

BAPTISTE AGLAVE

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https://balglave.github.io/b_aglave/

RESEARCH INTEREST

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 case study.

CURSUS

Postdoc

January 2023 - present

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

Subject: Modelling population dynamics processes in space:

Management Strategy Evaluation as framework.

Key words: State-space model, mechanistic modelling, demographic processes, spatial statistics.

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

Peer-reviewed

Aglave 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](#)

Olmos Maxime, Cao Jie, Thorson James T., Punt André E., Monnahan Cole C., Alglave Baptiste, Cody Szuwalski (*under review*). **Resolving population processes in spatiotemporal population dynamics models: eastern Bering Sea snow crab as a case study.** Submitted in Ecological Modelling.

TECHNICAL REPORTS

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

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

International conferences

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, 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](#)

National conferences

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, 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 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](#)

Seminars

Integrating heterogeneous and massive spatio-temporal data to infer spatial processes. Fisheries science as field of application. Quantitative seminars, School of Fisheries and Aquatic Science, University of Washington, Seattle. March 2023.

Inferring fish spatio-temporal distribution and identifying essential habitats: tackling the challenge of preferential sampling and change of support to integrate heterogeneous data sources. [Ecodep seminars](#), Paris, January 2023.

SUPERVISORY EXPERIENCE

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

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

Statistical Methods for Spatial Data, STAT 554, University of Washington. by John Wakefield.	2023
Annual meeting of the Mexico network, Irstea, Bordeaux	2022
Finist'R workshop Bootcamp of State Of the R, organized by the MIA. Biological station of Paimpont. link	2022
Stats aux sommets, MIA Paris, visio with an introduction to R-INLA and the SPDE approach by Thomas Opitz and Denis Allard.	2021
Finist'R workshop Bootcamp of State Of the R, organized by the MIA. Biological station of Roscoff. link	2020
Numerical methods for stochastic differential equation, Centrale Nantes by Marie Billaud-Friess.	2019 - 2020

PROJECTS AND WORKING GROUPS

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

Inference methods	Maximum likelihood inference, Bayesian inference
Languages	R, C++, Java, Python, SQL
Tools/Packages	Git, LaTeX, TMB, R-INLA, JAGS, Nimble, PostgreSQL

GRANT

Grant for the international mobility of doctoral students 2021
Grant obtained from Ifremer for the mobility at DTU Aqua (Danemark).

LAB AND DEPARTMENT COMMITMENT

Amédée seminars: organization of semestrial seminars with a focus on methodological development in fisheries science and marine ecology. [link](#)

Space-time seminars: organization of bimensual seminars with a focus on spatial and spatio-temporal statistics. [link](#) (the website is currently being updated)

REFERENCES

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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James Thorson

Habitat and Ecological Processes Research, Alaska Fisheries Science Center, NOAA, Seattle.

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