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Arthur N. Popper
Anthony Hawkins *Editors*

The Effects of Noise on Aquatic Life

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Editors

The Effects of Noise on Aquatic Life

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*This book is dedicated to our wives
Helen Popper and Susan Hawkins*

*We are grateful to them for putting up with us while
we planned and organized the conference. Without their
support, as well as their critical input in planning,
the meeting could not have happened.*

Tony Hawkins and Art Popper

Preface

These proceedings are the extended abstracts of the papers presented at the 2010 Second International Meeting on the Effects of Noise on Aquatic Life that took place in August in Cork, Ireland. The meeting brought together 248 scientists, regulators, and representatives from industry and environmental groups, representing 21 countries from all continents, to hear papers and discuss a broad range of topics focused on underwater sound and its effects on organisms living in the aquatic environment. This meeting followed from the immensely successful first conference that took place in 2007 in Nyborg, Denmark. The Cork meeting was, if anything, more successful than the first meeting in bringing people with different interests and experiences together and in allowing them to get to know one another, learn about new findings, and interact very successfully.

The basis for the first two meetings, and the third which will be held in Europe in August 2013, arises from concern that has been growing since at least the early 1990s. Humans are adding substantial noise to the aquatic environment, and this noise might have an impact on the quality of life, and even the survival, of aquatic organisms. While the original concern focused on marine mammals, this has changed in more recent years to the point where equal emphasis is now being placed upon fish and, most recently, on invertebrates. Indeed, while fish and marine mammals were well represented in Nyborg, with no representation of invertebrates, we are most pleased that a number of outstanding papers were presented in Cork on invertebrates.

The Cork conference was packed with papers; so many that we extended the idea, first tested at Nyborg, of having groups of rapid-fire presentations in the evening. These were as successful in arousing interest and provoking comment as the longer presentations given at the conference. We can have no doubt that the subject of underwater noise and its impact has come of age and that a community of people with strong interest in this topic has now been formed. We are planning to hold this community together in the period leading up to our next conference.

Arthur N. Popper, College Park, MD
Anthony Hawkins, Aberdeen, Scotland

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College of Chemical and Life Sciences & The Center for Comparative and Evolutionary Biology of
Hearing, University of Maryland (USA)

The editors/organizers would also like to express their gratitude to a large number of people who have provided help in planning and executing the meeting.

We start with our wives, Susan Hawkins and Helen Popper, for substantial and invaluable guidance in selecting the meeting site and planning the non-science activities for the meeting. We also thank Helen Popper for the many hours spent in editing the manuscripts in preparation for publication.

We are grateful to Erica Casper for tireless efforts in keeping track of delegates, manuscripts, and other items.

The logistics and organization of the meeting in Cork, and the running of the meeting, could not have been carried out without the exceptional guidance, wisdom, and help of the staff of Venues Ireland. In particular, we acknowledge the enormous contributions of Terri Cullinane, Triona Dillon, and Fiona McGarry. We do not know what we would have done without their help.

Charlene Hurley, the Conference and Events Executive of the Clarion Hotel Cork, rendered invaluable assistance in arranging facilities for the conference at the hotel.

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We also thank Patty Selby of the Department of Biology at the University of Maryland for her meticulous work to ensure that our funding was managed properly and that we were in the position to reimburse delegates getting support in the most efficient manner. Mr. James Parker, also of the Department of Biology, has been of major assistance in arranging the dispersal of funds.

We are grateful to Ann Avouris, our editor at Springer Science + Business Media, for showing great flexibility and resourcefulness as we worked to develop ways to rapidly produce a very high quality book as the work product of this meeting.

Finally, we want to express greatest gratitude and thanks to Roger Gentry, Marta Picciulin, Mark Tasker, and Doug Wartzok for serving on our steering committee and for providing invaluable insights and guidance as the meeting evolved. We also are most grateful to Elizabeth Burkhard, Peter Cott, Tom Carlson, Douglas Cato, John Dalen, Bob Gisiner, Bill Lang, Jennifer Miksis-Olds, Brandon Southall, Amy Scholik-Schlomer, Alexander Supin, Magnus Wahlberg, and Lidia (Eva) Wysocki for serving on our advisory committee and for being willing to provide their guidance during the development of the program.

Some Views of the Meeting



Susan Hawkins, Cork Lord Mayor Michael O'Connell, Tony Hawkins, and Colleen Le Prell



Michele Halvorsen, Thor Halvorsen
(the youngest attendee)



Some of the members of the organizing committee: Pete Cott, William Lang, Doug Wartzog, Roger Gentry, Mark Tasker, Tom Carlson, Jennifer Miksis-Olds, Arthur Popper, John Dalen, Tony Hawkins



Organizers Tony Hawkins and Arthur Popper along with Triona Dillon from Venues Ireland



Bruce Mate, Bill Ellison, Roger Gentry, Colleen LePrell





Meeting site at the Clarion Hotel, Cork





(forefront) Brandon Casper, Mark Tasker, Paul Nachtigall, Colleen LePrell



Carl Schilt, Tony Hawkins



Bob Dooling, Art Popper, Pete Rogers, Tony Hawkins, Dick Fay



River Lee in Cork



Brandon and Erica Casper, Mike and Tarralei Smith enjoying closing “shindig”



Jameson Brewery, site of the closing “shindig”



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