

Fish stocks in Flanders 1840-1950: A historical view of the reference condition of Flemish watercourses based on fish assemblages, including a database and a comparison with the actual situation

Abstract

This study is a compilation of 'historical' fish stock references in Flanders (Belgium). It is part of an extended report to establish and describe the reference condition of Flandrian watercourses. To accomplish the survey for historical fish data, several sources were used: archaeological investigations of remains from settlements, documents from abbeys and reports on toll levies and very early fisheries reports dating from before 1840. Later, some scientific reports became available and also fisheries statistics became more reliable. The examination of museum collections gave additional data. In some cases, inquiries collecting verbal references can be a possible source of information. The most important source of information was the Belgian fisheries journal *Pêche et Pisciculture*: the volumes from the period 1890 to 1943 contained about 10 000 pages with numerous fish data. After analysis of the data a reference period was set on 1840-1950, although it is obvious that already then, several anthropogenic influences had put a lot of pressure on aquatic habitats. This was reflected in (1) a general decline in migrating species, (2) a decline in the number of sensitive reophylic species and (3) an increase in occurrence of non-indigenous species due to introductions. It was possible to calculate an Index of Biotic Integrity, using the historical fish data, to give an indication about the ecological quality of our watercourses in that period. Compared to actual data, the general tendency was a decrease in ecological quality from good to critical in many water courses. This decrease in IBI during the last century is caused by an increase of non-indigenous species, an increase in the number of tolerant species and a decrease in the relative abundance of predator species. It is obvious that knowledge of the historical status of fish stocks is essential to set up management plans and targets on national, regional or catchment level. The Water Framework Directive obliges member states to evaluate ecological quality of watercourses by quantifying the actual status of the biological element 'fish' in comparison to the reference condition.