

# BAPTISTE ALGLAVE

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[https://balglave.github.io/b\\_alglave/](https://balglave.github.io/b_alglave/)

## RESEARCH INTEREST

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I am a quantitative ecologist and applied statistician with a specific interest in spatio-temporal modeling and applications in fisheries science and marine ecology. During my PhD, I developed statistical hierarchical models combining commercial catch declarations data and scientific survey data to infer fish spatio-temporal distribution and identify their essential habitats. Specifically, I developed methods to account for preferential sampling of commercial data and difference of spatial resolution between distinct data sources (change of support issues).

Since January 2023, I'm a post-doc fellow at the University of Washington (Seattle, USA) to develop spatio-temporal population dynamics models to project and address the effect of climate change on harvested population with the Snow Crab of the Bering Sea as a case study.

## EDUCATION

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### Postdoc

January 2023 - present

University of Washington, School of Aquatic and Fishery Sciences and NOAA

*Subject:* Projecting and addressing climate change for harvested marine populations.  
Snow Crab of the Bering Sea as a case study.

*Key words:* spatio-temporal modeling, population dynamics, projections,  
sensitivity analysis, species life-cycle, management strategy evaluation.

*Supervisors:* André Punt, Cody Szuwalski, Maxime Olmos.

### PhD

2019 - 2022

Ifremer Nantes and Institut Agro (Rennes) - UMR DECOD

*Subject:* Inferring fish spatio-temporal distribution and identifying essential habitats:  
tackling the challenge of preferential sampling and change of support to integrate  
heterogeneous data sources.

*Key words:* spatial and spatio-temporal modeling, hierarchical model, data integration,  
preferential sampling, change of support, fisheries functional zones.

*Supervisors:* Youen Vermard, Marie-Pierre Etienne, Mathieu Woillez, Etienne Rivot.

*Student mobility:* DTU Aqua, Copenhagen, Denmark. Supervision of Kasper Kristensen. August - October 2021

### MSc in fisheries science and quantitative ecology

2018 - 2019

Institut Agro (Rennes)

### Master thesis

Ifremer Nantes - EMH Research Unit

*Subject:* Management Strategy Evaluation under stock structure uncertainty.  
Application to the common sole in the Eastern English Channel.

*Supervisors:* Sigrid Lehuta, Youen Vermard.

### BSc in agriculture and food science

2016 - 2017

Institut Agro (Rennes)

*Student mobility:* semester study at University College Cork, Ireland.

August - December 2017

## SCIENTIFIC PUBLICATIONS

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### Peer-reviewed

Alglave Baptiste, Rivot Etienne, Etienne Marie-Pierre, Woillez Mathieu, Thorson James T, Vermard Youen (2022). **Combining scientific survey and commercial catch data to map fish distribution.** ICES Journal of Marine Science. <https://doi.org/10.1093/icesjms/fsac032>

Alglave Baptiste, Vermard Youen, Rivot Etienne, Etienne Marie-Pierre, Woillez Mathieu (2023). **Identifying mature fish aggregation areas during spawning season by combining catch declarations and scientific**

**survey data.** Canadian Journal of Fisheries and Aquatic Sciences. In press. [link](#)

### Under review

Alglave Baptiste, Kristensen Kasper, Vermard Youen, Rivot Etienne, Woillez Mathieu, Etienne Marie-Pierre (*under review*). **Inferring fine scale wild species distribution from spatially aggregated data.** Submitted in the Journal of the Royal Statistical Society: Series C. [link](#)

## TECHNICAL REPORTS

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Alglave Baptiste, Vermard Youen (2022). Ad-hoc contract for the preparation of STECF EWG 22-01 concerning closure areas to protect juveniles and spawners of all demersal stocks in western Mediterranean Sea.

## THESIS

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### PhD thesis

Alglave Baptiste (2022). Inferring fish spatio-temporal distribution and identifying essential habitats : tackling the challenge of preferential sampling and change of support to integrate heterogeneous data sources. PhD Thesis, Institut Agro, Rennes. [link](#)

### Master thesis

Alglave Baptiste (2019). **Management Strategy Evaluation of the Eastern English Channel common sole: management approach under uncertainty.** Master thesis. Master thesis, Institut Agro, Rennes. Specialization in fisheries science and quantitative ecology. [link](#)

## CONFERENCE PRESENTATIONS

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Alglave Baptiste, Vermard Youen, Bez Nicolas, Etienne Marie-Pierre, Kristensen Kasper, Thorson James T., Woillez Mathieu, Rivot Etienne (2022). **Can we trust commercial catch declarations data to map fish spatio-temporal distribution and identify fish essential habitats?** 15th conference of the AFH 'Fisheries research and sustainable development'. June 2022, Brest, France. [link](#)

Florian Quemper, Baptiste Alglave, Marie-Pierre Etienne, Etienne Rivot, Mathieu Woillez, Youen Vermard, Mathieu Doray et Guillermo Boyra (2022). **Etude de la distribution spatio-temporelle de la sardine (*S. pilchardus*) dans le Golfe de Gascogne.** 15th conference of the AFH 'Fisheries research and sustainable development'. June 2022, Brest, France. [link](#)

Alglave Baptiste, Vermard Youen, Etienne Marie-Pierre, Woillez Mathieu, Rivot Etienne (2022). **Can we use catch declarations data to map fish spatial distribution?** International Statistical Ecology Conference (ISEC). June 2022, Cape Town, South Africa. [link](#)

Alglave Baptiste, Kristensen Kasper, Vermard Youen, Rivot Etienne, Woillez Mathieu, Etienne Marie-Pierre (2022). **Downscaling coarse observations to predict continuous species spatio-temporal distribution.** Meeting of the RESSTE network 'Spatio-temporal statistics for remote sensing data'. May 2022, Paris, France. [link](#)

Alglave Baptiste, Kristensen Kasper, Vermard Youen, Rivot Etienne, Woillez Mathieu, Etienne Marie-Pierre (2022). **Going from coarse landings data to fine scale species distribution.** Annual meeting of the GdR 'Ecology and statistics'. April 2022, Montpellier, France. [link](#)

Alglave Baptiste, Vermard Youen, Etienne Marie-Pierre, Woillez Mathieu, Rivot Etienne (2021). **Can we trust commercial landings data to identify essential habitats of harvested fish? Application to several demersal species in the Bay of Biscay.** ISOBAY 17 - XVII International Symposium on Oceanography of the Bay of Biscay. June 2021, virtual event. [link](#)

Alglave Baptiste, Vermard Youen, Etienne Marie-Pierre, Woillez Mathieu, Rivot Etienne (2021). **Can we identify fish essential habitats with landings data? Application to the common sole of the Bay of Biscay.** Ecolstat 2021: annual meeting of the GdR 'Ecology and statistics'. April 2021, virtual event. [link](#)

Alglave Baptiste, Etienne Marie-Pierre, Vermard Youen, Woillez Mathieu, Rivot Etienne (2020). **Spatio-temporal modeling of fishery functional zones by combining catch declarations data and scientific survey data.** Annual meeting of the GdR 'Ecology and statistics'. March 2020, Rennes, France. [link](#)

Alglave Baptiste, Lehuta Sigrid, Leforestier Sophie, Vermard Youen (2019). **Management Strategy Evaluation of the Eastern English Channel common sole: management approach under uncertainty**. 14th conference of the AFH ‘Fisheries research and sustainable development’. June 2019 , University of Caen Normandie, France. [link](#)

## SUPERVISORY EXPERIENCE

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### Master

May - July 2022

*Subject:* Contributions of the lognormal Poisson model in multivariate analysis in community ecology. [link](#)

*Student:* Théo Fabien.

*Co-supervision with:* Marie-Pierre Etienne, Thomas Outrequin and Jean-Louis Marchand.

### Master thesis

February - August 2021

*Subject:* Combining commercial and scientific data to infer the space-time distribution of sardine in the Bay of Biscay. [link](#)

*Student:* Florian Quemper.

*Co-supervision with:* Etienne Rivot and Marie-Pierre Etienne.

## TEACHING

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### Introduction to spatio-temporal modeling for ecology (MSc)

2022

Institut Agro (Rennes), 10 hours. [slides](#) and [codes](#)

### Student project in data science (MSc)

2020 - 2021

Institut Agro (Rennes), 24 hours.

### Practical work in statistics for fisheries science (MSc)

2020

Institut Agro (Rennes), 20 hours.

### Practical work in basics of probability theory (BSc)

2019 - 2020

University of Nantes, 24 hours.

## WORKSHOP, COURSEWORK AND OTHER CONFERENCES

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Annual meeting of the Mexico network, Irstea, Bordeaux

2022

Stats aux sommets, MIA Paris, visio

2021

with an introduction to R-INLA and the SPDE approach by Thomas Opitz and Denis Allard.

Numerical methods for stochastic differential equation, Centrale Nantes

2019 - 2020

by Marie Billaud-Friess.

## PROJECTS AND WORKING GROUPS

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**MACCO project:** Identification of the target species and by-catch of the Bay of Biscay mixed fishery and evaluation of alternative management strategies. <https://www.macco.fr/>

Head of the project: Stéphanie Mahévas (Ifremer Nantes).

**EWG 22-01 - West Med closure areas** (2022): working group aiming at identifying and evaluating the potential closure areas for the demersal species of the Western Mediterranean Sea.

**Ifremer working group ‘Science with and for society’:** working group aiming at evaluating the interactions between science and society within Ifremer. It led to several surveys among researchers, post-doctoral and doctoral students and to internal reports for the Ifremer scientific direction.

## TECHNICAL SKILLS

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### Inference methods

Maximum likelihood inference, Bayesian inference

### Languages

R, C++, Java, Python, SQL

### Tools/Packages

Git, LaTeX, TMB, R-INLA, JAGS, Nimble, PostgreSQL

## GRANT

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### Grant for the international mobility of doctoral students

2021

Grant obtained from Ifremer for the mobility at DTU Aqua (Danemark).

## LAB AND DEPARTMENT COMMITMENT

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**Amédée seminars:** organization of semestrial seminars with a focus on methodological development in fisheries science and marine ecology. <https://halieutique.institut-agro-rennes-angers.fr/fr/seminaires-amedee>

## REFERENCES

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### Etienne Rivot

DECOD (Ecosystem Dynamics and Sustainability), Institut Agro, IFREMER, INRAE, Rennes, France.  
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### Marie-Pierre Etienne

Mathematical Research Institute of Rennes IRMAR, Rennes University, Rennes, France.  
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### Youen Vermard

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### Mathieu Woillez

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