

# **WATER TOXICITY**

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## The Challenges

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- Energy production and motor vehicles have needed more and more fuel, the demand for oil has continuously increased.
- Consequently, oil pollution related to its exploration, refining, and transport has become a major challenge to aquatic toxicology.
- The problem becomes even more pronounced as oil exploration occurs increasingly in aquatic areas, in the Arctic and in deeper water than earlier.



## The Challenges

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- Interactions with oil contamination and the natural environmental variables temperature and pressure should be given more emphasises...
- Another major problem is that many different chemicals have been dumped in various aquatic systems.
- The accurate chemicals and the places where dumping has occurred are often unknown. The main problem is that not only the water body is effected but also the sediment layer gets polluted related with the dumped toxicans into the aquatic systems.

- **Bottom sediments**

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- Important problems in aquatic systems involve sediments as the sediment toxicology
- We should examine how the toxicity of a chemical affected by its adherence to the bottom sediment?
- What is the bioavailability of toxicants in the sediment and how long will they effect the aquatic organisms?
- Also how do toxicants move between the sediment and water?

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- Toxicants can affect each other's effects, it will be increasingly important to characterize these as “cocktail effects.”
  - Globally, as European and North American water purification standards are not used in many areas, the employment of universal water standards should be a priority, and include the costs involved in water cleaning.
  - Water-cleaning units will be required both for preventing the spread of disease-causing microbes and for preventing the deterioration of the aquatic environment.



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- Another important issue is to evaluate the interactions between natural environmental variations and environmental contamination.
  - Understanding such interactions is important for evaluating the consequences of chemicalization, e.g. for climate change and ocean acidification.

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- Eutrophication is not, a toxicological problem, it and algal blooms are usually considered together with toxicological problems.
  - The overall effects of aquatic contamination are reflected in fisheries: together with overfishing, the contamination of water is of the greatest influence on fish stocks and fish diversity.

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- Another toxicological effect is , the environmental effects of nanomaterials.
  - These are just a few examples and personal views of the important issues for aquatic toxicology.
  - They clearly indicate that the field has immense possibilities, and global problems.