

Environmental effects of brine discharge from two desalination plants in Algeria (South Western Mediterranean)

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ABSTRACT

One of the main concerns in the desalination industry is to relieve pressure on the marine environment caused by brine disposal. Its impact depends on effluent dilution, which may be increased by installing appropriate diffusers. We analysed the environmental effect of brine discharge from two Algerian desalination plants with a similar capacity (200,000 m³/day), but different discharge technology, to explore the reduction in impact on the marine environment by using diffusers. Spatial distribution of the brine was extremely different at the two plants. This was a result of the different discharge technology installed and is reflected in the differences in impact observed on benthic communities. The impact of desalination activity on the marine environment can thus be mitigated and controlled by installation of multipoint diffusers. These systems can enhance mixing and reduce the impact on the benthic community and area of influence of facilities as large as those described in this paper.

Keywords: Brine discharge; Diffusers; Algeria; Dilution; Benthic; Impact assessment; Mediterranean

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