

DR. EROLA FENOLLOSA

Personal information

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Education

- 2019-2023 **MSc Data Science** at the Open University of Catalunya (Spain).
- 2016-2020 **PhD Excellent Cum Laude** in *Ecology, Environmental Sciences and Plant Physiology* with Extraordinary PhD Degree Prize at the University of Barcelona (Spain), Faculty of Biology. Financed by a 4-year PhD Fellowship from the Spanish Government (FPU15/06666).
- 2018 **Post Graduate Degree** in *Data Science, Applications in Biology and in Medicine with Python and R* at the University of Barcelona (Spain).
- 2015-2016 **MSc Environmental Agrobiology** with Extraordinary Master's Degree Prize by the University of Barcelona, at the University of Barcelona (Spain), Faculty of Biology
- 2011-2015 **BSc Environmental Sciences** minor in *Natural Park management*, with Extraordinary Bachelor's Degree Prize by the University of Barcelona and End of Degree National Prize by the Spanish Government, at the University of Barcelona (Spain), Faculty of Biology.

Complementary Formation

- Advanced Training Short NERC Course in *Staged-based demographic models in Ecology, Evolution and Conservation Biology* at the University of Oxford, United Kingdom (2019).
- Advanced University Course in *Diversity and Ecology of High Mountain Vegetation* at the University of Barcelona, Spain (2018).

Employment and fellowships

- **Postdoctoral Researcher Margarita Salas:** Competitive postdoctoral fellowship from the Spanish government to perform an internship to Oxford University and University of Barcelona under the supervision of Dr. Roberto Salguero-Gomez and Prof. Sergi Munné-Bosch. From 6/6/2022 to 5/6/2024 to develop the project "*Unravelling the mechanisms behind invasive species expansion: what role does stress tolerance play?*"
- **Postdoctoral researcher and divulgator:** Department of Evolutionary Biology, Ecology and Environmental Sciences, University of Barcelona, associated with the project "*Act on time: potentially invasive species in Barcelona*" from Dr. Sergi Munné-Bosch. From 23/11/2021 to 31/12/2021.
- **Postdoctoral researcher:** Department of Evolutionary Biology, Ecology and Environmental Sciences, University of Barcelona, associated with the project "*Antioxidants, senescence and stress in plants*" from Dr. Sergi Munné-Bosch. From 23/04/2021 to 22/11/2021

- **Laboratory technician / Postdoctoral researcher associated to research project:** Fundació Bosch i Gimpera (FBG) / University of Barcelona associated to the financed project: “*Development of RIPLESS, a commercial product to prevent the deterioration of fruit after the harvest*” from Dr. Sergi Munné-Bosch and Dra. Paula Muñoz. From 15/09/2020 to 22/04/2021.
- **Predoctoral researcher:** Financed with a competitive FPU fellowship from the Spanish Government Department of Evolutionary Biology, Ecology and Environmental Sciences, University of Barcelona, with the project “*Stress, reproduction and senescence for invasive success: the study-case of *Carpobrotus edulis**”. From 21/09/2016 to 9/9/2020.
- **Laboratory technician:** Financed by the research project “*Is plant organization the fountain of eternal youth*” from Dr. Roberto Salguero-Gómez at the University of Barcelona. From 01/01/2016 to 31/03/2016.
- **Undergraduate department researcher:** Financed by a 1-year competitive fellowship from the Spanish Government. From 1/7/2014 to 30/06/2015 to study ecophysiology of invasive plants at the Plant Physiology department from the University of Barcelona.
- **Undergraduate research assistant:** Financed by an Erasmus fellowship at the Eberhard Karls Universität Tübingen in Germany, under the supervision of Dr. Katja Tielbörger and Dr. Mirka Macel for the evaluation of the ecophysiological differentiation between the native and invasive ranges of *Lythrum salicaria*, From 1/7/2014 to 30/9/2014.
- **Undergraduate research collaborator:** At the Department of Ecology in the University of Girona (Spain) for data analysis in a project evaluating the role of water temperature into the development of biofilms and their activity, under the direction of Dr. Anna Romani. From 1/7/2012 to 30/7/2012.

Publications

*= EF is corresponding author

(In Preparation) ***Fenollosa, E.**, Pintó-Marijuan, M., Carvajal, C., Capellades, J., Munne-Bosch, S. Differentiate or mimic others to succeed? Species stress response dissimilarity as a key for invasive success of *Aptenia cordifolia*.

(In Preparation) ***Fenollosa E.**, Arqués-Viver I., Munné-Bosch S. Novel index to estimate red pigmentation in an invasive species leaves using RGB images: remote sensing applications for invasive species management.

Munné-Bosch S., Puig S., **Fenollosa E.**, Casadesús A., Fernández, E. (2022). Vitamin E protects from lipid peroxidation during winter stress in the seagrass *Cymodocea nodosa*. Accepted in *Planta*.

***Fenollosa E.**, Jené L., Munné-Bosch S. (2021). Geographic patterns of seed trait variation in an invasive species: how much can close populations differ? *Oecologia*, 196(3) 747-761.

Campoy J., Lema M., **Fenollosa E.**, Munné-Bosch S., Retuerto R. (2021) Functional responses to climate change may increase invasive potential of *Carpobrotus edulis*. *American Journal of Botany*. doi: 10.1002/ajb2.1745.

Tomasek O., Cohen AA., **Fenollosa E.**, Mencuccini M., Munné-Bosch S., Pelletier, F. (2021) Biochemical and Physiological Data Collection. Demographic Methods across the Tree of Life. Oxford University Press - R. Salguero-Gomez; M. Gamelon (eds).

***Fenollosa E.**, Munné-Bosch, S. (2020). Reproductive load modulates drought stress response but does not compromise recovery in an invasive plant during the Mediterranean summer. *Plant Physiology and Biochemistry*, 155 221-230.

Baccari S., Elloumi O., Chaari-Rkhis A., **Fenollosa E.**, Morales M., Drira N., Ben Abdallah F., FKI L., Munné-Bosch, S (2020). Linking leaf water potential, photosynthesis and chlorophyll loss with mechanisms of photo- and antioxidant protection in juvenile olive trees subjected to severe drought. *Frontiers in plant science*, 11.

***Fenollosa E.**, Jené L., Munné-Bosch S. (2020) A rapid and sensitive method to assess seed longevity through accelerated aging in an invasive plant species. *Plant Methods*, 6(64).

Ajmi A., Larbi A., Morales M., **Fenollosa E.**, Chaari A., Munné-Bosch S. (2020). Foliar paclobutrazol application suppresses olive tree growth while promoting fruit set. *Journal of Plant Growth Regulation*, 39 1638–1646.

Langensiepen M., Jansen M.A.K., Wingler A., Demmig-Adams B., Adams W.W., Dodd I.C., Fotopoulos V., Snowdon R., **Fenollosa E.**, de Tullio M.C., Buck-Sorlin G., Munné-Bosch S. (2020). Linking integrative plant physiology with agronomy to sustain future plant production. *Environmental and Experimental Botany*, 178, 104125.

***Fenollosa E.**, Munné-Bosch S. (2019). Increased chilling tolerance of the invasive species *Carpobrotus edulis* may explain its expansion across new territories. *Conservation Physiology*, 7(1), coz075.

Fenollosa E., Munné-Bosch, S. (2019). Physiological plasticity of plants facing climate change. *In Annual Plant Reviews online*, J.A. Roberts (Ed.), 2(3).

Pérez-Llorca M., **Fenollosa E.**, Salguero-Gómez R., Munné-Bosch S. (2018). What is the minimal optimal sample size for plant ecophysiological studies? *Plant Physiology*, 173(3) 953-955.

Fenollosa E., Gámez A., Munné-Bosch S. (2018). Plasticity in the hormonal response to cold stress in the invasive plant *Carpobrotus edulis*. *Journal of Plant Physiology*, 231 202-209.

Fenollosa E., Munné-Bosch S. (2018). Photoprotection and photo-oxidative stress markers as useful tools to unravel plant invasion success. In Sánchez-Moreiras and Reigosa-Roger (Eds.), *Advances in Plant Ecophysiology Techniques* (175-202). Springer.

Fenollosa E., Munné-Bosch S. Pintó-Marijuan M. (2017). Contrasting phenotypic plasticity in the photoprotective strategies of the invasive species *Carpobrotus edulis* and the coexisting native species *Crithmum maritimum*. *Physiologia Plantarum*, 160(2), 185 – 200.

Fenollosa E., Roach D.A., Munné-Bosch S. (2016). Death and plasticity in clones influence invasion success. *Trends In Plant Science*, 21(7) 551 – 553.

Presentations and workshops

Fenollosa E., Munné-Bosch S. (2019). *The role of the increased physiological tolerance on the invasion success of Carpoprotus edulis*. 6th Biodiversity Research Institute (IrBIO): Biodiversity loss and ecological crisis. Barcelona (Spain) 10 December 2019. Poster presented by Erola Fenollosa.

Arqués-Viver I., **Fenollosa E.**, Munné-Bosch S. (2019). *A novel approach to quantifying betalains as a stress and senescence marker in the invasive plant, Carpoprotus edulis*. International Conference on Integrative Plant Physiology, Sitges (Spain), 27-29 October. Poster presented by Ignasi Arqués-Viver.

Fenollosa E., Munné-Bosch S. (2019). *Physiological and ecological niche differentiation between invasive and native *Carpobrotus* sp.: the key of its invasion in Europe?* Ecology and management of alien plant invasions (EMAPI). Syntheses, challenges and new opportunities, Prague (Czech republic), 9-13 September 2019. Poster presented by Erola Fenollosa.

Fenollosa E., Munné-Bosch, S. (2018). *Una mayor tolerancia a las bajas temperaturas explicaría el desplazamiento del nicho invasor de *Carpobrotus* edulis*. VIII Coloquio de primavera sobre Ecofisiología forestal, Madrid (Spain) 25-27 April 2018. Oral communication by Erola Fenollosa.

Fenollosa E., Munné-Bosch, S. (2017). *High-scale photoprotective markers to assess invasive success*. Ecology and management of alien plant invasions (EMAPI), Syntheses, challenges and new opportunities, Lisboa (Portugal), 4-9 September 2017. Poster presented by Erola Fenollosa.

Fenollosa E., Munné-Bosch, S. (2017). *Photo-oxidative stress markers as useful tools to unravel plant invasion success*. I Workshop Photosynthesis, Theory and practice on the use of Gas Exchange equipments. Instituto de Agrobiotecnología (IdAB) in Pamplona, (Spain), 9-11 May 2017. Oral communication by Erola Fenollosa.

Simancas B., Morales M., Cela J., Cotado A., **Fenollosa E.**, Tijero V., Munné-Bosch S. and Salguero-Gómez R. (2016). *On the biochemical and demographic search of the fountain of eternal youth in a perennial plant species*. Annual Meeting 2016 British Ecological Society, Liverpool (UK) 11-14 December 2016. Poster presented by Barbara Simancas in the session: P - Global Change Ecology and Environmental Physiology.

Simancas B., Salguero-Gómez R., Morales M., Cela J., Cotado A., Ruiz D., **Fenollosa E.** and Munné-Bosch S. (2016). *Do perennial plants senesce? A case study in the Mediterranean shrub, *Cistus albidus**. VI Colloquium of Forestry ecophysiology, Biar (Alicante, Spain) 27-29 April 2016. Short communication by Barbara Simancas.

Assistance at the workshop: Retos na xestión da planta invasora *Carpobrotus edulis*, celebrated in the University of Vigo (Spain) organized by the group of vegetal ecophysiology in the Department of Bioloxía Vexetal e Ciencias do Solo. 3 March 2015.

Pintó-Marijuan M., Morales M., **Fenollosa E.** and Munné-Bosch S. *A comparative study between the photoprotection strategies of an alien invasive species (*Cortaderia selloana*) with a native protected Mediterranean palm (*Chamaerops humilis*)*. 4th International Symposium on Weeds and Invasive Plants (Agricultural Weeds and Plant Invaders). 18-23 May 2014. Sup Agro, Montpellier (France). Oral communication by Marta Pintó-Marijuan.

Research projects

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| 2022-2025 | “Landscape GENomics and Niche dynamics of hybrid Invasive Alien plants (GENNIAlien)”
PI: Sònia Garcia Giménez and Jordi López Pujol (Botanical Institute of Barcelona)
Ministry of Economy and Competitiveness, Spanish government |
| 2021-2025 | “Antioxidants, senescence and plant stress”
PI: Sergi Munné-Bosch (University of Barcelona)
ICREA Academy award from the Catalan government. |

- 2021 “Act on time: susceptible invasive species in Barcelona.”
PI: Sergi Munné-Bosch (University of Barcelona)
Barcelona city council
- 2019-2020 “Development of RIPLESS, a commercial product to prevent the deterioration of fruit after the harvest”
PI: Paula Muñoz and Sergi Munné-Bosch (University of Barcelona)
European Regional Development Fund
- 2018-2020 “Plant physiology linked with the environment”
PI: Sergi Munné-Bosch (University of Barcelona)
Generalitat de Catalunya
- 2016-2020 “Stress, reproduction and senescence in invasive success: the case study of *Carpobrotus edulis*”
PI: Erola Fenollosa and Sergi Munné-Bosch (University of Barcelona)
Ministry of Economy and Competitiveness, Spanish government
- 2016-2019 “Is oxidative stress a good mortality marker in perennial plants?”
PI: Sergi Munné-Bosch (University of Barcelona)
Ministry of Economy and Competitiveness, Spanish government
- 2013-2016 “Is plant organization the fountain of eternal youth?”
PI: Roberto Salguero-Gómez (University of Queensland)
Australian Research Council

Teaching experience

Laboratory teaching assistant on the following subjects:

Subject	Hours	Degree	Academic year	Center
Metabolism control and vegetal development	16h	4 th year Biotechnology	2017/2018	University of Barcelona
Plant physiology and biochemistry	18h	3 rd year Biotechnology	2017/2018	University of Barcelona
Plant physiology and biochemistry	20h	3 rd year Biotechnology	2018/2019	University of Barcelona
Plant physiology	3h	3 rd year Biochemistry	2018/2019	University of Barcelona
Plant physiology and biochemistry	36h	3 rd year Biotechnology	2019/2020	University of Barcelona
Plant physiology and biochemistry	48h	3 rd year Biotechnology	2021/2022	University of Barcelona

Other teaching experience: Review and reinforcement classes for students in elementary and secondary school (2010-2015), and also for university students through the Consortium for Advanced Studies in Barcelona (CASB) in the following subjects: Population and Community ecology, Biodiversity conservation, Environmental economy and Data analysis (2014-2015).

Mentoring

- Bachelor's degree thesis in Environmental Sciences of Clàudia Carvajal: *Differentiate or mimic others to succeed? Species stress response dissimilarity at the community level as a key for invasive success* (2020/2021). Qualification: Pending.
- Bachelor's degree thesis in Biology of Júlia Capellades: *Study of the impact of *Aptenia cordifolia* in l'Empordà* (2019/2020). Qualification: 9.1
- Bachelor's degree thesis in Biology of Andrea Ravenna: *Carpobrotus edulis has an increased fecundity at the invasive range: a comparison of the invisible legacy between the invasive and native ranges* (2019/2020). Qualification: 9.4.
- Bachelor's degree thesis in Biotechnology of Ignasi Arqués: *Ecophysiological study on the betalain pigments of the *Carpobrotus edulis* leaf*. (2019/2020). Qualification: 9.3
- Bachelor's degree thesis in Biotechnology of Laia Jené: *The role of longevity in the seeds of the invader *Carpobrotus edulis*, implications for its management* (2018/2019). Qualification: 8.9.
- Bachelor's degree thesis in Biology of Anna Gámez: *Evaluation of the cold stress response of the invasive and native genotypes of *Carpobrotus edulis** (2016/2017). Qualification: 9.3.

Outreach

- A total of 20 participative workshops "*Invasive species in Barcelona*" with students from the following schools and high schools (from 7 to 16 years old): Escola Sant Gregori, INS Pau Claris, INS Doctor Puigvert, Escola Diputació, Institut Anna Gironella, Peter Pan English School, and FEDAC Horta, within the project "Act on time: potentially invasive species in Barcelona" during November-December 2021. See divulgation videos here: <https://www.youtube.com/channel/UCWqPHUAd-S1ov9pkDZcrU0w>
- Brief introduction to Data Analysis with R: Overcome the fear: What is R? Firsts dialogues in the R language. Workshop for the ANTIOX Research group (24/11/2020).
- YouTube Channel "Environmental Data Scientist" with Data management and analysis for Undergraduate Students from the Faculty of Biology: <https://www.youtube.com/channel/UCurKODgPMmNL5WF8Mf3k3sg> (since 2020).
- Participation at the "Plant-water relations workshop" to 7/8 year old children organised by "Casal Infantil Vil·la Urania" in Barcelona (2018).
- Participation at the Science Party organized by the University of Barcelona with the development of different activities around Plant Physiology with the workshops: "Water and terrestrial plants" and "What is a seed and how do they disperse?", representing the Faculty of Biology (2017, 2018 and 2019).
- Participation at the Open-door day at the Faculty of Biology from the University of Barcelona, with the development of different activities around Plant Physiology (2017).

Awards

- Extraordinary PhD's Degree Prize by the University of Barcelona in Ecology, Environmental Sciences and Plant Physiology (2022).
- Seal of Excellence at the program Horizon Europe Marie Skłodowska-Curie Actions call HORIZON-MSCA-2021-PF-01-01-MSCA Postdoctoral Fellowships (2021).

- End of Degree National Prize by the Spanish Government in BSc Environmental Sciences (2018).
- First award at the competition “Three Minute Talk” (3MTBEECA17) organized by the Evolutionary Biology, Ecology and Environmental Sciences Department at the University of Barcelona (2017).
- Extraordinary Master’s Degree Prize by the University of Barcelona in MSc Environmental Agrobiology (2017).
- Extraordinary Bachelor’s Degree Prize by the University of Barcelona in BSc Environmental Sciences (2016).

Memberships

- Member of the *Biodiversity Research Institute* (IRBio) since 2019.
- Member of *Asociación Española de Ecología Terrestre* (AEET) since 2017.
- Member of the *American Society of Plant Biologists* (ASPB) 2016-2018.

Peer-review referee

Review Editor for Technical Advances in Plant Science in *Frontiers in Plant Sciences* (since 2020) and occasional peer-review referee in *Acta Oecologica* (since 2022), *Neobiota* (since 2021), *Biological Invasions* (since 2019), *Environmental and Experimental Botany* (since 2017) and *Lazaroa* (since 2017).

Languages

Mother tongue: Catalan and Spanish

English:

Level	Centre	Date
B2 Conversation Class	UB, Barcelona	21/10/2013 – 20/12/2013
B2.2	EIM, Barcelona	14/07/2015
C1.1	EIM, Barcelona	01/06/2016

German:

Level	Centre	Date
A1.1	EIM, Barcelona	14/06/2012
A1.2	EIM, Barcelona	27/07/2012
A2.1	PSP Sprachpunkt (Private German Language School), Berlin	28/07/2013
A2.2	EIM, Barcelona	18/07/2014
A2 Conversation Class	UB, Barcelona	28/10/2015 – 19/12/2015
A2 Conversation Class	UB, Barcelona	21/4/2020 – 21/07/20

Computer skills and competences

Good ability with general PC skills. Advanced user in R, Python, SPSS, Sigmaplot, Statgraphics and Microsoft Office. Experience in Java, C++, Bash and SQL programming. Notions of ArcGis, Visual Basic 2010, OBS Studio, VideoPad and WordPress management.

Other titles

Driving license: B1 (2013).

“Leisure and Free-time Instructor” by Escola Traç (2012). This title is required in Spain to work as childcare worker organizing activities and educate values to children.