Authors
Jean-Pierre Amigues & Bernard Chevassus-au-Louis

Co-authors
Véronique Barre, Philippe Dupont, Sarah Hernandez, Véronique Nicolas et Eric Tabacchi

Editor
Véronique Barre (R&D department, Onema)

Graphic design and page setting
Béatrice Saurel (saurelb@free.fr)

Suggested citation
Amigues J.P. and Chevassus-au-Louis B., 2011. Assessing the ecological services of aquatic environments. Scientific, political and operational issues. Onema. 172 pages

Acknowledgements
The discussion paper which led to this book was produced by the Scientific council working group on "quantitative and qualitative assessment of ecosystem services provided by water and aquatic environments". We extend our warmest thanks to the working group for its very fruitful, collective work. We are also very grateful to the members of the Scientific council for their constructive comments and lively discussions during the plenary sessions that enabled us to add to and improve the text. Particular thanks goes to Luc Abbadie, Chair of the Scientific council, Bernard Drobenko and Guy Oberlin.
We would also like to thank the Onema R&D department and particularly our co-authors who contributed to this book in a very active and constructive manner and formed a highly effective team with us. Special thanks also to Véronique Barre, our editor for this work, whose gentle persistence ensured the success of this undertaking. We also wish to thank the policy officers of the R&D and the Information and communication departments who provided valuable input.
This book would not be as clear or attractive without the illustrations and we are extremely grateful to Béatrice Saurel, for the art work, and to Amandine Samuel, a trainee at the Information and communication department, for the iconographic research, as well as to the individuals and photo libraries (Onema, Ecology ministry, CNRS, INRA) who provided us with photos free of charge.

The "*Comprendre pour agir*" (Knowledge for action) series publishes the results of research and science-advice work, for use by teachers, students, scientists, engineers and water and aquatic-environment managers.

Already published

Eléments d'hydromorphologie fluviale (October 2010)

Eléments de connaissance pour la gestion du transport solide en rivière (May 2011)

Our relationship with nature changes over time and the terms we use change as well. The term natural environment has made way for ecosystems and resources, which in turn have now been joined by ecosystem and ecological services, environmental cost/benefit analysis, etc.

Aquatic environments provide countless services to human societies, such as supplying drinking water and water for other uses, regulation of extreme hydrological situations, their use as waterways or for leisure activities, and the essential environment they provide for numerous species and for correct operation of the land ecosystems with which they are linked. Ecological services encompass this set of material and immaterial goods and services that humans obtain from nature.

In their book "Assessing the ecological services of aquatic environments. Scientific, political and operational issues", Jean-Pierre Amigues and Bernard Chevassus-au-Louis draw up the first comprehensive overview of the subject that will be of interest to all water stakeholders, including elected officials, technicians, teachers, scientists, students, etc. The authors define the notions arising from biodiversity studies and apply them to the management of aquatic environments. They put the socio-economic issues of ecological services into perspective for water governance in France, which to date has been more concerned with the quality of water resources than of aquatic environments.

The goal set by the Water framework directive is to preserve and restore natural environments while ensuring sustainable access to water. This book shows that the assessment of ecological services, a major factor in meeting that goal, lies at the crossroads between different issues and challenges facing both the scientific community and water stakeholders.

This third book in the "Comprendre pour agir" (Knowledge for action) series describes the main points of what could serve as guidelines for assessing ecological services and for the use of assessment results in public decision-making and management.

Jean-Pierre Amigues, economist, research director at the National Institute for Agricultural Research (INRA) and member of the Toulouse School of Economics (TSE), has spent the last 25 years working on the economics of natural resources, water and climate change in particular, as well as the economics of environmental assessments.

Bernard Chevassus-au-Louis, hydrobiologist and Inspector-general for the Agriculture ministry, worked at INRA on the biology of aquatic organisms before becoming Director general of INRA. He was then appointed President of the National museum of natural history (MNHN) and set about raising awareness of biodiversity and how it contributes to sustainable development.

ONEMA
The French national agency
for water and aquatic environments

Head offices – Le Nadar- 5 square Félix Nadar
94300 Vincennes
www.onema.fr