

Curriculum vitae**PERSONAL INFORMATION**

Name: Frazão da Fonseca Ribeiro dos Santos, Catarina

Date of birth: 21 December 1983 | Nationality: Portuguese

Researcher unique identifiers – ORCID: orcid.org/0000-0001-6988-253X; [ResearcherID: I-4420-2012](https://orcid.org/0000-0001-6988-253X);

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EDUCATION

- 2016 Ph.D. in Marine Sciences, Faculty of Sciences, University of Lisbon, Portugal. *Summa Cum Laude*
- 2011 Summer Term Course – Conservation Biology and Policy (ENV 209), Duke University Marine Laboratory, Nicholas School for the Environment, Duke University, USA. *Grade A*
- 2008 Master of Science in Ecology and Environmental Management, Faculty of Sciences, University of Lisbon, Portugal. *Grade 18/20*
- 2006 Degree in Marine Biology, Faculty of Sciences, University of Lisbon, Portugal. *Grade 15/20*

CURRENT POSITIONS

- 2021 – present *Researcher and lecturer*, Department of Animal Biology, Faculty of Sciences, University of Lisbon & MARE–Marine and Environmental Sciences Centre, University of Lisbon (MARE-UL), Portugal
- 2019 – present *Invited Research Associate and lecturer*, NOVA School of Business and Economics (NOVA-SBE), Environmental Economic Knowledge Center, Portugal

PREVIOUS POSITIONS

- 2018 – 2021 *Invited Researcher and lecturer*, Faculty of Sciences, Department of Animal Biology, University of Lisbon & MARE-UL, Portugal
- 2016 – 2018 *Post-Doctoral Researcher*, FCIências.ID & MARE-UL, Portugal
- 2012 – 2016 *Ph.D. Candidate*, MARE-UL, Portugal & Duke University Marine Lab, USA
- 2008 – 2012 *Research Fellow*, Portuguese Institute of Marine Research (IMAR), Portugal

TEACHING ACTIVITIES

- 2022 – present Responsible Lecturer, *Marine Spatial Planning and Environmental Assessment*, Master’s in Marine Ecology (2nd cycle), Faculty of Sciences, University of Lisbon, Portugal
- 2018 – 2021 Lecturer, *Marine Spatial Planning and Environmental Assessment*, Master’s in Marine Ecology (2nd cycle), Faculty of Sciences, University of Lisbon, Portugal
- 2021 – present Invited Lecturer, *Economic Models for Maritime Development: from Economics to Law*, Master’s in Law and Economics of the Sea (2nd cycle), NOVA Law School, Portugal
- 2018 – present Lecturer, *Animal Biology II*, Degree in Biology (1st cycle), Faculty of Sciences, University of Lisbon, Portugal
- 2019 – 2021 Lecturer, *Environmental Assessment*, Master in Ecology and Environmental Management (2nd cycle), Faculty of Sciences, University of Lisbon, Portugal
- 2018 – 2018 Invited Lecturer, *OTGA/VLIZ Training Course on Marine GIS Applications for Integrated Coastal Zone Management*, UNESCO/IOC Project Office for IODE, Oostende, Belgium
- 2018 – 2018 Invited Lecturer, *OTGA/VLIZ Training Course on Marine GIS Applications for Integrated Coastal Zone Management*, UNESCO/IOC Project Office for IODE, Oostende, Belgium

ORGANISATION OF (SCIENTIFIC) MEETINGS

- 2022 – 2022 Moderator of Session 6 on “Climate-smart marine spatial planning”, 3rd International Conference on Marine/Maritime Spatial Planning, IOC-UNESCO & European Commission, Spain (November 2022)
- 2021 – 2022 Co-convenor of Theme Session B on “Spatial management, climate change and biodiversity”, ICES Annual Science Conference 2022, Ireland (September 2022)

- 2021 – 2021 Chair of Peer review Workshop on “Study on the implementation by EU Member States of Directive 2014/89/EU on Maritime Spatial Planning (MSP Directive)”, European Commission, Brussels (December 2021)
- 2021 – 2021 Chair of Panel Session on “Marine Spatial Planning and Ocean Conservation in the Age of Climate Change”, 11th People and the Sea Conference, Netherlands (June 2021)
- 2021 – 2021 Moderator of Workshop on “MSP and Climate Change”, 4th Baltic MSP Forum, SwAM & VASAB, Latvia (June 2021)
- 2017 – 2018 Co-convenor of Session 14 “Vulnerability of marine social-ecological systems to climate change”, 4th International Symposium on The Effects of Climate Change on the World’s Oceans 2018 (by PICES, ICES, IOC-UNESCO, FAO), USA

INSTITUTIONAL RESPONSIBILITIES

- 2022 – 2022 Senior Consultant, World Bank Group (Study on “Climate Assessment for the Blue Economy Strategy of Mozambique”)
- 2021 – present Editor-in-Chief, [npj Ocean Sustainability](#) Journal, Nature Group, UK
- 2021 – present Guest Associate Editor, *Frontiers in Marine Science* Journal, [New Frontiers of Marine Governance Research Topic](#)
- 2021 – present Member of Coordination Board, Marine and Environmental Sciences Centre, University of Lisbon (MARE-ULisboa Pole), Portugal
- 2022 – 2022 Evaluator, 1 Call of Horizon Europe Program (Ocean Missions), European Commission REA, Belgium
- 2021 – 2022 Dedicated Rapporteur, 2 Calls of Horizon Europe Program (Cluster 6), European Commission REA, Belgium
- 2021 – 2021 Invited Expert, European Commission DG-MARE (“Study on the implementation by EU Member States of Directive 2014/89/EU on Maritime Spatial Planning”), Belgium
- 2021 – 2021 Invited Expert, UN Global Compact (Study on “A Call for Climate-Smart Marine Spatial Planning to Meet 1.5°C”)
- 2020 – 2022 Member of Theses Committees: Universidad del País Vasco, Spain (1 PhD) & University of Aveiro, Portugal (1 PhD) & University of Lisbon, Portugal (1 PhD, 5 MD)
- 2020 – 2020 Invited Expert, European Commission DG-MARE (Study on “Integration of Ecosystem-Based Approaches in Maritime Spatial Planning”), Belgium
- 2019 – 2020 Member of European COST Action, CA15217 “OceanGov: Ocean Governance for Sustainability”, Working Group 2
- 2019 – 2019 Invited Expert, European Commission DG-MARE (Study on “Economic Impact of Maritime Spatial Planning”), Belgium
- 2017 – 2019 Vice-Chairperson, 3 Calls of H2020 Program (Societal Challenge 2), European Commission REA, Belgium
- 2016 – 2021 Dedicated Rapporteur, 7 Calls of H2020 Program (Green Deal & SC2), European Commission REA, Belgium
- 2015 – 2016 Evaluator, 3 Calls of H2020 Program (SC2), European Commission REA, Belgium

PROJECTS

- 2023 – present Global Coordinator (PI), *MSPOLAR: Marine Spatial Planning in Polar Regions*. Portuguese Foundation for Science and Technology. Global funding: 49,127.96 euros. 2023-2024.
- 2022 – present Co-coordinator (co-PI), *NGANDU: The importance of shark populations and sustainable ocean use for human well-being in Cabo Verde and Sao Tome and Principe, West Africa*. Portuguese Foundation for Science and Technology and Aga Khan Development Network. Global funding: 248,965.00 euros. 2021-2024.
- 2022 – present Member of Advisory Board, *MSP-GREEN: Marine Spatial Planning as enabler of the European Green Deal*. PI: Pierpaolo Campostrini (CORILA). European Maritime, Fisheries and Aquaculture Fund (EMFAF). Global funding: 1,933,490.09 euros. 2022-2024.
- 2021 – present Member of Steering Group, *MSPACE: Marine Spatial Planning Addressing Climate Effects*. PI: Ana Queirós (Plymouth Marine Laboratory). UKRI National Environment

- Research Council Research Grants 2020.
- 2021 – present Project Team Member, *MozambES: Payments for mangrove ecosystem services in Mozambique*. PI: Maria Antonieta Cunha-e-Sá (NOVA School of Business and Economics). Programme for Cooperation in Science and Technology between MCTES and the Ismaili Imamat (Aga Khan Development Network) – 2nd Call for Joint Project Proposals 2019.
- 2021 – present Project Team Member, *OceanSchool*. PI: Maria Antonieta Cunha-e-Sá (NOVA School of Business and Economics). EEA Grants 2014-2021 – Blue Growth Programme, Call #5 Education.
- 2018 – 2022 Global Coordinator (PI), *OCEANPLAN: Marine Spatial Planning under Global Climate Change*. Portuguese Foundation for Science and Technology. Global funding: 239,127.96 euros.
- 2018 – 2022 Project Team Member, *VALPRAD: Ecological importance, economic valuation, and conservation of seagrass meadows in the Sado Estuary*. Programa Operacional MAR2020. Global funding: 649.246,17 euros.
- 2018 – 2022 Project Team Member, *ASCEND: Multigenerational adaptation of ascidians to ocean warming and acidification*. PI: Tiago Repolho (University of Lisbon). Portuguese Foundation for Science and Technology.
- 2017 – 2022 External Contributor, *GPS AZORES: Geographical and Political Scenarios in Maritime Spatial Planning for the Azores and North Atlantic*. PI: Helena Calado (University of the Azores). Programa Operacional AÇORES 2020.
- 2016 – 2018 Project Team Member, *SHARKFIT: Effects of climate change on temperate and tropical sharks*. PI: Rui Rosa (University of Lisbon). Portuguese Foundation for Science and Technology.
- 2013 – 2014 External Contributor, *TPEA: Transboundary Planning in the European Atlantic*. PI: Stephen Jay (University of Liverpool). European Commission DG MARE Integrated Maritime Policy Programme. External contributor through collaboration with DGPM (Portuguese Directorate General for Maritime Policy).
- 2010 – 2010 Project Team Member, *Strategic Environmental Assessment of the Amendment of the Tróia Urbanization Plan – Planning Unit 9*. PI: Francisco Andrade (University of Lisbon). Funded by the Municipality of Grândola, Portugal.
- 2010 – 2010 Project Team Member, *Strategic Environmental Assessment of the urban Detailed Plans of Tróia Planning Units 7 and 8*. PI: Francisco Andrade (University of Lisbon). Funded by the Municipality of Grândola, Portugal.
- 2010 – 2010 Project Team Member, *Strategic Environmental Assessment of the Urban Detailed Plan of Area T4 of Mourão*. PI: Francisco Andrade (University of Lisbon). Funded by the Municipality of Grândola, Portugal.
- 2009 – 2009 Project Team Member, *Strategic Environmental Assessment of the Urban Detailed Plan of Tróia Planning Unit 4*. PI: Francisco Andrade (University of Lisbon). Funded by the Municipality of Grândola, Portugal.
- 2008 – 2012 Project Team Member, *Environmental Monitoring Program for the Troiaresort Marina and New Ferryboat Dock*. PI: Francisco Andrade (University of Lisbon). Funded by SONAE Turismo, Portugal.

SCIENTIFIC PUBLICATIONS

Book Chapters

- Frazão Santos C, Agardy T, Gissi E (2022). *Marine Spatial Planning in the Age of Climate Change*. In: *Navigating Our Way to Solutions in Marine Conservation* (Crowder LB, ed), Open Book Publishers (in press).
- McAteer B, Fullbrook L, Liu W-H, Reed J, Rivers N, Vaidianu N, Westholm A, Toonen H, van Tatenhove J, Clarke J, Ansong J O, Trouillet B, Frazão Santos C, Eger S, ten Brink T, Waden E, Flannery W (2022). *International Progress in Marine Spatial Planning*. In: *Ocean Yearbook 36, Volume 35* (Chircop A et al., eds), BRILL, 346–380. doi.org/10.1163/22116001-03601013

- Calado H, Pegorelli C, Frazão Santos C (2021). *Maritime Spatial Planning and Sustainable Development*. In: *Life Below Water, Encyclopedia of the UN Sustainable Development Goals* (Leal Filho W, et al., eds), Springer International Publishing, doi.org/10.1007/978-3-319-71064-8_122-1
- Frazão Santos C, Ehler CN, Agardy T, Andrade F, Orbach M, Crowder LB (2019). *Marine Spatial Planning*. In: *World Seas: An Environmental Evaluation, Volume III* (Sheppard C, ed), Academic Press, 571–592, doi.org/10.1016/B978-0-12-805052-1.00033-4

Scientific Articles (Selected)

- Rosa R, Nunes E, Pissarra V, (...), Marques TA, Freitas R, Frazão Santos C (2023). *Evidence for the first multi-species shark nursery area in Atlantic Africa (Boa Vista Island, Cabo Verde)*. **Frontiers in Marine Science** 10: 1077748.
- Sousa A, Fernandez M, (...), Lourenço TC, Azevedo JMN, Frazão Santos C (2023). *A novel expert-driven methodology to develop thermal response curves and project habitat thermal suitability for cetaceans under a changing climate*. **Science of The Total Environment** 860: 160376.
- Sousa A, Fernandez M, Alves F, Coelho RE, Costa H, Lourenço TC, Azevedo JMN, Frazão Santos C (2023). *Integrated climate, ecological and socioeconomic scenarios for the whale watching sector*. **Science of the Total Environment** 857: 159589.
- Frazão Santos C, Agardy T, Allison EH, Bennett NJ, Blythe JL, Calado H, Crowder LB, Day JC, Flannery W, Gissi E, Gjerde KM, Gobin JF, Mulalap CY, Orbach M, Pecl G, Scherer M, Shelton AJ, Vieira da Silva C, Villasante S, Wedding L (2022). *A sustainable ocean for all*. **npj Ocean Sustainability** 1: 2.
- Palacios-Abrantes J, Badhe R, Bamford A, Cheung WWL, Foden W, Frazão Santos C, Grey K-A, Kühn N, Maciejewski K, McGhie H, Midgley GF, Smit IPJ, Pereira LM (2022). *Managing biodiversity in the Anthropocene: Discussing the Nature Futures Framework as a tool for adaptive decision-making for nature under climate change*. **Sustainability Science**, <https://doi.org/10.1007/s11625-022-01200-4>
- Fernandes M, Vieira da Silva C, Frazão Santos C (2022). *Climate-related vulnerability and risk assessment of main ocean uses: An overview*. **Frontiers in Marine Science** 9: 787882.
- Gissi E, Maes F, Kyriazi Z, Ruiz-Frau A, Frazão Santos C, et al. (2022). *Contributions of marine area-based management tools to the UN Sustainable Development Goals*. **Journal of Cleaner Production** 330: 129910.
- Gissi E, Maes F, Kyriazi Z, Ruiz-Frau A, Frazão Santos C, et al. (2022). *Data about marine area-based management tools to assess their contribution to the UN Sustainable Development Goals*. **Data-in-Brief** 40: 107704.
- Frazão Santos C, Agardy T, Andrade F, Crowder LB, Ehler CN, Orbach M (2021). *Major challenges in developing marine spatial planning*. **Marine Policy** 132: 103248.
- Kirkfeldt TS, Frazão Santos C (2021). *A Review of Sustainability Concepts in Marine Spatial Planning and the Potential to Supporting the UN Sustainable Development Goal 14*. **Frontiers in Marine Science** 8: 713980.
- Calado H, Pegorelli C, Vergílio M, Hipólito C, Campos A, Moniz F, Costa AC, da Silva CP, Fonseca C, Frazão Santos C, Gabriel D, et al. (2021). *Expert knowledge-based co-development of scenarios for maritime spatial planning in the Northeast Atlantic*. **Marine Policy** 133: 104741.
- Santos CP, Sampaio E, Pereira BP, (...), Frazão Santos C, Rosa R (2021). *Elasmobranch responses to experimental warming, acidification, and oxygen loss—A meta-analysis*. **Frontiers in Marine Science** 8: 735377 (2021).
- Sousa A, Alves F, Arranz P, Dinis A, Fernandez M, González García L, Morales M, Lettrich M, Encarnação Coelho R, Costa H, Capela Lourenço T, Azevedo JMN, Frazão Santos C (2021). *Climate change vulnerability of cetaceans in Macaronesia: Insights from a trait-based assessment*. **Science of the Total Environment** 795: 148652.
- Frazão Santos C, Agardy T, Andrade F, Calado H, Crowder LB, Ehler CN, García-Morales S, Gissi E, Halpern BS, Orbach MK, Pörtner H-O, Rosa R (2020). *Integrating climate change in ocean planning*. **Nature Sustainability** 3: 505-516.
- Frazão Santos C, Agardy T, Andrade F, Barange M, Crowder LB, Ehler CN, Orbach M, Rosa R (2016). *Ocean planning in a changing climate*. **Nature Geoscience** 9: 730.
- Frazão Santos C, Orbach M, Calado H, Andrade F (2015). *Challenges in implementing sustainable marine spatial planning: The new Portuguese legal framework case*. **Marine Policy** 61: 196-206.
- Frazão Santos C, Domingos T, Ferreira MF, Orbach M, Andrade F (2014). *How sustainable is sustainable marine spatial planning? Part I—Linking the concepts*. **Marine Policy** 49: 59-65.

- Frazão Santos C, Domingos T, Ferreira MF, Orbach M, Andrade F (2014). *How sustainable is sustainable marine spatial planning? Part II–The Portuguese experience*. **Marine Policy** 49: 48-58.
- Frazão Santos C, Michel J, Neves M, Janeiro J, Andrade F, Orbach M (2013). *Marine spatial planning and oil spill risk analysis: finding common grounds*. **Marine Pollution Bulletin** 74: 73-81.
- Frazão Santos C, Carvalho R, Andrade F (2013). *Quantitative assessment of the differential coastal vulnerability associated to oil spills*. **Journal of Coastal Conservation** 17: 25-36.
- Frazão Santos C, Teixeira ZG, Janeiro J, Gonçalves RS, Bjorkland R, Orbach M (2012). *The European Marine Strategy: Contribution and challenges from a Portuguese perspective*. **Marine Policy** 36: 963-968.

SELECTED INVITED TALKS & AWARDED COMMUNICATIONS

- ‘Climate change adaptation: The role of marine spatial planning’. MSP-GREEN Launching Conference (by Università Iuav di Venezia). Italy (Jan 2023). Invited speaker
- ‘Sustainable marine spatial planning’, Webinar: Assessing the balance between nature and people in European seas: Maritime Spatial Planning in the North Sea and North-East Atlantic (by WWF European Policy Office). Online (Oct 2022). Invited speaker
- ‘Climate change and marine spatial planning’, Planning for the future of Europe’s Marine Space – MSP Stakeholder Conference (by DG MARE, CINEA, and MSP Assistance Mechanism/EU MSP Platform), France (Jun 2022). Invited speaker
- ‘Planning the ocean under a changing climate’, Forum Océan: Un Enjeu Pour L’expertise Scientifique Européenne (by Muséum national d’Histoire naturelle/l’Institut de l’Océan de l’Alliance Sorbonne Université/MARE-ULisboa), France (Mar 2022). Invited speaker
- ‘Integrating climate change in ocean planning’, Ciências Research Day 2021, University of Lisbon, Portugal (Oct 2021). Invited speaker
- ‘Integrating climate change into marine spatial planning’, Marine Spatial Planning Webinar Series: Climate Informed Planning and Implementation, World Bank’s Environment, Natural Resources and Blue Economy (ENB) Global Practice Weekly Webinars, USA (Jun 2021). Invited speaker
- ‘Ocean planning in the age of climate change’, Dedicated Webinar by Sciaena.org, Portugal (Mar 2021). Invited speaker
- ‘Marine spatial planning and the need for coordination to face climate change: A global view’, Virtual Conference on Ocean Governance: Action Insights and Foreshadowing Challenges, European COST Action, Germany (Nov 2020). Invited speaker
- ‘The effects of climate change in marine spatial planning: pathways and solutions’, Dedicated Webinar by OpenChannels.org/OCTO, USA (Oct 2020). Invited speaker
- ‘MSP and the challenge of integrating climate change’, Marine Spatial Planning Workshop: Balancing Social, Economic, Cultural and Ecological Objectives, IMECaN/IMBeR, (Aug 2020). Invited speaker
- ‘La Planificación espacial marina en Portugal: avances y lecciones aprendidas’, II Workshop Internacional de Planificación Espacial Marina, University of Cadiz, Spain (Feb 2020). Invited lecturer
- ‘Marine spatial planning and climate change’, 4th MSPglobal Forum–Global Meets Regional, IOC-UNESCO and European Commission, Latvia (Nov 2019). Invited speaker
- ‘Planning towards sustainability under a changing climate’, Webinar Ecosystem-Based Ocean Management Solutions for Climate Mitigation and Adaptation, Virtual Blue COP25 (Nov 2019). Invited speaker
- ‘Ocean planning, management and policy’, ICES Science Day, IPMA, Portugal (Jun 2019). Invited speaker
- ‘Marine spatial planning, conservation and blue growth in the European Atlantic, and the challenge of a changing climate’, 5th International Conference on Marine Mammal Protected Areas, ICMMPA and WWF Greece, Greece (Apr 2019). Invited speaker
- ‘Marine spatial planning in a changing climate’, Colloquium on Marine Spatial Planning and Science, JPI Oceans and European Commission, Venice, Italy (Dec 2018). Invited speaker
- ‘IOC Marine Spatial Planning Guidelines’, OTGA/VLIZ Training Course on Marine GIS Applications for ICZM, IOC-UNESCO, Oostende, Belgium (Nov 2018). Invited lecturer
- ‘Marine spatial planning under a changing climate’, 15th Meeting of the European Commission Member States Expert Group on Marine Spatial Planning, European Commission, Belgium (Oct 2018). Invited speaker
- ‘Impacts of global environmental change in ocean planning and the Blue Economy’, ICES Annual Science Conference 2018, Hamburg, Germany (Sep 2018). Awarded by ICES

AWARDS AND PRIZES

- 2022 ICES Service Award – Session Convener (at the ICES Annual Science Conference 2022, Ireland), International Council of the Exploration of the Sea

- 2020 Individual Research Contract Award (1st place in panel), Portuguese Foundation for Science and Technology
- 2018 Best Early Career Scientist Presentation Award (at the ICES Annual Science Conference 2018, Germany), International Council of the Exploration of the Sea
- 2018 ICES Travel Award (to attend the ECCWO-18 Symposium, USA), International Council of the Exploration of the Sea
- 2014 Early Career Scientist Travel Award (to attend the 2nd International Ocean Research Conference, Spain), Intergovernmental Oceanographic Commission of UNESCO & The Oceanography Society
- 2011 Doctoral Grant Award, Portuguese Foundation for Science and Technology
- 2011 Luiz Saldanha/Ken Tenore Marine Policy and Strategies Travel Award (to undergo an internship at NOAA and Duke Marine Lab, USA), Luso-American Development Foundation & IMAR
- 2010 Best Poster Communication Award (at the International Conference on Coastal Conservation and Management in the Atlantic and Mediterranean, Portugal), ICCCM10 Scientific Committee
- 2007 Luiz Saldanha/Ken Tenore Marine Biology Travel Award (to undergo an internship at Research Planning Inc. and NOAA, USA), Luso-American Development Foundation & IMAR

CAREER BREAKS

June 2012 to October 2012 – Maternity leave (4 months)

February 2015 to June 2015 – Maternity leave (4 months)