

# Reducing FAD Structure Impact

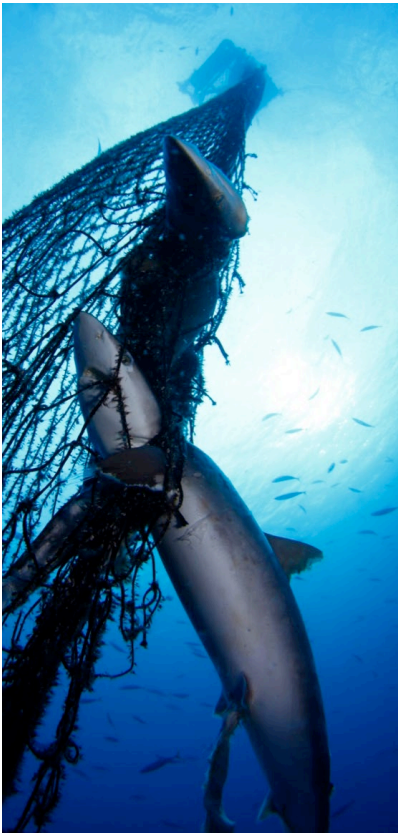
Gala Moreno, Martin Hall, Marlon Roman, Iker Zudaire, Mariana Tolotti, Jose Carlos Báez, Jon Lopez, Hilario Murua

DOCUMENT SAC-10 INF-I

Task 2.3 of the FAD WG to inform Annex II of Resolution C-18-05

13-17 May, 2019 | IATTC SAC meeting

## Ghost Fishing: Entanglement Issues



## FAD Stranding

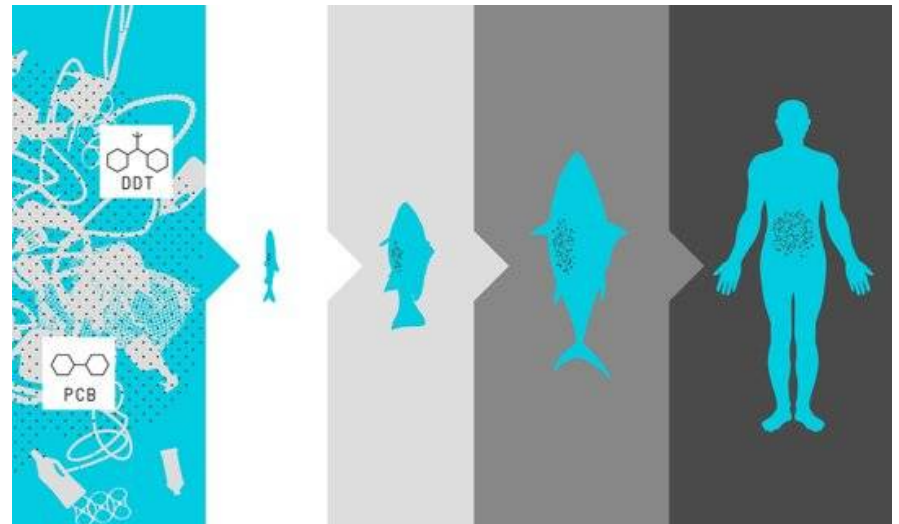




# Marine Pollution: Oceans Can Not “Digest” Plastics

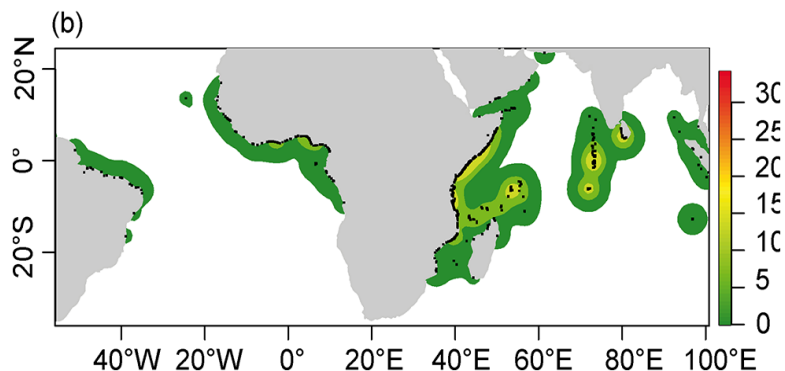


**FADs accumulate year after year**



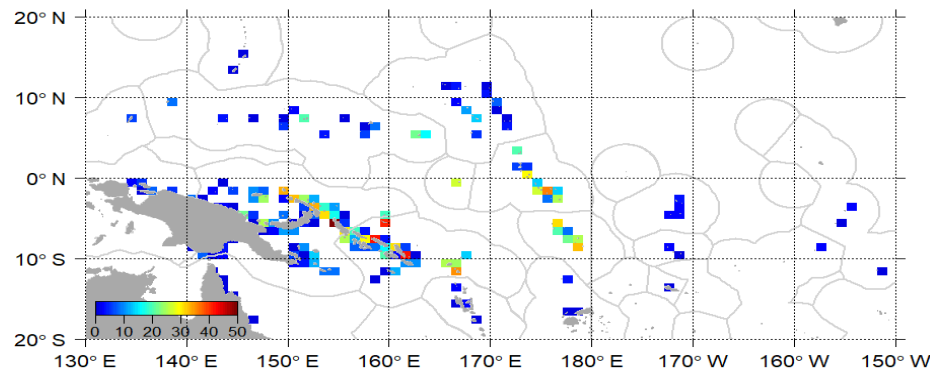
# FAD Stranding Events: which is the extent of the problem?

## Indian & Atlantic Ocean



- 10% of the FADs deployed end up beaching. *Maufroy et al. 2015*
- 1% FAD watch program in Seychelles. *Zudaire et al. 2018*

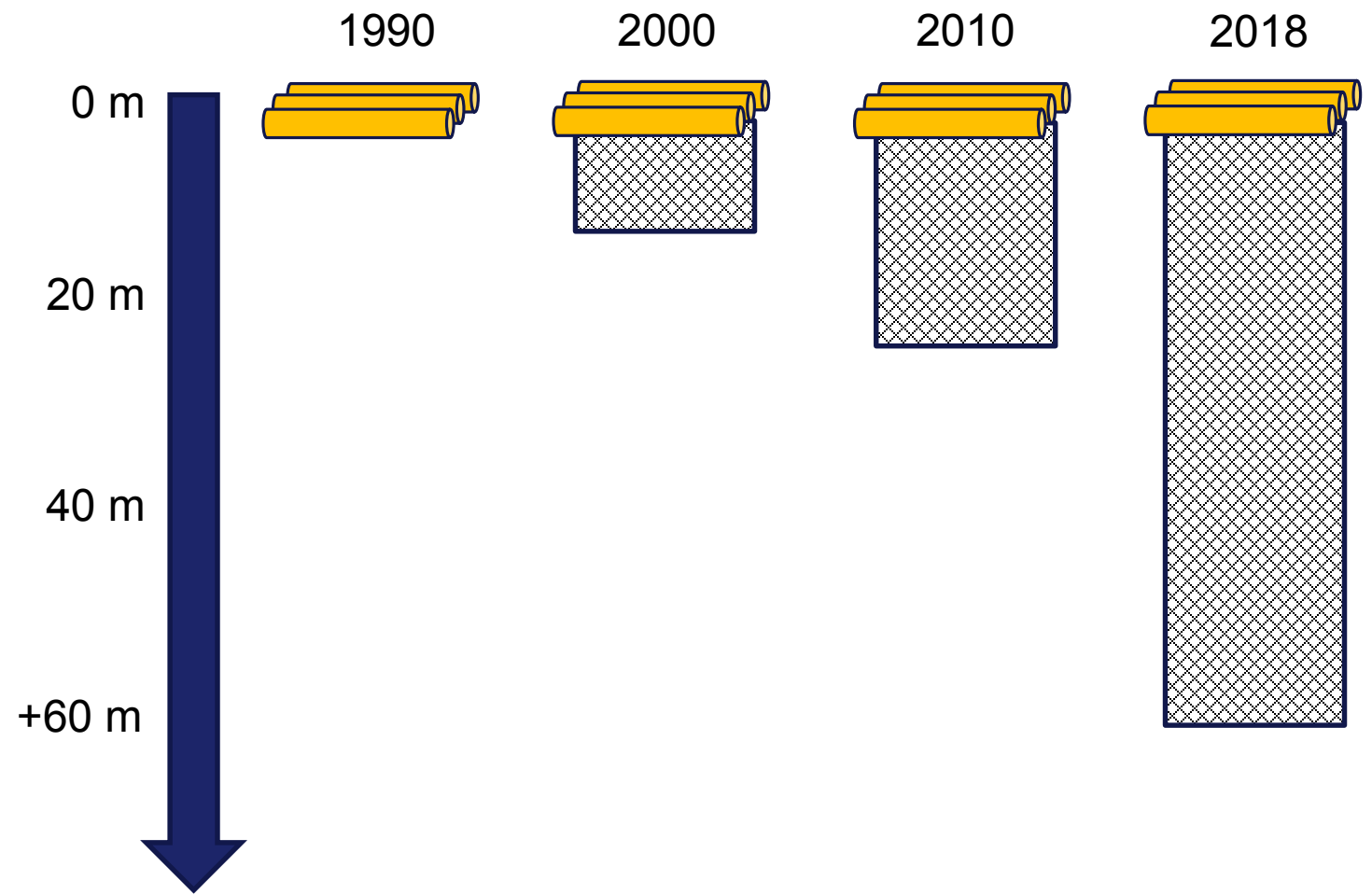
## Western and Central Pacific



- 5% stranding
- 26% buoy 'lost', likely leading to marine pollution or unnoticed beaching *Escalle et al. 2018*

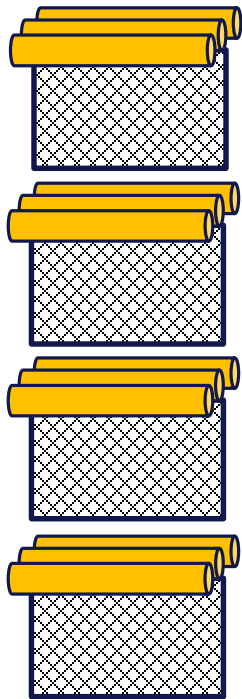
**These studies use buoy trajectories to assess the impact**

# Trend Towards more and Deep FADs



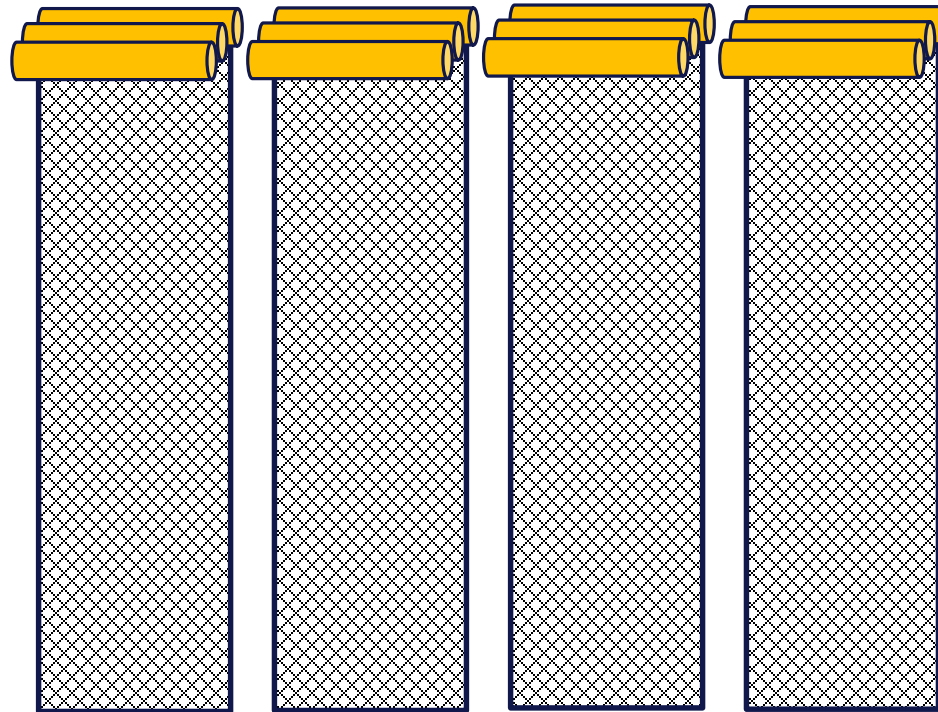
# Impact proportional to the size

FAD structure  
2000



Impact of  
4 FADs (2000)

FAD structure  
2018



← Impact of 4 FADs (2018) →

- ✓ Reduce numbers of FADs
- ✓ **Modification of FAD structure**
- ✓ Reduce lost or abandoned FADs

# Issues to address

- What is **biodegradable** → so far for the tests: **vegetal fibers**
- Determine the **working lifetime** required for a FAD → **EPO: 5 months to 1 Year**  
(from ISSF skipper workshops information)
- Design **biodegradable FADs** → **high heterogeneity**  
(fleet/veessel & region dependent)



# Experiments Under Controlled Conditions

## FIRST STEP: Material Selection and test

- 100% natural fibers / materials
- Sustainably harvested
- Available as close as possible to fishing grounds
- They can be processed to make ropes, no netting materials
- Cost

## Tunacons FIP and IATTC Project in the EPO



# Small-Scale At-Sea Experiments

Individual effort by EPO fleets

- Trimarine
- Opagac
- Nirsa
- Etc..



# Large-Scale Deployment of Bio-FADs

## 2019–2020

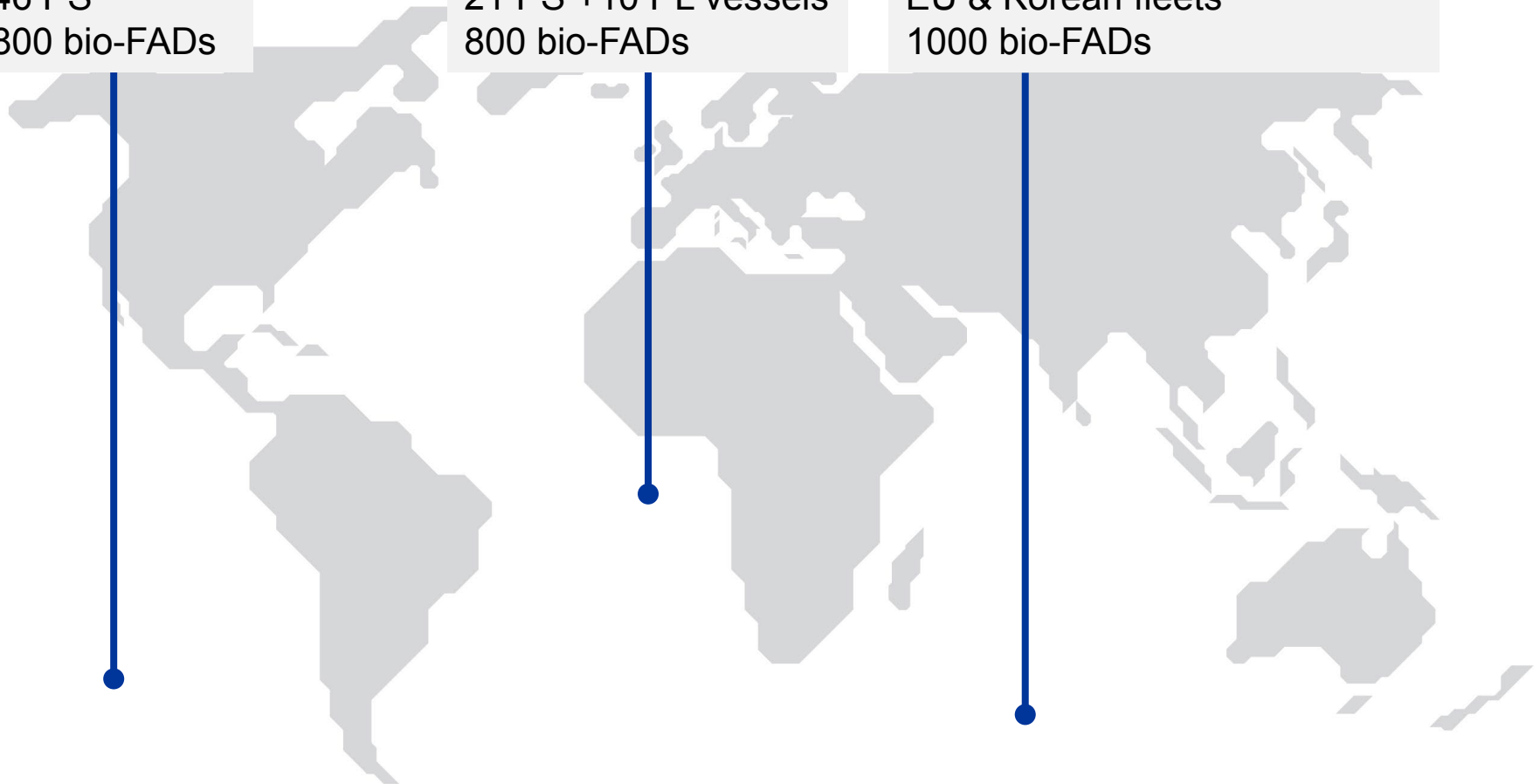
EPO fleet  
46 PS  
800 bio-FADs

## 2019

Ghanaian fleet  
21 PS + 10 PL vessels  
800 bio-FADs

## 2018–2019

BIOFAD project Indian Ocean:  
EU & Korean fleets  
1000 bio-FADs



## Other Actions to Reduce Marine Pollution by FADs

- ✓ Reduce numbers of FADs
- ✓ Modification of FAD structure
- ✓ **Reduce lost or abandoned FADs**



## Workshop Recommendations

- **Quantify strandings:** (i) To identify priority areas based on the vulnerability of the ecosystem and the degree of stranding (ii) measure the efficiency of the initiatives taken to mitigate the loss and abandonment of FADs.
- **Develop a guide** of good practices for tuna purse seiners and auxiliary vessels with the aim to reduce the loss and abandonment of FADs.
- **Study the trajectories** of FADs based on the position and time of deployment to determine the deployment areas with the highest risk of FAD loss of FADs.
- In projects on FAD retrieval from the coast, determine the **minimum requirements for the vessels** that would recover FADs, as well as ensure the management of the waste on land.



# Lessons learnt & recommendations

- ✓ Only FADs constructed **without netting** can completely eliminate the entanglement.
- ✓ **Reduce the size and weight** of the FAD
- ✓ **Avoid** the use of **plastics** to build FADs
- ✓ **Avoid FAD deployment areas** that imply high risk of stranding
- ✓ **Reduce and control FAD lost and abandonment**, to the extent possible
- ✓ Effort should be done to **define the criteria** of what constitutes a **biodegradable FAD**, in terms of materials used.



**Thank You!**

