

Manoela Romanó de Orte, Ph.D.

Postdoctoral Research Scientist
Department of Global Ecology
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Education

Ph.D. Water and Coastal Management University of Cádiz, Spain	2009-2013
M.S. Water and Coastal Management University of Cádiz, Spain	2007-2009
B.S. Oceanography Federal University of Paraná, Brazil	2002-2006

Research and Academic History

Postdoctoral Research Scientist Department of Global Ecology Carnegie Institution for Science Supervisor: Ken Caldeira Keywords: plastic pollution, climate change, carbonate chemistry, coral reefs, coral metabolism	2017-present
Postdoctoral Researcher Federal University of São Paulo, Brazil Supervisor: Augusto Cesar Keywords: heavy metals, ocean acidification, ecotoxicology	2014-2017
Ph.D. Researcher University of Cádiz and University of Huelva, Spain Advisors: Aguasanta Sarmiento and Tomás Ángel DelValls Casillas Keywords: marine sediments, geochemistry, ocean acidification, metal speciation, carbonate chemistry	2009-2013
Master's Researcher University of Cádiz and University of Santiago de Compostela, Spain Advisor: Alejo Carballeira and Tomás Ángel DelValls Casillas Keywords: toxicity tests, antibiotics, disinfectants, land-based aquaculture, marine pollution	2007-2009

Fellowships, Grants and Awards

Postdoctoral fellowship from FAPESP (São Paulo Research Foundation)

Carnegie Institution for Science (2017-2018)

Postdoctoral fellowship from FAPESP (São Paulo Research Foundation)

Federal University of São Paulo (2015-2019)

Postdoctoral fellowship from CAPES (Ministry of Education, Brazil)

Federal University of São Paulo (2014)

Full scholarship for LAOCA (Latin-American Ocean Acidification Workshop)

Dichato, Chile (2014)

“Cum Laude” distinction for doctoral thesis- University of Cádiz (2013)

Doctoral fellowship from CAPES (Ministry of Education, Brazil)

University of Cádiz (2009-2013)

Full scholarship for Acidification in Aquatic Environments Workshop

Tromsø, Norway (2012)

Master of Science Erasmus Mundus fellowship

University of Cádiz (2007-2009)

Peer Reviewed Articles

- 1) **De Orte MR**, Koweek DA, Cyronak T, Takeshita Y, Griffin A, Wolfe K, Szmant A, Whitehead R, Albright R, Caldeira K. Unexpected role of communities colonizing dead coral substrate in the calcification of coral reefs. *Limnology and Oceanography* 66:1793-1803, 2021.
- 2) **De Orte MR**, Clowez S, Caldeira K. Response of bleached and symbiotic sea anemones to plastic microfiber exposure. *Environmental Pollution* 249: 512-517, 2019.
- 3) Gouveia N, Oliveira CRM, Martins CP, Maranhão LA, Pereira CDS, **De Orte MR**, Harayashiki CAY, Almeida SM, Castro IB. Can shell alterations in limpets be used as alternative biomarkers of coastal contamination? *Chemosphere* 224: 9-19, 2019.
- 4) Souza LS, Pusceddu FH, Cortez FS, **De Orte MR**, Seabra AA, Cesar A, Ribeiro DA, Del Valls TA, Pereira CDS. Harmful effects of cocaine byproduct in the reproduction of sea urchin in different ocean acidification scenarios. *Chemosphere* 236 124284, 2019.
- 5) Bautista-Chamizo E, Sendra M, **De Orte MR**, Riba I. Comparative effects of seawater acidification on microalgae: Single and multispecies toxicity tests. *Science of The Total Environment* 649: 224-232, 2019.
- 6) Bautista-Chamizo E, Borrero-Santiago A, **de Orte MR**, DelValls A, Riba I. Effects of CO₂ enrichment on two microalgae species: A toxicity approach using consecutive generations. *Chemosphere* 213: 84-91, 2018.
- 7) **De Orte MR**, Bonnail E, Sarmiento AM, Riba I, DelValls A, Nieto JM. Metal fractionation in marine sediments acidified by enrichment of CO₂: a risk assessment. *Marine Pollution Bulletin* 131: 611-619, 2018.

- 8) Bautista-Chamizo E, Sendra M, Dis A, Seoane M, **De Orte MR**, Riba I. Will temperature and salinity changes exacerbate the effects of seawater acidification on the marine microalgae *Phaeodactylum tricornutum*? *Science of the Total Environment* 634: 87-94, 2018.
- 9) Basallote MD, Rodriguez-Romero A, **De Orte MR**, DelValls A, Riba I. CO₂ leakage simulation: effects of the pH decrease on fertilization and larval development of *Paracentrotus lividus* and sediment metals toxicity. *Chemistry and Ecology* 34: 1-21, 2018.
- 10) Goulding TA, **De Orte MR**, Slazaj D, Basallote MD, DelValls TA, Cesar A. Assessment of the environmental impacts of ocean acidification (OA) and carbon capture and storage (CCS) leaks using the amphipod *Hyale youngi*. *Ecotoxicology* 26: 521-533, 2017.
- 11) Slazaj D, **De Orte MR**, Goulding T, Medeiros ID, DelValls TA, Cesar A. The effects of ocean acidification and a carbon dioxide capture and storage leak on the early life stages of marine mussel *Perna perna* (Linnaeus, 1758) and metal bioavailability. *Environmental Science and Pollution Research* 24: 765-785, 2017.
- 12) Bautista-Chamizo E, **De Orte MR**, DelValls TA, Riba I. Simulating CO₂ leakages from CCS to determine Zn toxicity using the marine microalgae *Pleurochrysis roscoffensis*. *Chemosphere* 144: 955-965, 2016.
- 13) Kerr R, Da Cunha LC, Kukuchi RKP, Horta PA, Ito RG, Muller MN, Orselli IBM, Lencina-Avila JM, **De Orte MR**, Sordo L, Pinheiro BR, Bonou FK, Schubert N, Bergstrom E, Copertino M. The Western South Atlantic Ocean in a high-CO₂ world: Current measurements capabilities and perspectives. *Environmental Management* 57: 740-752, 2016.
- 14) Basallote MD, Rodríguez-Romero A, **de Orte MR**, DelValls TA, Riba, I. Evaluation of the threat of marine CO₂ leakage-associated acidification on the toxicity of sediment metals to juvenile bivalves. *Aquatic Toxicology* 166: 63-71, 2015.
- 15) **De Orte MR**, Sarmiento AM, Basallote MD, Rodríguez-Romero A, Riba I, DelValls, TA. Effects on the mobility of metals from acidification caused by possible CO₂ leakage from sub-seabed geological formations. *Science of the Total Environment* 470-471: 356-363, 2014a.
- 16) **De Orte MR**, Sarmiento AM, DelValls TA, Riba I. Simulation of the potential effects of CO₂ leakage from carbon capture and storage activities on the mobilization and speciation of metals. *Marine Pollution Bulletin* 86: 59-67, 2014b.
- 17) **De Orte MR**, Lombardi AT, Sarmiento AM, Basallote MD, Rodriguez-Romero A, Riba I, DelValls TA. Metal mobility and toxicity to microalgae associated with acidification of sediments: CO₂ and acid comparison. *Marine Environmental Research* 96: 136-144, 2014c.
- 18) Cesar A, Lia LRB, Pereira CDS, Santos AR, Cortez FS, Choueri RB, **De Orte MR**, Rachid BRF. Environmental assessment of dredged sediment in the major Latin American seaport (Santos, São Paulo - Brazil): An integrated approach. *Science of the Total Environment* 497-498: 679-687, 2014.
- 19) Rodriguez-Romero A, Jiménez-Tenório N, Basallote MD, **De Orte MR**, Blasco J, Riba I. Predicting the impacts of CO₂ leakage from sub-seabed storage: Effects of metal accumulation

and toxicity on the model benthic organism *Ruditapes philippinarum*. *Environmental Science and Technology* 48: 2292-301, 2014.

- 20) Rodríguez-Romero A, Basallote MD, **De Orte MR**, DelValls TA, Riba I, Blasco J. Simulation of CO₂ leakages during injection and storage in sub-seabed geological formations: Metal mobilization and biota effects. *Environment International* 68: 105-117, 2014.
- 21) Basallote MD, **De Orte MR**, DelValls TA, Riba, I. Studying the effect of CO₂-induced acidification on sediment toxicity using acute amphipod toxicity test. *Environmental Science & Technology* 48: 8864-8872, 2014.
- 22) **De Orte MR**, Carballeira C, Viana IG, Carballeira A. Assessing the toxicity of chemical compounds associated with land-based marine fish farms: The use of mini-scale microalgae toxicity test. *Chemistry and Ecology* 29: 554-563, 2013.
- 23) Garrard SL, Hunter RC, Frommel AY, Lane AC, Phillips JC, Cooper R, Dineshram R, Cardini U, McCoy SJ, Arnberg M, Rodrigues Alves BG, Annane S, **De Orte MR**, Kumar A, Aguirre-Martínez GV, Maneja RH, Basallote MD, Ape F, Torstensson A, Bjoerk MM. Biological impacts of ocean acidification: a postgraduate perspective on research priorities. *Marine Biology* 160: 1789-1805, 2013.
- 24) Carballeira C, **De Orte MR**, Viana IG, Carballeira A. Implementation of a minimal set of biological tests to assess the ecotoxic effects of effluents from land-based marine fish farms. *Ecotoxicology and Environmental Safety* 78: 148-161, 2012.
- 25) Carballeira C, **De Orte MR**, Viana IG, DelValls TA, Carballeira A. Assessing the toxicity of chemical compounds associated with land-based marine fish farms: The sea urchin embryo bioassay with *Paracentrotus lividus* and *Arbacia lixula*. *Archives of Environmental Contamination and Toxicology* 63: 249-261, 2012.

Selected Talks and Presentations

De Orte MR. Our Ocean in the Anthropocene: The combined impacts of pollution and climate change on marine life. Invited Seminar. Marine Science Seminar. UC Santa Barbara, 2021, Santa Barbara, USA.

De Orte MR. Climate Change and Plastic Pollution: A One-Two Punch for Coral Reefs. Invited Seminar. Marine Chemistry and Geochemistry Seminar Series. Woods Hole Oceanographic Institution, 2020, Woods Hole, USA.

De Orte MR, Koweek DA, Griffin A, Takeshita Y, Wolfe K, Cyronak T, Albright A, Caldeira K. Turf Algae on Dead Corals: Daytime Calcification and Nighttime Dissolution. Ocean Sciences Meeting, 2020, San Diego, USA.

De Orte MR, Koweek DA, Griffin A, Takeshita Y, Wolfe K, Cyronak T, Albright A, Caldeira K. Turf Algae on Dead Corals: Unexpected Daytime Calcification and Nighttime Dissolution. AGU Fall Meeting, 2019, San Francisco, USA.

De Orte MR. The effects of climate change on the calcification of coral reefs. Invited Seminar. Federal University of Rio Grande do Norte, 2019, Natal, Brazil.

De Orte MR, Wolfe K, Koweek DA, Takeshita Y, Griffin A, Cyronak T, Albright A, Caldeira K. In-situ metabolic measurements reveal complex recovery on a bleached reef. Ocean Visions, 2019, Atlanta, USA.

De Orte MR, Balduf KC, Brito BA, Choueri RB, Medeiros ID, Pereira CDS, Cesar A. The use of Ecotoxicological assays to evaluate risk of CO₂ leakages from CCS activities. XVII Brazilian Congress of Ecotoxicology, 2016, Curitiba, Brazil.

De Orte MR, DelValls TA, Riba I, Cesar A. The use of multiple lines of evidences to conduct risk assessment in sediments affected by CO₂ acidification. III International Symposium on Effects of Climate Changes on the World's Oceans, 2015, Santos, Brazil.

De Orte MR, Slazaj D, Goulding T, DelValls TA, Cesar, A. Using a battery of bioassays as an integrated tool to evaluate the effects of CO₂-induced acidification on metal toxicity. XVI Latin-American Congress of Ocean Science (COLACMAR), 2015, Santa Marta, Colombia.

De Orte MR, Sarmiento AM, Basallote MD, Riba I, DelValls A. Distribution of heavy metals in marine sediments acidified by CO₂ leaks during carbon capture and storage activities. XIII Brazilian congress of Ecotoxicology, 2014, Guarapari, Brazil.

De Orte MR, Lombardi AT, Basallote M D, Rodriguez-Romero A, DelValls A, Riba I, Sarmiento A. Studying the impacts of metal mobility and seawater acidification caused by CO₂ leakage from geological storage sites on marine microalgae. XVII PRIMO-Pollutant Responses in Marine Organisms, 2013, Faro, Portugal.

De Orte MR, Basallote M D, Rodriguez-Romero A, DelValls A, Riba I, Sarmiento A. The effects of CO₂ leakages from marine stable geological formations on the mobility and availability of metals. Society of Environmental Toxicology and Chemistry (SETAC) 6th World Congress, 2012, Berlin, Germany.

Patents

De Orte MR, Basallote MD, Rodriguez-RomeroA, DelValls TA, Riba I, Blaco J. *CO₂ Injection system for ecotoxicological studies*. Spanish Patent 201200753, 13/07/2012.

Journal Peer-Review Service

Science of the Total Environment, Scientific Reports, Marine Pollution Bulletin, Ecotoxicology and Environmental Contamination, Environmental Pollution, Journal of Hazardous Materials, Biogeoscience, Ecotoxicology and Environmental Safety, Regional Studies in Marine Science, Chemosphere, Journal of the Brazilian Chemical Society, Brazilian Journal of Oceanography, International Journal of Fisheries and Aquaculture

Teaching and Mentoring

Lectures

Federal University of São Paulo

2014-2017

Lecture: *Techniques of Underwater Sampling*

Lecture: *Marine Pollution and Integrated Assessment Methods*

Lecture: *Marine Ecotoxicology*

Developed, lectured and evaluated

University of Cádiz

2010-2013

Integrative tools for the assessment of the quality of aquatic ecosystems

Developed and taught classes in the laboratory

Mentorship

Co-adviser (undergraduate)

Giam Luca Altafim (2016), Julia Rysevas Silveira (2016), Victor Samhan Archangelo (2016), Leticia Fernanda da Silva (2015), Priscila dos Santos Sepúlveda (2015)

Adviser (Master's program)

Thomas Goulding (2015), Dorota Slazaj (2015), Esther Bautista Chamizo (2014)

Co-Adviser (Master's program)

Bruna Alves de Brito (2016), Karin Cristine Baldauf (2016)

Adviser (Ph.D. program)

Esther Bautista Chamizo (2015-2018)

Service and Leadership

Carnegie Institution DEI Committee	2020-present
Carnegie Institution Postdoctoral Association at Stanford	2019-present
Seminar committee. Department of Global Ecology	2018-present
Ph.D. Thesis committee. Ph.D. Ana Borrero Santiago	2016
University of Cádiz	
Master Thesis committee. Ms.C. Tierry Val de Medeiros	2016
Federal University of São Paulo	
Master's Project committee for the Postgraduate Program in Coastal and Oceanic Systems of the Center for Marine Studies. Federal University of Paraná.	2016

Relevant Professional Development Training

Teaching Approaches. Stanford University, Stanford-CA, USA.	2018
Scientific Communication (FAMELAB). São Paulo-SP, Brazil.	2016
Ecotoxicological Approaches for Environmental Assessment and Monitoring. São Paulo State University, Santos-SP, Brazil.	2014
Latin-American Workshop on Ocean Acidification (LAOCA). University of Concepción, Dichato, Chile.	2014
Acidification in Aquatic Environments. Marine Research institute, Tromso, Norway.	2011
Methodologies for Evaluating Metal Speciation. University of Huelva, Huelva, Spain.	2010
Scientific Diving. University of Cádiz, Cádiz, Spain.	2008

Languages

English (fluent reading, writing, and speaking)

Spanish (fluent reading, writing, and speaking)

Portuguese (native reading, writing, and speaking)