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Current position

Assistant Professor of Ecology, Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano (www.deib.polimi.it)

Past positions

2002-2005: post-doctoral research assistant, Dipartimento di Elettronica e Informazione, Politecnico di Milano

1999-2001: PhD student, Dipartimento di Scienze Ambientali, Università degli Studi di Parma

1998: scholarship, Dipartimento di Elettronica e Informazione, Politecnico di Milano

Education

2001: PhD in Ecology, Università degli Studi di Parma, Italy. Thesis on integrated management models for Manila clam farming in lagoon environments

1996: MSc (with honours) in Environmental Engineering, Politecnico di Milano, Italy. Thesis on risk-averse water management of the Como Lake

Awards

2000: Premio Marchetti of the Italian Ecological Society (SIeE) for the best paper "Un modello gestionale per *Tapes philippinarum* nella Sacca di Goro" presented by a young researcher at the 10th National SIeE meeting

Scientific memberships

Member of the Italian Ecological Society (SIeE) since 1999

Research

Research interests

I am member of the research and teaching group in Ecology (www.ecologia.polimi.it) and the research group in "Planning and management of environmental systems" at the Politecnico di Milano. My main research activities include basic and applied research in ecology, with a particular emphasis on ecological modelling, population demography and conservation biology, sustainable management of natural living resources, environmental impact assessment, life cycle assessment and sustainability indicators.

Research projects

2016-2018: Research team leader in the project *SafeNet: Sustainable fisheries in EU Mediterranean waters through networks of MPAs*, funded by the Directorate-General for Maritime Affairs and Fisheries of the European Commission

2015-2018: Senior research associate in the project *ECOPOTENTIAL: Improving future ecosystem benefits through earth observations*, funded by the H2020 Programme of the European Commission

2012-2016: Senior research associate in the project *CoCoNet - Towards COast to COast NETWORKS of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential*, funded by the 7th Framework Programme of the European Commission

- 2012-2014: Senior research associate in the project *ECO2Clouds - Experimental Awareness of CO2 in Federated Cloud Sourcing*, funded by the 7th Framework Programme of the European Commission
- 2012: Task leader in the research contract *BEMTOOL*, funded by the Directorate-General for Maritime Affairs and Fisheries of the European Commission within the tender *MAREA (Mediterranean hAlieutic Resources Evaluation and Advice)*
- 2011-2012: Senior research associate in the project *Ottimizzazione scientifica della ricerca per la gestione delle risorse della pesca nell'ambito delle politiche ambientali ed economiche*, funded by the Italian Ministry of Agricultural, Food and Forestry Policies
- 2011-2012: Research team leader in the project *Sulla strada della sostenibilità*, funded by Fondazione Cariplo
- 2010-2012: Research associate in the project *The role of spatial connectivity and trophic interactions in the sustainable management of small-scale fisheries through the implementation of networks of Marine Protected Areas*, funded by the Italian Ministry of Education, Universities and Research (PRIN 2008 program)
- 2007-2009: Research associate in the project *An Integrated Approach to the Conservation and Management of the European Eel in the Mediterranean Region*, funded by the Italian Ministry of Education, Universities and Research (PRIN 2006 program)
- 2006-2009: Research associate in the project *Conseguenze ed impatti dei cambiamenti climatici globali sulla gestione e conservazione delle risorse naturali*, funded by the Italian Ministry of Education, Universities and Research (Interlink program)
- 2004-2007: Research associate in the project *Valutazione di stock di alici e sardine nei mari italiani al fine di una gestione razionale della pesca*, funded by the Italian Ministry of Agricultural, Food and Forestry Policies
- 2002-2004: Research assistant in the project *Effetti della molluschicoltura sul riciclo dei nutrienti in lagune costiere distrofiche: strategie di gestione a basso impatto ambientale per gli allevamenti di vongole e il controllo delle fioriture algali*, funded by the Italian Ministry of Agricultural, Food and Forestry Policies
- 2002: Research assistant in the project *Verifica della Rete Natura 2000 in Italia e modelli di gestione*, funded by the Italian Ministry of the Environment
- 2000: Research assistant in the project *Analisi e gestione dei sistemi ecologici*, funded by Politecnico di Milano
- 1999-2002: Research assistant in the project *Supporto conoscitivo, metodologico e modellistico alle Unità Operative impegnate nella valutazione degli stock dei piccoli pelagici*, funded by the Italian Ministry of Agricultural, Food and Forestry Policies

Scientific collaborations

Italian institutions: Universities of Cagliari (A. Cau, M.C. Follesa), Ferrara (R. Rossi), Genoa (M. Petrillo, A. Mandich), Insubria (G. Ruggieri), Milan (S. Galassi), Padua (L. Zane, I. Marino), Parma (P. Viaroli, M. Bartoli), Roma "Tor Vergata" (E. Ciccotti) and Salento (S. Frascchetti), CNR-ISE (P. Volta), CMCC (S. Masina), COISPA (G. Lembo, M.T. Spedicato, I. Bitetto), CIBM (P. Sartor, A. Ligas), NISEA (P. Accadia), SZN (G. Procaccini). Foreign institutions include, in France, the biological station of Tour du Valat in Camargue (A. Crivelli), where I have been visiting scholar each summer between 2008–2014, the University of Nice Sophia-Antipolis (P. Guidetti, A. Di Franco), INRA Provence-Alpes-Côte d'Azur (M. Génard, D. Bevacqua), CNRS (J. Claudet), in Australia the University of Queensland (L. Lloyd-Jones) and, in the United States, the Hopkins Marine Station of Stanford University (G.A. De Leo, F. Micheli).

Editorial activity and scientific events

I have served as a referee for more than 30 peer-reviewed international journals (see verified review record at publons.com/a/1150270), including *Molecular Ecology*, *Journal of Cleaner Production*, *Science of the Total Environment*, *Environmental Modelling & Software*, *Water Resources Research*, *Ecological Applications*, *Scientific Reports*, *Biological Conservation*, *International Journal of Applied Earth Observation and Geoinformation*, *Environmental Science & Policy*. I am currently member of the editorial board of the *Journal of Limnology*.

I have been member of the organizing committee of the 13th national meeting of the Italian Ecological Society (Como, 2003) and editor of the proceedings of the meeting. I have been member of the local supporting committee for the organization of the 7th national meeting of the Italian Life Cycle Assessment Network (Milano, 2013).

Teaching

- 2017 to present: *Ecology* (4 ECTS credits), postgraduate programme in Landscape Architecture – Land Landscape Heritage, Politecnico di Milano
- 2016 to present: *General Ecology* (4 ECTS credits), postgraduate programme in Sustainable Architecture and Landscape Design, Politecnico di Milano, polo territoriale di Piacenza
- 2013 to present: *Ecology and sustainability of production systems* (8 ECTS credits), undergraduate programme in Environment and Land Planning Engineering, Politecnico di Milano
- 2015 to present: lectures on *Ecological footprint and sustainability metrics*, PhD course in Sustainability Metrics, Life Cycle Assessment and Environmental Footprint, Politecnico di Milano
- 2013 to present: lectures on *Ecosystem services and sustainability* and *Sustainability and production systems*, PhD course in Ecology and Development, Zentrum für Entwicklungsforschung, University of Bonn
- 2009-2015: lectures on *Life Cycle Assessment. Impact indicators for LCA*, course in *Global change and sustainability*, Alta Scuola Politecnica
- 2010-2013: *Ecology* (4 ECTS credits), undergraduate programme in Environmental Architecture, Politecnico di Milano
- 2009-2010: *Assessment and management models for fisheries resources* (1 ECTS credit), postgraduate programme in Marine Biology, Università di Bologna, sede di Ravenna
- 2004-2011: *Fundamentals of environmental impact assessment* (5 credits), undergraduate programme in Environment and Land Planning Engineering, Politecnico di Milano, sede di Cremona
- 1998-2010: teaching assistant of *Ecology, Modelling and simulation, Ecosystem conservation and management, Systems analysis, Applied Ecology*, undergraduate and postgraduate programmes in Environment and Land Planning Engineering, Politecnico di Milano

I have given several lectures about ecology and sustainability topics in different PhD courses at Politecnico di Milano. I have tutored or co-tutored the theses of more than 70 undergraduate students, 28 postgraduate students and 3 PhD students. I am member since 2010 of the selection board for teaching activities of my Department. In 2017 and 2018 I have been member of the selection board for the Honours Programme *Engineering for Sustainable Development* of the Politecnico di Milano. In 2007 I have organized an interdisciplinary PhD course on *Global changes and sustainability*. Between 2010 and 2012 I have been member of the teaching committee of the PhD program in Ecology of the University of Parma.

Selected publications

1. Recanati F., A. Castelletti, G. Dotelli & **P. Melià** (2017) Trading off natural resources and rural livelihoods. A framework for sustainability assessment of small-scale food production in water-limited regions. *Advances in Water Resources* 110: 484-493. doi: 10.1016/j.advwatres.2017.04.024
2. Jahnke M., R. Casagrandi, **P. Melià**, M. Schiavina, S.T. Schultz, L. Zane & G. Procaccini (2017) Potential and realized connectivity of the seagrass *Posidonia oceanica* and their implication for conservation. *Diversity and Distributions* 23:1423-1434. doi: 10.1111/ddi.12633
3. Mari L., L. Bonaventura, A. Storto, **P. Melià**, M. Gatto, S. Masina & R. Casagrandi (2017) Understanding large-scale, long-term larval connectivity patterns: the case of Northern Line Islands in the Central Pacific Ocean. *PLoS ONE* 12(8): e0182681. doi: 10.1371/journal.pone.0182681
4. Paterno M., M. Schiavina, G. Aglieri, E. Boscari, R. Casagrandi, A. Chassanite, M. Chiantore, L. Congiu, G. Guarnieri, C. Kruschel, V. Macic, I.A.M. Marino, C. Papetti, T. Patarnello, J. Ben Souissi, L. Zane & **P. Melià** (2017) Population genomics meet Lagrangian simulations: oceanographic patterns and long larval duration ensure connectivity among *Paracentrotus lividus* populations in the Adriatic and Ionian seas. *Ecology and Evolution* 7:2463-2479. doi: 10.1002/ece3.2844
5. Arrigoni Marocco A., R. Pelosato, **P. Melià**, G. Ruggieri, S. Sabbadini & G. Dotelli (2017) Life cycle assessment of natural building materials: the role of carbonation, mixture components and transport in the environmental impacts of hempcrete blocks. *Journal of Cleaner Production* 149:1051-1061. doi: 10.1016/j.jclepro.2017.02.161
6. Pascual M., M. Rossetto, E. Ojea, N. Milchakova, S. Giakoumi, S. Kark, D. Korolesova & **P. Melià** (2016) Socioeconomic impacts of marine protected areas in the Mediterranean and Black Seas. *Ocean & Coastal Management* 133:1-10. doi: 10.1016/j.ocecoaman.2016.09.001
7. **P. Melià**, M. Schiavina, M. Rossetto, M. Gatto, S. Frascchetti & R. Casagrandi (2016) Looking for hotspots of marine metacommunity connectivity: a methodological framework. *Scientific Reports* 6: 23705. doi: 10.1038/srep23705
8. Bevacqua D., **P. Melià**, M. Gatto & G.A. De Leo (2015) A global viability assessment of the European eel. *Global Change Biology* 21(9): 3323-3335. doi: 10.1111/gcb.12972
9. Rossetto M., I. Bitetto, M.T. Spedicato, G. Lembo, M. Gambino, P. Accadia & **P. Melià** (2015) Multi-criteria decision-making for fisheries management: a case study of Mediterranean demersal fisheries. *Marine Policy* 53: 83-93. doi: 10.1016/j.marpol.2014.11.006
10. Schiavina M., D. Bevacqua, **P. Melià**, A.J. Crivelli, M. Gatto & G.A. De Leo (2015) A user-friendly tool to assess management plans for European eel fishery and conservation. *Environmental Modelling & Software* 64: 9-17. doi: 10.1016/j.envsoft.2014.10.008
11. Schiavina M., I.A.M. Marino, L. Zane & **P. Melià** (2014) Matching oceanography and genetics at the basin scale. Seascape connectivity of the Mediterranean shore crab in the Adriatic Sea. *Molecular Ecology* 23(22): 5496-5507. doi: 10.1111/mec.12956
12. **Melià P.**, A.J. Crivelli, C. Durif, R. Poole & D. Bevacqua (2014) A simplified method to estimate body growth parameters of the European eel *Anguilla anguilla*. *Journal of Fish Biology* 85: 978-984. doi: 10.1111/jfb.12486
13. **Melià P.**, G. Ruggieri, S. Sabbadini & G. Dotelli (2014) Environmental impacts of natural and conventional building materials: a case study on earth plasters. *Journal of Cleaner Production* 80: 179-186. doi: 10.1016/j.jclepro.2014.05.073
14. Pujolar J.M., M. Schiavina, A. Di Franco, **P. Melià**, P. Guidetti, M. Gatto, G.A. De Leo & L. Zane (2013) Understanding the effectiveness of marine protected areas using genetic connectivity patterns and Lagrangian simulations. *Diversity and Distributions* 19 (12): 1531-1542. doi: 10.1111/ddi.12114
15. **Melià P.**, M. Schiavina, M. Gatto, L. Bonaventura, S. Masina & R. Casagrandi (2013) Integrating field data into individual-based models for the migration of European eel larvae. *Marine Ecology Progress Series* 487: 135-149. doi: 10.3354/meps10368
16. Di Franco A., G. Coppini, J.M. Pujolar, G.A. De Leo, M. Gatto, V. Lyubartsev, **P. Melià**, L. Zane & P. Guidetti (2012) Assessing Dispersal Patterns of Fish Propagules from an effective Mediterranean Marine Protected Area. *PLoS ONE* 7(12): e52108. doi: 10.1371/journal.pone.0052108
17. Bevacqua D., F. Capoccioni, **P. Melià**, S. Vincenzi, J.M. Pujolar, G.A. De Leo & E. Ciccotti (2012) Fishery-induced selection for slow somatic growth in European eel. *PLoS ONE* 7(5): e37622. doi: 10.1371/journal.pone.0037622
18. **Melià P.**, M. Petrillo, G. Albertelli, A. Mandich & M. Gatto (2012) A bootstrap approach to account for uncertainty in egg production methods applied to small fish stocks. *Fisheries Research* 117-118: 130-136.

doi: 10.1016/j.fishres.2011.05.011

19. Bevacqua D., M. Andreollo, **P. Melià**, A.J. Crivelli & G.A. De Leo (2011) Density-dependent and inter-specific interactions affecting European eel settlement in freshwater habitats. *Hydrobiologia* 671: 259-265. doi:10.1007/s10750-011-0725-1
20. Bevacqua D., **P. Melià**, G.A. De Leo & M. Gatto (2011) Intra-specific scaling of natural mortality in fish: the paradigmatic case of the European eel. *Oecologia* 165 (2): 333-339. doi:10.1007/s00442-010-1727-9
21. Bevacqua D., **P. Melià**, G.A. De Leo, M.C. Follesa, M. Gatto & A. Cau (2010) Body growth and mortality of the spiny lobster *Palinurus elephas* within and outside a small marine protected area. *Fisheries Research* 106 (3): 543-549. doi:10.1016/j.fishres.2010.10.008
22. Bevacqua D., G.A. De Leo, M. Gatto & **P. Melià** (2009) Size selectivity of fyke nets for European eel *Anguilla anguilla* (L.). *Journal of Fish Biology* 74 (9): 2178-2186. doi:10.1111/j.1095-8649.2009.02243.x
23. Brambilla Pisoni E., R. Raccanelli, G. Dotelli, D. Botta & **P. Melià** (2009) Accounting for transportation impacts in the environmental assessment of waste management plans. *International Journal of Life Cycle Assessment* 14 (3): 248-256. doi:10.1007/s11367-009-0061-0
24. Bevacqua D., **P. Melià**, A.J. Crivelli, M. Gatto & G.A. De Leo (2007) Multi-objective assessment of conservation measures for the European eel (*Anguilla anguilla*): an application to the Camargue lagoons. *ICES Journal of Marine Science* 64 (7): 1472-1482. doi:10.1093/icesjms/fsm126
25. Bevacqua D., **P. Melià**, A.J. Crivelli, G.A. De Leo & M. Gatto (2006) Timing and rate of sexual maturation of European eel in brackish and freshwater environments. *Journal of Fish Biology* 69 (Supplement C): 200-208. doi:10.1111/j.1095-8649.2006.01265.x
26. **Melià P.**, D. Bevacqua, A.J. Crivelli, J. Panfili, G.A. De Leo & M. Gatto (2006) Sex differentiation of the European eel in brackish and freshwater environments: a comparative analysis. *Journal of Fish Biology* 69 (4): 1228-1235. doi:10.1111/j.1095-8649.2006.01170.x
27. **Melià P.**, D. Bevacqua, A.J. Crivelli, G.A. De Leo, J. Panfili & M. Gatto (2006) Age and growth of the European eel *Anguilla anguilla* in the Camargue lagoons. *Journal of Fish Biology* 68 (3): 876-890. doi:10.1111/j.0022-1112.2006.00975.x
28. **Melià P.** & M. Gatto (2005) A stochastic bioeconomic model for the management of clam farming. *Ecological Modelling* 184 (1): 163-174. doi:10.1016/j.ecolmodel.2004.11.011
29. **Melià P.**, G.A. De Leo & M. Gatto (2004) Density and temperature-dependence of vital rates in the Manila clam *Tapes philippinarum*: a stochastic demographic model. *Marine Ecology Progress Series* 272: 153-164. doi:10.3354/meps272153
30. **Melià P.**, D. Nizzoli, M. Bartoli, M. Naldi, M. Gatto & P. Viaroli (2003) Assessing the potential impact of clam rearing in dystrophic lagoons: an integrated oxygen balance. *Chemistry and Ecology* 19 (2-3): 129-146. doi:10.1080/0275754031000119898
31. **Melià P.**, N. Casavola & M. Gatto (2002) Estimating daily egg production of European anchovy in the Adriatic Sea: a critical appraisal. *Marine Ecology* 23 (Supplement 1): 272-279. doi:10.1111/j.1439-0485.2002.tb00025.x

A complete list of my publications is available at home.deib.polimi.it/melia/pubblicazioni.htm