

Policy 6 Water Quality

The water of Chichester Harbour will be appropriate to the high conservation value and recreational use of the Area of Outstanding Natural Beauty. Work will continue to manage sources of water pollution. Waste reception facilities will continue to be provided and oil spill response preparedness will be maintained. Research into pollution, including microplastics, will be undertaken.

Good water quality is fundamental for the overall health of Chichester Harbour. Water quality sustains ecological processes that support native fish and invertebrate populations, vegetation, wetlands and birdlife. In addition, many people rely on good water quality for recreational use. Water quality can be reduced by **nutrient enrichment, excessive levels of bacteria**, and **toxic substances** such as heavy metals. In terms of the Harbour's designations, one of the most significant detrimental impacts is from excessive nutrients causing the Harbour to be eutrophic. This causes excessive growth of macroalgal weed, which smothers intertidal habitats, preventing birds from feeding and in the worst cases excluding oxygen so that the mud can no longer support the invertebrates that many species rely on. Macroalgal weed also blocks the cooling water intakes on vessels, slows sailing dinghies, and accumulates on the strandline.

The Harbour receives inputs of nitrates from several sources, including from the wider Solent and agricultural run-off. This **diffuse pollution** is tackled through a number of initiatives including the Solent Diffuse Water Pollution Plan, Catchment Sensitive Farming, and the Downs and Harbours Clean Water Partnership. Three Waste Water Treatment Works and eight combined outflows discharge into the Harbour. Heavy rain and high groundwater conditions put pressure on Waste Water Treatment Works. In these conditions, the nutrients in sewage have limited treatment before being discharged into Chichester Harbour.



The bacterial quality of the water is assessed monthly. Samples of oysters are collected from sites around the Harbour and they are tested to confirm they are within the parameters for harvesting and to determine the level of water treatment required. While there has been a gradual improvement over recent years the Harbour is still subject to regular failures and prohibitions from catching and selling shellfish from affected areas. There is no statutory standard for recreational waters and Chichester Harbour is not designated as a Bathing Water. However, discharges into the Harbour may have environmental health implications for sailors, and Chichester Harbour Conservancy, in partnership with Chichester District Council, undertakes a monitoring programme at 11 sites. The results are presented to the public, measured against the European Bathing Water Directive to allow the level of risk to be assessed. The addition of ultraviolet (UV) treatment to the storm discharge at Chichester Waste Water Treatment Works since 2013 has seen a marked improvement in these results.

The Water Framework Directive aims to protect and improve the chemical and ecological quality of rivers, estuaries, coastal waters and groundwaters. Every water body will be required to reach Good Chemical Status and Good Ecological Status. Chichester Harbour, however, is designated as a Heavily Modified Water Body and some of the parameters identified to reach Good Ecological Status are affected by the physically modified nature of the Harbour, or its use, and as such Good Ecological Potential is the required status. This does not relate to nutrient levels or good chemical status, which are not affected by the physical modifications, or its navigational use. The current Water Framework Directive overall water body classification for Chichester Harbour is Moderate Status (as of 2019), with an objective to achieve Good Potential by 2027. Chichester Harbour has Moderate Ecological Status and Moderate Status for physico-chemical quality elements (as of 2019), with objectives to achieve Good Status for both by 2027.

The Chichester Harbour Site of Special Scientific Interest is currently classified by Natural England, as of 2019, as being mostly in Unfavourable Recovering condition (82% of the SSSI). There is a threat to the recovery of the majority of the Harbour due to the potential water quality changes from housing growth and the uncertainty around efficacy of executing measures to tackle diffuse pollution.

Chichester Harbour Conservancy maintains an Oil Pollution Preparedness Plan, and a Ports Waste Management Plan on behalf of all the Harbour's marine waste producers, which conforms to the requirements of Marpol Convention Annex V. A free pump-out facility is provided at Itchenor for vessels needing to empty holding tanks.



MANAGEMENT CHALLENGES	PRINCIPAL PARTNERS
<ul style="list-style-type: none"> • New developments put pressure on Waste Water Treatment Works. • Storm water discharges from Water Waste Treatment Works and related sewer overflows, consisting of sewage effluent mixed with rain water, can occur following periods of prolonged or heavy rain and when the level of groundwater is high. • When there is insufficient headroom for development, developers may resort to package treatment plants, which may have similar environmental implications. • The maintenance of septic tanks and cesspits. • Farming operations, including fertilizers and animal manure, which are both rich in nitrogen and phosphorus, are one of the primary sources of nutrient pollution. • Discharges from recreational boats and run-off from antifouling paint are minor sources of water pollution. • The dumping of green waste (e.g. grass cuttings) in the Harbour or on the harbourside is a minor source of water pollution. 	<ul style="list-style-type: none"> • Arun & Rother Rivers Trust • Arun & Western Streams Catchment Partnership • British Marine • Chichester Harbour Conservancy • Chichester Harbour Federation • Chichester Water Quality Group • Downs & Harbours Clean Water Partnership • Eastern Solent Coastal Partnership • Environment Agency • Farmers • Individual Residents • Landowners • Local Authorities • Marine Conservation Society • Maritime and Coastguard Agency (MCA) • Natural England • Parish Councils • Residents Associations • Royal Yachting Association (RYA) • Solent Forum • Southern Water • Sussex Marine & Coastal Forum • Universities



Actions to be taken by Chichester Harbour Conservancy:

- 6.1 To maintain and exercise an Oil Spill Contingency Plan.
- 6.2 To maintain a Harbour Port Waste Management Plan and look for ways to increase recycling.
- 6.3 To maintain and exercise a Marine and Coastguard Agency compliant Oil Pollution Response Plan, a Tier 1 response capability and a contract with an approved contractor for a Tier 2 response to an oil spill in the Harbour.
- 6.4 To support and promote The Green Blue, the Royal Yachting Association and British Marine's initiative, to encourage environmental best practice.
- 6.5 To continue to provide a pump out station in the Harbour.
- 6.6 To investigate the scale and impacts of microplastics and microfibres on water quality and introduce measures to minimise their circulation.

Actions to be taken by other stakeholders:

- 6.7 To work with the Chichester Water Quality Group to help maintain and improve water quality discharged from the Waste Water Treatment Works
- 6.8 To improve the bacterial quality of storm discharges by the UV treatment at Chichester Waste Water Treatment Works.
- 6.9 To ensure all new housing developments have suitable sewage provision, resisting any new planning applications for private sewage outlets that discharge into Chichester Harbour.
- 6.10 To use evidence to influence decision making and investment in protecting and enhancing important habitats and species, and water quality improvements (e.g. Shellfish Valuation Study, 2018; Natural Capital (Water Quality) of the Solent Study, 2018/19).
- 6.11 To continue to monitor water quality levels at strategic locations around the Harbour.
- 6.12 To address any water misconnections.
- 6.13 To engage with Catchment Sensitive Farming initiatives.
- 6.14 To continue to monitor macroalgal weed coverage mapping (Environment Agency).
- 6.15 To work with universities and other partners to understand the efficacy of sustainable commercial seaweed harvesting, a short-term solution to remove algae mats impacting mudflats and saltmarsh.
- 6.16 To work with marinas, sailing clubs and boat yards to manage antifouling on boats.
- 6.17 To raise local awareness not to dispose of green waste either directly in the Harbour, nor to leave it to decompose in a harbourside location.