


# Amélie Lehuen, Ph.D. - Estuarine ecosystems

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42 years old

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 [am-lh](https://github.com/am-lh)

 [Amelie-Lehuen](https://www.researchgate.net/profile/Amelie-Lehuen)



## Education

- 2020-2023 - Doctoral thesis in Physiology and biology of organisms - populations - interactions  
Caen University - ED497 nBISE - Laboratory of biology of organisms and aquatic ecosystems (BOREA) MNHN, CNRS 8067, SU, IRD 207, UCN, UA, Caen - Director: Dr. Francis Orvain  
Marine Ecosystem Engineers Long-Term Evolution Modelling in resPOnse to climate change and sediment Transport in Seine Estuary.  
Partners: IFREMER Brest; NIOZ Netherlands; Italian National Research Council, Italy
- 2019-2020 - MSc Ocean Sciences, Coastal Living Resources Exploitation - Caen University
- Coastal ecosystems and food webs, Coastal areas: Knowledge and sustainable management
  - Physiology of marine organisms, Exploitation of fish, shellfish, and algal species
- 2018-19 - BSc Professions of environmental protection & management Ecological restoration & sustainable development - Caen University of Technology
- Natural habitats rehabilitation: Marine ecosystems management, Impact study, Ecological restoration, GIS; Habitats analysis; Sustainable Development and Environmental Management.
  - Tutored project: Primary production analysis of microphytobenthos on the Orne estuary foreshore and spectral data acquired by GIS.
- 2004 - Engineer degree - Rouen National Institute of Applied Sciences (INSA)
- Fine Chemistry and Engineering Department - specialism in Materials and Polymers

## Professional experience

- 2021 (ongoing) Association Treasurer GEMEL Normandie
- Finances:** Cash flow monitoring, budget forecasts, annual balance sheet. Implementation of cost accounting. Discussions with chartered accountant and statutory auditor.
- Social management:** 3 permanent employees (contract reviews, individual interviews), recruitment of temporary contracts.
- Association:** Set up of a Local Aid Scheme (DLA), development of organizational tools and practices to monitor projects, workload, costs, and volunteer activities.
- 2020-2023 - PhD Researcher - Caen University
- Marine Ecosystem Engineers Long-Term Evolution Modelling in resPOnse to climate change and sediment Transport in Seine Estuary (MELTING POTES).
- 2020-2022 (46h) - Vacation teaching IUT Grand Ouest Normandie Caen campus 2
- 2021-22 - L3: Tutored project
- 2020-21 - L2: Applied computer data analysis, Environmental analysis; L3: Marine ecosystem management & marine biology, Tutored project
- 2020 (9 months) - Research engineer - internship and fixed-term contract - Laboratory of biology of aquatic organisms and ecosystems (BOREA) MNHN, CNRS 8067, SU, IRD 207, UCN, UA, Caen
- Prediction of the distribution of macrozoobenthic species in the Seine estuary in response to hydro-morpho-sedimentary changes: first applications on the population of cockles, *Cerastoderma edule*. Definition of optimal ecological niches by quantile regression.
- 2019 (6 months) - Benthic technician - internship - GEMEL-Normandie - Luc sur Mer
- Evaluation of a stock of bivalves and associated fauna following a scientific reserve creation on the west coast of Cotentin.

## Skills

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| <br>IT<br>Relational databases (Access, SQL)<br>SIG<br>Bioturbation<br>Macrozoobenthos<br>Estuary, Coastal<br>Intertidal, Mudflat | <br>Species Distribution Model (SDM)<br>Optimal Ecological Niches<br>Quantile regression<br>Suitability index | <b>Organization - management</b><br>Full project management<br>Schedule building and monitoring<br>Budget definition and control<br>Leading a multidisciplinary team<br><br>Erosion model<br>Hydro-morpho-sedimentary model<br>Metabolic rate<br>Data analysis<br>Geo-statistics |
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## Publications

**Lehuen, A.**, Dancie, C., Grasso, F., et al., 2023. A quantile regression approach to define optimal ecological niche (habitat suitability) of cockle populations (*Cerastoderma edule*). *Unpub.*

**Lehuen, A.** et Orvain, F., 2023. A cockle-induced bioturbation model and its impact on sediment erodibility: a meta-analysis. *Unpub.*

**Lehuen A.**, Oulhen R.M., Zhou Z., de Smit J., Cozzoli F., Bouma T., Orvain Francis, 2023. Multispecies macrozoobenthic seasonal bioturbation effect on sediment erodibility. *Unpub.*



## Posters

August 2022 - Nereis park - Logonna-Daoulas, France

**Lehuen, A.**, Dancie, C., Grasso, F., et al., 2022. A modelling approach for predicting species distribution in Seine estuary by applying an Optimal Ecological Niche model: First application to *Cerastoderma edule* population.

**Lehuen, A.** et Orvain, F., 2022. Bioturbation model of *Cerastoderma edule* based on metabolic activity and sediment composition: a meta-analysis.

**Lehuen, A.** et Orvain, F., 2022. MELTING POTES Marine Ecosystem Engineers Long-Term Evolution: A Modelling study of benthic faunal activity and distribution in resPonse to climate change and sediment Transport in Seine Estuary.

September 2022 - ECSA59 - San Sebastian, Spain

**Lehuen, A.**, Dancie, C., Grasso, F., et al., 2022. A modelling approach for predicting species distribution in Seine estuary by applying an Optimal Ecological Niche model: First application to *Cerastoderma edule* population.



## Expertise

Mai 2023 (4 days) - NEO workshop - ILICO - Caen

Study of "Optimal Ecological Niche" species distribution models and inter-SNO (Systèmes National d'Observation) taxonomic and functional distribution: Coupling of hydro-biological data (low-frequency SOMLIT and high-frequency COASTHF) with planktonic (PHYTOBS) and benthic (BENTHOS) species distribution data in coastal ecosystems of mainland France. Workshop for 15 people.

2018 (8 months) - QHSE engineer - GB Ouest - Revima-APU Project - Caudebec en Caux

Creation of chemicals database, collective and individual protections rationalization, study of REACH exposure scenarios.

2011-2017 (6 years) - Utilities Project Manager - GB Ouest - Chevron Oronite Project - Le Havre

3 years global improvement plans management, 15 projects in parallel, 1,5M€ budget per year, development and sharing of project management tools.

2010-2011 (6 months) - Process Improvement engineer - Lubrizol - Rouen

Health, Safety and Environment project management.

2010 (8 months) - Environment engineer - Petroplus - Petit Couronne Refinery

Monitoring and improvement of flow and performance of the refinery Waste Water Treatment Plant. Communication of indicators.

2007-2009 (1,5 year) - Process Control engineer - Lubrizol - Rouen

Development of statistical process analysis tools on Statgraphics, alarm dashboard.

2007 (5 months) - R&D Process engineer - Cristal-Millennium Inorganic Chemicals - Le Havre

Stabilization and optimization of the white gypsum unit, industrial tests, US communication.

2004-2005 (2 years) - Process Improvement engineer - Lubrizol - Rouen

Continuous improvement projects. Production support and project management. Analysis of nonconformities.

## Permaculture

2019: Permaculture Design Course  
- CDFP l'Escargotier, Le Havre

## Music

2017 & 19: Jazz singing masterclass -  
Jazzitudes, Lisieux  
10 years of musical practice in band as  
singer and guitarist  
2012-17: Monthly open mike: Lavomatic  
Tour

## Dance

2004-12: Mandingue and Sabar  
weekly practice - Kaï Danse,  
Rouen  
2012-14: Contemporary dance shows  
- Le Phare, Le Havre