

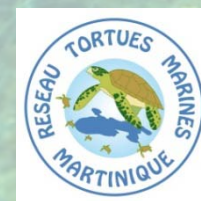
Marine Turtle Bycatch in FWI Net Fisheries

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WIDECAST Annual Meeting 10-11 April 2011 San Diego, USA



Context

Objectives

Results

Perspectives



**WIDECAST
31st ISTS**



**Guadeloupe
&
Martinique

FWI**

THE FWI FISHERIES

- 2100 boats
- Small scale
- Coastal (> 60%)



THE FWI FISHERIES

- 2100 boats
- Small scale
- Coastal (> 60%)



- Main fishing gears :

- *Antillean traps*
- *Line*
- *Nets* (gill & trammel)



BOTTOM NETS

Fish

Lobster

Queen conch



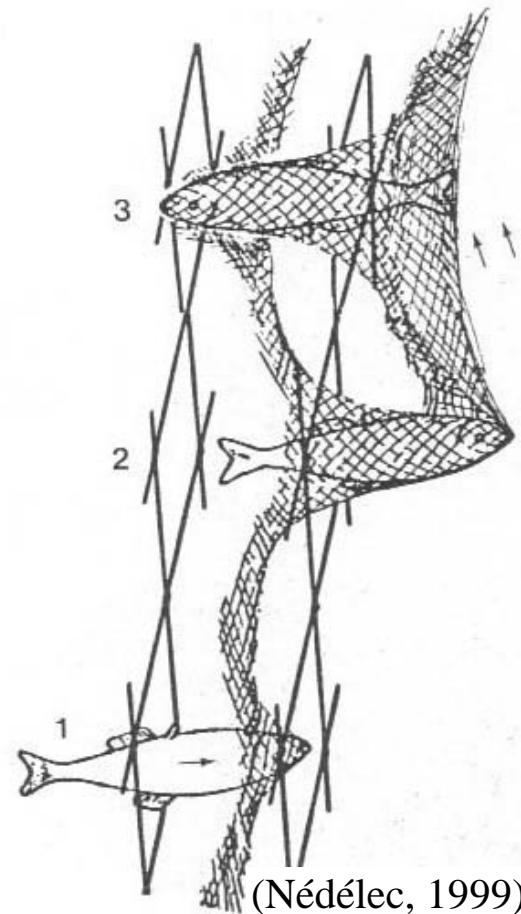
Gill net
(tight meshes)

Trammel net
(tight/loose meshes)

Folle net
(loose meshes)

THE TRAMMEL NET

- Bottom net
- 3 layers superimposed



(Nédélec, 1999)

THE TRAMMEL NET

Discards

Bycatch



Problems of sustainability

OBJECTIVES

- ① Determine the bottom net techniques
- ② Test and compare professional and modified nets



- improve the selectivity
- maintain the productivity
- decrease the bycatch

METHOD**Technique**

gill / trammel / folle

Height

low / high

Incline

floats / no floats

FISH NETS

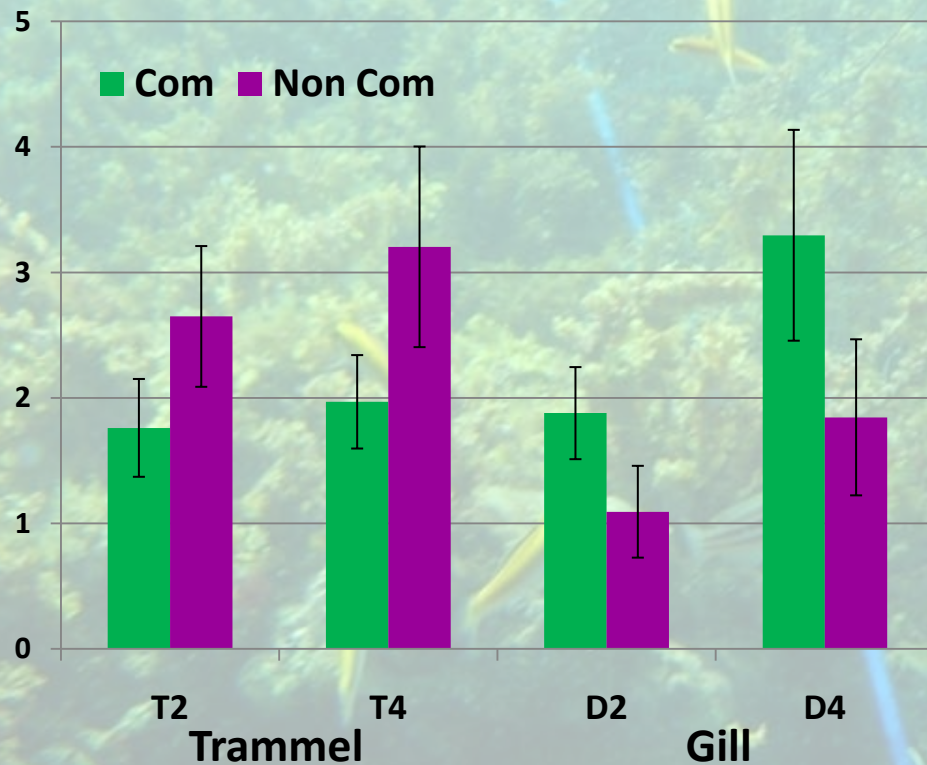
72 experimental trials

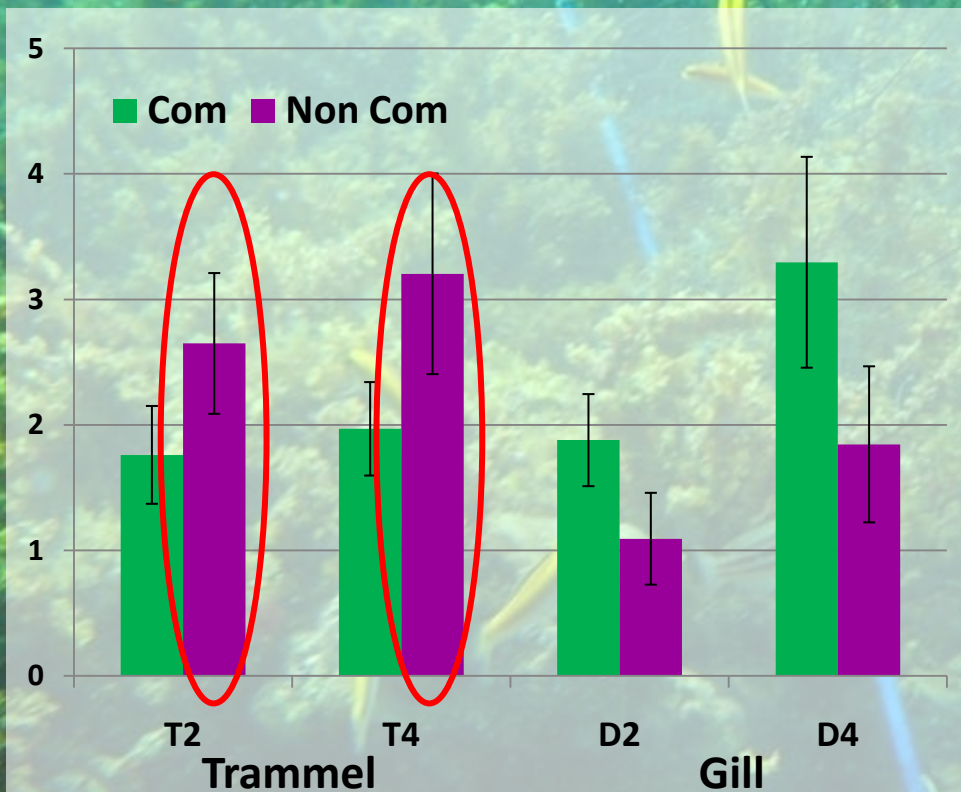
2769 individual captured



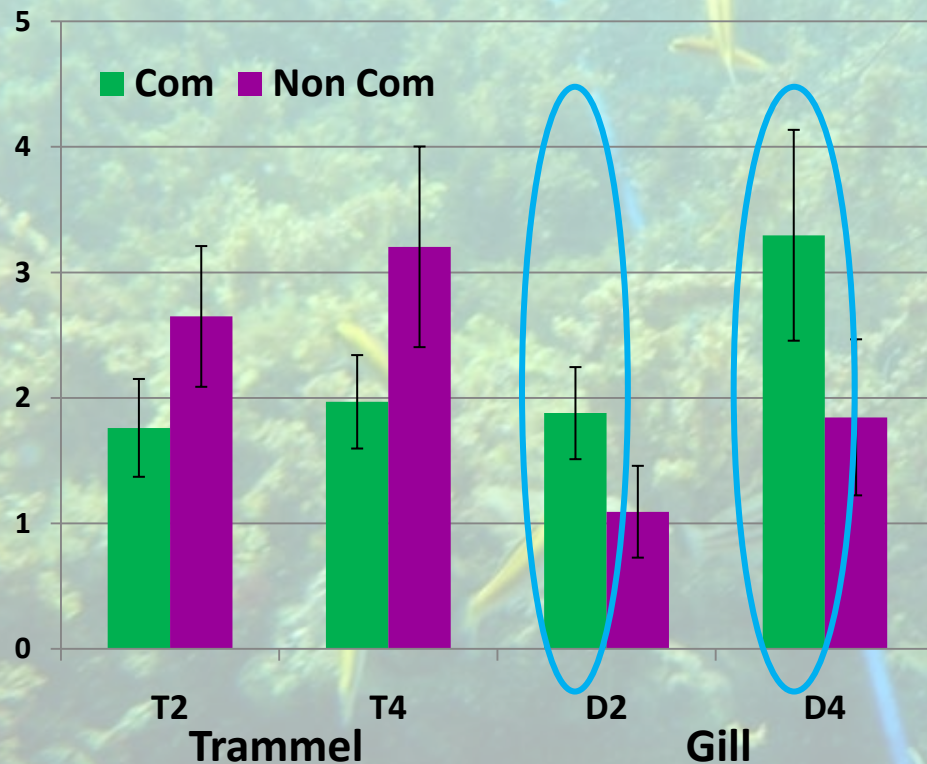
64 species



FISH NETS**Marketable sp vs non marketable**

FISH NETS**Marketable sp vs non marketable**

Selectivity
More discards in trammel nets

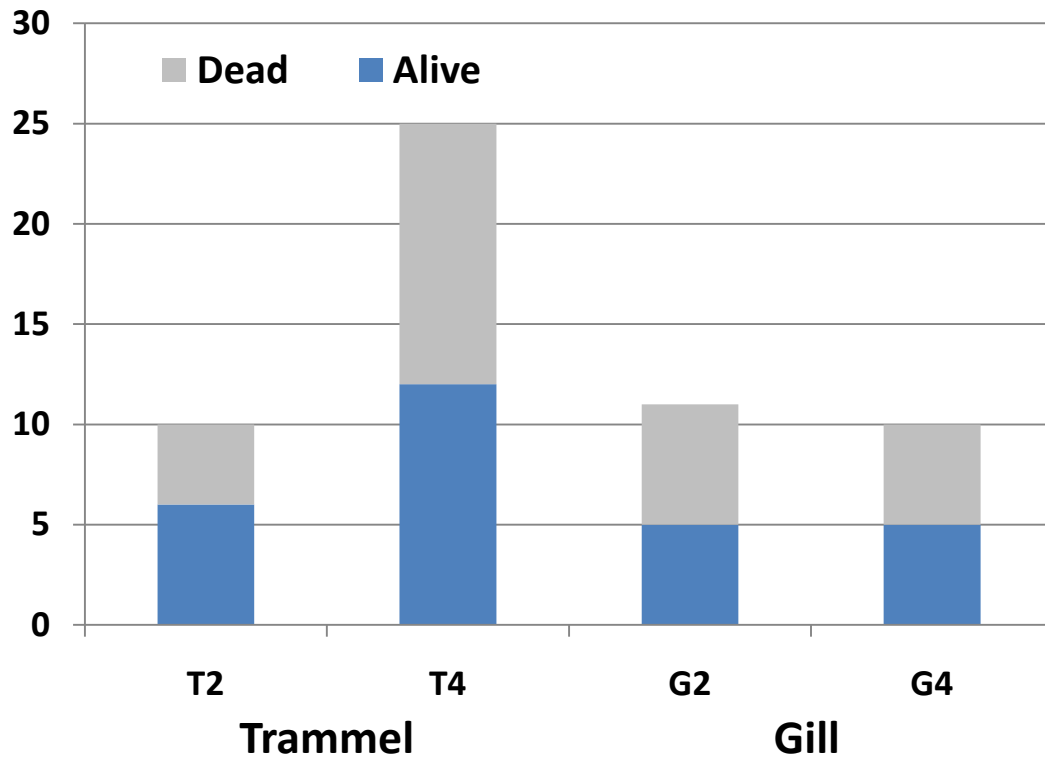
FISH NETS**Marketable sp vs non marketable**

Selectivity
More discards in trammel nets

Productivity
Gill net more productive

FISH NETS

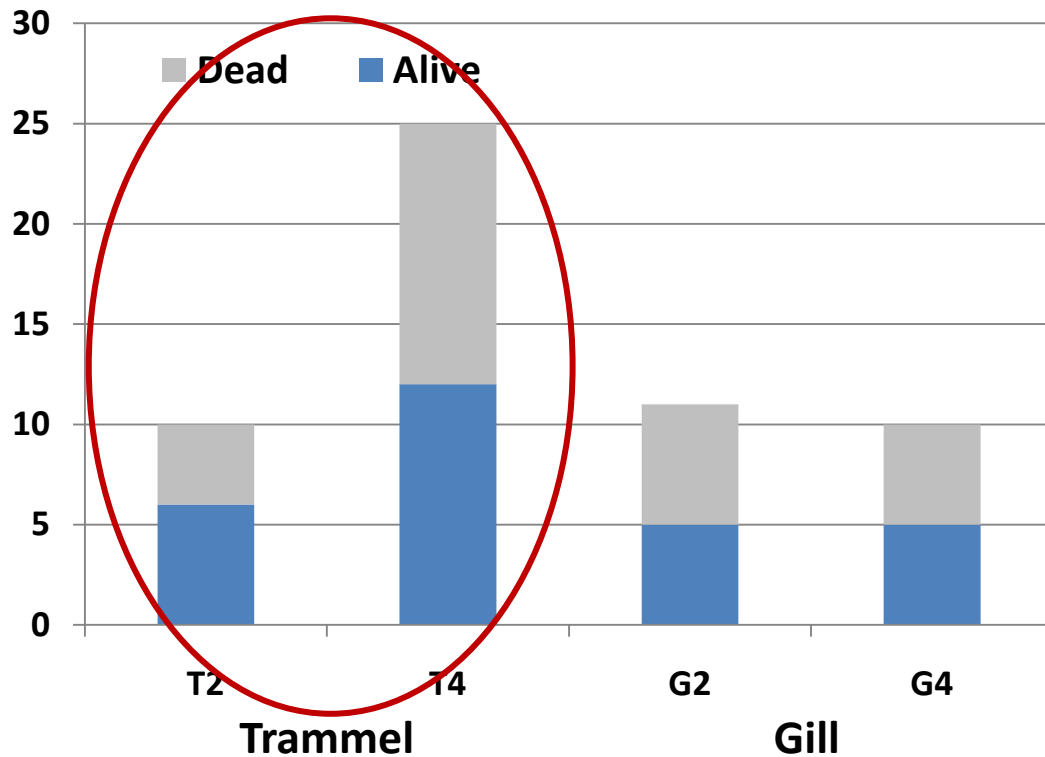
Marine Turtle Bycatch



**50% of mortality
(mean soak time: 5h)**

FISH NETS

Marine Turtle Bycatch



**50% of mortality
(mean soak time: 5h)**

**High profile trammel
net**

LOBSTER NETS

78 experimental trials

4962 individual captured

↳ 2832 *lobsters*

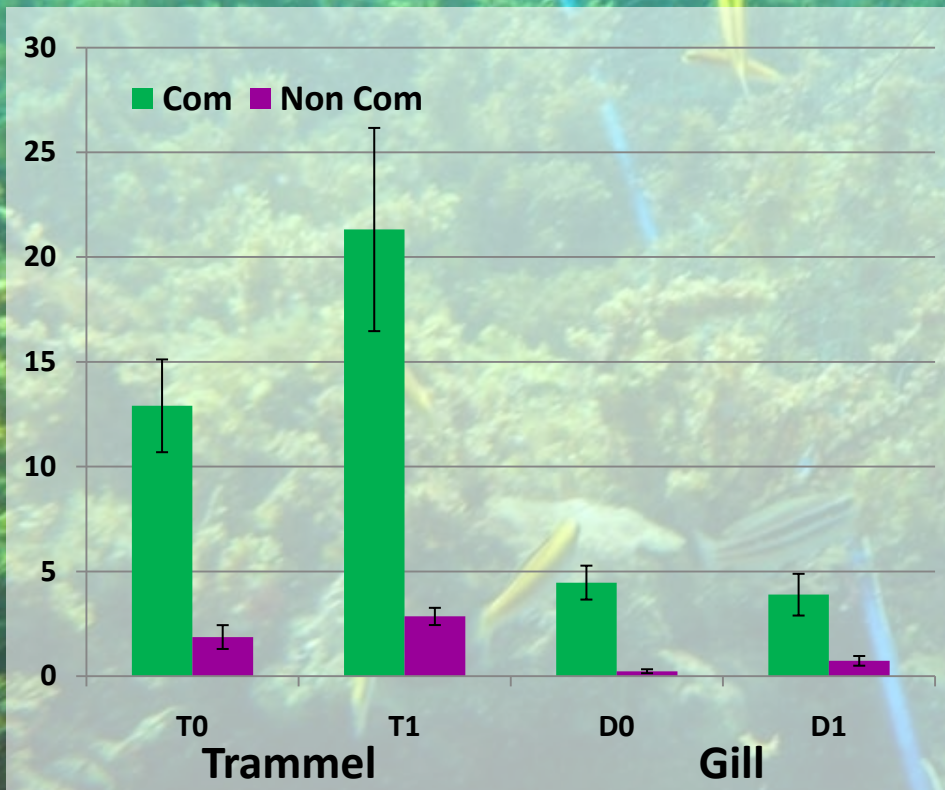


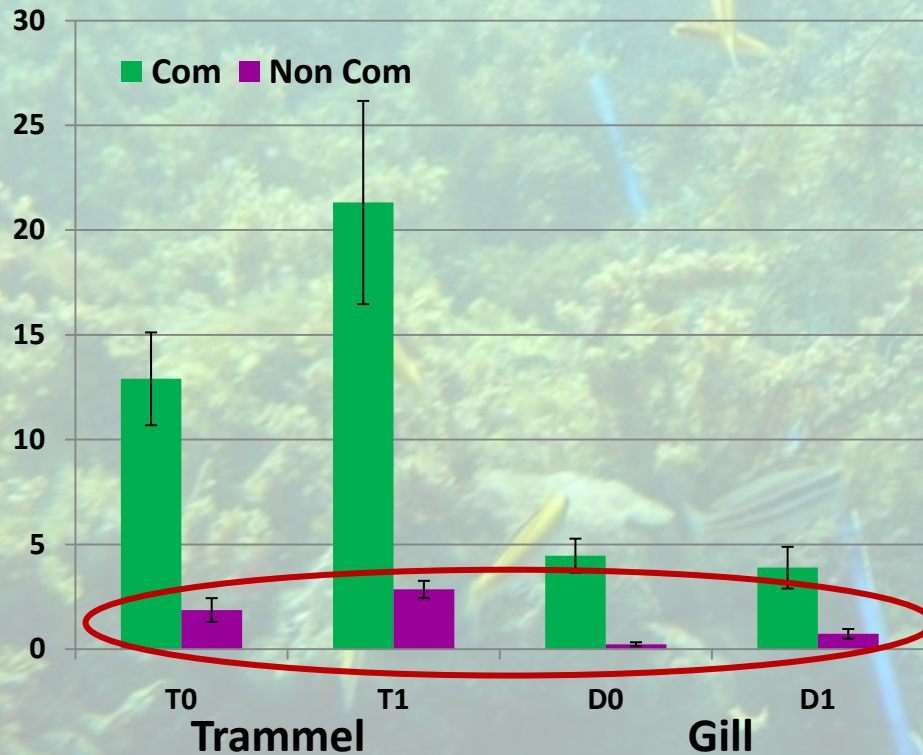
59 species



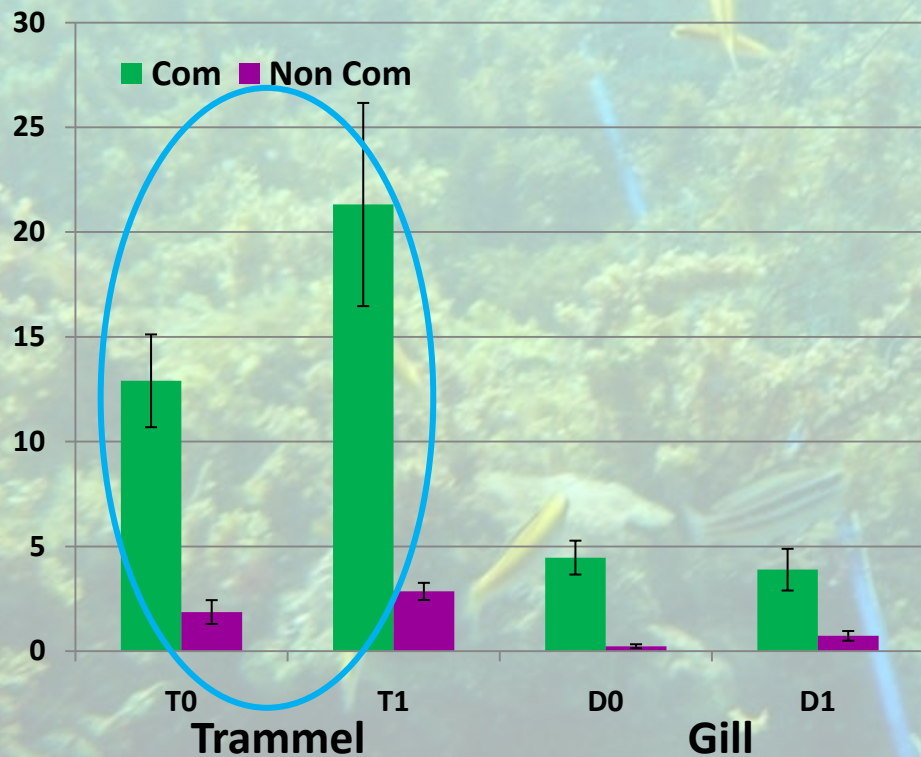
3 species



LOBSTER NETS**Marketable sp vs non marketable**

LOBSTER NETS**Marketable sp vs non marketable**

Selectivity
Few discards

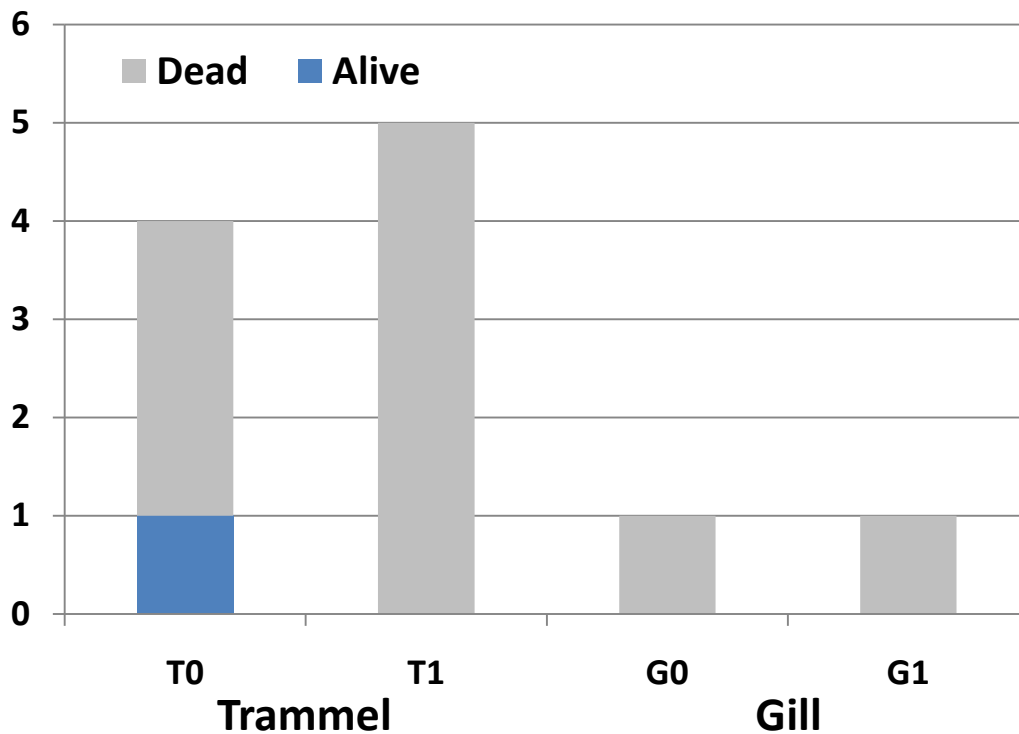
LOBSTER NETS**Marketable sp vs non marketable**

Selectivity
Few discards

Productivity
Trammel net more productive

LOBSTER NETS

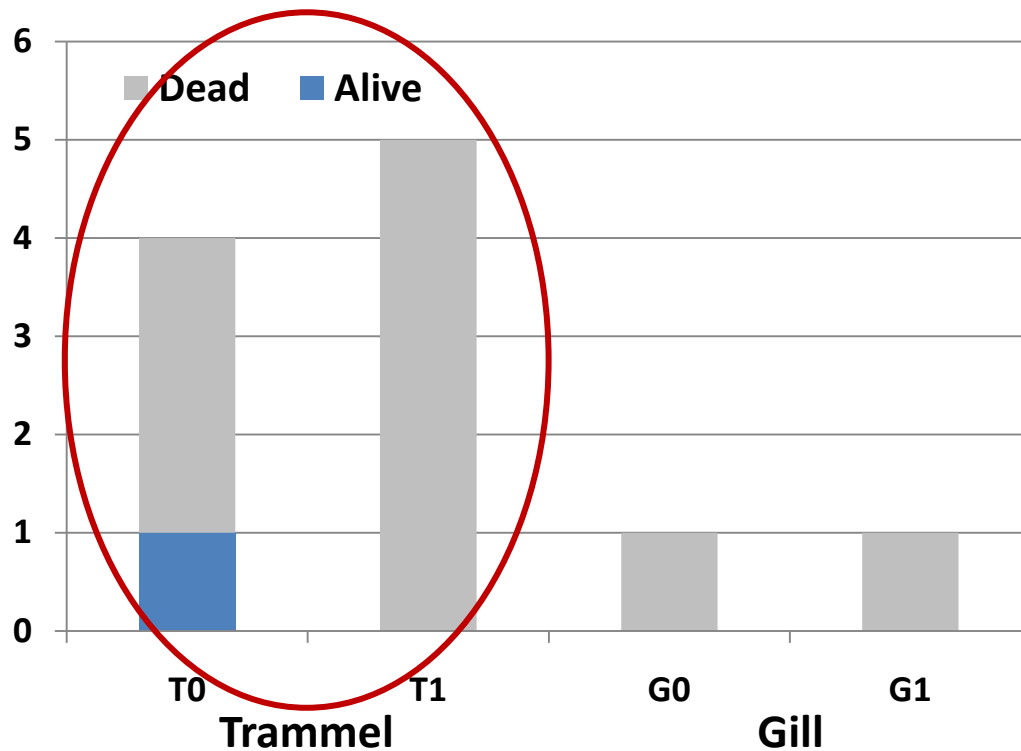
Marine Turtle Bycatch



**90% of mortality
(mean soak time: 13h)**

LOBSTER NETS

Marine Turtle Bycatch



90% of mortality
(mean soak time: 13h)

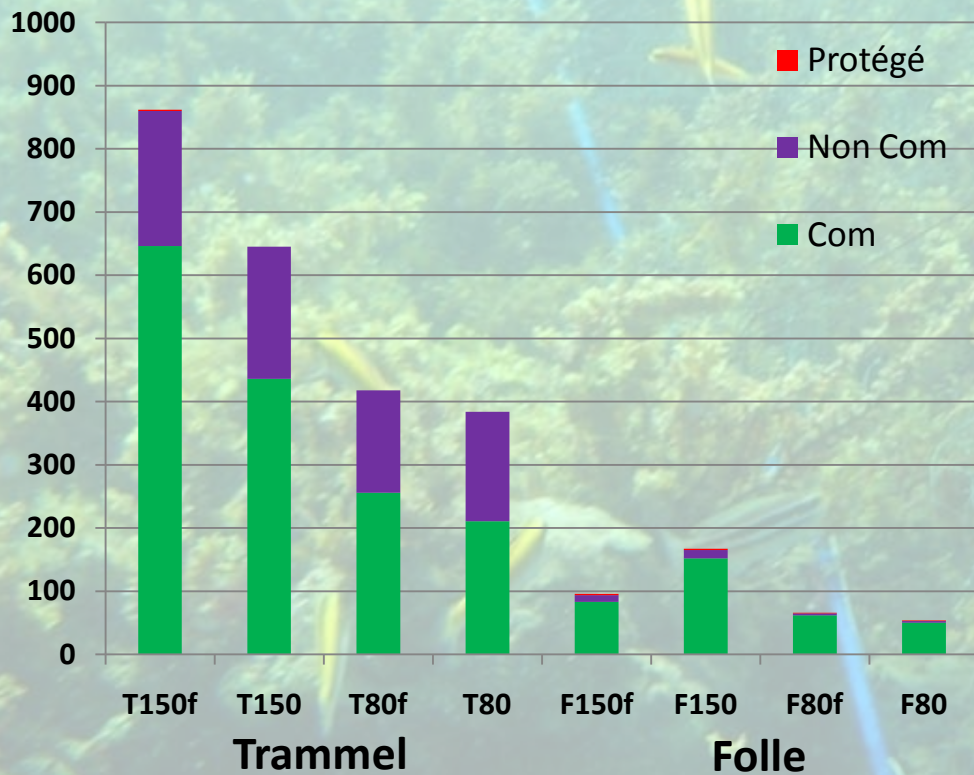
More bycatch in
trammel nets

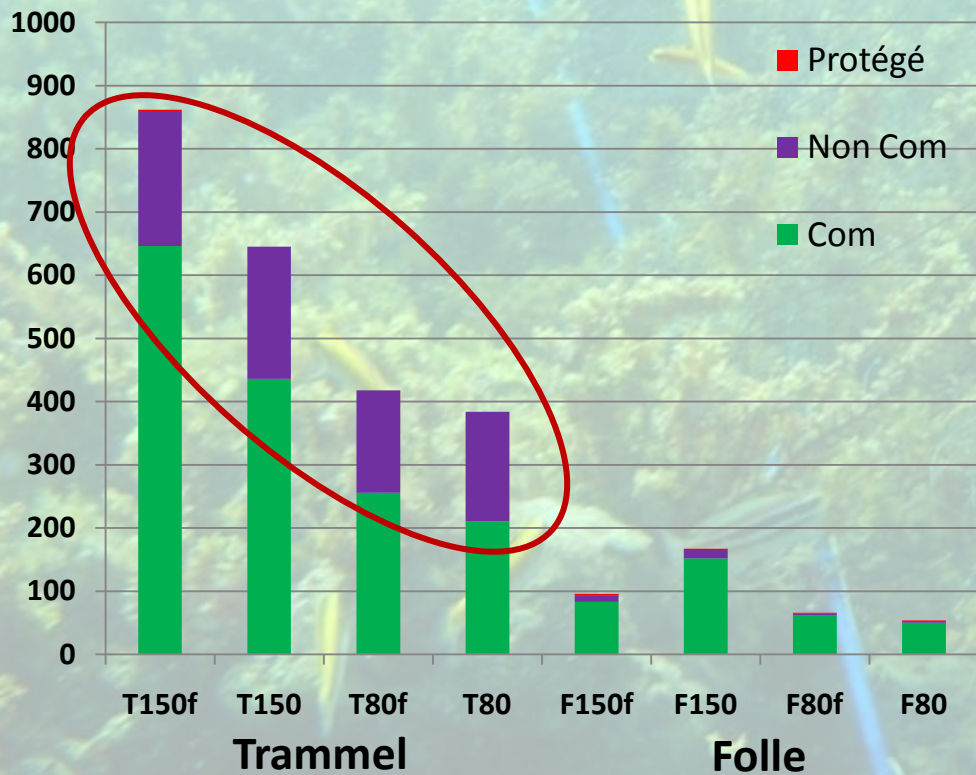
CONCH NETS

76 experimental trials

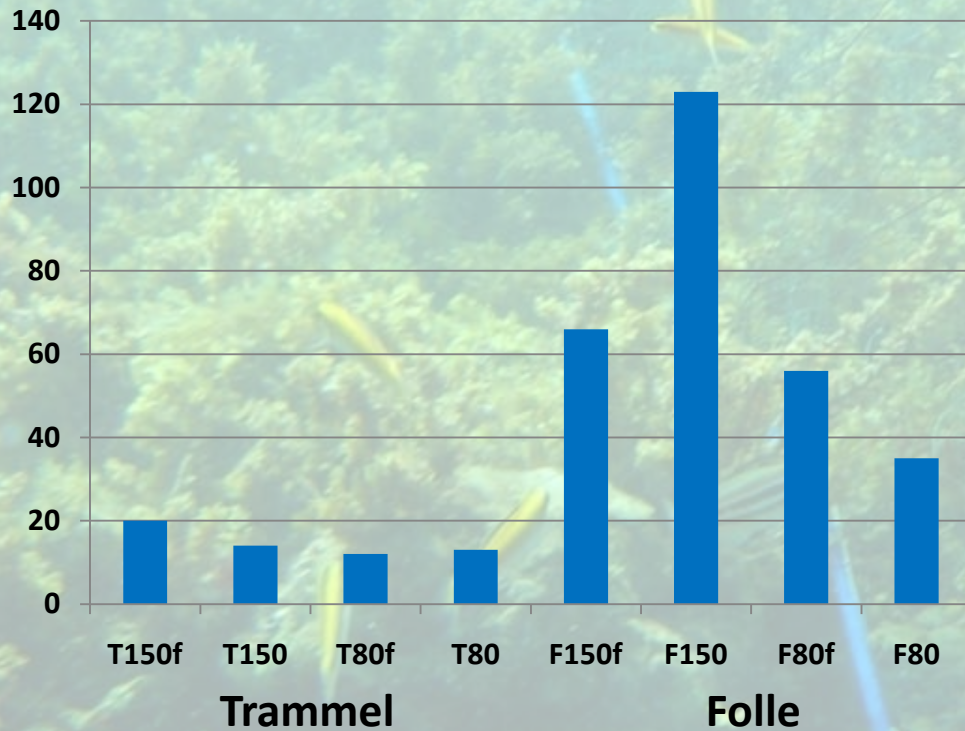
2738 individual captured

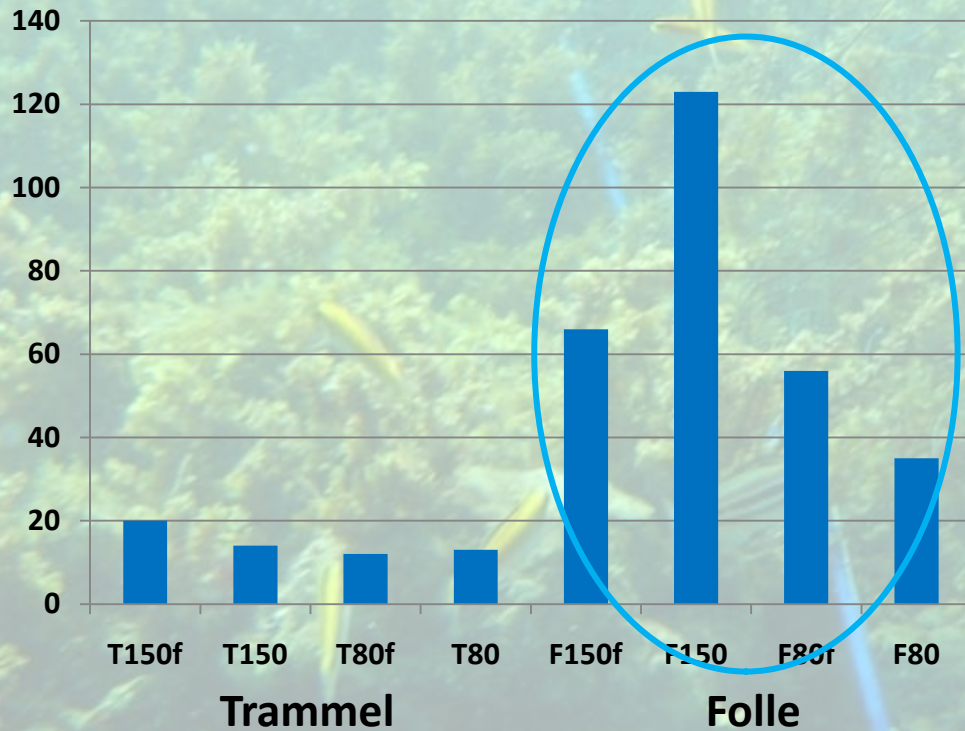


CONCH NETS**Marketable sp vs non marketable**

CONCH NETS**Marketable sp vs non marketable****Selectivity**

Trammel net non selective

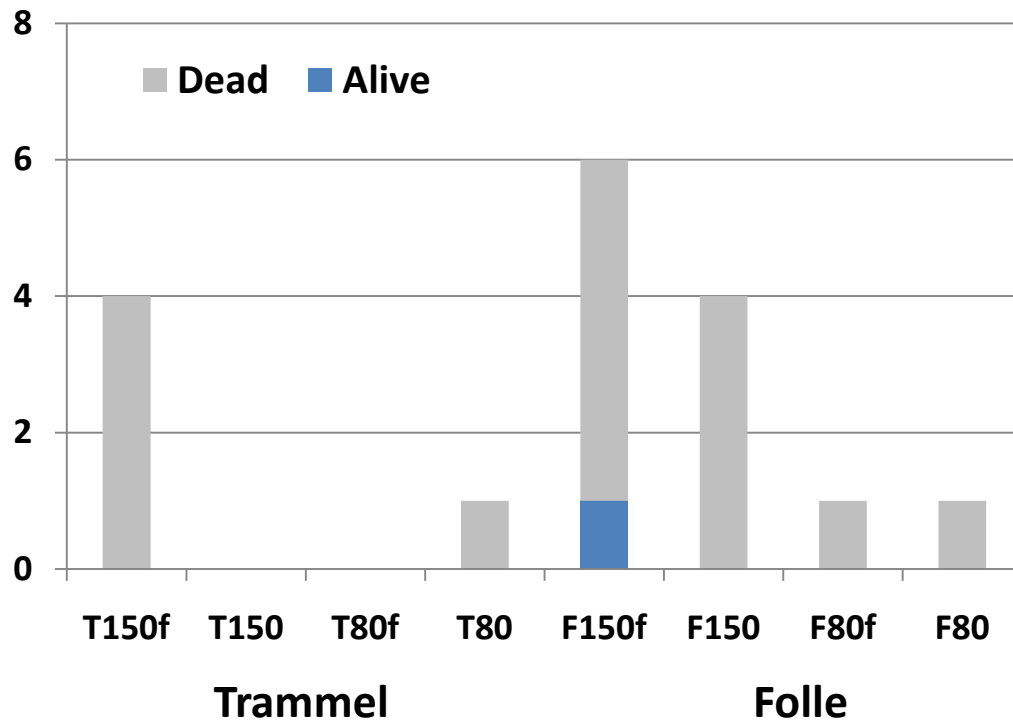
CONCH NETS**Queen Conch catches**

CONCH NETS**Queen Conch catches****Productivity**

Folle more selective

CONCH NETS

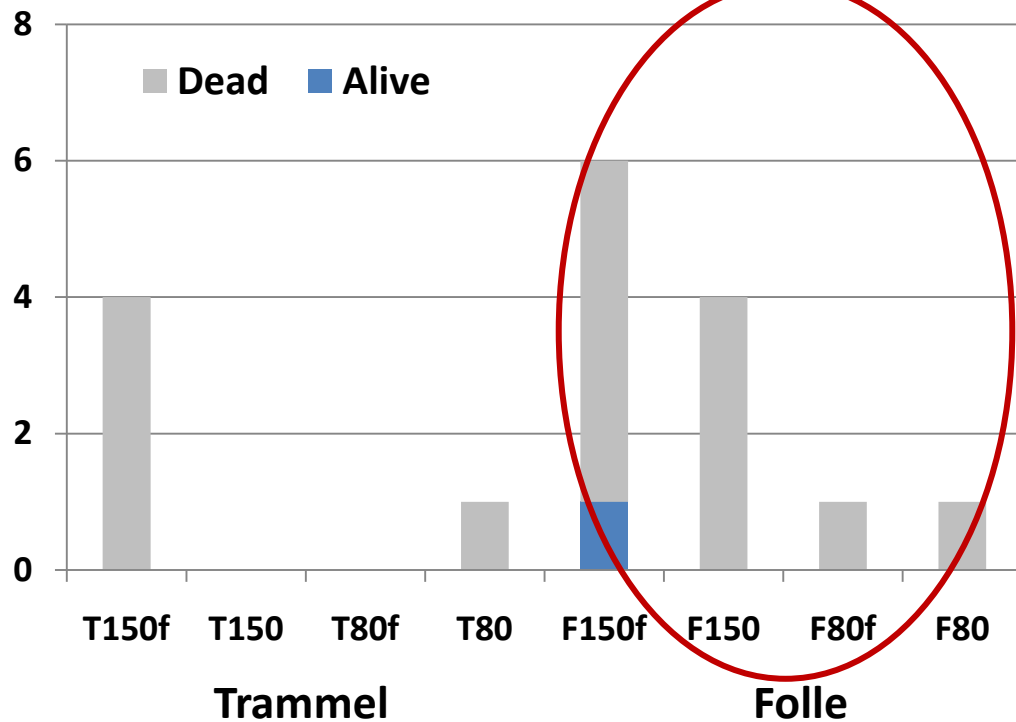
Marine Turtle Bycatch



**94% of mortality
(mean soak time: 24h)**

CONCH NETS

Marine Turtle Bycatch

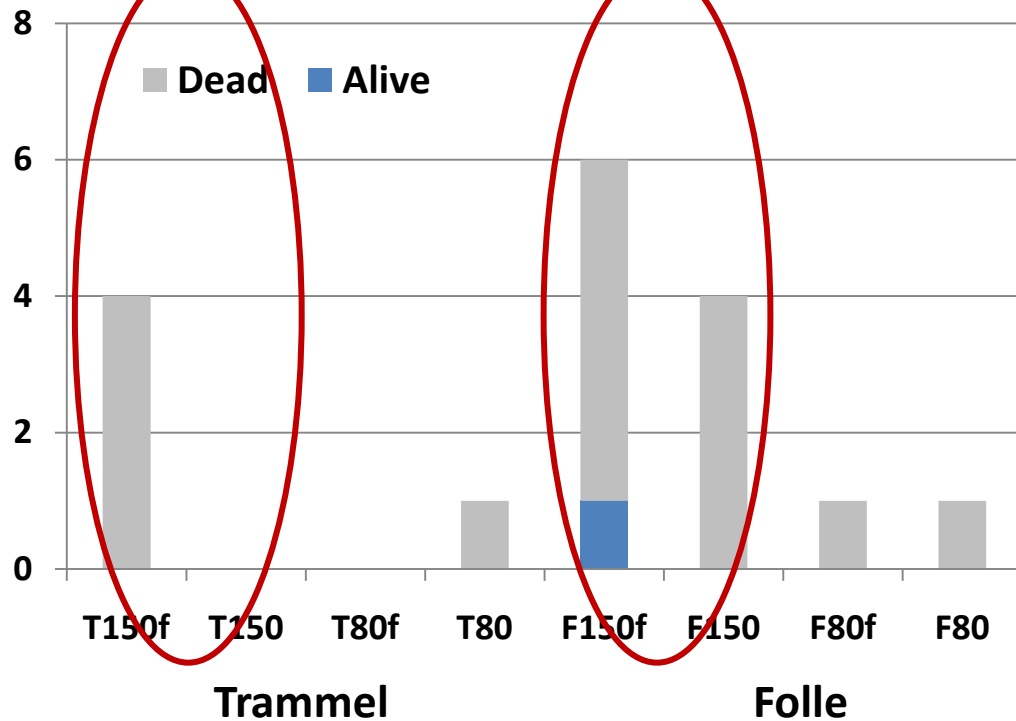


**94% of mortality
(mean soak time: 24h)**

Folle nets

CONCH NETS

Marine Turtle Bycatch



**94% of mortality
(mean soak time: 24h)**

Folle nets

High profile nets

MARINE TURTLE BYCATCH

Total Bycatch

84 marine turtles (Ei & Cm) for 226 trials → 2000 turtles in FWI

Mortality

54 dead turtles (64%)

Beaching

2 stranded turtles (4%)

CONCLUSIONS

Trammel net non selective

Folle nets murderous

Low profile nets interesting

Soak time < 4h

Lot of mortality but few stranding



FISHING REGULATION

Alternatives

MPAs - Soak times

Trammel net (ban?)

Low profile

Folle net

Ban ?

SUSTAINABLE FISHERY



ACKNOWLEDGMENTS

Observatoire du Milieu Marin Martiniquais (OMMM)



Financial support : DIREN, Région Martinique, Fonds Européens



Fishermen



ACKNOWLEDGEMENTS



WIDECAST

2009 – 2010 - 2011

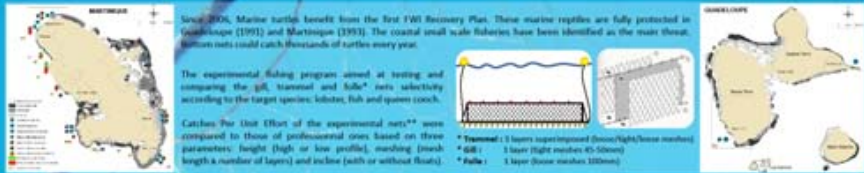
ACKNOWLEDGMENTS



Bycatches of Marine Turtles in the Small Scale Net Fisheries in the French West Indies



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Encouraging trends...
 With more than 60% of discards in some cases, the trammel net is definitely not selective. The gill net is the most selective gear. The long soak times practiced for the lobster and conch techniques increase turtle bycatches and mortality. Discards are also very important. The low profile nets capture less marine turtles in average.

The fish fishing would be more profitable and sustainable with the high profile net. But a low profile could maintain an acceptable productivity.


The lobster fishing would be more profitable with trammel net. The low profile trammel could be as effective as the high one.

The conch fishing is much more selective with the folle, but this longer soaking net is responsible for highest marine turtle's bycatches.

The beaching: the tip of the iceberg!
 The dead turtles caught during these trials were tagged in order to study their beaching.
 Among the 54 dead turtles, 2 were reported on a beach in Martinique and one in Guadeloupe, which accounts for 4%.
 The beaching rate of dead marine turtle, despite the fact that turtles are attached near coast, does not reflect the mortality rate from bycatch.
 About 64% of captured turtle died by drowning and entanglement. The death is correlated with the soak time.

Perspectives: Our objective is to identify the most selective nets, causing less bycatch of marine turtles, and maintaining a good fishing productivity. Changes in regulation and adaptation of the fishing techniques are the two main challenges targeted to decrease the impact on marine turtles' populations in the FWI. New policies and regulations on trammel nets and folle nets are required to reduce bycatch. Regulations could be applied to soak times, fishing periods and fishing areas as well as the ban of the above non selective gears.



An underwater scene featuring a blue net with several yellow floats. Numerous yellow fish are swimming around the net. The background is a dense, greenish-brown underwater forest or coral reef. A semi-transparent blue box with rounded corners is centered in the image, containing the text "Thank you for your attention".

Thank you for your attention

