

To date, the Catalan Government has been carrying out two consecutive Monitoring Programmes (MPs) according to the Water Framework Directive - WFD (2000/60/EC), covering the six-year periods of 2007-2012 and 2013-2018. Both MPs allowed to get significant and representative data from Catalan water bodies on several quality elements required by WFD: biological elements, physico-chemical parameters, hydromorphological conditions, priority substances, or groundwater piezometric levels. In parallel, several research programs have been carried out by some Catalan Research Centers and Universities, which have increased the knowledge for a suitable ecological status assessment. As a result, we currently have a good overview about the threats and human pressures facing freshwater and marine ecosystems in Catalonia and the required measures to tackle them.

Water pollution has been progressively reduced thanks to the more than 500 urban wastewater treatment plants that the Catalan Government has built up to now. However, several key issues that jeopardize the Catalan aquatic ecosystems still need to be addressed, such as exotic species, riparian alteration, groundwater overexploitation, nitrate and pesticides concentration in agricultural areas, emerging contaminants of concern, minimum environmental flows and flow regime alteration, connectivity loss due to dams and weirs along rivers, marine seagrasses degradation, or the coastal alteration by harbors, building breakwaters or sand restoration in beaches. Many of these pressures have become more complex, whilst new and emerging threats have been identified, and the harmful effects of multiple stressors have been increasingly affecting the aquatic ecosystems in Catalonia.

In this paper, we summarize the current most relevant threats and human pressures to Catalan aquatic ecosystems, pointing out several conservation and restoration challenges that would need to be adopted through a suitable program of measures. Given that over half of the Catalan rivers, reservoirs, wetlands, coastal lagoons, estuaries, bays and coastal waters are currently classified below the good ecological status, specific measures to tackle all identified threats are urgently needed in order to meet good ecological status in all water bodies, and to preserve the aquatic ecosystems and its biodiversity.