

River Itchen Water Quality

Our regulatory role

The Environment Agency works to create better places for people, wildlife and support sustainable development. We put the climate emergency at the heart of everything we do and help society adapt to environmental challenges. We improve and protect the quality of our air, land and water by tackling pollution.

We do this by:

1. regulating farms, factories and other businesses to minimise polluting emissions to air, water and land
2. regulating waste treatment and disposal sites
3. permitting the removal of water from surface and groundwater and the discharge of substances to water
4. responding to a range of emergencies including pollution of water, illegal dumping of hazardous waste and illegal fishing
5. working with conservation organisations to create and restore important habitats
6. licensing fishing and monitoring fish health in our rivers and fisheries across England

Water Company regulation remains a priority for us. All water companies have strict conditions around the discharge of effluent specified through their permits. We do everything we can with the legal powers and resources we have, to set protective permits and act where there is failure to comply with measures designed to protect our inland and coastal waters.

We authorise the discharge of storm sewage from sewage works or storm overflows when heavy rainfall overloads the sewer network. This is necessary to prevent the flooding of people's homes, workplaces and neighbourhoods with sewage. Storm overflows are subject to strict conditions which are set out in the environmental permits for each site. These require minimum dilution levels and other measures to protect the environment.

Part of our role is to ensure Water Companies invest in improvements to their wastewater treatment systems in line with legislative requirements and this is managed through the Asset Management Plan (AMP) process. This is a 5 yearly investment programme which is part of their business plan and is regulated by OFWAT.

Our monitoring role

We monitor the state of the water environment by measuring water quality, water quantity and ecology. This allows us to understand the overall health of aquatic ecosystems and manage the pressures impacting upon them. Much of our monitoring data is now available online. As an example of the data available, here is the link to data from the River Itchen at Cobden Bridge. [Open WIMS data](#)

We also welcome the various emerging citizen science initiatives that contribute valuable information on water quality to help everyone involved to identify and prioritise action.

customer service line
03708 506 506

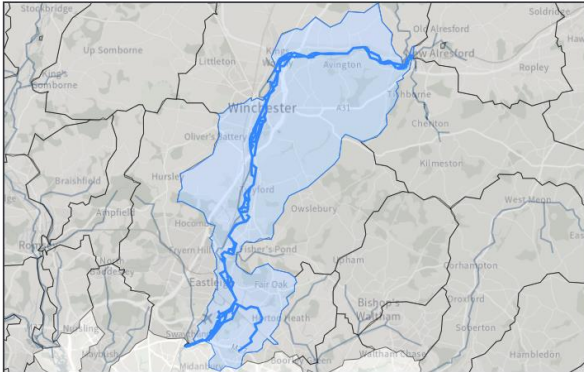
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0800 80 70 60

floodline
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Water quality in the River Itchen

Our Catchment Data Explorer summarises information about the water quality status and ecological health of each water body. The 2 water bodies of relevance here are the River Itchen and Southampton Water.

Itchen Water Body Good ecological status



SOUTHAMPTON WATER Water Body Moderate ecological status



[Itchen | Catchment Data Explorer | Catchment Data Explorer](#)

[SOUTHAMPTON WATER | Catchment Data Explorer | Catchment Data Explorer](#)

Ecological Status

Under the Water Framework Directive, the River Itchen is classified as being at Good Ecological Status.

Southampton Water is classified as being at Moderate Ecological Status. The reasons why this water body does not achieve good status relate to Dissolved Inorganic Nitrogen and mitigation measures.

Chemical Status

The chemical status for both the River Itchen and Southampton Water is defined as failing due to priority hazardous substances. For the 2019 assessment of chemical status we have changed some methods and increased our evidence base. Due to these changes, all water bodies now fail chemical status and this assessment is not comparable to previous years assessments.

There are 4 groups of global pollutants (uPBTs) causing these failures: polybrominated diphenyl ethers (PBDEs - a group of brominated flame retardants); Mercury; certain Polycyclic aromatic hydrocarbons (PAHs) and Perfluorooctane sulfonate (PFOS) a group of per- and polyfluoroalkyl substances (PFAS) which is being assessed for the first time.

There is little underlying change in chemical status for chemicals that are not uPBTs. If uPBTs are excluded then chemical status assessment is comparable to previous years' assessments.

In previous assessments, the chemical status of the River Itchen was classified as Good. The chemical status of Southampton Water was previously classified as Moderate due to elevated levels of Tributyltin but in the 2019 classification, this classification element achieved Good status.

In common with many rivers, levels of nutrients such as nitrates and phosphates are elevated above natural levels in the River Itchen. Our evidence also shows that run-off can introduce high levels of sediment into the river in certain areas which can smother gravels and affect the associated habitats and species.

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Sources of pollution in the River Itchen

The main sources of potential point source pollution (single, easily identified points of discharge) in the Itchen include treated wastewater, storm water from sewerage systems, pollution from privately owned sewage treatment works and septic tanks, road run-off and other discharges from trade premises, fish farms and watercress beds in the upper catchment.

Diffuse pollution is another main source of potential pollution. Urban diffuse pollution can include activities like people putting substances, such as car oil, into the surface water drainage systems and road and roof drainage entering via surface water drains. Rural sources of diffuse pollution are often associated with farming and other land management practices and the maintenance of land drainage systems.

What we are doing to improve water quality in the River Itchen

Water Companies

- We are holding water companies to account to reduce pollution, tackle storm overflows and invest more of their profits into the environment.
- We are prosecuting the most serious polluters: on 9 July 2021 Southern Water was sentenced to pay a record £90 million fine after pleading guilty in court to 6971 unpermitted pollution discharges which polluted rivers and coastal waters in Kent, Hampshire and Sussex.
- Improvements have been funded for the main sewage treatment works on the River Itchen and permit limits tightened further than in other river systems because of the river's designation as a Special Area of Conservation (SAC). Permit limits were set to the technically achievable limit (the best wastewater quality that was achievable with wastewater technology) at the time. Limits for phosphorus have been added to the permits of the larger discharges to prevent nutrient enrichment of the river's ecosystem to protect and improve the condition of the SAC and protect it from deterioration.
- Woolston wastewater treatment works has recently been upgraded and fitted with membrane filtration treatment, primarily to reduce nutrient pollution. An additional benefit is that it will also significantly reduce the levels of faecal bacteria in the sewage effluent.
- Permit limits are reviewed in the 5 yearly AMP process to ensure that consented limits are in line with any legislative changes or improvement in treatment technology and national policies.
- We are also working with Water Companies and other organisations and stakeholders on Drainage and Wastewater Management Plans (DWMP) for the Test and Itchen. These plans identify risks to the environment from wastewater and drainage and identify where improvements need to be made to prevent deterioration or harm.

Farmers and landowners

We are working with farmers to support environmentally friendly farming that doesn't damage water quality.

A dedicated agricultural team has been set up and they have been visiting farms across Hampshire and Sussex. We are providing advice and guidance to ensure that good practice is being followed and any necessary measures to protect the environment are implemented.

We work with other agencies including Natural England (Catchment Sensitive Farming Officers) to influence best practice land use to reduce run-off and lower pollution.

Monitoring and evidence

Using our evidence and monitoring data we can consider trends across a wide range of elements and establish reasons for failure or not achieving Good status.

In recent years, we have also been using innovative surveillance techniques to understand the sources of pollution and target our work to improve water quality. One example is working with others to map the risk of sediment entering the Test and Itchen.

We use models to determine where diffuse pollution is coming from and to assess nutrient losses from land. Models can also help us to consider options to reduce pollution risks.

Use of these monitoring and modelling tools ensure that we can target action to the places and activities that will reduce the risk of pollution and provide most benefit to the environment.

Working with others

There are many partnerships and groups that we work with in the Itchen catchment. Examples include:

- Test & Itchen Catchment Partnership. We work with them to deliver projects and to carry out investigations to seek out potential courses of action for environmental improvements [Catchment Management \(wessexrt.org.uk\)](https://www.wessexrt.org.uk)
- Solent Forum have been adopting a 'source to sea approach' and gathering evidence around freshwater catchment impacts on estuaries and coastal zones [Solent Forum - Home page](#)

Together with Southampton City Council, the University of Southampton and others, we are helping clear the Chessel Bay National Nature Reserve of nurdles. These small plastic pellets have been a significant issue in the Itchen Estuary for over a decade and can seriously harm wildlife and habitats. Last year we helped fund a successful trial of a nurdle clean-up technique, which will now be used across Chessel Bay.

Building on the success of this work, we are now looking to support the development of a much larger 'preventing plastic pollution' partnership project that will aim to clean up plastic pollution across the wider River Itchen Estuary, as well as help reduce the amount of plastic entering the environment in the first place through engagement with local communities and businesses.

Influencing development

We provide consultation advice on Marine Management Organisation (MMO) Marine Licence applications, including assessing capital and maintenance dredge applications as well as proposed works along the banks of the tidal Test, Itchen and Southampton Water. The most recent example of our input to an MMO Marine Licence application on the Itchen Estuary relates to an application to maintenance dredge at Merlin Quay in December 2021; we conditioned the dredge to ensure that sediment containing contaminants would not be disposed of within a Water Framework Directive water body.

In our role as statutory consultee on certain planning applications, we can seek to implement measures to reduce run off from developments and highways and reduce the impact of other urban diffuse pollution sources.

What you can do to help

We respond to environmental incidents to stop and reverse damage to our rivers. We prioritise our resources to incidents that cause the most serious and significant risk to the environment. Information about our response to environmental incidents is published [online](#).

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If members of the public see any sign of pollution, they should call our incident hotline on 0800 80 70 60 to report this to us. The information provided to our advisors is logged onto our system. We combine this incident information with other data. This helps us to assess how serious the incident could be.

Conclusions

We continue to work with government, the water industry, farmers and others to improve water quality in the River Itchen and all our rivers and we are making the case for the funding we need to protect the environment in England. We also need more investment from the farming and water industries and for local catchment partnerships to do their part.

Only wider action through water company investment, better farming practices and simple steps taken in the home to prevent sewer misuse will help ensure we have healthier sewers, cleaner rivers and a better environment for all.

November 2022

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