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MARINE BIODIVERSITY EXPLOITATION & CONSERVATION

Global analysis of beaching events in French dFAD trajectory data for impacts on sensitive habitats and proximity to ports

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INTRODUCTION

Drifting FADs are massively used in tropical tuna fisheries to aggregate fish

The use of dFADs leads to potentially negative ecological impacts, in particular beaching

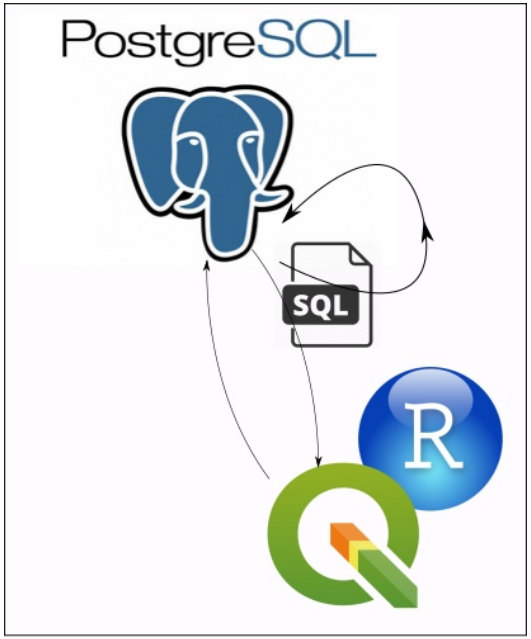
Objective: come out with detailed understanding of where and when beaching occur

METHODOLOGY

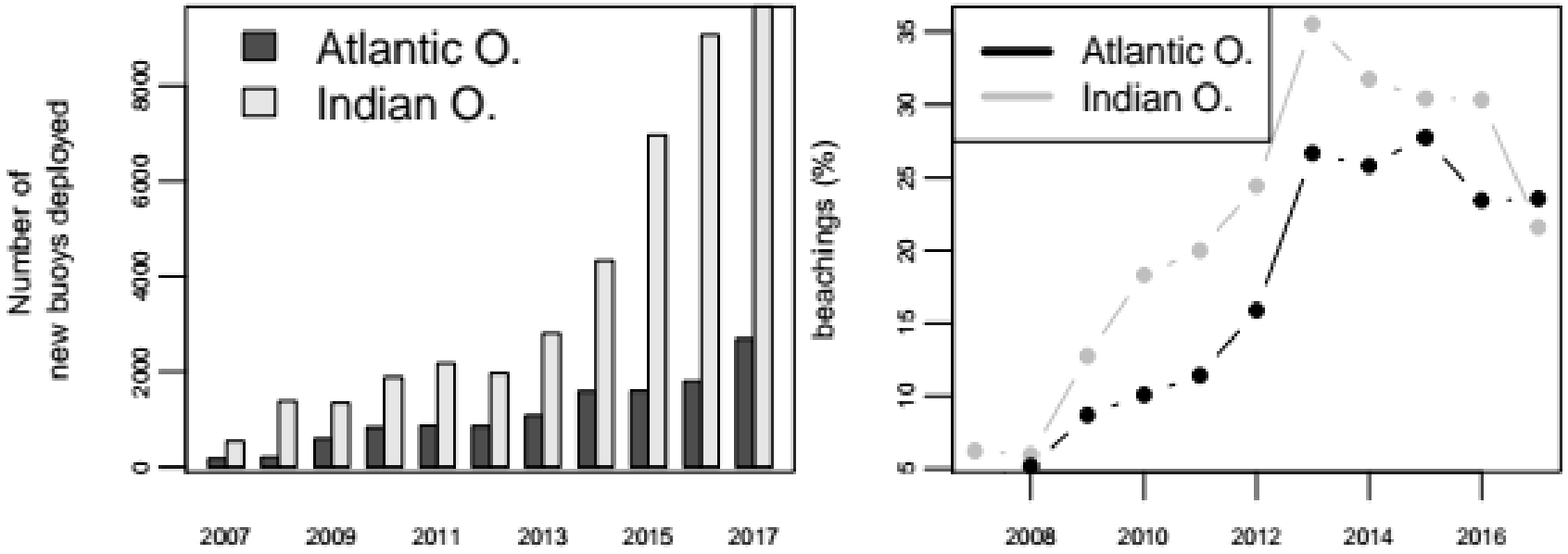
Methodology for identifying beaching is broken down into two main steps

Step 1: Based firstly on the spatial proximity of multiple positions from the same buoy

Step 2: Based secondly on basic characteristics expected for beaching

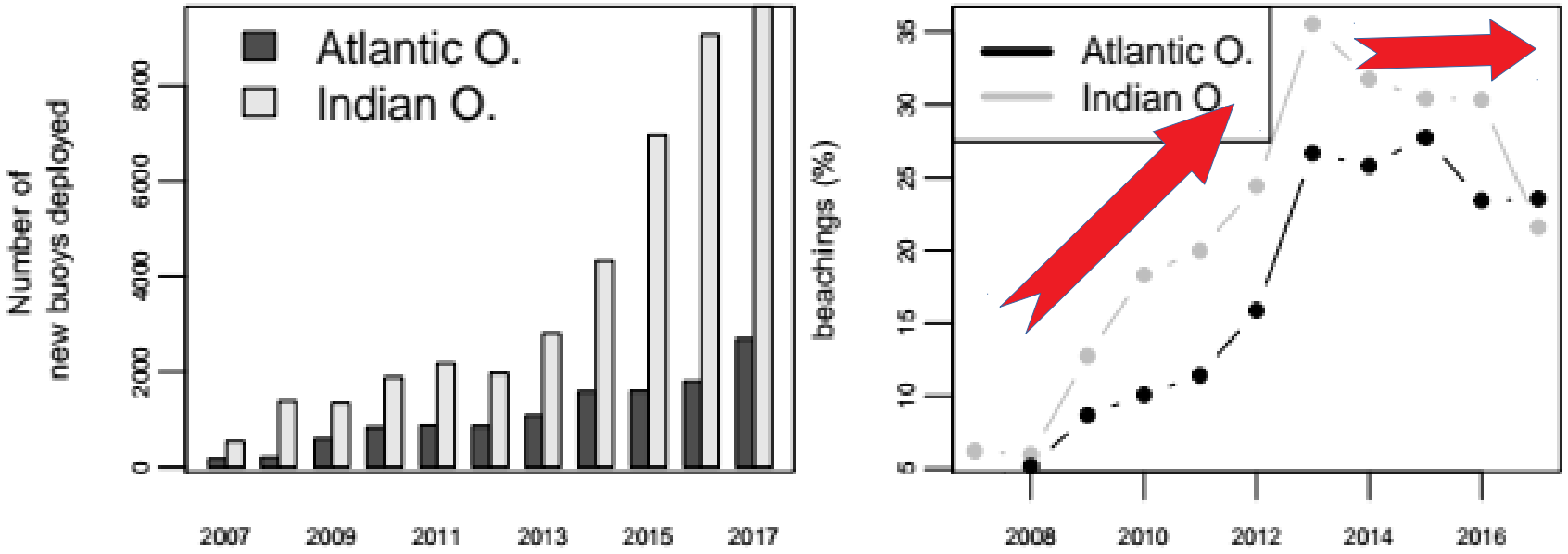


Percentage of beaching



Number of new buoys deployed (present in our database) in the Indian and Atlantic oceans over the period 2007-2017 (left) and percentage of these buoys that beached (right)

Percentage of beaching



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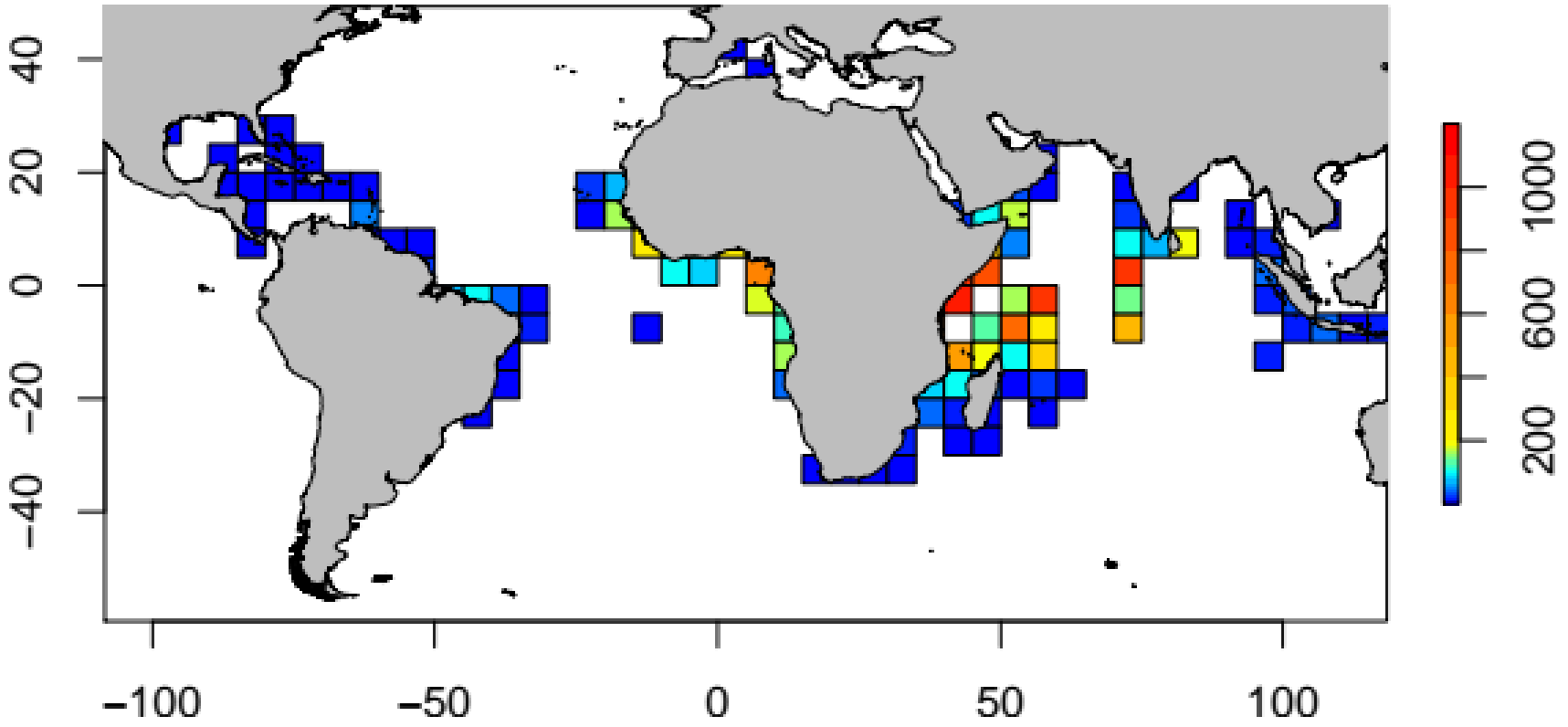
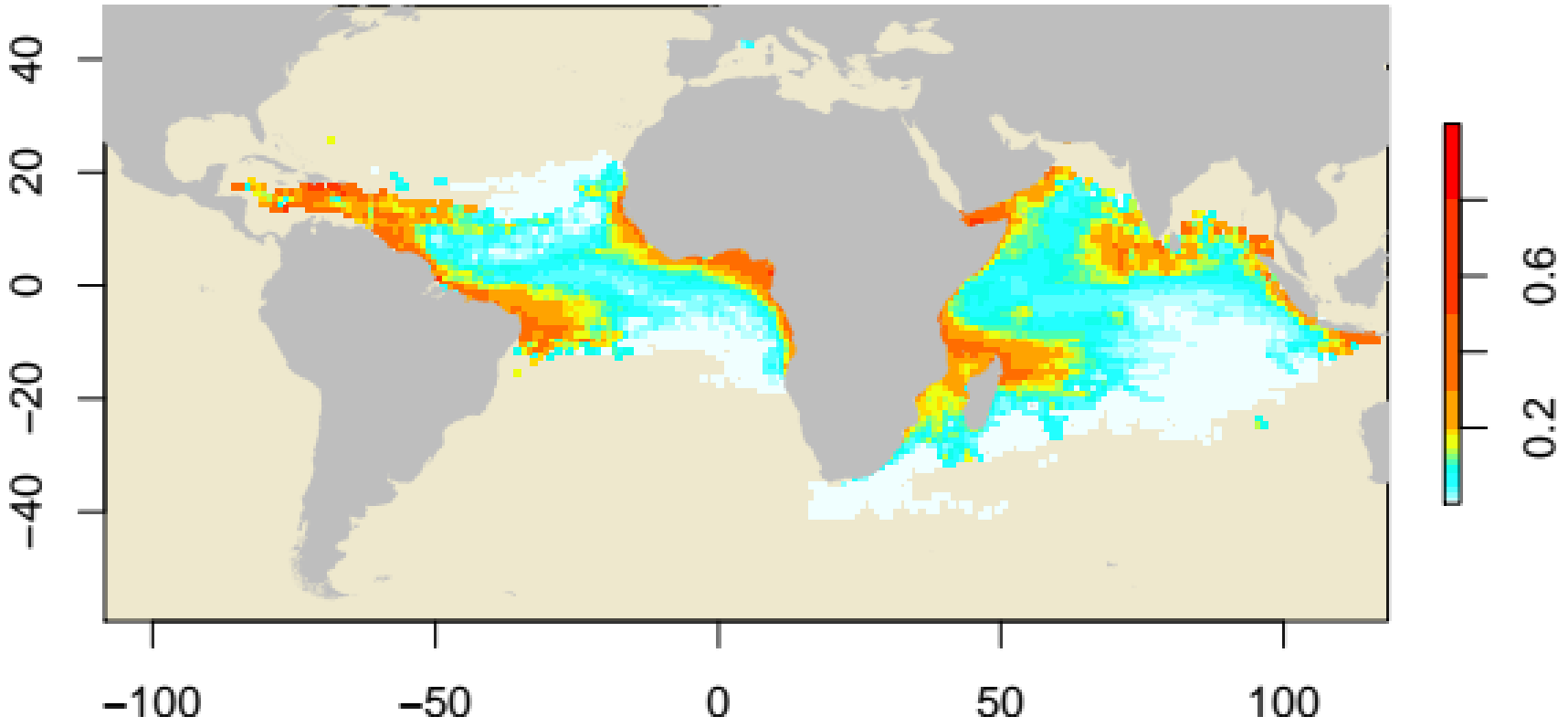
Location of beaching



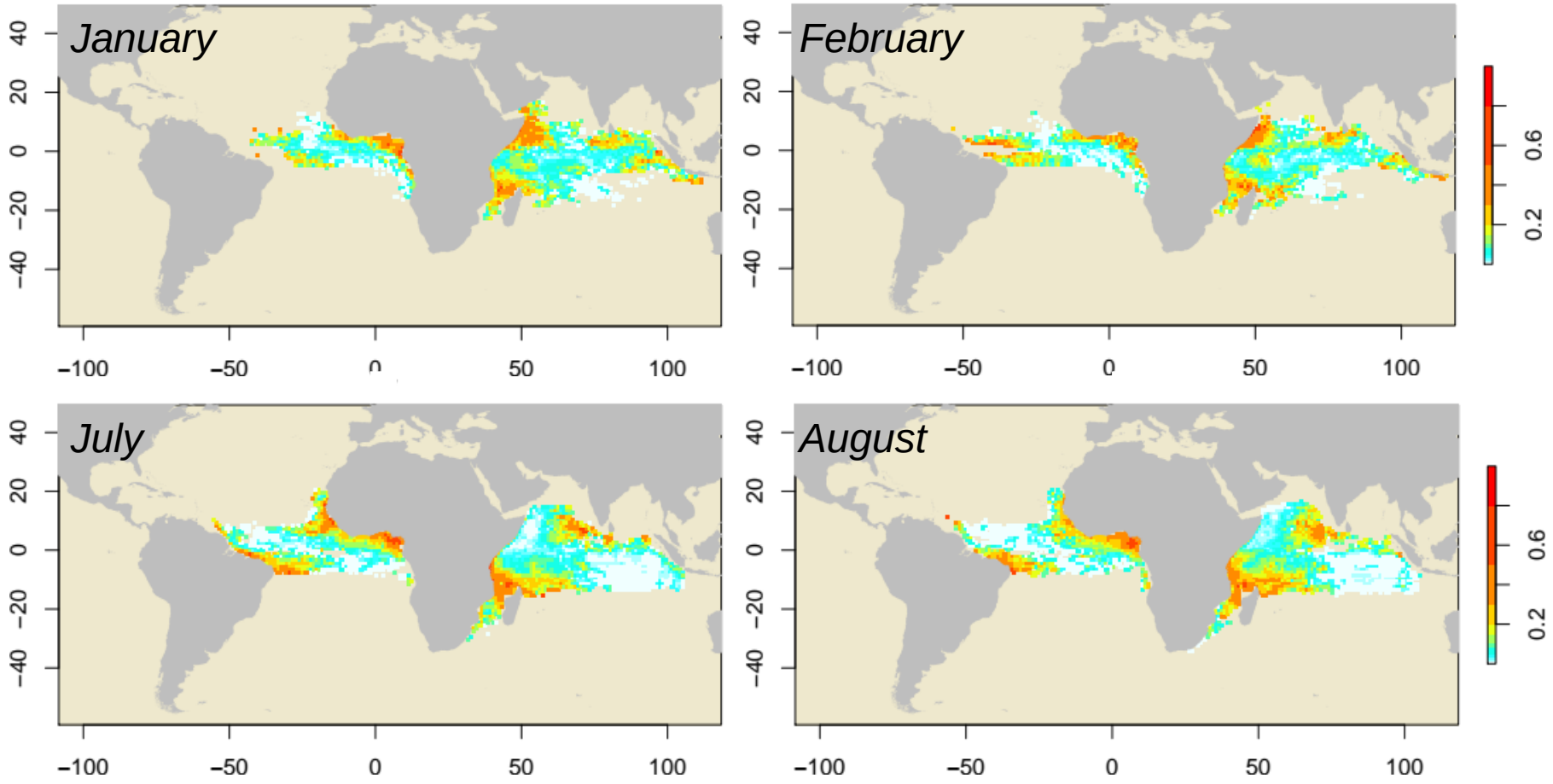
Density map of dFADs beaching over the period 2007-2017
(number of beaching in 5 km of coastline)

Origin of beaching

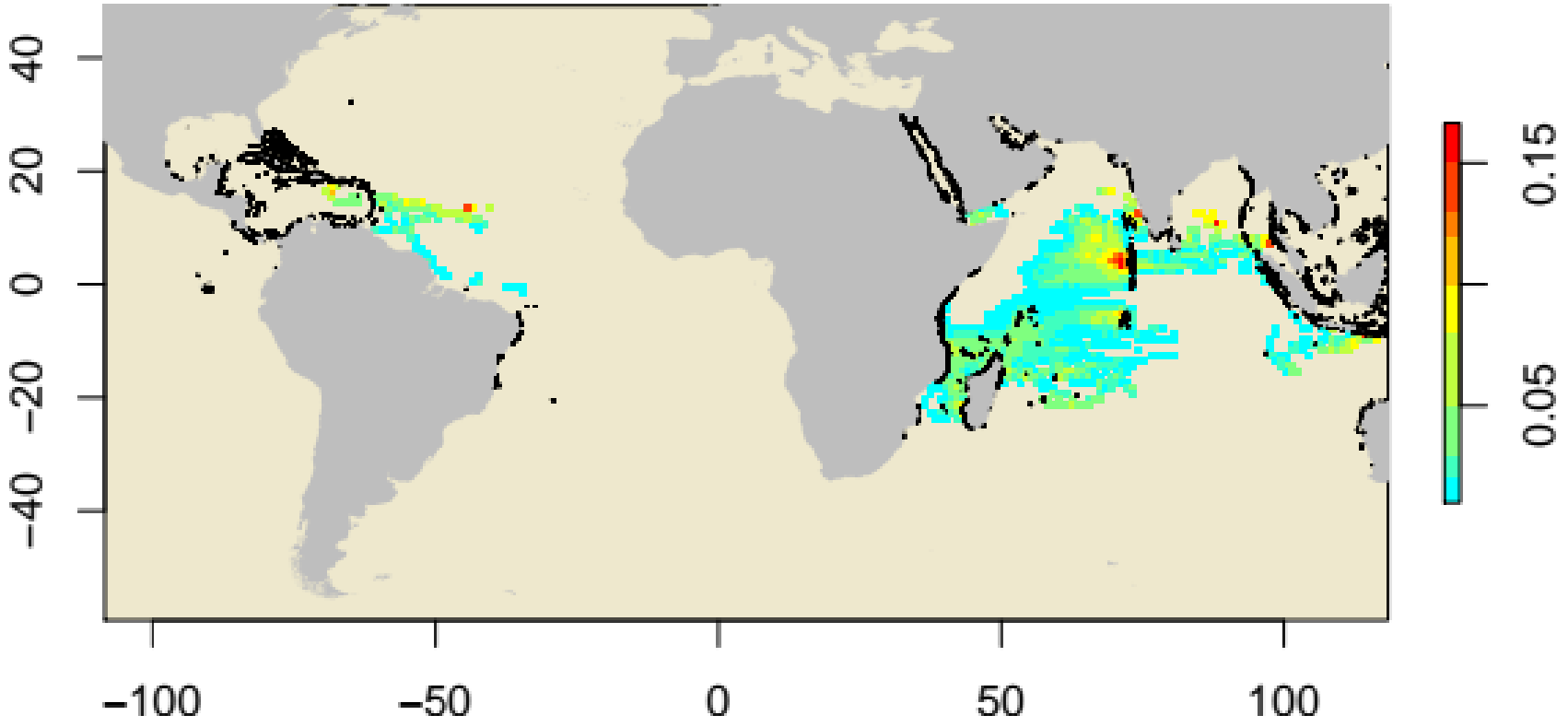


Map of the proportion of buoys that beached within 3 months following their last passage in each 1°x1° grid cell

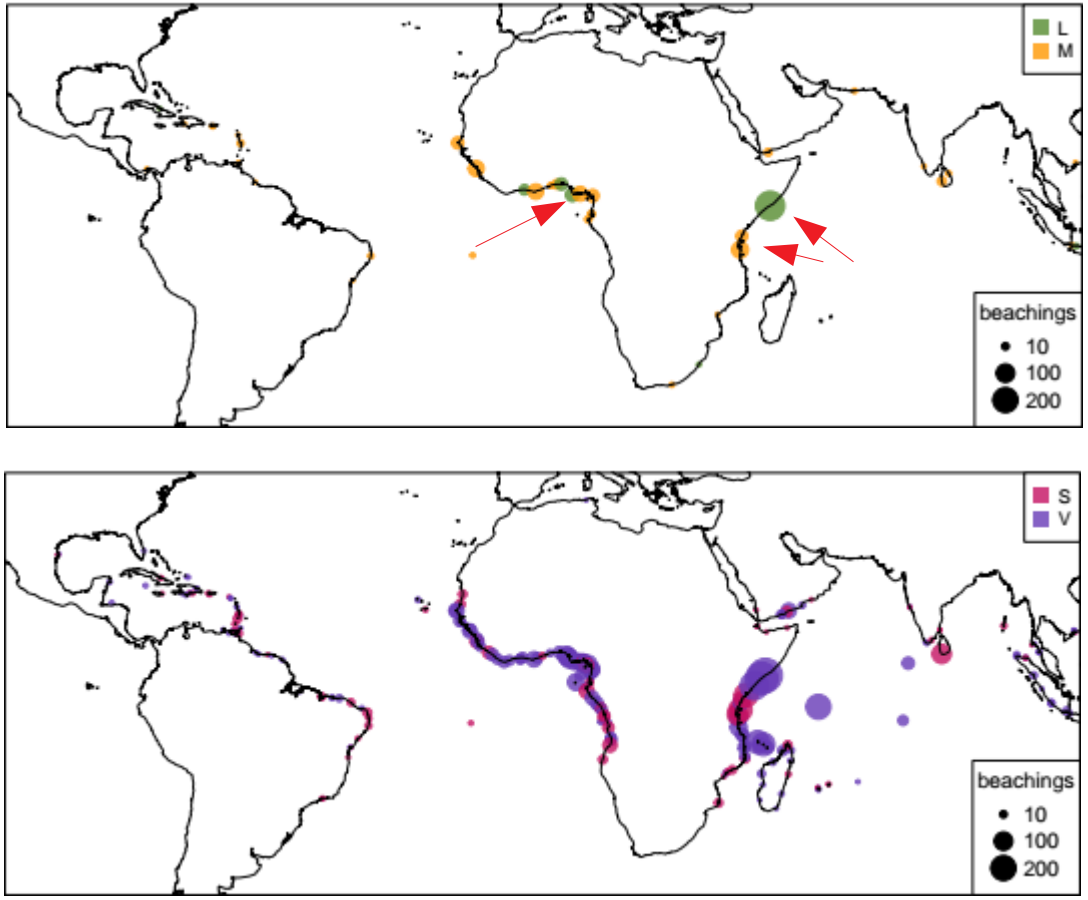
Seasonnality in beaching



Beaching on coral reefs



Beaching close to ports



num_beachings	Port_size
396	Large
509	Medium
1372	Small
3663	Very small

Maps showing beaching events that occur within 50km from ports categorizing by size

CONCLUSION

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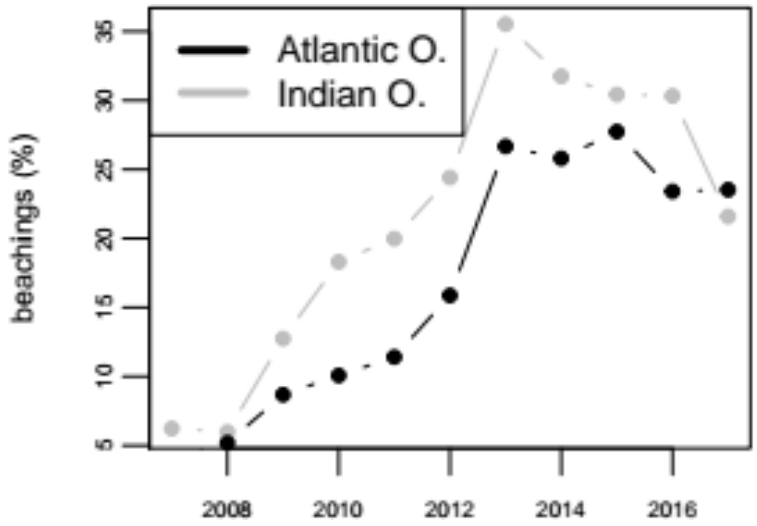
– Percentage of beaching increased from 2008 to 2013 and then stabilized



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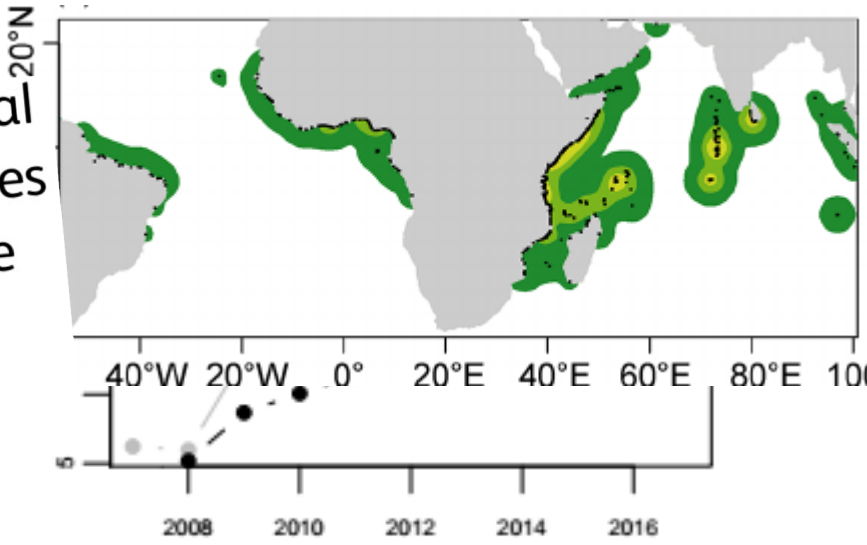
– Spatial distribution of beaching has not changed much in recent years

Large-Scale Examination of Spatio-Temporal Patterns of Drifting Fish Aggregating Devices (dFADs) from Tropical Tuna Fisheries of the Indian and Atlantic Oceans

Alexandra Maufroy[1]*, Emmanuel Chassot[2], Rocío Joo[1,3], David Michael Kaplan[1,4]



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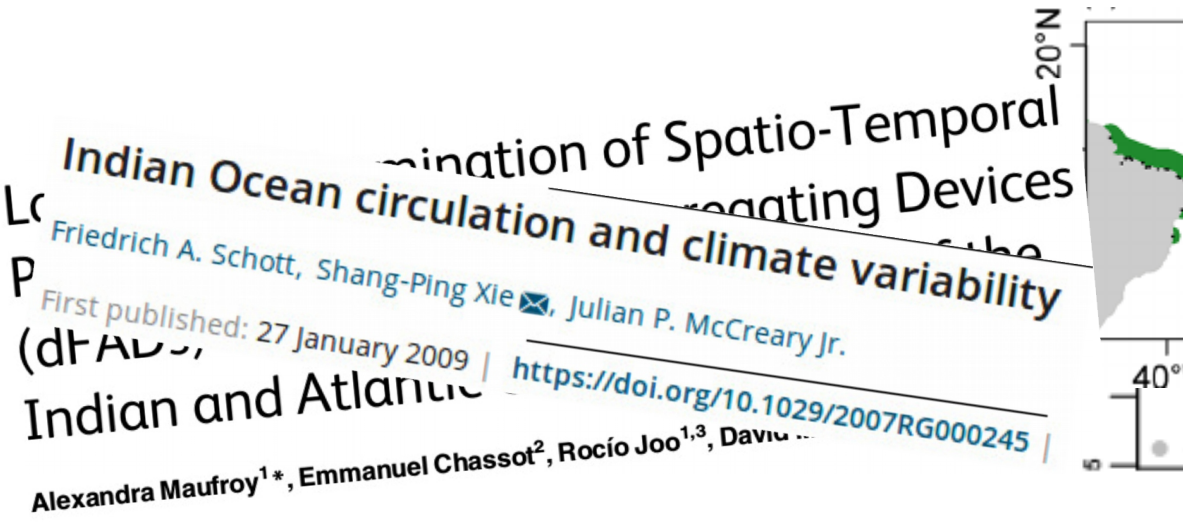
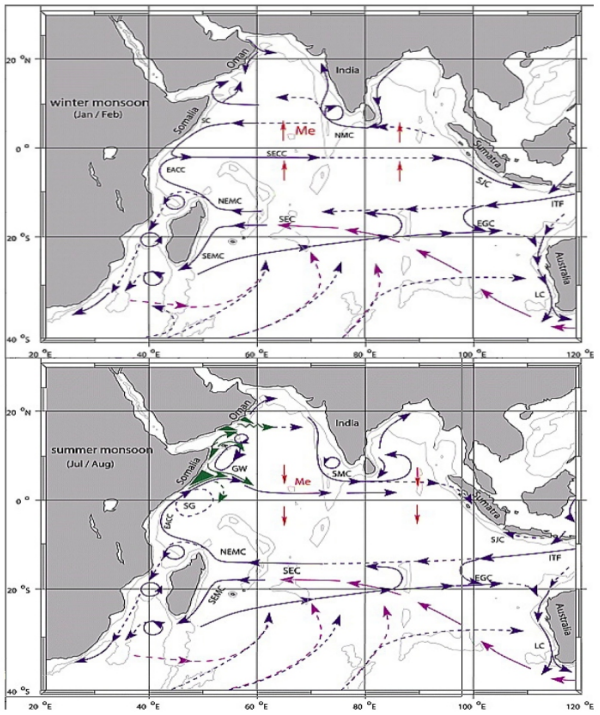
– Risky areas for dFADs deployments depend on the Monsoon regimes





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– Risky areas for dFADs deployments depend on the Monsoon regimes

– Forecast dFADs beaching using particle-tracking models

Fish aggregating devices drift like oceanographic drifters in the near-surface currents of the Atlantic and Indian Oceans

-Temporal

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Lo

P

(dFADs)

Indian and Atlantic

T. Imzilen [a], E. Chassot [b], J. Barde [c], H. Demarcq [a], A. Maufroy [a, d], L. Roa-Pascuali [a], J-F. Ternon [a], C. Lett [c]

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