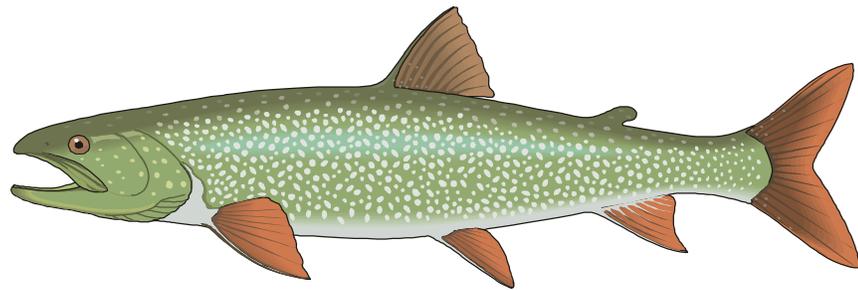


# Smolt Physiology, Ecology and Behavior

**Steve McCormick**  
**Don MacKinlay**



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

***Smolt Physiology,  
Ecology and Behavior***

SYMPOSIUM PROCEEDINGS

**Steve McCormick**

**Don MacKinlay**

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

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Don MacKinlay, SEP DFO, 555 West Hastings St.,  
Vancouver BC V6B 5G3 Canada  
Phone: 604-666-3520 Fax 604-666-6894  
E-mail: mackinlayd@pac.dfo-mpo.gc.ca

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## PREFACE

The fishes, which include approximately 23,000 extant species, are a morphologically and physiologically diverse taxon. They live in freshwater and marine habitats located in polar, temperate and tropical regions, and are exposed to a wide range of environmental conditions. In fish, as in other taxa, cardiovascular function has a direct bearing on numerous aspects of physiology, performance and ecology. Therefore, information on the inter-relationships between environmental change, morphophysiology, and cardiovascular function is crucial to understanding the biology of many species.

In recent years, researchers have made significant progress in understanding the physiological and morphological features which influence cardiovascular performance, and the effect that various environmental conditions (e.g. oxygen, temperature, emersion, carbon dioxide, etc.) have on cardiovascular function. In this symposium, contributors from 11 countries provide new insights into the mechanisms that control fish cardiovascular function, and describe the physiological/morphological adaptations to, and/or consequences of, alterations in various environmental parameters. The enclosed papers span levels of biological organization from the molecular to the whole animal, and include information on a wide range of taxa (from hagfish to tuna) which inhabit diverse aquatic environments. It is hoped that participants in the symposium can instill in the audience a renewed enthusiasm for research in fish biology, and that contributions to the symposium proceedings will enhance the reader's knowledge and understanding of fish cardiovascular physiology.

Symposium Organizers:

Kurt Gamperl  
Portland State U.

Anthony Farrell  
Simon Fraser U.

Don MacKinlay  
Fisheries Canada

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Don MacKinlay  
Congress Chair

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