

Big brother is watching you! An acoustic receiver network to track the whereabouts of fishes

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Camera surveillance, Bluetooth connection, social media... There are plenty of possibilities to check the whereabouts of people. But what with the whereabouts of migrating fishes? Wouldn't it be interesting to know their whereabouts!

Since the 1900s, several West-European migratory fish populations suffered a substantial decline and by 1950 many species were severely threatened or even extinct. Various causes for this trend have been reported, such as chemical pollution, changes in physical habitat, migration barriers, predation pressure (overfishing), lower body condition, infections, hydrodynamic and climate change. To help with the recovery and sustainable use of the migratory fish species, several legal incentives have been implemented during the last decades.

However, crucial knowledge on the migration routes, spatio-temporal habitat use and behaviour of the migratory fish species is still lacking in many cases. This situation may change drastically with the development and optimisation of new survey techniques. The most promising technique, acoustic telemetry, allows flexible and cost-efficient spatio-temporal tracking of migratory fish species. VLIZ and INBO recently initiated a permanent acoustic receiver network in the Western Scheldt Estuary and the Belgian coastal area in the framework of the LifeWatch project (<http://www.lifewatch.be>). This offers wide opportunities for collaboration between Belgian partners to study migratory fish species with distinct behaviour and habitat use at a larger (Belgian and international) scale.

In order to cover the various modes of migration patterns, several migratory fish species will be studied. For marine, coastal and estuarine systems, Atlantic cod (*Gadus morhua* L.), will be the model species, while in Belgian rivers European eel (*Anguilla anguilla* L.) is representative for catadromous downstream migration. In a later phase, other species, such as European sea bass (*Dicentrarchus labrax* L.), twaite shad (*Alosa fallax* L.), river lamprey (*Lampetra fluviatilis* L.) and sea trout (*Salmo trutta* L.) can be added to the network.

The acoustic tracking will help to define migration routes, spatio-temporal habitat use and migration behaviour.