

**Prof. Giovanni Fulvio Russo**  
*Curriculum vitae*

**Present position**

- Full Professor of Ecology at the Department of Sciences and Technologies (DiST) of Parthenope University of Naples.
- Member of the Academic Senate of Parthenope University as representative of Full Professors of the University.
- Member of the Academic Boards of the Bachelor program in Biological Sciences and of the Master program in Biology of Aquatic Environments and Productions, where he teaches the courses on Ecology and *Marine Ecology and Limnology*.
- Member of the Academic Board of the International PhD Programme "Environment, Resources and Sustainable Development", with administrative headquarters at Parthenope University of Naples.
- Member of the National Interuniversity Consortium for Sea Sciences (CoNISMa).
- President of the Italian Society of Marine Biology (SIBM).

**Scientific interests**

- He is interested in benthic marine communities and shellfish mollusks as environmental markers of climate changes, for which he was also coauthor of *CIESM Atlas of exotic species in the Mediterranean. Vol. 3. Molluscs* (2003).
- Numerical ecology, biological conservation, food webs, biodiversity and sustainable use of marine resources are the other main fields of interest of his research works.
- Over the years, he has been the scientific responsible of a number of research projects on the characterization of coastal marine environments and sustainable development, especially in Marine Protected Areas, through energy and multi-criteria analyses for environmental accounting.
- He is author or co-author of more than 260 scientific publications and informative volumes.

**Education**

- Born in Santa Maria Capua Vetere (Province of Caserta), on 9 August 1955.
- Classical maturity, awarded in 1973.
- Degree with honours and mention in Biological Sciences, achieved in 1979, at the University of Naples "Federico II", with the publication of the thesis on "Benthic Biocenoses of Fusaro Lake".
- Internal Graduated Student at the Institute of Zoology of the University of Naples "Federico II", from January 1980 to February 1981.
- Scholarship of the National Research Council at the Institute of Zoology of the University of Vienna (Chair of Marine Biology: Prof. Rupert Riedl), as part of the Finalized Project "Oceanography and Marine Funds", for research activities on marine mollusc communities in the prairies of the seagrass *Posidonia oceanica*, from March to December 1981.
- Researcher at the Zoological Station "Anton Dohrn" in Naples (Benthic Ecology Laboratories and Biological Oceanography), from 1982 to 1998.
- Adjunct Professor of Marine Biology at the Faculty of Sciences MM. FF. NN. of the "Federico II" University of Naples, from 1992 to 1998.
- From 1998 to 2001, Associate Professor of Ecology, at the Faculty of Sciences MM. FF. NN. of the University of Catania, where he teaches Ecology, Marine Ecology and Biological Oceanography, and is a member of the Teaching Committee of the Doctorate of Research in evolutionary biology of the same university.
- Since November 2001, he is at the University of Naples "Parthenope" and up to 2011 he was a member of the Academic Board of the Doctorate in Environmental Sciences: marine environment and resources, with administrative headquarters at the University of Messina.
- Since January 2005 he is Full Professor of Ecology at the Parthenope University of Naples.

### **Advanced courses of instruction**

- International course in marine ecology "*In situ*, experimentation and measurements", at the Zoological Station "Anton Dohrn" of Naples (July 1981).
- Optical microscopy course "Macro- and photomicrograph techniques", at the Lubrense Center of Marine Explorations (September 1982).
- International course on marine ecology "Organic matter in the near water column", at the Zoological Station "Anton Dohrn" of Naples (July 1983).
- Statistical data processing course "Multivariate analysis using personal computers (analytical methods of community ecology and related software), at the Computation Center of the University of Trieste (October 1986).
- Statistical data processing course "Quantitative methods for the management of fauna (analytical methods of population ecology and related software)", at the Department of Electronics of the "Politecnico di Milano" (April 1990).

### **International experiences of formation**

- University of Vienna, Institute of Zoology (1981, 1982, 1983)
- Endoume Marina Station, Marseille (1982, 1983, 1987, 1989, 1991)
- University of Nice, Laboratory of Biological Oceanography (1987, 1988)
- Oceanographic Museum of Monaco, Montecarlo (1988, 1999)
- University of Seville, Institute of Zoology (1988)
- University of Barcelona, Department of Ecology (1988, 1993)
- University of Paris VI, Institute of Biological Oceanography (1992)
- University of Brussels, Department of Animal Biology (1992)
- Tenth Italian expedition to Antarctica (1994)
- University of Texas, Austin, Section of Evolutionary Biology (1995)
- University of California, Davis, Department of Geology (1996)
- Hellenic Center for Marine Research, Athens, Institute of Oceanography (2000)

### **Management and Scientific Coordination activities**

- In 2019, member of the Working Group on Habitat Directive, for the review of the marine species and habitat of "Rete Natura 2000" protected areas in Italy (MATTM-ISPRA-SIBM funds).
- In 2018-19, CoNISMa scientific manager of fishery resources projects in four Marine Protected Areas: "Kingdom of Neptune, Punta Campanella; S. Maria di Castellabate and Costa degli Infreschi e della Masseta" (FEAMP-MIPAAF funds).
- In 2018-19, a member of the Working Group on Alien Marine Species, as part of the project revision and updating of the Ministry of the Environment database (MATTM-ISPRA-SIBM funds).
- In the years 2017-18, CoNISMa scientific manager of environmental accounting projects in the Marine Protected Areas of: Kingdom of Neptune, Capo Rizzuto, Pelagie Islands, Porto Cesareo, Torre Guaceto (MATTM funds).
- In the years 2014-19, CoNISMa scientific manager of environmental accounting projects in the Marine Protected Areas: Ventotene-S. Stefano, Punta Campanella, S. Maria di Castellabate and Costa of Infreschi and della Masseta (MATTM funds).
- In the years 2015-18, CoNISMa scientific referent for ROV investigations within the scope of the program for monitoring benthic populations along the Torre Annunziata-Capri power line (TERNA order).
- In the years 2014-2018, CoNISMa scientific manager on the monitoring of "Benthic marine habitats: a) Coralligenous, b) rhodolithic bottoms (maerl), c) *Posidonia oceanica* meadows" of the Campania Region, within the Marine Strategy project (ARPA Campania-MATTM funds).
- In the years 2013-15, scientific director of the Research Unit in the project on marine bioconstructions coastal: mapping and management (PRIN - MIUR funds).

- In 2013, scientific coordination for the analysis of biological data of underwater landscapes for the relative cartographic representation in the "Geological map with thematic elements and landscape submarines map of the National Park of Cilento, Vallo di Diano and Alburni - European and Global Geopark ", edited by ISPRA - Geological Survey of Italy (PNCVDA funds).
- In the years 2012-13, CoNISMa scientific referent on "benthic habitats of hard bottom and soft bottom" within the framework of the Marine Strategy (MATTM funds).
- In 2012, CoNISMa scientific manager of the project Drafting the management plans for the Sites of Marine Community Interest (SIC) of the Basilicata Region (Basilicata Region Funds).
- In 2012, scientific referent for the project of Updating the cards of the Sites of Community Interest (SIC) marine of the Campania Region (SIBM-MATTM funds).
- In the years 2011-12, scientific project manager Experimentation of low anchorage systems environmental impact, for the Marine Protected Area of Punta Campanella.
- In the years 2010-11, scientific coordinator of the project Definition of mooring areas and anchorage with regulations in the Marine Protected Area of Santa Maria di Castellabate, for the Cilento National Park and Vallo di Diano.
- In the years 2010-11, scientific coordinator of the project Definition of mooring areas and anchorage with regulations in the Marine Protected Area of Costa degli Infreschi and della Masseta, for the National Park of Cilento and Vallo di Diano
- In the years 2009-10, scientific director of the operating unit within the CoNISMa project Study of underwater marine cave environments in the Protected Marine Areas of Pelagie, Plemmirio and Capo Caccia, for the Ministry of the Environment.
- In the years 2008-09, he is scientific referent for the Campania and Basilicata regions in the project Implementation of Italian marine SCIs, by the Italian Marine Biology Society for the Ministry Environment.
- In the years 2007-08, scientific coordinator of the CoNISMa project (National Consortium Interuniversity for Sea Sciences) Analysis and assessment of the status of marine ecosystems in the areas A and B in 4 Marine Protected Areas (Porto Cesareo, Capo Rizzuto, Egadi Islands and Isola Asinara), also for the purpose of assess the effectiveness of the management measures of the same, for the Ministry of the Environment.
- In the years 2007-08, scientific director of the operational unit within the CoNISMa project Maintenance and implementation of AMPs within ASPIM: creation of address protocols for scientific research in the Marine Protected Areas, for the Ministry of the Environment.
- In 2007-08, scientific coordinator of the project "Spillover" effect of fish stocks in Punta AMP Campanella.
- In the years 2007-08, scientific manager of the project Services for the realization of study activities and economic and social analysis of the protected areas in Campania: Cilento marine areas (POR Campania).
- In the years 2006-07, scientific coordinator of the project Realization of an analysis procedure multi-criteria for the integrated management of the Cilento coast, for the APAT.
- In the years 2006-07, scientific director of the TARTANET center, for turtle recovery marine, in the Marine Protected Area of Punta Campanella.
- In the years 2006-07, scientific coordinator of the project Realization of the Geographic Information System

### **Institutional appointments**

- From 2018 till today, member of the *Academic Senate* of the University of Naples Parthenope, in representation of full professors.
- From 2016 till today, member of the Group of 10 experts of the *Natural Capital Committee*, appointed with Decree of the Minister of the Environment, for marine skills.
- From 2016 till today, President of the *Italian Society of Marine Biology* (three-year term).

- From 2015 till today, member of the Steering Committee of the *Observatory of the Sea*, representing the Parthenope University of Naples.
- From 2002 till today, representative of the Parthenope University of Naples in the Council Director of the Interuniversity *Center for Research on Bioethics* (CIRB).
- In the years 2009-2019, Scientific Director of the magazine *Uomo e Natura*, six-monthly of Mediterranean natural protected areas.
- In the years 2009-2018, President of the Degree Course in *Biological Sciences*, at the Faculty of Sciences and Technologies of the Parthenope University of Naples.
- In the years 2014-2016, member of the *Town Planning Commission* of the Municipality of Naples as "environmental expert".
- In the years 2013-2016, technical consultant of the Public Prosecutor of Grosseto for damages environmental consequences of the sinking at the Island of Giglio of the cruise ship "Costa Concordia".
- In the years 2013-2015, vice-president of the *Italian Society of Marine Biology*.
- In the years 2012-2016, member of the Scientific Committee of the *Phlegraean Fields Regional Park*.
- In the years 2011-2013, coordinator of the Section of Biological Oceanography and Marine Biology of the CoNISMa (National Interuniversity Consortium for Sea Sciences).
- In the years 2010-2013, member of the Executive Council of the Italian Society of Marine Biology
- In the years 2008-2013, a member of the "control room" of the SIC and ZPS network of the Region Basilicata, representing the National Interuniversity Consortium for Sea Sciences (CoNISMa).
- In the years 2005-2013, president of the Degree Course in Environmental Sciences and Specialized Degree in Science and Technology for the Environment and the Territory, at the Faculty of Science and Technology of the University of the Studies of Naples "Parthenope".
- In the years 2005-2010, member of the Administrative Board of the Department of Sciences for the Environment of the University of Naples "Parthenope".
- In the years 2004-2006, member of the board of the *Benthos Committee* of the Italian Society of Marine Biology (SIBM).
- In the years 2000-2001, member of the Scientific Committee of the Exhibition *The Ancient Ercolanesi. Anthropology, Society, Economics*, organized by the Archaeological Superintendence of Pompeii and Herculaneum.
- In the years 1998-2001, representative of the University of Catania in the Board of Directors of the *Fish Repopulation Consortium* of the Gulf of Catania.
- In the years 1998-2001, member of the coordination panel of the international study group on *The alien species of Mediterranean Molluscs* by the International Commission for the Scientific Exploration of the Mediterranean (CIESM), under the "Biodiversity and non-native species in the Mediterranean".
- In 1998-2001, Member of the Scientific Committee of the *Homo Faber Exhibition: nature, science and technology in ancient Pompeii*, organized by the Archaeological Superintendence of Pompeii.
- In the years 1998-2001, member of the *Technical Committee on Marine Habitats*, at the Ministry of the Environment-Nature Conservation Service, for the application to the sea of the Habitat Directive of the European Community (92/43 EEC). Participate in the compilation of the marine SIC cards of the Campania Region under the "Natura 2000" program.
- In 1996-1998, member of the *Executive Council of the Italian Society of Malacology*. In the years 1988-2001, member of the Scientific Council of the Italian Society of Malacology.
- In the years 1994-1998, representative of the Zoological Station "Anton Dohrn" of Naples in the Technical Advisory Commission for the establishment of Regional Regional Parks and Reserves Campania.

- In the years 1991-1994, member of the board of the *Coastal Management Committee* of the Italian Society of Marine Biology.
- In the years 1987-1988, member of the committee of specialists, within the Program International MEDIFAUNE, for the census of the macro-fauna of the Mediterranean Sea, coordinated by Prof. G. Fredj of the Laboratory of Biological Oceanography of the University of Nice and promoted by the International Commission for Scientific Exploration of the Mediterranean (CIESM).
- In the years 1986-1996, member of the Scientific Council of the CISMa-Centro Italiano Studi Malacologici.
- In the years 1985-1988, member of the National Commission for the Census of the Malacofauna Marina delle Coste Italian, by the Italian Society of Malacology and the E.N.E.A.

### **Awards**

- *Golden Dolphins Award* 2000, from the MAREVIVO environmental association, “for the scientific activity in protecting marine environment”.
- *Gold Trident Award* 2001, from the International Academy of Underwater Sciences and Techniques, and Honorary citizenship of Ustica, the first Italian Marine Protected Area, “for the research results obtained by scuba diving”.
- *Golden Lily Award* 2006, from the Municipal Administration of Castellabate (SA), “for the scientific and cultural activity promoting the local Marine Protected Area”.
- *Darwin Prize* 2009, from the Delphis-Mediterranean Dolphin Conservation association, “for the scientific activity and informative effort in protecting marine environment”.
- *Golden Primula Award* 2017, National Prize for Journalism and Multimedia, “for the dissemination activity in environmental field and in particular on natural protected areas”.
- *The pioneers of diving world Award* 2018, from the city of Naples Administration, “for the professionalism and competence demonstrated in protecting the marine and submarine world”.

Naples, March, 2020

### Scientific papers published on international journals (SCOPUS) in the last 5 years (2016-20)

1. Buonocore E., Donnarumma L., Appolloni L., Miccio A., Russo GF, Franzese PP (2020). Marine natural capital and ecosystem services: An environmental accounting model. *Ecol. Model.*; 424.
2. Buonocore E, Appolloni L, Russo GF, Franzese PP (2020). Assessing natural capital value in marine ecosystems through an environmental accounting model: A case study in Southern Italy. *Ecol Model.*; 419.
3. Renzi M, Blašković A, Broccoli A, Bernardi G, Grazioli E, Russo G. (2020). Chemical composition of microplastic in sediments and protected detritivores from different marine habitats (salina island). *Mar Pollut Bull.*, 152.
4. Appolloni L, Ferrigno F, Russo GF, Sandulli R. (2020).  $\beta$ -Diversity of morphological groups as indicator of coralligenous community quality status. *Ecol Ind.*, 109.
4. Pauna VH, Buonocore E, Renzi M, Russo GF, Franzese PP. (2019). The issue of microplastics in marine ecosystems: A bibliometric network analysis. *Mar Pollut Bull.*, 149.
5. Donnarumma L, Appolloni L, Chianese E, Bruno R, Baldrighi E, Guglielmo R, Russo GF, Zeppilli D, Sandulli R. (2019). Environmental and benthic community patterns of the shallow hydrothermal area of secca delle fumose (baia, naples, italy). *Front Mar Sci*, 6.
6. Rendina F, Bouchet PJ, Appolloni L, Russo GF, Sandulli R, Kolzenburg R, Putra A, Ragazzola F. (2019). Physiological response of the coralline alga *corallina officinalis* L. to both predicted long-term increases in temperature and short-term heatwave events. *Mar Environ Res.*,150.
7. Buonocore E, Paletto A, Russo GF, Franzese PP. (2019). Indicators of environmental performance to assess wood-based bioenergy production: A case study in northern italy. *J Clean Prod.*, 221:242-8.
8. Casoli E, Bonifazi A, Ardizzone G, Gravina MF, Russo GF, Sandulli R, Donnarumma L. (2019). Comparative analysis of mollusc assemblages from different hard bottom habitats in the central tyrrhenian sea. *Diversity*, 11(5).
9. Buonocore E, Picone F, Donnarumma L, Russo GF, Franzese PP. (2019). Modeling matter and energy flows in marine ecosystems using emergy and eco-exergy methods to account for natural capital value. *Ecol Model.*, 392:137-46.
10. Cattaneo-Vietti R, Russo GF. A brief history of the italian marine biology (2019). *European Zool J.*, 86(1):294-315.
11. Renzi M, Blašković A, Bernardi G, Russo GF. (2018). Plastic litter transfer from sediments towards marine trophic webs: A case study on holothurians. *Mar Pollut Bull.*, 135:376-85.
12. Donnarumma L, Sandulli R, Appolloni L, Sánchez-Lizaso JL, Russo GF. (2018). Assessment of structural and functional diversity of mollusc assemblages within vermetid bioconstructions. *Diversity*, 10(3).

13. Ferrigno F, Russo GF, Semprucci F, Sandulli R. (2018). Unveiling the state of some underexplored deep coralligenous banks in the gulf of Naples (Mediterranean Sea, Italy). *Reg Stud Mar Sci.*, 22:82-92.
14. Appolloni L, Sandulli R, Vetrano G, Russo GF. Assessing the effects of habitat patches ensuring propagule supply and different costs inclusion in marine spatial planning through multivariate analyses (2018). *J Environ Manage.*, 214:45-55.
15. Appolloni L, Sandulli R, Vetrano G, Russo GF. (2018). A new approach to assess marine opportunity costs and monetary values-in-use for spatial planning and conservation; the case study of Gulf of Naples, Mediterranean Sea, Italy. *Ocean Coast Manage.*, 152:135-44.
16. Appolloni L, Sandulli R, Bianchi CN, Russo GF. (2018). Spatial analyses of an integrated landscape-seascape territorial system: The case of the overcrowded Gulf of Naples, Southern Italy. *J Environ Account Manag.*, 6(4):365-80.
17. Buonocore E, Picone F, Russo GF, Franzese PP. (2018). The scientific research on natural capital: A bibliometric network analysis. *J Environ Account Manag.*, 6(4):381-91.
18. Donnarumma L, Sandulli R, Appolloni L, Russo GF. (2018). Assessing molluscs functional diversity within different coastal habitats of Mediterranean marine protected areas. *Ecol Quest.*, 29(3):35-51.
19. Donnarumma L, Bruno R, Terlizzi A, Russo GF. (2018). Population ecology of *Jujubinus striatus* and *Jujubinus exasperatus* (Gastropoda: Trochidae) in a *Posidonia oceanica* seagrass bed. *European Zool J*;85(1):17-25.
20. Ferrigno F, Appolloni L, Russo GF, Sandulli R. (2018). Impact of fishing activities on different coralligenous assemblages of Gulf of Naples (Italy). *J Mar Biol Assoc UK*, 98(1):41-50.
21. Donnarumma L, Sandulli R, Appolloni L, Di Stefano F, Russo GF. (2018). Morpho-structural and ecological features of a shallow vermetid bioconstruction in the Tyrrhenian Sea (Mediterranean Sea, Italy). *J Sea Res.*, 131:61-8.
22. Ingrosso G, Abbiati M, Badalamenti F, Bavestrello G, Belmonte G, Cannas R, Benedetti-Cecchi L, Bertolino M, Bevilacqua S, Bianchi CN, Bo M, Boscari E, Cardone F, Cattaneo-Vietti R, Cau A, Cerrano C, Chemello R, Chimienti G, Congiu L, Corriero G, Costantini F, De Leo F, Donnarumma L, Falace A, Frascetti S, Giangrande A, Gravina MF, Guarnieri G, Mastrototaro F, Milazzo M, Morri C, Musco L, Pezolesi L, Piraino S, Prada F, Ponti M, Rindi F, Russo GF, Sandulli R, Villamor A, Zane L, Boero F. (2018). Mediterranean bioconstructions along the Italian coast. *Adv Marine Biol.*, 79:61-136.
23. Ferrigno F, Russo GF, Sandulli R. Coralligenous bioconstructions quality index (CBQI): A synthetic indicator to assess the status of different types of coralligenous habitats (2017). *Ecol Indic.*, 82:271-9.

24. Franzese PP, Buonocore E, Donnarumma L, Russo GF. (2017). Natural capital accounting in marine protected areas: The case of the islands of ventotene and S. stefano (central italy). *Ecol Model.*, 360:290-9.
25. Appolloni L, Bevilacqua S, Sbrescia L, Sandulli R, Terlizzi A, Russo GF. (2017). Does full protection count for the maintenance of  $\beta$ -diversity patterns in marine communities? evidence from mediterranean fish assemblages. *Aquatic Conserv Mar Freshw Ecosyst.*, 27(4):828-38.
26. Vassallo P, Paoli C, Buonocore E, Franzese PP, Russo GF, Povero P. (2017). Assessing the value of natural capital in marine protected areas: A biophysical and trophodynamic environmental accounting model. *Ecol Model.*, 355:12-7.
27. Giordano G, Carbone M, Ciavatta ML, Silvano E, Gavagnin M, Garson MJ, Cheney KL, Mudianta IW, Russo GF, Villani G, Magliozzi L, Polese G, Zidorn C, Cutignano A, Fontana A, Ghiselin MT, Mollo E. (2017). Volatile secondary metabolites as aposematic olfactory signals and defensive weapons in aquatic environments. *Proc Natl Acad Sci U S A*, 114(13):3451-6.
28. Fastelli P, Blašković A, Bernardi G, Romeo T, Čížmek H, Andaloro F, Russo GF, Guerranti C, Renzi M. (2016). Plastic litter in sediments from a marine area likely to become protected (aeolian archipelago's islands, tyrrhenian sea). *Mar Pollut Bull.*, 113(1-2):526-9.
29. Ferrigno F, Bianchi CN, Lasagna R, Morri C, Russo GF, Sandulli R. (2016). Corals in high diversity reefs resist human impact. *Ecol Indic.*, 70:106-13.
30. Cattaneo-Vietti R, Bo M, Cannas R, Cau A, Follesa C, Meliadó E, Russo GF, Sandulli R, Santangelo G, Bavestrello G. (2016). An overexploited italian treasure: Past and present distribution and exploitation of the precious red coral *corallium rubrum* (L., 1758) (cnidaria: Anthozoa). *Ital J Zool.*, 83(4):443-55.
31. Donnarumma L, Bruno R, Terlizzi A, Russo GF. (2016). Population ecology of *gibbula umbilicaris* and *gibbula ardens* (gastropoda: Trochidae) in a *posidonia oceanica* seagrass bed. *Ital J Zool.*, 83(1):103-12.
32. Mariani M, Miragliuolo A, Mussi B, Russo GF, Ardizzone G, Pace DS. (2016). Analysis of the natural markings of risso's dolphins (*grampus griseus*) in the central mediterranean sea. *J Mammal.*, 97(6):1512-24.