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### **POSTER**

#### **Denitrification of salt water: results of the first two years of testing the Roto-Bio-Reactor®**

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The recycling of salt water in a closed system leads to an accumulation of nitrogen compounds. Unfortunately, technical freshwater denitrification solutions do not work for salt water. Usually, the biggest problem in biological denitrification systems is the massive growth of biomass which leads to clogging of the systems. To prevent this, the Roto-Bio-Reactor® rotates around the longitudinal axis.

Since the year 2003, the Roto-Bio-Reactor® is tested and adapted for salt water denitrification in the 3200 m<sup>3</sup> dolphin pools of Duisburg Zoo.

Since the start of this project, nitrate levels have dropped from 170 mg/l to just below 60 mg/l. However, many technical problems needed and still need to be resolved; especially the water filtration after the Roto-Bio-Reactor® is more difficult than originally thought. Our results show that the Roto-Bio-Reactor® is capable of lowering the nitrate level in the pool but the system is very labour-intensive and currently not fully functional.

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