

Abstraction and Flow Problems

What is the issue?

- Abstraction is the **permanent or temporary removal of water** from a river, lake, reservoir, canal, estuary or groundwater. Some people and businesses are permitted to abstract water.
- Abstraction changes the natural flow pattern and the amount of water in the environment. This reduces the amount of habitat, prevents natural movement of species and concentrates pollution in the water environment.
- Moreover, abstraction from the ground can cause environmental problems by reducing flows to lakes, rivers and wetlands.
- **Abstracted water is used by everyone** in their day to day lives; for drinking water, cleaning, to irrigate crops, support industry, produce food, generate power, use in households and many other goods and services.

What locations are affected?

- Low flows caused by abstraction can be a problem anywhere in England, but particularly in the East and South East of England.

Why should this concern me?

► The implications of reduced flows

- Reduced flows can lead to changes to and the loss of habitat for aquatic animals, plants and insects. For example, more fish deaths during periods of droughts.
- Also, during low flow events, water use may have to be constrained - affecting households, industry and agriculture.



► The effects of reduced groundwater

- Resources of stored groundwater can become depleted.
- Dependent river and wetland habitats may be damaged.
- Saltwater can intrude, reducing the quality of water available for abstraction.
- The cost of abstracting and purifying water may increase.



What are the future challenges and concerns?

▶ **Population growth will mean more demand for abstraction of water**

- More people means greater water demand for producing food, making goods etc.

▶ **The availability of water will alter due to climate change**

- Due to changing rainfall patterns, water availability will become more variable during the year and by location.

What can be done about this issue?

Those who abstract water may need to address the way they do so:

- Water companies need to manage abstraction in tune with the environment whilst meeting our drinking water needs.
- Farmers and others may need to change how they store and use water.
- Industry and the public need to use water wisely.
- National and local government will need to ensure that water demand and supply is considered in their decisions about town and country planning.

This could happen by:

▶ **Reviewing licences given to abstract water to reflect environmental goals**

▶ **Sharing water better**

- Water could be shared between similar abstractors – for instance, groups of nearby farmers could invest in a reservoir to store water.
- Increasing storage during winter to offset needs in summer months.
- A market for buying and selling water could enable water to be used by those who need it at the times they need it.

▶ **Reducing water demand**

- Helping and providing incentives to abstractors to use water more efficiently.
- Encouraging water companies to reduce leakage and reduce consumer demand through metering and water saving initiatives.
- Encouraging more water efficient homes and businesses.

▶ **Changing land use and channel design**

- Restoring wetlands and using different farming and land management practices to change the way water is stored and moved around the landscape to improve water availability and quality.
- Reshaping river channels to deal with lower flows