

Meeting Report

2019 Regional Leatherback Bycatch Prioritization Workshop

17-18 March 2019
Torarica Conference room
Paramaribo - Suriname



WIDECAST

Wider Caribbean Sea Turtle Conservation Network



NFWF

This workshop was organized with the support from the National Fisheries and Wildlife Foundation (NFWF), WIDECAST and WWF Netherlands

Table of Contents:

Table of Contents:	2
Introduction	3
1. Meeting proceedings Day 1, March 17th, 2019	4
Country presentation(s): Suriname	5
Country presentation: Trinidad and Tobago	6
Country presentation: Guyana	7
Country presentation: French Guiana:	8
Country presentation: Canada (foraging grounds):	9
2. Meeting proceedings Day 2, March 18th, 2019	10
Working group session 1: Country level	10
Working group session 2: Regional level.	10
Plenary session: Regional level	10
3. Most Important Regional Priorities:	11
Strategic framework for leatherback bycatch reduction in the Guianas and Trinidad and Tobago	11
Regulations and enforcement:	11
Gear:	11
Data:	12
E & A:	12
Form an overarching organization or committee	12
Annex 1: Participants list	13
Annex 2: Meeting Agenda	19
Annex 3: Results Working group session 1: the Plenary Matrix	21
Annex 4: Results Working group session 2:	30
Topic 1: Policy/ Regulation.	30
Topic 2: Gear	30
Topic 3: Data	31
Topic 4: Education and Awareness	32
Annex 5: Results of the Regional IUU meeting (Nov. 2018):	34

Introduction

Previous assessments of Northwest Atlantic (NWA) leatherback sea turtle (*Dermochelys coriacea*) status concluded that this regional management unit (RMU) was abundant with a stable and even increasing trend (TEWG 2007; Tiwari et al. 2013a). However, a recent NFWF-supported effort which involved pooling of data from members of the Northwest Atlantic Leatherback Working Group* revealed that regional trends in annual nest counts have declined significantly at both site-level and regional scales, and during both long-term (1990-2017) and recent (2008-2017) time periods (Northwest Atlantic Leatherback Working Group 2018). The working group discussed drivers of the updated trends in the context of what factors might have changed or have not been sufficiently addressed to cause a divergence between previous findings and the current analysis. Fisheries bycatch is a well-documented threat to leatherbacks in high seas areas (e.g., Fossette et al. 2014), high-latitude foraging areas (e.g., Hamelin et al. 2017; Chambault et al. 2017), and near key nesting beaches (e.g., Lee Lum 2006; Eckert 2013). In particular, net fisheries off historically high-density nesting beaches in Trinidad and the Guianas (i.e., Guyana, Suriname, and French Guiana) interact with leatherbacks and in high numbers (~3,000/year; Lee Lum 2006; Eckert 2013). Due to these high levels of leatherback bycatch near key nesting beaches during the nesting season and the potential for industrial long-line fisheries and leatherback overlap in the high seas, the working group recognized that bycatch is likely a primary driver of estimated declines in abundance. However, while acknowledging significant efforts previously invested in testing mitigation techniques to reduce leatherback bycatch in net fisheries in Trinidad (Eckert and Eckert 2005), participants in the working group noted that, in general, bycatch in the region is poorly monitored and significantly underreported, and enforcement of existing regulations is generally weak or non-existent¹. The recognized gaps have prevented early identification of priorities for monitoring, reporting, and conservation measures at a regional scale. Nonetheless, such a prioritization effort would highlight opportunities for immediate action, as well as major gaps in information, and facilitate exchange of knowledge capacity to act in order to limit bycatch.

WWF Guianas responded to this need by funding, organizing, and facilitating the 2019 Regional Leatherback Bycatch Prioritization workshop. The workshop was convened on the 17-18th of March 2019 in Paramaribo, Suriname, and included participants from Suriname, French Guiana, Guyana, Trinidad, Canada and the USA. Participants gathered to exchange and discuss data and information on bycatch issues in the region. National and regional priorities were discussed and drafted on bycatch reduction of the Northwest Atlantic leatherback population especially near nesting sites, foraging grounds and migratory routes.

The general objective of the workshop: Identify regional and national priorities for leatherback bycatch reduction in Trinidad and the Guianas.

Main question of this workshop: what are the actions/ priorities we need to take in order to address bycatch and reverse the current trends of decline in the regional nesting population of Leatherbacks?

¹ In French Guiana conservation actors are working along with the French Navy (Action de l'Etat en Mer) and the Marine Affairs to fight against Illegal, Unreported and Unregulated (IUU) fishing, which also contributes to bycatch of leatherback turtles in the region.

Day 1 objective: Share and summarize the current state of knowledge about leatherback bycatch in the region from a national perspective.

Day 2 objective: Establish national and regional priorities for bycatch reduction: synthesize this baseline information across countries to identify priorities, which will include key bycatch issues and concerns as well as gaps in knowledge or capacity that are currently obstacles to implement bycatch monitoring or reduction actions.

The workshop was designed to produce: the present report that i) summarizes the information and data shared and group discussions, and ii) highlights the regional priorities identified and steps forward by country by the group.

This report accomplishes the two goals mentioned above, and is structured as follows. First, meeting proceedings from Day 1 are summarized, which included country presentations to establish the current state of knowledge about leatherback bycatch in the region. Second, meeting proceedings from Day 2 are summarized, which included structure and results of working group activities and plenary discussions. Finally, the resulting priorities for leatherback bycatch monitoring and mitigation in the region are presented. Three annexes provide the list of meeting participants (Annex 1), the meeting agenda (Annex 2), and specific results of the individual working groups (Annex 3).

1. Meeting proceedings Day 1, March 17th, 2019

Opening remarks: Hanneke van Lavieren, WWF Guianas Oceans & Wildlife Coordinator, represented the Director of WWF Guianas. Van Lavieren communicated the reasons for the gathering and the objectives of the meeting, followed by the agenda for the day by Avanaisa Turny.

The Introduction presentation, was presented by **Bryan Wallace**. It stipulated the need and urgency to address leatherback bycatch reduction in the region. The presentation captured the events preceding the meeting, the importance of addressing bycatch and thus the importance and expected outcomes of this meeting from the perspective of the National Fish and Wildlife Foundation.

The official IUCN Red List status for the Northwest Atlantic leatherback subpopulation (currently “Least Concern” in Red List parlance) differed from the anecdotal information and reports from the field describing a decline in nesting abundance in recent years. An official re-assessment would be required to adjust the status. The Northwest Atlantic Leatherback Working Group was formed to perform an analysis of annual nesting trends since the 1990s and the re-assessment of this population’s status under IUCN Red List criteria. The assessment covered 39 sites across 17 countries. The resulting report documented long-term and recent declines at several individual nesting sites, across all genetic stocks, and for the regional population (Northwest Atlantic Leatherback Working Group 2018). The largest declines in sheer numbers are at the most important nesting sites, particularly French Guiana.

The Working Group also described three categories of drivers of the decline of the nesting population: 1) anthropogenic, which included bycatch near nesting sites, on migratory routes, and in foraging areas; 2) habitat loss; and 3) demographic and behavioral changes, such as longer remigration intervals, long-term cycles and variation in recruitment and breeding periodicity.

Bycatch near nesting sites was identified as the main threat to focus on, due to its high potential to significantly reduce the nesting population at nesting sites during the nesting season and to the existence of information about bycatch in some areas, as well as previous efforts to reduce bycatch interactions (e.g., Eckert 2013). Temporal and spatial overlap of turtles and fisheries, in the absence of bycatch reduction methods and devices, will increase the probability of interactions and thus of mortality of turtles.

Questions and answers:

Q: Marie Louise Felix on bycatch data availability.

A: For the assessment the working group used aggregated published data and connected the dots based on the data available. Data came from Project Global from the Duke University, on-board observers' data, data from bycatch data collectors (at landing sites). Data from different fisheries and different collection methods was used. The main fishery to focus on was gillnets. The actual data was used, without extrapolation for nesting and or bycatch rates.

Q: Laurent Kelle: How did you assess the trends for the fisheries; temporal aspects to the trends?

A: The annual nesting abundance over the past 28 years was analyzed and the trend was assessed showing an average of 4% annual decline for the last 10 years over all nesting sites. Oceanographic and fisheries trends were not assessed. This resulted in a quick overview of where to focus conservation and by-catch reduction efforts, thus near nesting sites. During the WIDECAST meeting, this would be discussed in depth by Bryan Wallace. *This presentation is added to the participants' folder.*

Important note: Karen Eckert: 'decline in nesting population for leatherbacks is getting worse over time, the populations elsewhere (e.g., East Pacific, West Pacific) have seen >95% declines in nesting. Those examples show us what can happen, so we have to address this issue, we have lost already half of them, 90% overall decline in the last decades; not just due to bycatch. Now we can focus on this issue and come up with solutions'.

Country presentation(s): Suriname

WWF Guianas by Michael Hiwat, overview of nesting sites, nesting data and trends, threats, bycatch in gillnet fisheries.

Fisheries Department of Suriname by Mario Ijsspol, a quick overview of the fisheries of concern for bycatch reduction, licenses, the regulation and regulation gap.

- Lines on the map define the following:
 - Yellow line: 15 fathom: artisanal fisheries
 - Between yellow and pink line: Sea-bob fisheries
 - Between pink and the red line (650 miles), most industrial fishing.
- Major Data Gap: There is no assessment for Suriname of IUU fishing on turtle bycatch.

- Based on 20-80% rule: 600 Gillnet vessels engage in IUU fishing.
- IUU fishing is of great concern as it is getting harder for fishermen to export their fish, they are losing market access.
- Legislation in place for marine mammals, turtles, Endangered Threatened Protected (ETP) species.
- Enforcement is inefficient, due to gaps: Lack of staff, financial and knowledge capacity and technical capacity: infrastructure present so that data could be processed in a reliable way.

WWF Guianas by Hanneke Van Lavieren/ Kim Sys, presenting on bycatch priorities, bycatch reduction efforts and the results of several bycatch studies done in between 2006, 2012 and 2015-2016 in Suriname, through data collection at landing sites for gillnet fisheries.

FAO- REBYC-II LAC project coordinator, Tomas Willems presenting on the development process of turtle bycatch reduction devices in trawl fisheries, the so called cable TED (Turtle Excluder Device).

- 1999: TED obligation, for import of shrimp to the USA
- For Fish trawlers, there is no TED obligation and no TED is used currently.
- Sea-bob trawlers: use the 4" bar TED under the MSC certification. They have done trials with the 3" bars, which gave a successful result: high retention of target catch, Sea-bob, and valuable by-catch. Lesser by-catch of non-valuable species (rays). The 2" bar TED (TTED) gave a loss of valuable bycatch (non-target catch).
- In fish trawling there is no use of TED. Currently they are working with NOAA on the development of and trials with a flexible, cable TED, which can be rolled upon the net drum. The tow time is 2-3 hours.
- Results: 75 % of rays were excluded from the catch, **no** turtles, **20-30 %** of the fish catch is lost.
- In the US the flexible Ted works perfectly, not in Suriname, we continue, until we get a workable percentage (near 100%) for retention of target catch. As the benefits for fishermen should be obvious to assure compliance since enforcement is weak and costly.

Conservation International Suriname, Henk Bhagwandin (Adekus), presenting on a pilot project with CI-Suriname on Fisheries improvement methods in artisanal fisheries, e.g. the use of net light (green LED lights) on drift nets to alert leatherbacks of the presence of danger (the net in the water).

Questions and Answers:

Q: Roy Ho Tsoi: Are the lights still visible in our murky waters?

A: HB: yes. However this is a proposal, it has not been implemented/ tested yet.

Country presentation: Trinidad and Tobago

Presented by **Jeff Gearhart**

- Trinidad and Tobago only has net fishing, shrimp trawling, long liners, but no fish trawling.

- Between 2005 and 2010, data on by-catch was collected and published. Several bycatch reduction methods, devices, and fishing alternatives were developed for 2 types of gillnet fishery commonly practiced in Trinidad by artisanal fishermen.
- The solutions lie within continuation of testing of bycatch reduction methods in gillnet fisheries, improvement of catch per unit effort for target species, reduction of the fishing effort, adjustment/ implementation of regulation for periodic closure areas and no-fishing/ netting zones at hotspots during nesting season.

Note from Laurent Kelle: 'build on the good results of the social feedback and engage the government and captains. Use social marketing: turtles are in your (fishermen's) hands! For fishermen are a proud people'.

Q: Tony Nalovic: Scientist, regulators and fishermen are not getting along?

A: Jeff Gearhart: 'rural communities and NGO's work closely. A socio-economic impact study was done. A stakeholder meeting was held: more impact, more studies, and longer periods, more scientific prove were requested/ needed to warrant change of regulation. Gillnet fisheries is the most important fishery in Trinidad. Consultation and dialogue is essential. Many fishermen have no other options than fishing. Improve value of fish on the market for line fish. Reducing the fishing effort. Increase collaboration between parties, stakeholders. Good opportunities: young people taking over of old fishermen, more NGO's are moving in and the current government is more willing.

Note from Tony Nalovic: The social dimensions of change should not be underestimated and need attention!!!

Q: Marie-Louise Felix: Where FAD's (Fish Aggregation Devices- which congregate fish and increase catch rates in one spot) considered for Trinidad?

A: Jeff Gearhart: 'we did not reach that stage, also depending on the season changes of water, the clarity changes where they can catch their target fish. Fad ownership is also an issue (whom is allowed to fish at that spot, and how is one excluded from fishing there?)

Note: Rosemarie Kishore: the fisheries in Trinidad and Tobago is multi-gear (more than 12 different fisher gears are used such as gillnets, hand lines trolling, trawling and fish potting). There is industrial fishing in the form of industrial trawlers and industrial long liners.

Country presentation: Guyana

Presented by **Devon Reece**

- There is a No Netting Zone in the area near Shell beach during the nesting season, this is declared annually. Villagers could fish with a net, given they keep to the guidelines set: (the net should be checked every 3 hours).
- Monitoring of ETP species is planned. There is a major data gap: there is no data on fishing effort and by-catch and IUU fishing. Masters and PhD students are stimulated to take up sea turtle conservation as research options.
- Database of ETP species by catch is planned to be set up with PAC and the University of Guyana

- The trawlers are required to use cameras on board, and the use of the TED is mandatory. The “Move on rule”, when there is a sighting, you move on, is also taken seriously.
- There is no fish trawling in Guyana.
- PAC spearheads a monitoring program for Marine turtles
- A transition from the No Netting Zone into a No Fishing Zone, is not an option at the moment.

Note: the onboard camera images and data is under the auspices of the Fisheries Department and the industrial fishermen.

Country presentation: French Guiana:

Presenters: **Nicolas Paranthoen, Dr. Damien Chevallier, Michel Nalovic, Nolwenn Cozannet**

- Reducing bycatch defined as priority # 1 in the French Guiana Sea Turtle National Action Plan, based on the results of monitored fisheries related injuries to turtles, the current potential for high numbers of drowned turtles annually, the increased fishing effort due to IUU fishing.
- The declining trend in nest counts for leatherbacks is evident for the Western and Eastern beaches.
- Foreign IUU fishing from Brazil, Guyana and Suriname is the main concern for Bycatch reduction in French Guiana.
- No trawling zone within 0-12 nautical miles.
- French Guiana has a relatively small fishing fleet (200 vessels) compared to Guyana and Suriname (> 1000 vessels).
- Data: in comparison to Suriname and Guyana, there are no data gaps. However French Guiana is aiming to get more data on bycatch in gillnet fishery. Data on the different life cycle stages of Leatherbacks, where they are, when.
- French Guiana is promoting the use of the TTED in shrimp trawling in French Guyana and advocating for its use to be mandatory for Shrimp imports into European Union. Results from experiments in French Guiana, Suriname, the Gulf of Mexico and the South Atlantic Bight shows that the TTED is more efficient in bycatch reduction of *Elasmobranchs* than the TED; there is a potential loss in retention of target shrimp catch when bycatch reduction of fish is high. This difference is overcome over the length of the tow since the improved fishing conditions of the lighter trawl (TTED equipped) ends up catching more shrimp as shown in French Guiana, Suriname trials. Trials are continuing in Suriname.
- CRPMEM and WWF France are collaborating through these joint projects: PALICA and PALICA 2 on bycatch reduction in gillnet fishery through improved data collection, the development of bycatch E & A programs, stakeholder engagement, information on fishing practices, training in MT handling techniques and introduction of bycatch reduction methods for trial by the gillnet fisheries (such as reducing net height, illuminating the net, changing float color and acoustic devices)..

Q: Jeff Gearhart: 'is there a need for that many float lines in the nets? The more lines, the more possibilities for entanglement of leatherbacks in those lines'.

A: Tony Nalovic: 'the fishermen are used to that many float lines. But reducing or entirely eliminating these float lines is something that we want to test'.

Country presentation: Canada (foraging grounds):

Presented by: **Brianne Kelly**

- Very large fishing fleets, using diverse fishing methods (gillnets, trawling, long line, traps), spread across large area and 4 different reporting areas.
- Highly productive foraging areas found here
- Minimal data on foraging leatherbacks.
- Fishing-leatherback interactions and turtle bycatch mortalities likely grossly underestimated (Hamelin et al (2017) *Aquatic Conservation: Marine and Freshwater Ecosystems*).
- Engagement with fishers is critical and essential to improve bycatch reporting and subsequently address bycatch through the adoption of bycatch reduction devices/methods.
- Species at Risk Act prohibits harm to leatherbacks including bycatch
- WWF Canada is part of the Global Ghost Gear Initiative which is also a cause of bycatch
- There is no evidence of a decreasing trend in abundance (2002 – 2015) of Leatherbacks at foraging sites, based on density estimate studies from 2002-2015 (Archibald and James (2016) *MEPS*).

Discussions on linkages between addressing by catch and addressing IUU.

Day 1 concluded with brief summary of country reports, and description of planned activities for Day 2. A. Turny summarized country reports into a draft matrix to enable comparisons across countries.

2. Meeting proceedings Day 2, March 18th, 2019

Day 2 began with a presentation of the draft country status summary in Google Docs by Avanaisa Turny, followed by a series of working group sessions.

Working group session 1: Country level

During this session, participants reviewed and adjusted country status compilation in Google docs. National-level groups combined information from the country status report and the topics, discussed national solutions and priorities in terms of effective bycatch reduction for each country. Groups were asked to discuss the following points:

- a. We know where we are with leatherback bycatch in country, where do we want to be in 2 years?
- b. Make a list of actions needed to reduce leatherback bycatch in fisheries (reach the goal). What is needed to reduce bycatch significantly (by at least 30%) in 2 years' time, take monitoring and evaluation into account? Solutions (regulation/ gear/ reduction of interaction/).
- c. Clearly identify the gaps (data, regulation, cooperation) to get from the now to the required status (goal) in 2 years' time.

The results are shown in Appendix 3, Results Working group session 1: the Plenary Matrix.

Working group session 2: Regional level.

During this session, participants worked in mixed groups based on expertise and interests, organized around specific topics (solutions and priorities). Participants decided on the topics, and self-sorted into groups according to these topics. The topics identified:

- 1) Policy/ Regulation
- 2) Gear
- 3) Data
- 4) Education and Awareness

Groups were directed to identify and discuss regional solutions and priorities in terms of effective bycatch reduction in the region. The results for working group session 2 are in Appendix 3 of this document. The results of this working group session were taken into the plenary session: regional level. This resulted in the participatory formulation of the final, most important priorities for the reduction of the NWA Leatherback bycatch in this region.

Plenary session: Regional level

The regional priorities from the country assessment matrix and the regional priorities by topic were summarized and presented to all participants. Participants discussed and revised the proposed summary and priorities until the final priorities could be approved by unanimous vote.

3. Most Important Regional Priorities:

Strategic framework for leatherback bycatch reduction in the Guianas and Trinidad and Tobago

The working group developed an overarching strategic framework to guide how projects are developed in the region going forward. Individual projects at particular sites or within particular countries can use this framework to develop specific activities and work plans. This common framework should ensure that all projects developed and implemented in the future share common features and approaches, and thus can be coordinated and evaluated together in the context of the shared, regional leatherback population.

1. Focus on near nesting sites in Guianas and Trinidad and Tobago, as well as migratory routes and foraging sites in Canada / US;
2. Focus on gillnet gear and engage fishers; symposium of stakeholders (e.g., fishers, scientists, decision-makers) to co-develop conservation measures.
3. Modify the gear in consultation with fishers and appropriate authorities;
4. Enforce and monitor conservation measures (e.g., gear modifications) in combination with spatial-temporal areas determined to be of highest importance for reducing leatherback bycatch;
5. Get fishers involved in data collection;
6. Make arrangements and develop methods for monitoring and evaluation (to measure success and failure), adaptive management, and sharing results and lessons learnt.

A next step will be to build on this Strategic Framework and develop a **Regional Plan of Action (2020-2025) to address and reduce Leatherback Bycatch in the Guianas and Trinidad and Tobago** based on the outcomes of this workshop and priorities and key actions identified. This Action Plan will consist of regional level action as well as national level components. The Action Plan will also identify key data gaps and management actions required along the migratory routes of these leatherbacks and at their foraging areas in the USA and Canada.

Workshop participants identified the highest priorities by topics discussed in working group.

Regulations and enforcement:

- Protection of turtles in the nesting season in the waters at nesting sites, through restricted / closed areas at nesting sites and in near shore areas with known or potentially high turtle-fishing interactions
- Develop a strategy to characterize and address bycatch related to IUU fishing. (See Annex 5: Results of the Regional IUU meeting (Nov. 2018), pages 7,8,9 of the IUU fishing workshop report for specific solutions and recommendations)

Gear:

- A structured program for testing, adaptation and adoption of modified gear in gillnet fisheries in the region
- Establish and enforce time/area restrictions for these fisheries

Data:

- Structured bycatch data collection approach in gillnet fisheries, across the region, in collaboration with fishers, also covering socio-economic aspects of the fishers
- Analyze regional bycatch data and combine with turtle occurrence data and synthesize into a regional leatherback-fisheries interactions map
- Assess potential impacts of long line fisheries on leatherbacks

E & A:

- Multi-stakeholder (fishers, scientists, conservation groups, decision-makers) regional symposium to engage fishers and discuss issues and solutions proposed

Form an overarching organization or committee

This committee's role would be to facilitate and monitor the actions / priorities in the region and success toward reduction of leatherback bycatch (FAO, WWF, WECAFC, CRFM, CRPMEM), and engage with international conventions, commissions, and initiatives (e.g., ICCAT, IAC).

Focal points were chosen at the meeting for participants to contact. These persons will also influence and follow the developments in their countries with regards bycatch reduction. They will also keep communication with other stakeholders ongoing within their position to keep a focus on bycatch reduction. They will lead the next steps of this meeting.

Focal points:

- Suriname: Hanneke van Lavieren /Mario Yspol
 - Guyana: Sopheia Edgehill, Devon Reece
 - French Guiana: Laurent Kelle
 - Trinidad: Rosemarie Kishore, Nicholas Alexander
 - For Canada / USA: Brianne Kelly
-

Annex 1: Participants list



WIDECAST

Wider Caribbean Sea Turtle Conservation Network



2019 Regional Leatherback Bycatch Prioritization Workshop

* Attended both the Regional Bycatch Workshop attending the WIDECAST Annual Meeting

(*) Attended *only* the Regional Bycatch Workshop

<u>Name:</u>	<u>Position:</u>	<u>Institute:</u>	<u>Address:</u>	<u>Phone number</u>	<u>Email address:</u>
Canada:					
* Brianna Kelly	Senior Specialist Marine Ecosystems & Fisheries	WWF-Canada	5251 Duke Street Duke Tower Suite 1202 Halifax NS B3J 1P3 902.482.1105 ext. 3025	902.482.1105 ext. 3025	bkelly@wwfcanada.org
France/ French Guiana					
* Dr. Damien Chevallier	Researcher	Centre National de Recherche Scientifique – Institut	3 rue Michel-Ange Délégation Alsace 23 rue du Loess – BP20	+0612 97 10 54	Damien.chevallier@iphc.cnrs.fr

		Pluridisciplinaire Hubert Curien (CNRS-IPHC)	Strasbourg, France		
* Nicolas Paranthoën	Coordinateur du Plan National d'Actions Tortues Marines en Guyane	Office National de la Chasse et de la Faune Sauvage (ONCFS)	Kourou, Guyane française	+0694 13 77 44	coordination.prtm@gmail.com
* Rachel Berzins	Cheffe de la cellule technique de Guyane	Office National de la Chasse et de la Faune Sauvage (ONCFS)	Kourou, Guyane française	+0694 40 45 14	rachel.berzins@oncfs.gouv.fr
* Christelle Guyon	Chargée de mission biodiversité marine	Direction de l'Environnement, de l'Aménagement et du Logement de Guyane	Rue Carlos Fineley CS 76003, 97306 Cayenne Guyane française	+0594 29 68 60	Christelle.guyon@developpement-durable.gouv.fr
* Nolwenn Cozannet	Chargée du projet Dauphin de Guyane	WWF France, bureau Guyane	2, rue Gustave Charlery 97 300 CAYENNE Guyane française	+0594 31 38 28	ncozannet@wwf.fr
* Michel (Tony) A. Nalovic	Ingénieur halieute / Fisheries Engineer / Research Fisheries Biologist	Comité Régional des Pêches Maritimes et des Elevages marins en Guyane (CRPMEM)	Dock du Larivot 97351 MATOURY Guyane française	+0594 38 79 85	Mnalovic_crpmem.guyane@yahoo.com
* Rommel Todd	Gillnet fisher / Vessel owner/ Elected officer, CRPMEM	Comité Régional des Pêches Maritimes et des Elevages marins en Guyane (CRPMEM)	Dock du Larivot 97351 MATOURY Guyane française	+594 694 00 50 30	toddrommel0@gmail.com
(*) Laurent Kelle	Directeur	Bureau Guyane du WWF France	2, rue Gustave Charlery	+0594 31 38 28	lkelle@wwf.fr

			97 300 CAYENNE Guyane française		
GUYANA					
* Sopheia Edghill	Marine Conservation Officer	WWF Guianas , Guyana Office	285 Irving Street, Queentown Georgetown, Guyana	(592) 223-7801 ext. 26 Cell: (592) 610-7182	sedghill@wwf.gy
* Odacy Davis	Deputy Commissioner	Protected Areas Commission	National Park, Thomas Road Thomas Lands Georgetown, Guyana	227-1888	odavis.pac@gmail.com
* Samuel Benn	Protected Areas Officer – Site Coordinator SBPA	Protected Areas Commission	National Park, Thomas Road Thomas Lands Georgetown, Guyana	227-1888	sbenn.pac@gmail.com
* Hannah Andries	Ranger - SBPA	Protected Areas Commission	National Park, Thomas Road Thomas Lands Georgetown, Guyana	227-1888	andriesh4pac@gmail.com
* Creig Henry	Ranger - SBPA	Protected Areas Commission	National Park, Thomas Road Thomas Lands Georgetown, Guyana	227-1888	15alexraighenry@gmail.com
* Rayner Mc Andrew	Environmental Officer II	Environmental Protection Agency	Ganges Street, Sophia Georgetown, Guyana	(592) 629-8185	epa.brm@gmail.com
* Nelanie La Cruz	Research Officer	Guyana Wildlife Conservation and Management Commission	Ganges Street, Sophia Georgetown, Guyana	(592) 697-5041	nelaniefcb@gmail.com

(*) Devon Reece	Fisheries Officer	Fisheries Department	Guyana Regent & Shiv Chanderpaul Dr. Georgetown, Guyana	(592) 670-3358	devon_reece2011@yahoo.com
(*) Brentol Gibbs	Health and Safety Officer	Guyana Association of Trawler Owners and Seafood Processors	Prittupaul Singh Investments, McDoom, East Bank Demerara	(592)225-2111	bgees32@yahoo.com
(*) Terrence Brown	Fisheries Officer	Fisheries Department, Guyana	Regent & Shiv Chanderpaul Dr. Georgetown, Guyana	(592) 225-9551 Cell: (592) 602-4191	browneterrence@yahoo.com
THE NETHERLANDS					
* Arjan de Groene	Advisor Caribbean Netherlands Programme & Marine Turtles	WWF-Netherlands		+31 (0)30 69 37 333 Cell: +31 (0) 6 46272075	agroene@wwf.nl
ST. LUCIA					
* Dr. Marie-Louise Felix			St.Lucia	758-7212019	mlfelixearth@gmail.com
SURINAME:					
* Hanneke Van Lavieren	Oceans Coordinator	WWF-Guianas Suriname	Henck Arronstraat 63 Paramaribo, Suriname	(597) 422-357 ext. 115	hvanlavieren@wwf.sr
* Efrend Barker	TED officer	Heiploeg		(597) 7168365	efrendbarker911@gmail.com
* Michael Hiwat	Marine Conservation Officer	WWF-Guianas Suriname	63 Henk Arronstraat, Suite E Paramaribo, Suriname	(597) 422-357 ext. 121	mhiwat@wwf.sr
* Avanaisa Turny	Director	AT-OSS	Bakamoejoeweg 24	00-597-8532629	ar.turney@outlook.com

			Paramaribo-Suriname		
* Tomas Willems	REBYC-II LAC Project Coordinator	FAO & MAAHF-Fisheries Dept.	Cornelis Jongbaw straat Paramaribo-Suriname		tomaswillems@gmail.com
(*) Mario Yspol	Senior Fisheries Officer	Dept. of Fisheries Suriname	Cornelis Jongbaw straat Paramaribo-Suriname		marioyspola2017@gmail.com
(*)	Senior Fisheries Officer	Dept. of Fisheries Suriname	Cornelis Jongbaw straat Paramaribo-Suriname		
* Els Van Lavieren	Technical Manager Marine & Wildlife Conservation Program	Conservation International Suriname			evanlavieren@conservation.org
* Roy Ho Tsoi	Senior Gamewarden	Ministry of RGB,	Cornelis Jongbaw straat Paramaribo-Suriname		rhotsoi@gmail.com
(*) M. Van der Veen	Owner/ Director	HOLSU. NV Industrial Trawl fisheries	Domburg-Suriname		murkvdveen@gmail.com
(*) Satesh Khodai	Chair of SUNFO	Artisanal Coastal Fisheries organization Suriname		597-8547600	sunatfo@gmail.com
(*) Rashida Mahadeo	Board member	Fishers Collective Paramaribo-Commewijne Suriname		597 713-4022	vis-col@hotmail.com
(*) M. Van Eer	Seabob-Heiploeg	Heiplaog Suriname/ Suriname	Paramaribo-		info@heiploegsuriname.com

		Seafood Association	Suriname		
* Kim Sys	Oceans Assistant	WWF Guianas Suriname			kimcsys@gmail.com
(*) Henk Bhagwandin	Lecturer/ Researcher	ADEK-UNIV-Suriname	Leysweg- Paramaribo		henk_bhagwandin@yahoo.com
TRINIDAD & TOBAGO:					
(*) Nicolas Alexander			Grand Riviere, Trinidad Rep. of Trinidad & Tobago		nichocalexander@gmail.com
(*) Rosemarie Kishore		Institute of Marine Affairs	Hilltop Lane, Chaguaramas Rep. of Trinidad & Tobago	(868) 634-4291	rkishore@ima.gov.tt
USA:					
* Dr. Karen L. Eckert	Executive Director/ Professor and Director	WIDECAST/ Center for Sustainability Principia College	1 Maybeck Place Elsah, Illinois 62028	(314) 954-8571	keckert@widecast.org
* Dr. Bryan Wallace	Marine Biologist	Ecolibrium, Inc	5343 Aztec Drive Boulder, Colorado 80303	(202) 295-7535	ecolibrium.inc@gmail.com
* Jeff Gearhart	Research Fisheries Biologist	NOAA National Marine Fisheries Service SEFSC / Mississippi Laboratories Harvesting Systems and Engineering Branch	202 Delmas Avenue Pascagoula, Mississippi 39568	(228) 549-1764 Cell: (228) 369- 0660	Jeff.Gearhart@noaa.gov

Annex 2: Meeting Agenda

AGENDA

2019 Regional Leatherback Bycatch Prioritization Workshop Paramaribo, 17- 18 March 2019

Day 1

General Objective: Identify regional and national priorities for leatherback bycatch reduction in Trinidad and the Guianas.

Expected results: a workshop report that i) summarizes the information and data shared and group discussions, and ii) highlights the regional priorities identified and steps forward by country by the group.

DAY 1: Share and summarize the current state of knowledge about leatherback bycatch in the region from a national perspective

08:15: Registration

08:30 Opening and welcome note by Suriname

08:35 Welcome note by WWF Guianas/ Steering committee (communicating the objective and expected outcomes of the meeting and the agenda for the meeting)

08:40 Introduction: a round of introduction by participants.

09:00 A general presentation on the need and urgency to address Leatherback Bycatch reduction in the region (WWF/ the Steering Committee).

09:15 Country presentation(s): Suriname and Q & A

10:15 Break

10:30 Country presentation(s): Trinidad and Tobago and Q & A

11:30 Country Presentation(s): Guyana and Q & A

12:30 Lunch

13:30 Country presentation(s) French Guiana and Q & A

14:30 Country presentation(s) Canada Q & A.

Note: Canada has been included to the country presentations due to them sharing the NW Atlantic leatherback population with the region through foraging sites and migration.

15:30 Plenary: discussions on similarities between countries, apparent areas of high bycatch, problem areas, possible solutions identified from presentations, gaps in knowledge, and lessons learned.

16:30 Closing remarks, followed by closing.

Day 2

DAY 2: Establish national and regional priorities for bycatch reduction: synthesize this baseline information across countries to identify priorities, which will include key bycatch issues and concerns as well as gaps in knowledge or capacity that are currently obstacles implementing By-catch monitoring or reduction actions.

08:15 Registration

08:30 Opening and introduction: Agenda Day 2

08:35 Working group session 1: Country level: Review and adjust country status compilation. Emphasis is on Bycatch reduction priorities, concerns and knowledge gaps.

09:45 Break: participants mingle. (topics for WG session 2 are proposed and agreed upon)

10:00 Working group sessions 2: mixed groups based on expertise and interests, discussing topics (concerns & solutions) at hand. Present and discuss.

11:30 Working group session 3: Mixed groups, (60% country and regional members added) to combine information from the country status report and the topics and discuss national solutions, identify gaps and establish priorities in terms of effective bycatch reduction in your country. Present on this. Q&A

13:00 Lunch

14:00 Working group session 4: Regional level. Mixed groups: identify and discuss regional solutions. Identify regional priorities in terms of effective bycatch reduction in the region. Present and discuss in plenary.

15:30 Summarize national and regional priorities in a plenary session. Discuss the way forward and next steps.

16:45 Final announcements. End notes by WWF and Guyana, French Guiana representatives. End note and closing by Suriname representatives

17:00 Closing

Annex 3: Results Working group session 1: the Plenary Matrix

Working group session 1 (Plenary- Matrix)

Main concerns/ severity	Suriname	Trinidad	Guyana	French Guiana	Canada
Data/ Information/ knowledge	14937- 719 nests		377-45 nests	Average: 7800-1200 nests	
Knowledge of Decline of Leatherback populations over the past 5 years:	Across the board: Yes 3.5% annually since 2008, to 5% decreases in past years				
Fishing fleet:	Shrimp trawl - Deep sea 4 - Penaeus 35 - Seabob 26 Fish trawl 35 Pelagic longline 60 Demersal longline 180 Coastal fishery - SK pin seine 15 - SK gillnet 380 - SKB bangamary 50 Inland fishery (estuaries) ca. 700	Trinidad only (Tobago not included) Fishers: 3280 Vessels: 1640; Approx.90% artisanal (multi-gear, primary gears: gillnets, trawls, lines, fish pots) Landing sites: 65	Increasing > 1000 vessels 80% driftnets Chinese S 305 Gillnet Nylon(GNN) 2-4” 458 Gillnet Polyethylene (GNP) 5-6” 329 GNP 7-8” 49 Catguts 39 Anchor S 42 Tie Seine 1 Pin Seine 21 Cadell 57 Circle S 14 trawls 109 Traps 58 Liners 65	Stable: 200 Gillnets vessels (70 unlicensed); Decreasing: 22 trawlers licensed (8 active in 2018) 45 artisanal hand lines licensed (from Venezuela)	>1,000 vessels; fixed gear (pot, trap, gillnet), trawls, long lines, seines

Main concerns/ severity	Suriname	Trinidad	Guyana	French Guiana	Canada
IUU fishing information	Mainly SK gillnet. Estimation: 20% fishing without license. 20% foreign vessels (Guyana) → 40% IUU gillnet effort → estimated >530 gillnet boats	In 2018 an Action Plan to address IUU fishing in the ports and waters under the jurisdiction of Trinidad and Tobago has been developed and awaiting approval by the Cabinet	43.4% of fleet	2/3 of resource fished additional to reported landings (Ifremer, Levrel 2012)	Minimal
Fisheries/ fishing methods of concerns:	Fish trawling; Gillnets; Long line; Ghost fishing	Gillnets (surface net and bottom-set), palangue (bottom-set long line), fish pot (lines attached to buoys)	Gillnets; Long line; Ghost fishing	Gillnets; IUU gillnet fishing IUU long line fishing (from Panama and others)	Pelagic trawl, fixed gear with vertical lines (pot, trap, gillnet), pelagic and ground fish long lines
By catch data (add gear-specific estimates, where available):	- Gillnet turtle bycatch: 2006, 2010-2012, 2015-2016 - Trawl turtle bycatch: observer data 1994 - 2015	Present 2001-2002 (interviews), 2007-2008 (on-board observers during testing), 2011-2012 (GPS monitoring), gillnets	not present	Present: 2008-09, 2014-2015 on-board observers in coastal gillnets; 2005, 2018 port-based interviews; 1999-2005 on-board observers on trawlers; 2012-present, data on injuries	2004-present: logbook data from Species At Risk Act reporting; 1978-present: entanglement data from Canadian Sea Turtle Network, Fisheries and Oceans Canada, Whale Entanglement and stranding, and other partners; some observer coverage of fisheries

Main concerns/ severity	Suriname	Trinidad	Guyana	French Guiana	Canada
Gaps: fisheries – turtle spatial overlaps knowledge	spatial distribution of both turtles and fisheries are known to certain extend - 2002-2005, data on fresh fisheries-related injuries (see Hilterman & Goverse 2007)	No: mapping of turtle habitat use and fishing effort through GPS monitoring and telemetry (2011-2012)	Yes: gillnet, longline (Foreign Vessels) fisheries distribution, Consistent turtle telemetry data	Yes IUU fishing presence mapping. The latest mapping done in 2012 according to the French Navy observations.	Yes: Minimal data on spatial overlaps with fisheries at a fine scale
Gaps: nesting data	No	No	Yes: Monitoring Secondary Beaches for full season, Tagging	Globally none. Gap on isolated beaches in central and western Fr Guiana	NA
Gaps: by-catch data	Yes: long-line fisheries No accurate data from fish trawlers	Yes, need more recent information for gillnets. No information for other gears of concern (palangue, fish pot)	No Data	Yes : IUU gillnet and longline fishing bycatch data Local gillnet bycatch data	Yes: Likely underestimated based on Hamelin et al (2017)
Gaps: in regulation	No reporting obligation for ETP species in any fishery, except in seabob trawl	Yes. Gear/area restriction to protect bycatch	Yes: Attention only on Industrial but not the Artisanal and Semi-Industrial	Absence of “no fishing zone”	Yes: Lack of enforcement and monitoring capacity
Gaps: in capacity	Institutional/ financial/ technical revitalizing turtles caught in net and release	Institutional/ financial/ technical. Lack of enforcement and monitoring capacity. Conduct additional bycatch research. Socio-economics assessment of targeted	Institutional/ financial/ technical	Financial Technical (alternative fishing methods and stock assessment of new target species)	Yes: Institutional, financial, technical; Additional bycatch research needed

Main concerns/ severity	Suriname	Trinidad	Guyana	French Guiana	Canada
		(gillnet) fishery. Feasibility of value-added catch for turtle safe fishing methods			
Fisheries-turtle-seasonality overlap of concern:	Waters in front of Braamspunt Galibi during the nesting season	Waters on the north and east coasts of Trinidad within 2.5 km and other identified hotspots	Waters in front of Shell beach	Waters in front of nesting sites (mostly IUU fishing in western FRENCH GUIANA ; local gillnet fishing in eastern FRENCH GUIANA)	High density fixed gear vertical lines during foraging season (e.g. lobster and crab pot gear commonly implicated in entanglements in July and August in recent Hamelin et al 2017 study)
Clarity in Bycatch evidence in the region:	YES: data	YES: data, but more recent estimates needed.	YES	YES: data	No: Bycatch reporting and associated mortality likely underreported and underestimated, respectively based on Hamelin et al (2017)
Leatherback in water Protection: Low/ medium/ high	Low - TED in shrimp/Seabob trawling - NFZ: very little enforcement	TED in shrimp trawling Legislation for no trawling on the east coast of Trinidad. Trawling on the north coast is limited to area and only from Mid Nov-mid January and not under the cover of night. Designated as an ESS in 2014;	TED in shrimp trawling 'NNZ'	TTED or TED in shrimp trawling mandatory	TED in shrimp trawl gear; separator panels in silver hake and squid trawl gear; circle hooks, corrodible hooks, completion of turtle disentanglement course and on-

Main concerns/ severity	Suriname	Trinidad	Guyana	French Guiana	Canada
		The Environmentally Sensitive Species (Leatherback Turtle) Notice, 2014			board disentanglement gear required in pelagic long line fleet
Interactions fishing effort-turtle presence: Low/ Medium/ High	Gillnet: high Trawl: low Pelagic long line: unknown	HIGH	HIGH	Shrimp trawl fishing: LOW Hand line: None Local gillnet fishing: seasonally HIGH IUU gillnet fishing: HIGH	Unknown; Better understanding of fine scale spatial and temporal overlap of fisheries and leatherbacks needed
Leatherback turtle bycatch severity:	Gillnet: high Trawl: low Pelagic longline: unknown	Gillnet: HIGH	No data to support	Medium for local fisheries Presumably HIGH for IUU fishing	Unknown; More complete reporting of bycatch needed to properly assess
Solutions on regulation and enforcement	enforcement seasonal NFZ Galibi; establishment seasonal NFZ Braampunt; gear enforcement	Several options to mitigate bycatch in gillnets: placement, avoidance, alternative fishing methods: (trolling)	Promote the NNZ, 2018 Fisheries Regulations enacted	Regulation ; S1: Implementation of a “temporal no fishing zone” after filling gaps on Dc breeding behavior and collaborative selectivity work with fishermen. Enforcement: S2: More effort against IUU fishing.	Improved capacity for monitoring and enforcement of reporting of bycatch and the Species At Risk Act

Main concerns/ severity	Suriname	Trinidad	Guyana	French Guiana	Canada
				Joint deployment Plan at the international level	
Solutions Gear	<p>Fish trawlers:</p> <ul style="list-style-type: none"> - TED <p>Gillnets</p> <ul style="list-style-type: none"> - reduce soak time - net adaptation - lights? - reduced net height <p>Pelagic long lines</p> <ul style="list-style-type: none"> - circular hooks - reduce soak time - lights? - other solutions? <p>Desk study needed</p>	<p>O1: Replace traditional deep setting surface drift gillnets (100 – 200 “hole”) with shallow set “narrow nets” and panel construction.--</p> <p>O2: Replace gillnet fishing with modern troll line fishing. Supplement with socio-economics assessment of target fishers, including feasibility of value-added catch for turtle safe fishing methods</p> <p>O3: Modernize outdated fishery regulations to include the provision of time-area closures of leatherback ‘hot-spots’.</p>	Use of TEDs, Use of Bycatch Reduction Devices	<p>S3: Adapt fishing gear and practices, adopt :</p> <ul style="list-style-type: none"> - Test green light and on board observation program (FEAMP PALICA2 program) <p>S4: Modify current fishing gear.</p> <ul style="list-style-type: none"> - Test reducing or entirely eliminating float lines. - Test net height reduction - Test floats color change white => red - Test floatless gillnet => on board observation program (FEAMP PALICA2 program) 	Some gear adjustments already in place for trawl and long line gear; Reduction of vertical lines in foraging areas (through regulations or technical solutions)
Solutions temporal spacing/ MPA	NFZ Galibi and Braamspunt Enforcement	Trawling does not take place on the northeast and east coasts where leatherback are located.		S1: Implementation of a “temporal no fishing zone” after filling gaps on Dc breeding behavior and	MPAs which prohibit use of gear that risks leatherback entanglement

Main concerns/ severity	Suriname	Trinidad	Guyana	French Guiana	Canada
	Temporal closed season for gillnet fisheries	By catch gear time area restrictions.		collaborative selectivity work with fishermen.	
Other By-catch reduction efforts/ actions:	<p>E & A Training Advocacy</p> <p>Reduce gillnet fishing effort/alternative livelihoods</p> <p>Random check of vessels at sea by the coast guard</p> <p>Increase VMS coverage of artisanal fleet</p> <p>Training in handling of turtles</p>	<p>Several over a period of 3 years: 2007-2010 in gillnet by-catch reduction. Economic assessment of fishery methods: trolling/ gillnetting. Fisher opinion measured on alternative options 2007. Training and demonstration 2008; 2011- spatial interaction data <input type="checkbox"/> Hot spots analysis</p>	<p>Use of onboard cameras, Onboard Observers, ETP Training, Education and awareness, Collection of Baseline data</p>	<p>S5: proper handling guidelines and training to fishers.</p> <p>S6: Global education and awareness</p>	<p>Training for fishers throughout the leatherback foraging range (in addition to training already happening in the pelagic long line fleet); supply of disentanglement equipment to fishers</p>
Bycatch priorities	<ul style="list-style-type: none"> - Enforcement NFZ - NFZ Braamspunt - Mandatory obligation reporting of ETP species - Fish trawl TED - Estimate bycatch in pelagic long line fishery (desk study) 	<p>Socio-economic study for targeted fishers/fishery; Recent by-catch data; refine hotspots with VMS system,</p> <p>Commitment from government and fishermen.</p> <p>Continue with gear research programs (gillnet size reduction trials, gear</p>	<p>Goal: To determine the severity of bycatch. Indicators:</p> <p>1.Legislation/regulation/policy review -regulate artisanal and semi-industrial fishery,</p>	<p>P1: Enforcement : More effort against IUU fishing. Joint deployment plan at the international level.</p> <p>P2: TTED – TED European Union law and enforcement globally (to exporting countries to EU)</p>	<p>1. Improve data on bycatch spatially and by gear type: Provide support for citizen networks to expand data gathering and training of fishers on bycatch reporting and disentanglement</p>

Main concerns/ severity	Suriname	Trinidad	Guyana	French Guiana	Canada
		<p>exchange including conservation gear subsidies and monitoring of conservation gear.</p> <p>Support collaborative regulatory reform based around time area closures and/or gear restrictions.</p>	<ul style="list-style-type: none"> - Review the No Netting Zone) - MSP for areas beyond SBPA <p>2. Establish mechanism for data collection for all categories of fisheries (ETP)</p> <ul style="list-style-type: none"> - Observer program. -Logbooks/reports - Training (all sectors involved) <p>3. Establish research program for by-catch</p> <ul style="list-style-type: none"> -turtle specifics -other ETP -Turtle telemetry (annual tracking) <p>4. Capacity Building for key Institutions</p> <ul style="list-style-type: none"> -new technologies -data analysis, etc. <p>Monitoring and Enforcement</p>	<p>P3: Modify current fishing gear through on board observation program (FEAMP PALICA2 testing program)</p> <p>P4: Implementation of a “temporal no fishing zone” after filling gaps on Dc breeding behavior and collaborative selectivity work with fishers.</p> <p>P5: proper handling guidelines and training for fishers (FEAMP PALICA2 program)</p> <p>P6: Global education and awareness</p>	<p>2. Reduce amount of vertical lines in water (through regulations or through technical solutions, e.g. ropeless gear)</p> <p>3. Improve capacity for enforcement and monitoring of Species At Risk Act</p> <p>4. Gather data on risk of ghost gear</p>

Main concerns/ severity	Suriname	Trinidad	Guyana	French Guiana	Canada
			- inter-agency response mechanism - improve enforcement of regulations		
STRAPS/ NPA?	No	Yes -2010 This STRAP along with other management measures has been incorporated into the following legislation; The Environmentally Sensitive Species. (Leatherback Turtle) Notice, 2014	NO	Yes : National Action Plan 2014-2023	Yes/ No
Similarities/ clusters?		Few at this time.		- IUU fisheries problem	
Outliers?		Higher densities of nesting turtles, Environmental conditions are different (limited soft- bottom substrate) on east and north coast Trinidad. Lower turbidity Target fish resources - mackerel Gillnets and Trolling fishing methods		- existing enforcement capacities - fewer gears used and less local fishing effort (number of vessels...) - EU funding availability - Mix of Guyana and Brazil style gillnets – high representation of other gillnet fleets – higher densities of fish and mega fauna presence for selectivity studies (except Trinidad)	

Annex 4: Results Working group session 2:

Topic 1: Policy/ Regulation.

Group members: Nicholas Alexander, Rashida Mahadeo, Arian de Groene (lead), Rayner McAndrew and Efrend Barker

Priorities:

1. Enforcement of 100% ban on fishing close to nesting beaches/ foraging areas (hotspots), during the breeding/ nesting season, as a bycatch reduction measure (long-term goal), based on documented turtle movements and habitat use; with:
 - a. The enforcement of existing fishing restrictions (e.g. Galibi)
 - b. The use of existing information on turtle habitat use to inform delineation of areas
 - c. Gear restrictions
2. Enforce IUU (too broad)
3. Mandatory reporting of ETP catches to all fisheries, not just MSC-certified, as a license condition
4. Standardize ETP friendly (gillnet) gears across region.
5. Reduce total fishing licenses.
6. Align with international policy frameworks; EU and US requirements for ETP-friendly fishing practices

Topic 2: Gear

Group members: Jeff Gearhart (lead), Nolwenn Cozannet, Henk Bhagwandin, Creig Henry, Todd Rommel, Tomas Willems, Michel Nalovic

Priorities were discussed and developed by the theme: **fishing gear.**

I. Gillnet fishery

Because it is believed that gillnets have the potential to affect more leatherbacks than any other fishing gear in the region, we first focused on potential bycatch reduction and mitigation measures for gillnets. Examples included: introduce LED lighting, remove vertical lines, reduce vertical profile, reduce soak time, reduce net length (French Guiana: limit of 2500m), float color, time/area closure or gear restriction.

Next, this working group qualitatively evaluated these potential measures to identify the most feasible and most likely to reduce leatherback bycatch (building on experiments already tested in French Guiana and Trinidad and Tobago). Measures that were discussed were ranked as follows, in order of highest to lowest priority (some measures have yet to be evaluated, these are marked with a (*)):

1. Time-area / gear restriction, must include enforcement (e.g., Trinidad and Tobago and Galibi (Suriname))

2. Reduce net length to 3km in Suriname and Guyana (plus winches and soak time), must include enforcement (e.g., Trinidad and Tobago (1.5 km nets – no winches, French Guiana 2.5 km nets)
3. Reduce the vertical profile and test *(excepted for Trinidad)
4. Remove vertical lines*
5. Reduce soak time, must include enforcement
6. Change float color*

The group also discussed fisheries priorities under two major categories: gear modification and enforcement.

1. **Gear modification** (vertical profile and remove vertical line): this is the most feasible but needs further experimentation (time, funding), especially in Guyana and Suriname, but also Trinidad and Tobago and French Guiana.
2. **Enforcement** needs: issues such as closure area / gear restriction, reduction of net lengths, etc. It was very clear to the group that the field enforcement capacities were a prerequisite to creating more closed areas. Indeed the creation of closed areas without the means of inspecting the compliance is not recommended.

Trinidad: next step after the vertical profile experiment: gear exchange program / net or trolling

Note: Importance to know the sea turtle diving behaviors.

Gillnet fishery (most available information, best opportunity to reduce bycatch)

- vertical profile reduction (modification & enforcement)
 - Guyana, Suriname, French Guiana: testing
 - Trinidad and Tobago: gear exchange
- remove vertical lines (modification)
- time/area restrictions (enforcement)
- net length restrictions; recommended: 3km (French Guiana: 2.5 km; Suriname 4km but not enforced) (enforcement)

II. Trawl fishery

Fish trawling, Suriname: recommendation to implement TEDs

III. Longline

Guyana, Suriname, important need for on board observers' data to confirm the impact of leatherback bycatch) Trinidad and Tobago: circle hooks and handling + disentanglement gear (if leatherback bycatch is confirmed)

Note Karen Eckert: Any strategy must take into account several factors: measurement of failure and success, retention of target catch, high leatherback turtle bycatch reduction results, ease of management and technology transfer/ exchanges.

Topic 3: Data

Group members: Devon Reece, Melanie La Cruz, Samuel Benn, Mario Yspol, Damien Chevallier, Rachel Berzins, Nicolas Paranthoën (lead)

Priorities:

#1 Develop data collection programs on artisanal gillnet fisheries. How?

Step 1: develop confidence / trust with artisanal fishers (Social science)

Develop an interviewing program to know:

- What are the fishers' problems in general?
- What are their problems related to bycatch?
- How do they deal with these; socio-economic study of potential effects of fishing regulations, gear changes, etc?
- What would they propose to do if no obstacles (funds, e.a)?

Step 2: implement the true data collection program. Different possibilities:

- in collaboration with fishers: they report their bycatch data
 - make sure they are able to identify species (ex: ETP identification training in Guyana & Suriname and field guide published by WWF Guianas)
 - Make sure the data collection form is strongly built to allow gather sufficient information (injuries, release of sea turtles...) and statistical analysis.
- using devices:
 - on-board cameras with GSM directly sending pictures to biologists on-land
 - Radio + GPS + photos so that fishers directly communicate the bycatch data to biologists.
- Incentivize the fishers to send their bycatch information.

Note Karen Eckert: have data monitoring and sharing mechanisms in place. Data/ information on market and supply chain analyses (e.g., cleaner sustainable catch -> niche market); economic incentives for fishers.

#2 Estimate IUU fishing effort and bycatch data

#3 Seek access to long line bycatch data from ICCAT (e.g., issues of foreign-flagged vessels operating in regional waters)

Topic 4: Education and Awareness

Group members: Terrence Brown, Hannah Andries, Rosemarie Kishore, Brianne Kelly, Sopheia Edgehill, Marie-Louise Felix (lead)

**Addressing the Marine Turtle Bycatch Threat
Education and Awareness**

Target Group	Message	Medium
Children including those of Fishers	Marine turtles are important	Story book. Fun Poems
	What are marine turtles? They can drown	School talks together with field trips to the beach

	Need to protect sea turtles	
	Let's help stop turtles being caught in fish nets	Art competitions
		Drama, Carnival
Fishers & General Public	Understanding the biology of marine turtles: they are not fish, they can drown	Organized workshops with videos and posters for fishers: resuscitation of turtles, handling and release from fish nets,
	Role in protecting marine resources	One and one discussions
	Understand the value of marine turtles	Documentaries
	Must reduce bycatch	App for the telephone to report turtle sightings
	Encourage participation in bycatch initiative	Radio talk shows Posters at fish landing sites
Government	Economic losses from bycatch of sea turtles	Round table discussions with all stakeholders
	Contribution to SDGs, Biodiversity Conventions etc	1 day symposium :issues & solution with scientists, conservation groups, decision makers and fishers
	Need to implement actions to reduce bycatch such as spatial closures	Presentation to Decision makers by scientists
		Documentary

Priority: Multi-Stakeholder meetings / Symposia; to get fishers informed and engaged. Ensure fishers have appropriate knowledge and tools. Build fisheries sector engagement.

Annex 5: Results of the Regional IUU meeting (Nov. 2018):

Results of the Regional IUU meeting (Nov. 2018), pages 7, 8, 9 of the IUU fishing workshop.
Working group sessions 2 and 3:

Working group session 2:

Perspective: Regional

Exercise: In your shoes! Countries will brainstorm on practical and possible solutions, making an effort to draft solutions for another country taking its own perspective, but especially the perspective of that country into account. French Guyana for Suriname, Suriname for Guyana and Guyana for French-Guyana). Present solutions per country, comment and have discussions. Results on the next page:

French Guiana for Suriname and Guyana:

- Control of fishing fleet
- Limit number of boats
- License ALL boats
- VMS on ALL boats

For Suriname:

- More control at sea
- Land ALL product in Suriname
- Report ALL departures and arrivals

For Guyana:

- Educate fishermen (programs to inform fishermen of their responsibility to respect marine resources)
- Convince captains of necessity to report to Maritime authorities all departures and arrivals
- Reduce the number of boats

Guyana for Suriname and French-Guiana:

Practical and possible solutions: tripartite Agreement for the Guiana shield

For Suriname:

- Simplify licensing
- Establish closed systems
- Education/ Awareness
- Stringent Measures

For French-Guiana:

- Utilization of Marine resources
- Adjust Punitive measures
- Increase communication amongst countries.

Suriname for Guyana and French Guiana

For Guyana:

- Fully implement license system with license conditions

- Increase Monitoring Control Systems
- Establish Anti-IUU department/ Unit
- Make an agreement with Suriname on Region 6 boats in Surinamese waters

For French-Guiana:

- Permanent Coast Guard base on West Coast functioning as deterrent
- Public accessibility portal for illegal vessels
- Connect license extension with reporting of landings

Working Group session 3

Perspective: Regional

Exercise:

- A. Brainstorm on regional issues in regional groups and develop a regional approach to IUU in the Guianas. Present the results. Discuss the outcomes of the presentations.

Results for exercise 3A:		
Results 3A		
Group 1	Group 2	Group 3
Short term	Short term	Short term
<ul style="list-style-type: none"> • Centralize information sharing system through MOU between 3 countries. Network: Website/ database 	<ul style="list-style-type: none"> • Sharing of data/ information (vessel list) → a regional IUU unit 	Joint commission: Establish mandate, timely reporting and stakeholders
<ul style="list-style-type: none"> • Tri-partisan workshops with fishermen / boat owners for education / awareness 	<ul style="list-style-type: none"> • Common regional numbering system (FAO) 	Joint Patrols: Monitoring and Control
<ul style="list-style-type: none"> • VMS on all vessels 	<ul style="list-style-type: none"> • Suriname should ratify PSM agreement 	Network: Website / Database
Long term solutions:	Long term:	
Joint patrols (IDP) with military & police	Overfishing – driver for IUU, regional stock assessment → effort control	A tripartite agreement making the above possible
<ul style="list-style-type: none"> • Education & Awareness 	Tripartite agreement	

- B. Identify criteria for regional collaboration. And develop regional approaches to IUU. Develop a work plan (on national level) to contribute to the chosen regional approaches to IUU, identify stakeholders, describe the implementation and reporting. Present the results.

Results on the next page

Results 3B		
Suriname:	Guyana:	French-Guiana:
What: Technical IUU team/ Working group	What: Anti-IUU fishing unit	What: Joint commission on an International Level (France; FAO, EU) and or on a Technical Level: FG/ FMC
Whom: high level representatives of: <ul style="list-style-type: none"> • the Ministry of MAAHF → fisheries Department; • the Ministry of Foreign Affairs; • the Ministry of Defense → the Navy; the Ministry of Justice and Police → Maritime Police; • the ministry of Finance → Customs; • the Coast Guard; • MAS → Maritime administration. 	Whom: representatives of: the Fisheries Department, Coast Guard, the MARAD, Marine Police, MLA, MFA and Fishermen representatives.	Whom: International level: Paris/EU for negotiation (long term). Technical level: French-Guiana, Suriname, Guyana andBrazil
Tasks and responsibilities: <ul style="list-style-type: none"> • Inventory of international agreements (signed and ratified (PSM)) • Data sharing • Implementation of National IUU Action Plan 	Objective: to prevent, deter, and eliminate IUU Tasks and responsibilities: <ul style="list-style-type: none"> • Propose laws and regulations • Develop an Anti- IUU National Plan of Action • Develop and Maintain Country's Database • Education/ Awareness • Execute Plan (NPOA) Collaborate with other countries	Objective: to facilitate exchanges between the 3 countries and address assessed common problems.

The next steps:

Suriname, Guyana and French-Guiana, will make efforts to develop a National anti-IUU Plan of Action. These efforts are initiated, lead, communicated and or advocated by the focal points. Focal points will stay in communication with WWF regarding these efforts and request support for the development of these National anti-IUU Plan of Actions, where needed.