BAPTISTE ALGLAVE

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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 a case study.

EDUCATION

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, Danemark. 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

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 reproduction areas from space-time modeling of 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

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

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

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

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

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

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

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. https://halieutique.institut-agro-rennes-angers.fr/fr/seminaires-amedee

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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Youen Vermard
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Mathieu Woillez
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n.b. Some of my modeling codes are available on the public repository: https://github.com/balglave/sdm_vms_logbooks.git