



## MARINE SCIENCE + ECOTOXICOLOGY



Are marine and fresh water systems comparable in terms of risk assessment?

- Macroalgae
- Microalgae
- Invertebrates (e.g. different opossum shrimp)



In the last years a lot of studies and peer-reviewed publications showed that marine ecosystems react more sensitive to environmental change when compared to freshwater bodies.

There is some evidence now that we do not have realistic scenarios for marine systems if solely based on freshwater studies.

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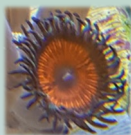
As the coastal water quality deteriorates, it endangers corals. Increasing run-offs of pesticides from agriculture is one reason for this.

Pesticides affect corals at very low concentration levels.

Need for standard test protocols, to generate reliable toxicity endpoints.

### Effects of chemicals on corals

Very sensitive organisms → biomonitoring organisms



polyp contraction  
change of colour  
loss of tissue  
mucous formation

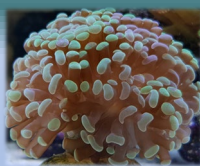


For risk assessment growth rates, mortality and bleaching  
will be accessed

- Using of coral nubbins: coral branch tips consisting of one to several polyps
- Acute tests (< 14 days); chronic tests (> 14 days)
- Screening of representative and sensitive coral species
- Identification of time for healing of cutted fragments
- Determining ranges for parameters like light intensity, pH, temperature, salinity, alkalinity, calcium-, nitrate- and phosphate content



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