



Action plan towards a free flowing Rhine and Maas

A call to action from the Free Flowing Rivers Conference, April 2024 Groningen The Netherlands. What top priority issues prevent the rivers Rhine and Maas to become free flowing rivers and what actions are necessary.

Issues	Actions
1. Longitudinal connectivity seaside	
a. Haringvliet sluices are and will not be opened far and frequent enough resulting in inadequate connectivity, besides not restoring a natural salt to fresh water gradient and estuarine habitats necessary for migratory fish to fulfill part of their live cycle.	Investigate possibilities to restore the required connectivity plus habitats and take the appropriate measures.
b. High fisheries pressure at vulnerable points in migration routes for fish in the Haringvliet mouth and Afsluitdijk fish migration river inlet and outlet point.	Establish the already announced fisheries free zones.
2. Longitudinal connectivity up- and down stream	
a. The many weirs and dams which still hamper connectivity are mostly equipped with fish passes, but recent telemetry studies show these have limited success for long distance migratory fish.	Asses and improve all fish passes on functionality and their maintenance for long distance migratory fish.
b. Hydropower stations, just like dams, mostly are equipped with fish passes. But for downstream migration of species the need extra measure to prevent species going through the turbines. Most measures currently in practice do not proof to be effective and in most cases old technology is still in place, like old types of turbines whilst more fish friendly designs are already on the market.	A moratorium on building of new and renovating of existing hydropower plants. An action plan to determine effective measures to lead downstream migration and to implement them everywhere.
c. Shipping on the Rhine and Maas is very intensive and delivers significant impact on ecology with noise, turbulence and direct damage by propellor collisions. This besides all the infrastructure to facilitate navigation.	An action plan should be drafted to address ship design and promote innovation towards nature friendly ships: less noise, direct propellor damage and need to dredge and normalize rivers. A standard should be set to which all ships should comply by a certain date.
d. Flow regime on large parts of the Rhine and Maas are hampered by sluice-weir complexes which result in ponded river stretches. As a	With large bypasses and environmental flow management of the sluice-weir complexes this problem can be overcome. A river basin wide assessment and action plan should be drafted.

consequence these stretches lack habitat heterogeneity.	
3. Lateral connectivity	
Free flowing side channels are very scarce. Yet they deliver important habitats for many riverine species. Existing restored side channels often lack adequate dimensions, and to often do not receive water from the main channel.	Restore free flowing side channels with an ecological design, learn from the design Stroming/ARK/WWF developed for the Waal with a series of side channels alternating over the shores in such a way it also restores sediment balance in the main channel. Not to be confused with the side dams the Dutch government has implemented recently.
4. Habitat restoration	
Large part of the floodplains still are in use for intensive agriculture. These floodplains are also prevented from flooding by low summer dikes. The total area for nature is far to less for many species to reach a favorable conservation status. In an interchange with high water safety and navigation stakes, the existing nature areas in the floodplains are under a strict vegetation and sediment management scheme as to prevent natural processes to occur that would negatively impact high water safety or navigation.	Clear nature development objectives are lacking and should be established, so that a roadmap towards reaching them can be drafted. Current practices preventing nature to reach a favorable conservation status should be identified and stopped (in a ordered way) as soon as possible.
5. Climate change	
Higher water temperatures and more frequent periods with low water levels can have a big impact on species. The impact of cooling water and damage by ship propellers will also increase because of this.	Scenario studies forecasting these impacts are necessary, combined with an overview of all possible mitigation and adaptation measures. Amongst which also the way and design of nature restoration measures, as to make them climate proof.



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