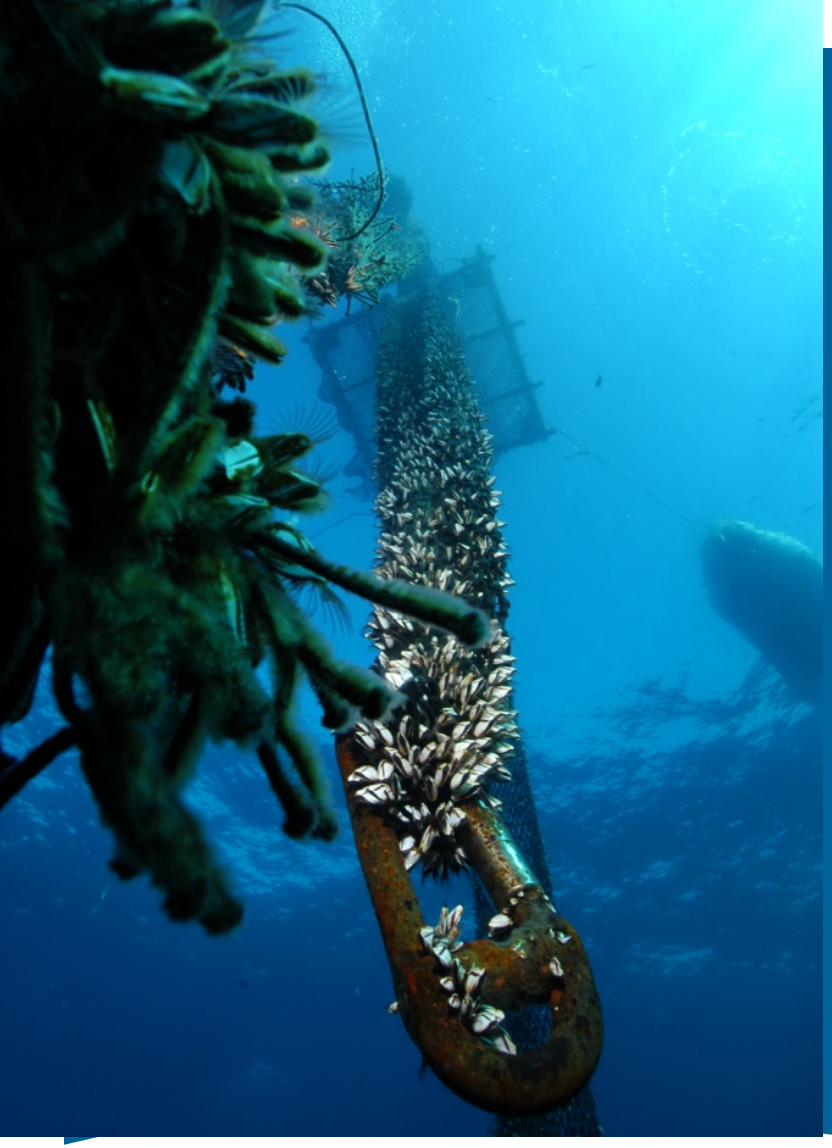


# ISSF Research on FADs

# Investigaciones de ISSF con plantados

ISSF Technical Report 2016-13A.

ISSF Technical Report 2017-06.

Dr. Gala Moreno
FAD Working group
11-12 de May 2018

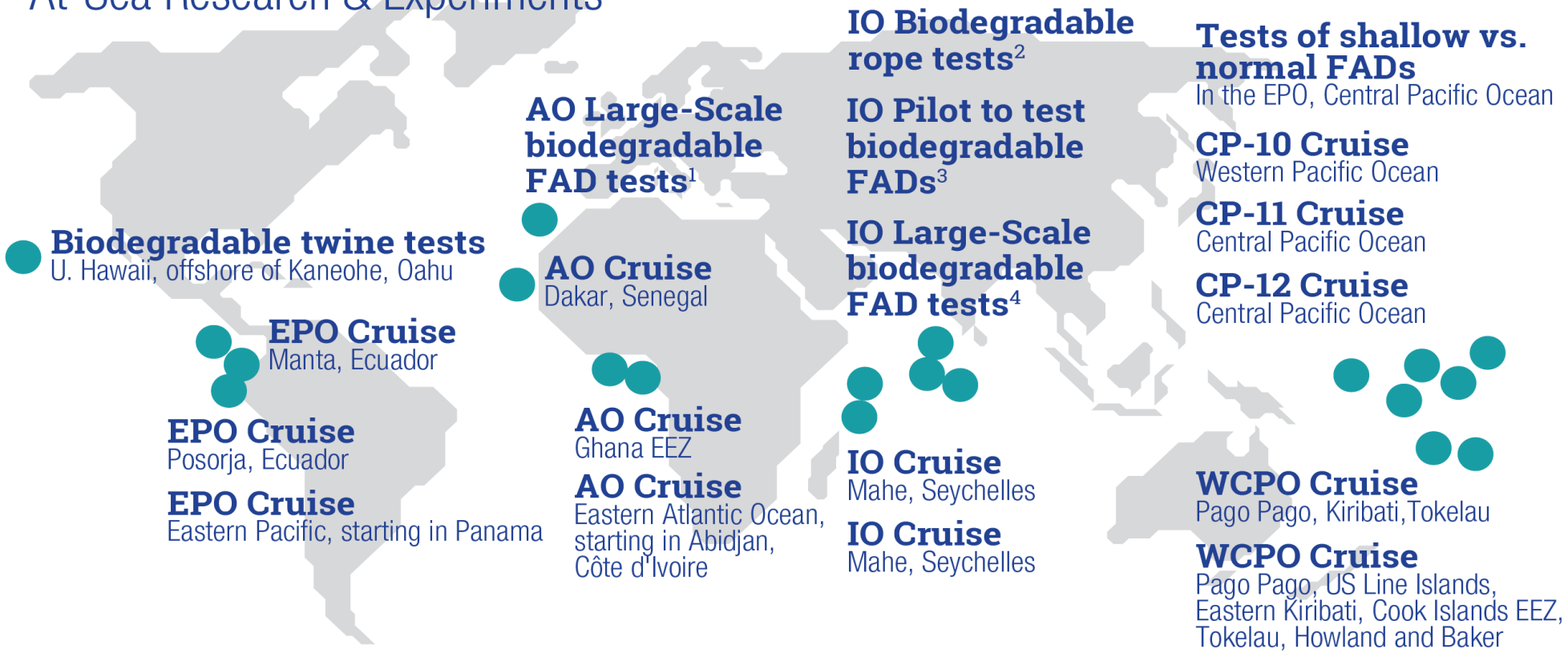
WWW.ISS-Foundation.org

# ISSF Scientific Research with Tuna Fleets

2011–present

## Making a Difference: On the Water

### At-Sea Research & Experiments



**Biodegradable twine tests**
U. Hawaii, offshore of Kaneohe, Oahu

**EPO Cruise**
Manta, Ecuador

**EPO Cruise**
Posorja, Ecuador

**EPO Cruise**
Eastern Pacific, starting in Panama

**AO Large-Scale biodegradable FAD tests**[1]

**AO Cruise**
Dakar, Senegal

**AO Cruise**
Ghana EEZ

**AO Cruise**
Eastern Atlantic Ocean, starting in Abidjan, Côte d'Ivoire

**IO Biodegradable rope tests**[2]

**IO Pilot to test biodegradable FADs**[3]

**IO Large-Scale biodegradable FAD tests**[4]

**IO Cruise**
Mahe, Seychelles

**IO Cruise**
Mahe, Seychelles

**WCPO Cruise**
Central Pacific Ocean

**Tests of shallow vs. normal FADs**
In the EPO, Central Pacific Ocean

**CP-10 Cruise**
Western Pacific Ocean

**CP-11 Cruise**
Central Pacific Ocean

**CP-12 Cruise**
Central Pacific Ocean

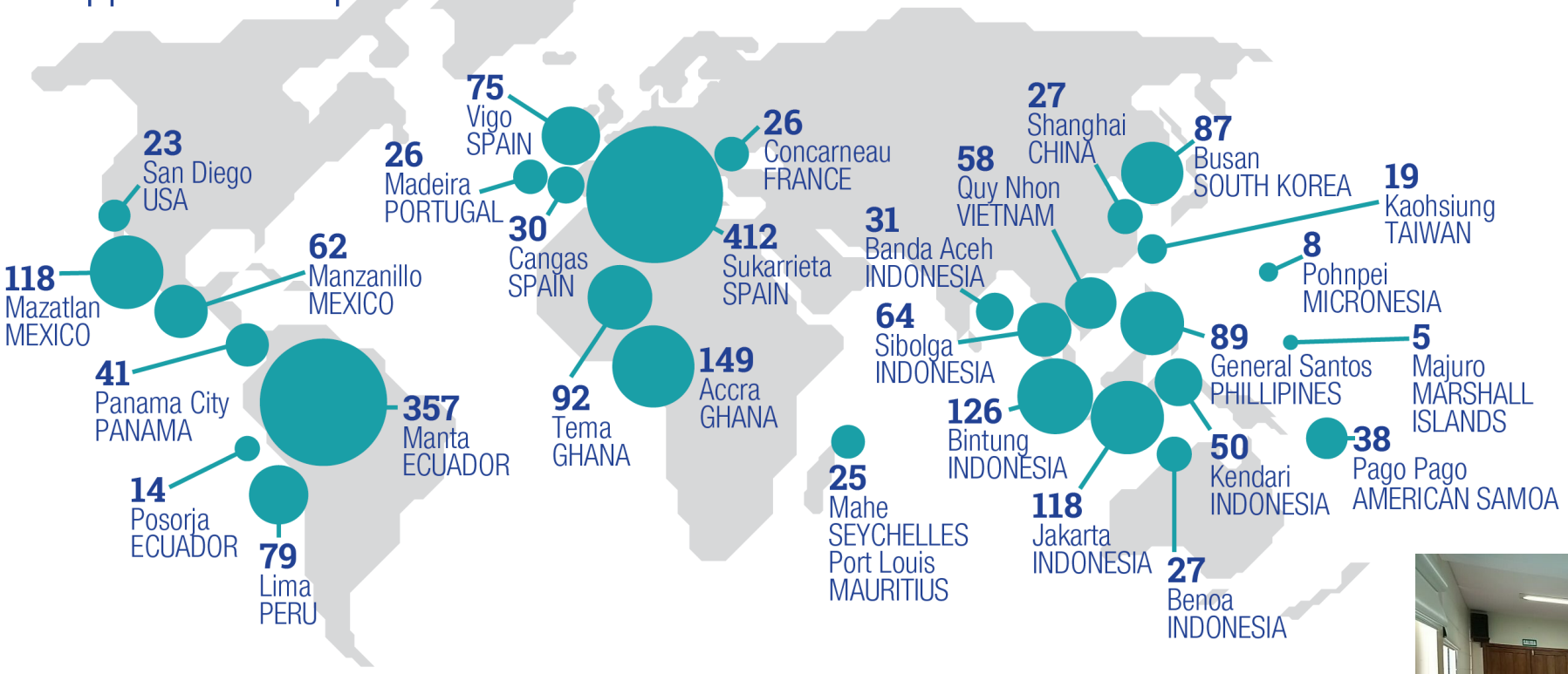
**WCPO Cruise**
Pago Pago, Kiribati,Tokelau

**WCPO Cruise**
Pago Pago, US Line Islands, Eastern Kiribati, Cook Islands EEZ, Tokelau, Howland and Baker

[1] With Ghanaian Tuna Association & FAO-GEF Common Oceans Project
[2] With INPLF & Marine Research Centre in Maldives
[3] With FAO-GEF Common Oceans Project
[4] With European Union & FAO-GEF Common Oceans Project

See **ISSF 2013-13A report** for details on research cruises.

# TALLERES DE PATRONES DE ISSF 2009-2018




+ 80 TALLERES EN 20 PAISES – 3000 PARTICIPANTES

# Bigeye and Yellowfin JUVENILES

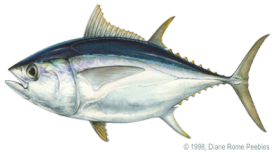
**ISSF Research**:

✗ Set time and fishing net depth

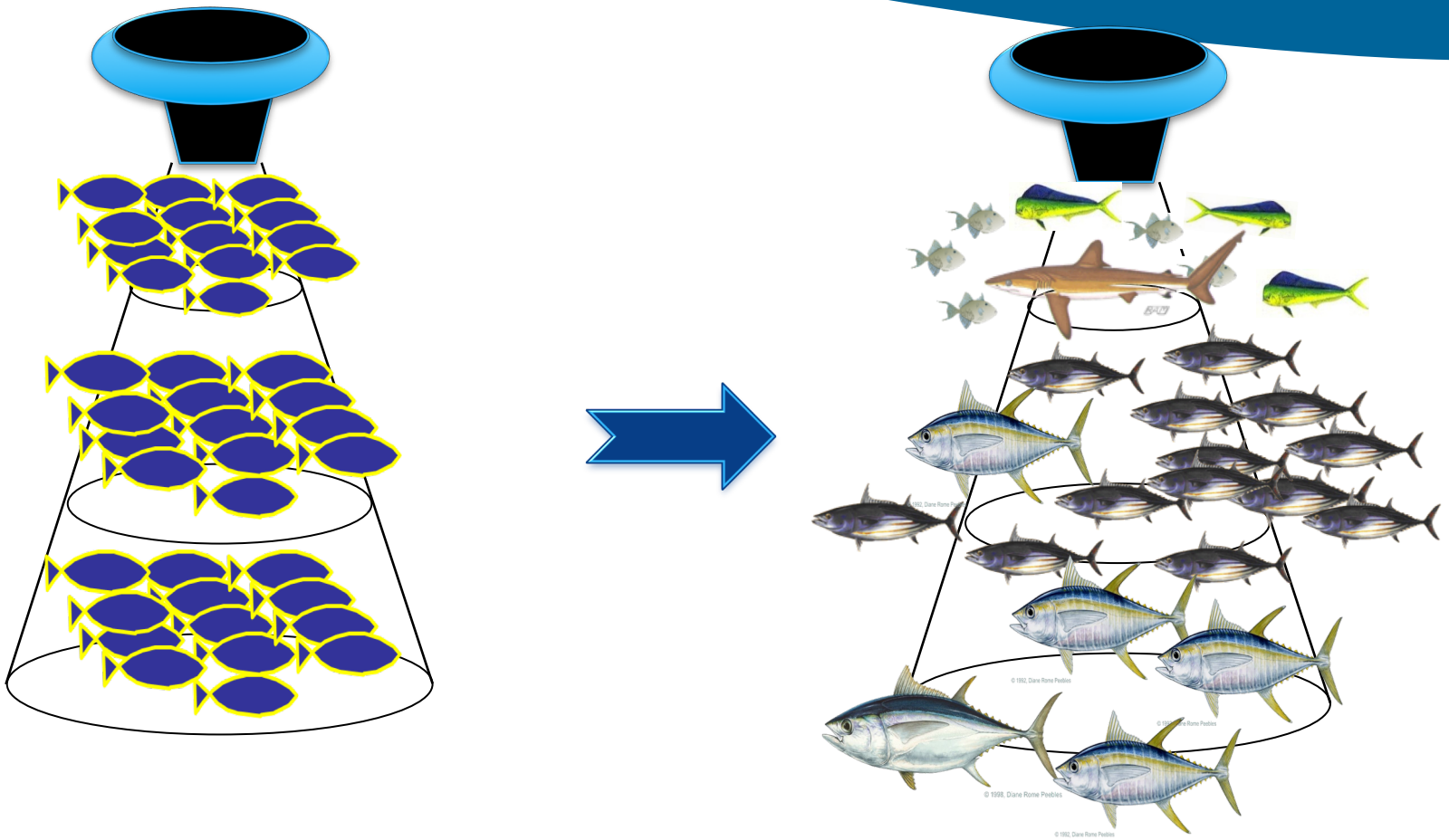
? Investigation of the effect of different depths of materials suspended beneath FADs (specific to area?)

? Tuna species segregation before the set or within the net

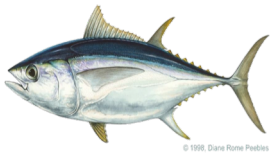
✓ Selective catch at FADs: Acoustic Discrimination



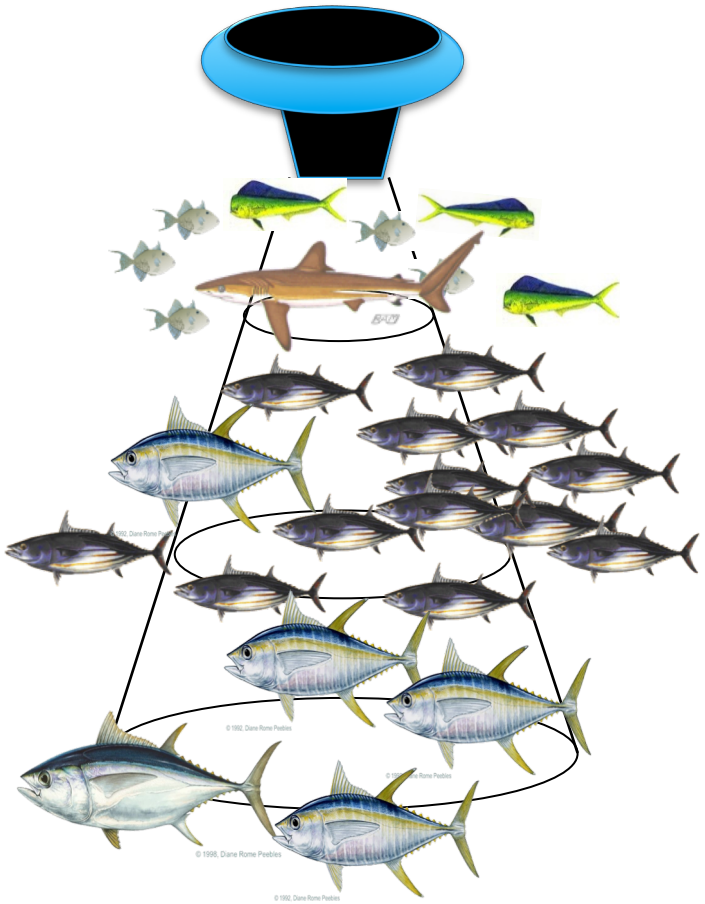
# Discriminación acústica



Using different acoustic frequencies tunas with and without swim-bladder can be discriminated



# Relevant Information



- Selective fishing
- Abundance indices

## ISSF Research

Unobserved mortality

✓ Non-entangling FADs (ISSF guide for non-entangling FADs)

Observed mortality

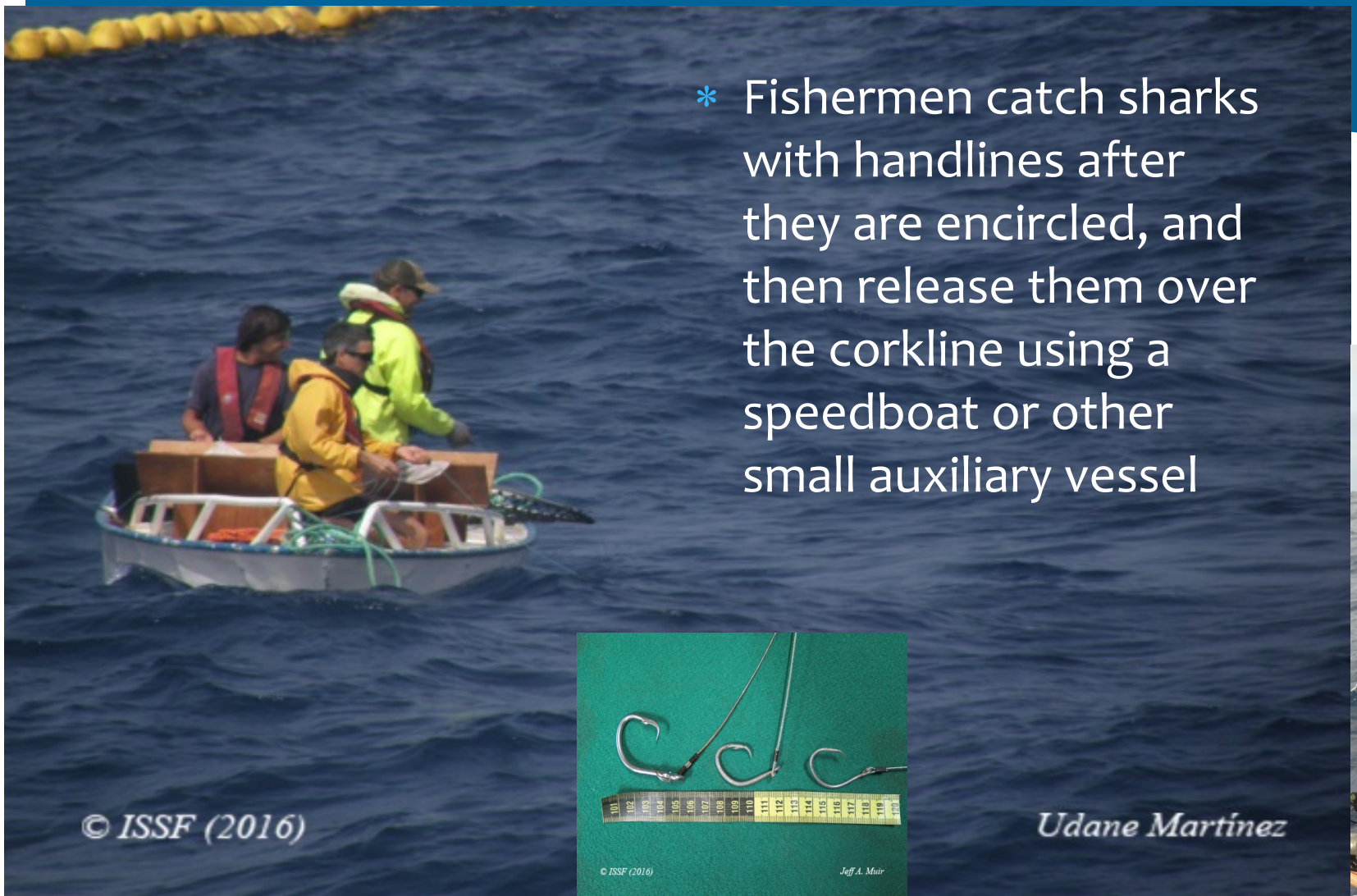
✗ Set time

✓ Best release practices from deck (15-20% mortality reduction)

✓ Avoid setting on small schools (20-40% mortality reduction)

? Release sharks from the net

# Non-target species: Release sharks from the net




* Fishermen catch sharks with handlines after they are encircled, and then release them over the corkline using a speedboat or other small auxiliary vessel



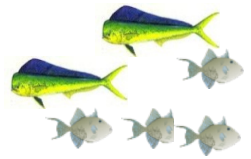

Could save 20% of sharks

## ISSF Research

✓ Avoid setting on small schools (20-40% mortality reduction)

✓ Selective catch at FADs: Acoustic Discrimination

? Set time: studying daily associative behaviour



# Impact of FAD structure on the ecosystem

## ISSF Research

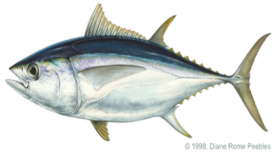
- ✓ Tests in fishing conditions a significant large number of biodegradable FADs–Atlantic and Indian Oceans
- ✓ Workshops with fishers and scientist for the recovery of FADs

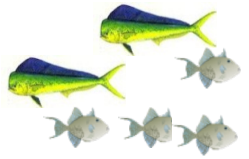
UNIÓN EUROPEA

# Summary

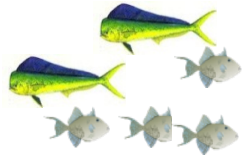
**ISSF Research priorities**

- Acoustic **discrimination**

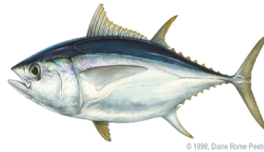




- Release **sharks** from **the NET**



- **Physiology and Behaviour** at FADs and in the net



- **Biodegradable** FADs

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