



Progress report on the implementation
of the "Master plan for migratory fish in
the Meuse River basin" for the period
2011-2020

English not being one of the IMC's official languages, the English version of this report is not an official translation and is only provided to make this report more widely available.



Introduction

The Meuse River is characterised by the natural appearance and the high ecological value of many of its stretches and tributaries, but also by the numerous engineering structures (locks, dams or bypasses, hydroelectric power plants...), which clearly show that it is a river strongly influenced by man. Hydromorphological damage exists along the course of the Meuse River and some of its tributaries. In particular, the development of the Meuse River and some of its tributaries into navigable waterways has required major modifications to the river bed and banks, as well as the construction of dams and locks which are used to maintain water levels and, in some cases, to generate electricity via hydropower.

Dams, locks and hydroelectric power plants located throughout the river system can constitute difficulties or obstacles for fish migration. Based on this observation, the International Meuse Commission decided, as of 2011, to deal with this topic at international level and in a structured manner within an ad hoc project group in charge of following up the implementation of a master plan dedicated to highly migratory species in the Meuse River basin, i.e. those whose life cycle includes a migration from the sea to fresh water and a migration from fresh water to the sea.

Actions implemented in this plan can be classified into 6 categories:

- Restoration of ecological continuity for upstream migration¹
- Development of spawning and juvenile habitats
- Stocking² of migratory fish
- Improvement of continuity and efficiency of downstream migration³
- Fisheries measures
- International coordination of measures

This document aims to summarise the progress made in the implementation of these different actions in 2020.



Photo 1: The lock of Lanaye (Wallonia) (Photo: IMC)

¹ Upstream migration: migration for a migratory fish to go upstream to spawn or develop.

² Stocking: the stocking of waters with fish by humans.

³ Downstream migration: for a migratory fish, the action of moving downstream in a watercourse, from upstream to downstream, for the purpose of reproduction or development.

Restoration of ecological continuity for upstream migration

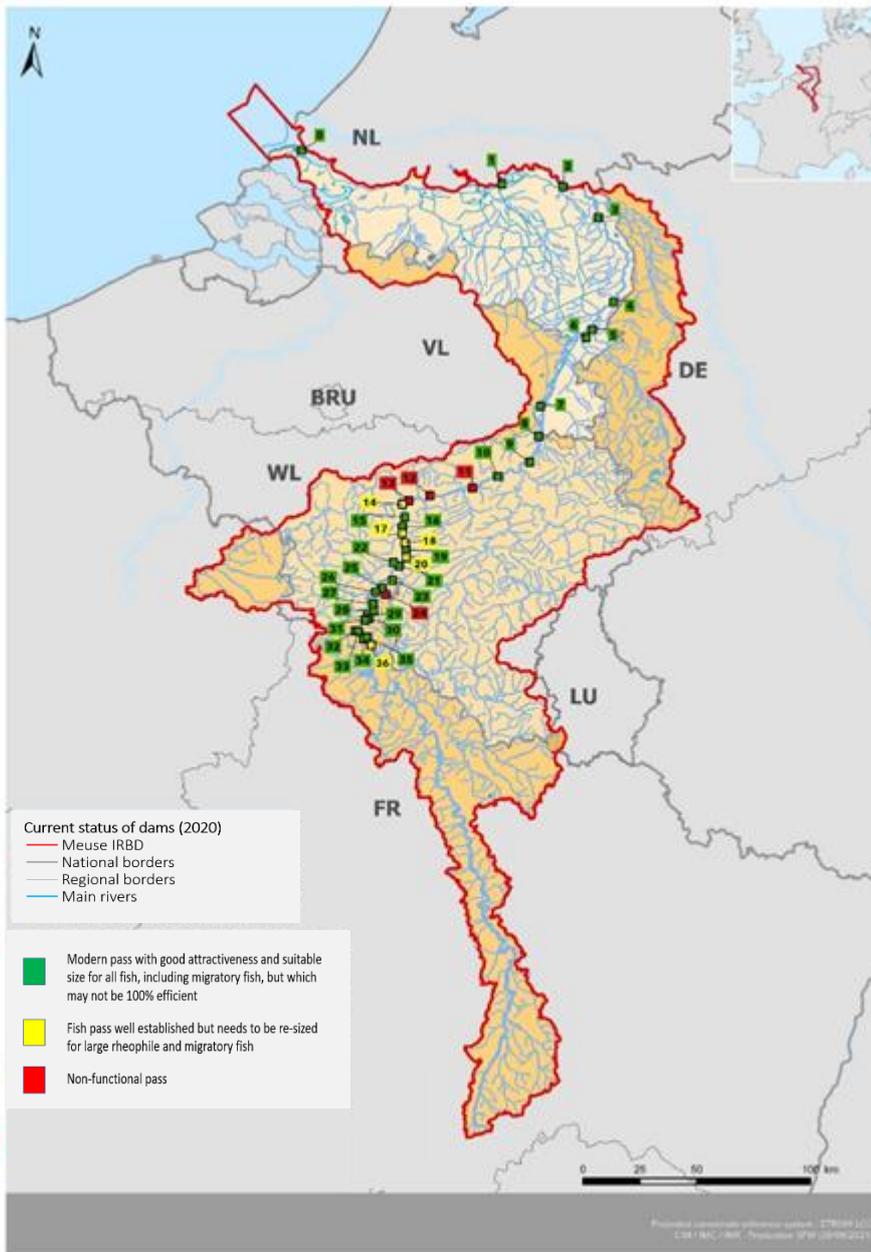
Since the drafting of the IMC Master Plan for Migratory Fish, many obstacles on the main course of the Meuse River have been made passable for fish. In both Wallonia and France, new functional fish passes have been built at many dams, and in the Netherlands, the partial opening of the Haringvliet locks⁴ in 2019 has improved the passage of migratory fish from the sea. In 2020, in Wallonia, a new fish pass was built at the Dinant dam. Studies are also underway to do the same at the Houx, Anseremme and Ampsin-Neuville dams in the coming years. In France, the "Baméo" project enabled to equip with new functional fish passes the dams at Mézières, Romery, Dom-le-Ménil, Villers-devant-Mouzon, Alma, Stenay, Sasse-sur-Meuse, Sivry-sur-Meuse and Belleville by 2020.

However, some obstacles still need to be removed to allow migratory fish to pass from the mouth of the Meuse River to France. Indeed, there are still nine dams blocking the free migration of fish (map 1).



*Photo 2: The fish pass of the hydroelectric power plant in Roermond (Netherlands)
(Photo: Johan Coeck)*

⁴ The Haringvliet is a former arm of the North Sea in South Holland. It receives the waters of the Hollands Diep, which is the name given to The Meuse River at this location. It is dammed by the Haringvliet dam which separates it from the North Sea.



Map 1: Current status of fish passage facilities at dams in the Meuse River basin (2020)

Similar efforts are also being made on the tributaries of the Meuse River, some of which are of great ecological interest.

Development of spawning and juvenile habitats

The Meuse River basin has a number of spawning and juvenile habitats for the various target species. In 2019, EPAMA⁵ and the Ardennes Federation for Fishing carried out an additional study of the presence of spawning and juvenile habitats for salmon in the tributaries of the Meuse River in France. Several river restoration projects are planned in the near future in Germany and Flanders to improve the habitat for salmonids, among others.

Stocking of migratory fish

A cooperative programme between the Netherlands, Germany and Wallonia to transport returning salmon and sea trout caught in the Meuse River to the fish farm in Erezée (W) is working well. Since 2010, the number of young salmon produced from these farms and released back into the Meuse River basin has increased significantly (figures 1 and 2).

In 2020, more than 700,000 juvenile salmon were released into different tributaries of the Meuse River. In Wallonia, 650,000 salmon at different life stages were released (different tributaries), in Germany more than 50,000 (Rur basin) and in the Netherlands approximately 25,000 (Gueule basin).

To support the growth of the population, production and stocking of juvenile salmon should be at least maintained at the same level in the coming years.

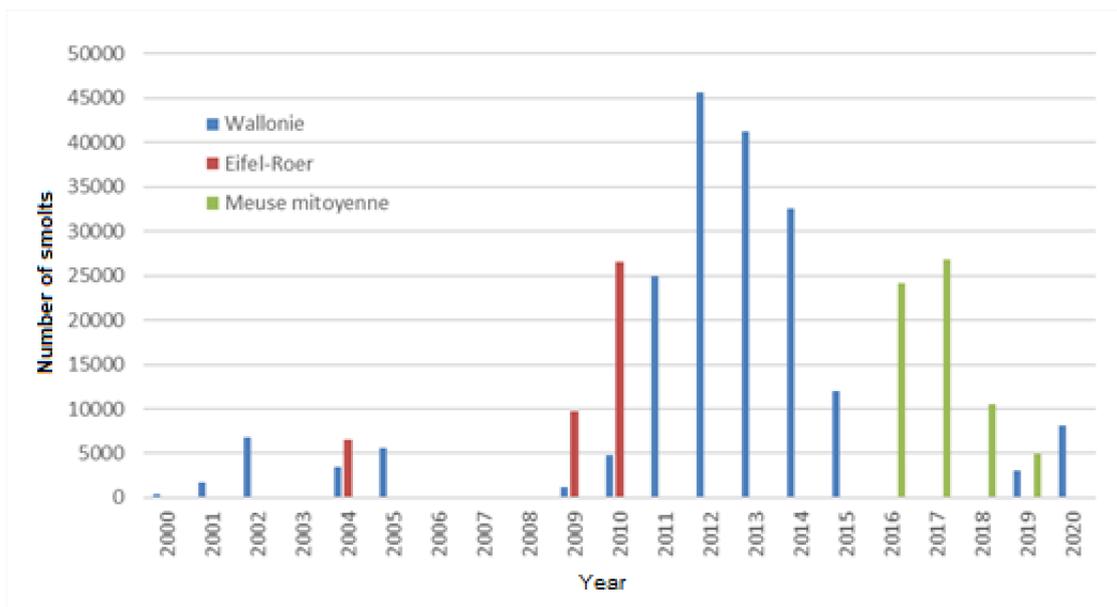


Figure 1: Number of smolts⁶ reintroduced in the Meuse River basin since 2000

⁵ EPAMA : Établissement Public pour l'Aménagement de la Meuse et de ses Affluents.

⁶ Smolt: young salmon returning to the sea.

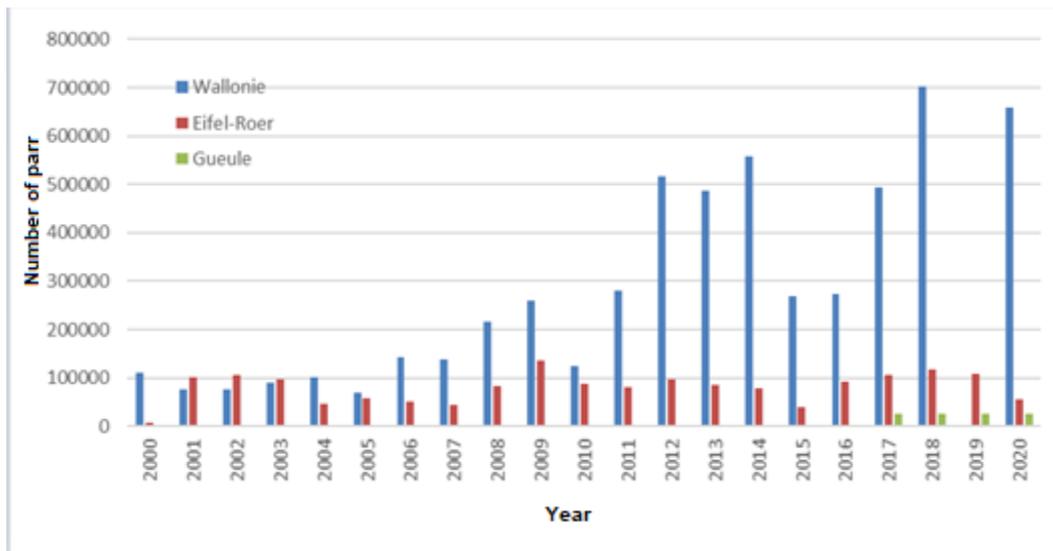


Figure 2: Number of parr⁷ reintroduced in the Meuse River basin since 2000

This fish stocking programme, coupled with the efforts to remove obstacles to upstream migration of fish, probably contributed to an increase in the number of returning salmon in the Meuse River basin. Even if this number remains (globally) limited (figure 3), for the past ten years or so there has been an increasing trend in the number of returning adult salmon, a trend that in recent years seems to be levelling off or even slightly declining.

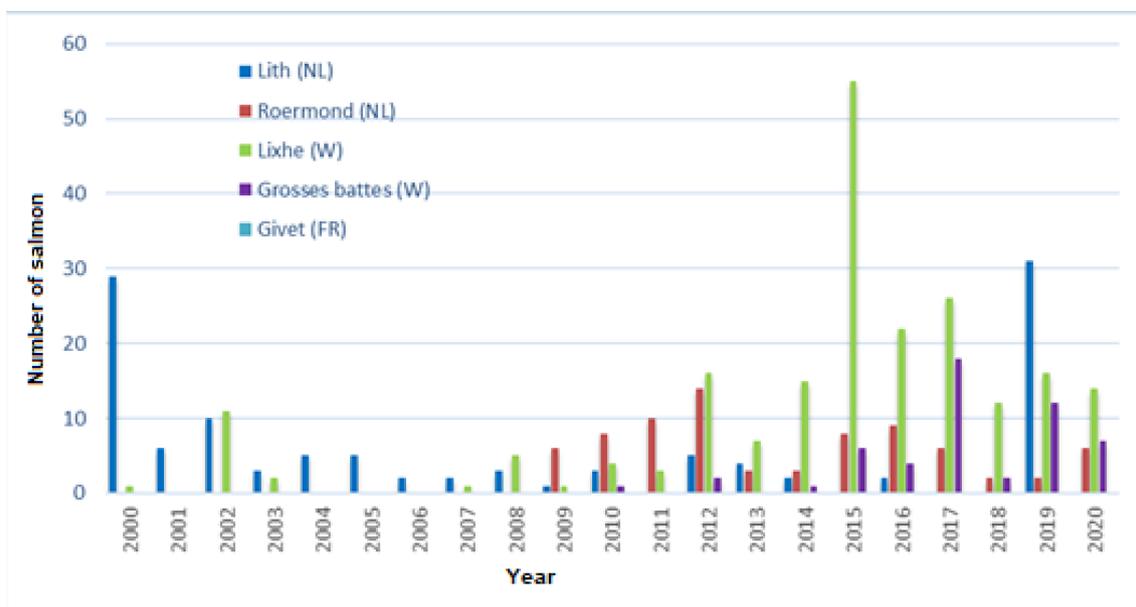


Figure 3: Number of returning salmon caught at different monitoring points in the Meuse River basin.

⁷ Parr: young salmon of less than three years old, which have not started the downstream migration.

Similar reintroduction efforts were made for eels, another migratory fish present in the Meuse River basin. In recent years, several hundreds of thousands elvers⁸ have been released into the rivers of the Meuse River basin (Figure 4). Unfortunately, due to the Covid-19 crisis, which made it difficult to implement stocking measures, this number fell sharply in 2020 (211,000 elvers in 2020 versus 1,200,000 elvers in 2019).

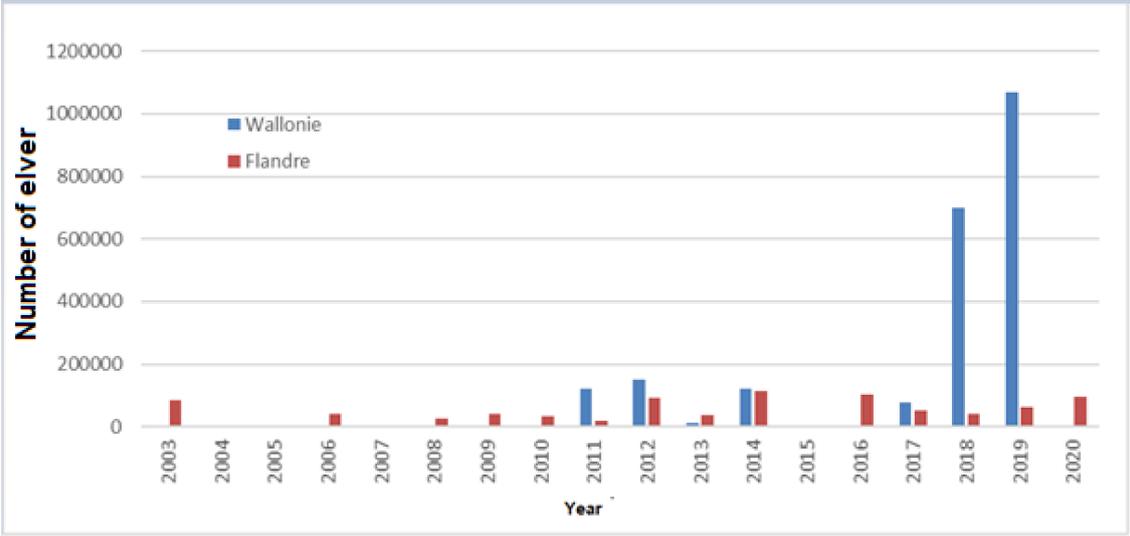


Figure 4: Number of elver reintroduced in the Meuse River basin since 2003.



Photo 3: Silver eel on downstream migration in the Meuse River near Tihange (Wallonia) (Photo: SPW)

⁸ Elver: European eel fry.

Improving continuity and efficiency of downstream migration

Studies carried out in the different countries and regions of the Meuse River basin indicate serious disturbances in the downstream migration of silver eels, salmon smolts and sea trout. According to experts, the disruption of the downstream migration is currently one of the most important obstacles to the sustainable recovery of migratory fish populations in the Meuse River basin downstream of the Ourthe River. Several actions are currently being implemented to improve the situation, in particular by reducing the mortality of downstream fish at the turbines of hydroelectric power plants.

Despite these efforts, the number of upstream eels in the Meuse River basin continues to decline significantly (Figure 5).

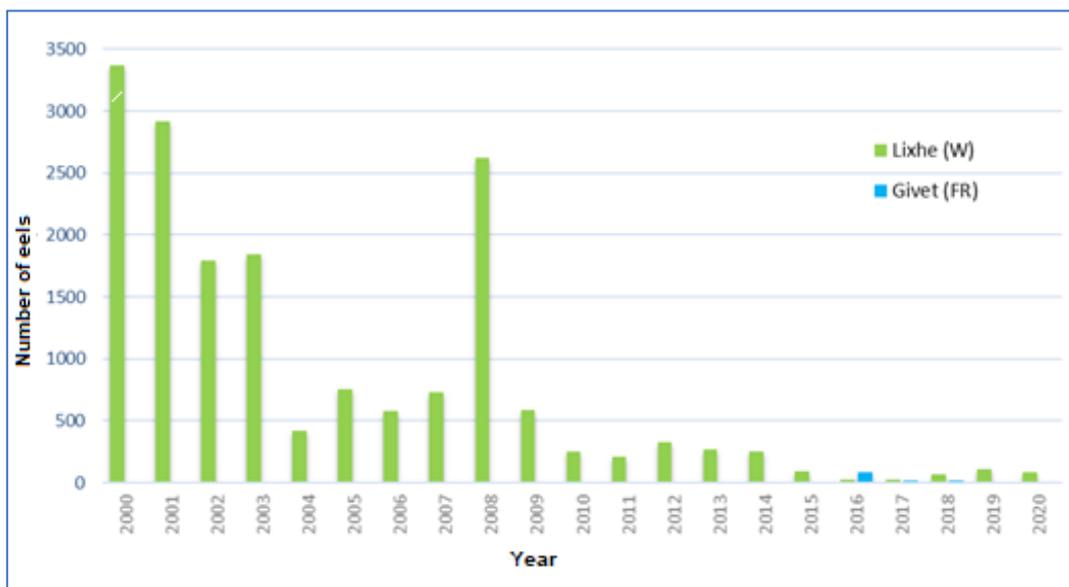


Figure 5: Number of upstream eels caught at different monitoring points in the Meuse River basin.

Fishing measures

Nowadays, all countries and regions in the Meuse River basin have sufficiently strict legislation in place to limit or prevent the catching of various species of migratory fish.

International coordination of measures

The measures taken within the framework of the "Master Plan Migratory Fish for the Meuse River" are discussed in the project group "Ecology" of the International Meuse Commission and thus coordinated at international level. There is also a regular exchange with the fish experts of the International Commission for the Protection of the Rhine (ICPR), who are working on the implementation of the "Master Plan Migratory Fish Rhine".