



Simon Oiry

PhD Student

- ▶ Marine Ecology
- ▶ Drone Pilot
- ▶ Data Processing
- ▶ Statistics

Skills

R	8 years
Python	2 years
JavaScript	2 years
Rmarkdown	3 years
Quarto	3 years
Data Analysis	8 years
Web Development	2 years

Languages

French	Native
English	Level C1
Spanish	Level A1

Summary

I am a marine biologist and remote sensing specialist with a PhD from Nantes Université (France), focusing on intertidal vegetation on European coasts. My expertise includes using drones, satellite imagery, and hyperspectral data to study coastal ecosystems and assess the effects of natural and human-driven changes. I have experience in spectroradiometry, geospatial analysis, and fieldwork in diverse coastal environments. Passionate about marine ecology and technology, I aim to develop innovative methods for monitoring and conserving coastal habitats.

Scientific Contributions

First author publications

Oiry, S., Davies, B. F. R., Rosa, P., Debly, A., Zoffoli, M. L., Barillé, A.-L., Harin, N., Román, M., Gernez, P., & Barillé, L. (Submitted). Heatwave impacts on intertidal seagrass reflectance: From laboratory experiment to satellite mapping of Seagrass Heat Shock Index.

Oiry, S., Davies, B. F. R., Stiger-Pouvreau, V., Gernez, P., & Barillé, L. (Submitted). Mapping the distribution of the alien invasive *Gracilaria vermiculophylla* at the site of its First European Observation.

Oiry, S., Davies, B. F. R., Sousa, A. I., Rosa, P., Zoffoli, M. L., Brunier, G., Gernez, P., & Barillé, L. (2024). Discriminating Seagrasses from Green Macroalgae in European Intertidal Areas Using High-Resolution Multispectral Drone Imagery. *Remote Sensing*, 16(23), 4383. <https://doi.org/10.3390/rs16234383>

Oiry, S., & Barillé, L. (2021). Using Sentinel-2 satellite imagery to develop microphyto-benthos-based water quality indices in estuaries. *Ecological Indicators*, 121, 107184. <https://doi.org/10.1016/j.ecolind.2020.107184>

Co-author publications

Barillé, L., Paterson, I. L., **Oiry, S.**, Aris, A., Cook-Cottier, E. J., & Nurdin, N. (2025). Variability of *Kappaphycus alvarezii* cultivation in South-Sulawesi (Indonesia) related to the monsoon shift: Water quality, growth and colour quantification. *Aquaculture Reports*, 40, 102557. <https://doi.org/10.1016/j.aqrep.2024.102557>

Zoffoli, M. L., Brando, V., Volpe, G., Vilas, L. G., Davies, B. F. R., Frouin, R., Pitarch, J., **Oiry, S.**, Tan, J., Colella, S., et al. (2025). CIAO: A Machine-Learning Algorithm for Mapping Arctic Ocean Chlorophyll-a from Space. *Science of Remote Sensing*, 100212. <https://doi.org/10.1016/j.srs.2025.100212>

Davies, B. F. R., **Oiry, S.**, Rosa, P., Zoffoli, M. L., Sousa, A. I., Thomas, O. R., Smale, D. A., Austen, M. C., Biermann, L., Attrill, M. J., et al. (2024a). Intertidal seagrass extent from Sentinel-2 time-series show distinct trajectories in Western Europe. *Remote Sensing of Environment*, 312, 114340. <https://doi.org/10.1016/j.rse.2024.114340>

Davies, B. F. R., **Oiry, S.**, Rosa, P., Zoffoli, M. L., Sousa, A. I., Thomas, O. R., Smale, D. A., Austen, M. C., Biermann, L., Attrill, M. J., et al. (2024b). A sentinel watching over inter-tidal seagrass phenology across Western Europe and North Africa. *Communications Earth & Environment*, 5(1), 382. <https://doi.org/10.1038/s43247-024-01543-z>

Tools

- ▶ Git
- ▶ RStudio
- ▶ VS Code
- ▶ Qgis
- ▶ Agisoft Metashape
- ▶ DaVinci Resolve
- ▶ Photoshop

Education

01/2022 - 05/2025

Ph.D. in Marine Ecology and Remote Sensing

Nantes University, France

Thesis: Characterization of Intertidal Vegetation on European Coasts Using MultiScale Remote Sensing in Response to Natural and Anthropogenic Pressures

2018 - 2019

Master: Mapping and Environmental management

Nantes University, France

Contact

- 📍 Nantes, France
- ☎ +33 750926354
- ✉ oirysimon@gmail.com
- 🏠 oirysimon.com
- 🔗 SigOiry
- 🔍 Simon Oiry

Román, A., **Oiry, S.**, Davies, B. F., Rosa, P., Gernez, P., Tovar-Sánchez, A., Navarro, G., Méléder, V., & Barillé, L. (2024). Mapping intertidal microphytobenthic biomass with very high-resolution remote sensing imagery in an estuarine system. *Science of the Total Environment*, 955, 177025. <https://doi.org/10.1016/j.scitotenv.2024.177025>

Davies, B. F. R., Gernez, P., Geraud, A., **Oiry, S.**, Rosa, P., Zoffoli, M. L., & Barillé, L. (2023). Multi-and hyperspectral classification of soft-bottom intertidal vegetation using a spectral library for coastal biodiversity remote sensing. *Remote Sensing of Environment*, 290, 113554. <https://doi.org/10.1016/j.rse.2023.113554>

Nuridin, N., Alevizos, E., Syamsuddin, R., Asis, H., Zainuddin, E. N., Aris, A., **Oiry, S.**, Brunier, G., Komatsu, T., & Barillé, L. (2023). Precision aquaculture drone mapping of the spatial distribution of *Kappaphycus alvarezii* biomass and carrageenan. *Remote Sensing*, 15(14), 3674. <https://doi.org/10.3390/rs15143674>

Román, A., Prasyad, H., **Oiry, S.**, Davies, B. F., Brunier, G., & Barillé, L. (2023). Mapping intertidal oyster farms using unmanned Aerial Vehicles (UAV) high-resolution multispectral data. *Estuarine, Coastal and Shelf Science*, 291, 108432. <https://doi.org/10.1016/j.ecss.2023.108432>

Zoffoli, M. L., Gernez, P., **Oiry, S.**, Godet, L., Dalloyau, S., Davies, B. F. R., & Barillé, L. (2023). Remote sensing in seagrass ecology: Coupled dynamics between migratory herbivorous birds and intertidal meadows observed by satellite during four decades. *Remote Sensing in Ecology and Conservation*, 9(3), 420–433. <https://doi.org/10.1002/rse2.319>

Brunier, G., **Oiry, S.**, Gruet, Y., Dubois, S. F., & Barillé, L. (2022). Topographic analysis of intertidal polychaete reefs (*Sabellaria alveolata*) at a very high spatial resolution. *Remote Sensing*, 14(2), 307. <https://doi.org/10.3390/rs14020307>

Brunier, G., **Oiry, S.**, Lachaussée, N., Barillé, L., Le Fouest, V., & Méléder, V. (2022). A machine-learning approach to intertidal mudflat mapping combining multi-spectral reflectance and geomorphology from UAV-based monitoring. *Remote Sensing*, 14(22), 5857. <https://doi.org/10.3390/rs14225857>

Haro, S., Jesus, B., **Oiry, S.**, Papaspyrou, S., Lara, M., González, C., & Corzo, A. (2022). Microphytobenthos spatio-temporal dynamics across an intertidal gradient using Random Forest classification and Sentinel-2 imagery. *Science of The Total Environment*, 804, 149983. <https://doi.org/10.1016/j.scitotenv.2021.149983>

Experience

PhD Student

Nantes University - France

01/2022 - 05/2025

My PhD explored how intertidal vegetation responds to environmental pressures using remote sensing technologies. By combining drone-based multispectral imagery, satellite data, and hyperspectral analysis, I investigated spatial and temporal patterns of seagrasses and macroalgae. The project aimed to refine habitat classification methods and support coastal ecosystem monitoring and management.

Engineer

02/2019 - 01/2022

Nantes University - France

Project founded by the French Office for Biodiversity (OFB). We aimed to develop a bio-indicator of estuarine water quality using microphytobenthos. I used remote sensing on 42 estuaries over multiple years (2018-2020) with Sentinel-2 imagery to assess biomass and coverage, linking them to nutrient levels to support ecological monitoring

Open Source Contributions

See my GitHub profile for a comprehensive list of open source projects.

DISCOV

Creator - Drone image classifier

Standing for Drone Intertidal Substrate Classification of Vegetation. Open-source algorithm used to classify drone-acquired ortho-images and discriminate the five main classes of intertidal vegetation along the Atlantic coastline of Europe.

ICE-CREAMS

Contributor - Satellite image classifier

Standing for Intertidal Classification of Europe: Categorising Reflectance of Emerged Areas of Marine vegetation using Sentinel-2. Satellite equivalent of DISCOV developed under the BiCOME project as part of ESAs Biodiversity+ Precursors studies.

MapRs

Creator - R package

A collection of tools for processing remote sensing data in R.