

## Ioannis Karakassis Curriculum Vitae

### Studies

- BSc in Biology: University of Athens 1984
- MSc in Marine Biology, University of Crete 1987
- Erasmus student in Aberdeen 1989
- PhD. in Marine Ecology, Biology Department, Univ. Crete 1991

### Positions held

2011-present: Professor, Biology Dept, University of Crete.  
2004-011: Associate Professor, Biology Dept, Univ. of Crete, Heraklion.  
2001-2004: Assistant Prof, Dept. of Environmental Engineering, Technical Univ. of Crete, Chania, Greece  
2000-2001: Research scientist (C grade) Institute of Marine Biology of Crete  
1997-2000: Technical Research scientist (C grade) Institute of Marine Biology of Crete.  
1991-1997: Postgraduate research scientist. Institute of Marine Biology of Crete

### Administration

2011-2014: Chair of the Students welfare committee  
2006-present: Member of the postgraduate studies committee  
2010-2013: Vice chairperson of the Biology Department, Univ. of Crete  
2006-2010: Director of the postgraduate programme in “Environmental Biology: management of marine and terrestrial biological resources”  
2004-present: Director of the Marine Ecology Laboratory

Research interests: Biological Oceanography, Marine Ecology, Coastal ecosystems, Anthropogenic effects on biological communities and ecosystems, impacts of aquaculture on marine environment, multivariate analysis, geochemistry, environmental impact assessment, biodiversity

### Participation in research projects

Member of the research team, partner, or coordinator in 37 EU funded and/or national research projects. Current and recent (past 10yr) international research projects:

- HYPOXIA: Benthic pelagic coupling: hypoxia and regime shifts. (EU/GSRT Aristeia II)
- Technical Assistance to the Ministry for Environment and Climatic Change for the implementation of the European Marine Strategy Framework Directive
- PREVENT ESCAPE: (EU-FP7)
- SHoCMed: Site selection and Carrying capacity of Aquaculture in the Mediterranean (EU-GFCM)
- AQUAGRIS: Envir. management reform for sustainable farming, fisheries & Aquaculture(EU-FP6, SSA)
- SAMI: Synthesis of Aquaculture and Marine Ecosystems Interactions (EU-FP6, SSA)
- BIOFAQS: Biofiltration and Aquaculture: an evaluation of hard substrate deployment performance within Mariculture developments (EU-DG XIV, Quality of Life)
- AQCESS: Aquaculture and Coastal Economic and Social Sustainability” (EU-DG XIV, Quality of Life)
- MERAMED Modelling environmental response to Aquaculture in the (EU-DG XIV, Quality of Life)
- MEDVEG: Effects of nutrient release from Mediterranean fish farms on benthic vegetation in coastal ecosystems” (EU-DG XIV, Quality of Life)
- MAMA: Mediter. network to Assess & upgrade Monitoring and forecasting Activity (EU-DG XII, EESD)
- COST-IMPACT: Costing the impact of demersal fishing on marine ecosystem processes and biodiversity (EU-DG XIV, Quality of Life)
- Indicators of the state of benthic communities affected by anthropogenic inputs”. Intergovernmental Oceanographic Commission – UNESCO/IO

### Research output

- Peer reviewed papers: 80
- Books and chapters 8
- Co-editor in books: 1

- Proceedings reviewed 15 (international) + 21 (in Greek conferences)
- Posters & abstracts 37
- Non reviewed papers 16
- Cumulative impact factor: 180
- Number of citations >2000 (>1500 without auto-citations)
- h factor: 26

#### Other national and international initiatives

- Member of the IUCN/FEAP working group for the establishment of Guidelines for Site selection and Modelling for marine aquaculture in the Mediterranean
- Member of the GFCM/CAQ working group on site selection and carrying capacity in the Mediterranean
- Member of the GESAMP working group on Offshore Aquaculture
- Member of the FAO Working Group on Ecosystem Approach to Aquaculture
- Coordinator of the SHOCMED initiative in the framework of the GFCM/CAQ
- Invited expert by FAO for the evaluation of the governmental strategy plan for the development of aquaculture in Cyprus (1997).
- Member of the feasibility study Group for a European Science Plan for Marine Biodiversity established by the European Science Foundation
- Member of the working group of benthic indicators established by IOC-UNESCO.
- Founding member of the «European Society for the Management of Biodiversity Data»
- Evaluator of research proposals submitted to the EU 5FW programme "Quality of Life"
- Member of the international Evaluation committee for research proposals on Biodiversity submitted to the ANR (France) 2007
- Member of the steering committee of the: Hellenic Network for Biodiversity Research (HELBIONET)

#### Other scientific activities

- Responsible for the organisation or member of the scientific committee in 7 conferences including
  - 13th Hellenic Conference of Ichthyologists, Mitilene 27-30<sup>th</sup> Sept 2007
  - 11th International Congress on the Zoogeography and Ecology of Greece and Adjacent Regions, Heraklion 21-25 Sept. 2009.
  - Ecosystem Approach to aquaculture: European conference of stakeholders. Heraklion, September 2007
  - 14th Hellenic Conference of Ichthyologists, Piraeus 6-9<sup>th</sup> May 2010
- Invited speaker in 48 International and national conferences (17 during the past 5 years)
- Member of the Editorial Board of the Inter-Research Journal "Aquaculture-Environment Interactions AEI"
- Reviewer of articles in international scientific journals including: MEPS, Hydrobiologia, ICES J. Mar. Sci., Aquaculture, J. Exp Mar. Biol. Ecol., J. mar Biol. Assoc. UK, J. Animal Ecol., J. Appl. Ecol., J. World Aquacult. Soc., Mar. Biol., Mar. Environ. Res., Biogeochemistry, J. Nat. History, Aquaculture Res.

#### Recent contracts/research funding during the past 10 years

- |   |           |
|---|-----------|
| • Hypoxia   | 415 000€  |
| • Tech Assistance for EMSFD                                 | 60 000€   |
| • PREVENT-ESCAPE (2009-2012):                               | 369 000 € |
| • Heavy metals in fish food webs (2010)                     | 2 500 €   |
| • Contract with Greek Ministry for Agriculture (2006-2007): | 150 000 € |
| • Aquagris (2006-2009)                                      | 16 200 €  |
| • IBIS (2006-2008): (GSRT)                                  | 160 000 € |
| • ECASA (2004-2007):  | 124 000 € |
| • SAMI (2005-2007):   | 22 700 €  |
| • MedVeg (2001-2004)  | 442 000 € |
| • MERAMED (2000-2003)                                       | 404 000 € |
| • BIOFAQs (2000-2003)                                       | 422 000 € |
| • AQCESS (2000-2003)  | 600 000 € |

### Recent Selected papers

- Lampadariou N, Akoumianaki I, **Karakassis I** (2008) Use of the size fractionation of the macrobenthic biomass for the rapid assessment of benthic organic enrichment. *Ecological Indicators* **8**: 729-742
- Tsagarakis K, Machias A, Giannoulaki M, Somarakis S, **Karakassis I** (2008) Seasonal and temporal trends in metrics of fish community for otter-trawl discards in a Mediterranean ecosystem. *ICES Journal of Marine Science* **65**:539-550
- Diaz-Almela E, Marba N, Alvarez E, Santiago R, Holmer M, Grau A, Danovaro R, Argyrou M, **Karakassis I**, Duarte CM (2008) Rapid seagrass (*Posidonia oceanica*) decline linked to Mediterranean fish farm inputs. *Marine Pollution Bulletin* **56**:1332-1342
- Holmer M, Argyrou M, Dalsgaard T, Danovaro R, Diaz-Almela E, Duarte CM, Frederiksen M, Grau A, **Karakassis I**, Marbà N, Mirto S, Pérez M, Pusceddu A, Tsapakis M (2008) Effects of fish farm waste on *Posidonia oceanica* meadows: synthesis and provision of monitoring and management tools. *Marine Pollution Bulletin* **56**:1618-1629
- Pitta P, Tsapakis M, Apostolaki ET, Tsagaraki T, Holmer M, **Karakassis I** (2009) 'Ghost nutrients' from fish farms are transferred up the food web by phytoplankton grazers. *Marine Ecology Progress Series* **374**:1-6 (επελέγη ως **Feature Article**)
- Apostolaki ET, Marba N, Holmer M, **Karakassis I** (2009) Fish farming impact on decomposition of *Posidonia oceanica* detritus. *J. exper mar biol ecol.* **369**:58-64
- Apostolaki ET, Marba N, Holmer M, **Karakassis I** (2009) Fish farming enhances mass and nutrient loss in (*Posidonia oceanica*). *Estuarine coastal shelf Science* **81**:390-400.
- Vanden Berghe E, Claus S, Appeltans W, Faulwetter S, Arvanitidis C, Somerfield P, Aleffi IF, Amouroux JM, Anisimova N, Bachelet G, Cochrane SJ, Costello MJ, Craeymeersch J, Dahle S, Degraer S, Denisenko S, Dounas C, Duineveld G, Emblow C, Escaravage V, Fabri MC, Fleischer D, Grémare A, Herrmann M, Hummel H, **Karakassis I**, Kędra M, Kendall M, Kingston P, Kotwichi L, Labrune C, Laudien J, Nevrova H, Occhipinti-Ambrogi A, Olsgard F, Palerud R, Petrov A, Rachor E, Revkov N, Rumohr H, Sardá R, Sistermans WCH, Speybroeck J, Janas U, Van Hoey G, Vincx M, Whomersley P, Willems W, Włodarska-Kowalczyk M, Zenetos A, Zettler ML, Heip C (2009) 'MacroBen' integrated database on benthic invertebrates of European continental shelves: a tool for large-scale analysis across Europe. *Marine Ecology Progress Series* **382**: 225-238
- Renaud PE, Webb TJ, Bjørgesæter A, **Karakassis I**, Kędra M, Kendall MA, Labrune C, Lampadariou N, Somerfield PJ, Włodarska-Kowalczyk M, Vanden Berghe E, Claus S, Aleffi F, Amouroux JM, Bryne KH, Cochrane SJ, Dahle S, Degraer S, Denisenko SG, Deprez T, Dounas C, Fleischer D, Gil J, Grémare A, Janas U, Mackie ASY, Palerud R, Rumohr H, Sardá R, Speybroeck J, Taboada S, Van Hoey G, Węślawski JM, Whomersley P, Zettler ML (2009) Continental-scale patterns in benthic invertebrate diversity: Insights from the MarBEF database. *Marine Ecology Progress Series* **382**: 239-252
- Escaravage V, Herman PMJ, Merckx B, Włodarska-Kowalczyk M, Amouroux JM, Degraer S, Grémare A, Heip CHR, Hummel H, **Karakassis I**, Labrune C, Willems W (2009) Productivity explains the distribution patterns of macrofauna species diversity in subtidal soft sediments. Results from a pan European dataset. *Marine Ecology Progress Series* **382**: 253-264
- Arvanitidis C, Somerfield PJ, Rumohr H, Faulwetter S, Valavanis V, Vasileiadou A, Chatzigeorgiou G, Vanden Berghe E, Vanaverbeke J, Labrune C, Grémare A, Zettler ML, Kędra M, Włodarska-Kowalczyk M, Aleffi IF, Amouroux JM, Anisimova N, Bachelet G, Büntzow M, Cochrane S, Costello MJ, Craeymeersch J, Dahle S, Degraer S, Denisenko S, Dounas C, Duineveld G, Emblow C, Escaravage V, Fabri MC, Fleischer D, Gray JS, Heip C, Herrmann M, Hummel H, Janas U, **Karakassis I**, Kendall MA, Kingston P, Kotwicki L, Laudien J, Mackie ASY, Nevrova HL, Occhipinti-Ambrogi A, Oliver PG, Olsgard F, Palerud R, Petrov A, Rachor E, Revkov NK, Rose A, Sardá R, Sistermans WCH, Speybroeck J, Van Hoey G, Vincx M, Whomersley P, Willems W, Zenetos A (2009) Biological geography of the European Seas: results from the macrofaunal inventory of the soft-substrate communities *Marine Ecology Progress Series* **382**: 265-278
- Somerfield PJ, Arvanitidis C, Faulwetter S, Chatzigeorgiou G, Vasileiadou A, Amouroux J, Anisimova N, Cochrane S, Craeymeersch J, Dahle S, Denisenko S, Dounas K, Duineveld G, Grémare A, Heip C, Herrmann M, **Karakassis I**, Kędra M, Kendall M, Kingston P, Kotwichi L, Labrune C, Laudien J, Nevrova H, Nicolaidou A, Occhipinti-Ambrogi A, Palerud R, Petrov A, Rachor E, Revkov N, Rumohr H, Sardá R, Janas U, Vanden Berghe E, Włodarska-Kowalczyk M (2009) Assessing evidence for random assembly of marine benthic communities from regional species pools. *Marine Ecology Progress Series* **382**: 279-286
- Webb TJ, Aleffi IF, Amouroux JM, Bachelet G, Degraer S, Dounas C, Dirk Fleischer D, Grémare A, Herrmann M,

Hummel H, **Karakassis I**, Kędra M, Kendall MA, Kotwicki L, Labrune C, Nevrova EL, Occhipinti-Ambrogi A, Petrov A, Revkov NK, Sardá R, Simboura N, Speybroeck J, Van Hoey G, Vincx M, Whomersley P, Willems W, Włodarska-Kowalczyk M (2008) Macroecology of the European soft sediment benthos: insights from the Macroben database. *Marine Ecology Progress Series* **382**: 287-296

- Grémare A, Labrune C, Vanden Berghe E, Amouroux JM, Bachelet G, Zettler ML, Vanaverbeke J, Fleischer D, Bigot L, Maire O, Deflandre B, Craeymeersch J, Degraer S, Dounas C, Duineveld G, Heip C, Herrmann M, Hummel H, **Karakassis I**, Kedra M, Kendall M, Kingston P, Laudien J, Occhipinti-Ambrogi A, Rachor E, Sardá R, Speybroeck J, Van Hoey G, Vincx M, Whomersley P, Willems W, Włodarska-Kowalczyk, M, Zenetos A (2009) Comparison of the performances of two biotic indices based on a soft-bottom macrozoobenthos pan-European database. *Marine Ecology Progress Series* **382**:297-311
- Moustakas A, **Karakassis I** (2009) Are a country's lifestyle and geomorphology linked with published aquatic biodiversity research? *Stochastic Environmental Research and Risk Assessment* **23**:737-748
- Borja A, Germán Rodríguez J, Black K, Bodoy A, Emblow C, Fernandes TF, Forte J, **Karakassis I**, Muxika I, Nickell TD, Papageorgiou N, Pranovi F, Sevastou K, Tomassetti P, Angel D (2009) Assessing the suitability of a range of benthic indices in the evaluation of environmental impact of fin and shellfish aquaculture located in sites across Europe. *Aquaculture* **293**:231-240
- Papageorgiou N, Sigala K, **Karakassis I** (2009) Changes of macrofaunal functional composition at sedimentary habitats in the vicinity of fish farms. *Estuarine Coastal Shelf Science* **83**:561-568
- Duarte CM, Holmer M, Olsen Y, Soto D, Marbà N, Guiu J, Black K, **Karakassis I** (2009) Will the oceans help feed humanity? *Bioscience* **59**:967-976
- Teixeira H, Borja A, Weisberg S, Ranasinghe J, Cadien D, Dauer D, Dauvin JC, Degraer S, Diaz R, Grémare A, **Karakassis I**, Llansó R, Lovell L, Marques J, Montagne D, Occhipinti-Ambrogi A, Rosenberg R, Sardá R, Schaffner L, Velarde R, (2010) Assessing Coastal Benthic Macrofauna Community Condition Using Best Professional Judgment - developing consensus across North America and Europe. *Marine Pollution Bulletin* **60**:589-600
- Papageorgiou N, Kalantzi I, Karakassis I (2010) Effects of fish farming on different sediment types of the Mediterranean Sea. *Marine Environmental Research* **69**:326-336
- Apostolaki ET, Marba N, Holmer M, **Karakassis I** (2010) Degrading seagrass (*Posidonia oceanica*) ecosystems: a source of dissolved matter to the Mediterranean. *Hydrobiologia* **649**: 13-23
- Tsapakis M, Dakanali E, Stephanou EG, **Karakassis I** (2010) PAHs and n-alkanes in Mediterranean coastal marine sediments: Aquaculture as a significant point source. *Journal of Environmental Monitoring* **12**:958-963
- Apostolaki ET, Marba N, Holmer M, **Karakassis I** (2010) Metabolic imbalance in coastal vegetated (*Posidonia oceanica*) and unvegetated benthic ecosystems. *Ecosystems* **13**: 459-471
- Tsagaraki TM, Petihakis G, Tsiaras K, Triantafyllou G, Tsapakis M, Korres G, Kakagiannis G, Frangoulis C, **Karakassis I** (2011) Beyond the cage: Ecosystem modelling for impact evaluation in aquaculture. *Ecological Modelling* **222**: 2512-2523
- Apostolaki ET, Holmer M, Marbū N, **Karakassis I** (2011) Epiphyte dynamics and carbon metabolism in a nutrient enriched Mediterranean seagrass (*Posidonia oceanica*) ecosystem. *Journal of Sea Research* **66**: 135-142
- Palialexis A, Georgakarakos S, **Karakassis I**, Lika K, Valavanis VD (2011) Fish distribution predictions from different points of view: Comparing associative neural networks, geostatistics and regression models. *Hydrobiologia* **670**: 165-188.
- Palialexis A, Georgakarakos S, **Karakassis I**, Lika K, Valavanis VD (2011) Prediction of marine species distribution from presence-absence acoustic data: Comparing the fitting efficiency and the predictive capacity of conventional and novel distribution models. *Hydrobiologia* **670**: 241-266.
- Apostolaki ET, Holmer M, Marbū N, **Karakassis I** (2011) Reduced carbon sequestration in a Mediterranean seagrass (*Posidonia oceanica*) ecosystem impacted by fish farming. *Aquaculture Environment interactions* **2**:49-59
- Rountos KJ, Peterson BJ, Karakassis I (2012) Indirect effects of fish cage aquaculture on shallow *Posidonia oceanica* seagrass patches in coastal Greek waters. *Aquaculture Environment interactions* **2**:105-115
- Apostolaki ET, Vizzini S, Karakassis I (2012) Leaf vs. epiphyte nitrogen uptake in a nutrient enriched Mediterranean seagrass (*Posidonia oceanica*) meadow. *Aquatic Botany*, 96: 58-62
- Cromey CJ, Thetmeyer H, Lampadariou N, Black KD, Kϕgeler J, Karakassis I (2012) MERAMOD - predicting the deposition and benthic impact of aquaculture in the Eastern Mediterranean. *Aquaculture Environment interactions* **2**:157-176
- Dimitriou PD, Apostolaki ET, Papageorgiou N, Reizopoulou S, Simboura N, Arvanitidis C, Karakassis I (2012) Meta-analysis of a large data set with Water Framework Directive indicators and calibration of a Benthic Quality Index

at the family level. *Ecological Indicators* **20**:101-107

- Sanz-Lázaro C, Malea P, Apostolaki ET, Kalantzi I, Marín A, **Karakassis I** (2012) The role of the seagrass *Posidonia oceanica* in the cycling of trace elements. *Biogeoscience* **9**: 2497-2507
- Kalantzi I, Shimmiel TM, Pergantis SA, Papageorgiou N, Black KD, **Karakassis I** (2013) Heavy metals, trace elements and sediment geochemistry at four Mediterranean fish farms. *Science of the Total Environment*, **444**:128-137
- **Karakassis I**, Dimitriou PD, Papageorgiou N, Apostolaki ET, Lampadariou N, Black KD (2013) Methodological considerations on the coastal and transitional benthic indicators proposed for the Water Framework Directive. *Ecological Indicators* **29**:26-33
- Kalantzi I, Black KD, Pergantis SA, Shimmiel TM, Papageorgiou N, Sevastou K, **Karakassis I** (2013) Metals and other elements in tissues of wild fish from fish farms and comparison with farmed species in sites with oxic and anoxic sediments. *Food Chemistry* **141**: 680-694
- **Karakassis I**, Papageorgiou N, Kalantzi I, Sevastou K, Koutsikopoulos C (2013) Adaptation of fish farming production to the environmental characteristics of the receiving marine ecosystems: A proxy to carrying capacity. *Aquaculture* **408–409**:184-190
- Moraitis M, Papageorgiou N, Dimitriou PD, Petrou A, **Karakassis I** (2013) Effects of offshore tuna farming on benthic assemblages in the Eastern Mediterranean. *Aquaculture Environment interactions* **4**:41-51
- Tsagaraki TM, Pitta P, Frangoulis C, Petihakis G, **Karakassis I** (2013) Plankton response to nutrient enrichment is maximized at intermediate distances from fish farms. *Marine Ecology Progress Series* **493**: 31-42
- Kalantzi I, Papageorgiou N, Sevastou K, Black KD, Pergantis SA, **Karakassis I** (2014) Metals in benthic macrofauna and biogeochemical factors affecting their trophic transfer to wild fish around fish farm cages. *Science of the Total Environment*, **470-471**: 742-753

### Recent chapters & books

- Karakassis I (2007) Effects of aquaculture on Mediterranean marine ecosystems: findings of recent EU-funded projects and ongoing research activities. In: *CIESM Workshop Monographs* **32**: 35-38.
- Holmer M, Hansen PK, Karakassis I, Borg JA, Schembri PJ (2008) Monitoring of environmental impacts of Marine Aquaculture. In: Holmer M., Black K., Duarte C.M., Marba N., Karakassis I. (eds) *Aquaculture in the Ecosystem*. Springer pp 47-85.
- Holmer M., Black K., Duarte C.M., Marba N., Karakassis I. (eds) (2008) *Aquaculture in the Ecosystem*. Springer, 326pp
- Καρακάσις Ι, Σεβαστού Κ (2011) Διατροφή, Περιβάλλον και Ιχθυοκαλλιέργεια. In: Μεντέ Ε, Νέγκας Ι. (επιμ.) «Στοιχεία διατροφής και φυσιολογίας θρέψεως και εφαρμοσμένη διατροφή ιχθύων και καρκινοειδών». Εκδ. Παπαζήσης. Αθήνα, σελ. 595-621
- Papageorgiou N, Karakassis I (2012) Environmental interactions of marine aquaculture in the Mediterranean: current status and expected changes. In: Stabler N (Ed.) “Life in the Mediterranean Sea: A look at habitat changes”. Nova Science Publishers, Inc pp. 617-634