

Expertise

Ecological Indicators

Ecological Management and Restoration

Ecology and restoration of Biological Soil Crusts

Modelling atmospheric pollution

Environmental Health studies

Biomonitoring air, water and soil

Plant ecology in the semiarid

Ecotoxicology

Climate Change and Desertification

Dioxins, PAHs, heavy metals, oxidized nitrogen

pollutants

Credentials

PhD, Ecology, Lisbon University, Faculty of Sciences

Degree, Biology, Faculty of Sciences, University of Lisbon

April, 2018 Cristina Branquinho, PhD

Associate Professor with Habilitation at

Centre of Ecology, Evolution and Environmental Changes

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Cristina Branquinho has been working in Ecology and in Environmental topics since 1992. She is an Associate Professor with habilitation at Faculty of Sciences of the University of Lisbon, Centre of Ecology, Evolution and Environmental Changes, leading the group of 20 researchers in Ecology of Environmental Changes (eChanges). She is experienced in monitoring the impact of pollution or anthropogenic activities, such as, mines, quarries, industrial, rural and urban areas on different environmental matrixes: air, soil, water, plants and also at ecosystem level. Part of the work has been based on the use of biological organisms as indicators of environmental quality. She has also developed methodologies for measuring PAHs and heavy metal contamination in stream water using transplanted aquatic mosses. With the previous information she has been building spatial (local or regional) and temporal geostatistical models with potential use for decision making. Since 2000 she has also being applying the previous knowledge to Environmental Health studies, in particular developing environmental biomonitoring to assess human exposure to toxic pollutants mainly, heavy metals, dioxins, furans and PAHs, and relating several environmental bioindicators and/or biomonitors of pollution and of land-uses changes with public health indicators in order to develop efficient tools for evaluation of the Human health risk assessment, especially with long-term chronic effects on health. This allows the production of high-resolution data on environmental exposure for developing reliable environmental health risk assessment studies. Part of her research is also been developed using the knowledge and the scientific principles of structure and functioning of ecosystems to undergo an ecological management and define sustainable strategies for the ecological restoration of degraded ecosystems. Namely, proposing managing options and scenarios including the strategy of ecological restoration in particular in Mediterranean streams, metal mines, quarries, heavy industries natural forests and sand beach dunes. In particular she is using Biological Soil Crusts for the restoration of margins of dams and desertified areas. Recently she has been involved in the production of Biological Soil Crusts for green roofs in order to avoid watering in Mediterranean areas. She is also interested in studying early warning indicators of climate-change and of desertification especially in the south of Portugal. More recently she is interested in further apply this methodology in other areas of the world especially Africa and South America. For that she intends to use the changes in ecological indicators of the structure and functioning of ecosystems as a result of global changes, climate change, nitrogen, metal and organic pollution.

Projects:

Cristina Branquinho participated in 62 research projects or contracts for services with total funding of more than 5,6 million. Coordinated 29 projects that attracted more than EUR 2.6 million. Of the 29 projects, 13 were the result of competitive tendering, the remaining 16 were funded by private or Municipalities companies. She also participated in projects for the dissemination of science or communication. As project coordinator, about 47 % of its funding comes from EU or other countries, 32% from companies or municipalities and 21% from national Science and Technology Foundation. The SinesBioar project won a "Best of the Best" award, given to the best projects funded by the Program Life Environment.

Funded in competing calls on the last 5 years as coordinator:

1. June 2016 – May 2019 - ChangeTracker: Tracking climate change in drylands based on ecological indicators. Funding: FCT-PTDC / AAG-GLO / 0045/2014; Budget 182k €. Coordination: Cristina Branquinho FFCUL.
2. January 2016 - December 2018 - H2020-Twinning-2015-1, Coordination & support action, Proposal number: 692331. Portuguese Strengthening research and innovation Capacities in the field of excess reactive nitrogen (NitroPortugal). Total budget: € 1000k. FFCUL budget: 200k €; Coordination Institute of Agronomy; Other partners: NERC, UK and University of Aarhus, DK. Cristina Branquinho is Principal Investigator of FFCUL.
3. March 2015- April 2016 - AdaptForChange "Improving the success of reforestation in semi-arid areas: adaptation to climate change scenario" project under the "Adapt program - Portugal Adapting to Climate Change". Funded by Portuguese Environmental Agency, 103k€. General coordination : Cristina Branquinho
4. 2014-2016 - EXPL / ATP-ARP / 0252/2013 - Use of native species on green roofs - Alternative to optimize water use and sustainability in Mediterranean conditions urban green spaces. Funded by FCT in 50 K €. General Coordination: Superior Institute of Agronomy (Teresa Afonso's Palace); Coordination in FFCUL: Cristina Branquinho; FFCUL funding: € 8 K;
5. March 2014 - February 2016 - Laura Concostrina (Spanish), BCSES "Functional diversity of Biocrusts: towards ecosystem services in drylands quantification". Scholarship provided by Marie Curie Intra-European Fellowships for Career Development (FP7- FP7-PEOPLE-2013-IEF, call identifier; Nº628406). Funding: 147 K €. Cristina Branquinho participates as a single supervisor.
6. 2010-2013 - Modelling Ecosystem Structure and Functional Diversity as early-warning indicators of Desertification and Land-degradation: from regional to local level. PTDC/AAC-CLI/104913/2008.
7. 2009-2010 - Transnational cooperation between Portugal and Italy (CNR). Biomonitoring of soil and atmospheric pollution at mine sites in Mediterranean ‎areas: responses from cellular to ecosystem level. Financed by FCT Portugal and CNR Italy.

Funded by private companies:

1. 2014-2017 - Environmental monitoring of dioxins / furans and metals in the vicinity of a hospital incinerator. Funding: AmbiMed, 67 K €. General Coordination: Cristina Branquinho.
2. 2012-2015 - Pilot study for the revegetation of biological crusts in order to control and mitigate the erosion processes that occur at the zones where there are daily changes of water level in the reservoirs, in the context of the power reinforcement of Salamonde Dam in the north of Portugal. Financed by EDP – Gestão da Produção de Energia, S.A: 66 480€. Coordinator Cristina Branquinho.
3. 2012-2013 - Urban Biodiversity in the context of "green structures", ecological connectivity and climate change. Funding: Municipality of Almada: 40 K €. Scientific coordination: Cristina Branquinho.
4. 2013-2014 - Development of strategies for remediation of contaminated by metals and its impact human health in the context of mining soil. Funding: Mining Company Somincor 75 K €. Scientific coordination: Cristina Branquinho.
5. 2012-2013 - Monitoring the ecological quality of streams in the municipality of Cascais. Funding: Municipality of Cascais: 3.5 K €. Scientific coordination: Cristina Branquinho, Centre for Environmental Biology, Faculty of Science, University of Lisbon.
6. 2012-2014 - "A mine of biodiversity". Holistic plan for dissemination of biodiversity, ecology and environment promoted by the Department of Environment of Copper Mine Neves-Corvo, for Somincor Company. Funding: SOMINCOR - Neves Corvo mines: 53 K €. Scientific coordination: Cristina Branquinho, Centre for Environmental Biology, Faculty of Science, University of Lisbon.
7. 2011-2014 – Assessment of atmospheric deposition of heavy metals and PCDD/Fs in the surroundings of a cement factory in Pataias and Maceira using biomonitors. Financed by the Cement industry COMPANHIA GERAL DE CAL E CIMENTO SECIL: 49000€. Coordinator Cristina Branquinho.
8. 2010-2012 – Lichen and Plant biodiversity of a Cu mine site in the south of Portugal. Financing: 45 000€; by SOMINCOR, sociedade mineira de Neves Corvo, SA.
9. 2008-2013 - “Evaluating the atmospheric deposition of heavy metals and PCDD/Fs in the surroundings of the SECIL-Outão industry using biomonitors”; Funding entity SECIL: 49280 €
10. 2007-2011 - GISA – Integrated Management of Environment and Health in the Alentejo Litoral Region Financing: 1 082 800 € by Private companies: Petróleos de Portugal-PETROGAL, S.A.; REPSOL Polímeros, Lda.; Administração do Porto de Sines, S.A.; Águas de Santo André, S.A.; Apiparques–Gestão de Parques Industriais, S.A.; Carbogal–Carbonos de Portugal, S.A.; EDP–Gestão da Produção de Energia, S.A.; EuroResinas-Indústrias Químicas, S.A.; Kimaxtr –Produtos de Construção S.A.; Repsol Polímeros, Lda.; REN–Atlântico, Terminal de GNL, S.A.

**Papers with IF on the last 5 years:**

<http://orcid.org/0000-0001-8294-7924>

<http://scholar.google.pt/citations?user=5OjG1v0AAAAJ>

<http://www.researcherid.com/rid/B-3670-2008>

<http://www.scopus.com/authid/detail.url?authorId=6603447018>

**2018**

1. Varela Z, López-Sánchez G, Yáñeza M, Péreza C, Fernández JA, Matos P, Branquinho C, Aboal JR. 2018. Changes in epiphytic lichen diversity are associated with air particulate matter levels: The case study of urban areas in Chile. Ecological Indicators, Ecological Indicators, 91:307-314.
2. Ockendon N, Thomas DHL, Cortina J, Adams WM, Aykroyd T, Barov B, Boitani L, Bonn A, Branquinho C, Brombacher M, Burrell C, Carver S, Humphrey QP, Crick HQP, Duguy B, Everett S, Fokkens B, Fuller RJ, Gibbons DW, Gokhelashvili R, Griffin C, Halley DJ, Hotham P, Hughes FMR, Karamanlidis AA, McOwen CJM, Miles L, Mitchell R, Rands MRW, Roberts J, Sandom CJ, Spencer JW, Broeke ET, Tew E, Thomas CJ, Timoshyna A, Unsworth RKF, Warrington S & Sutherland WJ. 2018. One Hundred Priority Questions for Landscape Restoration in Europe. Biological Conservation (in press).
3. Cruz de Carvalho R, dos Santos P, Branquinho C. 2018. Production of moss-dominated biocrusts to enhance the stability and function of the margins of artificial water bodies. Restoration Ecology (accepted); DOI: 10.1111/rec.12688
4. Djukic I, Kepfer-Rojas S, Schmidt IK, Larsen KS, Beier C, Berg B, Verheyen K, Caliman A, Paquette A, Gutiérrez-Girón A, Valdecantos A, Petraglia A, Alexander H, Augustaitis A, Saillard A, Fernández ACR, Sousa AI, Lillebø AI, Gripp AR, Francez AJ, Fischer A, Bohner A, Malyshev A, Andrić A, Smith A, Stanisci A, Seres A, Schmidt A, Avila A, Probst A, Ouin A, Khuroo AA, Verstraeten A, Stefanski A, Gaxiola A, Muys B, Bosman B, Ahrends B, Parker B, Sattler B, Berg B, Yang B, Juráni B, Erschbamer B, Rodriguez-Ortiz CE, Christiansen CT, Adair EC, Meredieu C, Mony C, Nock CA, Chen CL, Wang CP, Baum C, Rixen C, Delire C, Piscart C, Andrews C, Beier C, Rebmann C, Branquinho C et al. 2018. Early stage litter decomposition across biomes. Science of the Total Environment, in press. https://doi.org/10.1016/j.scitotenv.2018.01.012
5. Concostrina-Zubiri L, Matos P, Giordani P, Branquinho C. 2018. Biocrust tissue traits as potential indicators of global change in the Mediterranean. Plant and Soil https://doi.org/10.1007/s11104-017-3483-7.
6. Santos A, Godinho D, Vizinho A, Alvez F, Pinho P, Penha-Lopes G, Branquinho C. 2018. Artificial lakes as a climate change adaptation strategy in drylands: evaluating the trade-off on non-target ecosystem services. Mitigation and Adaptation Strategies for Global Change. https://doi.org/10.1007/s11027-017-9764-x
7. Brignole D, Drava G, Minganti V, Giordani P, Roeland S, Vieira J, Pinho P, Branquinho C. 2018. Chemical and Magnetic Analyses on Tree Bark as an Effective Tool for Biomonitoring: A Case Study in Lisbon (Portugal). Chemosphere, 195:508-514.
8. Mexia T, Vieira J, Príncipe A, Anjos A, Silva P, Lopes N, Freitas C, Santos-Reis M, Correia O, Branquinho C\*, Pinho P. 2018. Ecosystem services of urban parks under the magnifying glass. Environmental Research, 24; 160:469-478. doi: 10.1016/j.envres.2017.10.023.
9. Vieira J, Matos P, Mexia T, Silva P, Lopes N, Freitas C, Correia O, Branquinho C\*, Pinho P. 2018. Green spaces are not all the same for the provision of ecosystem services: the case of air purification and climate regulation. Environmental Research, 160:306-313.
10. Adessi A, Cruz de Carvalho R, De Philippis R, Branquinho C\*, Marques da Silva J. 2018. Microbial extracellular polymeric substances improve water retention in dryland biological soil crusts. Soil Biology & Biochemistry, 116, 67–69.
11. Listopad C, Kobel M, Príncipe A, Gonçalves P, Branquinho C. 2018. The effect of grazing exclusion over time on structure, biodiversity, and regeneration of high nature value farmland ecosystems in Europe. Science of the Total Environment, 610-611:926–936.

**2017**

1. Munzi S. Ramos MM, Máguas C, Cruz C, Branquinho C, Maia R. 2017. Intra- and inter-specific variation in chitin in lichens along a N-deposition gradient. Environmental Science and Pollution Research, 36: 28065–28071 https://doi.org/10.1007/s11356-017-0378-3 .
2. Ripple WJ, Wolf C, Newsome TM, Galetti M, Alamgir M, Crist E, Mahmoud MI, Laurance WF, and 15,364 scientist signatories from 184 countries including Branquinho C. 2017. World Scientists’ Warning to Humanity: A Second Notice. BioScience, 67:1026-1028. https://doi.org/10.1093/biosci/bix125
3. Paoli L, Pinho P, Branquinho C, Loppi S, Munzi S. 2017. The influence of growth form and substrate on lichen physiological responses along an aridity gradient . Environmental Science and Pollution Research, 24:26206–26212. DOI 10.1007/s11356-017-9361-2.
4. Serrano HC, Köbel M, Palma-Oliveira J, Pinho P, Branquinho C. 2017. Mapping exposure to multi-pollutants using environmental biomonitors – a multi-exposure index. Journal of Toxicology and Environmental Health, Part A 80:13-15, 710-718.
5. Pinho P, Barros C, Augusto A, Pereira MJ, Máguas C, Branquinho C. 2017. Using nitrogen concentration and isotopic composition in lichens to spatially assess the relative contribution of atmospheric nitrogen sources in complex landscapes. Environmental Pollution, 230:632-638.
6. Ochoa Hueso R, Silvana M, Rocio A Arróniz Crespo M, Avila A, Bermejo V, Bobbink R, Branquinho C, Concostrina-Zubiri L, Cruz C, Cruz de Carvalho R, De Marco A, Dias T, Elustondo D, Elvira S, Estebanez B, Fusaro L, Gerosa G, Izquieta-Riojano S, Lo Cascio M, Marzuoli R, Matos P, Mereu S, Merino J, Morillas L, Nunes A, Paoletti E, Paoli L, Pinho P, Rogers I, Santos A, Sicard P, Stevens C, Theobald MR. 2017. Ecological Impacts of Atmospheric Pollution and Interactions with Climate Change in Terrestrial Ecosystems of the Mediterranean Basin: Current Research and Future Directions. Environmental Pollution, 227:194-206. 10.1016/j.envpol.2017.04.062
7. Santos A, Pinho P, Munzi S, Botelho MJ, Palma JM, Branquinho C. 2017. The role of forest in mitigating the impact of atmospheric dust pollution in a mixed landscape. Environmental Science and Pollution Research 24:12038–12048. DOI 10.1007/s11356-017-8964-y
8. Llop E, Pinho P, Ribeiro M, Pereira MJ, Branquinho C. 2017. Traffic represents the main source of pollution in small Mediterranean urban areas as seen by lichen functional groups. Environmental Science and Pollution Research, 24:12016–12025. doi:10.1007/s11356-017-8598-0
9. Aguillaume L, Avila A, Pinho P, Matos P, Llop E, Branquinho C. The critical levels of atmospheric ammonia in a Mediterranean forest in North-Eastern Spain. Water Air and Soil Pollution, 228: 93. doi:10.1007/s11270-017-3286-8
10. Munzi S, Sheppard L, Leith ID, Cruz C, Branquinho C, Bini L, Gagliardi A, Cai G, Parrotta L. 2017. The cost of surviving nitrogen excess: energy and protein demand in the lichen Cladonia portentosa as revealed by proteomic analysis. Planta, 245(4):819-833. doi:10.1007/s00425-017-2647. http://link.springer.com/article/10.1007%2Fs00425-017-2647-2
11. Concostrina-Zubiri L, Molla I, Velizarova E, Branquinho C. 2017. Grazing or not grazing: implications for ecosystem services provided by biocrusts in Mediterranean cork–oak woodlands. Land Degradation and Development, 28,1345–1353. DOI: 10.1002/ldr.2573.
12. Nunes A, Kobel M, Pinho P, Matos P, de Bello F, Correia O, Branquinho C. 2017. Which plant traits respond to aridity? A functional approach in Mediterranean drylands. Agricultural and Forest Meteorology 239:176–184.
13. Matos P, Geiser L, Hardman A, Glavich D, Pinho P, Nunes A, Soares AMVM, Branquinho C. 2017. Tracking global change using lichen diversity: towards a universal framework. Methods in Ecology and Evolution, 8:788-798. doi: 10.1111/2041-210X.12712
14. Carvalho RC, Catalá M, Branquinho C, Silva JM, Barreno E. 2016. Dehydration rate determines the degree of membrane damage and desiccation tolerance in bryophytes. Physiologia Plantarum 159: 277–289. 2017, DOI: 10.1111/ppl.12511.
15. Serrano HC, Cotrim H, Pinto MJ, Martins-Loução MA, Branquinho C. 2017. Metal hyperaccumulation patterns within Plantago phylogeny (Plantaginaceae). Plant Soil, 411: 227-241. doi:10.1007/s11104-016-3024-9

**2016**

1. Nunes A, Oliveira G, Mexia T, Valdecantos A, Zucca C, Costantini EA, Abraham E, Kyriazopoulos A, Salah A, Prasse R, Correia O, Milliken S, Kotzen B, Branquinho C. 2016. Ecological restoration across the Mediterranean Basin as viewed by practitioners. Science of the Total Environment, 566:722-732, DOI: 10.1016/j.scitotenv.2016.05.136.
2. Koch NM, Branquinho C, Matos P, Pinho P, Lucheta F, Martins SMA, Vargas VMF. 2016. The application of lichens as ecological surrogates of air pollution in the subtropics: a case study in south Brazil. Environmental Science and Pollution Research, 23: 20819–20834, doi:10.1007/s11356-016-7256-2
3. Roccotiello E, Serrano HC, Mariotti MG, Branquinho C. Online March 2016. The impact of Ni on the physiology of a Mediterranean Ni-hyperaccumulating plant. Environmental Science and Pollution Research, 23:12414–12422. DOI: 10.1007/s11356-016-6461-3.
4. Ribeiro MC, Pinho P, Branquinho C, Llop E, Pereira MJ. 2016. Geostatistical uncertainty to assess air quality using high spatial resolution lichen data: a health study in the urban area of Sines, Portugal. Science of the Total Environment, 562:740-750. DOI: 10.1016/j.scitotenv.2016.04.081.
5. Augusto S, Pinho P, Santos A, Botelho MJ, Palma-Oliveira JM, Branquinho C. 2016. Tracking spatial fate of PCDD/F emissions from a cement industry, using lichens as environmental biomonitors. Environmental Science & Technology, 50:2434-2441. DOI: 10.1021/acs.est.5b04873.
6. Costantini EAC, Branquinho, C, Nunes, A, Schwilch, G, Stavi, I, Valdecantos A, Zucca C. 2016. Soil indicators to assess the effectiveness of restoration strategies in dryland ecosystems. Solid Earth, 7:397-414. DOI: 10.5194/se-7-397-2016.
7. Pinho P, Correia O, Lecoq M, Munzi S, Vasconcelos S, Gonçalves P, Rebelo R, Antunes C, Silva P, Freitas C, Lopes N, Santos-Reis M, Branquinho C. 2016. Evaluating green infrastructure in urban environments using a multi-taxa and functional diversity approach. Environmental Research, 147:601-610. DOI: 10.1016/j.envres.2015.12.025.
8. Hunther M, Barton P, Calhoun A, Pierson J, Tulloch A, Westgate M, Beger M, Branquinho C, Caro T, Gross J, Heino J, Lane P, Longo C, Martin K, McDowell WH, Mellin C, Salo H, Lindenmayer D. 2016. Two roles for ecological surrogacy: indicator surrogates and management surrogates. Ecological Indicators, 63:121-125. DOI: 10.1016/j.ecolind.2015.11.049.

**2015**

1. LINDENMAYER, D., PIERSON, J., BARTON, P., BEGER, M., BRANQUINHO, C., CALHOUN, A., CARO, T., GREIGF, H., GROSS, J., HEINO, J., HUNTER, M., LANE, P., LONGO, C., MARTIN, K., MCDOWELL, W.H., MELLIN, C., SALO, H., TULLOCH, A., WESTGATE, M. 2015. A new framework for selecting environmental surrogates. Science of the Total Environment, 538 1029-1038.
2. CARVALHO, R.C., SILVA, A.B., BRANQUINHO, C., SILVA, J.M. 2015. Influence of dehydration rate on cell sucrose and water relations parameters in an inducible desiccation tolerant aquatic bryophyte. Environmental and Experimental Botany, 120:18-22.
3. LISTOPAD, C. M. C. S., MASTERS, R. E., DRAKE, J., WEISHAMPEL, J., BRANQUINHO, C. 2015. Structural diversity indices based on airborne LiDAR as ecological indicators for managing highly dynamic landscapes. Ecological Indicators, 57:268-279.
4. MATOS, P., PINHO, P., ARAGÓN, G., MARTÍNEZ, I., NUNES, A., SOARES, A. M. V. M., BRANQUINHO, C. 2015. Lichen traits responding to aridity. Journal of Ecology, 103:451-458.
5. BARROS, C., PINHO, P., DURÃO, R., AUGUSTO, S., MÁGUAS, C., PEREIRA, M. J., BRANQUINHO, C. 2015. Disentangling natural and anthropogenic sources of atmospheric sulfur in an industrial region using biomonitors. Environmental Science and Technology, 49:2222–2229. DOI: 10.1021/es505292t.
6. SHIBATA, H., BRANQUINHO, C., MCDOWELL, W. H., MITCHELL, M. J., MONTEITH, D. T., TANG, J., ARVOLA, L., CRUZ, C., CUSACK, D., HALADA, L., KOPACEK, J., MÁGUAS, C., SAJIDU, S., SCHUBERT, H., TOKUCHI, N., ZÁHORA, J. 2015. Consequence of altered nitrogen cycles in the coupled human and ecological system under changing climate: the need for long-term and site-based researches. Ambio, 44:178-193. DOI:10.1007/s13280-014-0545-4.
7. SERRANO, H., ANTUNES, C., PINTO, M. J., MÁGUAS, C., MARTINS-LOUÇÃO, M. A., BRANQUINHO, C. 2015. The ecological performance of metallophyte plants thriving in geochemical islands explained by the Inclusive Niche Hypothesis. Journal of Plant Ecology, 8: 41-50. Doi:10.1093/jpe/rtu007 .
8. RAMOS, A., PEREIRA, M. J., SOARES, A., ROSARIO, L., MATOS, P., NUNES, P., BRANQUINHO, C., PINHO, P. 2015. Seasonal patterns of Mediterranean evergreen woodlands (Montado) are explained by long-term precipitation. Agricultural and Forest Meteorology, 202:44–50.
9. AUGUSTO, S., PINHO, P., SANTOS, A., BOTELHO, M. J., PALMA-OLIVEIRA, J. M., BRANQUINHO, C. 2015. Declining trends of PCDD/Fs in lichens over a decade in a Mediterranean area with multiple pollution sources. Science of the Total Environment, 508:95-100.
10. ROCCOTIELLO, E., SERRANO, H. C., MARIOTTI, M. G., BRANQUINHO, C. 2015. Nickel phytoremediation potential of the Mediterranean Alyssoides utriculata (L.) Medik. Chemosphere, 119:1372-1378.

**2014**

1. Nunes A, Tápia S, Pinho P, Correia O, Branquinho C. Advantages of the point-intercept method for evaluating functional diversity in semi-arid areas? iForest - Biogeosciences and Forestry (accepted) YW86T9, ID: #1261.
2. Munzi S, Correia O, Silva P, Lopes N,Freitas C, Branquinho C, Pinho P. 2014. Lichens as ecological indicators in urban areas: beyond the effects of pollutants. Journal of Applied Ecology, JAPPL-2013-00926 (accepeted); http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12304/abstract
3. Serrano H, Antunes Cristina, Pinto MJ, Máguas C, Martins-Loução MA, Branquinho C. 2014. The ecological performance of metallophyte plants thriving in geochemical islands explained by the Inclusive Niche Hypothesis. Journal of Plant Ecology - Manuscript ID JPE-2014-0015 doi:10.1093/jpe/rtu007
4. Roccotiello E, Serrano HC, Mariotti MG, Branquinho C. 2014. Nickel phytoremediation potential of the Mediterranean Alyssoides utriculata (L.) Medik.Chemosphere (http://dx.doi.org/10.1016/j.chemosphere.2014.02.031).
5. Shibata H, Branquinho C, McDowell WH, Mitchell MJ, Monteith DT, Tang J, Arvola L, Cruz C, Cusack D, Halada L, Kopacek J, Máguas C, Sajidu S, Schubert H, Tokuchi N, Záhora J. 2014. Consequence of altered nitrogen cycles in the coupled human and ecological system under changing climate: the need for long-term and site-based researches. Ambio, 1-16. DOI 10.1007/s13280-014-0545-4.
6. Príncipe AS, Nunes A, Pinho P, Rosário L, Correia O and Branquinho C. Modeling the long-term natural regeneration potential of woodlands in semi-arid regions to guide restoration efforts. European Journal of Forest Research, 1-11. DOI 10.1007/s10342-014-0787-5
7. Cruz de Carvalho R, Silva AB, Soares R, Almeida AM, Coelho AV, Marques da Silva J, Branquinho C. 2014. Differential proteomics of dehydration and rehydration in bryophytes: evidence towards a common desiccation tolerance mechanism. Plant Cell & Environment, 37 (7), 1499-1515.
8. Nunes A, Oliveira G, Cabral MS, Branquinho C, Correia O. 2014. Beneficial effect of pine thinning in mixed plantations through changes in the understory functional composition. Ecological Engineering 70, 387-396.
9. Pinho P, Llop E, Castro-Ribeiro M, Cruz C, Soares A, Pereira MJ, Branquinho C. 2014. Tools for determining critical level of atmospheric ammonia under the influence of multiple disturbances. Environmental Pollution, 188:88-93.
10. Munzi C, Cruz C, Branquinho C, Pinho P, Leith ID, Sheppard LJ. 2014. Can ammonia tolerance amongst lichen functional groups be explained by physiological responses? Environmental Pollution, 187:206-209. DOI:10.1016/j.envpol.2014.01.009.
11. Ribeiro MC, Pinho P, Llop E, Branquinho C, Soares A, Pereira MJ. 2014. Associations between outdoor air quality and birth weight: a geostatistical sequential simulation approach in Coastal Alentejo, Portugal. Stochastic Environmental Research and Risk Assessment 28(3):527-540. DOI 10.1007/s00477-013-0770-6.

**2013**

1. Augusto S, Máguas C, Branquinho C. 2013. Guidelines for biomonitoring persistent organic pollutants (POPs), using lichens and aquatic mosses – a review. Environmental Pollution (in press). http://dx.doi.org/10.1016/j.envpol.2013.05.019
2. Augusto S, Pereira MJ, Máguas C, Branquinho C. 2013. A step towards the use of biomonitors as estimators of atmospheric PAHs for regulatory purposes. 2013. Chemosphere, 95:626-632.
3. Oliveira AR, Branquinho C, Pereira MJ, Soares A. 2013. Stochastic Simulation Model for the Spatial Characterization of Lung Cancer Mortality Risk and Study of Environmental Factors. Mathematical Geosciences. DOI 10.1007/s11004-013-9443-8
4. Munzi S., Branquinho C., Cruz C. & Loppi S. 2013. Nitrogen tolerance in the lichen Xanthoria parietina: the sensitive side of a resistant species. Functional Plant Biology, 40:237-243. DOI:10.1071/FP12127.
5. Ribeiro MC, Pinho P., Llop E., Branquinho C., Sousa AJ, Pereira MJ. 2013. Multivariate geostatistical methods for analysis of biodiversity and environmental factors at multiple spatial scales. Ecological Indicators, 29:339-347. (IF2011= 2.695)

Book chapters of the last 5 years

1. Pinho, P., Nunes, A., Ramos, A., Batista, M., Mimo, S., Cordovil, C., Branquinho, C. 2015. Mapping production of biomass by annual plants in Mediterranean evergreen woodlands. In: Mapping and assessment of forest ecosystems and their services: applications and guidance for decision making in the framework of MAES. European Comission Report, Joint Research Centre, Forest Resources and Climate Unit. EUR 27751 EN pp: 15-18; doi:10.2788/720519. ISBN 978-92-79-55331-8 https://ec.europa.eu/jrc.
2. Concostrina-Zubiri, L., Molla, I., Nunes, A., Köbel, M., Matos, P., Bianconi, N., Costantini, E., Branquinho, C. 2015. Responses and effects of Biological Soil Crusts in Drylands: the case study of Portugal, in Abreu, M. M., Fangueiro, D., Santos, E. S. (Eds.). O Solo na Investigação Científica em Portugal. ISAPress, Lisboa, pp. 25-28.
3. Branquinho, C., Matos, P., Pinho, P. 2015. Lichens as ecological indicators to track atmospheric changes: future challenges. In LINDENMAYER, D.B., PIERSON, J., BARTON, P. Indicators and Surrogates of Biodiversity and Environmental Change. Melbourne: CSIRO Publishing. London: CRC Press. ISBN: 9781486304097. P.77-87.
4. Nowak, D., Jovan, S., Branquinho, C., Augusto, S., Ribeiro, M.C., Kretsch, C.E. 2015. Chapter 4: Biodiversity, air quality and human health. In: ROMANELLI, C., COOPER, D., CAMPBELL-LENDRUM, D., MAIERO, M., KARESH, W.B., HUNTER, D., GOLDEN, C.D. Connecting Global Priorities - Biodiversity and Human Health: A State of Knowledge Review. World Health Organization and Secretariat of the Convention on Biological Diversity. ISBN: ISBN 978 92 4 150853 7, p 63-74. https://www.cbd.int/health/SOK-biodiversity-en.pdf
5. Oenema, O., Salomez, J., Branquinho, C., Budnakova, M., Cermak, P., Geupel, M., Johnes, P., Tomkins, C., Spranger, T., Erisman, J. W., Pallìere, C., Maene, L., Alonso, R., Maas, R., Magid, J., Sutton, M. A., Grinsven, H. V. 2011. Chapter 23: Developing integrated approaches to Nitrogen management. In SUTTON, M., HOWARD, C. M., ERISMAN, J. W., BILLEN, G., BLEEKER, A., GRENNFELT, P., GRINSVEN, H. V., GRIZZETTI, B. 2011. The European Nitrogen Assessment: sources, effects and policy perspectives. Nova Ior que: Cambridge University Press. ISBN-13: 9781107006126. p. 612.
6. Branquinho, C., Gonzalez, C., Clemente, A., Pinho, P., Correia, O. 2014. Chapter 25 - The impact of the rural land-use on the ecological integrity of the intermittent streams of the Mediterranean 2000 Natura network. In SUTTON, M. A., MASON, K. E., SHEPPARD, L. J., SVERDRUP, H., HAEUBER, R., HICKS, W. K. – Nitrogen Deposition, Critical Loads and Biodiversity. Holanda: Springer. ISBN 978-94-007-7938-9. p. 229-241.
7. Baron, J. S., Barber, M., Feest, A., Gilliam, F., Lu, X., Stevens, C. J., Woodin, S., Bobbink, R., Adams, M., Agboola, J., Allen, E., Bealy, B., Bobrovsky, M., Bowman, W. D., Branquinho, C., Bustamente, M., Clark, C. M., Cocking, E., Cruz, C., Davidson, E., Denmead, T., Dias, T., Diese, N., Harrison, I., Galloway, J. N., Geiser, L., Khanina, L., Manrique, E., Ochoa-Hueso, R., Ometto, J. P., Payne, R., Scheuschner, T., Sheppard, L. J., Simpson, G., Singh, Y. V., Strachan, I., Sverdrup, H., Tokuchi, N., Van Dobben, H. 2014. The effects of atmospheric N deposition on terrestrial and freshwater biodiversity. In SUTTON, M. A., MASON, K. E., SHEPPARD, L. J., SVERDRUP, H., HAEUBER, R., HICKS, W. K. Nitrogen Deposition, Critical Loads and Biodiversity. Holanda: Springer. ISBN 978-94-007-7938-9. p. 465-480.
8. Pinho, P., Martins-Loução, M. A., Máguas, C., Branquinho, C. 2014. Chapter 24 - Calibrating total nitrogen concentration in lichens with reduced nitrogen emissions at regional scale. In SUTTON, M. A., MASON, K. E., SHEPPARD, L. J., SVERDRUP, H., HAEUBER, R., HICKS, W. K. Nitrogen Deposition, Critical Loads and Biodiversity. Holanda: Springer. ISBN 978-94-007-7938-9. p. 217-227.
9. Martins-Loução, M. A., Branquinho, C., Cruz, C. 2011. Final report COST action 729: assessing and managing nitrogen fluxes in the atmosphere-biosphere system in Europe. Holanda: Wageningen Academic Publishers. ISBN 978-90-817039-1-8.

Conferences participation:

Invited talks - >90

Other talks in conferences - >160

Posters at conferences - >140

Scientific Coordination Experience

Overall, she supervised the stay of 22 PhD fellows: 2 teachers, 15 postdoctoral fellowships, 5 short-term student stays. Supervised 17 doctoral theses of which 7 have already been completed. Spervised 17 masters, of which 14 have already defended the thesis. Guided 32 postgraduate students and 24 final degree papers (before Bologna). Recently, it has attracted foreign students at both post-doctoral and short-term stays, with 12 non-doctoral students and 5 doctoral students under several international collaborations.

Post-doc

junho 2016 – present – Zulema Varela.

maio 2016–Setembro 2016 — Laura Aguillaume.

janeiro 2016–presente — Helena Serrano.

setembro 2015–presente — Ana Catarina Cardoso da Luz

setembro 2015–dezembro 2015 — Ana Catarina Afonso.

March 2014 - February 2016 - Laura Concostrina (Spanish).

January 2014 – Abril 2016 - Ricardo Cruz de Carvalho.

Agosto 2012 - 2013 November - Sofia Augusto.

May 2012 - April 2014 - Silvana Munzi.

January 2012-2015 - Claudia Listopad.

Dez 2011-April 2012 - Silvana Munzi.

April 2011 to Nov 2011 – Silvana Munzi.

Mar 2011–September 2011 - Pedro Pinho.

Jan 2009- April 2010 - Esteve Llop.

Finished PhD Thesis

1. 2011 – 2016 – Paula Matos, Plano doutoral em Biologia e Ecologia das Alterações Globais da Universidade de Aveiro e da Universidade de Lisboa (SFRH / BD / 51419 / 2011) Establishing early‐warning ecological indicators of climate change based on lichen functional diversity. Orientadora: Cristina Branquinho, Co-orientador: Amadeu Soares, da Universidade de Aveiro.
2. Janeiro 2008 – novembro 2015 – Helena Cristina de Matos Serras Cadete Serrano, Doutoramento em Biologia – Ecologia da Faculdade de Ciências da Universidade de Lisboa, Ecology of a rare and endemic Plantago species (SFRH/BD/38289/2007). Orientadora: Cristina Branquinho, Co-orientadora: Maria Amélia Martins-Loução.
3. December 2013 - Ricardo Filipe Duarte da Cruz de Carvalho, PhD in Physiology and Biochemistry, at Faculty of Sciences University of Lisbon “Coping with Extreme Dehydration: A Physiological, Biochemical and Molecular Study on the Aquatic Bryophyte Fontinalis antipyretica” (SFRH/BD/31424/2006). Co-supervised with Prof. Dr. Jorge Marques da Silva.
4. Julho 2012 - Sofia Augusto, PhD in Ecology at Faculty of Sciences University of Lisbon, ”Developing a technology for biomonitoring the atmospheric pollution of toxic organic compounds and evaluating its impact on ecosystem and on the public health” (SFRH / BD / 35308 / 2007). Co-supervised with Prof. Dr. Cristina Máguas.
5. May 2011 – Carla Sofia Dávila Soares Gonzalez, PhD in Environmental Sciences at Science and Technology Faculty of New University of Lisbon “Interpreting change in Human-Nature and long term social relationships” SFRH/BD/22096/2005. Co-supervised with Prof. Dr. Rui Santos UNL.
6. December 2010 – Pedro António Pinho Lopes, PhD in Applied Ecology in Faculty of Sciences University of Lisbon “Modeling lichen communities: ecologic key factors in a changing environment” SFRH/BD/17880/2004. Co-supervised with Prof. Dr. Cristina Máguas.
7. April 2010 - Silvana Munzi, European PhD in Science and Technologies Applied to the Environment. University of Siena. Faculty of Maths, Physics and Natural Sciences. “Sensitive organisms (lichens) as monitors of biological effects of nitrogen pollution”. Supervisor Stefano Loppi, and co-supervisor Cristina Branquinho. PhD Erasmus Student in Portugal for 6 months.

**PhD Students**

1. 2016 – presente – Clara Wendt, Plano Doutoral BIODIV - Plano Doutoral em Biodiversidade, Genética e Evolução (BIODIV), na área das Ciências Biológicas da Universidade de Lisboa e Universidade do Porto.
2. 2015 – presente - Adriana Príncipe, Plano Doutoral BIODIV - Plano Doutoral em Biodiversidade, Genética e Evolução (BIODIV), na área das Ciências Biológicas da Universidade de Lisboa e Universidade do Porto, “Modeling the importance of microclimatic in the delivery of ecosystem services in drylands”. Orientadora: Cristina Branquinho.
3. 2015 – presente - Ana Cláudia Pereira de Oliveira, Plano Doutoral em Biologia e Ecologia das Alterações Globais da Universidade de Aveiro e da Universidade de Lisboa, Indicadores ecológicos como ferramentas para monitorar os efeitos das mudanças climáticas nos ecossistemas semiáridos, financiado por CNPq, Doutorado no Exterior-GDE (206444/2014-1).
4. 2014 – presente - Natália Mossmann Koch, Doutoranda do Programa de Pós-graduação em Ecologia, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brasil com a tese “Efeitos da paisagem na estrutura funcional das comunidades de liquens: como podem alterar os resultados do biomonitoramento em áreas urbano-industriais”. Projeto de doutorado sandwiche no exterior (PDSE – CAPES). Orientador: Vera Ma. Ferrão Vargas, co-orientadores: Suzana Ma. de Azevedo Martins e Cristina Branquinho.
5. 2011 – presente – Alice Nunes, Plano doutoral em Biologia e Ecologia das Alterações Globais da Universidade de Aveiro e da Universidade de Lisboa (SFRH/BD/51407/2011), Plant functional response to desertification and land degradation – contribution to restoration strategies. Orientadora: Cristina Branquinho, Co-orientadores: Otília Correia e Francesco de Bello da Universidade de Praga, República Checa.

**Master and undergraduate Students**

Supervised 15 master students 12 of each finished.

Supervised 18 post-graduation and 21 undergraduate students.

**Scientific representations**

2013 – Working Group 1 member of the Cost action FP1204 GreenInUrbs - “Green infrastructures approach: linking environmental with social aspects in studying and managing urban forests. Present in the meeting of Sofia, Bulgaria 2-3 October 2013.

2013 - present – Cristina Branquinho is a National Deputy of IUFRO Division 8 concerning Forest Health under the sub-task 7.01.00 – Impacts of air pollution and climate change on forest ecosystems – Multiple Stressors on Ecosystems. This Division includes study of forest ecosystems; site research and site classification; forest hydrology (including water quality); natural disasters and mitigation measures; forest fire prevention and control; wildlife and its habitats; biodiversity; forests and climate. IUFRO is "the" global network for forest science cooperation. It unites more than 15,000 scientists in almost 700 Member Organizations in over 110 countries, and is a member of ICSU. Scientists cooperate in IUFRO on a voluntary basis. IUFRO is open to all individuals and organizations dedicated to forest and forest products research and related disciplines. It is a non-profit, non-governmental and non-discriminatory organization with a long tradition dating back to 1892.

2012-2016 – Leader of the working group 3 “Traditional and Innovative Systems: Plants, Ecology and Microclimate Manipulation for Enhanced Vegetation Establishment Think-Tank” of the Cost action ES1104, ”Arid Lands Restoration and Combat of Desertification: Setting Up a Drylands and Desert Restoration Hub”.

2012-2016 – Member of the Steering committee of the Cost action ES1104, ”Arid Lands Restoration and Combat of Desertification: Setting Up a Drylands and Desert Restoration Hub”.

2012-2016 – National representative of the Cost action ES1104, ”Arid Lands Restoration and Combat of Desertification: Setting Up a Drylands and Desert Restoration Hub”.

2011-2014 - National representative of the Cost action FP0903: “Climate Change and Forest Mitigation and Adaptation in a Polluted Environment (MAFor)”.

2011-2012 - Representative of the Faculty of sciences of the University of Lisbon in the R&D Agrofood ITECH Executive Commission: presentation of innovative and technological projects with potential commercial value, in agro, food and forest areas.

2010 - .......Member of the National Commission to Combat Desertification and Land Degradation.

2011 - .......Member of the National Commission of Science and Technology to Combat Desertification and Land Degradation.

2010 – Selected as an expert of the Euro-Mediterranean University (EMUNI) for evaluating and developing projects.

2010 – Represented Portugal as a national expert on the Workshop on the review and revision of empirical critical loads and dose-response relationships, under the UNECE Convention on Lon-Range Trans-boundary Air Pollution at the Noordwijkerhout, The Netherlands 23-25 June 2010.

2010 - Represented Portugal as a national expert on the Task Force on Reactive Nitrogen (TFRN) under the Working Group on Strategies and Review of the UNECE Convention on Long-range Trans-boundary Air Pollution on the meeting in Prague Czech Republic, 12-13th May, 2010. The Task Force on Reactive Nitrogen has the long-term goal of developing technical and scientific information, and options which can be used for strategy development across the UNECE to encourage coordination of air pollution policies on nitrogen in the context of the nitrogen cycle and which may be used by other bodies outside the Convention in consideration of other control measures. The meeting had the objective of the implementation of the Convention (ECE/EB.AIR/96/Add.2) adopted by the Executive Body at its twenty-sixth session in December 2008 and intended to give options for revising the Gothenburg protocol.

2009-2011 - Portuguese representation at the European Nitrogen Assessment (ENA). ENA represented a process of scientific and policy synthesis that provided a major review of the role of excess nitrogen on environmental problems. Based on analysis of the problems and interactions, the review explored the potential to establish integrated solutions and better communicate the implications to society. The ENA report will have 5 major Sections, with 26 chapters. Each chapter will be written by leading international experts, comprising of Lead and Contributing Authors.

2008-2013 - Elected Member of the National Committee Global Change, IGBP, International Geosphere Biosphere Program Portugal, Academy of Sciences.

2008-2013 - National representative at the European Committee for Standardisation (CEN) and AFNOR Normalisation for: biomonitoring methods with mosses and lichens. CEN/TC 264/WG 31: 1) Biomonitoring of air - determination of biological index of epiphytic lichens; 2) Biomonitoring of air quality – procedure for passive biomonitoring of air quality using in situ mosses: from the collection to the preparation of samplings.

2007-2011 - Integrates the Scientific Commission of the project “Integrated Management of Environment and Health” coordinated by the regional authority: Coordinator Commission of Regional Development of the Alentejo Region (CCDR-A).

2006 – Invited as specialist of the working group 1 “Ammonia critical thresholds” at the United Nations Economic Commission for Europe (UNECE) Expert workshop on ammonia. Atmospheric ammonia: detecting emissions changes and environmental impacts. Leith, Edinburgh 4-6 December 2006.

2006-2011 – National Representative (substitute), of the Cost Action 729: “Assessing and managing nitrogen fluxes in the atmosphere-biosphere system in Europe”. (in July 2006 Gdansk, Poland and in December 2006 Edinburgh, UK)

2004-2008 – Invited to be a Member of the Scientific and Technical Council of the Environmental Agency of the Municipality of Oeiras, Portugal.