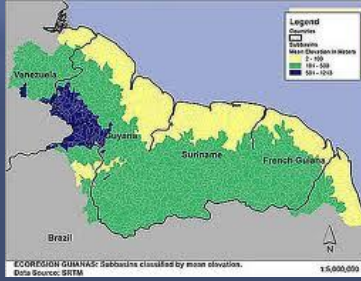


## BYCATCH OF SEA TURTLES IN SURINAME AND GUYANA: SEEKING SOLUTIONS THROUGH GEAR TECHNOLOGY, FISHERIES MANAGEMENT AND FISHER EDUCATION.

WWF Guianas

*Marie-Louise Felix, WWF Guianas &  
Sirimavo De Freitas, Guyana Marine Turtle  
Conservation Society*



ECOREGION GUIANAS: Subbasins circled by mean elevation.  
Data Source: SRTM




## Guianas Marine Conservation Targets

- ▣ *Marine Turtles:* with priority on the conservation of representative populations of marine turtles nesting in the region.
- ▣ *Fisheries:* focused on sustainable tropical shrimp fisheries utilizing ecosystem based management (EBM) approaches.



## Geographic Scope



- **Coastal Zone:** marine turtle nesting sites.
- **Inshore waters:** turtle foraging sites; artisanal fishing; IUU and an increasing amount of industrial fishing activity.
- **Offshore waters:** EEZ; industrial fishing; habitat impacts and bycatch of marine turtles from trawling are most severe.



## Major Threats, Drivers & Challenges to Marine Turtle Conservation



- **Bycatch in Fisheries** (from gill net and fish trawling)
- **Threats to Habitat** (coastal development, marine pollution, seismic exploration, light pollution and Climate Change, including impacts on nests, turtles and nesting sites)
- **Direct Exploitation** (local consumption, predation)



# Addressing Bycatch of Sea Turtles



## Fisheries Sector: Suriname Gill net fishing boats





Artisanal fishing boats, Guyana



## Artisanal Fishing, Guyana Gill net fishing boats (outboard engines)





The In-board powered or closed type boats have an average size of 55' to 65' by 11' by 9' (18m by 3.3m by 2.72m). Powered by 125-150 engines. They are decked, have a cabin and built-in ice box with a capacity of approx. 5 ton ice.



## The State of Marine Turtle Bycatch in the Guianas

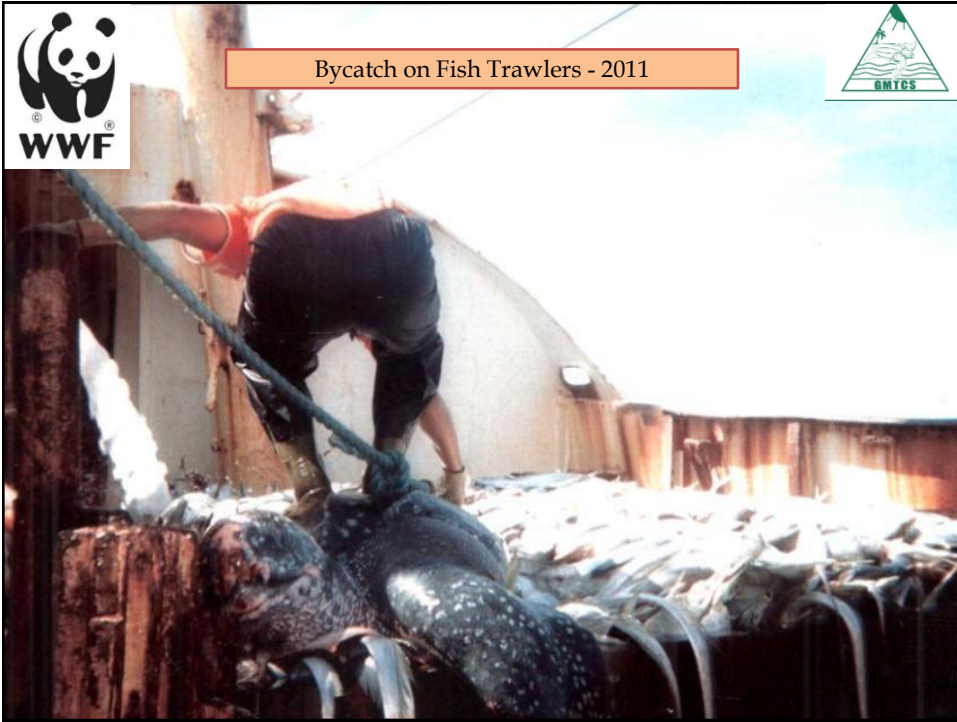
 **Gillnet Bycatch / Suriname**   
2007

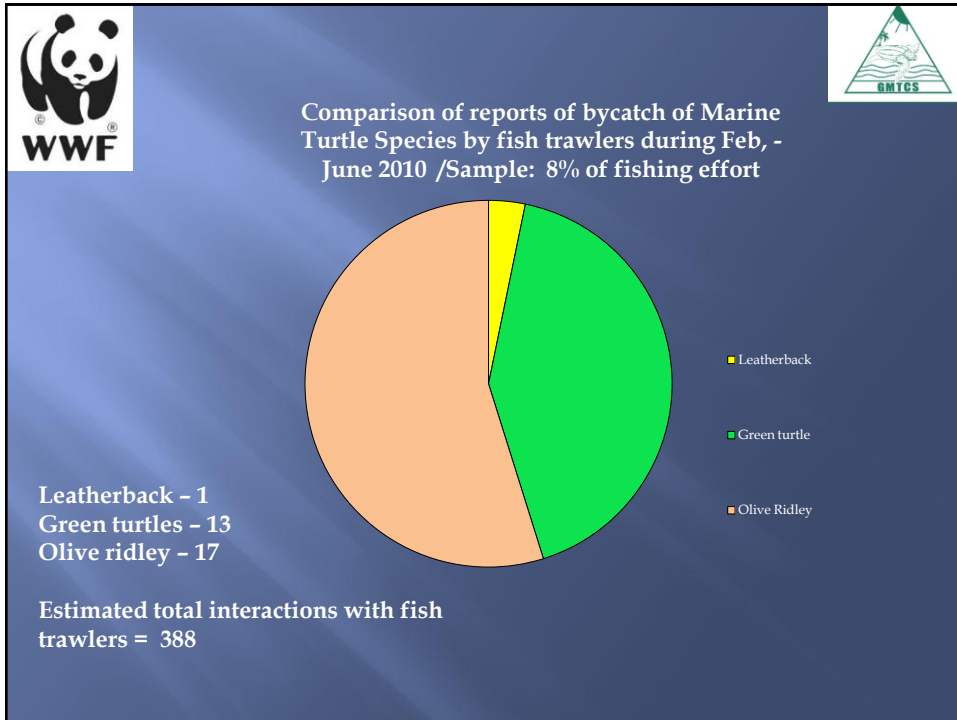





**Gillnet Bycatch in**  
**Guyana**  
**2011**





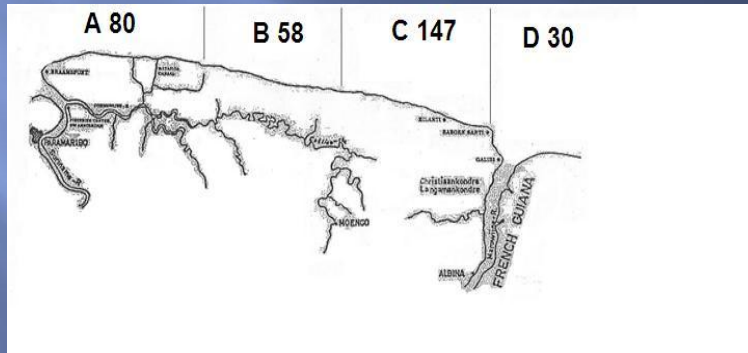
NUMBER OF TURTLES REPORTED CAUGHT IN GILL NETS PER LOCATION 2012

Month	A	B	C	D	Total
Feb		3			
March			6		
April	1			2	
May	21	13	22	7	63
June	31	23	48	3	105
July	18	13	46	16	93
August	9	6	21	2	38
Sept 15	-	-	4	-	-
Total	80	58	147	30	315





Bycatch data from Gill Nets in Suriname, 2011  
Data from 25% of the fishing effort.



Estimated total capture of marine turtles in the Suriname gill net fishery, nesting season 2011  
(data also available for 2006 & 2010)

Month	No. of boats interviewed		Total number of boats	Total turtles caught	% Fleet sampled	Est. total turtles caught
	open	decked				
January	108	11	119	22	39	56
February	90	37	127	26	42	62
March	121	39	160	117	53	221
April	119	19	138	95	45	211
May	80	39	119	84	39	215
June	154	45	199	115	65	177
July	170	46	216	65	71	92
August	148	41	189	29	62	47
September	96	33	129	13	42	31
Total	1086	310				1112



## How do we STOP turtle bycatch ?



## Main Activities: Fisheries Bycatch



- ▣ **Gathering and analysis** of gill net and trawl **by-catch data** and education and training of fishermen in the mitigation of marine turtle by-catch and in turtle reanimation.
- ▣ Participation in regional and international fisheries management meetings, to **identify** sustainable fishing **technologies**.
- ▣ Conducting of, in collaboration with National Organizations / DOF, **gear technology research**.
- ▣ Implementation of **incentive measures** to secure **fisher interest** in participating in research on and offshore.
- ▣ Organization of consultations to enable **fishers' involvement** in research **and adoption of new gears/ methodology**.
- ▣ Hosting of regional exchanges to maximize **information dissemination and sharing of data**.



## Fishermen's Consultation, Suriname: Let everyone have a voice



## Fisher Exchanges, Guyana



Educate & raise awareness in fishers

### WWF Fisheries Threats

**1**  Marine turtles face many dangers at sea.

**2**  One such danger is from fisheries.

**3**  Turtles accidentally swim into fish nets, get entangled underwater, and eventually drown, as they cannot swim to the surface to breathe.

**4**  Turtle remains entangled for more than 2 hours, it will drown.

**5**  In the Guianas, fishermen use TEDs or Turtle Excluder Devices. These TEDs allow turtles caught in trawl nets to escape without harm.

For some types of fishing however, there is no special fishing device that allows turtles to escape without harm, and fishermen must change how they fish in order to avoid catching turtles.

If we do not reduce turtle bycatch, we may lose all our sea turtles!


PROTECT SEA TURTLES! FISH SMART!

### WWF How can we protect sea turtles?


**1**  Protect the places where they live... beaches, mangroves and the oceans.

**2**  Return captured turtles to the sea.

**3 STOP** 



## Fisher consultations (Guyana and Suriname) Some points.....



- ❑ Not all fishermen participated and provided data.
- ❑ The fish trawlers as well as the coastal fishermen are afraid of repercussions if they give info on bycatch.
- ❑ Fishermen fear that their sole source of livelihood may be restricted or banned if WWF or the DOFs feel that bycatch rates are too high, and propose time or spatial closures.



## Fisher Comments cont'd...



- ❑ Fishermen are not pleased to find turtles in their nets.
- ❑ Most of the turtles are reported to be alive when found in the net.
- ❑ Fishermen report that nets are often not too deep in the water and turtles are able to come to the surface to breathe.
- ❑ It seems that turtles get tangled easier in the larger mesh sizes of the fishing nets.
- ❑ Fishermen reported that turtles are already seen in January in the coastal waters.



## Fisher Feedback



### For the Gillnets Boats.

- ❑ When the fishermen are retrieving the net and find a turtle caught in the net, they bring the net alongside the boat.
- ❑ Because of the weight of the turtle they cannot lift it into the boat and have to cut the net around the turtle to release it.
- ❑ As a consequence of the above, fishing nets are often damaged.
- ❑ No-one receives compensation for damaged nets and other fish gear.



## Fisher Recommendations Feb 2012

- Gill netters are concerned about the large number of illegal fishing boats and pirates in the Guianas' waters. They need the DOF to address this in order to reduce over fishing.
- Until such time fishers are too concerned about their personal safety and the security of the boats and engines, to entertain consideration to reduce fishing effort.
- Illegal fishermen will continue to exploit fish resources without constraints, hence registered fishermen fear that gill nets may continue to be lengthened.



## Research initiatives Bycatch Mitigation



# Seeking solutions through research adjusting net design and reducing net length



## Redesigning the TTED used in shrimp trawlers to fit drums of fish trawlers







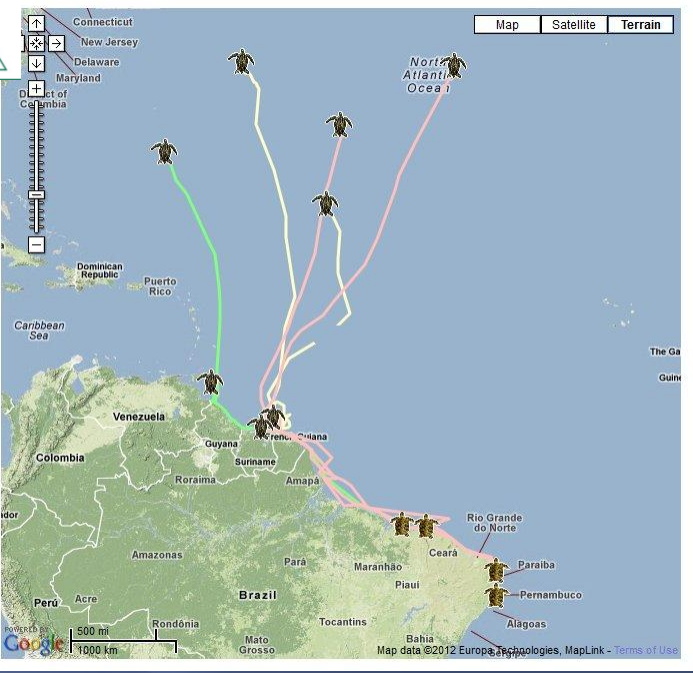



**Fisheries Research:  
Addressing Bycatch /  
Improved Fishing Practices  
and working with fishermen**



**Tracking of  
*C. mydas* and  
*D. coriacea* in  
2011 to  
assess  
potential  
interaction  
with  
Fisheries  
(identifying  
migration  
and foraging  
hotspots)**







## Results



## Results from Surveys and Research 2011

- ▣ Adjusted gill nets (shorter and with escape gaps) caught significantly fewer fish than the normal nets.
- ▣ The flexible TED did not catch turtles but fishermen insist that fewer fish were caught. Fish trawlers request repeated testing, and preferably with another flexible TED design.
- ▣ Data collection in Guyana suggests that less than 20 turtles are caught annually in fish gear. However, there is a high chance that this data is well below actual figures.



## Fisher Proposal to WWF



1. Support national efforts to control illegal gill net fishing and trawling.
2. Support the strengthening of the Maritime Authority in order to increase presence of the defense force marines at sea.
3. Lobby with the Ministry of Fisheries on behalf of the gill net fishermen and other artisanal fishers, to provide a patrol boat and fuel to fisher associations so that they may conduct sea patrols themselves.
4. Demand the DOF apply stricter penalties on persons caught fishing illegally.



## Fisher Proposal to WWF cont'd



1. Provide assistance to the DOF so that it may seek to secure retirement benefits for fishermen who wish to retire and move out of gill net fishing.
2. Lobby to increase fish prices on domestic and international markets, reducing the need for fishers to over-exploit fragile fish stocks.
3. Support artisanal fishers in their quest to ban fish trawling which is reported to be devastating inshore fish resources.
4. Discuss the benefits of putting a moratorium on the issuing of fish permits (especially in Suriname).



## Key Challenges to Sustainable Fisheries in the Guianas:



- ▣ Absence of Fisheries **Management Plans**;
- ▣ **Limited** technical, **human and financial resources** of the Fisheries office;
- ▣ **Insufficient monitoring** and analysis of fish and shrimp **landings**;
- ▣ Little or no **fish stock assessments**;
- ▣ Absence of monitoring of **impacts** on the benthos and or non-target species **by fishing gear and technologies**;
- ▣ Almost no control of **illegal fishing and piracy**; and
- ▣ Absence of any monitoring or **regulation of harvest levels** to ensure that the various fisheries are operating at or below but not beyond **MSY**.

