

## LIST OF PUBLICATIONS – PROFESSOR LUISA ORSINI

Current H-index: 30 (i10-index: 49); 68 publications; ca 3,150 citations, including 3 pending patents and 4 pending design registrations in October 2023 (source: Google Scholar)

### Patents

1. [Orsini L](#), Dearn KDD (2021) Patent [WO2021116229](#) Using *Daphnia* for bioremediation.
2. [Orsini L](#), Dearn KDD (2022) Patents filed in the name of Daphne Water Solutions Ltd in UK (PCT/EP2020/085377); USA (17783808) South Africa (PCT/EP2020/085377)
3. [Orsini L](#), Dearn KDD (2023) Design protection filed in the name of Daphne Water Solutions Ltd in the UK (6262063G; 6262064; 6262065; 6262066; 6262067; 6262068), South Africa (F2023/00196), EU (DN847707EMA-F) and USA (17/783,80)

### A. Reviews and Opinions

4. Abdullahi M., Li X., Abou-Elwafa Abdallah M.A., Stubbings W., Yan, N. Barnard M., Colbourne J.K., [Orsini L](#). (2022) Daphnia as sentinel species for environmental health protection: a perspective on biomonitoring and bioremediation of chemical pollution *Environmental Science and Technology* 56: 14237–14248.
5. Eastwood N, Stubbings WA, Abdallah MA, Durance I, Paavola J, Dallimer M, Pantel JH., Johnson S, Zhou J, Hosking JS, Brown JB, Ullah S, Krause S, Hannah DM, Crawford SE, Widmann M, [Orsini L](#) (2022) The Time Machine framework: monitoring and prediction of biodiversity loss'. *Trends in Ecology and Evolution (Invited opinion paper)* 37: 138-146.
6. Nogués-Bravo D, Rodríguez-Sánchez F, [Orsini L](#), de Boer E, Jansson R, Morlon H, Fordham DA, Jackson ST (2018) Cracking the Code of Biodiversity Responses to Past Climate Change *Trends in Ecology and Evolution (Invited review)* 33: 765-776.
7. [Orsini L](#), Schwenk K, De Meester L, Colbourne JK, Pfrender ME, Weider LJ (2013) The evolutionary time machine: using dormant propagules to forecast how populations can adapt to changing environments. *Trends in Ecology and Evolution (Invited opinion paper)* 28: 274-282.
8. [Orsini L](#), Vanoverbeke J, Swillen I, Mergeay J, De Meester L (2013) Drivers of population genetic differentiation in the wild: isolation by dispersal limitation, isolation by adaptation and isolation by colonization. *Molecular Ecology (Invited review)* 22: 5983-5999.
9. [Orsini L](#), Andrew R, Eizaguirre C (2013) Evolutionary Ecological Genomics *Molecular Ecology (Editorial piece for the special issue Evolutionary Ecological Genomics, eds Orsini, L, Andrew, R and Eizaguirre, C)* 22: 527-531.

### B. Peer reviewed journal articles

10. Abdullahi M., Stead I., Bennett S., Orozco R., Abou-Elwafa Abdallah M., Jabbari S., Macaskie L.E., Tzella A., Krause S., Al-Duri B., Lee R.G., Herbert B., Thompson P., Schalkwyk M., Getahun S., Dearn K.D., [Orsini L](#). Harnessing water fleas for water reclamation: a nature-based tertiary wastewater treatment technology. in press *Science of the Total Environment*.
11. Holden L., Cavoski A., Lee R. G., Eastwood N., Orsini L., Zhou J. Biodiversity Management Challenges: A Policy Brief. Accepted in *Environmental Law Review*
12. Chaturvedi A., Dhandapani D., Li X., Marshall H., Kissane S., Cuenca-Cambronero M., Asole G., Calvet F., Ruiz-Romero M., Marangio P., Guigó R., Rago D., Mirbahai L., Eastwood N., Colbourne J.K., [Orsini L](#). The hologenome of *Daphnia magna* reveals possible DNA methylation and microbiome-mediated evolution of the host genome. Under review in *Nucleic Acids Research*.
13. The PrecisionTox Consortium (2023) The Precision Toxicology Initiative. *Toxicology Letters* 383:33-42
14. Eastwood N., Zhou J., Derelle R., Jia Y., Crawford S., Abdallah M., Davidson T. A., Brown J. B., Hollert H., Colbourne J.K., Creer S., Bik H., [Orsini L](#). (2023) 100 years of anthropogenic impact causes changes in freshwater functional biodiversity. Under review in *eLife* (in press)
15. Abdullahi M., Zhou J., Dandapani V., Chaturvedi A., Orsini L. (2022) Historical exposure to chemicals reduces tolerance to chemical stress in *Daphnia* (waterflea). *Molecular Ecology* 31: 3098-3111
16. Chaturvedi A., Zhou, Raeymaekers JAM, Czypionka T, [Orsini L](#), Jackson CE, Spanier KI, Shaw JR, Colbourne JK, De Meester L (2021) Extensive standing genetic variation from a small number of founders enables rapid adaptation in *Daphnia*. *Nature Communications* 12: 4306.
17. Cambronero Cuenca M., Nguyen TTT, Tomero-Sanz H., Marshall H., [Orsini L](#) (2021) Evolutionary mechanisms underpinning fitness response to multiple stressors in *Daphnia*. Invited contribution to the special issue:

- Human induced evolution: from targeted species to worldwide impacts of human actions *Evolutionary Applications* 14:2457-2469.
18. Kissane S, Dhandapani V, **Orsini L** (2021) Protocol for assay of transposase accessible chromatin sequencing in non-model species *STAR Protocols Cell Press* (<https://doi.org/10.1016/j.xpro.2021.100341>).
  19. Suppa A, Kvist J, Li X, Dhandapani V, Almulla H, Tian AY, Kissane S, Zhou J, Perotti A, Mangelson H, Langford K, Rossi V, Brown JB, **Orsini L** (2020) Roundup causes embryonic development failure and alters metabolic pathways and gut microbiota functionality in non-target species. *BMC Microbiome* 8:170.
  20. Toyota K, Cambronero Cuenca M, Dhandapani V, Suppa A, Rossi V, Colbourne JK, **Orsini L** (2019) Transgenerational response to early spring warming in *Daphnia* *Nature Scientific Reports*: 9: 1-11.
  21. Jahnke M, D' Esposito D, Orrù L, Lamontanara A, Dattolo E, Badalamenti F, Mazzuca S, Procaccini G, **Orsini L** (2019) *Heredity*: 22:233–243.
  22. Ward A, Wondzell S, Schmadel N, Herzog S, Zarnetske J, Baranov V, Blaen P, Brekenfeld N, Drummond J, Fleckenstein J, Garayburu-Caruso V, Graham E, Hannah D, Harman C, Hixson J, Knapp J, Krause S, Kurz M, Lewandowski J, Li A, Marti E, Miller M, Milner A, Neil K, Plont S, Renteria L, Reynolds S, Roche K, Royer T, Segura C, Stegen J, Toyoda J, Wells J, Wisnoski N, **Orsini L**, Derelle R (2019) Spatial and temporal variation in river corridor exchange across a 5th-order mountain stream network *Hydrology and Earth System Sciences* (Invited contribution to the special issue Linking landscape organisation and hydrological functioning: from hypotheses and observations to concepts, models and understanding) 23, 5199–5225.
  23. Cottier F, Sherrington S, Cockeril S, Delolmo V, Kissane S, Tournu H, **Orsini L**, Palmer GE, Pérez C, Hall RA (2019) Remasking of *Candida albicans* -Glucan in Response to Environmental pH Is Regulated by Quorum Sensing *mBio* 5: e02347-19.
  24. Zarnetske J, Baranov V, Blaen P, Brekenfeld N, Chu R, Derelle R, Drummond J, Fleckenstein J, Garayburu-Caruso V, Graham E, Hannah D, Harman C, Hixson J, Knapp J, Krause S, Kurz M, Lewandowski J, Li A, Miller M, Milner A, Neil K, **Orsini L**, Packman A, Plont S, Renteria L, Roche K, Royer T, Schmadel N, Segura C, Stegen J, Toyoda J, Wisnoski N, Wondzell S (2019) *Earth Systems Science Data* (Invited contribution to the special issue Linking landscape organisation and hydrological functioning: from hypotheses and observations to concepts, models and understanding) 11: 1567–1581.
  25. Singh AK, Choudhury SR, De S, Zhang J, Kissane S, Dwivedi V, Ramanathan P, Petric M, **Orsini L**, Hebenstreit D, Brogna S (2019) The RNA helicase UPF1 associates with mRNAs co-transcriptionally and is required for the release of mRNAs from gene loci *eLife*: 8: e41444.
  26. Cambronero Cuenca M, Marshall H, De Meester L, Davidson TA, Beckerman AP **Orsini L** (2018) Predictability of the impact of multiple stressors on the keystone species *Daphnia*. *Nature Scientific Reports* 8: 17572.
  27. Cambronero Cuenca M, Beasley J, Kissane S, **Orsini L** (2018) Evolution of thermal tolerance in multifarious environments. *Molecular Ecology* 27: 4529–4541.
  28. Cambronero Cuenca M, Zeis B, **Orsini, L** (2018) Haemoglobin-mediated response to hyper-thermal stress in the keystone species *Daphnia magna*. *Evolutionary Applications* (Invited contribution for the special issue Evolutionary Aspects of Resurrection Ecology: Progress, Scope, and Applications) 11:112-120.
  29. Cuenca Cambronero M and **Orsini, L** (2018) Resurrection of Dormant *Daphnia magna*: Protocol and Applications *Journal of Visualized Experiments* 131: e56637
  30. Haileselassie, TH, Mergeay J, Vanoverbeke J, **Orsini, L**, De Meester L. (2018). Founder effects determine the genetic structure of the water flea *Daphnia* in Ethiopian reservoirs. *Limnology & Oceanography*: 63: 915–926
  31. **Orsini L**, Brown JB, Shams Solari, O Li D, He S, Podicheti R, Stoiber MH, Spanier KI, Gilbert D, Jansen M, Rusch D, Pfrender ME, Colbourne JK, Frilander MJ, Kvist J, Decaestecker E, De Schampheleere KAC, De Meester L (2018) Early transcriptional response pathways in *Daphnia magna* are coordinated in networks of crustacean specific genes. *Molecular Ecology*: 27:886-897. *This paper was highlighted in the perspectives of Molecular Ecology with the following commentary: Stanford, B. and Rogers, S. R(NA)-tistic Expression: the art of matching unknown mRNA and proteins to environmental response in ecological genomics.*
  32. Jansen M, Geerts AN, Rago A, Spanier KI, Denis C, De Meester L, **Orsini, L** (2017) Thermal tolerance in the keystone species *Daphnia magna* —a candidate gene and an outlier analysis approach. *Molecular Ecology*, 26, 2291–2305.
  33. Spanier IK, Jansen M, Decaestecker E, Hulselmans G, Becker D, Colbourne JK, **Orsini L**, De Meester L., Aerts S (2017) Conserved Transcription Factors Steer Growth-Related Genomic Programs in *Daphnia* *Genome Biology and Evolution*: 9(6):1821–1842.

- 34.** Asselman J, De Coninck DIM, Beert E, Janssen CR, **Orsini, L**; Pfrender ME, Decaestecker E; De Schampheleere K (2017) Bisulfite Sequencing with Daphnia Highlights a Role for Epigenetics in Regulating Stress Response to Microcystis through Preferential Differential Methylation of Serine and Threonine Amino Acids *Environmental Science & Technology* 51, 924–931.
- 35.** **Orsini L**, Marshall H, Cambronero Cuenca M, Chaturvedi A, Thomas KW, Pfrender ME, Spanier KI, De Meester L (2016) Temporal genetic stability in natural populations of the waterflea *Daphnia magna* in response to strong selection pressure *Molecular Ecology*, 25: 6024–6038.
- 36.** **Orsini, L** Gilbert D, Podicheti R, Jansen M, Brown JB, Shams Solari O, Spanier KI, Colbourne JK, Rusch DB, Decaestecker E, Asselman J, De Schampheleere KAC, Ebert D, Haag CR, Kvist J, Laforsch L, Petrusek A, Beckerman AP, Little TJ, Chaturvedi A, Pfrender ME, De Meester L, Frilander MJ (2016) *Daphnia magna* transcriptome by RNA-Seq across 12 environmental stressors. *Nature Scientific Data* 3:160030.
- 37.** D'Esposito D, Orr L, Dattolo E, .Bernarndo L, Lamontanara A, **Orsini, L**, Serra IA, Mazzuca S, Procaccini G. (2016) Transcriptome characterisation and simple sequence repeat marker discovery in the seagrass *Posidonia oceanica* *Nature Scientific Data* 3:160115.
- 38.** Li D, Brown JB, **Orsini L**, Hu G, Pan Z, He S (2016) MODA: MOdule Differential Analysis for weighted gene co-expression network *bioRxiv* 053496.
- 39.** Amato, A. and **Orsini, L**. (2015) Rare interspecific breeding in *Pseudo-nitzschia* (Bacillariophyceae) *Phytotaxa*, 217: 145-154
- 40.** **Orsini L**, Mergeay J, Vanoververbeke J, De Meester L (2013) The role of selection in driving landscape genomic structure of the waterflea *Daphnia magna*. *Molecular Ecology (Invited contribution to the special issue on Evolutionary Ecological Genomics)* 22: 583-601
- 41.** D' Esposito D, **Orsini L**, Procaccini G. (2013) Permanent genetics resources *Molecular Ecology Resources* 13: 546-549.
- 42.** **Orsini L**, Spanier KI, De Meester L (2012) Genomic signature of natural and anthropogenic stress in wild populations of the waterflea *Daphnia magna*: validation in space, time and experimental evolution *Molecular Ecology* 21: 2160–2175. *This paper was highlighted in the perspectives of Molecular Ecology with the following commentary: Pfrender, M.E. "Triangulating the genetic basis of adaptation to multifarious selection"*
- 43.** **Orsini L**, Jansen M, Souche EL, Geldof S, De Meester L (2011) Single nucleotide polymorphism discovery from expressed sequence tags in the waterflea *Daphnia magna* *BMC Genomics*. 12: 309. *This paper has been listed in the F1000 Biology for its innovative approach. It was commented by Van Straalen, N. M.* [\*http://f1000.com/12991956\*](http://f1000.com/12991956).
- 44.** Jansen B, Geldof S, De Meester L, **Orsini L** Isolation and characterization of microsatellite markers in the waterflea *Daphnia magna* (2011) *Molecular Ecology Resources*. 11: 418-421.
- 45.** De Meester L, Van Doorslaer W, Geerts A, **Orsini L**, Stoks R. (2011) Thermal Genetic Adaptation in the Water Flea *Daphnia* and its Impact: An Evolving Metacommunity Approach *Integrative and Comparative Biology (invited contribution for a special volume on "Integrated analysis of thermal adaptation")*. 51: 703–718.
- 46.** **Orsini L**, Decaestecker E, De Meester L, Pfrender ME, Colbourne JK (2010) *Biology Letters* 7: 2-3.
- 47.** Wirta H, Viljanen H, **Orsini L**, Montreuil O, Hanski I (2010) Three parallel radiations of Canthonini dung beetles in Madagascar. *Molecular Phylogenetics and Evolution*. 57:710-727.
- 48.** **Orsini L**, Wheat CW, Haag CR, Kvist J, Frilander MJ, Hanski I (2009) Fitness differences associated with Pgi SNP genotypes in the Glanville fritillary butterfly (*Melitaea cinxia*) *Journal of Evolutionary Biology* 22: 367–375.
- 49.** **Orsini L**, Corander J, Alasentie A, Hanski I (2008). Genetic spatial structure in a butterfly metapopulation correlates better with past than present demographic structure. *Molecular Ecology* 217: 2629-2642.
- 50.** Wirta, H, **Orsini L**, Hanski I (2008). An old adaptive radiation of forest dung beetles in Madagascar. *Molecular Phylogenetic and Evolution* 47: 1076-1089.
- 51.** **Orsini L**, Pajunen M, Hanski I, Savilahti H (2007). SNP discovery by mismatch-targeting of Mu transposition. *Nucleic Acids Research* 35 (6) e44. *This paper was in the research highlights of Nature 2007, vol 4(4) doi:10.1038/nmeth0407-299*

52. **Orsini L**, Koivulehto K, Hanski I (2007) Molecular evolution and radiation of dung beetles in Madagascar. *Cladistics* 23: 145-168.
53. Mirol P.M., Schäfer M.A., **Orsini L**. et al. (2007) Phylogeographic patterns in *Drosophila montana*. *Molecular Ecology* 16, 1085–1097.
54. Schäfer MA, **Orsini L**, McAllister BF, Schlotterer C (2006). Patterns of microsatellite variation through a transition zone of a chromosomal cline in *Drosophila americana* *Heredity* 97: 291-295.
55. Amato A., **Orsini L**. et al. (2005) Life cycle, size reduction patterns and ultrastructure of the pennate planktonic diatom *Pseudo-nitzschia delicatissima* (Bacillariophyceae) *Journal of Phycology* 41: 542-556.
56. Cerino F, **Orsini L**, Sarno D, Dell'Aversano C, Tartaglione L, Zingone A (2005). The alternation of different morphotypes in the seasonal cycle of the toxic diatom *Pseudo-nitzschia galaxiae* *Harmful Algae* 4: 33-48.
57. **Orsini L**, Huttunen S, Schlotterer C (2004) A multilocus microsatellite phylogeny of the *Drosophila virilis* group. *Heredity* 93: 161-165.
58. **Orsini L**. and Schlötterer C. (2004). Isolation and characterization of microsatellites in *Drosophila montana* and their cross-species amplification in *D. virilis*. *Molecular Ecology Notes* 4 (3): 412-414.
59. **Orsini, L**, Procaccini G, Sarno D, Montresor M (2004) Multiple rDNA ITS-types within the diatom *Pseudo-nitzschia delicatissima* (Bacillariophyceae) and their relative abundances across a spring bloom in the Gulf of Naples. *Marine Ecology Progress Series* 271:87-98.
60. Montresor M, Lovejoy C, **Orsini L**, Procaccini G, Roy S. (2003) Bipolar distribution of the cyst-forming dinoflagellate *Polarella glacialis*. *Polar Biology* 26: 186-194.
61. **Orsini, L**, Sarno D, Procaccini G, Poletti R, Dahlmann J, Montresor M (2002) Toxic *Pseudo-nitzschia multiseries* (Bacillariophyceae) from the Gulf of Naples: morphology, toxin analysis and phylogenetic relationships with other *Pseudo-nitzschia* species. *European Journal of Phycology*, 37: 247-257.
62. Procaccini G, Ruggiero MV, **Orsini L** (2002) Genetic structure and distribution of microsatellite population genetic diversity in *Posidonia oceanica* in the Mediterranean Basin. *Bulletin of Marine Science* 71:1291-1297.
63. Procaccini G, **Orsini L**, et al. (2001) Spatial patterns of genetic diversity in *Posidonia oceanica* an endemic Mediterranean seagrass *Molecular Ecology*, 10: 1413-1421.

#### C. Book chapters with peer review

64. Amato A. and **Orsini L** (2009) The eco-genomics of phytoplankton: an outlook on the future. In: Kersey, W. T. and Munger, S. P. (Eds.), *Marine Phytoplankton*. NOVA Publisher ISBN: 978-1-60741-087-4.
65. **Orsini L**, Acunto S, Piazzi L, Procaccini G (2001) Sexual reproduction and recruitment in *Posidonia oceanica* (L.) Delile, a genetic diversity study. In: Faranda, F.M. Guglielmo L. and Spezie G. (Eds.), *Mediterranean Ecosystem: Structures and Processes*. Springer-Verlag , Berlin Heidelberg. Cap. 50: 385-389.

#### D. Non SCI journals

66. Ruggiero MV, **Orsini L**, Procaccini G (2001). Depth related genetic structure in populations of endemic and introduced seagrass species: *Posidonia oceanica* and *Halophila stipulacea*. *Biologia Marina Mediterranea*. 8: 110.
67. Procaccini G, **Orsini L**, Ruggiero MV (2000) Genetic structure and distribution of microsatellite diversity in *Posidonia oceanica*. *Biologia Marina Mediterranea*. 7 (2): 115-118.
68. D'Esposito D, Dattolo E, Badalamenti F, **Orsini L**, Procaccini G (2012) Comparative analysis of genetic diversity of *Posidonia oceanica* along a depth gradient using neutral and selective/non neutral microsatellite markers. *Biologia Marina Mediterranea* 19 (1): 45-48.