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# Methods in Reproductive Aquaculture

## *Marine and Freshwater Species*

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Marine Biology series • Series editor: David H. Evans

### A Valuable Resource for Broodstock Management and Research

Expanding aquaculture production and growing concerns about conservation of depleted wild stocks have escalated interest in reproduction methods, an interest that will continue to grow into the foreseeable future. The large amount of information on fish reproduction available is not always readily accessible to all interested parties. Written to appeal to aquaculturalists, conservation managers, and scientific researchers, **Methods in Reproductive Aquaculture** provides an overview of available techniques and addresses ways to improve depleted stocks of endangered fish and other species.

### A Complete Guide to Gamete Quality and Management

The book focuses on gamete quality and management, exploring new objectives and areas of application and research, and new tools to deal with some aspects in reproduction of aquatic species. It begins with an examination of basic methods and techniques for gamete extraction, mainly sperm collection and egg stripping in different species, then describes techniques of spawning stimulation in males and females. The volume then highlights sperm and egg quality evaluation and considers sperm analysis from a practical broodstock management point of view and in the selection of appropriate breeders. The book goes on to discuss techniques used for artificial fertilization and the procedures for obtaining modified offspring. It introduces cryopreservation procedures for sperm, oocytes, and embryos, then discusses the materials and facilities required for gamete preparation and freezing-thawing procedures. The book concludes with an extensive section detailing sperm cryopreservation protocols for fifty-six marine and freshwater species.

### Organized, Accessible Information on Marine and Freshwater Aquaculture of Fishes

Unique in its focus on both marine and freshwater aquaculture of fishes, the book provides information on endangered, highly profitable species for aquaculture or fisheries and species with high potential in laboratory research. Presenting the available information in an easily understandable way, this is not merely a techniques book, but also a complete guide to fish reproduction, gamete quality, and management.

### FEATURES

- Reviews basic methods and techniques for gamete extraction, spawning stimulation, and stripping
- Discusses sperm and egg quality, focusing on gamete characteristics and methods used to evaluate quality
- Covers artificial fertilization from normal practice to chromosome manipulation
- Delineates sperm cryopreservation for marine, freshwater, anadromous, and catadromous species
- Reviews important aspects of gamete handling before, during, and after fertilization
- Contains 91 black and white illustrations and 59 tables

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Artificial Fertilization in Aquaculture Species: From Normal Practice to Chromosome Manipulation

#### Sperm and Egg Cryopreservation

Chilled Storage of Sperm and Eggs

Basic Principles of Fish Spermatozoa Cryopreservation

Cryopreservation of Fish Oocytes

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Cryopreservation of Sperm of Loach (*Misgurnus fossilis*)

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