

# Prestation de services Waterschap Roer en Overmaas - (Geul)

## Objective

Following to the increase of the water quality and general ecological quality of the river, Salmonidae are able to grow in the Geul river. Brown trout (*Salmo trutta fario*) is currently present in the river and performed a complete life cycle. Although natural reproduction seems rather weak in the Dutch part of the Geul River, this encouraging situation supported the local VBC (VisstandBeheerCommissie) to reintroduce another salmonid in the river, the Atlantic salmon (*Salmo salar*).

A first study conducted by the University of Namur in late Spring-Summer 2016 (cf report of Otjacques et al., 2016) estimated the potential carrying capacity of the Geul River. The study revealed that the Geul River has an undeniable potential for restocking Atlantic salmon due to physico-chemical quality, habitat availability and abundance of suitable prey.

Based on the area of suitable habitats and the middle hypothesis of the carrying capacity (25 fry / 100m<sup>2</sup>) of the river, the VBC of the Geul River supported by the Dutch authorities (Waterschap Limburg) takes the decision to reintroduce 24,000 young-of-the year (YoY) salmon in May 2017, sponsored by ARK Natuurontwikkeling and Sportvisserij Limburg. The purpose of the present study is to assess the success of the reintroduction by evaluating the growth rate, the fitness and the Catch Per Unit Effort (CPUE) of the fry restocked.

## Conclusions

The restocking of Atlantic salmon young-of-the year in the Geul River obviously was a success. The growth rate of the fry is one of the highest observed during the Meuse Salmon project and the coefficient condition is superior to that observed in other Belgian Rivers. We can assume that the fry benefited from the high productivity of the river and the abundance of prey (small invertebrates as Chironomidae, Simuliidae or Baetidae) but also from the low competition with juveniles of brown trout. Further restocking of young brown trout could potentially reduce the fitness of the salmon YoY through competition for food and habitats.

The number of fish restocked was fairly well estimated (approximately 24 000 fry) with respect to the area of suitable habitat available and the carrying capacity of the river. In addition, the higher CPUE in Holland than in Belgium pleads for a restocking with fry weighing about 0.5g rather than at an earlier stage. However, many factors vary between the Geul and the Samson Rivers, maybe explaining the differences between these results, regardless of the stocking size.

Based on results of this year, our advice is to continue with the restocking program of Salmon in the Geul river for the coming years, using the same sites and amounts as this year.