confluence from the River Dove until Cromwell Weir, approximately 8 km downstream of Newark. Below Cromwell Weir, the river is tidal and flows into the River Humber at Trent Falls about 83 km downstream. The area drained by the tidal Trent downstream of Cromwell equates to 2,212 km². Map 6 presents the tidal geographical area.

The River Trent is classed as tidal downstream of Cromwell Weir. However, due to the distance from the North Sea to the tidal limit, the river acts in different ways dependent on the distance from the sea. Upstream of Gainsborough (upper tidal reach), is predominantly fluvial whilst downstream of Gainsborough (lower tidal limit), the river is predominantly tidal. The saline limit is the boundary of the two differing regimes and this is found in the Gainsborough area.

As mentioned earlier, the tidal River Trent is operated by two different organisations. Upstream of Gainsborough to Cromwell Weir, the Canals and Rivers Trust control the river. Downstream of Gainsborough, Associated British Ports (ABP) regulate the river. They both have different requirements and combined with how the tidal regime works, results in slightly different abstraction restrictions for their respective operated reaches. This is why we differentiate using a boundary at Gainsborough.

The section Protected Areas highlights the importance of the Humber in terms of its European Marine Site status. This combined with extensive external consultation culminated in the agreement of the strategy requirements for the tidal River Trent. For resource assessment and details of licensing restrictions, please see Tables 3 and 4 for further details.



Legend

Limits of Tidal River Trent

- Cromwell Weir
- Trent Falls
- Tidal_Trent_Area
- Rivers

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Map 6: The catchment of the tidal River Trent

3.5. Artificial and Heavily modified water bodies (HMWBs)

Artificial water bodies describe water bodies that are entirely man-made for example canals. They also include lakes where no significant water body existed previously (gravel pits) or impounded rivers or lakes with an artificial catchment (reservoirs). A heavily modified water body is an existing body of water that has had its original appearance significantly changed to suit a specific purpose. For example, a river water body that has undergone extensive re-alignment for navigation, or a flood defended coastline.

Artificial water bodies and HMWBs are considered together and in the same way. These water bodies can be classified for many reasons, but for water resources purposes they are classified if they may contain a lake and/or reservoir that influence the downstream flow regime of the river. The downstream 'flow modified' water bodies are also classified as heavily modified. They are designated for water resource purposes if the flow regime has been altered by flow regulation/augmentation. The availability of water in water resource designated HMWBs will depend on the compensation release and/or operating agreements that impact on these water bodies.

Within the Lower Trent and Erewash ALS catchment, there are a number of watercourses that are designated HMWB for water resources reasons. These include: the Carr – New Brook, part of the Ramsley Brook and Milton Brook. These waterbodies are influenced by the reservoirs that are located within them. Staunton Harold and Foremark are all impounding reservoirs and are designated artificial water bodies. Both reservoirs provide storage for potable (drinking) water. As they are [impoundments](#), they obstruct the watercourses and thus alter the flow regime downstream. This affects the water availability within these catchments. Please refer to section 3.1 above for further details.

Other waterbodies designated HMWB for reasons other than water resources include much of the Rivers Trent, Erewash, Leen and Eau. There are also a number of lakes and drain water bodies which are designated artificial, including the lakes at Attenborough nature reserve. These are designated for a variety of reasons including navigation, flood protection, land drainage, urbanisation, the wider environment and other reasons.

3.6. Protected areas

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

- Special Areas of Conservation ([SAC](#)), which contribute to biodiversity by maintaining and restoring habitats and species;
- Special Protection Area ([SPA](#)), which provides protection to birds and their nests, eggs and habitats

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

The marine areas of the Humber Estuary SAC, the SPA and Ramsar sites together form the Humber Estuary European Marine Site. The Humber Estuary has been recognised as one of the most important estuaries in Europe for wildlife and has been designated as a European marine site. The key legislation for the Humber Estuary European Marine Site is the European Union's Habitats and Birds Directives, which set out a number of actions to be taken for nature conservation. The Habitats Directive legislates the areas designated SACs and the Birds Directive legislates areas designated SPAs.

The Humber is the second largest coastal plain estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. It is a muddy, macro-tidal estuary, fed by many

rivers including the Trent. Suspended sediment concentrations are high, with the majority originating from the marine environment.

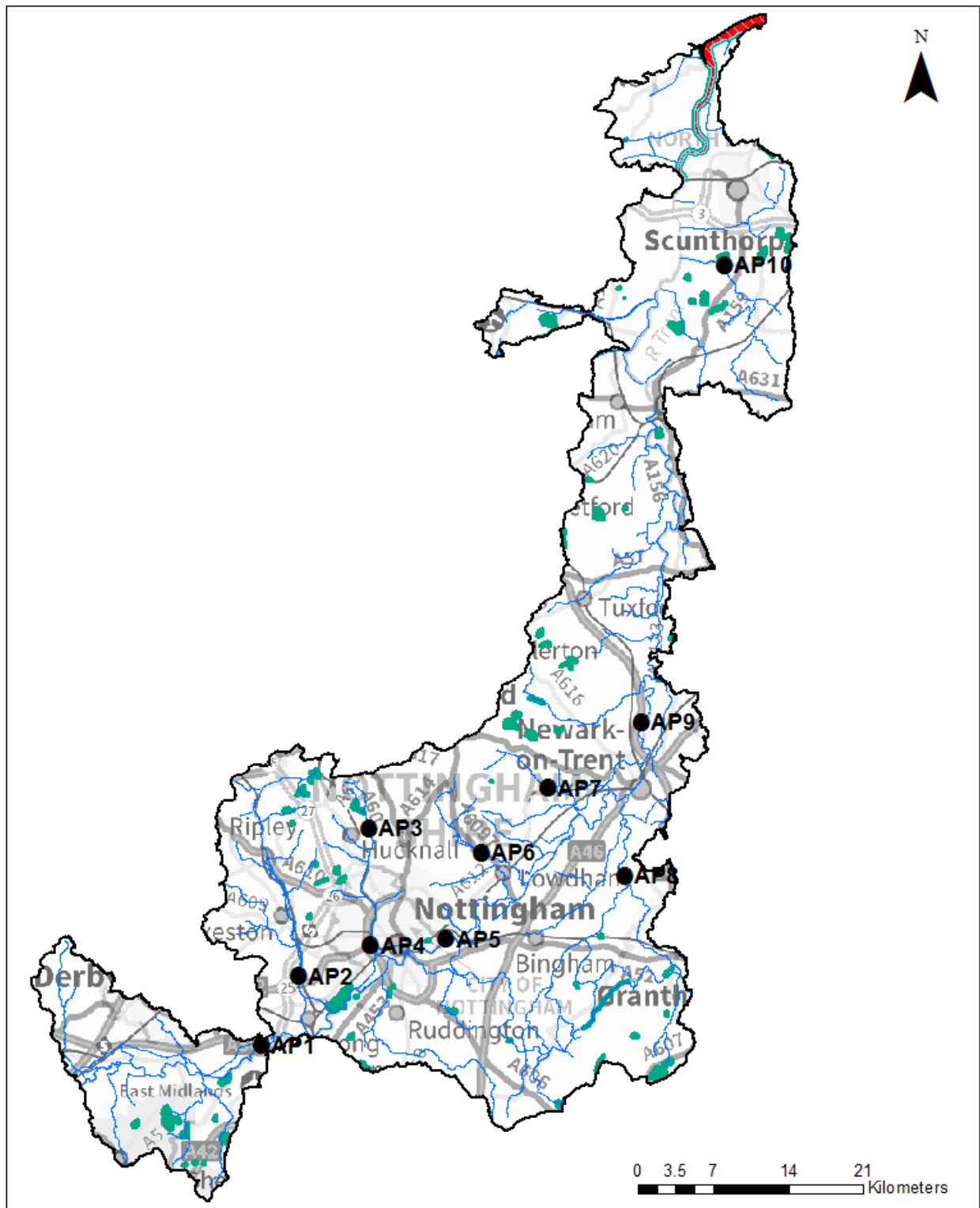
Habitats within the Humber Estuary include Atlantic salt meadows and a range of sand dune types in the outer estuary, together with subtidal sandbanks, extensive intertidal mudflats, glasswort beds and coastal lagoons. As salinity declines upstream, reedbeds and brackish saltmarsh communities fringe the estuary. These are best-represented at the confluence of the Rivers Ouse and Trent at Blacktoft Sands. Upstream from the Humber Bridge, the navigation channel undergoes major shifts from north to south banks, for reasons that have yet to be fully explained. This section of the estuary is also noteworthy for extensive mud and sand bars, which in places form semi-permanent islands.

Significant fish species in River Trent include Atlantic Salmon, European Eels, River Lamprey, Brook Lamprey and Sea Lamprey. These are all endangered species within the lower Trent catchment and listed as Humber conservation species. There is legislation in place to protect the European Eel (See Eel regulations 2011). For Abstraction you must have a screen on both the intake and discharge under the regulations. Screen mesh size will vary depending on location (Different Size class found at different parts of the catchment). You must also implement measures to control the velocity of water approaching the screen. This will be dependent on the life stages of the eels present. Also if deemed necessary, you may be required to incorporate a by-wash to return excluded eels to the waters they came from.

The Humber Estuary is also designated as a "Wetland of International Importance" under the Ramsar Convention. Ramsar sites in England are governed the same as any other European designated site (i.e. SACs and SPAs). Further information about the Humber Estuary can be found online at the [website](#) of the Humber Management Scheme.

Although only partially within the Lower Trent and Erewash catchment located south of Goole, Thorne Moor SAC is England's largest area of raised bog, lying a few kilometres north of the smaller Hatfield Moors, both within the former floodplain of the rivers feeding the Humber estuary (Humberhead Levels), and includes the sub-components Goole Moors and Crowle Moors. Although recent management has increased the proportion of active raised bog at Thorne Moors, the inclusion of Goole Moors, where peat-extraction has now ceased, means that the site is still predominantly degraded raised bog. The restored secondary surface is rich in many species associated with active raised bogs. Thorne and Hatfield Moors are designated SPAs for the presence of breeding migratory European Nightjars. The area covered is the same as the SACs described above.

For further information regarding SACs and SPAs, please visit the Joint Nature Conservation Committee [website](#). Map 7 presents the location of the above designated sites.



Legend

- Assessment Points
- Rivers
- ▨ SACs
- RAMSARs
- ▨ SPAs
- SSSIs

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Map 7. Designated sites across the Lower Trent and Erewash ALS area.

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 do not cause any deterioration in water body status both within the water body / bodies where the trade will take place and to downstream water bodies.

Guide to the potential trading in water bodies of Lower Trent and Erewash ALS

Table 6 provides a guide to the potential for trading in water bodies of Lower Trent and Erewash ALS water resource availability colour, as shown on Map 2.

To find out more about licence trading please go to our [water management web pages on gov.uk](http://www.environmental.gov.uk/water-management)

Table 6. Licence trading information associated with water resource availability colours in Lower Trent and Erewash ALS area.

ALS 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 these water bodies/GWMU as water available for new abstractions.
Restricted water available for licensing	There may be opportunities for licence holders to trade up to their full licensed quantities, but the quantities of water available to trade may be restricted once levels of actual abstraction reach sustainable limits. We will not permit licence trades in water bodies/GWMU where we are taking action to prevent deterioration unless the trade is consistent with achieving water body objectives.
Water not available for licensing	We will only trade up to recent actual abstraction but no increase in recent actual abstraction is permitted in these water bodies/GWMU. Licensed abstraction will be recovered for the environment.
HMWBs	Opportunities for trading will depend on local operating agreements and local management.

4.2. Taking action on unsustainable abstraction

We need to take action on unsustainable abstraction causing diversion from the aims of the WFD i.e. a situation where flow does not support good ecological status, or potential if the water body is heavily modified. Action is also needed to manage the risk of deterioration or correct instances of serious damage. The actions that we may take include:

- Actions under the water industry national environment programme (WINEP)
- Revocations of licences for non-use
- Reductions of under-used and unused licences
- Changes to time-limited licences

4.2.1. Action being taken on unsustainable abstraction in the Lower Trent and Erewash ALS

The Water framework Directive (WFD) requires that measures are taken to protect and improve the hydrological regime of waterbodies to meet WFD objectives. Severn Trent Water undertook an investigation under the WFD in the period 2015-2020 into the impact that groundwater abstraction for public water supply was having on flows in the Dover Beck. The results of this investigation and other investigations into the impact that groundwater abstraction for public water supply was having on a number of waterbodies across the Sherwood sandstone aquifer in Nottinghamshire, will mean that Severn Trent Water will reduce abstraction at some of their boreholes abstracting from the Sherwood Sandstone in the Lower Trent and Erewash and Idle and Torne ALS areas. In total this reduction will mean that Severn Trent Water licensed abstraction from the Sherwood sandstone will reduce by 23.5 Ml/d below recent actual abstraction rates. The reductions in licences will come into effect by 2030. In the period 2020-2025, Severn Trent Water will also implement environmental measures in the Dover Beck catchment. These will reduce the ecological susceptibility to low flows by improving habitat and/or water quality within the waterbody.

WFD also requires that there is no deterioration of the environment. Therefore in the period 2020-2025 as part of the Water Industry National Environment Plan (WINEP), Severn Trent Water will reduce their licensed abstraction from the Sherwood Sandstone in Nottinghamshire in the Lower Trent and Erewash ALS area down to recent actual abstraction quantities for all sources listed in WINEP3 with a “sustainability change” measure type. The licensed reductions will come into effect by 2030.

Renewal of the Sherwood Sandstone time limited licences in 2024 will also need to ensure that there is no deterioration of the environment. When we consider renewal of abstraction licences we apply the usual three tests of environmental sustainability, justification of need and efficient use of water. Our sustainability test includes considering the risk of environmental deterioration. We must ensure that the ecological habitats provided by the rivers and wetlands do not deteriorate as a result of continued abstraction and that the Sherwood Sandstone aquifer is protected.

4.2.2. Action being taken on unsustainable groundwater abstraction in the Lower Trent and Erewash ALS area

If groundwater abstractions are demonstrated to impact the environment, we seek to reduce or cease certain abstractions. This is aimed to prevent deterioration to groundwater aquifers and the surface waterbodies which are fed by these aquifers.

Lower Trent and Erewash - PT Sandstone Wollaton Groundwater Body (and associated groundwater management units). As a result of historical licensing, the groundwater resource balance is unsustainable, resulting in level and flow impacts on groundwater, surface water or wetland systems. This groundwater body is considered to be at overall poor status. We will take opportunities to reduce fully licensed risks.

The Lower Trent and Erewash - Magnesian Limestone Groundwater Body. This groundwater body is considered to be at Good status but is closed due to downstream level and flow impacts on groundwater, surface water or wetland systems. To protect these water resources we will take opportunities to reduce fully licensed risks.

Individual Groundwater Management Unit status and water availability is discussed in Section 3.2. Groundwater licences will be renewed on the following broad principles around environmental sustainability:

Water available for licensing (Green )

We will consider renewing the licence at the same quantities when the groundwater body/groundwater management unit, overlying rivers and associated wetland habitats have environmentally sustainable rates of water abstraction both now, and at times when abstractors take their full licensed quantities of water.

Restricted water available for licensing (Yellow )

If the groundwater/surface water bodies and/or groundwater management unit in which the groundwater abstraction sits are at risk of deterioration, time limited renewals may require licence changes to reflect historic usage in order to manage the risk of deterioration i.e. reduce fully licensed risk.

Water not available for licensing (Red )

If the groundwater/surface water bodies and/or groundwater management unit in which the groundwater abstraction sits are already subject to unsustainable rates of abstraction, we will need to renew the licence with measures to help restore a more sustainable level of abstraction. These measures could be licence quantity reductions or Hands off Flow / level conditions. Where 'water body' scale measures are still under investigation, then licence changes to reflect historic usage and a short time-limit will be applied. Requirements for any further licence changes (reductions, HoFs etc.) can then be assessed on the subsequent renewal.

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, irrespective of availability and without regard to impacts on the environment or other abstractors.

Following two public consultations Government have introduced new Regulations that which took effect on 1st January 2018. The Water Resources (Transitional Provisions) Regulations 2017 have removed the majority of previous exemptions from licensing control, and current exempt abstractors will now require a licence to lawfully abstract water (known as New Authorisations). This is to help balance the needs of all abstractors and

the environment. This will enable more effective water management by ensuring that all significant activities influencing the availability of water and its impact on the environment are undertaken in a sustainable way.

The main activities that are impacted by the changes include:

- 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 have 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.

GWMU

Groundwater Management Unit.

HMWB

Heavily Modified Water Body.

HoF

Hands off Flow.

HoL

Hands off Level.

MI/d

Megalitres per day.

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.

WFD

Water Framework Directive

6. Glossary

Abstraction

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

Abstraction licence

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

Assessment point

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

Catchment

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

Consumptive abstraction

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

Discharge

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

Environmental flow indicator

Flow indicator to prevent environmental deterioration of rivers, set in line with new UK standards set by [UKTAG](#).

Groundwater

Water that is contained in underground rocks.

Hands off flow

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

Impoundment

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

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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