

Position Statement on Dredging for Flood Management and Agriculture

This statement focuses on UK and Ireland

The issue – why is it relevant to the work of Rivers Trusts in our Movement.

Dredging is a term used to cover various activities, ranging from the removal of material from the riverbed or the sides of the river channel, to straightening or deepening rivers. The terms “desilting” and “drainage-works” are also used to specifically refer to removing fine material that accumulates in rivers after being washed off surrounding land.

Dredging is used as a flood risk management measure, to drain land for agriculture or development, or (illegally) for resource extraction for construction. Calls to dredge waterways most often arise from local communities who have been impacted by, or are concerned about the risk of, flooding to their property and from landowners wanting to improve drainage to dry out fields for livestock and crop management. This demand to dredge for flood management will only increase as the climate crisis increases the frequency of extreme weather events. To be clear – dredging can work in the short-term and is often an attractive solution, but it is an expensive option of last resort that only provides local benefit and may cause worse downstream outcomes. Other approaches are less expensive and more sustainable.

The Rivers Trust Movement is keen to engage in discussions around dredging due to the significant impact it can have on river systems and the surrounding environment. Dredging involves a lot of interference with the freshwater ecosystem, and so poses serious risks to habitats and biodiversity, both in the short and long term. It is essential that these risks are fully assessed when considering whether to dredge.

Additionally, The Rivers Trust is clear that dredging is not the solution we should be relying on to tackle these issues in the long-term. Addressing flood risk and excess levels of sediment pollution requires us to take a more holistic approach; The Rivers Trust advocates for a catchment-based, integrated, and sustainable approach to land and water management.

What are the contentious aspects?

Dredging is often cited as a straightforward solution to pervasive issues such as flooding. The devastation caused by flooding, with the inundation of farmland, businesses, and homes, understandably triggers demands for solutions. This has historically led to calls for more to be done to harness the drainage service provided by rivers through deepening and widening their channels by dredging.

Unfortunately, while this is an approach that can appear attractive, the reality is more nuanced, and requires careful communication with key stakeholders to explain the limitations with dredging, its adverse outcomes, and the need for a more holistic, catchment-based approach to address flood risk and sediment accumulation in rivers:

- The immediate flood relief provided by dredging can be short-lived. Dredged channels require long-term maintenance as natural processes in rivers mean that sediment will return and accumulate again, almost immediately. Additionally, straightened rivers will seek to return to their natural form, meandering and wiggling. This requirement for long-term costs, resources, and responsibilities, must be factored into any cost-benefit analysis of dredging.

- While dredging can reduce flooding in the immediate term in the local area, it can in fact increase flood risk downstream. By removing material from the river and thereby widening and/or deepening it, dredging can cause more water to move more quickly through the river network and thereby increase flood risk for communities downstream. Increased flow velocity may also scour infrastructure such as bridge foundations, embankments and flood defences, as well as exacerbating erosion of riverbanks. As the climate crisis will lead to increasingly frequent extreme weather, we must consider that deeper and straighter waterways are likely to amplify the impacts of these events.
- Where dredging is undertaken within tidal rivers or estuaries, deepening the channel can alter natural tidal processes by allowing tides to propagate further upstream, exposing them to higher tidal water levels. This can accelerate erosion of valuable intertidal habitats, including mudflats and saltmarshes. Changes to tidal dynamics may also alter sediment transport patterns, leading to long-term morphological changes and increased management requirements.
- Dredging can have serious and long-lasting negative impacts on the freshwater environment. It can damage or destroy fish spawning grounds, disrupt freshwater habitats and ecosystems, and cause riverbank instability and increased soil erosion. It can remove or damage features such as gravel riffles and river plants, that can act as an in-channel water purifying system, providing resilience to pollution. Dredging the silt that accumulates in a river can release sudden, large quantities of pollutants into the water, including nutrients, chemicals, heavy metals, and microplastics, which harm wildlife, plant life, and water quality. The silt that is removed can be difficult and expensive to dispose of, particularly where it is [contaminated due to historical industrial activity](#).
- Dredging and straightening of rivers can also lower the water table and reduce the amount of water available for crops and water supply in the summer months when it is most needed.
- Once a river has spilled into its floodplain, the depth of the normal river channel itself has a much smaller impact on flood peaks. Dredging therefore only affects a very small part of the newly expanded riverbed and [has minimal benefit in big floods](#) that cause the most damage to homes and businesses.

Dredging is best characterised as a local and short-term sticking plaster, as it does not actually tackle the root causes of flooding and can make problems worse for people downstream. For example, the excess silt that accumulates in our rivers typically, although not exclusively, results from poor soil management of agricultural land, where soils remain bare at wet times of year and livestock over-graze close to rivers, as well as from construction and highways runoff. Without a wider understanding of, and engagement with, these issues by the farming community, other land and infrastructure managers, regulators, and policy makers, the underlying causes of flooding and over-silting will not be tackled, flooding will persist, and dredging will only temporarily ease the situation.

The root cause of flooding is the speed of water flowing across the land and the inability of the landscape to regulate the journey of water naturally, rather than the channel form. The most sustainable solution to flooding is to slow the flow of water through the catchment, by encouraging infiltration into soils and aquifers, increasing storage in ponds, floodplains, restored peat and wetlands and holding back flood peaks in tributaries with leaky dams. Additionally, reducing soil erosion and the mobilisation of sediment on land addresses a key cause of sedimentation in rivers at its source, thereby reducing the need for repeat dredging. Techniques include the provision of protective ground cover through cover crops, conservation tillage, reducing soil compaction and the use of wetlands and buffer strips to trap sediment.

Our position

The Rivers Trust recognises that dredging is an important tool that will continue to be used in specific situations such as in the case of man-made drains in low-lying areas where water conveyance is key. However, whilst dredging may have a role to play in certain key localised situations, addressing flood risk and excessive levels of sediment loss requires us to take a much more holistic, strategic approach at the river catchment scale and focus on control at source by stopping releases from land, construction sites and highways. The Rivers Trust advocates for this integrated, catchment approach, with sustainable land management and nature-based solutions at its heart. We are clear that all stakeholders, including Government, regulators, the private sector and landowners and managers, must commit to implementing this approach at scale and be supported to do so.

When it comes to our strategic response to significant issues such as climate resilience and flood risk management, The Rivers Trust is clear that nature-based solutions, implemented at catchment-scale, must play a major role. There is now substantial evidence to show that nature-based solutions such as restored wetlands, wet woodlands, river buffer strips, regenerative land management and maintenance of healthy soils can help reduce flood risk, by slowing the rate at which the landscape drains, increasing its capacity to capture and store water, and thereby preventing flooding downstream. Notably, this approach also helps us in times of water scarcity and drought, by naturally regulating the release of water stored in the landscape back into rivers.

By implementing nature-based solutions across our landscape and blending these with conventional engineered solutions, in both rural and urban environments, we can address flood risk and the siltation of our rivers with a more long-term and cost-effective preventative solution than dredging. This, combined with avoiding further development on floodplains, will help build the catchment-wide resilience needed to face our changing climate. The Rivers Trust is committed to mainstreaming nature-based solutions and making them business-as-usual for our policymakers, regulators and private sectors.

Catchment-scale approaches that combine nature-based solutions with improved soil management can reduce sediment run-off into rivers and slow the rate at which waterways silt up. By tackling erosion and sediment loss at source, the measures help protect waterways while maintaining soil health and crop yields to the benefit of farm businesses. The Rivers Trust wants to see more effective enforcement of existing agricultural regulations, improved regulations and incentives around soil management and soil health monitoring, and greater funding for environmental land management schemes that support soil management techniques.

What are we doing about this issue?

Rather than dredging rivers, The Rivers Trust advocates for tackling the root cause of sediment buildup through source control, focusing on preventing sediment from entering rivers in the first place.

Most of our work is aimed at enabling and delivering the holistic, catchment-based approach that provides the longer-term and more environmentally friendly alternative to dredging:

- The Rivers Trust movement plays a key role in the [Catchment Based Approach \(CaBA\)](#), which works across all 100+ river catchments in England and cross-border with Wales, to embed collaborative, holistic water management at a river catchment scale. Convening Government, the private sector, civil society, landowners and communities, CaBA partnerships deliver targeted solutions, maximising environmental, social and economic benefits. [CaBA partnerships](#), many of which are hosted by members of the Rivers Trust Movement, are enabling delivery of the long-term, nature-based solutions that can tackle flood risk and pre-empt the need for dredging, delivering an estimated 2 million m³ of water storage to date. The Rivers Trust wants to see these partnerships strengthened and empowered so that they can deliver even more for nature and people.
- The Rivers Trust advocates for nature-based solutions and delivers them in both rural and urban environments, including those focused on natural flood management. The array of projects the Rivers Trust Movement has delivered is set out in [The Natural Flood Management Hub](#) which captures data and information from schemes across the Movement. The Rivers Trust is working with partners to enable these solutions to be rolled out more widely, as part of business as usual across sectors. We are co-leading the Ofwat Innovation funded [Mainstreaming Nature Based Solutions project in England, Wales and Northern Ireland](#), which aims to remove barriers to implementation of nature-based solutions at scale, because we know that these will be key to tackling ever-increasing flood risk.
- Members of the Rivers Trust Movement work closely with farmers across the UK and Ireland to help them optimise soil and water management on-farm and support them to identify and secure funding for interventions. The [Agricultural Advice Hub](#) helps to connect farmers and other actors in food supply chains with advice and information on sustainable farming practices, delivering greater outcomes for our environment. We also work at a national level in the nations of the UK and in Ireland, advocating for improved support for farmers to manage soil and water more sustainably and support compliance of agricultural regulations. We have joined calls for increased payments for agri-environmental schemes, for a greater range of nature-based solutions options to be made available and pressed for further funding for regulators so they can effectively oversee farming practices.