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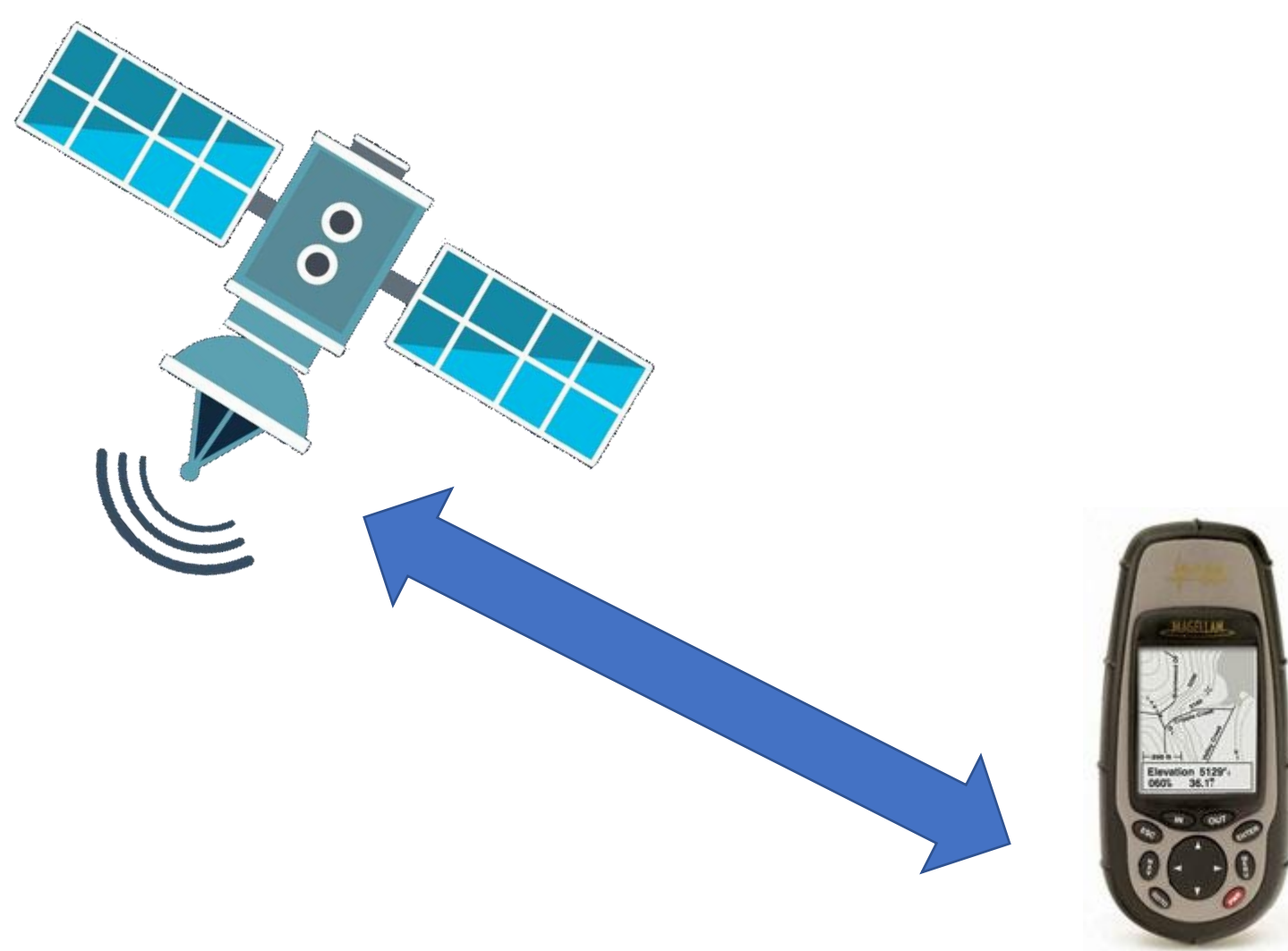
1 Introduction

We have some knowledge on small scale fisheries activity through data collection from landings. So we can estimate landings (not catches) and effort but we are missing where catches occurs. DEMERSTEM project has developed a case study on GPS use as complementary tool to regular landings data collection for a better spatialization of fishing activities.

2 A new available tool : GPS loggers

Data collection

a) We collect GPS position on the basis of a sampling scheme defined by gear, port ... The sampling scheme should be representative of the whole canoe activity.



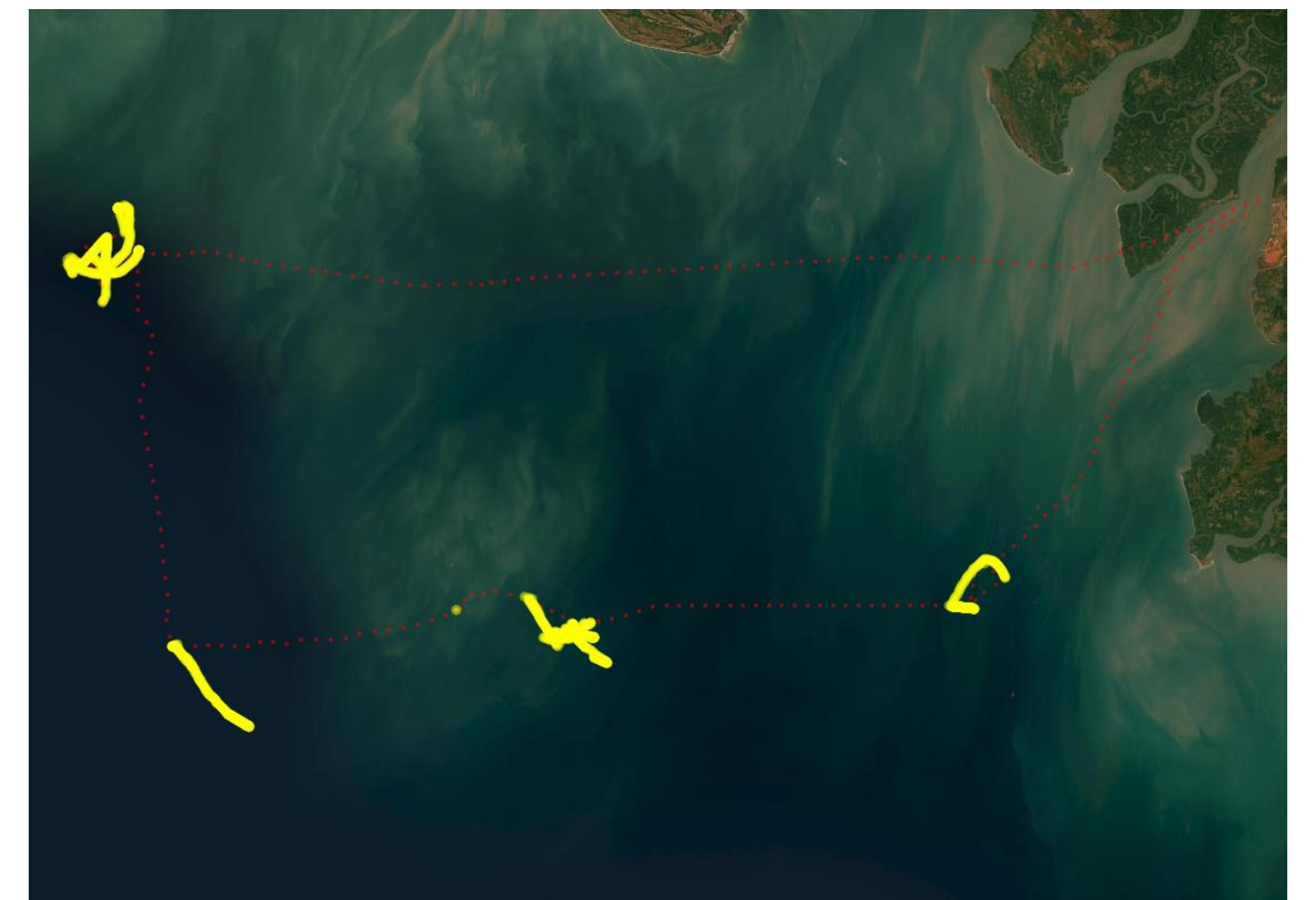
Data analysis

b) We modelize trajectories using expert knowledge and metrics (speed, number of close positions ...)

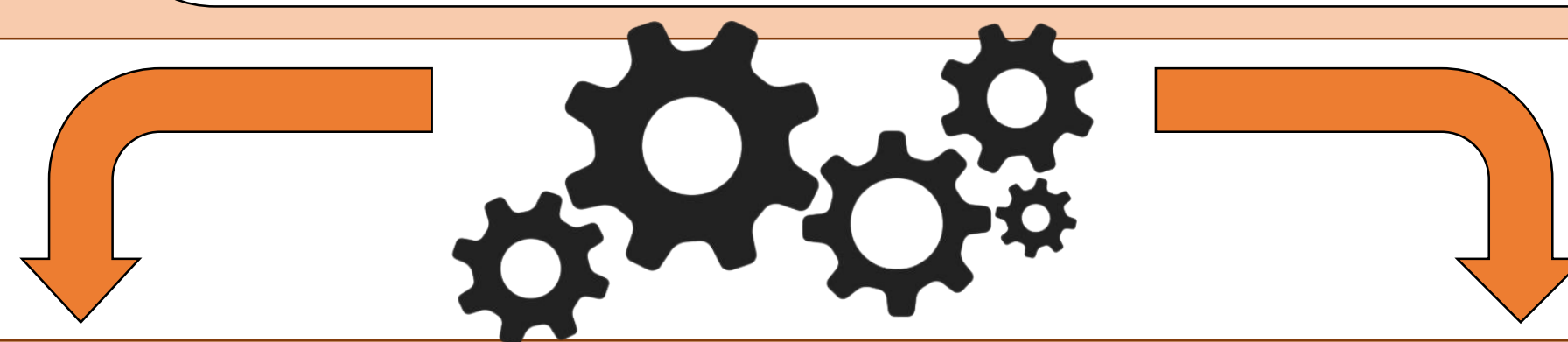


Fishing activity prediction

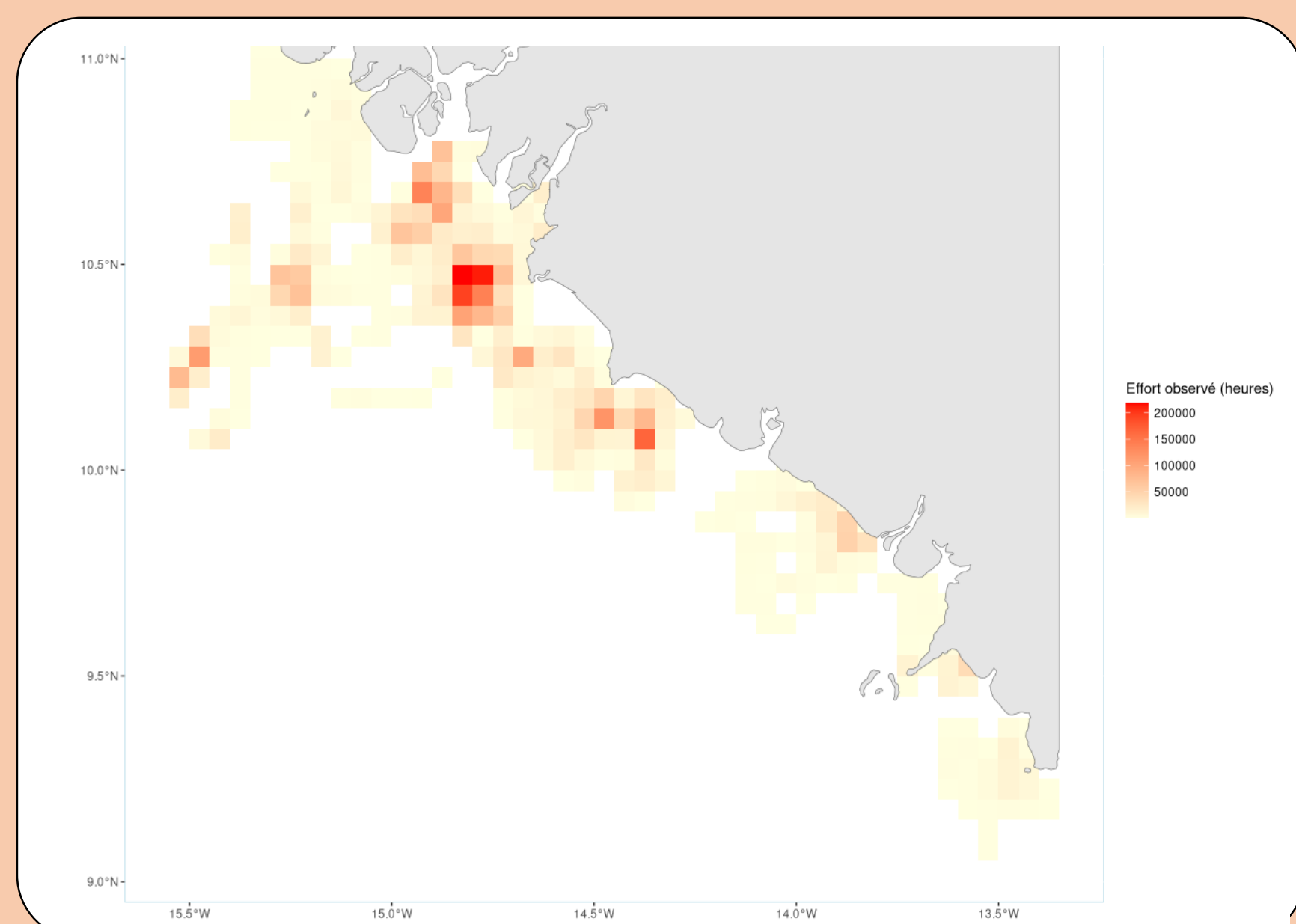
c) We use models to predict fishing activity and fishing area regarding metrics used in the model as factors.



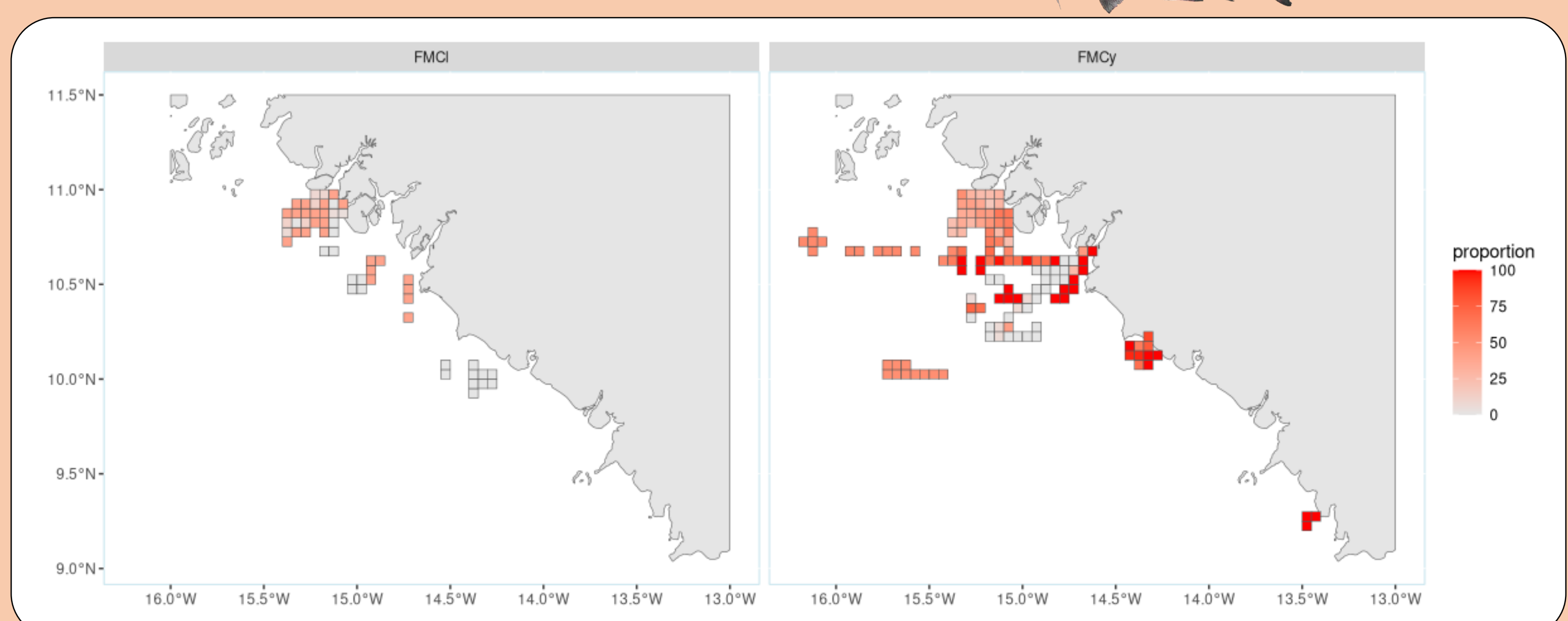
3 Results



Map of extrapolated fishing effort. Raising factor for extrapolation is calculated on the basis of the number of boat in the strata (Gear, port ...) and the number of GPS monitored boats.



Map of the estimate spatialization of catches of juveniles. This is a combination of length frequencies collected during landings and estimate fishing area using GPS. Specie: *Arius heudelottii*



4 Conclusion

Nowadays, GPS loggers are a good candidate to improve knowledge on fishing activity. Technologies are now cheaper and we are no more in the proof of concept stage. We capitalized the use of this kind of data through a R package (GPSMonitoring) and through the use of spatialized database (Postgresql/postgis),

Available data are useful to produce map of effort and catches that could be linked to :

- Catches by species observed during landings to estimate spatialized catches by species (or by size/species)
- To vms data to establish potential conflict areas

Références :

GPSMonitoring R Package : <https://github.com/polehalieutique/GPSMonitoring>

