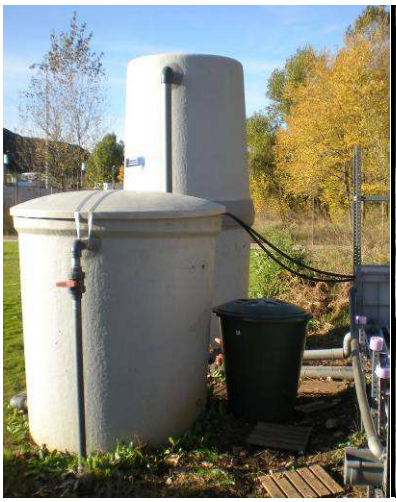
Mesocosms - SOSTAQUA

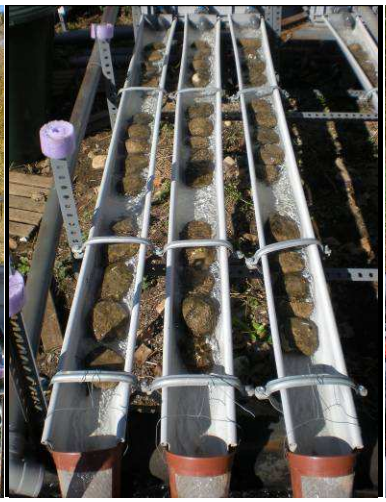
PARTICIPATING COMPANIES	Aguas de Barcelona
RESEARCH GROUP	F.E.M., University of Barcelona
LOCATION	Balsareny (Barcelona, Spain)

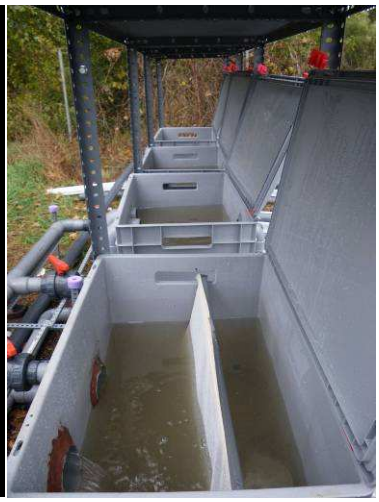
DESCRIPTION:

The stream mesocosm consists of 12 artificial channels and is operated as a flow-through system, relying on water pumped from a diversion channel of the Llobregat River. The pump provides a continuous supply of water to a 4000-L tank, fitted with an overflow pipe to maintain a constant water level and pressure head. Water is gravity-fed from the tank through polyethylene pipes to a series of four 96-L mixing tanks. Outlet pipes fitted with taps maintain flows from each mixing tank to the tops of three stream channels. Each channel consists of a 2-m long, 12-cm wide by 8-cm deep polyvinyl chloride (PVC) drain trough. A second, 2000-L tank can be filled with treated effluent (e.g. wastewater, salt-saturated effluent) and it is connected to each of the mixing tanks through a secondary plumbing system. Taps on the inlet pipes regulate the proportions of river water and effluent entering each mixing tank, which create uniform concentrations in each tank before flowing into three artificial stream channels.

This is a pioneering facility with international outreach, which has been successfully used in experiments of high scientific impact (Cañedo-Argüelles et al., 2012; Grantham et al., 2012), and is intended to serve to the research interests of the scientific community.







The stream channels (with drift basket at the end).

mixing tanks.

REFERENCES:

Cañedo-Argüelles, M., Grantham, T.E., Perrée, I., Rieradevall, M., Céspedes-Sánchez, R., Prat, N., 2012. **Response of stream invertebrates to short-term salinization: A mesocosm approach**. Environmental Pollution 166, 144-151.

Grantham, T.E., Cañedo-Argüelles, M., Perrée, I., Rieradevall, M., Prat, N., 2012. **A mesocosm approach for detecting stream invertebrate community responses to treated wastewater effluent**. Environmental Pollution 160, 95-102.