

LIFE IN BALLAST TANKS

STEPHAN GOLLASCH^{1*}, ELSPETH MACDONALD²,
SARA BELSON³, HELGE BOTNEN⁴, JENS T. CHRISTENSEN⁵,
JOHN P. HAMER⁶, GUY HOUVENAGHEL⁷, ANDERS JELMERT⁸,
IAN LUCAS⁶, DANIEL MASSON⁹, TRACY MCCOLLIN¹⁰,
SERGEJ OLENIN¹¹, AGNETA PERSSON¹², INGER WALLENTINUS¹²
LAMBERTUS P. M. J. WETSTEYN¹³ & THOMAS WITTLING¹⁴

¹*GoConsult, Hamburg, Germany*

²*Food Standards Agency, Aberdeen, Scotland*

³*Maritime Research Centre, Southampton Institute, Southampton, UK*

⁴*UNIFOB, Section of Applied Environmental Research, High Technology Centre, Norway*

⁵*Dept. of Marine Ecology, Institute of Biological Sciences, University of Aarhus, Aarhus C, Denmark*

⁶*University of Wales, Bangor, School of Ocean Sciences, Menai Bridge, Anglesey, UK*

⁷*Université Libre de Bruxelles, Brussels, Belgium*

⁸*Institute of Marine Research, Austevoll Aquaculture Research Station, Storebø, Norway*

⁹*IFREMER, Station de La Trembalde, France*

¹⁰*FRS Marine Laboratory, Aberdeen, United Kingdom*

¹¹*Coastal Research and Planning Institute, Klaipeda University, Lithuania*

¹²*Department of Marine Botany, Göteborg University, Göteborg, Sweden*

¹³*National Institute for Coastal and Marine Management, Middelburg, The Netherlands*

¹⁴*Institut für Hydrobiologie und Fischereiwissenschaft, Universität Hamburg, Hamburg, Germany*

*Corresponding author SGollasch@aol.com

Abstract

The abundance and diversity of species in ballast water, a recognised vector for the accidental introduction of nonindigenous organisms, has been examined through many studies around the world over the last 25 years. The results of European research activities are summarised in this contribution by outlining the objectives of some of these studies, and by focusing on the diversity of taxa determined from ballast water and tank sediment samples. In total 1508 samples (1219 ballast water, 289 tank sediment) were collected on 550 ships. A total of 990 taxa were identified during the 14 European shipping studies. The diversity of species found included bacteria, fungi, protozoans, algae, invertebrates of different life stages including resting stages, and fishes with a body length up to 15 cm. Crustacean, molluscan and polychaete invertebrates and algae form the majority of species found.

1 Introduction

The introduction of nonindigenous organisms to new areas has resulted in populations of many species being established outside their native ranges, with, in some cases, po-