

# 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:* Moving towards spatially explicit stock assessment models:

A base evaluation framework, practical motivations and some key methodological issues.

*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. <http://dx.doi.org/10.1139/cjfas-2022-0110>

## 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.** Ecostat 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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**CDD Ifremer** January 2023 - June 2024

*Subject:* Packaging and operationalizing spatio-temporal models to identify fish essential habitats based on catch declarations data and scientific survey data.

*CDD employee:* Juliette Casemajor.

*Co-supervision with:* Mathieu Woillez.

**Master** May - July 2022

*Subject:* Contributions of the lognormal Poisson model for multivariate analysis of ecological communities. [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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Statistical Methods for Spatial Data, STAT 554, University of Washington. 2023  
by John Wakefield.

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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**The Alaska Climate Integrated Modeling Project (ACLIM)** The Alaska Climate Integrated Modeling project (ACLIM) is an interdisciplinary collaboration to project and evaluate climate impacts on marine fisheries in the Bering Sea, Alaska. [link](#)

Head of the project: Kirstin Holsman (NOAA).

**MACCO project:** Identification of the target species and by-catch of the Bay of Biscay mixed fishery and evaluation of alternative management strategies. [link](#)

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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<b>Inference methods</b>	Maximum likelihood inference, Bayesian inference
<b>Languages</b>	R, C++, Java, Python, SQL
<b>Tools/Packages</b>	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. [link](#)

## 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

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### Youen Vermard

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