

Marta Bolgan



Born in Venezia (Italy) on 01/04/1985

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Current Position: Post Doc

Supervisor: Dr Antonio Di Franco

Appointed on project: Panoramica globale degli approcci di gestione della pesca, strategie di conservazione e loro connessioni (assegno di ricerca n. 13/2021).

Affiliation:

Section IME, Stazione Zoologica Anton Dohrn

Lungomare Cristoforo Colombo (complesso Roosevelt)

90149 Palermo, Italy

Education/Training/Experience

Institute and Location	Degree / Function	Year	Field of Study
Trieste University, Trieste (Italy)	Bachelor (Laurea Triennale)	2005-2008	Biological sciences
Trieste University, Trieste (Italy)	Master (Laurea Specialistica)	2008-2010	Marine biology
Centre for Ecology, Evolution & Environmental Changes, Lisbon University (Portugal)	Postgraduate researcher	2011	Fish auditory sensitivity
Center for Estuarine & Coastal Marine Sciences, Ca' Foscari University (Italy)	Postgraduate researcher	2012	Passive Acoustic Monitoring of <i>S. umbra</i>
Galway-Mayo Institute of Technology, Galway (Ireland)	PhD (Irish Research Council Grant)	2012- 2016	Aquatic Science
Laboratory of Functional & Evolutionary Morphology, University of Liège (Belgium)	Marie Skłodowska-Curie Postdoc (COFUND)	2016-2018	Passive Acoustic Monitoring of Mediterranean fish communities

Laboratory of Functional & Evolutionary Morphology, University of Liège (Belgium)	Postdoc	2018- 2019	Passive Acoustic Monitoring of Mediterranean fish communities
Marine and Environmental Sciences Centre, Lisbon University & ISPA-Instituto Universitário (Portugal)	Postdoc	2019-2020	Effect of noise on fish behaviour
Laboratory of Functional & Evolutionary Morphology, University of Liège (Belgium)	Postdoc	2020-2021	Passive Acoustic Monitoring applications for deep-sea fish

Appointments and awards

2021: Luxembourg Art Price Certificate of Artistic Merit

2017: Seal of Excellence of the European Commission, awarded with the project DEFPAM (Marie Skłodowska-Curie Individual fellowship 2017)

Publications

Author of 30 publications on ISI-journals

List of publications of the last 10 years

Journal Papers

Picciulin M., **Bolgan M.**, Rako-Gospić N., Petrizzo A., Radulović M., Falkner R. (*in press*) A fish and dolphin biophony in the boat noise-dominated soundscape of the Cres-Lošinj archipelago (Croatia). *Journal of Marine Science and Engineering*.

Bolgan M., Di Iorio L., Dailianis T., Catalan I.A., Lejeune P., Picciulin M., Parmentier E. (2022). Fish acoustic community structure in Neptune seagrass meadows across the Mediterranean basin. *Aquatic Conservation: Marine and Freshwater Ecosystems*. <https://doi.org/10.1002/aqc.3764>

Burchardt L.S., Picciulin M., Parmentier E., **Bolgan M.** (2021) A primer on rhythm quantification for fish sounds: a Mediterranean case study. *Royal Society Open Science*, <https://doi.org/10.1098/rsos.210494>

Barcelo-Serra M., Cabanellas S., Palmer M., **Bolgan M.**, Alós J. (2021). A state-space model to derive motorboat noise effects on fish movement from acoustic tracking data. *Scientific reports*, 11(1), 1-12.

Parmentier E., Bertucci F., **Bolgan M.**, Lecchini D. (2021). How many fish could be vocal? An estimation from a coral reef (Moorea Island). *Belgian Journal of Zoology* 151: 1–29.

Picciulin M., **Bolgan M.**, Fiorin R., Facca C., Malavasi S. (2021). Sound discrimination of two sympatric, threatened fish species allows for their in situ mapping. *Aquatic Conservation: Marine and Freshwater Ecosystems* DOI: 10.1002/aqc.3581

Bolgan M., Pereira B.P., Crucianelli A., Mylonas C.C., Pousão-Ferreira P., Parmentier E., Fonseca P.J, Amorim M.C.P. (2020). Vocal repertoire and consistency of call features in the meagre *Argyrosomus regius* (Asso, 1801). *Plos one*, 15(11), e0241792.

- Bolgan M.**, Parmentier E. (2020). The unexploited potential of listening to deep-sea fish. *Fish and Fisheries* 21(6), 1–15.
- Carriço R., Silva M.A., Menezes G.M., Vieira M., **Bolgan M.**, Fonseca P. J., Amorim M.C.P. (2020) Temporal dynamics in diversity patterns of fish sound production in the Condor seamount (Azores, NE Atlantic). *Deep-Sea Research Part I* 103357.
- Bolgan M.**, Gervaise C., Di Iorio L., Lossent J., Lejeune P., Raick X., Parmentier E. (2020). Fish biophony in a Mediterranean submarine canyon. *Journal of Acoustic Society of America* 147(4), 2466-2477.
- Bolgan M.**, Crucianelli A., Mylonas C.C., Henry S., Falguiere J.C., Parmentier E. (2020) Calling activity and calls' temporal features inform about fish reproductive condition and spawning in three cultured Sciaenidae species. *Aquaculture* 735243.
- Rountree R.A., Juanes F., **Bolgan M.** (2020) Temperate freshwater soundscapes: A cacophony of undescribed biological sounds now threatened by anthropogenic noise. *PlosOne* 15(3), e0221842.
- Bolgan M.**- Souldard J., Di Iorio L., Gervaise C., Lejeune P., Gobert S., Parmentier E. (2019). The sea chordophones make the mysterious /Kwa/: emitter identification of the dominating fish sound in Mediterranean seagrass meadows. *Journal of Experimental Biology* 222(11), jeb196931
- Rountree R.A., Juanes F., **Bolgan M.** (2018) Air movement sound production by alewife, white sucker, and four salmonid fishes suggests the phenomenon is widespread among freshwater fishes. *PLoS ONE* 13(9), e0204247.
- Rountree R.A., **Bolgan M.**, Juanes F. (2018) How can we understand freshwater soundscapes without fish sound descriptions? *Fisheries* 44(3), 137-143.
- Amorim M.C.P., Vasconcelos R.O., **Bolgan M.**, Pedroso S.S., Fonseca P.J. (2018) Acoustic communication in marine shallow waters: testing the acoustic adaptive hypothesis in sand gobies. *Journal of Experimental Biology* 21(22), jeb183681.
- Picciulin M., Keever L, Parmentier E., **Bolgan M.** (2018) Listening to the unseen: Passive Acoustic Monitoring reveals the presence of a cryptic fish species. *Aquatic Conservation: Marine and Freshwater Ecosystems* 29(2), 202-210.
- Bolgan M.**, Amorim M.C.P., Fonseca P.J., Di Iorio L., Parmentier E. (2018). Acoustic Complexity of vocal fish communities: a field and controlled validation. *Scientific reports*, 8(1): 10559.
- Bolgan M.**, Chorazyczewska E., Winfield I.J., Mc Cullough P., O'Brien J., Gammell M. (2018) The soundscape of Arctic charr spawning grounds in lotic and lentic environments: can Passive Acoustic Monitoring be used to detect spawning activities? *Bioacoustics* 27(1): 57-85.
- Bolgan M.**, O'Brien J., Picciulin M., Manning L., Gammell M. (2017) Behaviour of Arctic charr during an induced mating season in captivity: how male relative size influences male behavioural investment and female preference over time. *Journal of fish biology* 90(4): 1479-1505.
- Bolgan M.**, Chorazyczewska, E., Winfield I.J., Codarin, A., O'Brien J, Gammell M. (2016) First observations of anthropogenic underwater noise in a large multi-use lake. *Journal of Limnology* 75(3): 644-651.

- Bolgan M.**, O'Brien J, Rountree, R.A., Gammell M. (2016) Does the Arctic charr, *Salvelinus alpinus*, produce sounds in a captive setting? *Journal of Fish Biology* 89(3): 1857-1865.
- Picciulin M., **Bolgan M.**, Coro' A.B., Calcagno G., Malavasi S. (2016) Sound production in the shi drum *Umbrina cirrosa* and comparison with the brown meagre *Sciaena umbra*: a passive acoustic monitoring perspective. *Journal of Fish Biology* 88(4): 1655-1660.
- Bolgan M.**, O'Brien J., Gammell M. (2016) The behavioural repertoire of Arctic charr (*Salvelinus alpinus* (L.)) in captivity: a case study for testing ethogram completeness and reducing observer effects. *Ecology of Freshwater Fish* 25(2): 318-328.
- Picciulin M., **Bolgan M.**, Codarin A., Fiorin R., Colla S., Malavasi S. (2013) Characterisation of the noise emitted by the passage of a passenger cruise liner in the Venice lagoon: concern about possible effects on the local fish community. *Annales: Series Historia Naturalis* 23 (2): 143-147.
- Picciulin M., **Bolgan M.**, Codarin A., Fiorin R., Zucchetta M., Malavasi S. (2013) Passive acoustic monitoring of *Sciaena umbra* on rocky habitats in the Venetian littoral zone. *Fisheries Research* 145: 76-81.
- Bolgan M.**, Pedroso S.S., Picciulin M., Fonseca P.J., Amorim M.C.P (2013) Differential investment in acoustic communication during social interactions in two closely-related sand goby species. *Behaviour* 150: 133-152.
- Amorim M.C.P., Pedroso S.S., **Bolgan M.**, Jordão J.M, Caiano M., Fonseca P.J. (2012). Painted gobies sing their quality out loud: acoustic rather than visual signals advertise male quality and contribute to mating success. *Functional Ecology* 27(2): 289-298.
- Bolgan M.**, Rodeano M., Manna D., Ferrero E.A. (2009) Animal welfare and scientific research: the meerkat group at Parco Zoo Punta Verde. *International Zoo News* 374 (56/5): 281-288.
- Bolgan M.**, Rodeano M., Manna D., Ferrero E.A. (2008) What enrichment motivates meerkats? *Shape of Enrichment* 17 (4): 11-13.

Conference proceedings

- Rountree R.A., Juanes F., **Bolgan M.** (2017) Fish sound production in freshwater habitats of New England: Widespread occurrence of air movements sounds. In: *The Journal of the Acoustical Society of America* 141(5), 4003-4005.
- Bolgan M.**, O'Brien J., Winfield I.J., Gammell M. (2016) An investigation of Irish and British inland water soundscapes: which sonic sources influence acoustic levels? In: *Proceedings of Meetings on Acoustics (POMA), Acoustical Society of America (ASA)* 27(1).
- Picciulin M., Colla S., Fiorin R., **Bolgan M.**, Pranovi F., Malavasi S. (2016) The soundscape of a mussel farm: biophony and man-made noise levels. In: *Proceedings of Meetings on Acoustics (POMA), Acoustical Society of America (ASA)* 27(1).
- Bolgan M.**, Picciulin M., Codarin A., Fiorin R., Zucchetta M., Malavasi S. (2015) Is the Venice lagoon noisy? First passive listening monitoring of the Venice lagoon: possible effects on the

typical fish community. In: Popper, A.N. and Hawkins, A. (ed.) *The Effects of Noise on Aquatic Life II*. Springer Science+Business Media, LLC, New York pp. 83-90.

Bolgan M., Pedroso S.S., Vasconcelos R.O, Jordão J.M, Amorim M.C.P., Fonseca P.J. (2012) Hearing sensitivity of the painted goby, *Pomatoschistus pictus*. In: Popper, A.N. and Hawkins, A. (ed.) *The Effects of Noise on Aquatic Life I*. Springer Science+Business Media, LLC, New York, 109-111.

Pedroso S.S., **Bolgan M.**, Jordão J.M., Fonseca P.J., Amorim M.C.P. (2012) Acoustic communication in *Pomatoschistus* spp.: a comparison between closely related species. In: Popper, A.N. and Hawkins, A. (ed.) *The Effects of Noise on Aquatic Life I*. Springer Science+Business Media, LLC, New York, pp. 113-115.

Invited talks

Bolgan M. (2021) Quiet as a fish? How monitoring fish sounds can support biodiversity management, from inland waters to deep-sea habitats. Bridging Brain & Bioacoustic Seminar Series, Harvard University, August 2021 (USA).

Bolgan M., Picciulin M., Di Iorio L., Parmentier E. (2020). Passive Acoustic Monitoring of Fishes in the Mediterranean Sea: past, present and future perspectives. Festival of Ecology (British Ecological Society), Thematic session: Soundscapes as a tool to monitor disturbance impacts in the Anthropocene, December 2020

Bolgan M., Di Iorio L., Dailianis T., Catalan I.A., Lejeune P., Parmentier E. (2019). An acoustic Odyssey: Characterisation of the vocal fish community inhabiting Neptune seagrass meadows across the Mediterranean Sea. XXVII International Bioacoustics Congress, September 2019 (Brighton, UK)

Bolgan M., Parmentier E. (2019). DEFPAM-G: Deep-sea Fish Passive Acoustic Monitoring by using gliders. Seminar at IMEDEA, January 2019 (Esporles, Spain).

Bolgan M., Di Iorio L., Lejeune P., Parmentier E. (2018) Abondance et diversité acoustique des populations de poissons dans la baie de Calvi. Workshop STARECAPMED, April 2018 (STARESO, Calvi, France).

Bolgan M. (2017) Aquatic habitats: a silent world? An introduction to soundscape ecology with special reference to fish acoustic communication". Seminar at STARESO, August 2017 (Calvi, France).

Bolgan M. (2017) Aquatic habitats: a silent world? An introduction to soundscape ecology with special reference to fish acoustic communication". Seminar at Hellenic Centre of Marine Research, July 2017 (Heraklion, Greece).

Conference presentations (not invited)

Bolgan M., Picciulin M., Di Iorio L., Parmentier E. (2021). Passive Acoustic Monitoring of Fishes in the Mediterranean Sea: from single species to whole community monitoring. Ecoacoustic Congress, June 2021 (Urbino, Italy). Oral presentation.

- Picciulin M., Facca C., **Bolgan M.**, Zucchetta M., Fiorin R., Riccato F., Malavasi S. (2021). Does noise matter? Passive Acoustic Monitoring reveals the co-occurring presence of two threatened sympatric vocal species (*Sciaena umbra* and *Umbrina cirrosa*; Sciaenidae) in highly anthropized Venice inlets. Ecoacoustic Congress, June 2021 (Urbino, Italy) Oral presentation of Picciulin
- Bolgan M.**, Picciulin M., Di Iorio L., Parmentier E. (2021). Passive Acoustic Monitoring of Fishes in the Mediterranean Sea: from single species to whole community monitoring. Fish, Fisheries and Ecosystems in the Anthropocene, FSBI symposium (Leuven, BE). Oral presentation.
- Bolgan M.**, Gervaise C., Di Iorio L., Lossent J., Lejeune P., Raick X., Parmentier E. (2019) Fish biophony in a Mediterranean submarine canyon: a preliminary investigation using Static Acoustic Monitoring and gliders. 2019 Effects of noise on aquatic life conference, Den Haag (The Netherlands). Oral presentation.
- Bolgan M.**, O'Brien J., Gammell M., Winfield I.J. (2016) An investigation of a multi-use lake soundscape: which sonic sources influence acoustic levels? Cumbrian Lakes Research Forum 2016. Lancaster University, United Kingdom. Poster presentation.
- Bolgan M.**, O'Brien J., Winfield I.J. Gammell M. (2016) An investigation of Irish and British inland water soundscapes: which sonic sources influence acoustic levels? The Effects of Noise on Aquatic Life. 4th international conference. Dublin, Ireland. Poster presentation.
- Picciulin M., Colla S., Fiorin R., Bolgan M., Pranovi F., Malavasi S. (2016) The soundscape of a mussel farm: biophony and man-made noise levels. The Effects of Noise on Aquatic Life. 4th international conference. Dublin, Ireland. Poster presentation.
- Bolgan M.**, Picciulin M., Codarin A., Fiorin R., Zucchetta M., Malavasi S. (2013) Is the Venice lagoon noisy? First passive listening monitoring of the Venice lagoon: possible effects on the typical fish community. The Effects of Noise on Aquatic Life. 3rd international conference. Budapest, Hungary. Oral presentation.
- Amorim M.C.P., Pedroso S. S., **Bolgan M.**, Jordão J.M., Fonseca P.J. (2011) Courtship sounds indicate male quality in the painted gobies (*Pomatoschistus pictus*). Behaviour 2011. International conference. Bloomington, Indiana. Oral presentation of Amorim.
- Bolgan M.**, Pedroso S.S., Picciulin M., Jordão J.M., Fonseca P.J., Amorim M.C.P. (2011) Are painted goby drums efficient at keeping intruders at bay? A comparison of agonistic communication between two closely related species (Gobiidae, Teleostei). The XXIII meeting of the International Bioacoustics Council (IBAC). La Rochelle, France. Poster presentation.
- Pedroso S. S., **Bolgan M.**, Fonseca P.J., Amorim M.C.P. (2011) Do painted gobies sing their quality out loud? Symposium on Acoustic Communication by Animals. 3rd International conference. Ithaca, NY. Oral presentation of Amorim.
- Pedroso S.S., **Bolgan M.**, Pereira A., Almada V.C., Lugli M., Malavasi S., Fonseca P.J., Amorim, M.C.P. (2011) Geographical variation in courtship acoustic signals in sand gobies (Gobiidae, Teleostei). The XXIII meeting of the International Bioacoustics Council (IBAC). La Rochelle, France. Poster presentation.

Bolgan M., Pedroso S.S., Vasconcelos R.O., Jordão J.M., Amorim M.C.P., Fonseca, P.J. (2010) Hearing sensitivity of the painted goby, *Pomatoschistus pictus*. The Effects of Noise on Aquatic Life. 2nd international conference, Cork, Ireland. Poster presentation.

Pedroso S.S., *Bolgan M.*, Jordão J.M., Fonseca P.J., Amorim M.C.P. (2010) Acoustic communication in *Pomatoschistus* spp.: a comparison between closely related species. The Effects of Noise on Aquatic Life. 2nd international conference. Cork, Ireland. Poster presentation.

Del Piero D., **Bolgan M.**, Burca M., Calcagno G., D'Antoni S., Cogliervina C., De Flego P., De Munari M., Diviacco P. (2010) Three years after: What about *Callista chione* restoration plans. ICSR 13th International Conference on Shellfish Restoration. Charleston, SC, USA. Oral presentation of Del Piero.