

# ***Curriculum Vitæ***

**Patrícia Gonçalves Marques Cardoso Teixeira**

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## IDENTIFICATION

Name: Patrícia Gonçalves Marques Cardoso Teixeira  
Birth-place: Coimbra (Sé Nova)  
Birthday: 3<sup>rd</sup> May 1976  
Nationality: Portuguesa  
Address: Urbanização Encosta do Sol, lote 16 1º Dto  
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## ACADEMIC DEGREES

**1998**

**Graduation in Biology** – Faculty of Sciences and Technology of the University of Coimbra, with a final information of “BOM COM DISTINÇÃO”, with 16 values.

**2001**

**Master in Ecology** – Faculty of Sciences and Technology of the University of Coimbra, with a final information of “MUITO BOM”.

**2005**

**PhD in Biology (Ecology)** – University of Coimbra, with a final information of “Aprovado com Louvor e Distinção, por unanimidade”.

## POST-GRADUATION COURSES

**1999**

Advanced course integrated in the Master in Ecology “**Plant-Animal Interactions**”, under coordination of Profs. M. F. Rayan (Ireland), I. A. R. Paiva (Portugal), I. M. O. Abrantes (Portugal) and S. N. A. Santos (Portugal) with classification of 18 values.

**1999**

Advanced course integrated in the Master in Ecology “**Concepts of Ecological Effects Assessment**”, under coordination of Profs. J. Culp (Canada), T. Reinoldson (Canada), F. Wrona (Canada) and M. A. S. Graça (Portugal) with classification of 17 values.

**1999**

Advanced course integrated in the Master in Ecology “**Ecological Management and Modelling**”, under coordination of Profs. B. C. Patten (U.S.A), S. E. Jørgensen (Denmark), S. N. Nielsen (Denmark) and J. C. Marques (Portugal) with classification of 18 values.

**2000**

Advanced course integrated in the Master in Ecology “**Biostatistical Analysis and Experimental Design**”, under coordination of Profs. F. J. Wrona (Canada), D. J. Baird (Scotland) and A. J. A. Nogueira (Portugal), with classification of 18 values.

## **2000**

Advanced course integrated in the Master in Ecology “**Feedback mechanisms and nutrient dynamics. The use of mass balances in aquatic systems management**”, under coordination of Profs. Miguel A. Pardal (Portugal) and Mogens Flindt (Denmark), with classification of 18 values.

## **2003**

Advanced course integrated in the Master in Ecology “**GIS – Advanced Course – version 3.2**” under coordination of Prof. Miguel A. Pardal (Portugal).

## **2004**

Advanced course integrated in the Master in Ecology “**GIS – Advanced Course – version 8.2**”, under coordination of Profs. Miguel A. Pardal (Portugal) and Mogens Flindt (Denmark).

## **2006**

Course “The ecosystem management of the marine environment: a challenge for a sustainable Europe” integrated in **XXV Summer courses of UPV/EHU in San Sebastian - XX European courses** 3-5 July 2006. S Sebastian, Spain.

## **2007**

Advanced course integrated in the Master in Ecology “**Multivariate statistics in ecology and ecotoxicology**”, under coordination of Prof. José Paulo Sousa (Portugal).

## **2008**

Course “Recovery and restoration of marine and estuarine degraded ecosystems” integrated in **XXVII Summer courses of UPV/EHU in San Sebastian - XX European courses** 14-16 July 2008. S Sebastian, Spain.

## **2011**

Course “**Experimental design and analysis of multivariate data using primer and permanova +**”, held at the university of Aveiro, from 28<sup>th</sup> April to 6<sup>th</sup> May, by prof. Marti J Anderson and prof. Victor Quintino.

## **2012**

Course “**Sciences in animals of laboratory – aquatic organisms (CAL-AQUA)**” held at CIIMAR, Porto from 19-23 November.

## **2014**

Data Exploration, Regression, GLM & GAM with introduction to R, held at Coimbra, 3-7 February 2014 by Alain Zuur and Elena Ieno.

Advanced Course on Biomarkers, from gene to the ecosystem, held at ESTM Polytechnic Institute of Leiria, Peniche, 2-6 June 2014 by Marco Filipe Loureiro Lemos, Sara Calçada Novais, Bart Devreese, Carlos Gravato, Dick Roelofs, Roberto Carlos Marçal Gamboa.

## **TRAINING COURSES**

### **1998 – 1999**

Performed a scientific course in Ecology with supervision of Prof. João Carlos Marques (Full Professor of Department of Zoology, University of Coimbra), with a final classification of 19 values.

## **SCHOLARSHIPS**

### **1998 - 1999**

Scholar of IMAR - Instituto do Mar, Centro Interdisciplinar de Coimbra (research grant of 12 months with the reference IC18-CT98-0270), with the project "Bases for the integrated sustainable management of Mediterranean sensitive coastal ecosystems", under supervision of Prof. Doutor João Carlos Marques.

#### **2000**

Scholar of IMAR - Instituto do Mar, Centro Interdisciplinar de Coimbra (renewal by 2 months of the research grant, with the reference IC18-CT98-0270), with the project "Bases for the integrated sustainable management of Mediterranean sensitive coastal ecosystems", under supervision of Prof. Doutor João Carlos Marques.

#### **2000**

Master scholar from Foundation for Science and Technology (Research grant of 12 months with the reference SFRH/BM/383/2000), in IMAR - Instituto do Mar, Centro Interdisciplinar de Coimbra, with the project "A influência dos "blooms" macroalgais nas comunidades macrobentónicas e a intervenção das autoridades na recuperação do habitat de *Zostera noltii*", under supervision of Prof. Doutor Miguel Ângelo do Carmo Pardal.

#### **2001 - 2005**

PhD scholar from Foundation for Science and Technology (Research grant of 12 months, renewable until 48 months with the reference SFRH/BD/5350/2001), in IMAR - Instituto do Mar, Centro Interdisciplinar de Coimbra, with the project "Impacto das actividades humanas na qualidade ambiental do estuário do Mondego. Dinâmica a longo prazo das comunidades macrobentónicas intertidais e bioacumulação de metais pesados nas cadeias tróficas", under supervision of Prof. Doutor Miguel Ângelo do Carmo Pardal and co-supervision of Prof. Doutor Dave Raffaelli (University of York).

#### **2005 - 2008**

Post-Doc scholar from Foundation for Science and Technology (BPD/22176/2005), in IMAR – Institute of marine Research, with the project "Importance of long-term studies for the assessment of global climatic changes on the macrobenthic communities of a temperate estuary", under supervision of Prof. Doutor Miguel Ângelo do Carmo Pardal and co-supervision of Prof. Doutor Dave Raffaelli (University of York).

#### **2009 (Jan) – 2009 (Jul)**

Post-Doc scholar from Foundation for Science and Technology (BPD/ 43429 / 2008), in CESAM, with the project "THE EFFECTS OF GLOBAL CLIMATE CHANGES ON THE REMOBILIZATION OF MERCURY: THEIR ECOLOGICAL, SOCIO-ECONOMICAL AND HUMAN HEALTH IMPLICATIONS" under supervision of Prof. Armando Duarte and co-supervision of Prof. Eduarda Pereira.

### **PROFESSIONAL ACTIVITY**

#### **April 2022 – present**

Assistant Researcher at CIIMAR (CEEC FCT).

#### **April 2020 - June 2021**

Researcher at CIIMAR (Globaled Project)

#### **March 2015 – March 2020**

Principal Researcher at CIIMAR (Investigator FCT).

#### **June 2014 – February 2015**

Invited research grant from the project CLIMATROPH - Impact of multiple climate drivers (temperature and CO<sub>2</sub>) on marine trophic interactions – ecological and commercial implications (EXPL/MAR-EST/1427/2013).

**2009-June 2014**

Assistant Researcher (Ciência 2008) at IMAR – CMA (Marine and Environmental Research Centre).

### **DOMAIN OF SPECIALIZATION**

Investigation in Marine and Estuarine Ecology. Communities structure and functioning in coastal systems. Environmental impact studies. Long-term studies in estuarine ecosystems. Nutrient dynamics, namely nitrogen, phosphorous and metals (mercury) in estuarine systems.

Assessment of the impact of eutrophication and mercury on the population structure of macroinvertebrates.

Biology, production and population dynamics of benthic invertebrates (polychaetes, molluscs and crustaceans).

### **PRESENT INVESTIGATION INTERESTS**

Communities characterization and functioning in coastal systems. Long-term dynamics of macrobenthic communities in response to multiple stressors (natural and anthropogenic). Assessment of synergistic effects of contaminants (trace metals and xenoestrogens) and climate variables (temperature, CO<sub>2</sub> and oxygen) on the functioning of coastal communities. Effects at molecular, physiological and biochemical levels.

### **SCIENTIFIC PRODUCTION**

#### **Journals from Scientific Citation Index**

- [1] **Cardoso PG**, Lillebø AI, Pardal MA, Ferreira SM, Marques JC (2002) The effect of different primary producers on *Hydrobia ulvae* population dynamics: a case study in a temperate intertidal estuary. J Exp Mar Biol Ecol 277: 173-195 (Q1 Aquatic Science). (2.263 SCI) (92 Citations)
- [2] **Cardoso PG**, Pardal MA, Lillebø AI, Ferreira SM, Raffaelli D, Marques JC (2004) Dynamic changes in seagrass assemblages under eutrophication and implications for recovery. J Exp Mar Biol Ecol (Q1 Aquatic Science) 302/2: 233-248. (2.263 SCI) (288 Citations)
- [3] **Cardoso PG**, Pardal MA, Raffaelli D, Baeta A, Marques JC (2004) Macroinvertebrate response to different species of macro-algal mats and the role of disturbance history. J Exp Mar Biol Ecol (Q1 Aquatic Science) 308/2: 207-220 (2.263 SCI) (100 Citations).
- [4] Pardal MA, **Cardoso PG**, Sousa JP, Marques JC, Raffaelli D (2004) Assessing environmental quality: a novel approach. Mar Ecol Prog Ser 267: 1-8. (2.546 SCI) (104 Citations)
- [5] Ferreira SM, MA Pardal, AI Lillebø, **PG Cardoso**, JC Marques (2004) Population dynamics of *Cyathura carinata* (Isopoda) in a eutrophic temperate estuary. Estuar Coast Shelf Sci (Q1

- Aquatic Science) 61: 669-677. (2.324 SCI) (45 Citations)
- [6] **Cardoso PG**, Brandão A, Pardal MA, Raffaelli D, Marques JC (2005) The resilience of *Hydrobia ulvae* populations to anthropogenic and natural disturbances. Mar Ecol Prog Ser 289: 211-219. (2.546 SCI) (74 Citations)
- [7] Gonçalves SC, Pardal MA, **Cardoso PG**, Ferreira SM, Marques JC (2005) Biology, population dynamics and secondary production of *Tylos europaeus* (Isopoda, Tyliidae) in the western coast of Portugal. Mar Biol (Q1 Aquatic Science) 147 (3): 631-641. (2.468 SCI) (23 Citations)
- [8] Dolbeth M, Pardal MA, Lillebø AI, **Cardoso PG**, Ferreira SM. (2005) Annual production of estuarine fauna in different environmental conditions: an evaluation of the estimation methods. J Exp Mar Biol Ecol (Q1 Aquatic Science) 326: 115-127. (2.263 SCI) (79 Citations)
- [9] Lillebø AI, Neto JM, Martins I, Verdelhos T, Leston S, **Cardoso PG**, Ferreira SM, Marques JC, Pardal MA (2005) Management of a shallow temperate estuary to control eutrophication: the effect of hydrodynamics on the system nutrient loading. Est Coast Shelf Scien (Q1 Aquatic Science) 65: 697-707. (2.324 SCI) (131 Citations)
- [10] **Cardoso PG**, Bankovic M, Raffaelli D, Pardal MA. (2007) Polychaete assemblages as indicators of habitat restoration in a temperate estuary under eutrophication. Est Coast Shelf Scien (Q1 Aquatic Science) 71: 301-308. (2.324 SCI) (68 Citations)
- [11] **Cardoso PG**, Raffaelli D, Pardal MA. (2007) Seagrass beds and intertidal invertebrates: an experimental test of the role of habitat structure. Hydrobiologia (Q1 Aquatic Science) 575: 221-230 (1.985 SCI) (22 Citations)
- [12] Lillebø AI, Flindt MR, Pardal MA, **Cardoso PG**, Ferreira SM, Marques JC. (2007). The faunal role on the degradation of the common intertidal salt marsh plant *Scirpus maritimus*. Hydrobiologia (Q1 Aquatic Science) 579: 369-378 (1.985 SCI) (9 Citations)
- [13] Dolbeth M, **Cardoso PG**, Ferreira SM, Verdelhos T, Raffaelli D, Pardal MA. (2007) Anthropogenic and natural disturbances on a macrobenthic estuarine community over ten years of study. Mar Poll Bulletin (Q1 Aquatic Science) 54: 576-585. (2.531 SCI) (142 Citations)
- [14] **Cardoso PG**, Raffaelli D, Lillebø AI, Verdelhos T, Pardal MA. (2008). The impact of extreme flooding events and anthropogenic stressors on the macrobenthic communities' dynamics. Est Coastal Shelf Scien (Q1 Aquatic Science) 76: 553-565. (2.324 SCI) (125 Citations). **Top cited paper in ECSS during 2008-2012 period.**
- [15] **Cardoso PG**, Lillebø AI, Lopes C, Pereira ME, Pardal MA (2008). The influence of bioturbation by *Hediste diversicolor* on mercury fluxes from estuarine sediment: A mesocosms laboratory experiment. Mar Poll Bulletin (Q1 Aquatic Science) 56: 325-334. (2.531 SCI) (25 Citations)
- [16] **Cardoso PG**, Raffaelli D, Pardal MA (2008). The impact of extreme weather events on the seagrass *Zostera noltii* and related *Hydrobia ulvae* population. Mar Poll Bulletin (Q1 Aquatic Science) 56: 483-492. (2.531 SCI) (38 Citations)

- [17] Nunes M, Coelho JP, **Cardoso PG**, Pereira ME, Duarte AC, Pardal MA (2008). The macrobenthic community along a mercury contamination in a temperate estuarine system (Ria de Aveiro, Portugal). *Scien of the Total Envir (Q1 Environmental Chemistry)* 405: 186-194. (3.258 SCI) (46 Citations)
- [18] Gonçalves SC, Anastácio PM, **Cardoso PG**, Ferreira SM, Pardal MA, Marques JC (2009). Sandy beach macrofaunal communities on the western coast of Portugal- Is there a steady structure under similar exposed conditions? *Est Coastal Shelf Scien (Q1 Aquatic Science)* 81: 555-568. (2.324 SCI) (31 Citations)
- [19] Grilo TF, **Cardoso PG**, Dolbeth M, Pardal MA. (2009). Long-term changes in amphipod population dynamics in a temperate estuary following ecosystem restoration. *Hydrobiologia (Q1 Aquatic Science)* 630: 91-104. (1.985 SCI) (17 Citations)
- [20] **Cardoso PG**, Lillebø AI, E. Pereira, A. C. Duarte, Pardal MA. (2009). Different mercury bioaccumulation kinetics by two macrobenthic species: the bivalve *Scrobicularia plana* and the polychaete *Hediste diversicolor*. *Mar Env Res (Q1 Aquatic Science)* 68: 12-18. (2.337 SCI) (41 Citations)
- [21] **Cardoso PG**, Leston S, Grilo TF, Bordalo MD, Crespo D, Raffaelli D, Pardal M. A. (2010). Implications of nutrient decline in the seagrass ecosystem success. *Mar Poll Bull. (Q1 Aquatic Science)* 60: 601-608. (2.531 SCI) (50 Citations)
- [22] Grilo TF, **Cardoso PG**, Dolbeth M, Bordalo MD, Pardal MA. (2011) Effects of extreme climate events on the macrobenthic communities' structure and functioning of a temperate estuary. *Mar Poll Bull (Q1 Aquatic Science)* 62: 303-311. (2.531 SCI) (77 Citations)
- [23] Dolbeth M., **Cardoso PG.**, Grilo TF., Bordalo M.D, Raffaelli D, Pardal M.A (2011). Long-term changes in the production of estuarine macrobenthos affected by multiple stressors. *Est Coastal Shelf Scien (Q1 Aquatic Science)* 92: 10-18. (2.324 SCI) (95 Citations)
- [24] Bordalo MD, Ferreira SM, **Cardoso PG**, Leston S, Pardal MA. (2011). Resilience of an isopod population (*Cyathura carinata*) to multiple stress factors in a temperate estuarine system. *Hydrobiologia (Q1 Aquatic Science)* 671:13-25 (1.985 SCI) (2 Citations)
- [25] Verdelhos T, **Cardoso PG**, Dolbeth M, Pardal M.A. (2011). Latitudinal gradients on *Scrobicularia plana* reproduction patterns, population dynamics and secondary production. *Mar Ecol Prog Ser* 442: 271-283. (2.546 SCI) (19 citations)
- [26] **Cardoso PG**, Pereira E., Grilo T.F., Duarte A.C., Pardal M.A. (2012). Kinetics of mercury bioaccumulation in the polychaete *Hediste diversicolor* and in the bivalve *Scrobicularia plana*, through a dietary exposure pathway. *Water Air Soil Pollut (Q2 Pollution)* 223: 421-428 (1.748 SCI) (10 Citations)
- [27] Grilo TF, **Cardoso PG**, Pardal M.A. (2012). Implications of *Zostera noltii* recolonization on the *Hydrobia ulvae* population structure success. *Mar Env Res (Q1 Aquatic Science)* 73: 78-84. (2.337 SCI) (13 citations)
- [28] **Cardoso PG**, Grilo TF, Pereira E Duarte A.C., Pardal M.A. (2013) Mercury bioaccumulation and decontamination kinetics in the edible cockle *Cerastoderma edule*. *Chemosphere (Q1 Chemistry/Pollution)* 90:1854-1859. (3.137 SCI) (19 citations)

- [29] **Cardoso PG**, D'Ambrosio M, Marques SC, Azeiteiro UM, Coelho JP, Pereira E. (2013) The effects of mercury on the peracarida community dynamics in a temperate coastal lagoon (Ria de Aveiro, Portugal). *Mar Poll Bull (Q1 Aquatic Science)* 72: 182-195. (2.531 SCI) (13 citations)
- [30] Grilo TF, **Cardoso PG**, Pato P, Duarte AC, Pardal MA. (2013) Organochlorines accumulation on a highly consumed bivalve and main implications for human health. *Science of Total Environment (Q1 Environmental Chemistry)* 461-462: 188-197. <http://dx.doi.org/10.1016/j.scitotenv.2013.04.096> (3.258 SCI) (14 citation)
- [31] Dolbeth M, **Cardoso PG**, Grilo TF, Raffaelli D, Pardal MA. (2013) Drivers of estuarine benthic species distribution patterns following a restoration of a seagrass bed: a functional trait analyses. *Marine Pollution Bulletin (Q1 Aquatic Science)* 72: 47-54. DOI 10.1016/j.marpolbul.2013.05.001. (2.531 SCI) (31 citations)
- [32] **Cardoso PG**, Sousa E, Matos P, Henriques B, Pereira E, Pardal MA (2013). Impact of mercury contamination on the population dynamics of *Peringia ulvae* (Gastropoda): Implications on metal transfer through the trophic web. *Estuarine Coastal and Shelf Science (Q1 Aquatic Science)* 129: 189-197. DOI 10.1016/j.ecss.2013.06.002. (2.324 SCI) (22 citations)
- [33] D'Ambrosio M, Marques SC, Azeiteiro UM, Pardal MA, Pereira E, Duarte AC, **Cardoso PG**. (2013) Mercury bioaccumulation and the population dynamics of *Mesopodopsis slabberi* (Crustacea: Mysidacea) along a mercury contamination gradient. *Ecotoxicology (Q2 Toxicology)* 22: 1278-1288. DOI 10.1007/s10646-013-1115-4 (2.773 SCI) (1 citation)
- [34] **Cardoso PG**, Marques SC, D'Ambrosio M, Pereira E, Duarte AC, Azeiteiro U, Pardal MA (2013). Changes in the zooplankton communities along a mercury contamination gradient in a coastal lagoon (Ria de Aveiro, Portugal). *Marine Pollution Bulletin (Q1 Aquatic Science)* 76: 170-177. DOI 10.1016/j.marpolbul.2013.09.007 (2.531 SCI) (23 citations)
- [35] Grilo TF, **Cardoso PG**, Pato P, Duarte AC, Pardal MA (2014). Uptake and depuration of PCB-153 in edible shrimp *Palaemonetes varians* and human health risk assessment. *Ecotoxicology and Environmental Safety (Q1 Pollution/Toxicology)* 101: 97-102. DOI: 10.1016/j.ecoenv.2013.12.020 (2.203 SCI) (6 citations)
- [36] Verdelhos T, **Cardoso PG**, Dolbeth M, Pardal MA (2014). Recovery trends of *Scrobicularia plana* populations after restoration measures, affected by extreme climate events. *Marine Environmental Research (Q1 Aquatic Science)* 98:39-48 <https://doi.org/10.1016/j.marenvres.2014.03.004> (2.337 SCI) (20 citations).
- [37] **Cardoso PG**, Pereira E, Duarte AC, Azeiteiro U (2014). Temporal characterization of mercury accumulation at different trophic levels and implications for metal biomagnification along a coastal food web *Marine Pollution Bulletin (Q1 Aquatic Science)* 87: 39-47. DOI: 10.1016/j.marpolbul.2014.08.013 (2.991 SCI) (25 citations)
- [38] **Cardoso PG**, Grilo TF, Reis AT, Coelho JP, Pereira E, Pardal MA (2015). Field transplantation of the bivalve *Scrobicularia plana* along a mercury gradient in Ria de Aveiro (Portugal): uptake and depuration kinetics. *Science of Total Environment (Q1 Environmental Chemistry)* 512-513: 55-61 doi: 10.1016/j.scitotenv.2015.01.027 (4.099 SCI) (8 citations)



- [39] Grilo TF, Mendes T, Coelho JP, Pereira E, Pardal MA, **Cardoso PG** (2015). Kinetics of Mercury Accumulation and Elimination in Edible Glass Eel (*Anguilla anguilla*) and Potential Health Public Risks. *Water Air and Soil Pollution (Q2 Pollution)* 226: 166 doi: 10.1007/s11270-015-2431-5 (1.554 SCI) (2 citations)
- [40] Matos P, Sousa E, Pardal MA, Pereira E, **Cardoso PG**. (2016). The effects of mercury contamination on the structure and functioning of the macrobenthic assemblages of the Ria de Aveiro (Portugal). *Water Air and Soil Pollution (Q2 Pollution)* 227:41. 10.1007/s11270-015-2734-6 (2 citations)
- [41] Van Tussenbroek BI, Soissons LM, Bouma TJ, Asmus R, Auby I, Brun FG, **Cardoso PG**, Desroy N, Fournier J, Ganthy F, Garmendia J-M, Godet L, Grilo TF, Kadel P, Ondiviela B, Peralta G, Recio M, Valle M, Van der Heide T, Van Katwijk MM (2016). Pollen limitation may be a common Allee effect in marine hydrophilous plants: implications for decline and recovery in seagrasses. *Oecologia (Q1 Ecology)* 182:595-609. DOI 10.1007/s00442-016-3665-7. (3.12 SCI) (11 citations)
- [42] Soissons LM, Van Katwijk MM, Brun FG, Peralta G, **Cardoso PG**, Grilo TF, Ganthy F, Garmendia J-M, Godet L, , Kadel P, Ondiviela B, , Recio M, Valle M, Van der Heide T Fournier J, Desroy N Asmus R, Bouma TJ (2017). Seasonal and latitudinal variation in seagrass mechanical traits across Europe: the influence of local nutrient status and morphometric plasticity. *Limnology and Oceanography (Q1 Aquatic Sciences)* 63: 37-46. doi: 10.1002/lno.10611. (3.595 SCI) (9 citations)
- [43] **Cardoso PG**, Rodrigues D, Madureira TV, Oliveira N, Rocha MJ, Rocha E (2017). Warming modulates the effects of the endocrine disruptor progestin levonorgestrel on the zebrafish fitness, ovary maturation kinetics and reproduction success. *Environmental Pollution (Q1 Toxicology/Pollution)* 229: 300-311. doi: 10.1016/j.envpol.2017.05.090 (4.358 SCI) (11 citations)
- [44] **Cardoso PG**, Grilo TF, Dionisio G, Aurelio M, Lopes AR, Pereira R, Pacheco M, Rosa R (2017). Short-term effects of increased temperature and lowered pH on a temperate grazer-seaweed interaction (*Littorina obtusata*/*Ascophyllum nodosum*). *Estuarine, Coastal and Shelf Science (Q1 Aquatic Sciences)* 197: 35-44. <https://doi.org/10.1016/j.ecss.2017.08.007> (2.413 SCI) (7 citations)
- [45] **Cardoso PG**, Loganimoce EM, Neuparth T, Rocha MJ, Rocha E, Arenas F (2018). Interactive effects of increased temperature,  $p\text{CO}_2$  and the synthetic progestin levonorgestrel on the fitness and breeding of the amphipod *Gammarus locusta*. *Environmental Pollution (Q1 Toxicology/Pollution)* 236: 937-947. doi: 10.1016/j.envpol.2017.10.065 (4.358 SCI) (11 citations)
- [46] Soissons LM, Van Katwijk MM, Brun FG, Peralta G, **Cardoso PG**, Grilo TF, Ganthy F, Garmendia J-M, Godet L, , Kadel P, Ondiviela B, , Recio M, Valle M, Van der Heide T Fournier J, Desroy N Asmus R, Bouma TJ (2018). Latitudinal Patterns in European Seagrass Carbon Reserves: Influence of Seasonal Fluctuations Versus Short-Term Stress and Disturbance Events. *Frontiers in Plant Science (Q1 Plant Science)* 9:88. doi: 10.3389/fpls.2018.00088 (3.677 SCI) (8 citations)
- [47] Grilo TF, Lopes AR, Sampaio E, Rosa R, **Cardoso PG**. (2018). Sex differences in oxidative stress response of topshells *Trochus histrio* under increased temperature and high  $p\text{CO}_2$ . *Marine Pollution Bulletin (Q1 Aquatic Science)* 131: 252-259. doi: 10.1016/j.marpolbul.2018.04.031 (3.241 SCI) (10 citations)

- [48] **Cardoso PG**, Rodrigues D, Madureira T, Rocha MJ, Rocha E (2018). Histopathological evaluation of combined impacts of the synthetic progestin levonorgestrel and temperature on the female zebrafish maturation using a semi-quantitative grading analysis – is it enough? *Bulletin of Environmental Contamination and Toxicology* (Q2 Pollution)101: 417-422. doi.org/10.1007/s00128-018-2436-z (1.48 SCI) (2 citations)
- [49] Grilo TF, Repolho T, Rosa R, **Cardoso PG** (2019). Performance and herbivory of the tropical topshell *Trochus histrio* under short-term temperature increase and high CO<sub>2</sub>. *Marine Pollution Bulletin* (Q1 Aquatic Science) 138: 295-301. https://doi.org/10.1016/j.marpolbul.2018.11.011 (3.241 SCI) (2 citations)
- [50] Cruzeiro C, Ramos A, Loganimoce EM, Arenas F, Rocha E, **Cardoso PG** (2019). Genotoxic effects of combined multiple stressors on *Gammarus locusta* haemocytes: interactions between temperature, pCO<sub>2</sub> and the synthetic progestin levonorgestrel. *Environmental Pollution* (Q1 Toxicology/Pollution) 245: 864-872. https://doi.org/10.1016/j.envpol.2018.11.070 (4.358 SCI) (1 citation)
- [51] Ivorra L, **Cardoso PG**, Chan SK, Tagulao, Cruzeiro C. (2019). Environmental characterization of 4,4' dichlorobenzophenone in surface waters from Macao and Hong Kong coastal areas (Pearl River Delta) and its toxicity on two biological models: *Artemia salina* and *Daphnia magna*. *Ecotoxicology and Environmental Safety* (Q1 Toxicology/Pollution)171: 1-11. https://doi.org/10.1016/j.ecoenv.2018.12.054 (3.974 SCI) (6 citations)
- [52] Ivorra L, Cruzeiro C, Chan SK, Tagulao K, **Cardoso PG** (2019). Uptake and depuration kinetics of dicofol metabolite 4,4' dichlorobenzophenone in the edible Asiatic clam *Meretrix meretrix*. *Chemosphere* (Q1 Pollution/Chemistry) 235: 662-669. https://doi.org/10.1016/j.chemosphere.2019.06.155 (5.108 SCI)
- [53] **Cardoso PG**, Resende-de-Oliveira R, Rocha E (2019). Combined effects of increased temperature and levonorgestrel exposure on zebrafish female liver using stereology and immunohistochemistry against catalase, CYP1A, HSP90 and vitellogenin. *Environmental Pollution* (Q1 Toxicology/Pollution) 252: 1059-1067. https://doi.org/10.1016/j.envpol.2019.06.058. (5.714 SCI) (6 citations)
- [54] Pilotto F, ..., **Cardoso PG**, et al. (2020). Meta-analysis of multidecadal biodiversity trends in Europe. *Nature Communications* 11: 3486. Doi/10.1038/s41467-020-17171-y (12.12 SCI) (10 citations)
- [55] Amorim VE, Gonçalves O, Capela R, Fernandez-Boo S, Oliveira M, Dolbeth M, Arenas F, **Cardoso PG** (2020). Immunological and oxidative stress responses of the bivalve *Scrobicularia plana* to distinct patterns of heatwaves. *Fish and Shellfish Immunology* 106: 1067-1077. doi.org/10.1016/j.fsi.2020.09.024 (3.3 SCI)
- [56] Ivorra L, **Cardoso PG**, Chan SK, Cruzeiro C, Tagulao K. (2021). Can mangroves work as an effective phytoremediation tool for pesticide contamination? A worldwide overview. *Journal of Cleaner Production*. https://doi.org/10.1016/j.jclepro.2021.126334 (7.24 SCI)
- [57] Dolbeth M, Babe O, Costa DA, Mucha AP, **Cardoso PG**, Arenas F (2021). Benthic estuarine communities' contribution to bioturbation under the experimental effect of marine heatwaves. *Scientific Reports* 11:11422. https://doi.org/10.1038/s41598-021-90720-7 (IF 4.38)
- [58] **Cardoso PG**, Gonçalves O, Carvalho MF, Rodrigo O, Vaz-Pires P (2021). Seasonal evaluation of freshness profile of commercially important wild *versus* farmed fish species. *Foods* 10, 1567. https://doi.org/10.3390/foods10071567. (IF 4.12)

- [59] Ivorra L; Cruzeiro C; Ramos A; Tagulau K., **Cardoso PG** (2022). How can environmental conditions influence dicofol genotoxicity on the edible Asiatic clam, *Meretrix meretrix*? *Environmental Pollution* 293: 118467. (IF 8.07)
- [60] Ivorra L, **Cardoso PG**, Tagulau K, Cruzeiro C (2022). Quantification of insecticides in commercial seafood sold in East Asian markets: risk assessment for consumers. Submitted to *Environmental Science and Pollution Research*. DOI:10.1007/s11356-022-24413-7
- [61] Morais H, Arenas F, Cruzeiro C, Galante-Oliveira S, **Cardoso PG** (2023). Combined effects of climate change and environmentally relevant mixtures of endocrine disrupting compounds on the fitness and gonads' maturation dynamics of *Nucella lapillus* (Gastropoda). *Marine Pollution Bulletin* 190, 114841. <https://doi.org/10.1016/j.marpolbul.2023.114841>
- [62] Magnoni LJ, Gonçalves O, **Cardoso PG**, Silva-Brito F, Ozório R, Palma M, Viegas I. (2023) Growth performance and quality indicators of European seabass (*Dicentrarchus labrax*) fed diets including refined glycerol. *Aquaculture* 569, 739377. <https://doi.org/10.1016/j.aquaculture.2023.739377>
- [63] **Cardoso PG**, Gonçalves O, Ozório R (2023). Combined effects of temperature and dietary lipid level on body composition, growth and freshness profile in European seabass, *Dicentrarchus labrax*. *Animals* 13(6), 1068. <https://doi.org/10.3390/ani13061068>.
- [64] Cardoso PG, Morais H, Crespo D, Tavares D, Pereira E, Pardal MA. 2023. Seasonal characterization of mercury contamination along the Portuguese coast: human health and environmental risk assessment. *Environ Sci Pollut Res*. <https://doi.org/10.1007/s11356-023-29495-5>
- [65] Morais H, Cruzeiro C, Pardal MA, Cardoso PG. 2023 Baseline progestins characterization in surface waters of Portuguese estuaries. *Marine Pollution Bulletin* 194: 115352. <https://doi.org/10.1016/j.marpolbul.2023.115352>

Citations indicated per paper correspond to the total number of citations, according to the Web of Science.

### **Papers Submitted**

- [1] Amorim VE, Morais H, Silva Ferreira AC, Pardal MA, Cruzeiro C, Cardoso PG. Development and application of a robust analytical method for accurate quantification of progestins in environmental samples from three Portuguese coastal estuaries. Submitted to STOTEN
- 2) Morais H, Barreiro A, Amorim VE, **Cardoso PG**. Oxidative stress responses of the marine gastropod *Nucella lapillus* to increased temperature and mixtures of endocrine disruptor chemicals. In preparation.

### **Other publications:**

Ramos A, Cruzeiro C, Malhão F, Lopes-Marques M, Cardoso PG. 2023. Solos com Vida! Protocolos científicos do 5º ao 9º ano. Zenodo <https://doi.org/10.5281/zenodo.8314993>.

### **Book Chapters**

Lillebø AI, Pardal MA, **Cardoso PG**, Marques JC (2002) The effect of primary producers dynamics (macrophytes and macroalgae) on *Hydrobia ulvae* population dynamics. In: Pardal MA, Marques JC, Graça MA (eds). *Aquatic Ecology of the Mondego River basin*.

Global importance of local experience. Imprensa da Universidade de Coimbra, p 435-455. [http://dx.doi.org/10.14195/978-989-26-0336-0\\_29](http://dx.doi.org/10.14195/978-989-26-0336-0_29)

- Dolbeth M, **Cardoso PG**, Pardal MA. Impact of eutrophication on the seagrass assemblages of the Mondego estuary (Portugal) (2011). In: AA Ansari, S Singh Gill, GR Lanza, W Rast (Editors). Eutrophication: Causes, Consequences and Control, Springer Science Business Media, DOI 10.1007/978-90-481-9625-8\_11., p 225-246.
- Lillebø AI, Flindt MR, **Cardoso PG**, Leston S, Dolbeth M, Pereira ME, Duarte AC, Pardal MA. (2011). Restoration of seagrass community to reverse eutrophication in estuaries In: Ecohydrology and Restoration, L Chicharo & M Zalewski (eds) In: Treatise on Estuarine and Coastal Science, E Wolanski & D S McLusky (Chief eds) vol 10: p 151-164. <https://doi.org/10.1016/B978-0-12-374711-2.01007-X>
- Silva-Santos P, Lopes RJ, Múrias T, Medeiros J, **Cardoso PG**, Dolbeth M, Pardal MA, Cabral JA (2011). The use of stochastic models as a management tool in a shallow temperate estuary of south Europe (Mondego, Portugal). In: Alonso M. S. and Rubio I. M. (Eds), *Seagrass: Ecology, Uses and Threats*. Nova Science Publishers, Inc., New York, p 157-176.
- Cardoso PG**, Dolbeth M, Sousa R, Relvas P, Santos R, Silva A, Quintino V 2019. The Portuguese Coast (chapter 7). In Shepard C (eds) **World Seas: An Environmental Evaluation**. <https://doi.org/10.1016/B978-0-12-805068-2.00009-7>
- Cardoso PG** 2021. Pharmaceuticals contamination. Problematic and threats for the aquatic System. In: Azul AM (eds) Encyclopedia of the UN sustainable development goals. Life Below water [https://doi.org/10.1007/978-3-319-71064-8\\_47-1](https://doi.org/10.1007/978-3-319-71064-8_47-1).
- Cardoso PG** 2021. Estuaries: dynamics, biodiversity and impacts. In: Pardal MA et al (eds) Encyclopedia of the UN sustainable development goals. Life Below water. [https://doi.org/10.1007/978-3-319-71064-8\\_17-1](https://doi.org/10.1007/978-3-319-71064-8_17-1)

### **Master Thesis**

Cardoso PG (2001) Impacto da eutrofização na dinâmica populacional e produção de *Hydrobia ulvae* no estuário do Mondego. Tese de Mestrado, Faculdade de Ciências e Tecnologia da Universidade de Coimbra, 138 p.

### **PhD Thesis**

Cardoso PG (2005) Long-term changes within macrobenthic assemblages of a temperate estuary under eutrophication. Tese Doutoramento, Faculdade de Ciências e Tecnologia da Universidade de Coimbra, 150 p.

## **PARTICIPATION IN SCIENTIFIC EVENTS**

### **1997**

II National Meeting of Biology Students, Aveiro (Portugal), 21<sup>st</sup> March.

### **1997 – 1998**

II Conference cycle about contemporaneous themes in biology, Coimbra (Portugal), December 1997 to January 1998.

### **1998**

X Iberic Symposium of Marine Benthic Studies, Carvoeiro (Portugal), 23-26 February.

Workshop - Global changes, environmental integrity and sustainable development of coastal areas, Carvoeiro (Portugal), 26-28 February.

III National Meeting of Biology Students, Coimbra (Portugal), 27-28 March.

3º National Meeting of Ecology, SPECO - Sociedade Portuguesa de Ecologia, Faro (Portugal), 3-5 December.

## **2000**

XI Iberic Symposium of Marine Benthic Studies, Málaga (Spain), 21-25 February.

31<sup>st</sup> Annual Symposium of the Estuarine and Coastal Sciences Association, Bilbao (Spain), 3-7 July.

## **2001**

Plankton Symposium, Aveiro (Portugal), 20 -22 September.

## **2002**

XII Iberic Symposium of Marine Benthic Studies, Gibraltar – La Linea, 22 -25 October.

## **2003**

38<sup>th</sup> European Marine Biology Symposium, Aveiro, 8-12 September.

## **2004**

World Congress of Malacology, Perth, Western Australia, 11-16 July.

XIII Iberic Symposium of Marine Benthic Studies, Las Palmas Gran Canaria, 21-24 September.

## **2005**

ASLO Summer Meeting, Santiago de Compostela, 19-24 June.

## **2006**

ECSA International Meeting, Venice, 16-20 October.

Workshop COPRANET “Gestão Integrada das zonas costeiras. Temos realmente escolha?, CCDR – Centro, December.

## **2007**

42<sup>nd</sup> ECSA International Meeting, Kaliningrad - Svetlogorsk, 16-22 September.

## **2008**

43<sup>rd</sup> ECSA International Meeting, Lisbon, 7-9 February.

43<sup>rd</sup> European Marine Biology Symposium – S. Miguel, Açores, 8-12 September.

## **2009**

45<sup>th</sup> Estuarine & Coastal Sciences Association, 30 August - 4 September, Dublin, Ireland.

44<sup>th</sup> European Marine Biology Symposium, 7-11 September, Liverpool, United Kingdom.

## **2010**

20<sup>th</sup> SETAC Europe annual meeting 23-27 May 2010. Seville, Spain.

47<sup>th</sup> ECSA meeting & 45<sup>th</sup> EMBS 2010, 23-27 August, Edinburgh, Scotland.

## **2011**

21<sup>th</sup> SETAC Europe annual meeting 15-19 May 2011, Milan, Italy.

46<sup>th</sup> European Marine Biology Symposium, Rovinj, Croatia, 12-16 September.

WCMB – World Conference on Marine Biodiversity, Aberdeen, Scotland (U.K.)

## **2012**

50th ECSA, Venice, 3-7 June, 2012

### **2013**

11<sup>th</sup> International Conference on Mercury as a Global Pollutant (ICMGP), Edinburgh, 28 July-2 August, 2013.

53rd Estuarine & Coastal Sciences Association (ECSA) - Estuaries and coastal areas in times of intense change. 13-17 October, Shanghai, China.

### **2014**

Workshop co-funded by the COST Action: Seagrasses in Europe - Threats, Responses and Management. 4-6 March, Olhão, Portugal.

54<sup>th</sup> Estuarine Coastal Sciences Association (ECSA) – Coastal systems under change: tuning assessment and management tools. 12-16 May, Sesimbra, Portugal.

### **2015**

3<sup>rd</sup> International symposium Effects of climate change on the world's oceans. Santos city, Brazil, 23-27 March 2015

ECSA Local Meeting on the Seine Estuary/Colloque Port 2000 after 10 years –Restoration of the estuarine environments, the example of the Seine estuary. 27-28 May, Le Havre, France.

### **2017**

22nd International Conference on Environmental Indicators during 1-5 August in Helsinki (Finland).

### **2018**

4th World Conference on Marine Biodiversity in Montreal, 13-16 May 2018.

31<sup>st</sup> congress New European Society for comparative Physiology and Biochemistry, Porto 9-12 September 2018.

### **2021**

SEB2021 Annual Conference, 28 June-9 July 2021.

### **2022**

PRIMO21 The 21st International Symposium on Pollutant Responses In Marine Organisms, Gothenburg Sweden, May 22-25, 2022.

## **ORAL PRESENTATIONS AND POSTERS PRESENTED IN SCIENTIFIC MEETINGS**

### **ORAL PRESENTATIONS**

- [1] **Cardoso PG**, Lillebø AI, Pardal MA, Flindt M, Marques JC (1998). Importância da macrofauna bentónica nos processos de degradação das macrófitas de sapal (*Spartina maritima* e *Scirpus maritimus*) no estuário do Mondego. 3º Encontro Nacional de Ecologia, SPECO - Sociedade Portuguesa de Ecologia, Faro (Portugal), 3-5 December.

- [2] **Cardoso PG**, Lillebø AI, Pardal MA, Ferreira SM, Marques JC (2000). Impact of eutrophication on *Hydrobia ulvae* population dynamics in the Mondego estuary (Western Portugal). 31<sup>st</sup> Annual Symposium of the Estuarine and Coastal Sciences Association, Bilbao (Spain), 3-7 July.
- [3] Ferreira SM, Pardal MA, Lillebø AI, **Cardoso PG**, Marques JC (2000). Impact of macroalgae blooms in the population dynamics, production and life cycle of *Cyathura carinata* (Krøyer). Evidence from the Mondego estuary. 31<sup>st</sup> Annual Symposium of the Estuarine and Coastal Sciences Association, Bilbao (Spain), 3 -7 July.
- [4] **Cardoso PG**, Pardal MA, Lillebø AI, Ferreira SM, Raffaelli D, Marques JC (2003). Dynamic changes in seagrass assemblages under eutrophication and implications for recovery. 38<sup>th</sup> European Marine Biology Symposium, Aveiro, 8-12 September.
- [5] **Cardoso PG**, Brandão A, Pardal MA, Raffaelli D, Marques JC (2004). The resilience of *H. ulvae* populations to anthropogenic and natural disturbances. World Congress of Malacology, Perth, 11-16 July.
- [6] **Cardoso PG**, Pardal MA, Raffaelli D, Baeta A, Marques JC (2004). Macroinvertebrate response to different species of macroalgal mats and the role of disturbance history. XIII Simpósio Ibérico de Estudos de Bentos Marinho, Las Palmas Gran Canaria, 21-24 September.
- [7] Dolbeth M, Lillebø AI, **Cardoso PG**, Ferreira S, Pardal MA (2004). Annual production of 5 common intertidal macrobenthic species: different methods responses in different environmental scenarios. ECSA Local Meeting Symposium Towards an integrated knowledge and management of estuarine systems, Lisboa; 9-10 September.
- [8] **Cardoso PG**, Raffaelli D, Lillebø A I, Verdelhos T, Marques J C, Pardal M A (2005). Long-term changes within macrobenthic assemblages of a temperate estuary experiencing eutrophication. ASLO Summer Meeting, Santiago de Compostela, 19-24 June.
- [9] **Cardoso PG**, Bankovic M, Raffaelli D, Pardal MA (2006). Polychaete assemblages as indicators of habitat recovery in a temperate estuary under eutrophication. ECSA 41<sup>st</sup> International Conference "Measuring and managing changes in estuaries and lagoons" – Veneza, 15-20 October.
- [10] Dolbeth M, **Cardoso PG**, Ferreira SM, Verdelhos T, Raffaelli D, Pardal MA (2006). Anthropogenic and natural disturbances on a macrobenthic estuarine community over ten years of study. ECSA 41<sup>st</sup> International Conference "Measuring and managing changes in estuaries and lagoons" – Veneza, 15-20 October.
- [11] **Cardoso PG**, Raffaelli D, Lillebø AI, Verdelhos T, Pardal MA. (2007). The impact of extreme flooding events and anthropogenic stressors on the macrobenthic communities' dynamics. ECSA 42<sup>nd</sup> International Conference "Estuarine ecosystems: structure, function and management" – Kaliningrad - Svetlogorsk, 16-22 September.
- [12] Grilo TF, **Cardoso PG**, Pardal MA (2008). The impact of extreme weather events on the macrobenthic communities' dynamics of a temperate estuary. ECSA 43<sup>rd</sup> International Conference. "Climate change impacts on south-European coastal ecosystems" – Lisboa, 7-9 February.
- [13] **Cardoso PG**, Grilo TF, Pardal MA (2008). The impact of extreme weather events on the seagrass *Zostera noltii* and related *Hydrobia ulvae* populations. 43<sup>rd</sup> European Marine Biology Symposium – S. Miguel, Açores, 8-12 September.

- [14] **Cardoso PG**, Leston S, Grilo T, Bordalo MD, Crespo D, Raffaelli D, Pardal MA (2009). Implications of nutrient decline in the seagrass ecosystem success. 44th European Marine Biology Symposium, Liverpool, United Kingdom, 7-11 September.
- [15] Nunes M, Coelho JP, **Cardoso PG**, Pereira ME, Duarte AC, Pardal MA (2009). Macrobenthic community structure in intertidal areas of a temperate estuarine system (Ria de Aveiro, Portugal). 45th Estuarine & Coastal Sciences Association, Dublin, Ireland 30 August - 4 September.
- [16] Nunes M, Coelho JP, **Cardoso PG**, Pereira ME, Duarte AC, Pardal MA (2009). The macrobenthic community along a mercury contamination in a temperate estuarine system (Ria de Aveiro, Portugal). 44th European Marine Biology Symposium, Liverpool, United Kingdom, 7-11 September.
- [17] Grilo TF, **Cardoso PG**, Dolbeth M, Pardal MA (2009). Long-term changes on amphipods population dynamics of a temperate estuary following an ecosystem restoration. 44th European Marine Biology Symposium, Liverpool, United Kingdom, 7-11 September.
- [18] Bordalo MD, Ferreira SM, **Cardoso PG**, Leston S, Pardal MA (2009). The impact of anthropogenic and extreme weather events on a *Cyathura carinata* population dynamics over a 15-year period. 44th European Marine Biology Symposium, Liverpool, United Kingdom, 7-11 September.
- [19] **Cardoso PG.**, Lillebo A.I., Pereira E., Duarte A.C., Pardal M.A. (2010). Different mercury bioaccumulation kinetics by two macrobenthic species: The bivalve *Scrobicularia plana* and the polychaete *Hediste diversicolor*. 20<sup>th</sup> SETAC Europe annual meeting 23-27 May 2010. Seville, Spain.
- [20] Grilo TF, **Cardoso PG**, Dolbeth M, Pardal MA. (2010). Effects of extreme climate events on the macrobenthic communities' structure and functioning of a temperate estuary. 45<sup>th</sup> EMBS meeting & EMBS 2010, 23-27 August, Edinburgh, Scotland.
- [21] **Cardoso PG**, E. Pereira, T.F. Grilo, A.C. Duarte, M.A. Pardal (2011). Kinetics of mercury bioaccumulation in the polychaete *Hediste diversicolor* and in the bivalve *Scrobicularia plana*, through a dietary exposure pathway. 21<sup>st</sup> SETAC Europe Annual Meeting, 15-19 May, Milan, Italy.
- [22] Grilo T.F., **Cardoso P.G.**, Pardal, M.A. (2011) The impact of ecosystem restoration and subsequent seagrass *Zostera noltii* recolonization in a related *Hydrobia ulvae* population. 46th European Marine Biology Symposium, Rovinj, Croatia, 12-16 September.
- [23] Dolbeth M, **Cardoso PG**, Grilo TF, Bordalo M, Raffaelli D, Pardal MA (2011). Long-term changes in production of estuarine benthos affected by multiple stressors. WCMB – World Conference on Marine Biodiversity, Aberdeen, Scotland (U.K.)
- [24] Nunes M, Coelho JP, **Cardoso PG**, Pereira ME, Duarte AC, Pardal MA (2011). Influência da contaminação por mercúrio na estrutura da comunidade macrobentónica da Ria de Aveiro, Jornadas da Ria de Aveiro, 2-4 Maio.
- [25] Grilo T.F, **Cardoso P.G.**, Pato P., Baptista J, Duarte A.C., Pardal M.A (2012). PCBs accumulation in sediments and bivalves from the Ria de Aveiro (Portugal) and implications for public health. 50th ECSA, Venice, 3-7 June, 2012.
- [26] **Cardoso P.G**, Grilo T.F, Pereira E, Duarte A.C., Pardal M.A (2013). Mercury accumulation and decontamination kinetics in the edible cockle *Cerastoderma edule*. 11<sup>th</sup> International



Conference on Mercury as a Global Pollutant (ICMGP), Edinburgh, 28 July-2 August, 2013.

- [27] Grilo TF, **Cardoso PG**, Pato P, Duarte AC, Pardal MA (2013) Organochlorine accumulation on a highly consumed bivalve (*Scrobicularia plana*) and its main implications for human health. 53rd Estuarine & Coastal Sciences Association (ECSA) - Estuaries and coastal areas in times of intense change. 13-17 October, Shanghai, China.
- [28] Grilo TF, **Cardoso PG**, Pato P, Duarte AC, Pardal MA (2013). Uptake and detoxification of PCB-153 in the edible shrimp *Palaemonetes varians*. 53rd Estuarine & Coastal Sciences Association (ECSA) - Estuaries and coastal areas in times of intense change. 13-17 October, Shanghai, China.
- [29] **Cardoso PG**, D'Ambrosio M Marques SC Azeiteiro UM, Coelho JP, Pereira E. (2013) The effects of mercury on the peracarida community dynamics in a temperate coastal lagoon (Ria de Aveiro, Portugal). 53rd Estuarine & Coastal Sciences Association (ECSA) - Estuaries and coastal areas in times of intense change. 13-17 October, Shanghai, China.
- [30] Matos P, Sousa E, Pardal MA, Pereira E, **Cardoso PG**. The effects of mercury contamination on the structure and functioning of the macrobenthic assemblages of the Ria de Aveiro (Portugal). 53rd Estuarine & Coastal Sciences Association (ECSA) - Estuaries and coastal areas in times of intense change. 13-17 October, Shanghai, China.
- [31] Grilo TF, Abreu A, Pardal MA, **Cardoso PG** (2014). How seagrass beds can be really dynamic systems. Workshop co-funded by the COST Action: Seagrasses in Europe - Threats, Responses and Management. 4-6 March, Olhão, Portugal.
- [32] **Cardoso PG**, Sousa E, Matos P, Henriques B, Pereira E, Pardal MA (2014). Impact of mercury contamination on the population dynamics of *Peringia ulvae* (Gastropoda): Implications on metal transfer through the trophic web. ECSA 54 - Coastal systems under change: tuning assessment and management tools: 12-16 May, Sesimbra, Portugal.
- [33] Grilo TF, Mendes T, Coelho JP, Pereira E, Pardal MA, **Cardoso PG** (2014). Is the glass eel *Anguilla anguilla* a safe product for human consumption after temporary mercury exposure? 54<sup>th</sup> Estuarine Coastal Sciences Association (ECSA) – Coastal systems under change: tuning assessment and management tools. 12-16 May, Sesimbra, Portugal.
- [34] Grilo TF, Abreu A, Pardal MA, **Cardoso PG** (2015). Structural and functional responses of macrobenthic communities to climate variability: a comparison between distinct climate scenarios. ECSA Local Meeting on the Seine Estuary/Colloque Port 2000 after 10 years –Restoration of the estuarine environments, the example of the Seine estuary. 27-28 May, Le Havre, France.
- [35] **Cardoso PG**, Pereira E, Duarte AC, Azeiteiro UM (2015). Temporal characterization of Mercury accumulation at different trophic levels and implications for metal biomagnification along a coastal food web. ECSA Local Meeting on the Seine Estuary/Colloque Port 2000 after 10 years –Restoration of the estuarine environments, the example of the Seine estuary. 27-28 May, Le Havre, France.
- [36] D'Ambrosio M, Marques SC, Azeiteiro UM, Pardal MA, Pereira E, Duarte AC, **Cardoso PG** (2017). Mercury contamination and its effects on the bioaccumulation pattern and population dynamics of *Mesopodopsis slabberi* (Crustacea: Mysidacea). 19<sup>th</sup> International Symposium on Pollutant Response in Marine Organisms, Matsuyama, Japan (30 June- 3 July)

- [37] Ivorra L, Tagulao K, Kiu CS, **Cardoso PG**, Cruzeiro C (2017). Dicofol levels in the mouth of the Pearl River Delta and its environmental implication. 22nd International Conference on Environmental Indicators during 1-5 August in Helsinki (Finland).
- [38] **Cardoso PG**, Loganimoce EM, Neuparth T, Rocha MJ, Rocha E, Arenas F (2018). Interactive effects of increased temperature, pCO<sub>2</sub> and the synthetic progestin levonorgestrel on the fitness and breeding of the amphipod *Gammarus locusta*. 4<sup>th</sup> World conference on Marine Biodiversity in Montreal, 13-16 May 2018.
- [39] **Cardoso PG**, Rodrigues D, Madureira T, Oliveira N, Rocha MJ, Rocha E (2018). Warming modulates the effects of the endocrine disruptor levonorgestrel on zebrafish ovary maturation kinetics and reproduction. 31<sup>st</sup> ESCPB, Porto, 9-12 September 2018.
- [40] Ivorra LG, Cruzeiro C, **Cardoso PG**, Chan SK, Tagulao KT. (2018). Environmental risk assessment of 4,4'-dichlorobenzophenone (4,4'-DCBP) in the mouth of the Pearl River Delta (PRD). The Asian Conference on Sustainability, Energy and the Environment 8-10 June, Kobe, Japan.
- [41] **Cardoso PG**, Gonçalves O (2021). Avaliação sazonal do perfil de frescura de peixe selvagem versus aquacultura/Seasonal evaluation of the freshness profile of wild versus cultivated fish. Webinar - Avaliação da frescura e otimização de metodologias de conservação de pescado, projeto ValorMar. 28th January 2021.
- [42] **Cardoso PG**, Gonçalves O, Cavalheri T, Amorim VE, MF Carvalho, Vaz-Pires P, Ozório R (2021). Combined effects of temperature and diets with different fat composition on freshness profile of the European seabass, *Dicentrarchus labrax*. SEB2021 Annual Conference 29 June-8 July (virtual).
- [43] Amorim VE, Gonçalves O, Capela R, Fernandez-Boo S, Oliveira M, Dolbeth M, Arenas F, **Cardoso PG** (2021). The effects of distinct heatwaves on the immunological and oxidative stress responses of the bivalve *Scrobicularia plana*. SEB2021 Annual Conference 29 June-8 July (virtual).
- [44] **Cardoso PG**, Gonçalves O, Carvalho MF, Ozório R, Vaz-Pires R (2021). Seasonal assessment of freshness and quality of some relevant fish species (wild versus cultured). SEB2021 Annual Conference 29 June-8 July (virtual).
- [45] Morais H, Arenas F, Galante-Oliveira S, **Cardoso PG**. Combined effects of temperature and mixtures of endocrine disruptors (mercury and drosiprenone) on the fitness, consumption rates and gonads maturation dynamics of the gastropod *Nucella lapillus*. 21st International Symposium on Pollutant Responses In Marine Organisms, PRIMO21, Gothenburg Sweden, May 22-25, 2022.

## POSTERS

- [1] Verdelhos T, Pardal MA, **Cardoso PG**, Ferreira SM (2002). Impact of eutrophication on the population structure and dynamics of *Scrobicularia plana*. A case study in the Mondego estuary. II Congresso internacional das Sociedades Malacológicas Europeias, Vigo.
- [2] Dolbeth M, Pardal MA, Lillebø AI, **Cardoso PG**, Ferreira SM (2002). Macrobenthic secondary production estimation methods: an evaluation in different environmental scenarios. XII Simpósio Ibérico de Estudios del Bentos Marino, Gibraltar, 22 -25 October.
- [3] AI Lillebø, Flindt MR, Pardal MA, **Cardoso PG**, Ferreira SM, Marques JC (2004). The faunal role on the degradation of the common intertidal salt marsh plant *Scirpus maritimus*. XIII Simpósio Ibérico de Estudios de Bentos Marinho, Las Palmas Gran Canaria, 21-24 September.
- [4] Lillebø AI, Neto JM, Martins I, Verdelhos T, Leston S, **Cardoso PG**, Ferreira SM, Marques JC, Pardal MA (2005). Management of a shallow temperate estuary to control eutrophication: the effect of hydrodynamics on the system nutrient loading. ASLO Summer Meeting, Santiago de Compostela, 19-24 June.
- [5] Nunes M, Coelho JP, Cardoso PG, Pereira ME, Duarte AC, Pardal MA (2011). Estudo da comunidade macrobentónica intertidal da Ria de Aveiro. Jornadas da Ria de Aveiro.

- [6] Costa S, Viegas I, **Cardoso PG**, Pereira E, Duarte A.C., Pardal M.A (2013). Differential, sex, morphotype and tissue accumulation of mercury in the crab *Carcinus maenas*. 11<sup>th</sup> International Conference on Mercury as a Global Pollutant (ICMGP), Edinburgh, 28 July-2 August, 2013.
- [7] **Cardoso PG**, Marques SC, D'Ambrosio M, Pereira E, Duarte AC, Azeiteiro U, Pardal MA (2014). Changes in the zooplankton communities along a mercury contamination gradient in a coastal lagoon (Ria de Aveiro, Portugal). 54<sup>th</sup> Estuarine Coastal Sciences Association (ECSA) – Coastal systems under change: tuning assessment and management tools. 12-16 May, Sesimbra, Portugal.
- [8] **Cardoso PG**, Dionísio G, Aurélio M, Paula J, Grilo T, Rosa R (2015). How trophic interactions (*Littorina obtusata*/*Ascophyllum nodosum*) may be endangered by climate change. 3<sup>rd</sup> International symposium Effects of climate change on the world's oceans. Santos city, Brazil, 23-27 March 2015.
- [9] Grilo TF, Reis AT, Coelho JP, Pereira E, Pardal MA, **Cardoso PG** (2015). Field transplantation of the bivalve *Scrobicularia plana* along a mercury gradient in Ria de Aveiro (Portugal): uptake and depuration kinetics. ECSA Local Meeting on the Seine Estuary/Colloque Port 2000 after 10 years – Restoration of the estuarine environments, the example of the Seine estuary. 27-28 May, Le Havre, France.
- [10] **Cardoso PG**, Dionísio G, Aurélio M, Paula J, Grilo T, Rosa R (2015). How trophic interactions (*Littorina obtusata*/*Ascophyllum nodosum*) may be endangered by climate change. ECSA Local Meeting on the Seine Estuary/Colloque Port 2000 after 10 years – Restoration of the estuarine environments, the example of the Seine estuary. 27-28 May, Le Havre, France.
- [11] Rodrigues D, **Cardoso PG**, Oliveira N, Malhão F, Madureira TV, Rocha E. (2016). Effects of a Synthetic Progestin on the Zebrafish Gonadal Maturation - Preliminary Histopathology Study with a Supra-Environmental Concentration of Levonorgestrel. Congresso da Sociedade Portuguesa de Microscopia, 28-29 June, Porto.
- [12] Grilo TF, Duarte B, **Cardoso PG**, Caçador I, Rosa R (2016). Growth and photophysiological responses of tropical and temperate *Ulva* species under a future changing ocean. ECSA 56 – Coastal systems in transition from a 'natural' to an 'anthropogenically modified' state. 4-7 September, Bremen, Germany.
- [13] Tagulao KA, Wong UM, Chan SK, Ivorra LG, **Cardoso PG** (2017). Mangroves in Macao: Their Role in Heavy Metals Remediation. Poster presented at: the 7th International Symposium for Wetland Pollutant Dynamics and Control (WETPOL), August 21-25, 2017, Big Sky, Montana, USA Mangroves in Macao: Their Role in Heavy Metals Remediation.
- [14] **Cardoso PG**, Morais H, Crespo D, Tavares D, Pereira E, Pardal MA (2022). Temporal characterization of mercury contamination along the Portuguese Coast: human health and ecological risk assessment. 21st International Symposium on Pollutant Responses In Marine Organisms, PRIMO21, Gothenburg Sweden, May 22-25, 2022.
- [15] Hernández-Chan S, Uribe G, Michelsen S, **Cardoso PG**, Lima F, Arenas F (2023). *Predicting thermal tolerance limits of marine forests' seaweed species under a changing climate*. 8th European Psychological Congress, Brest, France, August 2023.

## PARTICIPATION IN RESEARCH PROJECTS

### NATIONAL PROJECTS (As coordinator):

2018-2021

GLOBALLED – Impacts of global change on environmentally realistic mixtures of endocrine disruptor compounds on the structure and functioning of coastal ecosystems – Implications for a sustainable environment (PTDC/BIA-ECO/30552/2017).

Funding: COMPETE 2020 e FCT (206.143.33€)

Coordinator: Patrícia Cardoso Teixeira

2017-2021

VALORMAR – Valorização Integral dos Recursos Marinhos: Potencial, Inovação Tecnológica e Novas Aplicações, with the reference POCI-01-0247-FEDER-024517 within the R&D Institution CIIMAR

Funding: European Regional Development Fund (ERDF) and by the European Social Fund (ESF).

Coordinator of PPS4 - CIIMAR: Patrícia Cardoso Teixeira

Data: 01/10/2017 a 31/07/2021

2014-2015

CLIMATROPH - Impact of multiple climate drivers (temperature and CO<sub>2</sub>) on marine trophic interactions – ecological and commercial implications (EXPL/MAR-EST/1427/2013).

Funding: FCT (49.895€)

Coordinator: Patricia Cardoso Teixeira (IMAR-CMA, Coimbra)

Nature of investigation: The recent emergence of climate change as a widely accepted and crucial issue for society has enabled the far more rapid recognition of warming and ocean acidification (OA) as parallel concern for policy makers. To date, studies into the costs of interactive effects of warming and OA on non-calcified marine macroalgae are largely unknown. To our knowledge, only a few studies have exposed the interactive effects of increased CO<sub>2</sub> and other abiotic factors on non-calcified marine macroalgae, mostly with a focus on the combined effects of CO<sub>2</sub> and nutrients. Therefore, during this 1-year project we will be able to explore and develop a protocol for implementation of this methodology in seaweeds which can possibly be diffused to other primary producers. It is expected that after completion of the present project a better understanding of the cause-effect of climate change on the bottom-up and top-down interactions will be achieved. In addition, an estimation of the economic impact of warming and acidification on the seaweed food industry will be provided. Overall, new scientific knowledge will be provided to enable policy makers to develop management and conservation strategies to sustain and protect the marine environment.

2010-2013

MERCOAST - Impact of mercury on the dynamics of estuarine communities in a coastal lagoon (Ria de Aveiro, Portugal). Their socio-economics implications (PTDC/MAR/101906/2008).

Funding: FCT (145.373€)

Coordinator: Patricia Cardoso Teixeira (IMAR-CMA, Coimbra)

Nature of investigation: Considering that estuaries, especially salt marshes and seagrass beds, are very productive ecosystems and recognized as nursery areas for several estuarine/marine species, most of them with high economic interest (e.g clams – *Scrobicularia plana*, cockles – *Cerastoderma edule*, crustaceans, fishes), it would be crucial to assess the impact of mercury loading on the population dynamics (i.e. community structure, life span, growth rates, breeding periods) of such species. Also will be addressed other relevant points such as: 1) to determine the kinetics of mercury bioaccumulation in two distinct macrobenthic species; 2) to characterize the plankton community along the mercury gradient, in terms of abundance, community structure and biodiversity and evaluate until which point the zooplankton community is affected by the mercury pollution and what are the possible consequences for the upper trophic levels; 3) to evaluate the impact of mercury contamination on the growth, reproduction and survival of an important mysid species, *Mesopodopsis slabberi*; 4) to evaluate the impact of mercury on the growth of salt marsh plants.

## **NATIONAL PROJECTS (as collaborator):**

2021-2024

Ocean3R – Reduce pressures, restore and regenerate the NW Portuguese ocean and waters (NORTE-01-0145-FEDER-000064).  
Funding: NORTE2020 and FEDER.

2018-2021

SEEINGSHORE – Understanding and predicting the impact of climate change on coastal habitats.

Funding: FCT and FEDER

Coordination: Francisco Arenas

Co-PI – **Patricia Cardoso**

2016-2019

INNOVMAR - Innovation and Sustainability in the Management and Exploitation of Marine Resources (Reference NORTE-01-0145-FEDER-000035), supported by the Northern Regional Operational Programme (NORTE2020), through the European Regional Development Fund (ERDF).

2015-2018

CLIMATOXEEL -Combined effects of global climate change and neurotoxicants on the early ontogeny of the European eel (*Anguilla anguilla*).

Funding: FCT (196.771€)

Coordinator: Tiago Fernandes Grilo.

Nature of Investigation: to study the combined effects of warming, acidification and some neurotoxic compounds on the life cycle of the *A. anguilla*.

2011-2014

BIOCHANGED - Impact of evenness changes on the estuarine ecosystems functioning.

Funding: FCT

Coordinator: Marina Dolbeth (University of Coimbra)

Nature of investigation: Study the effect of biodiversity evenness changes due to eutrophication impact and introduction of invasive species in the estuarine ecosystem functioning, following multiple extreme weather events. As extreme weather events, we will test changes in salinity and “thermic shock”, which in the field conditions resulted after changes in the rainfall patterns (floods and drought) and the occurrence of heat waves. These experiments are set in accordance with the field long-term database of the Mondego estuary on the macrofauna communities’ composition and structural changes, following eutrophication and climate impacts and in accordance to invasive species invasion patterns from Minho and Mondego estuaries.

2005-2007

Fisheries resources in the scope of an European policy of sustainable development: an interdisciplinary approach using the seabass (*Dicentrarchus labrax*) (III/AMB/4/2005).

Funding: III – Instituto de Investigação Interdisciplinar, University of Coimbra (100%).

Coordinator: Miguel Pardal (IMAR – Instituto do Mar, University of Coimbra).

Nature of Investigation: Integrating an ecological, physiological, ecotoxicological and metabolic approach, this project intends to improve the knowledge on the Mondego ichthyofauna. Main objectives were: 1) Assess the importance of the Mondego estuary as a nursery area in a perspective of sustainable development of fisheries resources; 2) Evaluate the growth rates of seabass individuals in the aquacultures under different exploration regimes; 3) Compare the fish quality of an aquaculture and the wild specimens.

2002-2004

Dynamic model of stress induced changes on benthic communities – DYNAMOD (POCTI/MGS/37431/2001).

Funding: FCT

Coordinator: João Carlos Marques (IMAR - Instituto do Mar, Universidade de Coimbra);  
Nature of Investigation: Understanding and modelling of processes involved in the replacement of primary producers in the Mondego estuary. Development of a dynamic structural model with application of mathematical algorithms in order to describe qualitative modifications occurred in a scenario of change (non-eutrophic to strongly eutrophic).

2002-2004

Characterization of the Mondego estuary and establishment of management scenarios in terms of water quality and ecosystem integrity.

Coordinator: João Carlos Marques (IMAR - Instituto do Mar, Universidade de Coimbra);

Funding: INAG – Institute of water (Portugal)

Nature of Investigation: Identification of impacts and pressures along the Mondego estuary extension. Assessment of the environmental integrity and identification of sensitive areas based on hydraulic circulation, water quality and benthic communities data. Establishment of management scenarios using GIS (geographic information system) and circulation models in order to control the eutrophication process observed in the terminal part.

2000–2003

Ecological adaptation and genetic divergence in changing sandy shores. Concepts and guidelines for beach protection and management (Sapiens 36553/99).

Funding: Programme SAPIENS 99

Coordinator: João Carlos Marques (IMAR - Instituto do Mar, Universidade de Coimbra).

Nature of investigation: Characterization of biological communities of sandy beaches; assessment of external factors conditioning the dominant species and development of models of their population dynamics. Evaluation of eventual genetic divergence related to the ecological adaptation of these species.

1999–2002

Human impact on the estuarine dynamics of matter and energy – basis for an integrated management of estuarine ecosystems (PRAXIS / C/ MGS / 11238/ 1998).

Funding: Programa PRAXIS XXI

Coordinator: João Carlos Marques (IMAR - Instituto do Mar, Universidade de Coimbra).

Nature of investigation: Characterization of pelagic, taxonomic and trophic groups in terms of their biology, dynamics and ecology, assessing the biodiversity and biomass production. Assessment of environmental impact of human activities on the structure and functioning of pelagic ecosystem. Development of concepts and ecological models for an integrated estuarine management.

1996 – 2000

Assessment of integrity of saltmarshes ecosystems (*Spartina maritima*) in the Mondego estuary, using the structure and function of benthonic reproductive processes (PRAXIS XXI/BD/9290/96).

Funding: JNICT.

Coordinator: João Carlos Marques.

Nature of investigation: Study of the environmental impact and use of ecological holistic indicators in the saltmarsh of *Spartina maritima* in the Mondego estuary.

## **EUROPEAN PROJECTS (as collaborator):**

**2020-2024**

### **FutureMARES**

Climate Change and Future Marine Ecosystem Services and Biodiversity

Funding: UE, Horizon 2020

Nature of Investigation: Marine and transitional ecosystems provide fundamental climate regulation, food provisioning and cultural services. FutureMARES provides socially and economically viable nature-based solutions (NBS) for climate change (CC) adaptation and mitigation to safeguard these ecosystems' natural capital, biodiversity and services. The program advances understanding of the links between species and community traits, ecological functions and ecosystem services as impacted by CC by analysing the best available data from monitoring programs and conducting targeted experiments and beyond state-of-the-art modelling.

#### **1998 – 2000**

Bases for the integrated sustainable management of Mediterranean sensitive coastal ecosystems MECO (IC18 CT98 0270).

Funding: UE, Programa INCO (100%).

Coordinator: Felicita Scapini (University of Florence, Italy).

Nature of investigation: characterization of sensitive ecosystems in mediterranean coastal areas, mainly sandy beaches. Development of a management strategy for a sustainable use.

#### **INTERNATIONAL PROJECTS (as collaborator and external consultant)**

##### **2015-2018**

The role of mangroves on the bioaccumulation and citogenotoxic effects of metals and pesticides on the food web of a tropical coastal system (FDCT 117/2014/A3).

Funding: FDCT, Macau

Coordinator: Chan Shek Kiu

Nature of Investigation: evaluate the role of mangroves on the bioaccumulation and citogenotoxic effects of metals and organic compounds on the food web and consequently on human health.

#### **INTERVENTION IN THE SCIENTIFIC COMMUNITY**

##### **Referee of scientific journals**

- Estuarine Coastal and Shelf Science
- Marine Environmental Research
- Marine Pollution Bulletin
- Marine and Freshwater Research
- Marine Ecology Progress Series
- Aquatic Ecology
- Journal of Sea Research
- Journal of Molluscan Studies
- Journal of Marine Biological Association of United Kingdom
- Environmental Pollution
- Ecological Indicators
- Environmental Monitoring and Assessment
- Ecotoxicology and Environmental Safety
- Journal of Integrated Coastal Zone Management
- Hidrobiologia
- Chemosphere
- Estuaries and Coasts

##### **Member of the Editorial Board of Scientific Journals**

- The Scientific World Journal (Academic Editor)
- Frontiers in Marine Science (Review Editor)
- Toxics (Guest Editor Special Issue)

## **PARTICIPATION IN PROJECTS IN THE AREA OF KNOWLEDGE TRANSFERENCE**

**2008-2013** Monitoring plan of macrobenthic invertebrates (abundance and diversity)

Funding: ACUINOVA – Actividades Piscícolas, SA (100%) (**411 686€**)

Coordinator: **Miguel Pardal** (FCTUC – Faculdade de Ciências e Tecnologia da Universidade de Coimbra).

Nature of work: The monitoring plan has as objectives to analyse the effects of implementation of the *Scophthalmus maximus* aquaculture on the macrobenthic communities of the adjacent coastal areas.

## **EXPERIENCE IN FIELD AND EXPERIMENTAL WORK**

### **1997 – 2008**

Participation in monthly sampling campaigns at the intertidal area of the Mondego estuary in order to study the macrobenthic communities structure and flux of nutrients in the system.

### **1999 - 2000**

Participation in fortnightly sampling campaigns at the intertidal area, in the sandy substrate of Quiaios and Cabedelo beaches, in order to study the biology and population dynamics of the amphipode *Talitrus saltator*.

### **2005 – 2013**

Participation in seasonal sampling campaigns at the intertidal area, in Ria de Aveiro, in order to study the effect of mercury on the structure and functioning of macrobenthic, suprabenthic and planktonic communities.

### **2012-PRESENT**

Vast experience in the implementation and execution of mesocosm experiments, testing the effects of multiple stressors (e.g. climate and contaminants, like mercury) on survival, reproduction, physiological and immunological responses, cytogenotoxicity on key coastal species. Also, experience in field transplantation experiments to evaluate the bioaccumulation and depuration abilities of mercury by bivalves.

Additionally, I have solid experience with implementation of mesocosms experiments with different macrobenthic species (e.g. bivalves, polychaetes, crustacea, fish), exposed to contaminants, such as mercury, PCBs in order to evaluate their kinetics of accumulation and depuration.

## **OTHER COURSES**

Course “Ecotourism-Tourism of Nature”, by Formação Tecnológica e Gás, Coimbra, 2003.

Course “Environmental Management Systems”, by Formação Tecnológica e Gás, Coimbra, 2004.

Course “Introduction to the Assessment of Environmental Impact Studies”, by Formação Tecnológica e Gás, Coimbra, 2004.

Course “Environmental Impact Studies”, by Formação Tecnológica e Gás, Coimbra, 2004.

Course “Quality of Water”, by Formação Tecnológica e Gás, Coimbra, 2004.



How to Write a Competitive Proposal for Horizon 2020 by Sean McCarthy at Instituto Pedro Nunes, Coimbra, 8<sup>th</sup> April 2014.

How to Write a Competitive Proposal for Horizon Europe by Sean McCarthy at University of Coimbra, 21<sup>st</sup> September 2023.

## **LANGUAGE SKILLS**

English – Reading, writing and conversation

French – Reading and writing

Spanish – Reading, writing and conversation

## **PEDAGOGIC ACTIVITY**

### **AT GRADUATION LEVEL**

#### **Practical classes of Graduation in Biology of F.C.T.U.C.:**

Hidrobiology	2002/2003 (1º - 2º sem)
Hidrobiology	2003/2004 (1º - 2º sem)
Hidrobiology	2004/2005 (1º - 2º sem)
Hidrobiology	2005/2006 (1º - 2º sem)

### **AT POST-GRADUATION LEVEL**

#### **Theoretical and practical classes in the Master in Ecology of F.C.T.U.C.**

Communities and Ecosystems	2004/2005
Communities and Ecosystems	2005/2006
Ecology of Populations	2007/2008
Ecology of Populations	2009/2010
Ecology of Populations	2010/2011

#### **Theoretical and practical classes in European Masters in Applied Ecology - EMAE (FCTUC)**

Population Ecology	2009-2010
Biogeochemical Cycles and Environmental Assessment of Wetlands	2008-2009
Population Ecology	2009-2010
Biogeochemical Cycles and Environmental Assessment of Wetlands	2009-2010
Population Ecology	2010-2011
Biogeochemical Cycles and Environmental Assessment of Wetlands	2010-2011
Biogeochemical Cycles and Environmental Assessment of Wetlands	2011-2012
Nutrient Dynamics	2016 (4h)

#### **Theoretical and practical classes in the Master in Marine Resources of F.C.U.P (University of Porto)**

Population Ecology	2012-2013
Population Ecology	2013-2014

#### **Theoretical and practical classes in the Master in Environmental Sciences and Management of the University of S. Joseph (Macau)**

## SUPERVISING EXPERIENCE

### Post-doc

[1] Interactive effects of global climate change and PAHs pollution on marine amphipod *Gammarus locusta*. A biochemistry, proteomic and genotoxic transgenerational approach. Tiago Fernandes Grilo.

### PhD thesis

#### Ongoing:

[1] *The effects of climate extremes on the transformation and toxicity of PFAS in non-target coastal species*. Vânia Encarnação Amorim, University of Porto, Portugal (FCT Grant: 2021.06462.BD).

#### Concluded:

- [1] *Impacts of Climate Variability and Anthropogenic Stressors on Estuarine Macrobenthic Assemblages. Socio-economic Implications and Human Health Risk Assessment*. PhD thesis by Tiago Fernandes Grilo, University of Coimbra, 2013. **Co-supervision** with Miguel Ângelo do Carmo Pardal, University of Coimbra.
- [2] *The role of mangroves on the bioaccumulation and cytogenotoxic effects of pesticides on the food web of a sub-tropical coastal system*. Lucia Ivorra, University of Saint Joseph (Macau) in collaboration with the University of Porto (Portugal), 22 July 2021.
- [3] *Combined effects of climate change and endocrine disruptor compounds on the structure and functioning of coastal ecosystems*. Hugo Arantes de Moraes, University of Porto, Portugal (FCT Grant: SFRH/BD/139762/2018), 5 September 2023.

### Master thesis

#### Concluded:

- [1] *The effects of distinct heatwaves on the immunological and oxidative stress responses of the bivalve *Scrobicularia plana**. Vânia Encarnação Amorim. University of Porto, 2019.
- [2] *Combined effects of warming, acidification and the synthetic progestin levonorgestrel on the fitness of the marine amphipod *Gammarus locusta* (Crustacea)*. MSc thesis by Epeli Manu Loganimoce, University of Porto, 2017.
- [3] *Synergistic effects of increased temperature and the synthetic progestin levonorgestrel on the reproduction of the zebrafish*. Daniela Sofia Barbosa Rodrigues, University of Porto, 2017.
- [4] *Structural and functional responses of macrobenthic communities to climate variability: a comparison between distinct climate scenarios*. M.Sc thesis by Anthony Martins de Abreu, University of Coimbra, 2013. **External supervision**, University of Coimbra
- [5] *The impact of mercury contamination on the population dynamics and production of *Peringia ulvae* in the Ria de Aveiro (Portugal)*. M.Sc thesis by Eva Sousa, University of Coimbra, 2013. **External supervision**, University of Coimbra.
- [6] *The impact of mercury contamination on the population dynamics of *Mesopodopsis slabberi* (van Beneden, 1861) (Crustacea: Mysidacea) and its bioaccumulation pattern*. M.Sc thesis by Mariaelena D'Ambrosio, 2012. University of Coimbra. **External Supervision**, University of Coimbra.
- [7] *The effects of mercury contamination on the structure and functioning of the macrobenthic assemblages of the Ria de Aveiro (Portugal)*. M.Sc thesis by Patrícia Alexandra Nunes Matos, 2012. University of Coimbra. **External Supervision**, University of Coimbra.
- [8] *Long-term changes on population dynamics and secondary production of *Ampithoe valida* and *Melita palmata* (Amphipoda) in the Mondego estuary*. M.Sc thesis by Tiago Fernandes Grilo, 2008, University of Coimbra. **Co-supervision** with Miguel Ângelo do Carmo Pardal, University of Coimbra

- [9] *Impacto da contaminação por mercúrio na estrutura das comunidades macrobentónicas da ria de Aveiro*. M.Sc thesis by Margarida Nunes Cardoso, 2007, University of Coimbra. **Co-supervision** with Miguel Ângelo do Carmo Pardal, University of Coimbra.
- [10] *O impacto da eutrofização na dinâmica populacional de *Hydrobia ulvae* e *Cyathura carinata*, no estuário do Mondego*. M.Sc thesis by Andrea Raquel Fernandes Martins Brandão, 2006, University of Coimbra. **Co-supervision** with Miguel Ângelo do Carmo Pardal, University of Coimbra.

### **Graduation (curricular internship)**

#### **Concluded:**

- [1] *Development and Application of a Robust Analytical Method for Accurate Quantification of Progestins in Environmental Samples from three Portuguese Coastal Estuaries*. Therese Nyiraneza. University of Porto, 2023.
- [2] *Evaluation of freshness of *Trachurus trachurus* and *Scomber colias* based on Physical, organoleptic, and Microbiological parameters*. Ana Catarina Maia dos Santos. University of Porto, 2018/2019.
- [3] *The effects of binary mixtures of mercury and synthetic progestins on the fitness and reproduction of *Gammarus locusta* under global warming conditions*. Maria Sousa. University of Porto, 2018/2019.
- [4] *The effects of distinct heat waves on the immunological response and oxidative stress of the bivalve *Scrobicularia plana**. Maria Oliveira, University of Porto, 2018/2019.
- [5] *Avaliação imunohistoquímica dos efeitos combinados da exposição à progestina levonorgestrel e aumento da temperatura no funcionamento do fígado de peixe-zebra*. Relatório de estágio de Ricardo Oliveira. Licenciatura em Ciências do Meio Aquático. Universidade do Porto, 2018.
- [6] *Avaliação preliminar dos efeitos do stress térmico agudo ao nível da resposta imunológica dos bivalves marinhos *Mytilus* sp.* Relatório de estágio de Ana Luisa Mano. Licenciatura em Ciências do Meio Aquático. Universidade do Porto, 2017.
- [7] *Avaliação do efeito da eutrofização e posterior recuperação na estrutura de comunidades macrobênticas do estuário do Mondego (Portugal)*. José Ribamar Costa Oliveira Filho (Universidade Federal do Maranhão – UFMA), July 2013.

## **PARTICIPATION IN ACADEMIC JURIES**

### **Master theses**

- [1] Main examiner of master thesis of Márcia Sofia da Silva Santos. 27<sup>th</sup> December 2011. IPL, Escola Superior de Turismo e Tecnologia do Mar.  
Dissertation: Phytoremediation of Cadmium at different salinities by *Scirpus maritimus* from the Óbidos Lagoon (Portugal).
- [2] Main examiner of master thesis of Cármen Alexandra Costa Pedro. 27<sup>th</sup> December 2011. IPL, Escola Superior de Turismo e Tecnologia do Mar.  
Dissertation: How do salinity and heavy metal contamination affect *Salicornia ramosissima* and the cadmium accumulation capacity?
- [3] Member of jury of master thesis of Mariaelena D'Ambrosio. 17<sup>th</sup> July 2012. University of Coimbra.  
Dissertation: The impact of mercury contamination on the population dynamics of *Mesopodopsid slabberi* (van Beneden, 1861) (Crustacea: Mysidacea) and its bioaccumulation pattern.
- [4] Member of jury of master thesis of Patrícia Alexandra Nunes Matos. 17<sup>th</sup> September 2012. University of Coimbra.  
Dissertation: The effects of mercury contamination on the structure and functioning of the macrobenthic assemblages of the Ria de Aveiro (Portugal).

[5] Member of jury of master thesis of Eva Carvalho de Sousa. 13<sup>th</sup> September 2012. University of Coimbra.

Dissertation: The impact of mercury contamination on the population dynamics of *Peringia ulvae* (Gastropoda) on a temperate coastal lagoon (Ria de Aveiro, Portugal).

[6] Member of jury of master thesis of Anthony Martins de Abreu. 18<sup>th</sup> September 2012. University of Coimbra.

Dissertation: Structural and functional responses of macrobenthic communities to climate variability: a comparison between distinct climate scenarios.

[7] Main examiner of master thesis of Kelly Veiga. 4<sup>th</sup> November 2015. IPL, Escola Superior de Turismo e Tecnologia do Mar.

Dissertation: Assessment of metals contamination (Cd, Pb, Ni) at the Óbidos Lagoon using *Cerastoderma edule* as a biomonitoring tool.

[8] Main examiner of master thesis of Daniela Filipa Guardado dos Santos. 9<sup>th</sup> June 2020. IPL, Escola Superior de Turismo e Tecnologia do Mar.

Crescimento e caracterização bioquímica das microalgas *Isochrysis* sp. E *Rhodomonas* báltica sujeitas a diferentes filtros de cor de luz LED.

### **PhD theses**

[1] Main examiner of PhD thesis of Maria Benedicta A. D. B. Bordalo e Sá. 26<sup>th</sup> February 2013. University of Coimbra. Dissertation: Towards the understanding of multiple stressors in key estuarine species: linking environmental, anthropogenic and parasitism influences.

[2] Main examiner of PhD thesis of Joana Luisa Bento Simões Baptista. 24<sup>th</sup> July 2013. University of Coimbra. Dissertation: PCB contamination in the fish communities of the Mondego estuary.

[3] Member of jury of PhD thesis of Tiago Fernandes Grilo. 24<sup>th</sup> July 2013. University of Coimbra. Dissertation: Impacts of Climate Variability and Anthropogenic Stressors on Estuarine Macrobenthic Assemblages. Socio-economic Implications and Human Health Risk Assessment.

[4] Main examiner of PhD thesis of Margarida Nunes Cardoso. 27<sup>th</sup> February 2014. University of Coimbra. Dissertation: Persistent organic pollutants in Portuguese estuaries. Occurrence and distribution of PCDD/Fs and dioxin-like PCBs.

[5] Main examiner of PhD thesis of Daniel de Jesus Crespo. 9<sup>th</sup> May 2017. University of Coimbra. Dissertation: Interactive effects of global ecological changes in the ecosystem functioning of estuarine systems: invasive species and climate change.

[6] Main examiner of PhD thesis of Mariaelena D'Ambrosio. 23<sup>rd</sup> February 2018. University of Coimbra. Dissertation: Ecology of gelatinous carnivores in the Mondego estuary: the role of siphonophores.

[7] Main examiner of PhD thesis of José Sérgio Mauricio Seco. 27<sup>th</sup> May 2020. University of Aveiro (Zoom session). Dissertation: Mercury accumulation in the food web of the Scotia Sea, Southern Ocean.

[8] Member of the jury (supervisor) of Lucia Ivorra Gonzalez. 22<sup>nd</sup> July 2021. Dissertation: The role of mangrove ecosystems in the dynamics of organochlorine pesticides with particular focus on dicofol and its main metabolite. Cotutelle between University of Porto and University of Saint Joseph (Macau).

## SCIENTIFIC ACTIVITY SPREADING ACTIONS

- Since 2001 to 2010 has participated in the activities of “Ciência Viva no Verão” that has been held in Mondego estuary.
- On 22<sup>th</sup> June 2013 participated in the Earth Night, an initiative developed by the Science Museum of the University of Coimbra (<http://www.museudaciencia.org/index.php?module=events&option=calendar&id=400>), with some activities related with the area of marine ecology.
- On 10<sup>th</sup> February 2014 participated in a laboratorial activity with the students of the 3<sup>rd</sup> level of “Escola Básica nº 1 de Condeixa-a-Nova, about the “Benthic organisms of the estuarine systems”.
- On 26<sup>th</sup> July, 30<sup>th</sup> August and 13<sup>th</sup> September 2014 coordinated an action of “Ciência Viva no Verão” that has been held in the Mondego estuary.
- On 1<sup>st</sup> and 29<sup>th</sup> August 2015 co-coordinated an action of “Ciência Viva no Verão” that has been held in the Mondego estuary.
- On 16<sup>th</sup> February 2016, gave a lecture entitled ‘Life in the Estuaries’ to the 8<sup>th</sup> level at Escola Basica Francisco Torrinha, Porto.
- On 13<sup>th</sup> April 2021, gave a presentation “Avaliação sazonal do perfil de frescura de peixe selvagem versus aquacultura” to CMIA (Centro de Monitorização e Interpretação Ambiental de Matosinhos).
- On 7, 9, 15 March 2023 gave presentation about the “Health of Soil” to several schools in Guimarães, Portugal.
- Workshop on Environmental Education (under 360.come project) aimed at students, from 5<sup>th</sup> to 9<sup>th</sup> grade, of different schools in the municipality of Guimarães, with the aim of raising awareness and educating students on topics such as: healthy soils, biodiversity and science. Done by the group WISE (Women in Science & Education). (2023/03/01 - 2023/03/30).
- Participation in the green week in Guimarães, 16<sup>th</sup> September 2023.

### Websites

<https://www2.ciimar.up.pt/team.php?id=310>  
<https://www.researchgate.net/profile/Patricia-Cardoso-4>  
<https://scholar.google.com/citations?user=ttq5AQwAAAAJ&hl=pt-PT>  
[www.be-wise.pt](http://www.be-wise.pt)

## INTERVIEW (NEWSPAPER / MAGAZINE)

Activity description	Newspaper / Forum
2017/10/24	<p>Um estudo do Porto demonstrou que as hormonas presentes nas pílulas e lançadas nas águas residuais, em conjunto com o aumento da temperatura causado pelas alterações climáticas, podem afetar a reprodução dos peixes e colocar em risco ecossistemas aquáticos. Este estudo teve como principal objetivo avaliar os efeitos interativos entre o aumento de</p>
	Diário de Notícias

Activity description		Newspaper / Forum
	temperatura e as hormonas presentes nas pílulas, usadas também em terapias hormonais de substituição (utilizadas em doentes com cancro, por exemplo), na reprodução e na descendência do peixe zebra.	
2017/10/24	Hormonas na água inibem reprodução	Correio da Manhã
2017/10/23	Hormonas que vão parar aos esgotos e aquecimento global estão a afetar reprodução dos peixes	Sapo Online
2017/10/23	Hormonas lançadas na água e aumento da temperaturas inibem reprodução dos peixes	Sábado Online
2017/10/23	Hormonas lançadas na água e alta temperatura inibem reprodução dos peixes	Notícias ao Minuto Online
2017/10/23	Hormonas lançadas na água e aumento da temperaturas inibem reprodução dos peixes	Jornal de Notícias Online
2017/10/23	Hormonas lançadas na água e aumento da temperaturas inibem reprodução dos peixes	Diário de Notícias Online
2017/10/23	Hormonas lançadas na água e aumento da temperaturas inibem reprodução dos peixes	Correio da Manhã Online
2017/10/23	Peixes. Pílulas e calor afetam reprodução	Jornal de Notícias
2017/10/23	Hormonas lançadas na água e aumento da temperatura inibem reprodução dos peixes	Atlas da Saúde Online
2017/10/23	Hormonas lançadas na água e aumento da temperaturas inibem reprodução dos peixes	Diário de Notícias da Madeira Online

### INTERVIEW (TV / RADIO SHOW)

Program	Topic
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	Program	Topic
2017/11/25 - 2017/11/25	Mentes que Brilham (Porto Canal)	Aquecimento global e hormonas na reprodução do peixe-zebra
2017/10/23 - 2017/10/23	TSF - Rádio Notícias	Hormonas lançadas na água e aumento da temperaturas inibem reprodução dos peixes

Patricia Carlos Teixeira