### **TABLE OF CONTENTS – Genomics in Aquaculture**

- List of Contributors
- 1: The new era of genome sequencing using high-throughput sequencing technology: generation of the first version of the Atlantic cod genome
  - Abstract
  - Introduction
  - The first version of the Atlantic cod genome
  - Ongoing efforts to improve the Atlantic cod genome assembly
  - Acknowledgments
  - Glossary
- 2: The rainbow trout genome, an important landmark for aquaculture and genome evolution
  - Abstract
  - Rainbow trout
  - The rainbow trout genome: diversity, structure, organization
  - A genome for genetic and functional investigations
  - Future directions and concluding remarks: resources are still expending
- 3: An improved version of the Atlantic cod genome and advancements in functional genomics: implications for the future of cod farming
  - Abstract
  - The Atlantic cod fisheries—and the rebirth of cod aquaculture
  - Immunogenomics—the unusual immune system of Atlantic cod
  - Atlantic cod functional genomics research
  - Generation of a new version of the Atlantic cod genome
  - Annotation using MAKER2
  - Tandem repeat content—assembly and biological implications
  - An improved Atlantic cod genome—a valuable resource for biological inferences, fisheries management and the future cod aquaculture
- 4: Catfish genomic studies: progress and perspectives
  - Abstract
  - Introduction
  - The genome: structure and organization
  - The transcriptome: expression and function
  - The genome: single nucleotide polymorphisms and genomic variations
  - The genome: its relationship with phenome

- Future directions
- Concluding remarks

#### 5: Tilapia genomic studies

- Abstract
- Introduction
- Life history
- The genome: structure and organization
- Functional and applied aspects
- Future direction and aspects
- Conclusions
- Acknowledgments

### 6: Turbot (Scophthalmus maximus) genomic resources: application for boosting aquaculture production

- Abstract
- Biology and aquaculture
- Genomic resources
- Genetic architecture and function of productive traits
- Concluding remarks and perspectives

#### 7: Zebrafish offer aquaculture research their services

- Abstract
- Introduction
- The Genome: diversity, structure and organization
- Functional and applied aspects of systems biology
- Future directions future perspectives
- Acknowledgments

## 8: Current status in other finfish species: Description of current genomic resources for the gilthead seabream (Sparus aurata) and soles (Solea senegalensis and Solea solea)

- Abstract
- Introduction
- Transcriptome resources and their main characteristics in gilthead seabream and soles
- Current genetic maps and genome drafts in gilthead seabream and soles
- Functional and applied aspects using genomic approaches
- Future directions
- Concluding remarks
- Acknowledgments

#### 9: Molluscs

- Abstract
- Life history and biology
- Genomes: diversity, structure, and organization
- Functional and applied aspects
- Future directions

•

# o 10: Genomics in the common carp

- Abstract
- Common carp biology and aquaculture
- The genome: diversity, structure, organization, and evolution
- Functional genomics research and applications in the common carp
- Genetic tool development
- Future directions
- Concluding remarks

•

- Acknowledgments
- 11: Future perspective
  - Abstract
- o Index.