

Part A. PERSONAL INFORMATION

CV date	11/1/2021
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First and Family name	ELOY BÉCARES MANTECÓN		
Social Security, Passport, ID number		Age	57
Researcher codes	WoS Researcher ID (*)	H-6361-2015	
	SCOPUS Author ID(*)		
	Open Researcher and Contributor ID (ORCID) **	0000-0002-7123-3579	

(*) At least one of these is mandatory

(**) Mandatory

A.1. Current position

Name of University/Institution	Universidad de León		
Department	Facultad de CC Biológicas y Ambientales		
Address and Country	Campus de Vegazana s/n		
Phone number	987291568	E-mail	ebecm@unileon.es
Current position	Catedrático	From	Dic-2020
Key words	Wetlands, applied limnology, environmental biotechnology		

A.2. Education

PhD	University	Year
CC Biologicas	León	1987
Doctor en Biología	León	1995

A.3. JCR articles, h Index, thesis supervised...

Four sexenios (2016) 1 sexenio de transferencia (2019). 16 supervised theses (4 in progress). Bibliometric indicators: SCOPUS = 116 articles, 4488 citations, 310 citations / year (last 4 years), **h-index: 38**. ISI-WOS = 113 articles, 4326 citations, 38 citations / article, **h-index = 37**, 173 citations / year, 93 papers in Q1

Part B. CV SUMMARY (max. 3500 characters, including spaces)

My research has focused on the field of basic and applied limnology, alternating studies on the ecology of biological processes for the treatment of wastewater, such as constructed wetlands and stabilization ponds, with basic studies on the biodiversity and functioning of lakes and natural wetlands in arid zones. In the field of applied limnology, it has contributed to the knowledge of microbial communities and their importance in the treatment of wastewater and organic pollutants in constructed wetlands, stabilization ponds, and activated sludge processes. The importance of abiotic mechanisms for the removal of pathogenic organisms has been demonstrated, as well as the impact of treatment plants on the transmission of antibiotic-resistant bacteria in aquatic environments. These results have been transferred to the study of shallow lakes and natural wetlands where the research has made it possible to demonstrate the importance of microbial communities (bacteria and protozoa) as an important part of the biomass and the functioning of Mediterranean wetlands, in contrast to the wetlands of cold areas. Studies comparing the functioning and structure of Mediterranean and Northern European wetlands have also provided important insights into the importance of fluctuations in water depth on the dynamics of vegetation. Therefore, it has contributed to show the structural and functional differences of the lakes along the climatic gradients, and the consequences of these gradients in the dynamics of invasive aquatic species such as algae (eg, *Didymosphenia geminata*), Louisiana red crayfish (*Procambarus clarkii*), or fish (eg, *Salmo trutta* in North America). In recent years I have focused on the use of molecular tools for the study of microbial communities and antibiotic-resistant bacteria in wastewater and on the study of amphibian barcoding and amphibians pathogens.

Part C. RELEVANT MERITS



C.1. Publications (including books)

- Rodríguez-Alcalá, O., Blanco S., García-Giron J., Jeppesen E., Irvine K., Noges P., Noges T., Gross E., Becares E. 2020 Large scale geographical and environmental drivers of shallow lake diatom metacommunities across Europe. **Sci. Tot. Environ.** 707. <https://doi.org/10.1016/j.scitotenv.2019.135887> IF: 6,551 Q1
- Casais, R., Rodríguez A., Dalton K., Domínguez P. Márquez I. Becares E., Carter D., Gray M.J., Miller D., Balseiro A. 2019. Water sports could contribute to the translocation of ranavirus. **Nature Scientific Reports** 9:2340. IF: 4,122 Q1
- Hijosa-Valsero M., Becares E., Fernández-Aláez C., Fernández-Aláez M., Mayo R., Jiménez J,J 2016 Chemical pollution in inland shallow lakes in the Mediterranean region (NW Spain), PAHs, insecticides and herbicides in water and sediments. **Sci. Tot. Environ.** 544: 797-810. IF: 4,9 Q1
- Fernandez-Montiel I., Sidrach-Cardona R., Gabilondo R., Pedescoll A., Scheu S., Becares E., 2016. Soil communities are affected by CO₂ belowground emissions at a natural vent in Spain. **Soil Biology & Biochemistry** 97: 92-98 IF:4,94 Q1
- Hijosa-Valsero, Reyes-Contreras C., Domínguez C., Bécades E., Bayona J.M. 2016 Behaviour of pharmaceuticals and personal care products in constructed wetlands compartments: pore water, substrate and plant roots. **Chemosphere**. 145: 508-517 IF:4,208 Q1
- Sidrach-Cardona R., Hijosa-Valsero M., Martí E., Balcázar J.L., Bécades E. (2014) Prevalence of antibiotic-resistant fecal bacteria in a river impacted by both an antibiotic production plant and urban treated discharges. **Sci. Tot. Environ.** 488-489:220-227. IF: 5,528 Q1
- Adrados B., Sánchez O., Arias C.A, Becares E., Garrido L., Mas J., Brix H., Morato J. 2014. Microbial communities from different types of natural wastewater treatment systems: vertical and horizontal flow constructed wetlands and biofilters. **Water Research**.55:304-312 IF: 5,528 Q1
- Budy P., Thiede G.P., Lobón-Cervia J., González-Fernández G., Mchugh P., Mcintosh A., Vollestad L.A., Becares E., Jellyman P. (2013) Limitation and facilitation of one of the world's most invasive fish: An intercontinental comparison. **Ecology**. 94(2): 356-36 IF: 5 Q1
- Huszar V.L.M., Kosten S., Becares E., Costa L.S. van Donck E., Hansson L-A., Jeppesen E., Kruk C., Lacerot G., Mazzeo N., de Meester L., Moss B., Lürling M., Noges T., Romo S., Scheffer M. 2012. Warmer climate boosts cyanobacterial dominance in lakes. **Global Change Biology** 18: 118-126 IF:6,91 Q1
- HANSSON L.A., BÉCARES E., FERNÁNDEZ-ALAEZ C., FERNÁNDEZ-ALÁEZ M., VAN DE BUND, W., VAN DONCK, E., KAIRESALO T., MIRACLE S., ROMO S., MOSS B. 2007 Relaxed circadian rhythm in zooplankton along a latitudinal gradient. **Oikos**. 116: 585-591. IF: 3,136 Q1

C.2. Research projects and grants

- Application of molecular tools for the management of wetlands and aquatic species vulnerable to climate change and globalization (BT-2019). Biodiversity Foundation. Ministry for the Ecological Transition and the Demographic Challenge. 2020-21. IP: Eloy Bécades. € 60,000 7 researchers
- Application of the theory of metacommunities to the management of the biodiversity of lagoons in agricultural and livestock landscapes of the Mediterranean, (CGL2017-84176-R) FINANCING: Ministry of Economy and Competitiveness. Researchers: 8. Duration: 2018-21. Inv. Principal: Eloy Bécades Mantecón, Camino Fernández Aláez.
- Characterization of microbial communities and mechanisms involved in the elimination of pathogenic organisms in combined systems of constructed wetlands (CTM2008-06676-C05-03 / TECNO) FUNDING: MICINN, DURATION: 2008-2011 Amount: € 89,540 N° RESEARCHERS: 5. Inv. Principal: Eloy Bécades Mantecón.
- Antibiotic resistant bacteria in aquatic environments. Elimination mechanisms in health implications. FINANCING: Fundación MAPFRE. 3 researchers. Duration: 2010. Amount: € 15,000. Inv. Principal: Eloy Bécades Mantecón
- Treatment of slurry through consortiums of algae and bacteria: photosynthetic oxygenation and removal of nutrients VA-13-C3-2. Instituto Tecnológico Agrario de Castilla y León. 2007-2009. € 32,000. 6 invest. Inv. Principal: Eloy Bécades Mantecón



Characterization of microbial communities and mechanisms involved in the elimination of pathogenic organisms in combined systems of constructed wetlands (CTM2005-06457-C05-03 / TECNO) FUNDING: MICINN, DURATION: 2005-2008 Amount: € 70,000 N° RESEARCHERS: 5. Inv. Principal: Eloy Bécares Mantecón

Sanitary risks in the reuse of wastewater in agriculture. Comparison of existing technologies and implications in the design and exploitation of processes (LE-02/2005). FINANCING: Instituto Tecnológico Agrario, Junta de Castilla y León. DURATION: 2005-2006. INV. PRINCIPAL: Eloy Bécares Mantecón. QUANTITY: 26,566 No. INVESTIGATORS: 5

Effect of eutrophication and the introduction of species on the degradation of wetlands. (LE-12 / 00B) FINANCING: Junta de Castilla y León. DURATION 2000 - 2003. INV. 1,000,000 pts

Ecological quality and functioning of shallow lake ecosystems with respect to the needs of the European Water Framework Directive. ECOFRAME. FINANCING: Commission European Communities EVK1-1999-00261 .. DURATION: 2000-2002. COORDINATOR: (Brian Moss). € 51,000 IP ULE: Eloy Becares.

Shallow wetland lake function and restoration in a changing European environment (SWALE). FINANCING: Commission of the European Communities. EXECUTION: 1997-2000. € 168,283 IP: Brian Moss, IP ULE: Eloy Becares.

C.3. Contracts

Scientific coordinator of the Experimental Field of Low Cost Wastewater Treatment in Rural Areas, located in Mansilla de las Mulas (León). Project framed within the Comparative Study of different low-cost purification systems. Advice and analysis of the effectiveness of the Sanitation Plan of the Province of León. FINANCING: Mixed Commission University-Diputación de León. EXECUTION: 1989-1999. 101,885,867 pts

Specific collaboration agreement between the Duero Hydrographic Confederation and the University of León within the framework agreement of general collaboration between the Ministry of the Environment and the University of León for: 1- The advice and determination of biological indices, 2- The elaboration of an Atlas of benthic diatoms of the Duero basin. 2007- 2009. Funding entity: Duero Hydrographic Confederation. Duration: 4 years. Main researcher: Dr. Eloy Bécares Mantecón. Budget: € 324,077

Design and development of a population control system for the red crayfish (*Procambarus clarkii*) in the Salburúa wetlands (Alava). Center for Environmental Studies of the Vitoria City Council. 2006. € 12,000

Integrated control of the red crab in Lake Sumido. Monitoring and study of the introduction of the eel as a biological control. Icthos Gestión Ambiental SL. € 1,515. 2008.: Dr. Eloy Bécares Mantecón

Director of 85 Art. 83 contracts with Administrations and companies (1989-2020) (€ 2,234,230)

C.4. Patents

Device for taking biofilm samples in treatment plants by trickling filters. AUTHORS: Eloy Bécares Mantecón, Miguel Angel Martínez Sánchez APPLICANT: Universidad de León. REGISTRATION N° .: P9301282. DATE: June 10, 1993. EXPLOITATION: León Provincial Council. (Treatment plant of Mansilla de las Mulas).

C.5 Reception of post-doc and sabbatical researchers

- Dra. Luciana Pinto Sartori. Universidad Sao Camino, Sao Paulo (Brasil). Becada Fundación Santander. Julio 2015. Tropical limnology.
- Dra, Anna Pedescoll Albacar. Contratada Juan de la Cierva, 2013- 2015, Constructed wetlands.
- Patricia Carla Giloni. Universidad de Sao Paulo-Sao Carlos. Estancia Doctoral. Octubre 2008-Octubre 2009. Constructed wetlands..



- Dra. Phaedra Budy. Utah State University. Diciembre-junio 2008. Sabbatical. Fish ecology in rivers and lakes.
- Dr. Pedro Lithg. Universidad de Minas Gerais (Brasil). Sabbatical. 2004-2005. Amphibian diseases
- Dr. Juan Antonio Alvarez Rodríguez. Post-doc. (octubre 2004 a octubre 2005) Constructed wetlands.

C.7 Grants

2014, 2008, 2002: Grants from the Mobility Subprogram for teachers and researchers in foreign centers. MINECO and Ministry of Education and Science (stays in the USA, Germany and Denmark, respectively). 2003: Grant from the European Science Foundation (ESF) within the LINKECOL program, stage in Lund (Sweden).

C.8 Institutional responsibilities

2008-2016: Director of the Research Support Area of the Vice-Rector's Office for Research at the University of León. 2002-2020 Director of the Diatomology and Water Quality Laboratory Research Service at the University of León.

C.9 Teaching in Universities and other courses.

Lectures in the Degrees of Environmental Sciences, Environmental Biotechnology, Agricultural and Forest Engineering, Degree of Biology. (average of 18 credits/year). Certificate of Teaching Excellence (81.6 out of 100) in the Quality Assessment Program of the University of León. Professor of 45 courses (Summer, Instrumental, University Extension, Official Associations of Biologists, Pharmacists, Universities Coruña, Valencia, Cantabria, UIMP, and companies). Visiting professor at the Technological Institute of Antioquia (Medellín, Colombia) 2014, 2013, 2012. Universidad del Atlántico (Barranquilla, Colombia) 2011-2014

C.10 Referee

Review of 27 projects ANEP, 2 BBVA projects, FG UPM-UPC (1), research projects from Germany (1), Colombia (1), Ecuador (2), Chile (1), Argentina (1), Bolivia (4). Review of 70 articles since 2011.