

11 years of management of the zebra mussel invasion in the Ebro basin (Northern Spain)

C. DURÁN¹, M. LANAÓ², V. TOUYA¹ & A. ANADÓN²

¹Confederación Hidrográfica del Ebro, Zaragoza, Spain ■ ²Tragsatec, Zaragoza, Spain
Email: cduran@chebro.es

After 11 years of management of the zebra mussel invasion in the Ebro basin, the Ebro Hydrographic Confederation, the organism which protects and administrates the hydraulic public property, is developing a balance of actions and of the state of invasion with the purpose of evaluating the effectiveness of measures and efforts carried out during this period.

Since the first moment, the main lines of work have been based on prevention, control and eradication measures, unified in the “National Strategy for the Control of Zebra Mussel in Spain” and locally, in the “Emergency Plan 2007-2010”. A wide campaign of larvae analysis and adult control of the species through all navigable water bodies in the Ebro basin (5919 larvae analysis in the period 2004-2011) and an intensive campaign of public awareness directed to interested sectors (navigators, fishermen, environment agents, workers of affected facilities,...) are the main measures carried out as part of the prevention. In terms of control, significant changes in navigation rules have been carried out as well as the control of accesses to the affected reservoirs and the building of disinfection stations near these reservoirs. These measures have slowed down the spread of the invasion in the Ebro basin. Finally, research studies have been developed about methodologies address to the eradication of the problem and technical advice has been given on hydraulic infrastructures in the farming, energetic, industrial sectors and in supplies to populations with the aim of minimizing the impacts of the invasion on the productive systems of these sectors and the ecological impact of the applied treatments in the receiving aquatic medium.

At present, only seven rivers are affected by the invasion of zebra mussel in the Ebro basin, so it can be said that the spread of the pest has had a smaller exponential progression than in other countries. However, the economic impact associated with it is alarming, with an outlay of 13,634,756 € in the 2001-2009 period. At a national level, four hydrographic basins (Cantábrico, Ebro, Júcar and Guadalquivir) contain this alien species in their territory.

As a result of the experience collected in these years, a lack of coordination between the different authorities involved in the management of biological invasions can still be seen, and which makes difficult an effective management. Pest control and eradication are important but expensive, so efforts must be directed towards prevention, which is easier and less expensive. In relation to prevention, awareness campaigns must be aimed at sectors which can take action as spread vectors, as well as the general public, in general, as from all points of view, it is a problem which affects everybody and as a consequence, we must all work to fight against it. Finally, it is interesting to promote relations between the management and research organisms with the purpose of finding a viable solution that brings together several interests and sometimes, opposing ones like the ecological, economic and management interests.