

**CURRICULUM VITAE ABREVIADO (CVA)**

**IMPORTANT** – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

**Part A. PERSONAL INFORMATION**

First name	Araceli		
Family name	Puentes Trueba		
Gender (*)	Female	Birth date	
Social Security, Passport, ID number			
e-mail	puentes@unican.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-7627-4743		

(\*) Mandatory

**A.1. Current position**

Position	Full professor		
Initial date	16/03/2022		
Institution	Universidad de Cantabria		
Department/Center	Instituto de Hidráulica Ambiental (IH Cantabria)		
Country	Spain	Teleph. number	+34 942201616
Key words	Benthic ecology, ecological modelling, environmental impact and risk assessment, marine resources, climate change		

**A.2. Previous positions (research activity interruptions, indicate total months)**

Period	Position/Institution/Country/Interruption cause
25/10/10-15/03/2022	Associate professor/Universidad de Cantabria/Spain
16/10/09-24/10/10	Assistant professor/Universidad de Cantabria/Spain
01/01/08-15/10/09	Associate Researcher/Fundación Instituto de Hidráulica Ambiental de Cantabria/Universidad de Cantabria/Spain
01/02/01-31/12/07	Postdoctoral Researcher/Universidad de Cantabria/Spain
01/01/00-31/06/00	Postdoctoral Researcher/Universidad del País Vasco/Spain
01/03/97-31/09/99	Research assistant/Universidad de Cantabria/Spain
01/07/95- 28/02/97	Research assistant/Scientific Association of Marine Studies/Spain
01/01/90-31/12/94	Research assistant/Universidad de Cantabria/FLTQ/Spain

**A.3. Education**

PhD, Licensed, Graduate	University/Country	Year
PhD Marine Science	Universidad de Cantabria	2000

**Part B. CV SUMMARY**

Araceli Puentes Trueba: PhD in Marine Sciences (University of Cantabria); Full Professor of the University of Cantabria, in the area of Hydraulic Engineering; coordinator of “Master in Integrated Management of Water Systems”, and researcher associated to the Environmental Hydraulics Institute (IH Cantabria), where she is head of the “Littoral Ecosystems Group”.

Her research is mainly focused on the study of the spatial-temporal patterns of benthic communities (macroalgae, macroinvertebrates), ecological modelling, and the environmental risk assessment of estuarine and coastal waters, including the effects of anthropogenic pressures and the impacts of climate change.

She has published 66 SCI papers (34 Q1), 1488 cites, 16 books chapters and 14 articles in journals not indexed with peer review. In addition, she has presented 10 contributions to international (Littoral 2000; ASLO, 2006; CERF, 2007, 2015; 2017; 2023; IWMO, 2010; ICES, 2010; ECSA, 2014, EMBS, 2015) and 5 to national conferences, and participated as co-author in over 80. She has 3 research periods, and has an H index = 22.

She has participated in 27 R&D projects at national and European level, acting since 2013 as Principal Investigator in four funded by the Spanish Research Agency and two funded by

Fundación Biodiversidad (MITERD). Among most recent relevant projects are the European Projects “*Adaptation to climate change through management and restoration of European estuarine ecosystems*” (**LIFE-ADAPTA BLUES**); “*Marine biodiversity and ecosystem functioning leading to ecosystem services*” (**MARBEFES**); and “*Nature Based solutions for Atlantic regional climate resilience*” (**NBRACER**); and at National level “*Development of risk maps of natural systems against climate change in Cantabrian estuaries*” (**MARES**); “*Tools and methods for environmental risk assessment of chemical spills in port areas*” (**PREVEMAR**); “*Integration of climate and anthropic drivers in ecological modelling: a dynamic tool for the environmental estuarine management*” (**ECOTOPO**); “*Hybrid modeling of macroalgae distribution in a changing environment: the integration of dispersal strategies as biotic predictors*” (**C3N-pro**); “*Evaluación de los patrones de biodiversidad y resiliencia al cambio climático en estuarios*” (**REST**); and “*Desarrollo de técnicas avanzadas de modelado ecológico en ecosistemas litorales*” (**SimuLIT**).

She completed a 6-month stay (2007-2008) at the Virginia Institute of Marine Sciences (USA), working in collaboration with Robert J. Diaz (D.H.C., Göteborg University, Sweden), thanks to which she published two SCI papers (Puente & Díaz, 2008, 2015).

She has been the coordinator or collaborated in more than 40 research contracts of special relevance with companies and public administrations, having a great impact on coastal management policies. She has participated in the NE Atlantic Geographic Intercalibration Group (**NEA-GIG**) for different biological elements (macroalgae, invertebrates, fish) within the Intercalibration exercise of the Water Framework Directive (2000/60/CE), organized at the EU level by the JRC. Currently she coordinates the “*Littoral Monitoring Network of Cantabria*” (**RCLC**), as well as the systematic studies developed for the stock assessment of marine biological resources, in support of the Regional Fisheries Authority.

She has supervised 5 Thesis (+2 in development), 18 Master Thesis and 4 grade projects. She has been part of the evaluation committee of 16 Thesis, and numerous Master Thesis.

Among other institutional responsibilities and memberships are:

- Member of the Regional Advisory Board on Environment (from 2018-2022) and Regional Advisory Board of Climate Change and environment (from 2022).
- Member of the Academic Committee of the PhD Program in Coastal Engineering, Hydrobiology and Management of Aquatic Systems “IH2O” (from 2008).
- Member of the Postgraduate Committee at the School of Civil Engineering (from 2014).
- Founding partner and Secretary of Scientific Association of Marine Studies (1994-2009).

She received the National Environment Award “AQUA”, from the Spanish Ministry of the Environment (2003) for the contribution of her research group to the development of the Environmental design of sanitation systems in coastal areas. She has participated in different transfer and dissemination activities, such as MOOC courses (e.g. TRASMARES), specialization/summer courses (e.g. Professional Assoc. of Civil Engineers, AQUALOGY, Port Authority of Gijón, EMBOS Training School on Marine Biodiversity), the EU Researchers’ Night, and the International Day of Women and Girls in Science and Science Week.

## Part C. RELEVANT MERITS

### C.1. Publications

<sup>1</sup>Sainz-Villegas, S., Sánchez-Astráin, B., Puente, A., Juanes, J.A. 2024. Exploring the effects of temperature and light availability on the vegetative propagation processes of the non-native species *Asparagopsis armata*. Front. Mar. Sci. 10:1343353.

Galván, C., Puente, A. 2023. Exploring the newly emerging effects of native seagrasses on non-native juvenile clams”. Front. Mar. Sci. 10:1160734.

Mazarrasa, I., Neto, J.M., Bouma, T.J., Grandjean, T., Garcia-Orellana, J., Masqué, P., Recio; M., Serrano, O., Puente, A., Juanes, J.A. 2023. Drivers of variability in Blue Carbon stocks and burial rates across European estuarine habitats. Sci. Total Environ. 886: 163957

<sup>1</sup>Sainz-Villegas, S., Puente, A., Sánchez-Astráin, Juanes, J.A. 2023. Characterization of *Gelidium corneum*’s (Florideophyceae, Rhodophyta) vegetative propagation process under increasing levels of temperature and irradiance. Mar. Environ. Res. 187: 105966.

Mazarrasa, I., Garcia-Orellana, J., Puente, A., Juanes, J.A. 2022. Coastal engineering infrastructure impacts Blue Carbon habitats distribution and ecosystem functions. Sci. Rep., 12: 19352.

- Puente, A., Gómez, A.G., de los Ríos, A., Galván, C. 2022. Natural stress vs anthropogenic pressures. How do they affect benthic communities? Mar. Poll. Bul. 181: 113925.
- <sup>1</sup>Sainz-Villegas, S., de la Hoz, C., Juanes, J.A., Puente, A. 2022. Predicting non-native seaweeds global distributions: The importance of tuning individual algorithms in ensembles to obtain biologically meaningful results. Front. Mar. Sci. 9: 1009808.
- <sup>1</sup>Galván, C., Puente, A., Juanes, J.A. 2021. Nested socio-ecological maps as a spatial planning instrument for estuary conservation and ecosystem-based management. Front. Mar. Sci. 8: 730762.
- Ramos, E., Guinda, X., Puente, A., De la Hoz, C.F., Juanes, J.A. 2020. Changes in the distribution of intertidal macroalgae along a longitudinal gradient in the northern coast of Spain. Mar. Environ. Res. 157: 104930.
- Calleja, F., Ondiviela, B., Puente, A., Juanes, J.A. 2020. Can seedlings' physiological information improve vegetation distribution predictions at local scales? Biol. Invasions 22: 2509–2523.
- <sup>1</sup>De la Hoz, C.F., Ramos, E., Puente, A., Juanes, J.A. 2019. Climate change induced range shifts in seaweeds distributions in Europe. Marine Environmental Research 148:1-11.
- <sup>1</sup>De la Hoz, C.F., Ramos, E., Puente, A., Juanes, J.A. 2019. Temporal transferability of marine distribution models: the role of algorithm selection. Ecol. Indic. 106: 105499.
- Puente, A., Guinda, X., Juanes, J.A. Echavarri-Erasun, B., Ramos, E., et al. 2017. The role of physical variables in biodiversity patterns of intertidal macroalgae along European coasts. J. Mar. Biol. Assoc. U. K. 97: 549-560.
- <sup>1</sup>Galván, C., Puente, A., Castanedo, S., Juanes, J.A. 2016. Average vs extreme salinity conditions: do they equally affect the distribution of macroinvertebrates in estuarine environments? Limnol. Oceanogr. 61 (3): 984-1000.
- Puente, A., Diaz, R.J. 2015. Response of benthos to ocean outfall discharges: does a general pattern exist?. Mar. Pollut. Bull. 101: 174 - 181.
- <sup>1</sup>Galván, C., Juanes, J.A., Puente, A. 2010. Ecological classification of European transitional waters in the North-East Atlantic Eco-region. Estuar. Coast. Shelf Sci. 87(3): 442-450.
- Puente, A., Juanes, J.A., Calderón, G., Echavarri-Erasun, B., García, A., García-Castrillo G. 2009. Medium-term assessment of the effects of the Prestige oil spill on estuarine benthic communities in Cantabria (Northern Spain, Bay of Biscay). Mar. Pollut. Bull. 58: 487–495.
- García, A., Sainz, A., Revilla, J.A., Álvarez, C., Juanes, J.A., Puente, A. 2008. Surface water resources assessment in scarcely gauged basins in the north of Spain. J. Hydrol. 356: 312-326.
- Puente, A., Diaz, R. 2008. Is it possible to assess the ecological status of highly stressed natural estuarine environments using macroinvertebrates indices? Mar. Pollut. Bull. 56: 1880-1889.
- Puente, A., Juanes, J.A., García, A., Álvarez, C., Revilla, J.A., Carranza, I., 2008. Ecological assessment of soft bottom benthic communities in northern Spanish estuaries. Ecol. Indic. 8: 373–388.
- <sup>1</sup> *Papers from PhD Thesis supervised by Araceli Puente.*

## C.2. Congres

- Puente, A., Gómez, A. G., de los Ríos, A., Galván, C. Disentangling the effects of natural and anthropogenic pressures on benthic communities. Coastal and Estuarine Research Federation (CERF). Portland (EEUU). 2023. Oral presentation.
- Puente, A., Galván, C., Juanes, J.A. Active restoration of ecological drivers in a temperate estuary: trends in intertidal benthic communities. Coastal and Estuarine Research Federation (CERF). Providence (EEUU). 2017. Oral presentation.
- Puente, A., Fernández, C., Ramos, E., Méndez, F., Menéndez, M., Juanes, J.A., Losada, I.J. Predicting future species distribution under global warming in European coastal waters. Coastal and Estuarine Research Federation (CERF). Portland (EEUU). 2015. Oral presentation.
- Puente, A., Guinda, X., Juanes, J.A., et al. The role of physical variables in biodiversity patterns along European coasts. 51st European Marine Biology Symposium (EMBS). Helgoland (Alemania). 2015. Oral presentation.
- Puente, A., Méndez, F., Fernández, C., Ramos, E., Menéndez, M., Losada, Í.J., Juanes, J.A. Coastal waters classification based on physical attributes along the Mediterranean

Sea. Estuarine Coastal Sciences Association. ECSA 54. Sesimbra (Portugal). 2014. Oral presentation.

### C.3. Research projects

- Nature Based Solutions for Atlantic Regional Climate Resilience (**NBRACER**). EU HORIZON-MISS-2022-CLIMA-01-06; 101112836). 2023-/2027). 18.159.207. IP: Mindert de Vries (STICHTING DELTARES (Deltares). Researcher.
- Enhancing biodiversity in the Atlantic area with sustainable artificial reefs (**EBASAR**). M. Ciencia e Innovación. Proyecto de Transición Ecológica y Transición Digital (TED2021-129532B-I00). 2022-2024. IP: E. Blanco and A. Puente. 113.800 €. Coordinator.
- Marine biodiversity and ecosystem functioning leading to ecosystem services (**MARBEFES**) (Grant 101060937). Horizon Europe (Call HORIZON-CL6-2021-BIODIV-01-03) – European Union. 2022 – 2026. IP: J.M. Węśławski (IO-PAN). 15.107.310 €. Researcher.
- Los campos del alga roja *Gelidium corneum* en las costas atlánticas españolas: ¿es compatible su conservación con su explotación comercial? (**GELIDIUM**). Fundación Biodiversidad del Ministerio para la Transición Ecológica y el Reto Demográfico. 2020 - 2021. IP: A. Puente. 60.590 €. Coordinator.
- Evaluación de los patrones de biodiversidad y Resiliencia al cambio climático en ESTuarios (**REST**). Convocatorias Fenix del IHCantabria – Gobierno de Cantabria. 2020 – 2021. IP: A. Puente, C. Galván. 50.000,00 €. Coordinator.
- Integration of climate and anthropic drivers in ecological modelling: a dynamic tool for the environmental estuarine management (**ECOTOPO**) (RTI2018-096409-B-I00). Programa Estatal de I+D+i Orientada a los Retos de la Sociedad. 2019 – 2021. IP: A. Puente, C. Galván. 90.750€. Coordinator.
- Adaptation to climate change through management and restoration of European estuarine ecosystems (**LIFE ADAPTA BLUES**). Program LIFE-Climate Change Adaptation (LIFE18 CCA/ES/001160) (2019-24). IP: J.A. Juanes (UC). 2.100.000 €. Researcher.
- Elaboración de MAPas de Riesgo de los sistemas naturales frente al cambio climático en los ESTuarios cantábricos (**MARES**). Fundación Biodiversidad. Ministerio para la Transición Ecológica. 2017-2018. IP: A. Puente. 66.764 €. Coordinator.
- Tools and procedures for the analysis of the environmental risk of spills by chemical substances in port areas (**PREVEMAR**) (BIA2015-67298-R). National Program of Fundamental Research Projects. Ministry of Economy and Competitiveness. 2016-2018. IP: A. Puente. 57.000 €. Coordinator.
- Integration of human activities in the conservation objectives of the Natura 2000 Network in the littoral of Cantabria (**LIFE-CONVIVE**). Program LIFE-Nature-UE. (Ref. LIFE14 NAT/ES/001213) (2015-19). IP: J.A. Juanes (UC). 1.325.000 €. Researcher.
- Development and validation of a methodology for the analysis of environmental risks in port areas. Diffuse pollution by hydrocarbons (**MARPORT**) (BIA2012-34123). National Program of Fundamental Research Projects. Ministry of Economy and Competitiveness. 2013-2015. IP: A. Puente. 95.940 €. Coordinator.

### C.4. Contracts, technological or transfer merits

- Implementation and monitoring of the recovery and resilience plan for the green transition. Deliverable 8 – Report of the restoration of coastal wetlands. DG REFORM – European Commission. 2022-2023. IP: A. Puente (UC). 43.260 €
- Development of a methodology for the analysis and assessment of the vulnerability to climate change of protected areas. Fundación Biodiversidad del Ministerio para la Transición Ecológica y el Reto Demográfico. 2020-2021. IP: A. Puente. 17.545 €.
- Littoral Monitoring Network of transitional and coastal waters of Cantabria (**RCLC**). Assessment of their Ecological Status according to the Water Framework Directive. Gov. Cantabria. 2017 - 2024. IP: A. Puente. 200.00 € (2017), 240.00 € (2018-2024).
- Evaluation of stock assessment and proposal of exploitation plans of marine biological resources. 2023. Consejería de Ganadería, Agricultura y Pesca. Government of Cantabria. IP: A. Puente. 120.000 €.