

## CURICULUM VITAE

**Name** KOUMOUNDOUROS Giorgos  
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### **Education**

1991: B.Sc. in Biology from the University of Crete, Greece.  
1993: M.Sc. degree in Marine Biology from the University of Crete, Greece.  
1998: Ph.D. degree in Marine Biology from the University of Crete, Greece.

### **Professional Experience**

1993-1998 Participation in research projects carried out by the Aquaculture Department of the Institute of Marine Biology of Crete.  
1998-1999 Researcher at the Biology Department, University of Crete.  
2000-to 2001 Researcher at the Aquaculture Department, Institute of Marine Biology of Crete.  
2001 to 2003 Technical and Laboratory personnel (*ETEP*), Biology Department, University of Crete.  
2003 to 2008 Lecturer at the Biology Department, University of Patras.  
2008 to 2011 Assistant Professor, Biology Department, University of Patras.  
2011 to date Associate Professor, Biology Department, University of Crete.

### **Fellowships**

1991-1993 From the Institute of Marine Biology of Crete  
1993-1995 From the Institute of Marine Biology of Crete  
1995-1998 From the Greek Ministry of Development, General Secretary for Research and Technology

### **Research interests**

1. Morpho-anatomical abnormalities of reared fish, with emphasis on the determination of the stage of development and subsequently on their causative factors.
2. Swimming performance in fish.
3. Ontogeny of fish, with special emphasis on morphology, morphometrics and osteology.
4. Effect of environmental factors on fish ontogeny, shape, survival, growth and sex.
5. Rearing of candidate fish species, with emphasis on the hatchery phase.

### **Teaching and supervision of students**

GK has supervised eight MSc theses and fifteen BSc theses. Three PhD theses are currently in progress, under his supervision.

GK has given classes in Zoology and in Fish Biology (2003-2011, undergraduate level) and in Aquaculture (2003-2010, postgraduate and undergraduate level). Since 2011 he has been involved in the classes of Zoology, Marine Biology, Marine Biotechnology and Fisheries Biology.

### **International Research Projects**

- A comprehensive genetic study of cultured and wild stocks of gilthead sea-bream (*Sparus aurata*) and genetic assessment of several related species as candidates for aquaculture. AIR 3, No. AIR3-CT94-1926. (*Researcher*)
- Early control of growth for fish production with special reference to muscle development, gene expression and temperature (M.O.S.T.). Submitted to Agriculture and Fisheries Program. Area 5.3. Biology of species for optimization of aquaculture. FAIR961941. (*Main Researcher*)

- Inter-Regional Action for Technology Transfer (ARINCO: 96.EU. 16.961). (*Main Researcher*)
- Optimisation of rearing conditions in sea bass for eliminated lordosis and improved musculoskeletal growth (O.R.C.I.S.). QLRT-2000-01233. (*Scientist in charge*)
- *Estimation of genetic parameters for seabass (HERITABOLUM)*. CRAFT PROJECT. (*Main Researcher*)
- Preservation of Copepod Eggs for Fish Farming (POCEFF), (Q5CR-2002-72468). (*Researcher*)
- Improving sustainability of European fish aquaculture by control of malformations (FineFish). EU Collective Research Project, Contract No 012451. (*Scientist in charge*)

### **National Research Projects**

GK has participated in 12 national research projects as a partner (8) or scientist in charge (4).

### **International collaborations**

GK has developed active collaborations (common projects, students' exchange) with research groups of Europe and Australia. Some of them are

- Dr. B. Fauconneau, INRA, Fish Physiology, Campus de Beaulieu, Rennes, France.
- Dr. H. Alami, INRA, Fish Nutrition, B.P.3 St Pee sur Nivelle, France.
- Prof. A. Oliva-Teles, Dr. A.P. Carvalho, Departamento de Zoologia e Anthropologia, Faculdade de Ciencias, Universidade do Porto, Porto, Portugal.
- Prof. G. Goldspink, Dr. D. Wilkes, University of London, Royal Free Hospital School of Medicine, Department of Anatomy and Developmental Biology, London, United Kingdom.
- Prof. J.L. van Leeuwen, Wageningen University, Department of Animal Sciences, Wageningen, The Netherlands.
- Prof. N. Stickland, Dr. C. Ashton, University of London, The Royal Veterinary College, Department of Veterinary Basic Sciences, London, United Kingdom.
- Prof. S. Cataudella, Dr. C. Boglione, Tor Vergata University, Laboratory of Experimental Ecology and Aquaculture, Rome, Italy.
- Dr. B. Chatain, Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER), Palavas, France.
- Dr. J. Zambonino, Dr. C. Cahu, Dr. S. Fontagne, UMR NuAGe, INRA-IFREMER-Univ Bordeaux I, France.
- Dr. G. Baeverfjord, Dr. I. Lein, Dr. S. Helland, Dr. Witten, Institute of Aquaculture Research AS (AKVAFORSK), Norway.
- Dr. W.M. Koven, National Center for Mariculture (NCM) Israel Oceanographic and Limnological Research (IOLR), Israel.
- Prof. Battaglene S., Dr. Cobcroft J., Marine Research Laboratories, Tasmanian Aquaculture and Fisheries Institute, University of Tasmania, Hobart, Tasmania, Australia.
- Prof. Kjorsvik E., Marine Science Group, Dept. Biology, NTNU Center of Fisheries and Aquaculture Norwegian University of Science and Technology, N7491 Trondheim, Norway.

### **Publications**

GK has 45 papers in peer-reviewed journals (over 650 citations, excluding self-citations of all types, H-Index = 18), 28 publications in international conferences, 21 publications in Greek conferences and one chapter in book.

### **Invited talks**

- 2005 Koumoundouros G. *Abiotic causative factors of the haemal lordosis in sea bass*. International Workshop on "Deformities in Fish Larvae", March 11th, 2005. The Royal Flemish Academy of Belgium for Sciences and Art, Brussels.
- 2007 Koumoundouros G. Morpho-anatomical abnormalities in reared fish. An important issue of product quality, consumer perception, production cost & management, and

- animal welfare. AQUACULTURE Twin event, COST/EUREKA Strategic Workshop & Brokerage Event, 10-12 June 2007, Science Park Patras, Greece.
- 2007 Koumoundouros G. Morpho-anatomical abnormalities in reared fish. An important issue of product quality, consumer perception, production cost & management, and animal welfare. “What future for Mediterranean Marine Aquaculture”, PROFET POLICY Workshop, 22-23 November 2007, Athens, Greece.
- 2008 Koumoundouros G. Skeletal deformities in finfish aquaculture. Australasian Aquaculture 2008 International Conference. August 3-6, Brisbane, Queensland, Australia.
- 2008 Koumoundouros G. European Research on Finfish Deformities: From ORCIS to FINEFISH. Australasian Aquaculture 2008 International Conference. August 3-6, Brisbane, Queensland, Australia.
- 2009 Koumoundouros G. Skeletal Deformities in Mediterranean Hatcheries. The Loop of Quality. Athens, November 30, 2009. Selonda SA internal workshop.
- 2010 *Variation of fish ontogeny in finfish hatcheries*. INVE IAQ Workshop. April 27, 2010. Hoogveld, Brussels.
- 2010 Zambonino-Infante J.L., Darias M.J., **Koumoundouros G.**, Cahu C.L., Mazurais D. Dietary vitamin A, C and D influence the morphogenesis of marine fish larvae: A review of the main results and recommendations obtained from FINEFISH (EU project). Australasian Aquaculture 2010 International Conference. May 23-26, Hobart, Tasmania, Australia.
- 2010 Koumoundouros G. Current industry practices on larval quality. LARVANET. “Critical success factors for fish larval production in European Aquaculture: a multidisciplinary network.” (COST ACTION FA0801). October 5-6, 2010, Porto, Portugal.
- 2011 Koumoundouros G. The effect of temperature in the early embryonic stages on sex change and deformities in fish and its effect on growth rate. COST Exploratory Workshop, “Early embryonic environment as cues of epigenetics responses for sustainable food production”, 28 to 29 November 2011, Brussels, Belgium.
- 2012 Koumoundouros G. Biological variability, indices of quality and predictable hatchery production. The case of vulnerable larvae and robust juveniles. INTRANEMMA Training Course Series, “*Innovative Solutions in Increasing Predictability in Sea Bass and Sea Bream Hatcheries*”, 17 September 2012, Athens, Greece.

#### Other

- Reviewer in 30 International Scientific Journals.
- Invited deputy coordinator in “Critical success factors for fish larval production in European Aquaculture: a multidisciplinary network (LARVANET)” (COST ACTION FA0801).
- Invited member of the Scientific Committee of the 5<sup>th</sup> Fish & Shellfish Larviculture Symposium, (LARVI, September 7-10, 2009, Gent).
- Member of the European Aquaculture Society.
- Member of “The Fisheries Society of the British Isles”.

#### List of Selected Publications

##### International Journals

1. **Koumoundouros G.**, Kiriakos Z., Divanach P., Kentouri M., 1995. Morphometric relationships as criteria for the evaluation of larval quality of gilthead sea bream. *Aquaculture International*, 3: 143-149.
2. **Koumoundouros G.**, Gagliardi F., Divanach P., Boglione C., Cataudella S., Kentouri M., 1997. Normal and abnormal osteological development of caudal fin in *Sparus aurata* L. *Fry. Aquaculture*, 149: 215-226.

3. Divanach P., Papandroulakis N., Anastasiadis P., **Koumoundouros G.**, Kentouri M., 1997. Effect of water currents during postlarval and nursery phase on the development of skeletal deformities in sea bass (*Dicentrarchus labrax* L.) with functional swimbladder. *Aquaculture*, 156: 145-155.
4. **Koumoundouros G.**, Oran G., Divanach P., Stefanakis S., Kentouri M., 1997. The opercular complex deformity in intensive gilthead sea bream (*Sparus aurata* L.) larviculture. Moment of apparition and description. *Aquaculture*, 156: 165-177.
5. **Koumoundouros G.**, Divanach P., Kentouri M., 1998. Embryonic and yolk-sac larval development of *Dentex dentex* Linnaeus 1758 (Osteichthyes, Sparidae). *Marine Life*, 6: 41-50.
6. Paspatis M., Markakis G., **Koumoundouros G.**, Kentouri M., 1999. Preliminary results on rearing of *Sparus aurata* X *Pagrus pagrus* hybrids. *Aquaculture International*, 7: 295-306.
7. **Koumoundouros G.**, Divanach P., Kentouri M., 1999. Osteological development of the vertebral column and of the caudal complex in *Dentex dentex*. *Journal of Fish Biology*, 54: 424-436.
8. **Koumoundouros G.**, Divanach P., Kentouri M., 1999. Ontogeny and allometric plasticity of *Dentex dentex* (Osteichthyes: Sparidae) in rearing conditions. *Marine Biology*, 135: 561-572.
9. **Koumoundouros G.**, Divanach P., Savaki A., Kentouri M., 2000. Effects of three preservation methods on the evolution of swimbladder radiographic appearance in sea bass and sea bream juveniles. *Aquaculture*, 182: 17-25.
10. **Koumoundouros G.**, Divanach P., Kentouri M., 2000. Development of the skull in *Dentex dentex* (Osteichthyes: Sparidae). *Marine Biology*, 136: 175-184.
11. Pavlidis M., **Koumoundouros G.**, Sterioti A., Somarakis S., Divanach P., Kentouri M., 2000. Evidence of temperature-dependent sex determination in the European sea bass (*Dicentrarchus labrax* L.). *Journal of Experimental Zoology*, 287: 225-232.
12. Carrillo J., **Koumoundouros G.**, Divanach P., Martinez J., 2001. Morphological malformations of the lateral line in reared gilthead sea bream (*Sparus aurata* L. 1758). *Aquaculture*, 192: 281-290.
13. **Koumoundouros G.**, Divanach P., Kentouri M., 2001. Osteological development of *Dentex dentex* (Osteichthyes, Sparidae): dorsal, anal, paired fins and squamation. *Marine Biology*, 138: 399-406.
14. **Koumoundouros G.**, Divanach P., Kentouri M., 2001. The effect of rearing conditions on development of saddleback syndrome and caudal fin deformities in *Dentex dentex* (L.). *Aquaculture*, 200: 285-304.
15. Wilkes D., Xie S.Q., Stickland N.C., Alami-Durante H., Kentouri M., Sterioti A., **Koumoundouros G.**, Fauconneau B., Goldspink G., 2001. Temperature and myogenic factor transcript levels during early development determines muscle growth potential in rainbow trout (*Oncorhynchus mykiss*) and sea bass (*Dicentrarchus labrax*). *Journal of Experimental Biology*, 204: 2763-2771.
16. **Koumoundouros G.**, Divanach P., Anezaki L., Kentouri M., 2001. Temperature-induced ontogenetic plasticity in sea bass (*Dicentrarchus labrax*). *Marine Biology*, 139: 817-830.
17. **Koumoundouros G.**, Sfakianakis D.G., Maingot E., Divanach P., Kentouri M., 2001. Osteological development of the vertebral column and of the fins in *Diplodus sargus* (Teleostei: Perciformes: Sparidae). *Marine Biology*, 139: 853-862.
18. **Koumoundouros G.**, Maingot E., Divanach P., Kentouri M., 2002. Kyphosis in reared sea bass (*Dicentrarchus labrax* L.): ontogeny and effects on mortality. *Aquaculture*, 209: 49-58.
19. **Koumoundouros G.**, Pavlidis M., Anezaki L., Kokkari C., Sterioti A., Divanach P., Kentouri M., 2002. Temperature sex determination in the European sea bass, *Dicentrarchus labrax* (L., 1758) (Teleostei, Perciformes, Moronidae): Critical sensitive ontogenetic phase. *Journal of Experimental Zoology*, 292: 573-579.
20. **Koumoundouros G.**, Sfakianakis D.G., Divanach P., Kentouri M., 2002. Effect of temperature on swimming performance of sea bass (*Dicentrarchus labrax* L.) juveniles. *Journal of Fish Biology*, 60: 923-932.

21. Sfakianakis D.G., **Koumoundouros G.**, Divanach P., Kentouri M., 2003. Development of a saddleback-like syndrome in reared white seabream *Diplodus sargus* (Linnaeus, 1758) Aquaculture, 217: 673-676.
22. Sfakianakis D.G., **Koumoundouros G.**, Divanach P., Kentouri M., 2004. Osteological development of the vertebral column and of the fins in *Pagellus erythrinus* (L. 1758). Temperature effect on the developmental plasticity and morpho-anatomical abnormalities. Aquaculture, 232: 407-424.
23. Klimogianni A., **Koumoundouros G.**, Kaspiris P., Kentouri M., 2004. Effect of temperature on the embryonic and yolk-sac larval development of common Pandora, *Pagellus erythrinus* (Linnaeus, 1758). Marine Biology, 145: 1015-1022.
24. **Koumoundouros G.**, Carrillo J., Divanach P., Kentouri M., 2004. The rearing of common dentex *Dentex dentex* (L.) during hatchery, nursery and on-growing phase. Aquaculture, 240: 165-173.
25. **Koumoundouros G.**, Kouttouki S., Georgakopoulou E., Papadakis I., Maingot E., Kaspiris P., Kiriakou Y., Georgiou G., Divanach P., Kentouri M., Mylonas C.C., 2005. Ontogeny of the shi drum *Umbrina cirrosa* (Linnaeus 1758), a candidate new species for aquaculture. Aquaculture Research, 36: 1265-1272.
26. Sfakianakis D.G., Doxa C.K., Kouttouki S., **Koumoundouros G.**, Maingot E., Divanach P., Kentouri M., 2005. Osteological development of the vertebral column and of the fins in *Diplodus puntazzo* (Cetti, 1777). Aquaculture, 250: 36-46.
27. Sfakianakis D.G., Georgakopoulou E., Papadakis I., Divanach P., Kentouri M., **Koumoundouros G.**, 2006. Environmental determinants of hemal lordosis in European sea bass, *Dicentrarchus labrax* (Linnaeus, 1758). Aquaculture, 254: 54-64.
28. Sfakianakis D.G., Georgakopoulou E., Kentouri M., **Koumoundouros G.**, 2006. Geometric quantification of lordosis effects on body shape in European sea bass, *Dicentrarchus labrax* (Linnaeus, 1758). Aquaculture 256: 27-33.
29. Kouttouki S., Georgakopoulou E., Kaspiris P., Divanach P., **Koumoundouros G.**, 2006. Shape ontogeny and variation in the sharpnose seabream, *Diplodus puntazzo* (Cetti 1777). Aquaculture Research, 37: 655-663.
30. Georgakopoulou E., Sfakianakis D.G., Kouttouki S., Divanach P., Kentouri M., **Koumoundouros G.**, 2007. The influence of temperature during early life on phenotypic expression at later ontogenetic stages in sea bass. Journal of Fish Biology, 70: 278-291.
31. Georgakopoulou E., Angelopoulou A., Kaspiris P., Divanach P., **Koumoundouros G.**, 2007. Temperature effects on cranial teratogenesis in European sea bass, *Dicentrarchus labrax* (L.). Journal of Applied Ichthyology, 23: 99-103.
32. **Koumoundouros G.**, 2008. First record of saddleback syndrome in wild parrotfish *Sparisoma cretense* (Linnaeus, 1758) (Perciformes, Scaridae). Journal of Fish Biology, 72: 737-741.
33. **Koumoundouros G.**, Ashton C., Sfakianakis D.G., Divanach P., Kentouri M., Anthwal N., Stickland N.C. Thermally induced phenotypic plasticity of swimming performance in European sea bass [*Dicentrarchus labrax* (Linnaeus 1758)] juveniles. Journal of Fish Biology, accepted for publication.
34. **Koumoundouros G.**, Ashton C., Giopanou I., Ksenikoudakis G., Georgakopoulou E., Stickland N.C., 2009. Ontogenetic differentiation of swimming performance in gilthead sea bream (*Sparus aurata*, Linnaeus 1758) during metamorphosis. Journal of Experimental Marine Biology and Ecology, 370: 75-81.
35. Mazurais D., Glynatsi N., Darias M.J., Christodoulopoulou S., Cahu C.L., Zambonino-Infante J.L., **Koumoundouros G.** Optimal levels of dietary vitamin A for reduced deformity incidence during development of European sea bass larvae (*Dicentrarchus labrax*) depend on malformation type. Aquaculture 294: 262-270.
36. Darias M.J., Mazurais D., **Koumoundouros G.**, Glynatsi N., Christodoulopoulou S., Huelvan C., Desbruyeres E., Le Gall M.M., Quazuguel P., Cahu C.L., Zambonino-Infante J.L., 2010. Dietary vitamin D3 affects digestive system ontogenesis and ossification in European sea bass (*Dicentrarchus labrax*, Linnaeus, 1758). Aquaculture 298: 300-307.

37. Nikolioudakis N., **Koumoundouros G.**, Kiparissis S., Somarakis S., 2010. Defining length-at-metamorphosis in fishes: a multi-character approach. *Marine Biology*, 157: 991-1001.
38. Georga I., **Koumoundouros G.**, 2010. Thermally induced plasticity of body shape in adult zebrafish *Danio rerio* (Hamilton, 1822). *J. Morphol.* 271:1319–1327.
39. Georgakopoulou E., Katharios P., Divanach P., **Koumoundouros G.**, 2010. Effect of temperature on the development of skeletal deformities in Gilthead seabream (*Sparus aurata* Linnaeus, 1758). *Aquaculture*, 308: 13–19.
40. Georga I., Glynatsi N., Baltzios A., Karamanos D., Mazurais D., Darias M.J., Cahu C.L., Zambonino-Infante J.L., **Koumoundouros G.**, 2011. Effect of vitamin A on the skeletal morphogenesis of European sea bass, *Dicentrarchus labrax* (Linnaeus, 1758). *Aquaculture Research*, 42: 684-692.
41. Darias M.J., Mazurais D., **Koumoundouros G.**, Cahu C.L., Zambonino-Infante J.L., 2011. Overview of vitamin D and C requirements in fish and their influence on the skeletal system. *Aquaculture* 315: 49-60.
42. Darias M.J., Mazurais D., **Koumoundouros G.**, Le Gall M.M., Huelvan C., Desbruyeres E., Quazuguel P., Cahu C.L., Zambonino-Infante J.L., 2011. Imbalanced dietary ascorbic acid alters molecular pathways involved in skeletogenesis of developing European sea bass (*Dicentrarchus labrax*). *Comparative Biochemistry and Physiology - A Molecular and Integrative Physiology*, 159: 46-55.
43. Kaushik S., Georga I., **Koumoundouros G.**, 2011. Growth and body composition of zebrafish (*Danio rerio*) larvae fed a compound feed from first feeding onwards: towards implications on nutrient requirements. *Zebrafish*, 8(2): 87-95.
44. Boglione C., Gavaia P., **Koumoundouros G.**, Gisbert E., Moren M., Fontagné S., Witten P.E. A review on skeletal anomalies in reared European larvae and juveniles. Part 1: Normal and anomalous skeletogenic processes. *Reviews in Aquaculture*, accepted for publication.
45. Boglione C., Gisbert E., Gavaia P., Witten P.E., Moren M., Fontagné S., **Koumoundouros G.** A review on skeletal anomalies in reared European larvae and juveniles. Part 2: Main typologies, occurrences and causative factors. *Reviews in Aquaculture*, accepted for publication.

#### Book Chapters

**Koumoundouros G.** 2010. Morpho-anatomical abnormalities in Mediterranean marine aquaculture. In: *Recent Advances in Aquaculture Research*, G. Koumoundouros (ed), pp. 125-148. Transworld Research Network, Kerala, India.