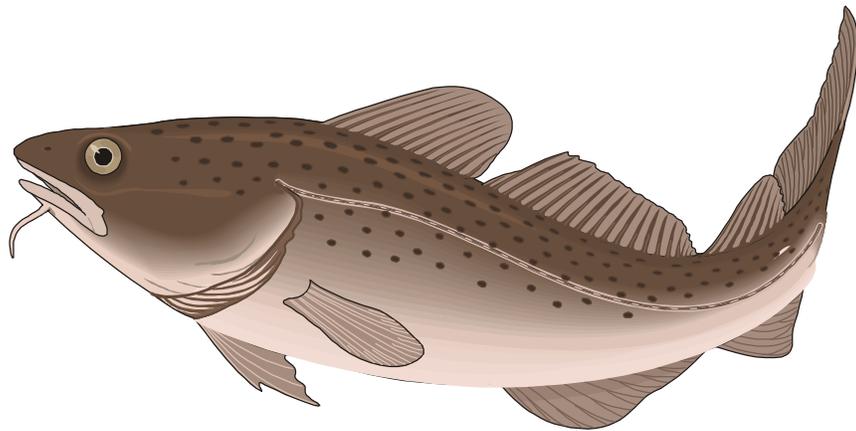


# Fish Response to Toxic Environments

**Chris Kennedy**  
**Don MacKinlay**



International Congress on the Biology of Fish  
*Towson University, Baltimore MD July 26-30, 1998*

***Fish Response to  
Toxic Environments***

SYMPOSIUM PROCEEDINGS

**Chris Kennedy**

**Don MacKinlay**

*International Congress on the Biology of Fish  
Towson University, Baltimore MD July 27-30, 1998.*

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## PREFACE

Reasonable evidence exists to demonstrate that alteration of aquatic ecosystems is increasing, and is having a deleterious effect on aquatic resources such as fish. We have a vital interest in evaluating and understanding the effects of various environmental stressors on fish in a timely fashion, as current thought perceives the risks to be great. Fish can be affected by stressors through direct effects and by indirect effects on the systems which support them. This symposium proposes to bring together experts in piscine toxicology to highlight and communicate recent research in areas important to increasing our understanding of the impacts of environmental alterations on various aspects of fish biology

The examples of toxic environments discussed in this symposium included those contaminated with anthropogenic and natural sources of xenobiotics such as heavy metals, hydrocarbons, and pesticides, as well as environments of altered physical and chemical characteristics including temperature and oxygen. Several papers discuss some of the more new and novel methodologies in examining and assessing toxic response in fish to environmental insult. The approaches taken in these papers spans several levels of biological organization from the molecular, biochemical, physiological, population to the ecosystem level, to gain a more comprehensive understanding of the relationship between fish and their environments.

Symposium Organizers:

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Don MacKinlay  
Congress Chair

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