

XAVIER BENITO

National Socio-Environmental Synthesis Center
(SESYNC), University of Maryland
1 Park Place, Suite 300, Annapolis 21401,
Maryland, USA

xbenitogranell@sesync.org

www.xavierbenito.com

[OrcidID](#) | [Google Scholar](#) | [GitHub](#)

EDUCATION

- 2016 PhD Aquatic Ecology. Aquatic Ecosystems Program (IRTA, Spain) and Centre for Climate Change (University Rovira & Virgili, Spain) Thesis: “Benthic diatoms and foraminifera as indicators of coastal wetland habitats: application to palaeoenvironmental reconstruction of a Mediterranean Delta”. Excellent cum laude, International doctorate mention
- 2012 M.S. Physical Geography (University Rovira & Virgili, Spain) Thesis: “Predictive modelling of wetland habitats in a Mediterranean delta with a GIS approach”
- 2011 B.S. Biology, University of Girona (Spain)
- 2007 B.S. Environmental Sciences, University of Girona (Spain)

PROFESSIONAL EMPLOYMENT

- 2018- Postdoctoral fellow. National Socio-Environmental Synthesis Center (SESYNC), University of Maryland (USA)
- 2016-18 Postdoctoral research associate. Department of Earth and Atmospheric Sciences, University of Nebraska-Lincoln (USA)
- 2011-16 PhD student. Aquatic Ecosystems Program (IRTA, Spain) and Centre for Climate Change (University Rovira & Virgili, Spain)

RESEARCH EXPERIENCE

- 2019 Guest lecturer, Paleocology, University of California, Berkeley
- 2019 Participant investigator. *A global analysis of oligotrophication trends in rivers and their ecological consequences – RIVERSHIFT*. Supported by SESYNC (Socio-Environmental Synthesis Center) under funding received by the National Science Foundation DBI-1052875. PI: Carles Ibáñez (IRTA)
- 2016 Postdoctoral researcher. *The Role of Mountains, Landscapes, and Climate in the Distribution and Generation of Biodiversity in the Amazon/Andean Forest*. Funded by National Science Foundation (NSF EAR-1338694). PIs: Prof. Paul A Baker, Prof. Sherilyn C Fritz
- 2014-2015 Research assistant in ecological modelling. *‘RISES-AM- Responses to coastal climate change: Innovative Strategies for high End Scenarios – Adaptation and Mitigation’*. Funded by European Commission (Contract FP7-ENV-2013-two-stage-603396). PI: Dr. Carles Ibáñez (IRTA)
- 2012-2015 Research assistant in diatom analysis. *‘Habitat restoration and management in two coastal lagoons of the Ebro Delta’*. Funded by European Commission (LIFE 09 NAT/ES/000520). PI: Dr. Carles Ibáñez (IRTA)

PUBLICATIONS

Peer-reviewed publications (ordered by inverse chronology)

13. **Benito, X.**, Feitl, M., Fritz, S.C., Mosquera, P.V., Schneider, T., Hampel, H., Quevedo, L. & Steinitz-Kannan, M. Identifying temporal and spatial patterns of diatom community change in the tropical Andes over the last c. 150 years. *Journal of Biogeography*. DOI: 10.1111/jbi.13561
12. Ibáñez, C., Alcaraz, C., Caiola, N., Prado, P., Trobajo, R., **Benito, X.**, Reyes, E., Day., J.W. & Syvitski, J.P.M. Basin-scale land use impacts on world deltas: human vs natural forcings. 2019. *Global Planetary Change* 173: 24-32.
11. Prado, P., Alcaraz, C., **Benito, X.**, Caiola, N. & Ibáñez, C. Pristine vs. human-altered Mediterranean deltaic wetlands display contrasting resilience to RSLR. 2019. *Science of the Total Environment* 655: 1376-1386
10. Fritz, S.C., **Benito, X.** & Steinitz-Kannan, M. 2019. Long-term and regional perspectives on recent change in lacustrine diatom communities in the tropical Andes. *Journal of Paleolimnology* 61: 251-262
9. **Benito, X.**, Fritz, S.C., Steinitz-Kannan, M. Velez, M.I. & McGlue, M.M. 2018. Lake regionalization and diatom metacommunity structuring in tropical South America. *Ecology and Evolution* 8(6): 7865-7878.
8. **Benito, X.**, Fritz, S.C., Steinitz-Kannan, M., Tapia, P.M., Kelly, M.A & Lowell, T.V. 2018. Geo-climatic factors drive diatom community responses in tropical South American freshwaters. *Journal of Ecology* 106: 1660–1672.
7. Velez, M.I., Jaramillo, C., Salazar-Rios, F., **Benito, X.**, Fritz, S.C., Tapia, P.M., Lubiniecki, D., Kar, N. & Escobar, J. 2018. Aquatic ecosystems in a newly formed ecospace: Early Pliocene lakes in the Central Andean Altiplano. *Palaeoecology, Palaeoclimatology, Palaeogeography* 490: 218–226.
6. Carballeira, R., Trobajo, R., Leira, M., **Benito, X.**, Sato, S. & Mann, D.G. 2017. A combined morphological and molecular approach to *Nitzschia varelae* sp. nov. with discussion of symmetry in Bacillariaceae. *European Journal of Phycology* 52: 342–359
5. **Benito, X.**, Cearreta, A., Trobajo, R. & Ibáñez, C. 2016. Benthic foraminifera as indicators of habitat in a Mediterranean delta: implications for ecological and palaeoenvironmental studies. *Estuarine, Coastal and Shelf Science* 180: 97–113
4. Cearreta, A., **Benito, X.**, Trobajo, R., Ibáñez, C. & Giosan, L. 2016. Holocene palaeoenvironmental evolution of the Ebro Delta (Western Mediterranean Sea): an early formation based on the benthic foraminiferal record. *The Holocene* 26(9): 1438–1456
3. **Benito, X.**, Cearreta, A., Trobajo, R., Ibáñez, C. & Brunet, M. 2015. Benthic foraminifera as indicators of habitat change in anthropogenically impacted coastal wetlands of the Ebro Delta (NE Iberian Peninsula). *Marine Pollution Bulletin* 101: 163–173.
2. **Benito, X.**, Trobajo, R. & Ibáñez, C. 2015. Benthic diatoms in a Mediterranean delta: ecological indicators and a conductivity transfer function for paleoenvironmental studies. *Journal of Paleolimnology* 54: 171-188
1. **Benito, X.**, Trobajo, R. & Ibáñez, C. 2014. Modelling habitat distribution of Mediterranean coastal wetlands: the Ebro Delta as case study. *Wetlands* 34: 775–785

Book chapters

15. **Benito, X.**, Fritz, S.C. Diatom diversity and biodiversity across tropical South America (*in press*). In: Rull, V. & Carnaval, A.C. (Eds), Neotropical Diversification. Springer
14. **Benito, X.** Benthic foraminifera and diatoms as ecological indicators (*in press*) In: Cristobal, G. Blanco, S. Bueno, G. (Eds). Modern Trends in Diatom Identification: Fundamentals and Applications. Springer

Other publications and products (databases, reports, non-peer reviewed articles)

- Benito, X.**, Fritz, S.C., Feitl, M., Steinitz-Kannan, M., Tapia, P.M., Velez, M.I., McGlue, M.M. and others. Tropical South American Diatom Database. Geo-referenced inventory of sites. [Github: <https://github.com/xbenitogranell/diatoms-biogeography-southamerica>]
- Koch, A., K.C. Glover, K.C., Zambri, B., Thomas, E.K., **Benito, X.** & J.Z. Yang, J.Z. 2018. Open data practices and challenges among early career paleo-researchers. *Past Global Changes Magazine*, vol. 26(2), 54-55.
- Benito, X.**, Fritz, S.C, Steinitz-Kannan, M., Tapia, P.M., Kelly, M.A. & Lowell, T. 2018. Data from: Geo-climatic factors drive diatom community distribution in tropical South American freshwaters. Dryad Digital Repository. DOI: <https://doi.org/10.5061/dryad.ck7pt> [downloaded 22 times]
- Benito, X.**, Fritz, S.C, Steinitz-Kannan, M., Velez, M.I. & McGlue, M.M. 2018. Data from: Lake regionalization and diatom metacommunity structuring in tropical South America. *Dryad Digital Repository*. DOI: <https://doi.org/10.5061/dryad.6jk8h77> [downloaded 4 times]
- Benito, X.**, Alexandroff, S. 2017. It is important to create a PAGES early-career researchers working group? What should be its remit? *Past Global Changes Magazine*, 25: 102-103

GRANTS AND FELLOWSHIPS

- | | |
|------|--|
| 2019 | Co-PI, 'Creating a unified approach to evaluate regime shift detection methods'. Synthesis Working Group Funded by CIEE-ICEE [\$12,000] |
| 2018 | Postdoctoral Fellowship awardee, National Socio-Environmental Synthesis Center (SESYNC). "Regime shifts in tropical Andean lakes" [\$120K] |
| 2018 | Postdoctoral Fellowship awardee, Juan de la Cierva postdoctoral grant awardee, Spanish Ministry of Science, Innovation and Universities [declined due to job incompatibility] |
| 2017 | Co-PI, 'Long-term Perspectives on Recent Limnological Change in Lakes of the Ecuadorean Andes'. Funded by National Geographic Society (CP-R006-17). Co-PI Prof. Sherilyn C Fritz [\$20K] |
| 2013 | PhD mobility grant awardee, University Rovira and Virgili. Research stay at the University of Szczecin, 4 months (Poland) [2,500€] |
| 2011 | PhD Fellowship University Rovira and Virgili - IRTA (Spain) [48,000€] |
| 2008 | Undergraduate mobility awardee, Institute of Limnology "Raul A. Ringuelet"; Sponsorship: Banco Bilbao Vizcaya Argentaria [2,000€] |

AWARDS AND HONOURS

- | | |
|------|--|
| 2020 | NEON ASLO-SFS Early-Career Scholar awardee. Joint ASLO-SFS Meeting Madison, Wisconsin (9-13 June 2020) [Cancelled due to COVID-19] |
| 2017 | Early-Career Researcher grant awardee, 3rd Young Scientists Meeting, Past Global Environmental Changes (PAGES). Morillo de Tou, Spain. |

- 2015 PhD student registration fee awardee, 13th International Paleolimnology Symposium (IPA), Lanzhou, China [declined due to job incompatibility]
- 2015 Travel grant awardee, Iberian Association of Limnology (AIL). Contribution at the Aquatic Sciences Meeting ASLO Granada, Spain [100€]
- 2003 3rd best undergraduate thesis award, *Els arbres de Jesús* (in catalan), Municipality of Tortosa (Catalonia, Spain)

PRESENTATIONS (*selection*)

- 2019 **Benito, X.**, Feitl, M., Schneider, T., Fritz, S., Simpson, G. & Ruhi, A. Identifying lake ecological resilience across the tropical Andes. INQUA Conference. 25-31 July 2019. Dublin (Ireland) [*Oral presentation*]
- 2019 **Benito, X.**, Schneider, T., Feitl, M., Fritz, S.C. & Ruhi, A. A palaeoecological perspective of resilience in Andean lakes. ASLO Aquatic Sciences Meeting. 24 Feb - 1 March 2019. Puerto Rico (USA) [*Oral presentation*]
- 2018 **Benito, X.** & Ruhi, A. Palaeoecological-scale resilience in Andean socio-environmental systems. AGU Fall Meeting 2018, Washington DC, 10-14 December 2018 [*Oral presentation*]
- 2018 **Benito, X.**, Feitl, M., Fritz, S., Schneider, T., Mosquera, P., Hampel, H., Quevedo, L., Steinitz-Kannan, M. Analyzing diatom metacommunities across space and time. Society for Freshwater Sciences Annual Meeting. 20-24 May 2018, Detroit (MI) [*Oral presentation*]
- 2017 **Benito, X.**, Fritz, S., Steinitz-Kannan, M, Velez, M.I. & McGlue, M.M. Diatom metacommunity structure of lake districts in tropical South America. North American Diatom Symposium. 30-4 September 2017, Ohio (USA) [*Oral presentation*]
- 2017 **Benito, X.**, Trobajo, R., Cearreta, A. & Giosan, L. Benthic foraminifera as bioindicators of present and past Mediterranean deltaic habitats. XVIII Conference of the Iberian Association of Limnology. 4-8 July 2017. Tortosa (Spain) [*Oral presentation*]
- 2015 **Benito, X.**, Cearreta, A., Trobajo, R., Ibáñez, C & Brunet, M. Natural and anthropogenic changes in a Mediterranean delta using diatoms and foraminifera. International Estuarine, Coastal and Shelf Sciences Association conference. 4-7 September 2015. London (UK) [*Oral presentation*]

INVITED TALKS

- 2019 Stroud Water Research Center (Avondale, PA): *A paleolimnological scale resilience of lakes to recent warming*
- 2019 University of California, Berkeley (Freshwater Ecology lab seminar series): *Continental-scale lake diatom regime shifts*
- 2017 Yachay University (San Miguel de Urucuquí, Ecuador): *Diatom diversity and biogeography in tropical South America*
- 2016 Ebro Delta Natural Park (Spain): *Environmental evolution of the Ebro Delta during the last 8,000 years*
- 2015 Ebro Delta Natural Park (Spain): *Benthic foraminifera as paleoenvironmental proxies in coastal wetlands*

PROFESSIONAL SERVICE

- 2019 SESYNC postdoctoral research fellowship review panel
- 2018- Co-editor with Luca Marazzi (Florida International University, USA) “Diatom of the Month” series of posts, early-career diatomists of the International Society for Diatom Research
- 2018 Review panel member for the Graduate Travels Awards Program (GTAP) Summer 2018, University of Nebraska-Lincoln, USA
- 2018- Member of the Gender and Science commission of the Iberian Association of Limnology (AIL)
- 2017- Steering committee member of PAGES Early-Career Network (Past Global Environmental Changes; Future Earth Core Project)
- 2017- Webmaster of the American Quaternary Association (AMQUA)
- 2017-2018 Review panel member for the Undergraduate Creative Activities and Research Experience (UCARE), University of Nebraska-Lincoln
- 2016 Review panel member for Assistant professorship in Geosciences at the Department of Earth and Atmospheric Sciences, University of Nebraska-Lincoln, USA
- 2016- Steering committee member for the Early-Career Diatomists of the International Society for Diatom Research (ISDR)

Reviewed manuscripts [[Publons](#) profile]

Scientific Reports, Estuaries and Coasts, Journal of Maps, Environmental Earth Sciences, Marine and Freshwater Research, Journal of Biogeography, Hydrobiologia, Ecological Applications, Quaternary Sciences Reviews, Freshwater Biology, Ecological Indicators, Science of the Total Environment, Ecosphere

Organization of international conferences and special sessions

- 2019 INQUA Conference, Dublin. “Past Socio-Environmental Systems”. PAGES ECN splinter meeting co-organized with Ignacio Jara (CEAZA, Chile) and Nick Schafstall (Charles University, Czech Republic)
- 2018 AGU Fall Meeting. Past Global Changes Early-Career Network: Perspectives on Open Data Practices. Session co-organized with Alex Kock (University College of London, UK), Madelyn Mette (Uni Research Climate, Norway) and Caroline Quanbeck (University of Florida, USA). 10-14 December 2018. Washington DC, USA
- 2018 Member of the local organizing committee “Impacts of Sea Level Rise from past to present”. INQUA-PAGES Conference for Early-Career Researchers. 26-27 August 2018. Utrecht (Netherlands)
- 2016 Member of the local organizing committee XVIII Congress of the Iberian Association of Limnology. 4-8 July 2017. Tortosa (Spain)
- 2015 Member of the local organizing committee International Symposium CLIMATE-ES. 11-13 March 2015, Tortosa (Spain)

Workshops

- 2018-2019 Geo-Genomics: synthesizing geologic and biotic data to tackle diversification questions in tropical South America (Wake Forest University, NC, USA). Working group (NSF EAR-1338694 grant) [*workshop organizer*]
- 2018 Ecology and Bioindication of Diatoms, 25th International Diatom Symposium, Berlin (Germany) [*workshop organizer and lecturer*]
- 2017 Phycological Consortium Research, Iowa, USA. 9-12 November [*invited*]

TEACHING AND MENTORING EXPERIENCE

- 2015 Undergraduate supervisor of Marta Gasel, intern scholar from University of Barcelona at IRTA (Spain)
- 2013 Co-supervisor of Anna Binczewska, master student from University of Poznan (Poland) at IRTA, co-supervised with Rosa Trobajo (Spain)
- 2012-13 Teaching assistant. Geography degree: *Introduction to Geographical Information Systems*. University Rovira & Virgili, Tarragona (Spain).

RESEARCH EXPEDITIONS

- July 2018 5-week fieldwork in lakes of Ecuadorian Andes and Amazonia '*Long-term Perspectives on Recent Limnological Change in Lakes of the Ecuadorian Andes*'. Funded by National Geographic Society (CP-R006-17).

RESEARCH STAYS, SURVEYS AND INTERNATIONAL EXPERIENCE

- 2018-2017, 2018 Visiting postdoc at the University of California, Berkeley (Albert Ruhi's lab)
- 2017, 2018 Volunteered at the University of Nebraska State Museum, performing biology and geology related activities for children in the "Dinosaurs and Disasters"
- 2013 Research stay at the University of Szczecin, Poland [4 months]
- 2012 Research stay at the Institute of Limnology "Raul A. Ringuelet", Argentina [5 months]
- 2008-11 Participation in biological monitoring and educational activities during summer camps in Girona, Spain.
- 2005-08 Lead biological monitoring program of amphibian communities of the Caramella stream, Tarragona, Spain.

SKILLS AND LANGUAGES

Spatial processing and analysis with GIS libraries in R and ArcView
Data processing, analysis and visualisation using R, including R Markdown
Sharing data repositories using GitHub for control version and collaborative projects
Web development with HTML, CSS, PHP and Javascript
Advanced user in Content Management Systems (Wordpress and MODX)
Proficient in English; native Catalan and Spanish speaker