



## Acknowledgements

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The international community has progressively acknowledged the issues raised by the fragmentation of habitats and responded with a number of legal texts. In the European Union, the Water framework directive is a prime example in the field of aquatic environments. The objective of the texts is generally to preserve or to restore the ecological continuity of hydrosystems and their riparian corridors in order to slow or to stop the loss of biodiversity now taking place.

In aquatic ecosystems, the massive (yet often unsuspected) numbers of transverse obstacles on rivers (over 70 000 obstacles have already been inventoried in France) are one of the main causes of degraded ecological continuity, particularly for fish whose survival depends on their freedom of movement. An evaluation of the degradations to ecological continuity is a prerequisite to assessing the seriousness of problems in the field and identifying the priorities for action.

The need for a simple, reliable and standardised assessment method for use by a wide range of environmental stakeholders rapidly became evident. Onema responded to the challenge and coordinated the development of the ICE protocol as the basis for the required ecological-continuity assessment method.

This richly illustrated book in the *Knowledge for action* series presents the results of the development work and particularly the concepts, design methods and detailed application procedures for the ICE protocol. It also presents succinctly the main scientific and technical knowledge available internationally on the issues involved in ecological continuity for fish, the physical capabilities of various fish species in continental France, the different types of obstacles and their impact, and the main types of fish passes now used.

This book should enable readers to understand in detail the methods implemented, to apply them locally and, in general, to use the information presented here for an array of other specific needs.

**Jean-Marc BAUDOIN**, PhD in functional ecology, director of the Onema-Irstea centre for study and research on the hydroecology of lakes, coordinated over a period of five years numerous national projects concerning hydromorphology and the ecological continuity of continental aquatic environments as a member of the Onema general management.

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