

# Lorenzo Mari – Curriculum vitæ

## Personal information

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Nationality	Italian
Date of birth	May 22, 1981
Current position	<i>Associate Professor, Ecology</i> DEIB, PoliMi

## Research statement

Research interests	<p>As an environmental engineer with a PhD in information technology, I am deeply interested in the analysis of ecological and environmental processes by means of quantitative tools. My research activity is mainly devoted to the study of spatiotemporal dynamics in ecology and epidemiology by means of simple (whenever possible) yet rigorous mechanistic models. Over the last years I have become more and more involved in the emerging field of ecohydrology, an interdisciplinary discipline aimed at studying the interactions between water and ecosystems.</p>
Research activities	<p>Examples of problems I have recently analyzed – or I am still struggling with – are: the modeling of the ongoing COVID-19 pandemic; the metapopulation dynamics of foundation species in the Mediterranean Sea; the spatiotemporal patterns of marine plastic pollution in the Mediterranean Sea; the short-term instability properties of ecological and epidemiological systems; the dynamics of water-borne and water-related diseases (cholera and schistosomiasis in particular) and the role of human mobility in promoting their spatial diffusion; and the transmission of fish diseases along river networks.</p> <p>In addition to scientific relevance, some of these topics have clear social and/or economic implications. This is the case, for instance, of building models for marine plastic pollution, the dynamics of foundation species that provide key ecosystem services (like the seagrass <i>Posidonica oceanica</i> in the Mediterranean Sea), cholera epidemics (like the one that stroke Haiti in 2010), parasitic infections (like schistosomiasis, which affects hundreds of millions of people in developing countries), and the ongoing COVID-19 pandemic. Mathematical models are key tools to understand drivers and controls of infectious disease dynamics and spatiotemporal dynamics in ecology.</p>
Current research and perspectives	<p>I am currently working on coupled physical-biological models to study the dispersal patterns of pelagic species in the Mediterranean Sea. Aim of the research is to understand the large-scale implications of connectivity for population ecology, conservation and management. I also continue working on waterborne disease dynamics. In particular, I am interested in the definition of formal conditions for pathogen epidemicity and endemicity, explicitly accounting for realistic environmental settings and for the interplay between epidemiological and ecological dynamics. The modeling tools developed for these two research lines (namely, computationally intensive individual-based simulations and stability analysis of large-scale spatially explicit systems) can be applied to a variety of problems that are crucial to conservation ecology like, for instance, the definition of persistence criteria for populations living in fragmented landscapes, dendritic networks or webs of marine protected areas, or the derivation of invasion/persistence conditions for alien species or agricultural pests.</p>

## Employment

- Jul 2020 – Associate Professor at DEIB, PoliMi  
Jul 2017 – Jun 2020 Assistant Professor at DEIB, PoliMi  
Jan 2009 – Jun 2017 Postdoctoral Research Associate at DEIB, PoliMi, and at Laboratoire d'Écohydrologie (ECHO), Ecole Polytechnique Fédérale de Lausanne (EPFL)

## Education

- Jan 2006 – Dec 2008 **Cursus studiorum**  
PhD, Information Technology, PoliMi. Advisor: Prof. R. Casagrandi (DEIB, PoliMi). Tutor: Prof. C. Piccardi (DEIB, PoliMi). Degree awarded *with merit* on April 3 2009.  
Major research: “Models for movement ecology”. Advisor: Prof. R. Casagrandi; co-advisor: Prof. M. Gatto (DEIB, PoliMi). Part of the research work has been published in *Freshwater Biology* [a1], *The American Naturalist* [a3], *Ecohydrology* [a5] and *Theoretical Population Biology* [a6].  
Minor research: “The impact of hydrodynamics on the spatial distribution of an aquatic species: a numerical study”. Advisor: Prof. L. Bonaventura (MOX Laboratorio di Modellistica e Calcolo Scientifico, Dipartimento di Matematica “F. Brioschi”, PoliMi). The results of the minor research have been published in *Ecological Modelling* [a4].
- Oct 2003 – Oct 2005 MSc, Environmental and Land Planning Engineering, PoliMi  
Thesis title: “Modelli spazialmente espliciti per la dinamica di popolazioni animali: la determinazione genetica del rapporto sessi” (*Spatially explicit models for the dynamics of animal populations: the genetic determination of the sex ratio*). Advisor: Prof. M. Gatto; co-advisor: Prof. R. Casagrandi. Mark: 110/110 *cum laude*. The thesis has been awarded the CIRITA 2006 prize. Part of the work has been published on *Mathematical Biosciences and Engineering* [a2].
- Sept 2000 – Oct 2003 BSc, Environmental and Land Planning Engineering, PoliMi  
Thesis title: “Ruolo di sostanze tossiche in un modello di competizione algale” (*Role of toxicants in a model of algal competition*). Advisor: Prof. A. Graggani (DEIB, PoliMi). Mark: 103/110.
- Visiting positions**
- Sept – Dec 2007 Visiting research collaborator at Prof. S.A. Levin’s Theoretical Ecology Lab, Department of Ecology and Evolutionary Biology, Princeton University (NJ)
- Mar 2006 Visiting at Prof. R. Nathan’s Movement Ecology Lab, Department of Evolution, Systematics and Ecology, Hebrew University of Jerusalem (Israel)
- Awards**
- July 2016 Polisocial Award, PoliMi
- April 2015 D4D Health Prize, Data for Development Challenge, Orange
- Sept 2014 Young Researchers’ Award, Società Italiana di Ecologia (SIte)
- Nov 2012 Fondo Rotary Research Prize, Rotary Club Como
- Sept 2008 Marchetti Prize for young researchers in Ecology, SIte, as coauthor of the paper “Will the zebra mussel (*Dreissena polymorpha*) reach Florence along the Arno River? Results from a mechanistic network model”, XVIII Congresso della SIte
- Nov 2006 CIRITA (Centro Interdipartimentale di Ricerca in Informatica per il Territorio e l’Ambiente, PoliMi) Prize for the MSc Thesis “Modelli spazialmente espliciti per la dinamica di popolazioni animali: la determinazione genetica del rapporto sessi”

## Publications

### Journal articles

- [a77] C. Trevisin, L. Kamber, L. Mari, N. Chitnis, J. Perez-Saez, S. Sayasone, P. Odermatt, M. Gatto, A. Rinaldo (2024)  
**A spatially explicit model of the dynamics of *Opisthorchis viverrini* spread**  
*Ecohydrology*, in press
- [a76] M.C. Goodman, T.D. White, J. Kazdan, D. Bradley, M. Shivji, R. Casagrandi, L. Mari, M. Gatto, J.G. Eurich, D. McCauley, R.J. O'Connor, G.A. De Leo, F. Micheli (2024)  
**Reef shark population declines on remote Pacific reefs: Inferences from multiple methods in a data-limited fishery**  
*Marine Ecology Progress Series*, in press
- [a75] I.H. Aslan, J.D. Pourtois, A.J. Chamberlin, K.R. Mitchell, L. Mari, K.M. Lwiza, C.L. Wood, E.A. Mordecai, A. Yu, R. Tuan, R.G.S. Palasio, A.M. Monteiro, D. Kirk, T.S. Athni, S.H. Sokolow, E.K. N'Goran, N.R. Diakite, M. Ouattara, M. Gatto, R. Casagrandi, D.C. Little, R.W. Ozerick, R. Normal, F. Allan, A.S. Brierley, L. Ping, T.A. Pereira, G.A. De Leo (2024)  
**Re-assessing thermal response of schistosomiasis transmission risk: evidence for a higher thermal optimum than previously predicted**  
*PLoS Neglected Tropical Diseases*, 18:e0011836. doi: 10.1371/journal.pntd.0011836
- [a74] C. Trevisin, L. Mari, M. Gatto, A. Rinaldo (2024)  
**Epidemicity indices and reproduction numbers from infectious disease data in connected human populations**  
*Infectious Disease Modelling*, 9:875–891. doi: 10.1016/j.idm.2024.04.011
- [a73] C. Vanalli, L. Mari, R. Casagrandi, M. Gatto, I.M. Cattadori (2024)  
**Helminth ecological requirements shape the impact of climate change on the hazard of infection**  
*Ecology Letters*, 27:e14386. doi: 10.1111/ele.14386
- [a72] G. Palma, D. Caprioli, L. Mari (2023)  
**Epidemic management via imperfect testing: A multi-criterial perspective**  
*Bulletin of Mathematical Biology*, 85:66. doi: 10.1007/s11538-023-01172-1
- [a71] F. Guerrini, D. Lobelle, L. Mari, R. Casagrandi, E. van Sebille (2023)  
**Modelling carbon export mediated by biofouled microplastics in the Mediterranean Sea**  
*Limnology and Oceanography*, 68:1078–1090. doi: 10.1002/lno.12330
- [a70] C. Vanalli, L. Mari, R. Casagrandi, B. Boag, M. Gatto, I.M. Cattadori (2023)  
**Modeling the contribution of antibody attack rates to single and dual helminth infections in a natural system**  
*Mathematical Biosciences*, 360:109010. doi: 10.1016/j.mbs.2023.109010
- [a69] E. Stella, R. Pastres, D. Pasetto, M. Kolega, D. Mejdandžić, S. Čolak, A. Musmanno, A. Gustinelli, L. Mari, E. Bertuzzo (2023)  
**A stratified compartmental model for the transmission of *Sparicotyle chrysophrüi* in *Sparus aurata* farms**  
*Royal Society Open Science*, 10:221377. doi: 10.1098/rsos.221377
- [a68] C. Trevisin, E. Bertuzzo, D. Pasetto, L. Mari, S. Miccoli, R. Casagrandi, M. Gatto, A. Rinaldo (2023)  
**Spatially explicit reproduction numbers from incidence and mobility data**  
*Proceedings of the National Academy of Sciences USA*, 120:e2219816120. doi: 10.1073/pnas.2219816120

- [a67] M. Igoe, R. Casagrandi, M. Gatto, C.M. Hoover, L. Mari, C.N. Ngonghala, J.V. Remais, J.N. Sanchirico, S.H. Sokolow, S. Lenhart, G.A. de Leo (2023)  
**Reframing optimal control problems for infectious disease management in low income countries**  
*Bulletin of Mathematical Biology*, 85:31. doi: 10.1007/s11538-023-01137-4
- [a66] F. Dagostin, C. Vanalli, B. Boag, R. Casagrandi, M. Gatto, L. Mari, I.M. Cattadori (2023)  
**The enemy of my enemy is my friend: Immune-mediated facilitation contributes to fitness of co-infecting helminths**  
*Journal of Animal Ecology*, 92:477–491. doi: 10.1111/1365-2656.13863
- [a65] J.C. Lemaître, D. Pasetto, M. Zanon, E. Bertuzzo, L. Mari, S. Miccoli, R. Casagrandi, M. Gatto, A. Rinaldo (2022)  
**Optimal control of the spatial allocation of COVID-19 vaccines: Italy as a case study**  
*PLoS Computational Biology*, 18:e1010237. doi: 10.1371/journal.pcbi.1010237
- [a64] Z.Y.C. Liu, A.J. Chamberlin, K. Tallam, I.J. Jones, L.L. Lamore, J. Bauer, M. Bresciani, C.M. Wolfe, R. Casagrandi, L. Mari, M. Gatto, A.K. Diongue, L. Toure, J. Rohr, G. Riveau, N. Jouanard, C.L. Wood, S.H. Sokolow, L. Mandl, G. Daily, E.F. Lambin, G.A. De Leo (2022)  
**Deep learning segmentation of satellite imagery identifies aquatic vegetation associated with snail intermediate hosts of schistosomiasis in Senegal, Africa**  
*Remote Sensing*, 14:1345. doi: 10.3390/rs14061345
- [a63] C. Trevisin, J.C. Lemaître, L. Mari, D. Pasetto, M. Gatto, A. Rinaldo (2022)  
**Epidemicity of cholera spread and the fate of infection control measures**  
*Journal of the Royal Society Interface*, 19:20210844. doi: 10.1098/rsif.2021.0844
- [a62] F. Guerrini, L. Mari, R. Casagrandi (2022)  
**A coupled Lagrangian-Eulerian model for microplastics as vectors of contaminants applied to the Mediterranean Sea**  
*Environmental Research Letters*, 17:024038. doi: 10.1088/1748-9326/ac4fd9
- [a61] A. Bernasconi, L. Mari, R. Casagrandi, S. Ceri (2021)  
**Data-driven analysis of amino acid change dynamics timely reveals SARS-CoV-2 variant emergence**  
*Scientific Reports*, 11:21068. doi: 10.1038/s41598-021-00496-z
- [a60] E. Stella, L. Mari, J. Gabrieli, C. Barbante, E. Bertuzzo (2021)  
**Mapping environmental suitability for Anthrax reemergence in the Arctic**  
*Environmental Research Letters*, 16:105013. doi: 10.1088/1748-9326/ac2527
- [a59] L. Mari, P. Melià, M. Gatto, R. Casagrandi (2021)  
**Identification of ecological hotspots for the seagrass *Posidonia oceanica* via metapopulation modeling**  
*Frontiers in Marine Science*, 8:628976. doi: 10.3389/fmars.2021.628976
- [a58] L. Mari, R. Casagrandi, E. Bertuzzo, D. Pasetto, S. Miccoli, A. Rinaldo, M. Gatto (2021)  
**The epidemicity index of recurrent SARS-CoV-2 infections**  
*Nature Communications*, 12:2752. doi:10.1038/s41467-021-22878-7
- [a57] F. Guerrini, L. Mari, R. Casagrandi (2021)  
**The dynamics of microplastics and associated contaminants: Data-driven Lagrangian and Eulerian modeling approaches in the Mediterranean Sea**  
*Science of the Total Environment*, 777:145944. doi: 10.1016/j.scitotenv.2021.145944
- [a56] C. Vanalli, L. Mari, L. Righetto, R. Casagrandi, M. Gatto, I.M. Cattadori (2020)  
**Within-host mechanisms of immune regulation explain the contrasting dynamics of two helminth species in both single and dual infections**  
*PLoS Computational Biology*, 16:e1008438. doi: 10.1371/journal.pcbi.1008438
- [a55] E. Stella, L. Mari, J. Gabrieli, C. Barbante, E. Bertuzzo (2020)  
**Permafrost dynamics and the risk of anthrax transmission: A modelling study**  
*Scientific Reports*, 10:16460. doi: 10.1038/s41598-020-72440-6

- [a54] M. Belharet, A. Di Franco, A. Calò, L. Mari, J. Claudet, R. Casagrandi, M. Gatto, J. Lloret, C. Sève, P. Guidetti, P. Melià (2020)  
**Extending full protection inside existing marine protected areas or reducing fishing effort outside can reconcile conservation and fisheries goals**  
*Journal of Applied Ecology*, 57:1948–1957. doi: 10.1111/1365-2664.13688
- [a53] E. Bertuzzo, L. Mari, D. Pasetto, S. Miccoli, R. Casagrandi, M. Gatto, A. Rinaldo (2020)  
**The geography of COVID-19 spread in Italy and implications for the relaxation of confinement measures**  
*Nature Communications*, 11:4264. doi: 10.1038/s41467-020-18050-2
- [a52] M. Gatto, E. Bertuzzo, L. Mari, S. Miccoli, L. Carraro, R. Casagrandi, A. Rinaldo (2020)  
**Spread and dynamics of the COVID-19 epidemic in Italy: Effects of emergency containment measures**  
*Proceedings of the National Academy of Sciences USA*, 117:10484–10491. doi: 10.1073/pnas.2004978117
- [a51] L. Mari, P. Melià, S. Fraschetti, M. Gatto, R. Casagrandi (2020)  
**Spatial patterns and temporal variability of seagrass connectivity in the Mediterranean Sea**  
*Diversity and Distributions*, 26:169–182. doi: 10.1111/ddi.12998
- [a50] C.M. Hoover, S.H. Sokolow, J. Kemp, A.J. Lund, I. Jones, T. Higginson, G. Riveau, A. Savaya-Alkalay, S. Coyle, C. Wood, F. Micheli, R. Casagrandi, L. Mari, M. Gatto, A. Rinaldo, J. Perez-Saez, J.R. Rohr, J.N. Sanchirico, A. Sagi, J.V. Remais, G.A. De Leo (2019)  
**Modelled effects of prawn aquaculture on poverty alleviation and schistosomiasis control**  
*Nature Sustainability*, 2:611–620. doi: 10.1038/s41893-019-0301-7
- [a49] F. Guerrini, L. Mari, R. Casagrandi (2019)  
**Modelling plastics exposure for the marine biota: Risk maps for fin whales in the Pelagos Sanctuary (North-Western Mediterranean)**  
*Frontiers in Marine Science*, 6:299. doi: 10.3389/fmars.2019.00299
- [a48] L. Mari, R. Casagrandi, E. Bertuzzo, A. Rinaldo, M. Gatto (2019)  
**Conditions for transient epidemics of waterborne disease in spatially explicit systems**  
*Royal Society Open Science*, 6:181517. doi: 10.1098/rsos.181517
- [a47] D. Pasetto, S. Arenas-Castro, J. Bustamante, R. Casagrandi, N. Chrysoulakis, A.F. Cord, A. Dittich, C. Domingo, G. El Sarafy, A. Karnieli, G. Kordelas, I. Manakos, L. Mari, A. Monteiro, E. Palazzi, D. Poursanidis, A. Rinaldo, S. Terzagò, A. Ziemba, G. Ziv (2018)  
**Integration of satellite remote sensing data in ecosystem modelling at local scales: Practices and trends**  
*Methods in Ecology and Evolution*, 9:1810–1821. doi: 10.1111/2041-210X.13018
- [a46] L. Mari, R. Casagrandi, A. Rinaldo, M. Gatto (2018)  
**Epidemicity thresholds for water-borne and water-related diseases**  
*Journal of Theoretical Biology*, 447:126–138. doi: 10.1016/j.jtbi.2018.03.024
- [a45] L. Carraro, L. Mari, M. Gatto, A. Rinaldo, E. Bertuzzo (2018)  
**Spread of proliferative kidney disease in fish along stream networks: a spatial meta-community framework**  
*Freshwater Biology*, 63:114–127. doi: 10.1111/fwb.12939
- [a44] L. Carraro, E. Bertuzzo, L. Mari, I. Fontes, H. Hartikainen, N. Streppareva, H. Schmidt-Posthaus, T. Wahli, J. Jokela, M. Gatto, A. Rinaldo (2017)  
**An integrated field, laboratory and theoretical study of PKD spread in a Swiss prealpine river**  
*Proceedings of the National Academy of Sciences of the USA*, 114:11992–11997. doi: 10.1073/pnas.1713691114
- [a43] L. Mari, R. Casagrandi, A. Rinaldo, M. Gatto (2017)  
**A generalized definition of reactivity for ecological systems and the problem of transient species dynamics**  
*Methods in Ecology and Evolution*, 8:1574–1584. doi: 10.1111/2041-210X.12805

- [a42] E. Bertuzzo, L. Mari (2017)  
**Hydrology, water resources and the epidemiology of water-related diseases**  
*Advances in Water Resources*, 108:329–331. doi: 10.1016/j.advwatres.2017.09.011
- [a41] M. Ciddio, L. Mari, S.H. Sokolow, G. De Leo, R. Casagrandi, M. Gatto (2017)  
**The spatial spread of schistosomiasis: a multidimensional network model applied to Saint-Louis region, Senegal**  
*Advances in Water Resources*, 108:406–415. doi: 10.1016/j.advwatres.2016.10.012
- [a40] L. Mari, M. Ciddio, R. Casagrandi, J. Perez-Saez, E. Bertuzzo, A. Rinaldo, S.H. Sokolow, G.A. De Leo, M. Gatto (2017)  
**Heterogeneity in schistosomiasis transmission dynamics**  
*Journal of Theoretical Biology*, 432:87–99. doi: 10.1016/j.jtbi.2017.08.015
- [a39] L. Mari, L. Bonaventura, A. Storto, P. Melià, M. Gatto, S. Masina, R. Casagrandi (2017)  
**Understanding large-scale, long-term larval connectivity patterns: the case of the Northern Line Islands in the Central Pacific Ocean**  
*PLoS ONE*, 12:e0182681. doi: 10.1371/journal.pone.0182681
- [a38] A. Rinaldo, E. Bertuzzo, M. Blokesch, L. Mari, M. Gatto (2017)  
**Modeling key drivers of cholera transmission dynamics provides new perspectives on parasitology**  
*Trends in Parasitology*, 33:587–599. doi: 10.1016/j.pt.2017.04.002
- [a37] L. Mari, M. Gatto, M. Ciddio, E.D. Dia, S.H. Sokolow, G. De Leo, R. Casagrandi (2017)  
**Big-data-driven modeling unveils country-wide drivers of endemic schistosomiasis**  
*Scientific Reports*, 7:489. doi: 10.1038/s41598-017-00493-1
- [a36] E. Bertuzzo, F. Finger, L. Mari, M. Gatto, A. Rinaldo (2016)  
**On the probability of extinction of the Haiti cholera epidemic**  
*Stochastic Environmental Research and Risk Assessment*, 30:2043–2055. doi: 10.1007/s00477-014-0906-3
- [a35] L. Carraro, L. Mari, H. Hartikainen, N. Strepparava, T. Wahli, J. Jokkela, M. Gatto, A. Rinaldo, E. Bertuzzo (2016)  
**An epidemiological model for proliferative kidney disease in salmonid populations**  
*Parasites and Vectors*, 9:487. doi: 10.1186/s13071-016-1759-z
- [a34] F. Finger, T. Genolet, L. Mari, G. Constantin De Magny, N.M. Manga, A. Rinaldo, E. Bertuzzo (2016)  
**Mobile phone data highlights the role of mass gatherings in the spreading of cholera outbreaks**  
*Proceedings of the National Academy of Sciences of the USA*, 113:6421–6426. doi: 10.1073/pnas.1522305113
- [a33] J. Perez-Saez, T. Mande, N. Ceperley, E. Bertuzzo, L. Mari, M. Gatto, A. Rinaldo (2016)  
**Hydrology and density feedbacks control the ecology of the intermediate hosts of schistosomiasis across habitats in seasonal climates**  
*Proceedings of the National Academy of Sciences of the USA*, 113:6427–6432. doi: 10.1073/pnas.1602251113
- [a32] E. Bertuzzo, F. Carrara, L. Mari, F. Altermatt, I. Rodriguez-Iturbe, A. Rinaldo (2016)  
**Geomorphic controls on elevational gradients of species richness**  
*Proceedings of the National Academy of Sciences of the USA*, 113:1737–1742. doi: 10.1073/pnas.1518922113
- [a31] J. Perez-Saez, L. Mari, E. Bertuzzo, R. Casagrandi, S.H. Sokolow, G. De Leo, T. Mande, N. Ceperley, J.M. Frohlich, M. Sou, H. Karambiri, H. Yacouba, A. Maiga, M. Gatto, A. Rinaldo (2015)  
**A theoretical analysis of the geography of schistosomiasis in Burkina Faso highlights the roles of human mobility and water resources development in disease transmission**  
*PLoS Neglected Tropical Diseases*, 9:e0004127. doi: 10.1371/journal.pntd.0004127

- [a30] L. Righetto, R.U. Zaman, Z.H. Mahmud, E. Bertuzzo, L. Mari, R. Casagrandi, M. Gatto, S. Islam, A. Rinaldo (2015)  
**Detection of *Vibrio cholerae* O1 and O139 in environmental waters of rural Bangladesh: a flow cytometry-based field trial**  
*Epidemiology and Infection*, 143:2330–2342. doi: 10.1017/S0950268814003252
- [a29] L. Mari, E. Bertuzzo, F. Finger, R. Casagrandi, M. Gatto, A. Rinaldo (2015)  
**On the predictive ability of mechanistic models for the Haitian cholera epidemic**  
*Journal of the Royal Society Interface*, 20140840. doi: 10.1098/rsif.2014.0840
- [a28] M. Ciddio, L. Mari, M. Gatto, A. Rinaldo, R. Casagrandi (2015)  
**The temporal patterns of disease severity and prevalence in schistosomiasis**  
*Chaos*, 25:036405. doi: 10.1063/1.4908202
- [a27] L. Mari, R. Casagrandi, E. Bertuzzo, A. Rinaldo, M. Gatto (2014)  
**Floquet theory for seasonal environmental forcing of spatially-explicit waterborne epidemics**  
*Theoretical Ecology*, 7:351–365. doi: 10.1007/s12080-014-0223-y
- [a26] F. Finger, A. Knox, E. Bertuzzo, L. Mari, D. Bompangue, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo (2014)  
**Cholera in the Lake Kivu region (DRC): integrating remote sensing and spatially-explicit epidemiological modeling**  
*Water Resources Research*, 50:5624–5637. doi: 10.1002/2014WR015521
- [a25] S. Ceola, E. Bertuzzo, L. Mari, G. Botter, I. Hödl, T.J. Battin, M. Gatto, A. Rinaldo (2014)  
**Light and hydrologic variability as drivers of stream biofilm dynamics in a flume experiment: a modelling approach**  
*Ecohydrology*, 7:391–400. doi: 10.1002/eco.1357
- [a24] L. Mari, R. Casagrandi, E. Bertuzzo, A. Rinaldo, M. Gatto (2014)  
**Metapopulation persistence and species spread in river networks**  
*Ecology Letters*, 17:426–434. doi: 10.1111/ele.12242
- [a23] I. Hödl, L. Mari, E. Bertuzzo, S. Suweis, K. Besemer, A. Rinaldo, T.J. Battin (2014)  
**Biophysical controls on cluster dynamics and architectural differentiation of microbial biofilms in contrasting flow environments**  
*Environmental Microbiology*, 16:802–812. doi: 10.1111/1462-2920.12205
- [a22] A. Knox, E. Bertuzzo, L. Mari, D. Odermatt, E. Verrecchia, A. Rinaldo (2014)  
**Optimizing a remotely-sensed proxy for plankton biomass in Lake Kivu**  
*International Journal of Remote Sensing*, 35:5219–5238. doi: 10.1080/01431161.2014.939782
- [a21] L. Mari (2014)  
**The Haiti cholera epidemic: from surveillance to action**  
*Pathogen and Global Health*, 108:3. doi: 10.1179/2047772413Z.000000000169
- [a20] L. Righetto, E. Bertuzzo, L. Mari, E. Schild, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo (2013)  
**Rainfall mediations in the spreading of epidemic cholera**  
*Advances in Water Resources*, 60:34–46. doi: 10.1016/j.advwatres.2013.07.006
- [a19] M. Gatto, L. Mari, E. Bertuzzo, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, A. Rinaldo (2013)  
**Spatially explicit conditions for waterborne pathogen invasion**  
*The American Naturalist*, 182:328–346. doi: 10.1086/671258
- [a18] S. Ceola, I. Hödl, M. Adlboller, G. Singer, E. Bertuzzo, L. Mari, G. Botter, J. Waringer, T.J. Battin, A. Rinaldo (2013)  
**Hydrologic variability affects invertebrate grazing on phototrophic biofilms in stream microcosms**  
*PLoS ONE*, 8:e60629. doi: 10.1371/journal.pone.0060629

- [a17] M. Gatto, L. Mari, E. Bertuzzo, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, A. Rinaldo (2012)  
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- [c128] B. He, L. Mari  
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- [c126] R. Casagrandi, L. Mari, D. Bogani  
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- [c125] R. Casagrandi, L. Mari, D. Bogani  
**Prototypical epidemiological modelling of Disease X infections spreading along different environmental pathways**  
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- [c123] D. Stucchi, D. Martinetti, D. Bevacqua, L. Mari, R. Casagrandi  
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- [c122] I.M. Cattadori, C. Vanalli, F. Dagostin, L. Mari, R. Casagrandi, M. Gatto, B. Boag  
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- [c121] E. Stella, R. Pastres, D. Pasetto, M. Kolega, D. Mejdandžić, S. Čolak, L. Mari, E. Bertuzzo  
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- [c120] D. Pasetto, J.C. Lemaitre, M. Zanon, E. Bertuzzo, L. Mari, S. Miccoli, R. Casagrandi, P. Pezzotti, S. Merler, A. Rinaldo  
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- [c119] F. Guerrini, L. Mari, R. Casagrandi  
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- [c118] F. Guerrini, D. Lobelle, L. Mari, R. Casagrandi, E. van Sebille  
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- [c117] J.C. Lemaitre, D. Pasetto, M. Zanon, E. Bertuzzo, L. Mari, S. Miccoli, R. Casagrandi, M. Gatto, A. Rinaldo  
**What is the best vaccine allocation strategy against COVID-19 in Italy? Optimal control applied to spatial, age-stratified epidemiological models at country scale**  
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- [c116] D. Pasetto, J.C. Lemaitre, M. Zanon, E. Bertuzzo, L. Mari, S. Miccoli, R. Casagrandi, P. Pezzotti, S. Merler, M. Gatto, A. Rinaldo  
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- [c115] C. Trevisin, J.C. Lemaitre, L. Mari, D. Pasetto, M. Gatto, A. Rinaldo  
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- [c114] J.C. Lemaitre, D. Pasetto, M. Zanon, E. Bertuzzo, L. Mari, S. Miccoli, R. Casagrandi, M. Gatto and A. Rinaldo  
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- [c113] F. Guerrini, L. Mari, R. Casagrandi  
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- [c112] E. Stella, R. Pastres, D. Pasetto, L. Mari, E. Bertuzzo  
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- [c111] C. Vanalli, L. Mari, R. Casagrandi, M. Gatto, B. Boag, I.M. Cattadori  
**Non-linear interactions between climate change and host processes drive the future of a helminth-herbivore system**  
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- [c110] R. Casagrandi, F. Guerrini, M. Pancerasa, M. Ciddio, L. Mari, M. Gatto  
**Data-informed modelling of movement may be key to properly describe important ecological and eco-epidemiological processes**  
*SIMAI 2020+21*, Parma, Italy, August 30–September 3 2021
- [c109] F. Guerrini, L. Mari, R. Casagrandi  
**Two sides of the same coin: A coupled modelling description of the dynamics of microplastics and associated contaminants in the Mediterranean Sea**  
*MICRO 2020*, Lanzarote, Spain, November 23–27 2020 (online meeting)
- [c108] F. Guerrini, L. Mari, R. Casagrandi  
**Microplastic as a vector of chemical contamination in the marine environment: A coupled Lagrangian-Eulerian approach**  
*Global Oceans 2020*, Singapore – U.S. Gulf Coast, October 5–14 2020 (online meeting)
- [c107] F. Guerrini, L. Mari, R. Casagrandi  
**A modelling approach to map microplastics and associated contaminants in the Mediterranean Sea**  
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- [c106] M. Gatto, E. Bertuzzo, L. Mari, D. Pasetto, S. Miccoli, R. Casagrandi, A. Rinaldo  
**The routes of COVID-19 in Italy: Past and future scenarios**  
*EHESS Workshop: Modeling the propagation of COVID-19*, Paris, France, May 18–20 2020 (online meeting)
- [c105] E. Stella, L. Mari, C. Barbante, J. Gabrieli, E. Bertuzzo  
**Spatiotemporal influence of permafrost thaw on anthrax diffusion**  
*EGU General Assembly*, Vienna, Austria, April 4–8 2020 (online meeting)
- [c104] L. Mari, P. Melià, M. Gatto R. Casagrandi  
**A Mediterranean-wide metapopulation model for the seagrass *Posidonia oceanica***  
*XXIX Congresso della SITE*, Ferrara, Italy, September 10–12 2019
- [c103] F. Guerrini, L. Mari, R. Casagrandi  
**A modeling approach to analyse plastics exposure for *Balaenoptera physalus* in the Pelagos Sanctuary**  
*XXIX Congresso della SITE*, Ferrara, Italy, September 10–12 2019
- [c102] F. Guerrini, L. Mari, R. Casagrandi  
**Risk caused by plastic pollution on marine ecosystems: a seascape-driven approach**  
*X World Congress of the International Association for Landscape Ecology*, Milano, Italy, July 1–5 2019
- [c101] F. Guerrini, L. Mari, R. Casagrandi  
**Integrating Lagrangian simulations of plastic pollution with chemical advection-diffusion processes to account for cetacean ingestion risk within the Pelagos Sanctuary**  
*LAPCOD VII*, Venezia, Italy, June 17–21 2019
- [c100] C. Vanalli, B. Boag, R. Casagrandi, M. Gatto, L. Mari, I.M. Cattadori  
**Spatial risk of helminth infections and long-term predictions under climate change: gastrointestinal helminths of rabbits in the UK**  
*17th Annual Ecology and Evolution of Infectious Diseases (EEID) meeting*, Princeton (NJ), USA, June 10–13 2019
- [c99] F. Guerrini, L. Mari, R. Casagrandi  
**Microplastiche nel Mar Mediterraneo: Il caso dell'Area Marina Protetta Pelagos**  
*25° Convegno di Igiene Industriale*, Corvara, Italy, March 27–29 2019

- [c98] E. Stella, L. Mari, E. Bertuzzo  
**On the transmission of anthrax disease in the Arctic region**  
*One Arctic – One Health Conference*, Oulu, Finland, February 7–9 2019
- [c97] M. Belharet, P. Melià, M. Gatto, R. Casagrandi, L. Mari, T. Rinaldo, I. Bitetto, A. Calò, P. Carbonara, J. Claudet, M. Coll, X. Corrales, A. Di Franco, T. Font, P. Guidetti, G. Lembo, A. Ligas, J. Lloret, C. Piroddi, G. Prato, R. Sahyoun, P. Sartor, J. Steenbeek, D. Vilas  
**Age-structured metapopulation models to assess fisheries sustainability in the Northwestern Mediterranean Sea**  
*Fish Forum 2018*, Roma, Italy, December 10–14 2018
- [c96] F. Guerrini, L. Mari, R. Casagrandi  
**Plastic pollution in the Mediterranean: An ecosystem risk assessment**  
*Innovative Solutions to Pollution in South East and Southern Europe*, Belgrade, Serbia, December 4–5 2018
- [c95] L. Mari, P. Melià, S. Frascchetti, M. Gatto, R. Casagrandi  
**Hotspot identification and connectivity trends for the endemic seagrass *Posidonia oceanica* in the Mediterranean Sea**  
*XXVIII Congresso della SItE*, Cagliari, Italy, September 12–14 2018
- [c94] P. Melià, M. Belharet, L. Mari, M. Gatto, R. Casagrandi, A. Calò, P. Carbonara, J. Claudet, M. Coll, A. Di Franco, P. Guidetti, G. Lembo, A. Ligas, J. Lloret, G. Prato, P. Sartor  
**Sustainable management of small-scale fisheries in the northwestern Mediterranean Sea**  
*XXVIII Congresso della SItE*, Cagliari, Italy, September 12–14 2018
- [c93] L. Mari, M. Ciddio, S.H. Sokolow, G.A. De Leo, M. Gatto, R. Casagrandi  
**A multidimensional network model for the spatial dynamics of schistosomiasis**  
*XXVII Congresso della SItE*, Napoli, Italy, September 12–15 2017
- [c92] L. Carraro, L. Mari, M. Gatto, A. Rinaldo, E. Bertuzzo  
**A metacommunity model for the spread of proliferative kidney disease in stream networks**  
*IECID 2017*, Trieste, Italy, May 17–19 2017
- [c91] F. Finger, T. Genolet, L. Mari, G.C. de Magny, A. Rinaldo, E. Bertuzzo  
**Modeling the spread of cholera using human mobility estimates derived from mobile phone records**  
*IECID 2017*, Trieste, Italy, May 17–19 2017
- [c90] F.J. Perez-Saez, T. Mandel, N. Ceperley, E. Bertuzzo, L. Mari, M. Gatto, A. Rinaldo  
**Incorporating the ecology of intermediate hosts of schistosomiasis into spatially explicit models of disease transmission in seasonal climates**  
*IECID 2017*, Trieste, Italy, May 17–19 2017
- [c89] L. Mari, F. Dagostin, L. Raffa, M. Ciddio, L. Righetto, M. Gatto, R. Casagrandi  
**Spatially explicit modeling of potential Ebola spread in Senegal**  
*NetMob 2017*, Milano, Italy, April 5–7 2017
- [c88] L. Righetto, L. Mari, M. Gatto and R. Casagrandi  
**Drivers of spatial heterogeneity of HIV prevalence in Senegal: disentangling key features of human activity and mobility**  
*NetMob 2017*, Milano, Italy, April 5–7 2017
- [c87] M. Gatto, E. Bertuzzo, L. Carraro, R. Casagrandi, L. Mari, P. Melià, A. Rinaldo  
**Connectivity and dynamics of space-explicit ecological and epidemiological systems under variable climate**  
*INdAM Workshop: Mathematical Approach to Climate Change Impacts*, Roma, Italy, March 13 – 17 2017
- [c86] R. Casagrandi, L. Mari, P. Melià, S. Frascchetti, M. Gatto  
**Cross-scale effects of protecting *Posidonia oceanica* connectivity hotspots in the Mediterranean**  
*1° Congresso nazionale congiunto SITE–UZI–SIB*, Milano, Italy, August 30 – September 2 2016

- [c85] M. Ciddio, L. Mari, R. Casagrandi, M. Gatto  
**A schistosomiasis transmission model to study the effects of heterogeneity on human and snail prevalence**  
*1° Congresso nazionale congiunto SITE-UI-SIB*, Milano, Italy, August 30 – September 2 2016
- [c84] L. Mari, R. Casagrandi, A. Rinaldo, M. Gatto  
**A novel anisotropic measure of the reactivity of ecological systems**  
*1° Congresso nazionale congiunto SITE-UI-SIB*, Milano, Italy, August 30 – September 2 2016
- [c83] L. Righetto, L. Mari, M. Gatto, R. Casagrandi  
**Drivers of HIV prevalence in developing countries: evidence from mobile communication data and demographic surveys in Senegal**  
*1° Congresso nazionale congiunto SITE-UI-SIB*, Milano, Italy, August 30 – September 2 2016
- [c82] G. Constantin de Magny, F. Finger, T. Genolet, L. Mari, N.M. Manga, A. Rinaldo, E. Bertuzzo  
**Modeling the role of mass gatherings in the spreading of cholera outbreaks in Senegal using human mobility estimates derived from mobile phone records**  
*7th Vibrio conference*, Roscoff Marine station, France, March 29 – April 1 2016
- [c81] M. Ciddio, L. Mari, R. Casagrandi, S.H. Sokolow, G. De Leo, M. Gatto  
**Human population movement and schistosomiasis transmission risk: the case study of Senegal**  
*Epidemics 5*, Clearwater Beach (FL), USA, December 1–4 2015
- [c80] F. Finger, T. Genolet, L. Mari, G. Constantin de Magny, A. Rinaldo, E. Bertuzzo  
**Modeling the spread of cholera using human mobility estimates derived from mobile phone records**  
*Epidemics 5*, Clearwater Beach (FL), USA, December 1–4 2015
- [c79] L. Mari, R. Casagrandi, E. Bertuzzo, F. Finger, A. Rinaldo, M. Gatto  
**Assessing the predictive ability of mechanistic models for the Haitian cholera epidemic**  
*European Ecological Federation Conference/XXV Congresso della Site*, Roma, Italy, September 21–25 2015
- [c78] L. Mari, R. Casagrandi, M. Ciddio, M. Gatto  
**Floquet theory for seasonally forced models of waterborne pathogen transmission**  
*European Ecological Federation Conference/XXV Congresso della Site*, Roma, Italy, September 21–25 2015
- [c77] T. Wahli, N. Strepparava, H. Schmidt-Posthaus, H. Segner, L. Mari, E. Bertuzzo, L. Carraro, A. Rinaldo, J. Holland, C.J. Secombes, J. Jokela, H. Hartikainen  
**Role of ecology, evolution and immunology for aquatic diseases in riverine landscapes: the case of proliferative kidney disease**  
*17th EAAP International Conference on Diseases of Fish and Shellfish*, Las Palmas de Gran Canaria, Spain, September 7–10 2015
- [c76] M. Ciddio, L. Mari, R. Casagrandi, S.H. Sokolow, G. De Leo, M. Gatto  
**The impact of human mobility on schistosomiasis in Senegal: an analysis via mobile phone data**  
*9th European Congress on Tropical Medicine and International Health*, Basel, Switzerland, September 6–10 2015
- [c75] J. Perez-Saez, L. Mari, E. Bertuzzo, T. Mande, N. Ceperley, S.H. Sokolow, G. De Leo, R. Casagrandi, M. Gatto, A. Rinaldo  
**Spatial patterns of schistosomiasis in Burkina Faso: relevance of human mobility and water resources development**  
*9th European Congress on Tropical Medicine and International Health*, Basel, Switzerland, September 6–10 2015
- [c74] L. Carraro, E. Bertuzzo, L. Mari, M. Gatto, N. Strepparava, H. Hartikainen, A. Rinaldo  
**An epidemic model for the interactions between thermal regime of rivers and transmission of Proliferative Kidney Disease in salmonid fish**  
*EGU General Assembly*, Vienna, Austria, April 12–17 2015

- [c73] F. Finger, A. Knox, E. Bertuzzo, L. Mari, D. Bompangue, M. Gatto, A. Rinaldo  
**Integrating remote sensing and spatially explicit epidemiological modeling**  
*EGU General Assembly*, Vienna, Austria, April 12–17 2015
- [c72] J. Perez-Saez, E. Bertuzzo, J.M. Frohlich, T. Mande, N. Ceperley, M. Sou, H. Yacouba, H. Maiga, S. Sokolow, G. De Leo, R. Casagrandi, M. Gatto, L. Mari, A. Rinaldo  
**Spatial patterns of schistosomiasis in Burkina Faso: relevance of human mobility and water resources development**  
*EGU General Assembly*, Vienna, Austria, April 12–17 2015
- [c71] L. Mari, R. Casagrandi, M. Ciddio, S.H. Sokolow, G. De Leo, M. Gatto  
**Uncovering the impact of human mobility on schistosomiasis via mobile phone data**  
*NetMob 2015*, Cambridge (MA), USA, April 8–10 2015
- [c70] M. Ciddio, L. Mari, M. Gatto, A. Rinaldo, R. Casagrandi  
**Impact of environmental conditions on snails dynamics and schistosomiasis transmission**  
*IECID 2015*, Sitges, Spain, March 23–25 2015
- [c69] A. Rinaldo, E. Bertuzzo, L. Mari, F. Finger, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe  
**On spatially explicit models of epidemic and endemic cholera: the Haiti and Lake Kivu case studies**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 15–19 2014
- [c68] M. Ciddio, L. Mari, R. Casagrandi, M. Gatto  
**A model for schistosomiasis transmission accounting for infection age in snails: sensitivity and bifurcation analyses**  
*XXIV Congresso della SItE*, Ferrara, Italy, September 15–17 2014
- [c67] L. Mari, R. Casagrandi, E. Bertuzzo, A. Rinaldo, M. Gatto  
**A spatially explicit criterion for metapopulation persistence in river ecosystems**  
*XXIV Congresso della SItE*, Ferrara, Italy, September 15–17 2014
- [c66] E. Bertuzzo, F. Finger, L. Mari, M. Gatto, A. Rinaldo  
**On the probability of extinction of the Haiti cholera epidemic**  
*EGU General Assembly*, Vienna, Austria, April 27–May 2 2014
- [c65] F. Finger, B. Schaeffi, E. Bertuzzo, L. Mari, A. Rinaldo  
**Parameter and uncertainty estimation for mechanistic, spatially explicit epidemiological models**  
*EGU General Assembly*, Vienna, Austria, April 27–May 2 2014
- [c64] A. Knox, C. Van der Hens, F. Finger, E. Bertuzzo, L. Mari, M. Blokesch, A. Rinaldo  
**Model-guided field validation: part of an integrated framework to improve cholera forecasts and interventions in Haiti**  
*Life Sciences Switzerland Annual Meeting*, Lausanne, Switzerland, January 4–5 2014
- [c63] F. Finger, E. Bertuzzo, L. Mari, A. Knox, M. Gatto, A. Rinaldo  
**Spatially explicit modelling of cholera epidemics**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 9–13 2013
- [c62] F. Finger, E. Bertuzzo, L. Mari, A. Knox, M. Gatto, A. Rinaldo  
**Rainfall driven cholera outbreak modelling**  
*Swiss Geoscience Meeting*, Lausanne, Switzerland, November 15–16 2013
- [c61] M. Ciddio, L. Righetto, L. Mari  
**The role of climatic variability on cholera spreading in Bangladesh**  
*1st Conference of the SISC*, Lecce, Italy, September 23–24 2013
- [c60] L. Mari, P. Melià, M. Gatto, A. Storto, M. Vichi, S. Masina, R. Casagrandi  
**Larval connectivity in the central Pacific Ocean: lagrangian simulations in the Northern Line Islands**  
*1st Conference of the SISC*, Lecce, Italy, September 23–24 2013

- [c59] E. Bertuzzo, L. Mari, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, M. Gatto, A. Rinaldo  
**Does space matter in cholera spreading?**  
*XXIII Congresso della Site*, Ancona, Italy, September 16–18 2013
- [c58] F. Finger, E. Bertuzzo, L. Mari, A. Knox, L. Righetto, A. Rinaldo  
**Spatially explicit modelling of cholera epidemics**  
*XXIII Congresso della Site*, Ancona, Italy, September 16–18 2013
- [c57] A. Knox, E. Bertuzzo, L. Mari, D. Bompangue, H. Sarmento, D. Odermatt, E. Verrecchia, A. Rinaldo  
**Optical remote sensing in an eco-epidemiological study: The challenge of Lake Kivu, DRC**  
*XXIII Congresso della Site*, Ancona, Italy, September 16–18 2013
- [c56] L. Mari, E. Bertuzzo, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto  
**Spatiotemporal invasion conditions for waterborne pathogens**  
*XXIII Congresso della Site*, Ancona, Italy, September 16–18 2013
- [c55] L. Mari, P. Melià, M. Gatto, A. Storto, M. Vichi, S. Masina, R. Casagrandi  
**Assessing larval connectivity patterns in the Northern Line Islands: a long-term analysis with Lagrangian simulations**  
*XXIII Congresso della Site*, Ancona, Italy, September 16–18 2013
- [c54] L. Righetto, E. Bertuzzo, L. Mari, R. Casagrandi, M. Gatto, A. Rinaldo  
***Vibrio cholerae* in the waters of rural Bangladesh: from site-specific detection to population biology**  
*XXIII Congresso della Site*, Ancona, Italy, September 16–18 2013
- [c53] L. Righetto, M. Ciddio, E. Bertuzzo, L. Mari, R. Casagrandi, A. Rinaldo, M. Gatto  
**A spatially explicit model of cholera spreading in Bangladesh: the role of climate and mobility**  
*XXIII Congresso della Site*, Ancona, Italy, September 16–18 2013
- [c52] L. Mari, E. Bertuzzo, L. Righetto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto  
**Outbreak conditions for waterborne disease epidemics: data and models**  
*S.Co. 2013 – Complex Data Modeling and Computationally Intensive Statistical Methods for Estimation and Prediction*, Milano, Italy, September 9–11 2013
- [c51] L. Righetto, R. Zaman, Z.H. Mahmud, E. Bertuzzo, L. Mari, R. Casagrandi, M. Gatto, M.S. Islam, A. Rinaldo, M. Blokesch  
**Field study of the ecology of *Vibrio cholerae* in the aquatic environment of rural Bangladesh**  
*EMBO Conference on Aquatic Microbial Ecology: SAME13*, Stresa, Italy, September 8–13 2013
- [c50] L. Mari, E. Bertuzzo, L. Righetto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto  
**A criterion for waterborne pathogen invasion in spatially explicit and temporally fluctuating environments**  
*INTECOL Congress*, London, UK, August 18–23 2013
- [c49] E. Bertuzzo, L. Mari, L. Righetto, A. Knox, F. Finger, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**Predicting the evolution of large cholera outbreaks: lessons learnt from the Haiti case study**  
*EGU General Assembly*, Vienna, Austria, April 7–12 2013
- [c48] S. Ceola, E. Bertuzzo, L. Mari, G. Botter, I. Hödl, T.J. Battin, M. Gatto, A. Montanari, A. Rinaldo  
**Hydrologic and light variability as drivers of stream biofilm-invertebrate dynamics**  
*EGU General Assembly*, Vienna, Austria, April 7–12 2013
- [c47] M. Ciddio, L. Mari, L. Righetto  
**A spatially explicit model of endemic cholera in Bangladesh: the role of hydroclimatic forcings**  
*Theoretical Approaches and Related Mathematical Methods in Biology, Medicine and Environment*, CIMAB and GASVA-SIMAI workshop, Milano, Italy, April 4–6 2013

- [c46] E. Bertuzzo, L. Mari, L. Righetto, M. Gatto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo  
**Hydroclimatology of dual-peak annual cholera incidence: insights from a spatially explicit model**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 3–7 2012
- [c45] S. Ceola, I. Hödl, M. Adlboller, G. Singer, E. Bertuzzo, L. Mari, G. Botter, T.J. Battin, M. Gatto, A. Rinaldo  
**Hydrologic variability enhances stream biofilm grazing by invertebrates**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 3–7 2012
- [c44] L. Mari, M. Gatto, E. Bertuzzo, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, A. Rinaldo  
**A novel spatially-explicit condition for the onset of waterborne diseases in complex environments**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 3–7 2012
- [c43] L. Righetto, E. Bertuzzo, L. Mari, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**Rainfall-driven epidemic cholera: hydrologic controls on water-borne disease and multi-season projections**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 3–7 2012
- [c42] A. Rinaldo, M. Gatto, L. Mari, R. Casagrandi, L. Righetto, E. Bertuzzo, I. Rodriguez-Iturbe  
**Spatially explicit models, generalized reproduction numbers and the prediction of patterns of waterborne disease**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 3–7 2012
- [c41] L. Mari, E. Bertuzzo, L. Righetto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto  
**A novel condition for the onset of waterborne diseases in complex environments**  
*XXII Congresso della SIIE*, Alessandria, Italy, September 10–13 2012
- [c40] L. Mari, E. Bertuzzo, L. Righetto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto  
**An ecohydrological model of cholera dynamics**  
*SIDISA 2012*, Milano, Italy, June 26–29 2012
- [c39] E. Bertuzzo, L. Mari, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**An epidemic model for the future progression of the current Haiti cholera epidemic**  
*EGU General Assembly*, Vienna, Austria, April 22–27 2012
- [c38] S. Ceola, E. Bertuzzo, L. Mari, G. Botter, I. Hödl, T. Battin, A. Rinaldo  
**Hydrologic drivers and controls of stream biofilm-grazer interactions**  
*EGU General Assembly*, Vienna, Austria, April 22–27 2012
- [c37] L. Righetto, S. Islam, Z.H. Mahmud, E. Bertuzzo, L. Mari, R. Casagrandi M. Gatto, I. Rodriguez-Iturbe, M. Blokesch, A. Rinaldo  
**Presence and viability of *V. cholerae* in the waters of rural Bangladesh (Matlab area)**  
*EGU General Assembly*, Vienna, Austria, April 22–27 2012
- [c36] T.J. Battin, I. Hödl, E. Bertuzzo, L. Mari, S. Suweis, A. Rinaldo  
**The biogeodynamics of microbial landscapes**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 5–9 2011
- [c35] E. Bertuzzo, L. Mari, L. Righetto, M. Gatto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo  
**A spatially explicit model for the future progression of the current Haiti cholera epidemic**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 5–9 2011
- [c34] S. Ceola, E. Bertuzzo, L. Mari, G. Botter, I. Hödl, T.J. Battin, A. Rinaldo  
**Assessing the role of hydrologic variability in stream nutrient processing and transport**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 5–9 2011
- [c33] L. Mari, E. Bertuzzo, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**Hydrologic transport, human mobility and the spread of cholera epidemics: insights from a spatially explicit model**  
*XXI Congresso della SIIE*, Palermo, Italy, October 3–6 2011



- [c32] L. Righetto, R. Casagrandi, E. Bertuzzo, L. Mari, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**Modeling environmental drivers of cholera seasonality in Bengal endemic areas**  
*European Conference on Ecological Modeling*, Riva del Garda, Italy, May 30–June 2 2011
- [c31] E. Bertuzzo, L. Mari, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**A spatially distributed model for the future evolution of the current Haiti cholera outbreak**  
*EGU General Assembly*, Vienna, Austria, April 3–8 2011
- [c30] S. Ceola, G. Botter, E. Bertuzzo, L. Mari, I. Rodriguez-Iturbe, A. Rinaldo  
**Hydrologic controls on river trophic dynamics**  
*EGU General Assembly*, Vienna, Austria, April 3–8 2011
- [c29] L. Mari, E. Bertuzzo, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**Hydrological transport, human mobility and cholera epidemics: a spatially explicit modeling approach**  
*EGU General Assembly*, Vienna, Austria, April 3–8 2011
- [c28] A. Rinaldo, E. Bertuzzo, L. Mari, L. Righetto, M. Gatto, R. Casagrandi, I. Rodriguez-Iturbe  
**Reactive transport on multiscale networks: controls and drivers of large-scale cholera outbreaks**  
*EGU General Assembly*, Vienna, Austria, April 3–8 2011
- [c27] S. Suweis, E. Bertuzzo, L. Mari, A. Maritan, I. Rodriguez-Iturbe, A. Rinaldo  
**Scaling and universality of species lifetimes**  
*EGU General Assembly*, Vienna, Austria, April 3–8 2011
- [c26] E. Bertuzzo, L. Mari, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**Hydroclimatology of dual peak cholera incidence in Bengal region: inferences from a spatial explicit model**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 13–17 2010
- [c25] R. Casagrandi, L. Mari, E. Bertuzzo, M. Gatto, S.A. Levin, I. Rodriguez-Iturbe, A. Rinaldo  
**Drivers and controls of the zebra mussel invasion of the Mississippi-Missouri river system**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 13–17 2010
- [c24] L. Mari, E. Bertuzzo, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**Human mobility patterns and cholera epidemics: a spatially explicit modeling approach**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 13–17 2010
- [c23] S. Ceola, G. Botter, E. Bertuzzo, L. Mari, I. Rodriguez-Iturbe, A. Rinaldo  
**Ecohydrological streamflow distributions and hydraulic food chain models**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 13–17 2010
- [c22] L. Righetto, E. Bertuzzo, L. Mari, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**The role of the aquatic reservoir in long-term cholera dynamics**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 13–17 2010
- [c21] A. Rinaldo, E. Bertuzzo, L. Mari, L. Righetto, M. Gatto, R. Casagrandi, I. Rodriguez-Iturbe  
**On spatially explicit models of cholera epidemics: hydrologic controls, environmental drivers, human-mediated transmissions**  
*AGU Fall Meeting*, San Francisco (CA), USA, December 13–17 2010
- [c20] L. Righetto, E. Bertuzzo, L. Mari, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**Ecohydrological drivers of cholera spreading along fluvial systems**  
*Water and health: where science meets policy*, Chapel Hill (NC), USA, October 25–26 2010
- [c19] E. Bertuzzo, L. Mari, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo.  
**Spreading of cholera through surface water**  
*LATSIS Symposium 2010*, Lausanne, Switzerland, October 17–20 2010

- [c18] L. Mari, E. Bertuzzo, R. Casagrandi, M. Gatto, S.A. Levin, I. Rodriguez-Iturbe, A. Rinaldo  
**Drivers and controls of the zebra mussel invasion of the Mississippi-Missouri river system**  
*LATSIS Symposium 2010*, Lausanne, Switzerland, October 17–20 2010
- [c17] L. Righetto, E. Bertuzzo, L. Mari, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo  
**Ecohydrologic drivers and controls for cholera epidemics**  
*LATSIS Symposium 2010*, Lausanne, Switzerland, October 17–20 2010
- [c16] S. Suweis, E. Bertuzzo, A. Maritan, L. Mari, I. Rodriguez-Iturbe, A. Rinaldo  
**Diversity and geography of species lifetimes**  
*LATSIS Symposium 2010*, Lausanne, Switzerland, October 17–20 2010
- [c15] L. Mari, E. Bertuzzo, R. Casagrandi, M. Gatto, S.A. Levin, I. Rodriguez-Iturbe, A. Rinaldo  
**Modeling the spread of the zebra mussel in the Mississippi-Missouri river system: a multi-layer network approach**  
*XX Congresso della SItE*, Roma, Italy, September 27–30 2010
- [c14] L. Mari, E. Bertuzzo, R. Casagrandi, M. Gatto, S.A. Levin, I. Rodriguez-Iturbe, A. Rinaldo  
**A multi-layer network model for the zebra mussel invasion of the Mississippi-Missouri river system**  
*SIMAI 2010, Joint SIMAI/SEMA Conference on Applied and Industrial Mathematics*, Cagliari, Italy, June 21–25 2010
- [c13] L. Righetto, E. Bertuzzo, L. Mari, R. Casagrandi, M. Gatto, A. Rinaldo  
**Hydroclimatological and anthropogenic drivers for cholera spreading**  
*European Geosciences Union General Assembly 2010*, Wien, Austria, May 2–7 2010
- [c12] L. Mari, R. Casagrandi, M. Gatto  
**Social foraging and the formation of plant recruitment patterns**  
*White Workshop on Mathematical Biology*, Trento, Italy, December 17–19 2009
- [c11] L. Mari, Giuliano Bonanomi, Marino Gatto, Francesco Giannino, Stefano Mazzoleni, Renato Casagrandi  
**Plant-soil negative feedbacks and the formation of Janzen-Connell recruitment patterns**  
*XIX Congresso della SItE*, Bolzano, Italy, September 15–18 2009
- [c10] M. Gatto, P. Melià, L. Mari, R. Casagrandi  
**Movement and life cycles: the paradigmatic cases of European eel and zebra mussel**  
*69° Congresso Nazionale dell'Unione Zoologica Italiana*, Senigallia, Italy, September 22–25 2008
- [c9] L. Mari, L. Bonaventura  
**Modeling the spatiotemporal dynamics of sessile aquatic species: coupling ecological and hydrodynamic models**  
*XVIII Congresso della SItE*, Parma, Italy, September 1–3 2008
- [c8] M.T. Pisani, E. Pucci, L. Mari, R. Casagrandi, M. Gatto  
**Will the zebra mussel (*Dreissena polymorpha*) reach Florence along the Arno River? Results from a mechanistic network model**  
*XVIII Congresso della SItE*, Parma, Italy, September 1–3 2008
- [c7] L. Mari, R. Casagrandi, M. Gatto  
**A PDE model for central-place foraging of dispersed seeds**  
*XVII Congresso della SItE*, Ancona, Italy, September 17–20 2007
- [c6] R. Casagrandi, L. Mari, M. Gatto  
**A demographic model for the local dynamics of *Dreissena polymorpha***  
*VI Congresso Nazionale della Società Italiana di Biometria*, Pisa, Italy, June 20–22 2007
- [c5] L. Mari, R. Casagrandi, M. Gatto  
**Un modello per la dinamica del mitilo zebra (*Dreissena polymorpha*)**  
*MUA2007, Congresso del Centro Interuniversitario per la Matematica Applicata a Biologia, Medicina, Ambiente (CIMAB)*, Montecatini Terme, Italy, March 29–31 2007

- [c4] L. Mari, M. Gatto, R. Casagrandi  
**Rapporto sessi sbilanciato e competizione locale per le risorse**  
*XVI Congresso della SItE*, Viterbo-Civitavecchia, Italy, September 19–22 2006
- [c3] L. Mari, T. Avgar, R. Casagrandi, R. Nathan, M. Gatto  
**A spatially explicit approach to seed dispersal and predation**  
*XVI Congresso della SItE*, Viterbo-Civitavecchia, Italy, September 19–22 2006
- [c2] L. Mari, R. Casagrandi, M. Gatto  
**Predicting and controlling zebra mussels outbreaks in freshwater ecosystems: a non-linear demographic model**  
*Modeling Approaches in Biodiversity Research*, Sede Boqer, Israel, March 19–23 2006
- [c1] R. Casagrandi, L. Mari, C. Baranzelli, A. Caimi, M. Gatto  
**A model for the population dynamics and control of zebra mussels (*Dreissena polymorpha*, Pallas)**  
*XIV Congresso della SItE*, Siena, Italy, October 4–6 2004
- Other publications**
- [o18] M. Gatto, R. Casagrandi, L. Mari (2023)  
**Ecologia delle malattie, pandemie e COVID-19**  
 Quaderno di Ecologia: “Scienza e Società. L’Ecologia per un futuro migliore”. ISBN: 979-12-210-3848-4  
 Available online at [https://www.ecologia.it/category/pubblicazioni\\_site/](https://www.ecologia.it/category/pubblicazioni_site/)
- [o17] M.T. Spedicato, A. Rindorf, K. Anastasopoulou, O.C. Basurko, L. Batts, C. Willestofte Berg, M. Biondi, P. Carbonara, R. Casagrandi, J. Depestele, B. DeWitte, I. Goienetxea, N. Sand Jacobsen, S. Kavadas, I. Maina, L. Mari, P. Melià, M. Moriarty, D. Politikos, G. Romagnoni, I. Ruiz, J. Russell, D. Vanvermaete, C. Vassilopoulou, W. Zupa, D. Reid (2023)  
**SEAWise Report on the pressure induced by fisheries related litter on key species groups**  
 SEAWise project, Deliverable 4.7  
 Available online at <https://doi.org/10.11583/DTU.23284649.v1>
- [o16] M. Montani, F. Cattaneo, A.L. Tourè, I.S. Diallo, L. Mari, R. Casagrandi (2023)  
**Cross-continental YouthMapping to fight schistosomiasis transmission in Saint-Louis region, Senegal**  
 In P. Solis, M. Zeballos (eds). *Open Mapping towards Sustainable Development Goals: Voices of YouthMappers on Community Engaged Scholarship*  
 Springer Nature, Sustainable Development Goals Series. ISBN: 978-3-031-05181-4  
 Available online at <https://link.springer.com/book/9783031051814>
- [o15] F. Guerrini, L. Mari, R. Casagrandi (2021)  
**Microplastic as a vector of chemical contamination in the marine environment: A coupled Lagrangian-Eulerian approach**  
*Global Oceans 2020*, pp. 1–7  
 Available online at <https://ieeexplore.ieee.org/document/9389405>
- [o14] L. Mari, P. Melià, M. Gatto, R. Casagrandi (2019)  
**Monitoring climate effects on marine connectivity in the Mediterranean Sea**  
 Ecopotential project, Deliverable 8.5, pp. 49–55  
 Available online at <http://www.ecopotential-project.eu/images/ecopotential/documents/D8.5.pdf>
- [o13] M. Gatto, R. Casagrandi, L. Mari, P. Melià (2018)  
**From coast to coast: Simulating the connectivity of marine ecosystems**  
*Rendiconti dell’Accademia Nazionale delle Scienze detta dei XL, Memorie di Scienze Fisiche e Naturali*, 136°, Vol. XLII, Parte II, Tomo I, pp. 39–55  
 Available online at <http://media.accademiaxl.it/memorie/S5-VXLII-P2-2018/gattoetal39-55tomoI.pdf>

- [o12] L. Mari, R. Casagrandi (2018)  
**Hotspots identification of *Posidonia oceanica* connectivity within the LME in the last three decades**  
 Ecopotential project, Deliverable 8.2, pp. 44–48  
 Available online at <http://www.ecopotential-project.eu/images/ecopotential/documents/D8.2.pdf>
- [o11] P. Melià, L. Mari, M. Gatto (2018)  
**Il ruolo dell'ecologia nella progettazione del paesaggio / The role of ecology in landscape design**  
 in A. Tartaglia, D. Cerati (eds). *Progetto e valorizzazione dei territori rurali metropolitani. Proposte per il Sud-Abbatense / Design and enhancement of the metropolitan rural territories. Proposals for the South-Abbatense*  
 Maggioli Editore, Santarcangelo di Romagna. ISBN: 978-88-916-2693-6
- [o10] D. Pasetto, R. Casagrandi, G. El Serafy, L. Mari, A. Monteiro, A. Ziemba (2017)  
**Validation of ecological models through Earth observations**  
 Ecopotential project, Deliverable 6.1, pp. 24–35  
 Available online at <http://www.ecopotential-project.eu/images/ecopotential/documents/D6.1.pdf>
- [o9] L. Mari, R. Casagrandi, M. Ciddio, S.H. Sokolow, G. De Leo, M. Gatto (2015)  
**Uncovering the impact of human mobility on schistosomiasis via mobile phone data**  
*Data for Development Challenge Senegal – Book of Abstracts: Scientific Papers*  
 Available online at <http://www.d4d.orange.com/>
- [o8] J. Perez-Saez, F. Finger, L. Mari, A. Rinaldo, E. Bertuzzo (2015)  
**Human mobility and the spreading of waterborne diseases**  
*Data for Development Challenge Senegal – Book of Abstracts: Scientific Papers*  
 Available online at <http://www.d4d.orange.com/>
- [o7] M. Gatto, L. Mari, A. Rinaldo (2013)  
**Leading eigenvalues and the spread of cholera**  
*SIAM News*, Volume 46, Number 7, September 2013
- [o6] M. Gatto, L. Mari, A. Rinaldo (2012)  
**Modelli spazio-temporali di diffusione, previsione e controllo delle epidemie di colera: dal Sudafrica ad Haiti**  
*Rendiconti dell'Istituto Lombardo Accademia di Scienze e Lettere*, 145:47–57
- [o5] L. Mari (2009)  
**Models for Movement Ecology**  
 PhD thesis in Information Technology, PoliMi, A.Y. 2008/2009.  
 Advisor: Prof. R. Casagrandi; co-advisor: Prof. M. Gatto
- [o4] L. Bonaventura, C. Biotto, A. Decoene, L. Mari, E. Miglio (2009)  
**A coupled biological and hydrodynamic model for the spatial distribution of aquatic species in thermally forced basins**  
 MOX Report 2009.2, Dipartimento di Matematica “F. Brioschi”, PoliMi
- [o3] L. Mari, L. Bonaventura (2007)  
**The impact of hydrodynamics on the spatial distribution of an aquatic species: a numerical study**  
 Internal report 2007.60, DEIB, PoliMi
- [o2] L. Mari (2005)  
**Modelli spazialmente espliciti per la dinamica di popolazioni animali: la determinazione genetica del rapporto sessi**  
 MSc thesis in Environmental Engineering, PoliMi, A.Y. 2004/2005  
 Advisor: Prof. M. Gatto; co-advisor: Prof. R. Casagrandi
- [o1] L. Mari (2003)  
**Ruolo di sostanze tossiche in un modello di competizione algale**  
 BSc thesis in Environmental Engineering, PoliMi, A.Y. 2002/2003  
 Advisor: Prof. A. Gagnani

## Students' meetings

- [s3] C. Vanalli, L. Mari, R. Casagrandi, M. Gatto, B. Boag, I.M. Cattadori (2021)  
**Interactions between climate change and coinfections: What should we expect from the future?**  
5th Huck Life Sciences Symposium, Penn State University, May 18–19, 2021 (online meeting)
- [s2] L. Mari, R. Casagrandi, M. Gatto (2008)  
**A model for the spread of the zebra mussel (*Dreissena polymorpha*) on the Arno River**  
PhDAY, June 26 2008, DEIB, PoliMi. Best paper candidate
- [s1] L. Mari, E. Bertuzzo, R. Casagrandi, A. Rinaldo, M. Gatto (2008)  
**Ecohydrology of the zebra mussel**  
Incontro Dottorandi in Ecologia e Scienze dei Sistemi Acquatici, April 14–16 2008, San Michele all'Adige

## Invited seminars, talks and workshops

- March 2022 Persistenza di metapopolazioni di anfibi in reti fluviali. XXI Giornata Mondiale dell'Acqua: Ambienti acquatici e vertebrati anfibi, Accademia Nazionale dei Lincei (Rome, Italy)
- June 2020 A spatially-explicit SEPIA model for COVID-19 transmission in Italy: Reproduction numbers and control strategies. Modellistica e COVID-19, Giornata di studio online UMI/SIMAI (Trento, Italy)
- May 2017 Disease dynamics on river and human mobility networks: Implications for control. NIMBioS workshop on optimal control of NTDs, University of Tennessee (Knoxville TN, US)
- Jan 2017 Spatially explicit modeling of schistosomiasis transmission dynamic. PoliMi (Milano, Italy)
- Jan 2016 Modeling cholera epidemics: Theoretical approach and real-world applications. PoliMi (Milano, Italy)
- April 2015 Uncovering the impact of human mobility on schistosomiasis via mobile phone data. NetMob 2015, Massachusetts Institute of Technology (Cambridge MA, US)
- Jan 2015 Spatially explicit models for schistosomiasis transmission. Hopkins Marine Station of Stanford University (Pacific Grove CA, US)
- Jun 2014 Ecohydrological modeling and waterborne disease epidemics. NIMBioS investigative workshop on leptospirosis modeling, University of Tennessee (Knoxville TN, US)
- Dec 2013 The spread of the invasive species *Dreissena polymorpha* along river networks. Università degli Studi di Milano (Milano, Italy)
- Nov 2011 Drivers and controls of the zebra mussel invasion of the Mississippi-Missouri river system. Eawag (Dübendorf, Switzerland)
- Dec 2008 Bifurcation and chaos in a demographic model for the dynamics of the zebra mussel *Dreissena polymorpha*. PoliMi (Milano, Italy)
- Apr 2007 On the role of toxicants in a model for algal competition. PoliMi (Milano, Italy)
- May 2006 A demographic model for *Dreissena polymorpha*: local dynamics, prediction and control. PoliMi (Milano, Italy)

## Involvement in research programs

- 2023 – Project “One Health PREPAREDness: an integrated framework to manage the risk of zoonotic disease emergence (PREPARED)” (PRIN, MIUR; principal investigator: Prof. M. Di Marco), PoliMi research unit (principal investigator: Prof. Renato Casagrandi)

2022 –	Project “National Biodiversity Future Center” (Spoke 5: Urban biodiversity), PoliMi research unit (principal investigators: Prof. Maria Chiara Pastore and Prof. Renato Casagrandi)
2021 –	Project “Shaping ecosystem based fisheries management (SEAwise)” (European Commission H2020, principal investigator: Prof. A.H. Rindorf, Danmarks Tekniske Universitet), PoliMi research unit (principal investigator: Prof. P. Melià)
2021 – 2022	PoliMI unit coordinator “EPIdeiological Data assimilation and Optimal Control for short-term forecasting and emergency management of COVID-19 in Italy (EPIDOC)” (FISR, MIUR; principal investigator: Prof. D. Pasetto, Università Ca’ Foscari Venezia)
2017 – 2019	Project manager for the project “MApping Schistosomiasis Transmission Risk in Saint-Louis, Senegal (MASTR-SLS)” (Polisocial Award, principal investigator: Prof. R. Casagrandi, PoliMi)
2016 – 2019	Project “Improving future ecosystem benefits through earth observation (ECOPOTENTIAL)” (European Commission H2020, principal investigator: Prof. A. Provenzale, Consiglio Nazionale delle Ricerche), PoliMi research unit (principal investigators: Prof. R. Casagrandi and Prof. M. Gatto)
2015 – 2016	Project “Uncovering the impact of human mobility on schistosomiasis via mobile phone data” (Bill & Melinda Gates Foundation, principal investigator: Prof. M. Gatto, PoliMi)
2014 – 2015	Project “Towards coast to coast networks of marine protected areas (COCONET)” (European Commission FP7, principal investigator: Prof. F. Boero, Università del Salento), CoN-ISMa/PoliMi research unit (principal investigator: Prof. M. Gatto, PoliMi)
2014	Project “Temperature driven emergence of Proliferative Kidney Disease in salmonid fish” (SNSF, principal investigator: Dr. H. Hartikainen), EPFL research unit (principal investigator: Prof. A. Rinaldo, EPFL)
2014	Project “Santé des populations: maladies d’origine hydrique” (Swiss Agency for Development and Cooperation, principal investigator: Prof. A. Rinaldo, EPFL)
2012 – 2014	Project “Dynamics and controls of large-scale cholera outbreaks (DYCHO)” (SNSF project 138104, principal investigator: Prof. A. Rinaldo, EPFL)
2012 – 2013	Project “Climate Change Assessment in Small Pacific Islands States” (Comune di Milano, principal investigator: Prof. R. Casagrandi, PoliMi)
2009 – 2013	Project “River networks as ecological corridors for biodiversity, populations and waterborne disease (RINEC)” (ERC project 227612, principal investigator: Prof. A. Rinaldo, EPFL)
2009 – 2013	Project “Hydrologic controls on ecological processes: river networks as corridors for biodiversity, populations and pathogens of water-borne diseases” (SNSF project 124930, principal investigator: Prof. A. Rinaldo, EPFL)

## Teaching activities

### As lecturer

Academic Years 2017–	“Industrial Ecology” (8 credits) Master Degree in Energy Engineering, PoliMi (Campus Piacenza)
A.Y.s 2016–2017, 2020–	“General Ecology” (4 credits) Master Degree in Sustainable Architecture and Landscape Design, PoliMi (Campus Piacenza)
A.Y.s 2022–2023	“Geo Fundamentals B: Fundamentals of Earth System Science and Ecology” (5 credits) Master Degree in Geoinformatics, PoliMi
A.Y.s 2016–2021	“Geo Fundamentals 1” (5 credits) Master Degree in Geoinformatics, PoliMi
A.Y.s 2018–2020	“Ecologia” (6 credits) Bachelor Degree in Civil and Environmental Engineering, Polimi (Campus Lecco)

A.Y.s 2012–2016	“Ecology and Sustainability” (6 credits) Master Degree in Environmental Engineering, PoliMi (Campus Como)
A.Y.s 2012–2014	“Analisi dei Sistemi II” (5 credits) Bachelor Degree in Environmental Engineering, PoliMi (Campus Como)
A.Y. 2011–2012	“Conservation Ecology and Sustainability” (6 credits) Master Degree in Environmental Engineering, PoliMi (Campus Como)
	<b>As teaching assistant</b>
A.Y. 2014–2015	“Global Change and Sustainability”, Alta Scuola Politecnica (4 hours)
A.Y. 2013–2014	“Water Resources Engineering”, Prof. A. Rinaldo (20 hours) Master Degree in Environmental Sciences and Engineering, EPFL “Global Change and Sustainability”, Alta Scuola Politecnica (4 hours)
A.Y. 2012–2013	“Water Resources Engineering”, Prof. A. Rinaldo (20 hours) Master Degree in Environmental Sciences and Engineering, EPFL “Ecologia”, Prof. R. Casagrandi (10 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi “Global Change and Sustainability”, Alta Scuola Politecnica (4 hours)
A.Y. 2011–2012	“Conservazione e Gestione degli Ecosistemi”, Prof. M. Gatto (20 hours) Corso di Laurea Magistrale in Ingegneria per l’Ambiente e il Territorio, PoliMi “Water Resources Engineering”, Prof. A. Rinaldo (20 hours) Master Degree in Environmental Sciences and Engineering, EPFL
A.Y.s 2009–2011	“Water Resources Engineering”, Prof. A. Rinaldo (20 hours) Master Degree in Environmental Sciences and Engineering, EPFL
A.Y. 2008–2009	“Modelling and Simulation”, Prof. G. Guariso (DEIB, PoliMi) (40 hours) Master Degree in Environmental Engineering, PoliMi (Campus Como) “Ecologia 1”, Prof. R. Casagrandi (20 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi (Campus Como) “Ecology 2”, Prof. R. Casagrandi (4 hours) Master Degree in Environmental Engineering, PoliMi (Campus Como) “Global Change and Sustainability”, Alta Scuola Politecnica (4 hours) “Modellistica e Controllo dei Sistemi Ambientali 1”, Prof. A. Gragnani (4 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi “Modellistica e Controllo dei Sistemi Ambientali 2”, Prof. A. Gragnani (4 hours) Corso di Laurea Magistrale in Ingegneria per l’Ambiente e il Territorio, PoliMi
A.Y. 2007–2008	“Ecologia 1 con Laboratorio”, Prof. M. Gatto (20 hours, lab tutor) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi
A.Y. 2006–2007	“Ecologia 1”, Prof. R. Casagrandi (20 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi (Campus Como) “Ecologia 1 con Laboratorio”, Prof. M. Gatto (5 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi
A.Y. 2004–2009	Teaching seminars for graduate and undergraduate courses at PoliMi, including “Caos Deterministico e Applicazioni” (Prof. C. Piccardi), “Ecologia 2” (Prof. M. Gatto), “Modellistica e Controllo dei Sistemi Ambientali 1 e 2” (Prof. A. Gragnani), “Spatial Biology” (Prof. M. Gatto)
	<b>PhD courses</b>
2024	“Analysis of Complex Networks: Theory and Applications”, Prof. C. Piccardi (lecturer, 2 hours) PhD Program in Information Technology, DEIB, PoliMi
2020	“Analysis of Complex Networks: Theory and Applications”, Prof. C. Piccardi (lecturer, 2 hours) PhD Program in Information Technology, DEIB, PoliMi

- 2017 “Analysis of Complex Networks: Theory and Applications”, Prof. C. Piccardi (lecturer, 2 hours)  
PhD Program in Information Technology, DEIB, PoliMi
- 2013 “Spatial Dynamics in Biology”, Prof. M. Gatto (lecturer, 2 hours)  
PhD Program in Information Technology, DEIB, PoliMi
- 2011 “Spatial Dynamics in Biology”, Prof. M. Gatto (lecturer, 2 hours)  
PhD Program in Information Technology, DEIB, PoliMi

#### **Master courses**

- 2024 “Designing for Transition” (lecturer, 8 hours)  
POLI.design, PoliMi

#### **Tutoring of PhD students**

- D. Bogani (ongoing). PhD Science, Technology, and Policy for Sustainable Change, PoliMi
- A. Coppola (ongoing). PhD Science, Technology, and Policy for Sustainable Change, PoliMi
- B. He (ongoing). PhD Information Technology, PoliMi
- F. Guerrini (2022). Data-informed models for the coupled dispersal of microplastics and plastic-related pollutants applied to the Mediterranean Sea PhD Information Technology, PoliMi

#### **Tutoring of MSc students**

- Q. Li, Z. Li (ongoing). MSc Sustainable Architecture and Landscape Design, PoliMi
- T. Sacco (ongoing). MSc Environmental and Land Planning Engineering, PoliMi
- F. Lena (ongoing). MSc Environmental and Land Planning Engineering, PoliMi
- M. Corbetta (2022). Human movement in pandemic times: The impact of COVID-19 in Italy analyzed through the lens of Google and Apple mobility data. MSc Geoinformatics Engineering, PoliMi
- A.S. Almogabar Ruiz, L. Carminati, E. Gusso, S. Ingaramo, B.A. Khan, H. Kuai, G. Paola, L. Piermarini (2021). DRonE: A Decision support system to Respond to ongoing Epidemics. Alta Scuola Politecnica, PoliMi and Politecnico di Torino
- A. Blanco Hernández (2020). Direct air capture by large scale reforestation of Sahara desert. MSc Energy Engineering, PoliMi
- J. Sponchiado (2020). Marine plastic pollution, loopholes in the juridical chain from international to regional scale: A case study from the Pelagos sanctuary. MSc Marine Sciences, Università degli Studi di Milano – Bicocca
- F. Cattaneo, M. Montani (2019). Mapping the risk of schistosomiasis transmission in Saint-Louis region, Senegal, using Volunteered Geographic Information and Machine Learning applied to aerial imagery. MSc Geoinformatics Engineering, PoliMi
- G. Toffano (2019). Un approccio modellistico allo studio dell’interazione tra microplastiche e inquinanti in ambiente marino. MSc Environmental and Land Planning Engineering, PoliMi
- E. Glavich, I. Marangoni (2019). Analisi della connettività di *P. oceanica* come base decisionale per l’istituzione di aree marine protette nel Mediterraneo. MSc Environmental and Land Planning Engineering, PoliMi
- F. Guerrini (2018). Modelling exposure to plastics for the marine biota: Risk maps for fin whales in the Pelagos sanctuary (North-Western Mediterranean). MSc Environmental and Land Planning Engineering, PoliMi
- A. Comini (2017). Dinamica spazio-temporale del briozoo *Fredericella sultana*, ospite primario nel ciclo della malattia proliferativa renale. MSc Environmental and Land Planning Engineering, PoliMi



M. Stecco (2016). *Rotavirus gastroenteritis*: Epidemiological dynamic and relationship between the disease outbreak and environmental factors. MSc Environmental and Land Planning Engineering, PoliMi

F. Dagostin, L. Raffa (2016). Diffusione spazio-temporale del virus Ebola in Senegal: Un modello predittivo basato su dati di telefonia cellulare. MSc Environmental and Land Planning Engineering, PoliMi

M. Ciddio (2012). Sviluppo di un modello spazialmente esplicito di diffusione del colera e sua applicazione al caso endemico del Bangladesh. MSc Environmental and Land Planning Engineering, PoliMi

M.T. Pisani, E. Pucci (2008). Invasione di specie alloctone su reti fluviali: Un modello per il mitilo zebra (*Dreissena polymorpha*) sull'Arno. MSc Environmental and Land Planning Engineering, PoliMi

#### **Tutoring of BSc students**

M. Andreoli, I.E. Comotti (2020). Analisi quantitativa dei fattori di trasmissione della malaria nelle regioni del Senegal. BSc Civil and Environmental Engineering, PoliMi

T. Borghi (2020). Analisi dei pattern di dispersione passiva della specie lessepsiana *Fistularia commersonii* nel Mar Mediterraneo. BSc Civil and Environmental Engineering, PoliMi

F. Paruta (2020). Analisi di un modello preda-predatore per la specie invasiva *Mnemiopsis leidyi*: Impatti sullo zooplancton nel Mar Mediterraneo. BSc Civil and Environmental Engineering, PoliMi

C. Bottin, C. Ebli (2020). Valutazione dell'input di plastica nel mar Mediterraneo da parte dei principali fiumi italiani. BSc Civil and Environmental Engineering, PoliMi

C. Castelletti (2019). Analisi di un modello di competizione intraspecifica tra *Posidonia oceanica* e *Caulerpa* spp. BSc Civil and Environmental Engineering, PoliMi

M. Rossi (2018). Raccolta e analisi di dati relativi all'immissione di rifiuti plastici in mare: Il caso dell'Area Marina Protetta Pelagos (Mar Tirreno). BSc Environmental and Land Planning Engineering, PoliMi

F. Cattaneo, M. Montani (2017). Analisi di dati demografici spazialmente distribuiti nella regione di Saint-Louis, Senegal. BSc Environmental and Land Planning Engineering, PoliMi

F. Guerrini (2016). Un approccio modellistico al problema del marine debris nel Mar Mediterraneo. BSc Environmental and Land Planning Engineering, PoliMi

N. Capella (2015). Un approccio modellistico per lo studio del rapporto tra malaria e deforestazione. BSc Environmental and Land Planning Engineering, PoliMi

#### **Academic and scientific service**

2023–2024	Board member, admission committee of the PhD program in Information Technology (DEIB, PoliMi)
2023	Guest Editor, <i>Frontiers in Big Data</i> (ISSN: 2624-909X) and <i>Frontiers in Public Health</i> (ISSN: 2296-2565)
2022–	Editorial Board member, <i>Frontiers in Marine Science</i> (ISSN: 2296-7745)
2022–	PhD Board member, PhD program in Information Technology (DEIB, PoliMi)
2020–	Scientific Board member, MaB-UNESCO Reserve <i>Po Grande</i>
2020–	Editorial Board member, <i>Data in Brief</i> (ISSN: 2352-3409)
2020–	Editorial Board member, <i>Water</i> (ISSN: 2073-4441)

2017–2022	Member of the Tutoring and Web Coordination Boards, MSc in Geoinformatics Engineering, School of Civil, Environmental and Land Management Engineering, PoliMi
2015–2019	Guest Editor for the Special Issue “Hydrology, water resources and the epidemiology of water-related diseases”, <i>Advances in Water Resources</i>
2009–	Reviewer for <i>Advances in Water Resources, Agriculture, Agronomy, Animals, Annals of Epidemiology, Applied Geography, Applied Mathematical Modelling, Applied Mathematics and Computation, Aquatic Invasions, Atmosphere, Biology, BMC Infectious Diseases, BMC Public Health, Bulletin of Mathematica Biology, Chaos, Solitons &amp; Fractals, Computer Methods and Programs in Biomedicine, Communications in Nonlinear Science and Numerical Simulation, Continental Shelf Research, Data in Brief, Discrete Dynamics in Nature and Society, Earth’s Future, Eco-Health, Ecological Applications, Ecological Modelling, Ecology Letters, Environment International, Environmental Pollution, Environmental Science and Pollution Research, Epidemiology, Environmental Modelling and Software, ESAIM: Mathematical Modelling and Numerical Analysis, Freshwater Biology, Freshwater Science, Frontiers in Marine Science, Frontiers in Plant Science, Frontiers in Public Health, Fundamental and Applied Limnology, Heliyon, International Journal of Environmental Research and Public Health, International Journal of Infectious Disease, Journal of Animal Ecology, Journal of Applied Ecology, Journal of Biological Dynamics, Journal of Contaminant Hydrology, Journal of Ecology, Journal of Hazardous Material, Journal of Mathematical Biology, Journal of Neuroinfectious Diseases, Journal of Statistical Mechanics, Journal of Theoretical Biology, Journal of the Royal Society Interface, Lancet Infectious Diseases, Marine Pollution Bulletin, Mathematical Biosciences and Engineering, Mathematical Methods in the Applied Sciences, Mathematical Modelling and Control, Mathematics, Mathematics and Computers in Simulation, Methods in Ecology and Evolution, Nature Communications, Nature Medicine, Networks and Heterogeneous Media, Nonlinear Analysis: Hybrid Systems, Nonlinear Dynamics, npj Clean Water, Ocean and Coastal Management, Oikos, Pathogens, PLoS Computational Biology, PLoS Medicine, PLoS Neglected Tropical Diseases, PLoS One, Proceedings of the National Academy of Sciences of the USA, Proceedings of the Royal Society B, Risk Management and Healthcare Policy, Royal Society Open Science, Public Health, Remote Sensing, Reviews in Geophysics, Reviews on Environmental Health, Science of the Total Environment, Scientific Data, Scientific Reports, SoftwareX, Sustainable Computing: Informatics and Systems, Sustainability, The American Naturalist, Theoretical Population Biology, Tropical Medicine and Infectious Disease, Veterinary Sciences, Water Policy, Water Resources Research, the IFAC World Congress, the International Federation of Automatic Control, the Fulbright Commission, the UK Natural Environment Research Council, the University of Firenze, the US National Science Foundation, and the Wellcome Trust</i>

## Scientific membership

2006–	Member of the SIte
2010–2012	Member of the American Geophysical Society (AGU) and European Geosciences Society (EGU)
2008	Member of the European Association of Environmental and Resource Economists (EAERE)

Milano, November 29, 2024

Lorenzo Mari