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EXPLAINED

Relevant for: Geography | Topic: Indian River System Including Lakes, and HEPs

Barrier removal on Hucava river in Slovakia in progress. | Photo Credit: Screenshot via YouTube/DamRemovalEurope

The story so far: At least 239 barriers – a record figure – were removed from rivers across 17 countries of Europe, the 2021 Dam Removal Progress report has revealed. This is a 137 per cent increase from the previous year.

A total of 4,984 dams have been removed so far, according to data from nations across Europe —France, Sweden, Finland, Spain, Scotland, Denmark, Portugal, Italy, Switzerland, Estonia, Germany, and England and Wales,

The Dam Removal Progress report has been prepared by Dam Removal Europe (DRE), an organisation that aims to restore rivers in the continent that have high cultural or natural importance. It is a coalition of seven organisations – World Wildlife Fund, The Rivers Trust, The Nature Conservancy, the European Rivers Network, Rewilding Europe, Wetlands International, and the World Fish Migration Foundation.

The report serves as a means for European countries to evaluate EU policies and track the progress and impact of the removal of dams and subsequent river restoration. The 2021 report shows an increase in both the total number of removals and the number of European countries reporting barrier removals.

The EU's 2030 Biodiversity Strategy lists restoring 25,000 km of rivers across the bloc to a "free-flowing state" as one of the key steps to improve degraded ecosystems. The Biodiversity Strategy is a core part of the European Green Deal.

Spain led the way in barrier removal in 2021, removing 108 barriers over its rivers, while Portugal, Montenegro, and Slovakia reported removing riverine barriers for the first time.

There was a 55 per cent jump in the number of countries which reported their barrier removal statistics in 2021 as compared to the previous year.

All riverine barriers eventually outlive their utility and no longer serve any economic purpose. In 2020, a study led by French scientist Barbara Belletti found that around 15 per cent of the 1.2 million barriers on rivers and streams in Europe are obsolete. In most cases, costs of demolition are lower than costs of repair for such obsolete barriers.

In Finland, the first of three dams under the Hiitolanjoki restoration project was demolished in 2021, and the rest of the dams are expected to be removed in the coming years. The main objective of the project is to enable upstream migration of the landlocked salmon population at Lake Ladoga. The Hiitolanjoki project is the largest river restoration project in Finland.

For a barrier removal to qualify as successful, it must have been removed through its full vertical extent so that a significant portion of the stream can pass through, allowing ecological flow, and for fish to pass. Per the International Union for Conservation of Nature (IUCN), ecological or environmental flow refers to water required for a river, coastal zone, wetland, or other water body "to maintain ecosystems and their benefits where there are competing water uses and where flows are regulated."

Technical fishways and bypasses are not considered to be barrier removals.

Data presented in the 2021 Dam Removal Progress report has been collected from three sources:

On the face of it, dams fragment rivers and streams, but their effects are far-reaching. Dams, and barriers at large, lead to the loss of habitat for species belonging to riverine ecosystems and severely impact the routes of migratory fish. A 2020 analysis by the World Fish Migration Foundation found that migratory freshwater fish in Europe have declined by 93 per cent.

High sedimentation in older dams is a threat to their structural integrity and can lead to floods and other threats to life. In some rivers, the loss of income from fishing is larger than the value of power produced by hydroelectric dams.

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