

Francesco Caruso



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Current Position: Researcher

Current Affiliation:

Department of Marine Animal Conservation and Public Engagement
Stazione Zoologica Anton Dohrn, Napoli (Italy)

Education/Training/Experience

Institute and Location	Degree / Function	Year	Field of Study
Department of Animal Biology and Marine Ecology, University of Messina, Italy	B.Sc.	2004-2007	Marine Biology and Ecology
Department of Animal Biology and Marine Ecology, University of Messina, Italy	M.Sc.	2008-2010	Marine Biology and Ecology
University of Messina & National Institute of Nuclear Physics – LNS, Italy	Ph.D.	2011-2014	Underwater Acoustics
Woods Hole Oceanographic Institution, United States	Guest Ph.D.	2014	Marine Bioacoustics
Institute for Coastal Marine Environment, National Research Council, Italy	Researcher Fellow	2014-16	Marine Multidisciplinary Observatories
Woods Hole Oceanographic Institution, United States	Guest Investigator	2015	Bio-logging
Woods Hole Oceanographic Institution, United States	Postdoc	2017	Bio-logging

Institute of Deep-sea Science and Engineering, Chinese Academy of Sciences, China	Postdoc	2017-2021	Bioacoustics & Marine Mammal Ecology
Stazione Zoologica Anton Dohrn, Napoli, Italy	Researcher	2021-present	Bioacoustics & Marine Mammal Ecology

Appointments and awards

Awards & Fellowships

- 2019 PIFI Fellowship as “Promising International Scientist”, Chinese Academy of Sciences, China
- 2017 PIFI Fellowship as “Promising International Scientist”, Chinese Academy of Sciences, China
- 2016 MAGINOT Fellowship at National Research Council, Italy
- 2016 MEDITERRANEO Video Festival Annual Award - XIX Edition, Italy
- 2015 EMSO – MedIT Fellowship, National Research Council, Italy
- 2014 WHOI – Gori Fellowship, Woods Hole Oceanographic Institution, United State

Field work

- 2021: Co-organizer and participant, “*Impact assessment of illegal fishing on deep-diving cetaceans in the Aeolian Islands*”. CIMA Foundation – Woods Hole Oceanographic Institution – Stazione Zoologica.
- 2019: Co-organizer and participant, “*Deep-diving cetacean survey in the South China Sea*”, Institute of Deep-sea Science and Engineering (CAS) – CIMA Foundation.
- 2017-2021: Co-organizer and participant, “*Periodical boat-based surveys in coastal waters of Hainan Island (China) managed by Marine Mammal and Marine Bioacoustics Lab*”. IDSSE - CAS
- 2017-2021: Participant, “*Animal Rescue / Necropsy / Bio-reconstruction of cetacean species*”. Institute of Deep-sea Science and Engineering (CAS).
- 2017: Co-organizer and participant, “*Assessing resilience of beaked whale populations to human impacts in the Ionian Sea*”. CIMA Foundation - Woods Hole Oceanographic Institution.
- 2015-2017: Participant, “*Setting and deployment of fixed hydrophones and moorings*”. Woods Hole Oceanographic Institution.
- 2016: Participant, European Marine Strategy, “*Passive Acoustic Monitoring, Marine Mammal Observer, Deployment of fixed hydrophones and moorings*”. National Research Council.
- 2015: Participant, BANSIC15, “*Biological oceanography and underwater acoustics in the Sicily Channel (Mediterranean Sea)*”. National Research Council.
- 2014-2016: Participant, “*Periodical boat-based surveys in coastal waters of the Sicily Channel (Mediterranean Sea) managed by Bioacoustics Lab*”. National Research Council.
- 2011: Participant, SIRENA 11, “*Acoustic and visual techniques to help ascertain the distribution of cetaceans in the Ligurian Sea (Mediterranean Sea)*” - Interdisciplinary Centre for Bioacoustics and Environmental Research - NATO Undersea Research Center.

Students' Supervision

2018 – 2021: M.Sc Students (Zining Gong, Likun Zhao, Wanxue Xu), Chinese Academy of Sciences, Institute of Deep-sea Science and Engineering, China

2019: M.Sc Student (Ivan Popov), Université des Antilles et de La Guyane, Guadeloupe, France & Chinese Academy of Sciences, Institute of Deep-sea Science and Engineering, China

2017: B.Sc Student (Destiny Reese) Marine Biological Laboratory & Woods Hole Oceanographic Institution, MA, United States

2013: M.Sc Student (Claudia Rocca), University of Catania, Italy

Academic Services

From 2020: Reviewer, Scientific Reports, Nature Research

From 2020: Reviewer, The Journal of the Acoustical Society of America, AIP Publishing

From 2020: Reviewer, Aquatic Mammals, MinuteMan Press

From 2019: Reviewer, Journal of Experimental Biology, The Company of Biologists

From 2018: Reviewer, PLOS ONE, Public Library of Science

Memberships of Scientific Societies

From 2015: Member, Society for Marine Mammalogy

From 2014: Member, Italian Association of Acoustics

From 2013: Member, European Cetacean Society

Synergistic Activity

From 2017: Vice-President and Co-Founder of eConscience – Art of Soundscape (non-profit organization, www.econscience.earth).

Publication metrics (June 2021)

Number of ISI publications with IF: 33

h-index: 10

List of publications of the last 10 years:

Peer-reviewed publications:

Dong L, Dong J, **Caruso F**, Zhao L, Li S (2021). Temporal variation of the underwater soundscape in Jiaotou Bay, an Indo-Pacific humpback dolphin (*Sousa chinensis*) habitat off Hainan Island, China. *Integrative Zoology* 1– 22. DOI: 10.1111/1749-4877.12530.

Dong L, **Caruso F**, Dong J, Liu M, Lin M, Li S (2021). Whistle characteristics of a newly recorded Indo-Pacific humpback dolphin (*Sousa chinensis*) population in waters southwest of Hainan Island, China, differ from other humpback dolphin populations. *Mar Mam Sci*; 1– 22. DOI: 10.1111/mms.12816.

Lin M, Liu M, **Caruso F**, Rosso M, Tang X, Dong L, Lin W, Borroni A, Bocconcelli A, Dai L, Li S (2020). A pioneering survey of deep-diving and off-shore cetaceans in the northern South China Sea. *Integrative Zoology* 00, 1–11. DOI: 10.1111/1749-4877.12508.

- Rosso M, Lin M, **Caruso F**, Liu M, Dong L, Borroni A, Lin W, Tang X, Bocconcelli A, Li S (2020). First live sighting of Deraniyagala's beaked whale (*Mesoplodon hotaula*) or ginkgo-toothed beaked whale (*Mesoplodon ginkgodens*) in the western Pacific (South China Sea) with preliminary data on coloration, natural markings and surfacing patterns. *Integrative Zoology* 00, 1–11. DOI: 10.1111/1749-4877.12507.
- Caruso F**, Hickmott L, Warren JD, Segre P, Chiang G, Bahamonde P, Español-Jiménez S, Li S, Bocconcelli A (2020). Diel differences in blue whale (*Balaenoptera musculus*) dive behavior increase nighttime risk of ship strikes in northern Chilean Patagonia. *Integrative Zoology* 00, 1–18. DOI: 10.1111/1749-4877.12501.
- Xu W, Dong L, **Caruso F**, Gong Z, Li S (2020). Long-term and large-scale spatiotemporal patterns of soundscape in a tropical habitat of the Indo-Pacific humpback dolphin (*Sousa chinensis*). *PLoS ONE* 15(8):e0236938. DOI: 10.1371/journal.pone.0236938.
- Li S, Lin M, **Caruso F**, Dong L, Lin W, Rosso M, Bocconcelli A (2020). Cetaceans under threat in South China Sea. *Science*; 368 (6495):1074-1075. DOI: 10.1126/science.abc7557.
- Caruso F**, Dong L, Lin M, Liu M, Xu W, Li S (2020). Influence of acoustic habitat variation on Indo-Pacific humpback dolphin (*Sousa chinensis*) in shallow waters of Hainan Island, China. *The Journal of the Acoustical Society of America* 147(6):3871-3882. DOI: 10.1121/10.0001384.
- Caruso F**, Dong L, Lin M, Liu M, Gong Z, Xu W, Alonge G, Li S (2020). Monitoring of a Nearshore Small Dolphin Species Using Passive Acoustic Platforms and Supervised Machine Learning Techniques. *Methods Article, Front. Mar. Sci. - Marine Megafauna*. DOI:10.3389/fmars.2020.00267.
- Lin M, **Caruso F**, Liu M, Lek S, Li K, Gozlan R, Li S (2019). Food-mortality risk trade-off in the Indo-Pacific humpback dolphin (*Sousa chinensis*). *Aquatic Conserv: Mar Freshw Ecosyst*, 1–8. DOI: 10.1002/aqc.3280.
- Flaspohler GE, **Caruso F**, Mooney AT, Katija K, Fontes J, Afonso P, Shorterret A (2019). Locomotion patterns of the veined squid (*Loligo forbesi*) using bio-logging tags. *J Exp Biol.*; pii: jeb.198226. DOI: 10.1242/jeb.198226.
- Papale E, Alonge G, **Caruso F**, Grammauta R, Mazzola S, Mussi B, Pace DS, Buscaino G (2019). The higher, the closer, the better? Influence of sampling frequency and distance on the acoustic properties of short-beaked common dolphins burst pulses in the Mediterranean Sea. *Aquatic Conserv: Mar Freshw Ecosyst.*; 1–10. DOI: 10.1002/aqc.3158.
- Caruso F**, Sciacca V, Parisi I, Viola S, de Vincenzi G, Bocconcelli A, Mooney TA, Sayigh L, Li S, Filiciotto F, Moulins A, Tepsich P, Rosso M (2019). Acoustic recordings of rough-toothed dolphin (*Steno bredanensis*) offshore Eastern Sicily (Mediterranean Sea). *The Journal of the Acoustical Society of America* 146, EL286; DOI: 10.1121/1.5126118.
- Dong L, **Caruso F**, Lin M, Liu M, Gong Z, Dong J, Cang S, Li S (2019). Whistles emitted by Indo-Pacific humpback dolphins (*Sousa chinensis*) in Zhanjiang waters, China. *J. Acoust. Soc. Am.* 145 (6), June 2019, DOI: 10.1121/1.5110304.
- Gong Z, Dong L, Lin M, Liu M, **Caruso F**, Dong J, Li S (2019) Echolocation signals of free-ranging pantropical spotted dolphins (*Stenella attenuata*) in the South China Sea. *J. Acoust. Soc. Am.* 145 (6), June 2019, DOI: 10.1121/1.5111742.
- Lillis A, **Caruso F**, Mooney TA, Llopiz J, Bohnenstiehl D, Eggleston DB (2018). Drifting hydrophones as an ecologically meaningful approach to underwater soundscape measurement in coastal benthic habitats. *Journal of Ecoacoustics*. 2: #STBDH1. DOI: 10.22261/JEA.STBDH1.
- Ceraulo M, Papale E, **Caruso F**, Filiciotto F, Grammauta R, Parisi I, Mazzola S, Farina A, Buscaino G (2018). Acoustic comparison of a patchy Mediterranean shallow water seascape: *Posidonia oceanica* meadow and sandy bottom habitats. *Ecological Indicators* 85: 1030–1043. DOI: 10.1016/j.ecolind.2017.08.066.
- Caruso F**, Alonge G, Bellia G, De Domenico E, Grammauta R, Larosa G, Mazzola S, Riccobene G, Pavan G, Papale E, Pellegrino C, Pulvirenti S, Sciacca V, Simeone F, Speciale F, Viola S,

- Buscaino G (2017). Long-Term Monitoring of Dolphin Biosonar Activity in Deep Pelagic Waters of the Mediterranean Sea. *Scientific Reports*,7: 4321. DOI:10.1038/s41598-017-04608-6.
- Viola S, , Grammauta R, Sciacca V, Bellia G, Beranzoli L, Buscaino G, **Caruso F**, Chierici F, Cuttone G, D'Amico A, De Luca V, Embriaco D, Favali P, Giovanetti G, Marinaro G, Mazzola S, Filiciotto F, Pavan G, Riccobene G (2017). Continuous monitoring of noise levels in the Gulf of Catania (Ionian Sea). Study of correlation with ship traffic. *Marine Pollution Bulletin*; 121: 97–103. DOI: 10.1016/j.marpolbul.2017.05.040.
- Aguzzi J, [...], **Caruso F** et al. (2017). Inertial bioluminescence rhythms at the Capo Passero (KM3NeT-Italia) site, Central Mediterranean Sea. *Scientific Reports*, 7:44938, DOI: 10.1038/srep44938.
- Caruso F**, Lizarralde D, Elsenbeck J, Collins J, Zimmer WMX, Sayigh L (2016). Detection and Tracking of Fin Whales During Seismic Exploration in the Gulf of California. *Proceedings of Meetings on Acoustics* 27, 070021. DOI: 10.1121/2.0000424.
- Sciacca V, Viola S, **Caruso F**, De Domenico E, Pavan G, Pulvirenti S, Riccobene G for the EMSO Collaboration (2016). Shipping Noise and Seismic Airgun Surveys in the Ionian Sea: Long Term Observations and Potential Impact on Mediterranean Fin Whale. *Proceedings of Meetings on Acoustics* 27, 040010. DOI: 10.1121/2.0000311.
- Bocconcelli A, [...], **Caruso F** et al. (2016). DTAG studies of blue whales (*Balaenoptera musculus*) in the Gulf of Corcovado, Chile. *Proceedings of Meetings on Acoustics* 27, 040002. DOI: 10.1121/2.0000269
- Buscaino G, Ceraulo M, Pieretti N, Corrias V, Farina A, Filiciotto F, Maccarrone V, Grammauta R, **Caruso F**, Giuseppe A, Mazzola S (2016). Temporal patterns in the soundscape of the shallow waters of a Mediterranean marine protected area. *Scientific Report*, 6, 34230; DOI: 10.1038/srep34230.
- Adrián-Martínez, [...], **Caruso F** et al. for the KM3NeT Collaboration (2016). Long term monitoring of the optical background in the Capo Passero deep-sea site with the NEMO tower prototype. *The European Physical Journal C*; 76:68. DOI 10.1140/epjc/s10052-016-3908-0.
- Distefano C, [...], **Caruso F** et al. for the KM3NeT Collaboration (2016). Measurement of the atmospheric muon flux at 3500 m depth with the NEMO Phase-2 detector. *The European Physical Journal Web of Conferences* 121, 05015. DOI: 10.1051/epjconf/201612105015.
- Adrián-Martínez S, [...], **Caruso F** et al. for the KM3NeT Collaboration (2016). The prototype detection unit of the KM3NeT detector. *The European Physical Journal C*; 76:54. DOI: 10.1140/epjc/s10052-015-3868-9.
- Caruso F**, Sciacca V, Bellia G, De Domenico E, Larosa G, Papale E, et al. (2015). Size Distribution of Sperm Whales Acoustically Identified During Long Term Deep-Sea Monitoring in the Ionian Sea. *PLoS ONE* 10(12): e0144503. DOI: 10.1371/journal.pone.0144503.
- Sciacca V, **Caruso F**, Beranzoli L, Chierici F, De Domenico E, Embriaco D, et al. (2015). Annual Acoustic Presence of Fin Whale (*Balaenoptera physalus*) Offshore Eastern Sicily, Central Mediterranean Sea. *PLoS ONE* 10(11): e0141838. DOI:10.1371/journal.pone.0141838.
- Aiello S, [...], **Caruso F** et al. (2015). Measurement of the atmospheric muon depth intensity relation with the NEMO Phase-2 tower. *Astroparticle Physics*, Vol. 66, Pag. 1-7, 2015. DOI: 10.1016/j.astropartphys.2014.12.010.
- Adrián-Martínez S, [...], **Caruso F** et al. (2014). Deep sea tests of a prototype of the KM3NeT digital optical module. *The European Physical Journal C*, Volume 74, id. #3056, 8 pp. DOI: 10.1140/epjc/s10052-014-3056-3.
- Viola S, [...], **Caruso F** et al. (2014). Underwater acoustic positioning system for the SMO and KM3NeT-Italia projects. 6th International Workshop on Very Large Volume Neutrino Telescopes, Stockholm, SWEDEN. *AIP Conference Proceedings* 1630, 134. DOI: 10.1063/1.4902790.
- Pellegriti MG, [...], **Caruso F** et al. (2014). Long-term optical background measurements in the Capo Passero deep-sea site. 6th International Workshop on Very Large Volume Neutrino

Telescopes, Stockholm, SWEDEN. AIP Conference Proceedings 1630, 134; DOI: 10.1063/1.4902780.

Pellegrino C, [...], **Caruso F** et al. (2014). The Trigger and Data Acquisition for the NEMO-Phase 2 Tower. 6th International Workshop on Very Large Volume Neutrino Telescopes, Stockholm, SWEDEN. AIP Conference Proceedings 1630, 134. DOI: 10.1063/1.4902796.

Chiarusi T, [...], **Caruso F** et al. (2014). Status and first results of the NEMO Phase-2 tower. Journal of Instrumentation, 9, 03, C03045. DOI: 10.1088/1748-0221/9/03/C03045.

Aiello S, [...], **Caruso F** et al. (2013). The optical modules of the phase-2 of the NEMO project. Journal of Instrumentation, 8, 07, P07001. DOI: 10.1088/1748-0221/8/07/E08001.

Conference Proceedings

2020 7th Annual Meeting of the Society for Bioacoustics, JAPAN – Online meeting

2019 5th The Effects of Noise on Aquatic Life, Den Haag, NETHERLANDS
World Marine Mammal Conference 2019, Barcelona, SPAIN

2018 Ocean Sciences Meeting (OSM 2018), Portland, OR, UNITED STATES
32nd Annual Conference of the European Cetacean Society (ECS 2018), La Spezia, ITALY
2nd Oceanoise Asia, Hakodate, Hokkaido, JAPAN
1st Asian-Pacific Conference of Endangered Marine Species, Shantou, CHINA
6th Conference of Cetacean Research and Conservation, Shantou, CHINA

2017 EGU General Assembly 2017, Vienna, AUSTRIA
44th National Conference of Italian Association of Acoustics (AIA), Pavia, ITALY
173rd Meeting of the Acoustical Soc. of America, Boston, UNITED STATES
4th International Marine Protected Areas Congress, La Serena, Coquimbo, CHILE
22nd Biennial Conference on the Biology of Marine Mammals in Halifax, CANADA

2016 30th Annual Conference of the European Cetacean Society, Funchal, Madeira, PORTUGAL
4th The Effects of Noise on Aquatic Life, Dublin, IRELAND

2015 29th Annual Conference of the European Cetacean Society, MALTA
Watkins Memorial Marine Mammal Bioacoustics Symposium, MA, UNITED STATES
EGU General Assembly 2015, Vienna, AUSTRIA
3rd Underwater Acoustics Conference and Exhibition, Platania, Crete, GREECE
EEF 2015 - Ecology at Interface, Rome, ITALY
21st Biennial Conference on The Biology of Marine Mammals, CA, UNITED STATES

2014 28th Annual Conference of the European Cetacean Society, Liege, BELGIUM
41st National Conference of Italian Association of Acoustics (AIA), Pisa, ITALY
75th National Conference of the Italian Zoological Union (UZI), Bari, ITALY
100th National Conference of the Italian Society of Physics (SIF), Pisa, ITALY
6th International Workshop on Very Large Volume Neutrino Telescopes, SWEDEN

2013 27th Annual Conference of the European Cetacean Society, Setubal, PORTUGAL
1st Cetacean Echolocation-Outer Space Neutrinos, Erice, ITALY
EMSO, Ocean Observatories: Challenges and Progresses, Rome, ITALY

2011 21st Congress of the Italian Society of Ecology, Palermo, ITALY
1st Ecology, Behaviour and Conservation of the sperm whale in the Med, Ischia, ITALY