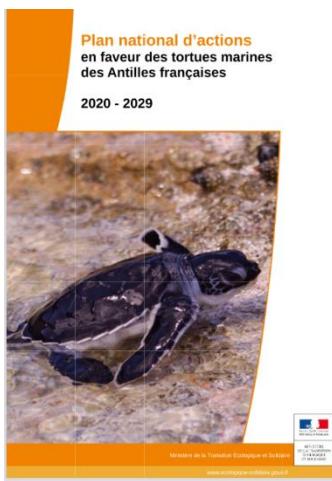




© PARANTHOËN Nicolas



Préfet de la Région
Guadeloupe

Arrêté
Régional
Français

Direction
de l'Environnement,
de l'Aménagement et du Logement



Préfet de la
Martinique

Arrêté
Régional

Direction
de l'Environnement,
de l'aménagement et du logement



Conservation updates from the Leeward Islands

Implementation of the Sea Turtle National Action Plan (NAP) in the French West Indies (Guadeloupe, Martinique and St-Martin)

<https://www.tortues-marines-antilles.org/>



Presentation plan



1) Location, habitats, populations

2) National Action Plan as a STRAP for the FWI (Guadeloupe, Martinique & St-Martin)

3) Population monitoring

4) Conservation updates

5) Outreach

6) Prospects for exchanges with the WIDECAST folks

1) Location, habitats, populations



Area: 1 628 km²
Human population: 378 561
Humain density: 233 people/km²

223 nesting sites:

- *Eretmochelys imbricata* (\simeq 1700 crawls/yr)
- *Chelonia mydas* (\simeq 900 crawls/yr)
- *Dermochelys coriacea* (\simeq 120 crawls/yr)

Foraging sites (seagrass beds & reefs):

- *Eretmochelys imbricata* (adult males, juveniles, sub-adults)
- *Chelonia mydas* (juveniles, sub-adults)



Area: 1 128 km²
Human population: 349 925
Human density: 310 people/km²

134 nesting sites:

- *Eretmochelys imbricata* (\simeq 1050 crawls/yr)
- *Chelonia mydas* (\simeq 230 crawls/yr)
- *Dermochelys coriacea* (\simeq 330 crawls/yr)

Foraging sites (seagrass beds & reefs):

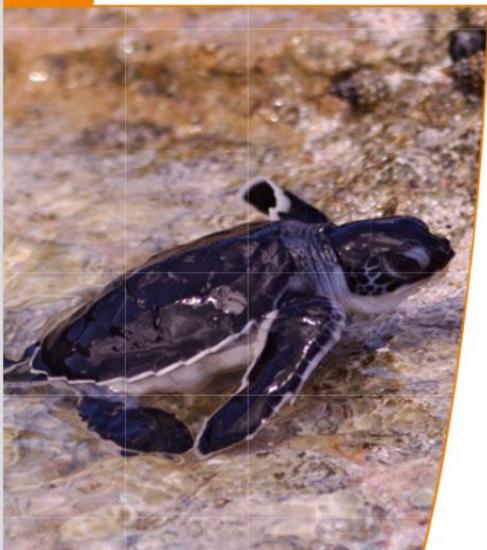
- *Eretmochelys imbricata* (adult males, juveniles, sub-adults)
- *Chelonia mydas* (juveniles, sub-adults)



2) National Action Plan as a STRAP for the FWI (Guadeloupe, Martinique & St-Martin)



Plan national d'actions
en faveur des tortues marines
des Antilles françaises
2020 - 2029



Ministère de la Transition Ecologique et Solidaire

www.ecologie-solidaire.gouv.fr



Le National des Forêts



Targeted species	Priority: Green, Hawksbill Secondary: Leatherback, Loggerhead, Olive Ridley
Targeted populations	Adult females nesting (Cm, Ei, Dc) Resident foraging juveniles and subadults (Cm & Ei) Resident foraging adults (especially Ei males)
Main threats to mitigate	1) Accidental catches in bottom-set gillnets 2) Predation by mongooses 3) Tourism disturbance, especially at sea 4) Habitat degradation (nesting & foraging sites)
Overall plan objective	Improve the conservation status of nesting and foraging populations of green and hawksbill turtles
Application period and duration	2020-2029 / 10 years Unofficially started in 2018
Key objectives and number of actions	4 sections or chapters : A- organization & implementation of the plan B- conservation C- population monitoring (and research) D- outreach → 36 action sheets

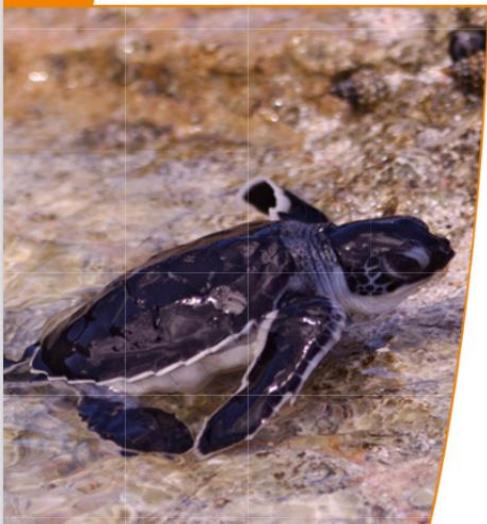


2) National Action Plan as a STRAP for the FWI (Guadeloupe, Martinique & St-Martin)



Plan national d'actions
en faveur des tortues marines
des Antilles françaises

2020 - 2029



Ministère de la Transition Ecologique et Solidaire

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RÉSEAU TORTUES MARINES DES ANTILLES FRANÇAISES 2025





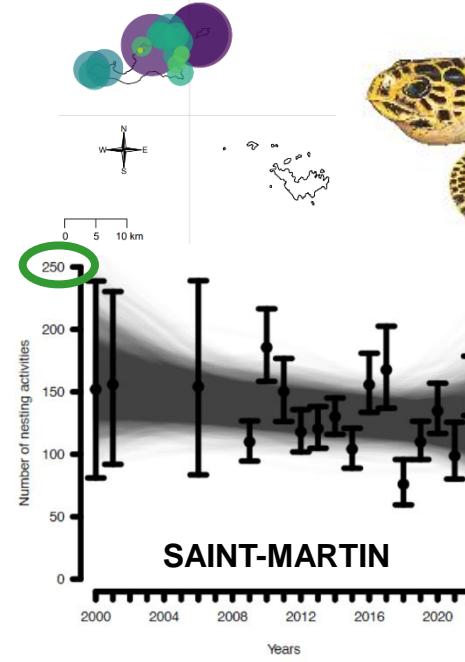
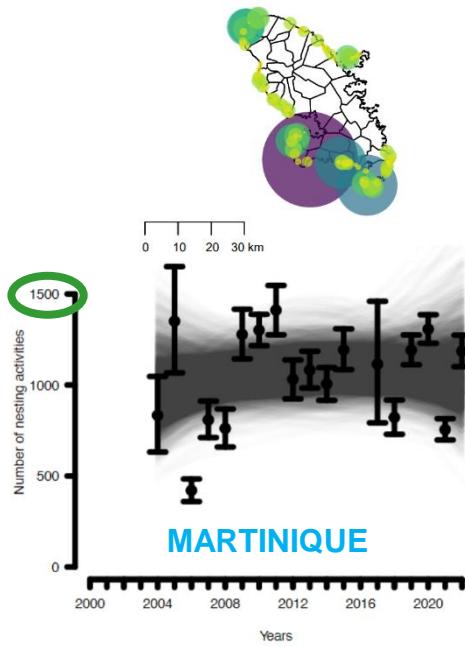
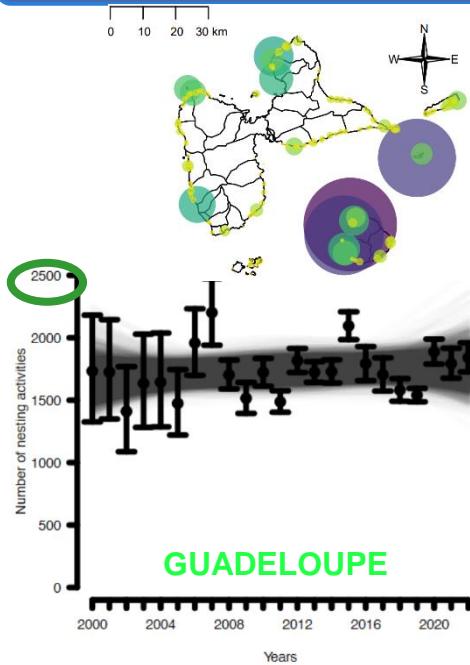
3) Population monitoring (and research)

STAKES	OBJECTIVES	#ACTION	ACTIONS
Population monitoring			
Population and habitat monitoring	Estimating trends in sea turtle nesting and foraging populations	23	Organize discussions on scientific protocols, citizen science and their implementation
		24	Nesting population monitoring
		25	Resident foraging population monitoring
Threat assessment	Improving knowledge of sea turtle ecology	26	Identifying major foraging sites
		27	Determining dispersal routes on an oceanic scale
		28	Study the impact of climatic phenomena on sea turtle populations
Data sharing	Understanding the impact of human activities	29	Study the impact on sea turtles of human activities at foraging sites
		30	Contribute to studies on the impact of human activities on sea turtle health
Data sharing	Improve visibility, sharing and analysis of existing data	31	Produce and distribute a regional summary of knowledge on sea turtles in the French West Indies
		32	Organizing regional data

3) Population monitoring

Action #24: nesting population

Trends in HAWKSBILL nesting activity



Hawksbill

Eretmochelys imbricata

- **Stable trend**
- **1727** crawls/yr
(average 2000 > 2022)
- **1724** crawls/yr
(average 2017 > 2022)

- **Stable trend**
- **1047** crawls/yr
(average 2004 > 2022)
- **1062** crawls/yr
(average 2017 > 2022)

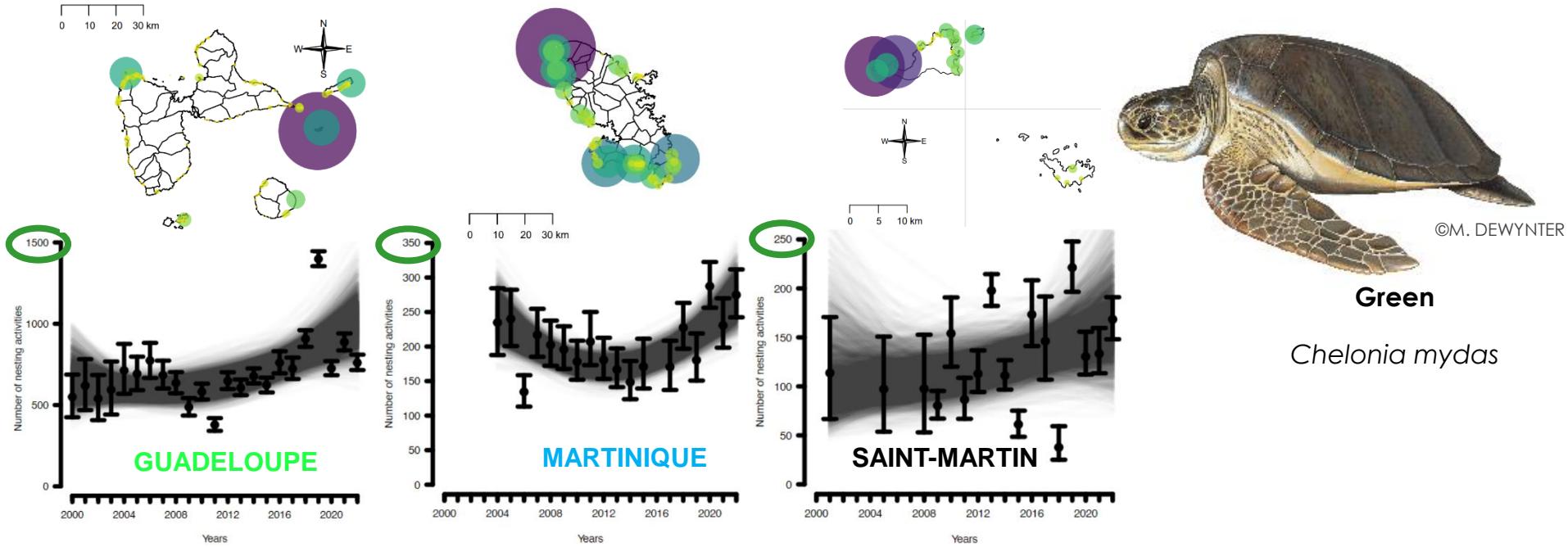
- **Stable trend**
- **134** crawls/yr
(average 2017 > 2022)
- **123** crawls/yr
(average 2017 > 2022)



3) Population monitoring

Action #24: nesting population

Trends in GREEN nesting activity



©M. DEWYNTER

Green

Chelonia mydas

- Positive trend
- 694 crawls/yr
(average 2000 > 2022)
- 900 crawls/yr
(average 2017 > 2022)

- Positive trend
- 203 crawls/yr
(average 2004 > 2022)
- 229 crawls/yr
(average 2017 > 2022)

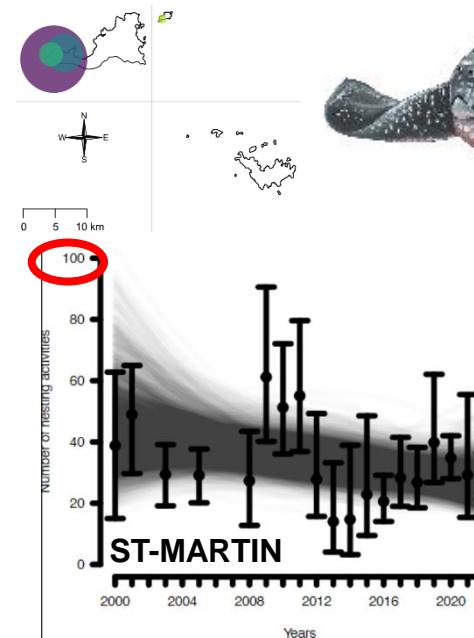
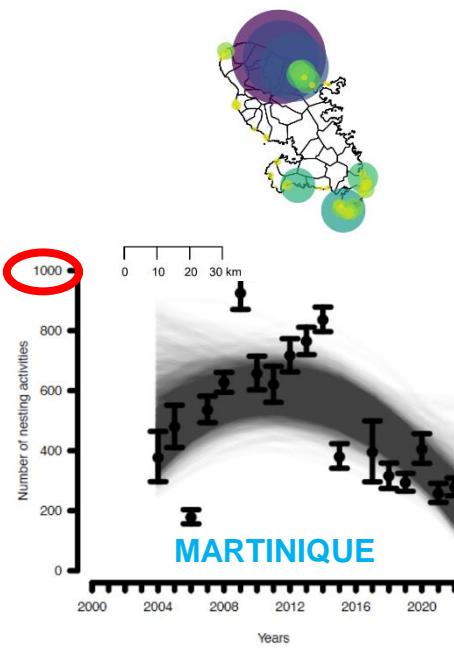
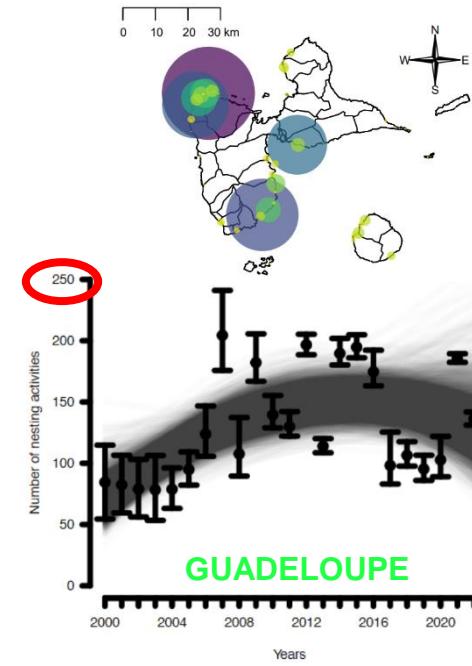
- Positive trend
- 125 crawls/yr
(average 2000 > 2022)
- 140 crawls/yr
(average 2017 > 2022)



3) Population monitoring

Action #24: nesting population

Trends in LEATHERBACK nesting activity



Leatherback

Dermochelys coriacea

→ Positive trend (2000 > 2022) but **negative trend** (2014 > 2022)

→ 130 crawls/yr
(average 2000 > 2022)

→ 121 crawls/yr
(average 2017 > 2022)

→ **Negative trend**

→ 507 crawls/yr
(average 2004 > 2022)

→ 329 crawls/yr
(average 2017 > 2022)

→ **Negative trend**

→ 33 crawls/yr
(average 2000 > 2022)

→ 31 crawls/yr
(average 2017 > 2022)



3) Population monitoring

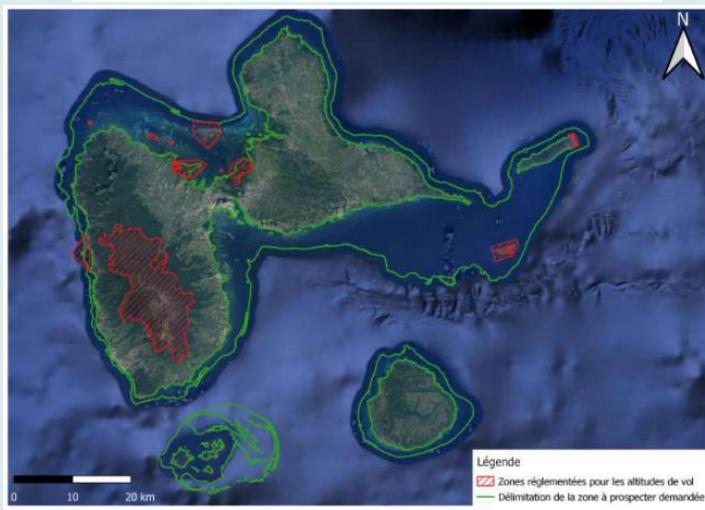
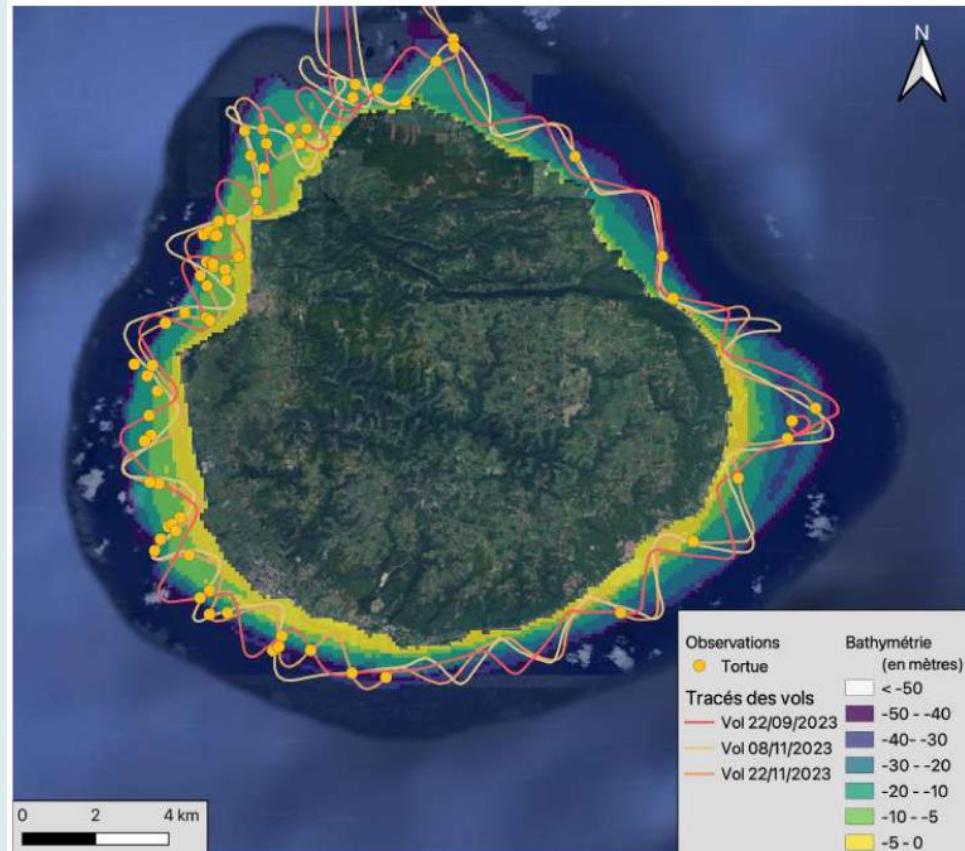
Action #25: resident foraging population



Monitoring strategy: 3 complementary protocols

#1: site occupancy (presence/absence) through autogyro aerial surveys

- Coastal areas between 5 to 50m deep
- 2 replicates between December and February to focus on resident pop. & avoid nesting females



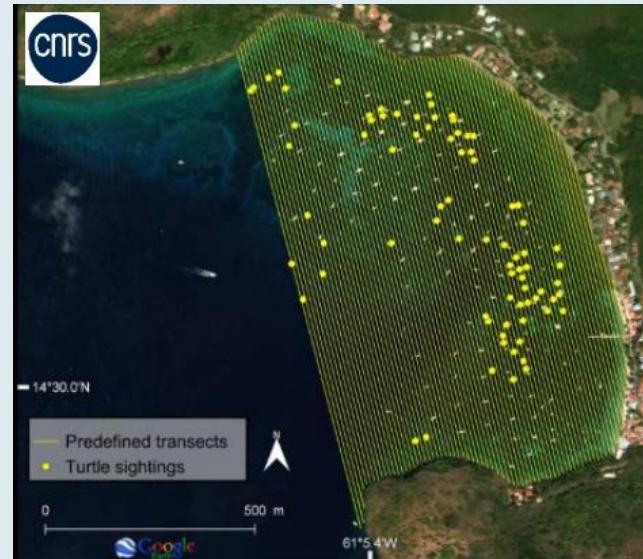
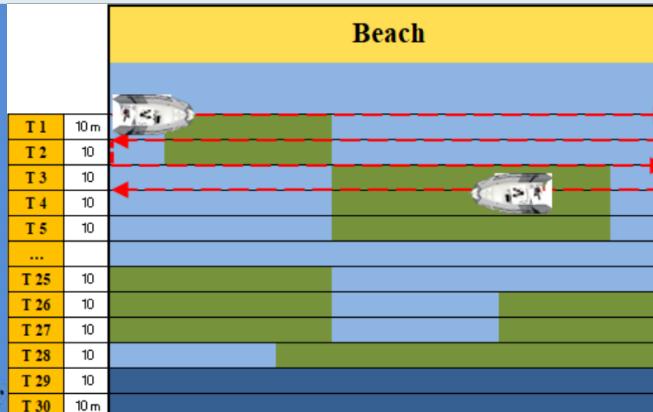
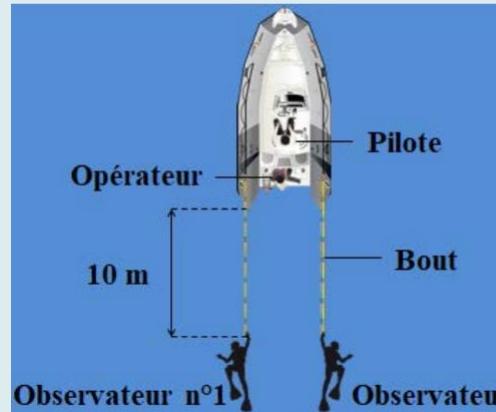
3) Population monitoring

Action #25: resident foraging population

Monitoring strategy: 3 complementary protocols

#2: abundance / density through boat-towed transect counts

- Coastal areas between 2 to 15m deep
- Sites to be chosen after aerial surveys
- Number of replicates to be determined



3) Population monitoring

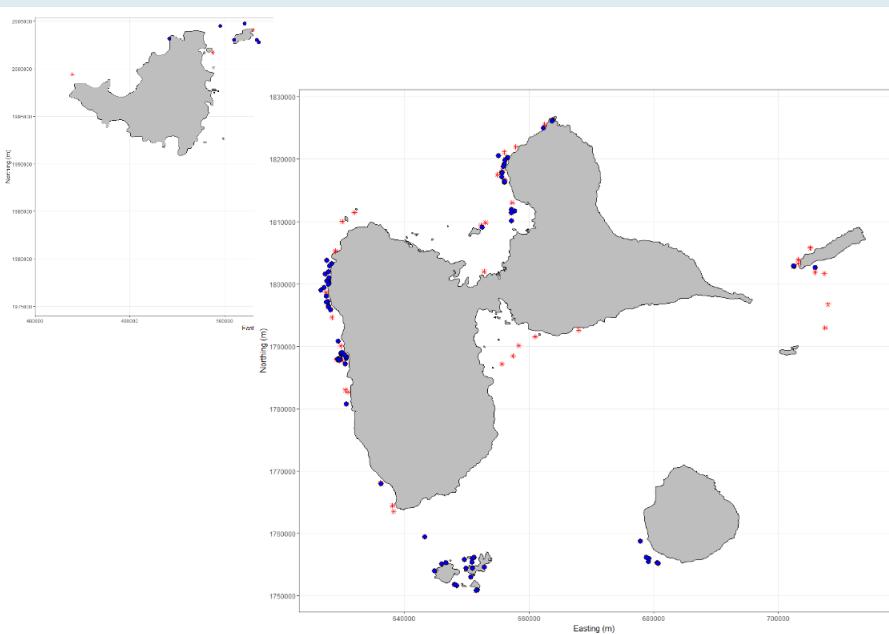
Action #25: resident foraging population



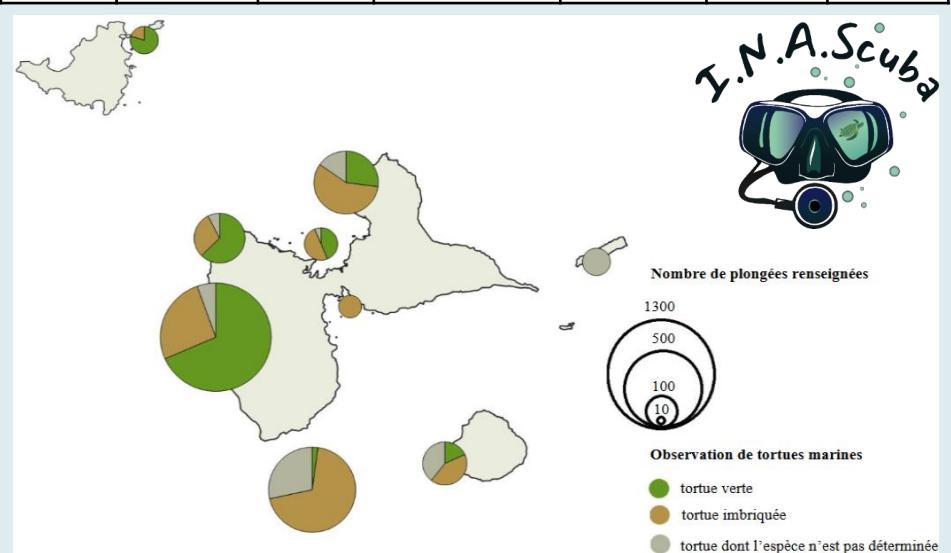
Monitoring strategy: 3 complementary protocols

#3: abundance through the citizen science INA-SCUBA diving program

- Presence/Absence on diving sites all yr round
- Implemented in **GP** between 2002 & 2014 (>40 000 dive data)
- Implemented in **MQ** between 2004 & 2008
- **Restarted in 2022 in the FWI (~20 000 dives on 251 sites after 3 years !)**



Island	Dive sites		# volunteer diving clubs	# dives reported	Cm sightings	Ei sightings
	Known	Monitored				
MQ	110	110	14/65	13 239	1 677 (13%)	1 852 (14%)
GP	192	139	16/45	5 964	704 (11%)	846 (13%)
SXM	14	14	1/2	404		
St-B	25	12	1/?			





4) Conservation

ENJEUX	OBJECTIFS	N°ACTION	ACTIONS
VOLET CONSERVATION			
Restoring sea turtle populations	Reduce bycatch	10	Supporting changes in fishing regulations
		11	Support professionals in researching and implementing alternative fishing techniques
	Combating human disturbance	12	Locate and remove ghost fishing gear and illegal gear
		13	Training fishing professionals to “resuscitate” sea turtles
	Combating violations of sea turtle protection laws	14	Supervising approaches to sea turtles
		15	Controlling activities likely to impact sea turtles
	Combating predation by exotic and domestic species	16	Reinforcing surveillance and policing actions
		17	Limit the presence of exotic and domestic predators near nesting sites
	Strengthening capacities to care for sea turtles in distress	18	Organize field response to distress situations (stranding network)
		19	Care for sea turtles in all territories
Good quality of priority habitats for sea turtles	Controlling developments and activities likely to impact sea turtle habitats	20	Restore and maintain in good condition priority nesting sites
		21	Combating unauthorized anchoring in seagrass beds and reefs
		22	Ensure that coastal activities are compatible with the preservation of sea turtle habitats

4) Conservation

Action #10: Supporting changes in fishing regulations

Keystone of the 2020-2029 NAP in Guadeloupe and Martinique:

→ Changes in fishing regulation through a collaborative fisheries approach

MARTINIQUE

- New fishing regulation in 2019 prohibiting trammel nets

GAUDELOUPE

- Fishing regulation dated from 2002 **under review** → **trammel nets might be prohibited in 2025**

QUESTIONS ARAISED

- Fishers compensate for the loss of trammel net by **increasing their bottom-set times with gillnets to target spiny lobsters**
- The **setting time is a major factor in the bycatch** of sea turtles (over the fishing gear itself)
- **Are trammel nets still being used elsewhere in the Caribbean?**





4) Conservation

Action #10: Supporting changes in fishing regulations

SPAW-RAC 2024. CAMAC phase 1 : overview of available information on interactions between fisheries and marine megafauna in the CAMAC area



Country	Nb Fishing vessels	Annual landings (mt)	Main target species	Main fishing gears	% contribution to GDP	Main References
Anguilla	153	1 310	Lobster, conch, large pelagic fish, sharks, reef fish, snappers	Pots and traps, lines, seine net	3.14	CRFM 2021
Antigua & Barbuda	332	3 164	Conch, reef fish, Lobster	Trap, hand and trolling lines, gillnet	0.95	CRFM 2021; FAO 2023a
Barbados	1146	1 436	Reef fish, large pelagic fish	Boat seine, traps, handlines, trolling lines, cast net, longline	0.14	CRFM 2021
Bonaire	100-130	102	Large pelagic fish, reef fish	Trolling line, handline	<0.1	De Graaf, 2016
Curaçao	294		Large pelagic fish, reef fish	Handline, trolling lines	<0.001	Marloes, 2016
Dominica	434	800	Mostly large pelagic fish	Handline & trolling lines on FADs	0.42	CRFM 2021
Dominican Republic	3361	11 000	Lobster, shrimp, conch, reef fish, large pelagic fish	Traps, gillnets and casting nets, bottom longlines, handlines, FADs	0.5	Herrera <i>et al.</i> , 2011
French Guiana	94	2 495	Coastal demersal fish, shrimps	Driftnet, Gillnet, shrimp trawl	0.5	IFREMER SIH 2022, INSEE
Grenada	2 028	2 636	Large migratory pelagic	Longline, trolling lines, beach seine	1.16	CREM 2021
Guadeloupe	657	2 415	large pelagic fish, lobster, reef fish, conch	Trolling lines and longlines on FADs, traps, set gillnets, trammelnets	1.92	IFREMER SIH 2022, INSEE
Haiti	No data	No data	Reef fish, large pelagic fish	Gillnets, cast nets, handline, spear	No data	Aquino, pers. comm.
Jamaica	8 032	14 333	Reef fish, lobster, conch		0.49	CRFM 2021
Martinique	801	1 157	Large pelagic fish, lobster, reef fish	Trolling lines and hand lines on FADs, traps, set gillnets	1.1	IFREMER SIH 2022, INSEE
Montserrat	18	32		Beach seine, traps, lines, nets, spear...	0.24	CRFM 2021
Puerto Rico	956	609	Large pelagic fish, conch, lobster, octopus	Handline, trolling lines, traps, set gillnets	No data	Koeneke, 2011; Departamento De Recursos Naturales Y Ambientales, pers. com., 2018 data
Saba	10	135	Lobster, redfish	Traps	8	Brunel <i>et al.</i> , 2021; de Graaf <i>et al.</i> , 2017
St Eustatius	15	22,4	Lobster, reef fish, large pelagic fish	Traps, handlines, trolling lines	1	Brunel <i>et al.</i> , 2020
Saint Kitts and Nevis	221	1 047	Conch, reef fish, large pelagic fish	Traps, beach and boat seines, handline, trolling lines on FADs	0.5	CRFM 2021
Saint Lucia	891	2 148	Large pelagic fish, reef fish	Trolling, longlines, traps, gillnets	0.55	CRFM 2021
Saint Vincent & Grenadines	900	2 232	Large pelagic fish, reef fish	Longline, trolling lines, seines	0.6	CRFM 2021
Tobago	657	2 479	Large pelagic fish, reef fish	Longline, handline, traps, gillnets, beach seine	<0.1	Trinidad and Tobago Fisheries Division, Ministry of Agriculture, Land and Fisheries, pers. com., 2020 data
Trinidad	2 143	11 215	Shrimp, ground fish, large pelagic fish, snappers, sharks	Shrimp trawl, longlines, hand lines, traps, gillnets, beach seine		

Though trammel nets are cited in other places in the report: **Antigua & Barbuda, Dominican Republic, Grenada, Haiti, Jamaica, Puerto Rico, & Venezuela**

4) Conservation

Action #11: Support professionals in researching and implementing alternative fishing techniques



Bottom-set gillnets will remain important for Guadeloupe & Martinique small-scale coastal fisheries

→ Conduct Collaborative Fisheries Research to foster voluntary behaviour changes by fishers in developing bycatch mitigation techniques

1st project (GP): 2013 to 2015



- 46 fishers trained in **resuscitation** of ST
- 50 **resuscitation kits** distributed

Details: [CNPMEM 2020 feedback](#)



2nd project: 2020 to 2023



- GP: 174 tests with 6 fishers on bottom-set gillnets equipped w **visual deterrent devices (VDD)** on & off
 - LEDs don't show negative influence on CPUE for targeted species
 - to be continued for ST, sharks & rays
- MQ: ST **vocalizations experiments**

Details: [TOPASE summary \(english\)](#)



3rd project: 2025 to 2027



- GP & MQ: 720 tests with 23 fishers on bottom-set gillnets equipped with **VDD** on & off
 - test effectiveness on ST, sharks & rays CPUE

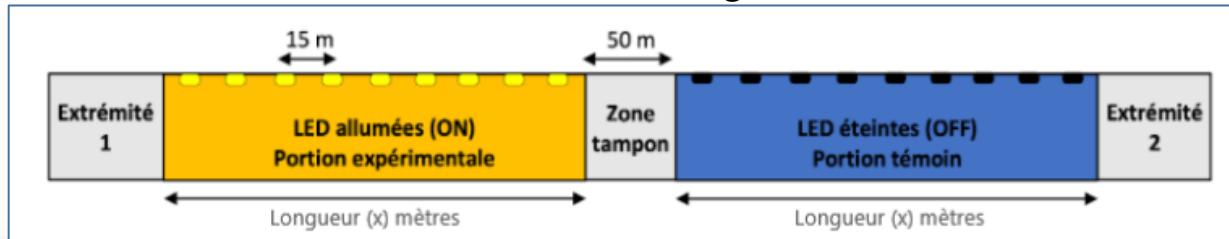


4) Conservation

Action #11: Support professionals in researching and implementing alternative fishing techniques



Visual Deterrent Devices : green & UV LEDs



Green LEDs



WANG, 2010 (Mexico)

- Green LEDs : - **40% BPUE** / =CPUE / =VPUE
- Green poles : - **59% BPUE** / =CPUE / =VPUE

KAKAI, 2019 (Kenya)

- **64,3% CATM** (62 Cm, 14 Ei, 9 Cc, 1 Lo)

ORTIZ, 2016 (Pérou)

- **63,9% BPUE** à / = CPUE



UV LEDs



WANG, 2013 (Mexico)

- UV LEDs : **BPUE à - 39,7% / =CPUE / =VPUE**

DARQUEA, 2020 (Ecuador)

- **All species: - 62,2% BPUE**
- Cm: -93% BPUE
- Lo : no difference



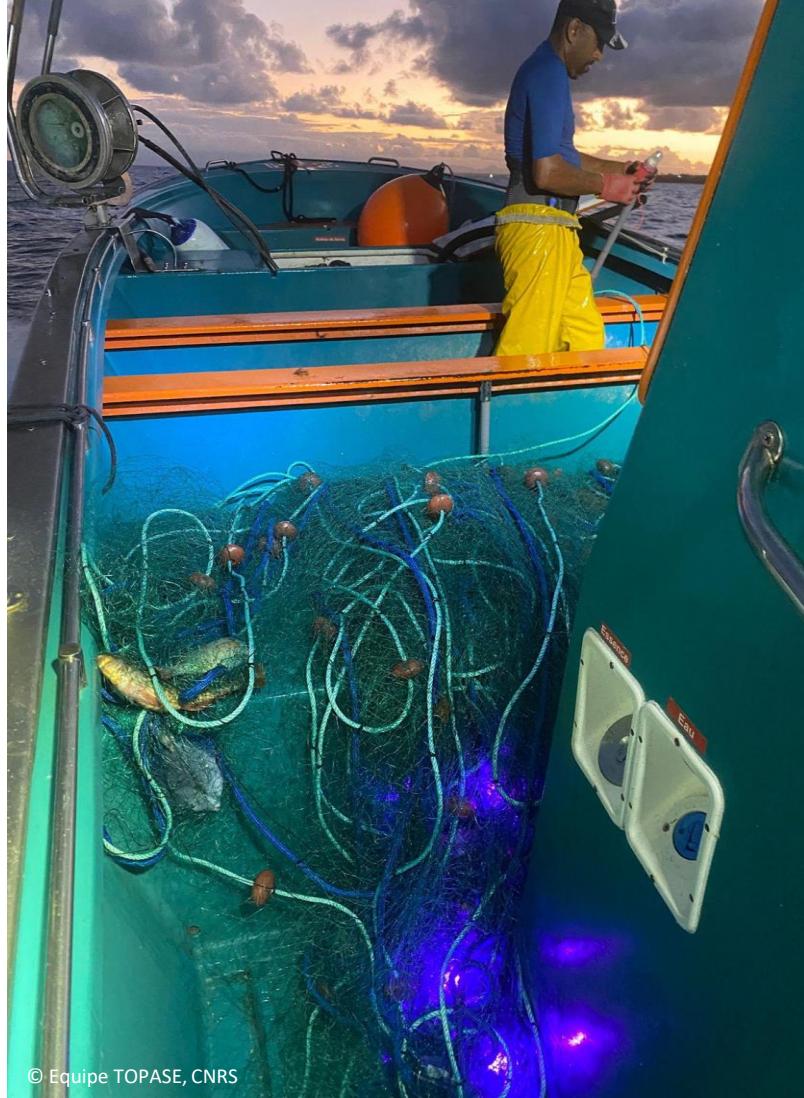
VIRGILI 2018 et LUCCHETTI 2019 (Mediterranean)

Sea turtle BPUE:

- Virgili: **16 Cc bycaught, 100% in portion without LEDs**
- Lucchetti: **2 Cc bycaught in portion without LEDs**
= CPUE

4) Conservation

Action #11: Support professionals in researching and implementing alternative fishing techniques



4) Conservation

Action #17: Limit the presence of exotic and domestic predators near nesting sites

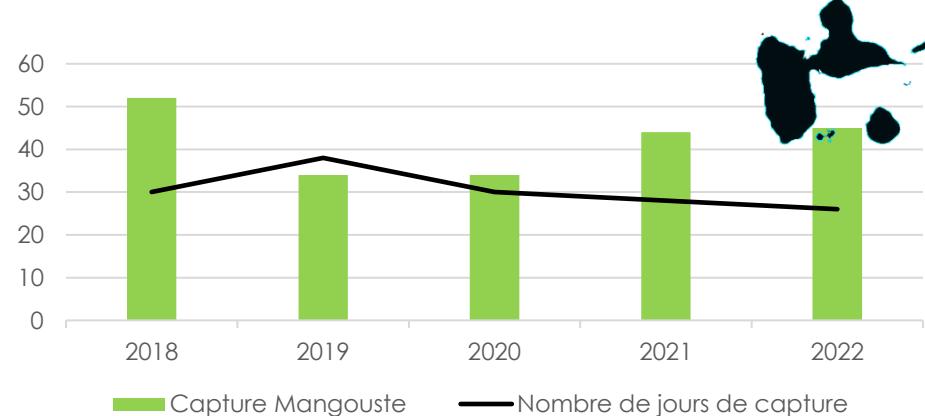


Regulation of mongoose at key *Guadeloupe* and *Martinique* nesting sites

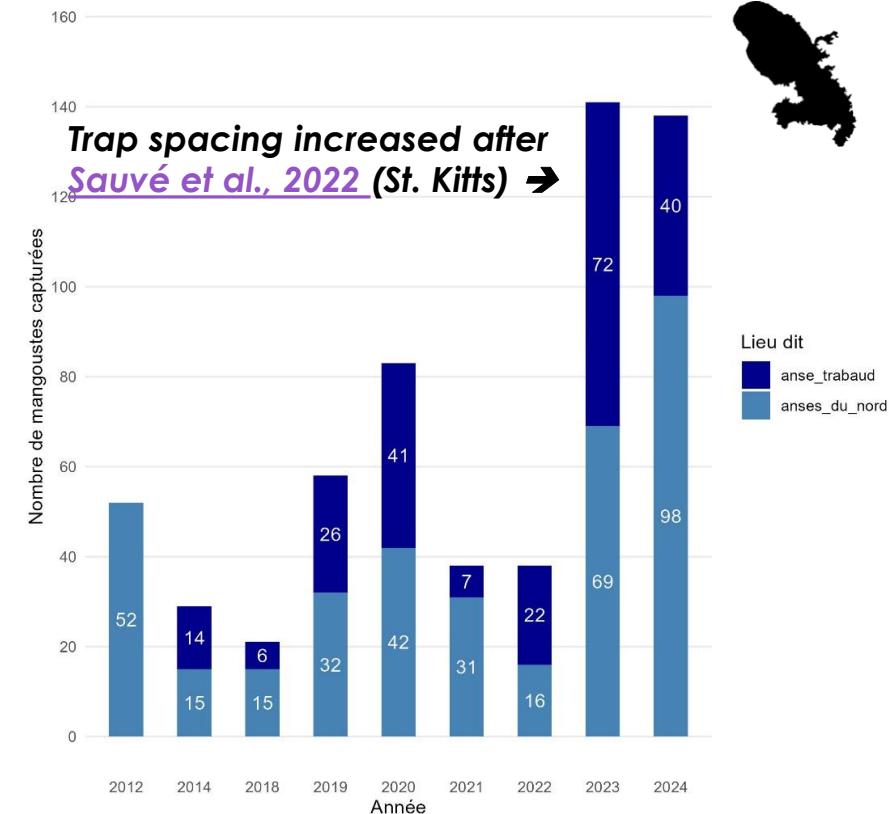
→ Up to 100% of predicated nests without regulation



© ONF



Nombre de mangoustes capturées par lieu dit (2012 - 2024)



4) Conservation

Action #17: Limit the presence of exotic and domestic predators near nesting sites



Regulation of mongoose at key nesting sites Guadeloupe and Martinique



Vulnerable traps



Unvulnerable traps



DOC250

DOC200

Ratières

Bait : herring

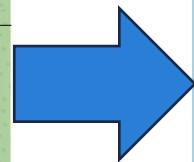
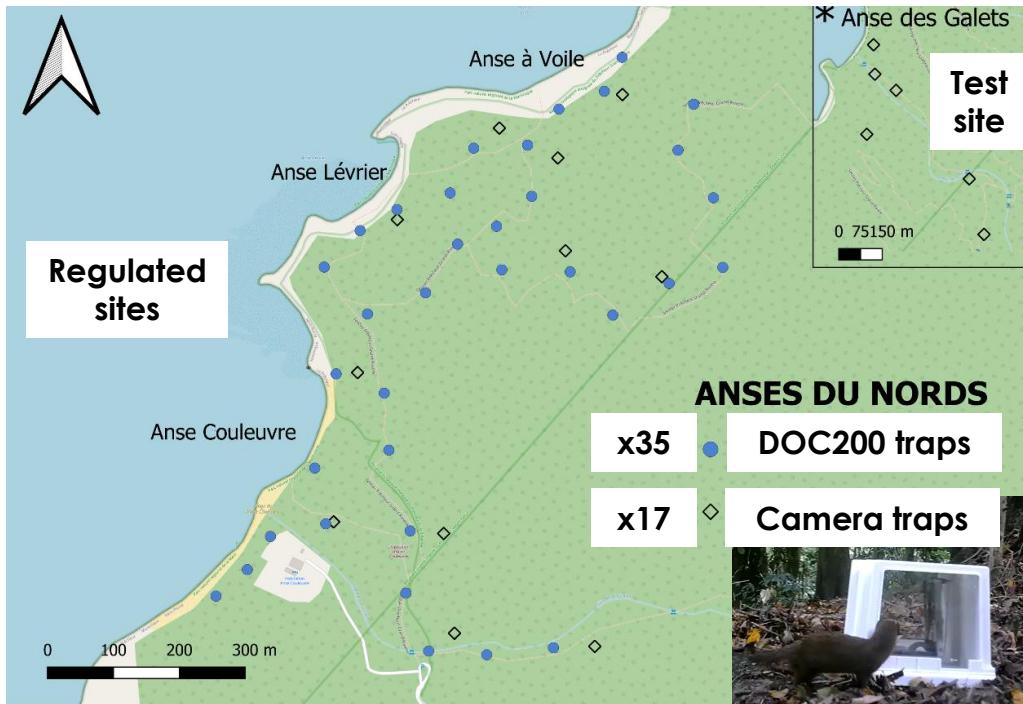
4) Conservation

Action #17: Limit the presence of exotic and domestic predators near nesting sites



Regulation of mongoose at key nesting sites Guadeloupe and Martinique

Anses du Nord (northern coves)



avril mai juin juillet août septembre octobre



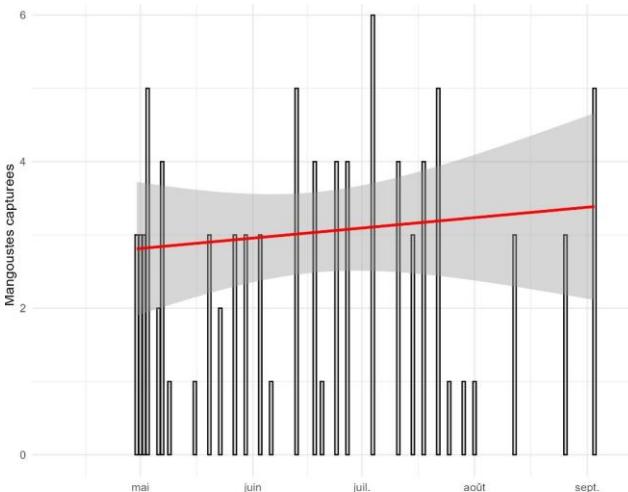
4) Conservation

Action #17: Limit the presence of exotic and domestic predators near nesting sites

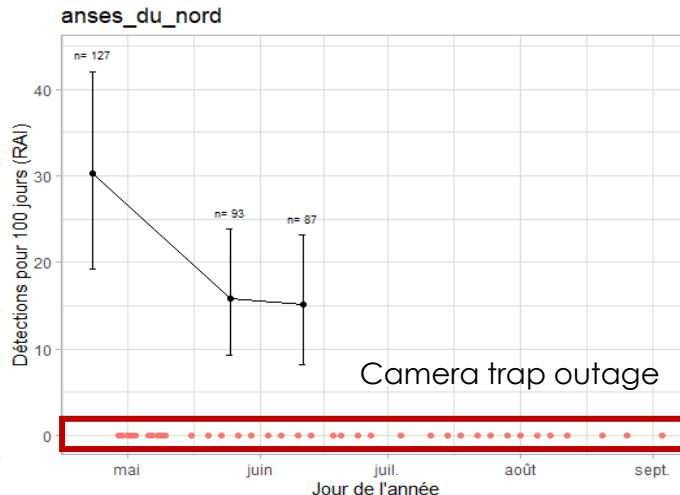


Regulation of mongoose at key nesting sites Guadeloupe and Martinique

Trapped mongooses (DOC200)



Mongoose abundance (camera traps)



Graph showing Detections pour 100 jours (RAI) over the month of juillet. The y-axis ranges from 0 to 15. The x-axis shows months: mai, juin, juil. Data points are at (mai, ~12), (juin, ~3), and (juillet, ~3). A red bar highlights the month of juillet. An annotation 'Camera trap outage' is placed near the juillet data point.

Month	Detections pour 100 jours (RAI)
mai	~12
juin	~3
juillet	~3

ANSE DES GALETS test site

Traces of predation observed at each monthly visit

ANSES DU NORD regulated site

Few traces of predation observed (only in September)





5) Outreach

ENJEUX	OBJECTIFS	N°ACTION et priorité (1 ou 2)	ACTIONS
VOLET SENSIBILISATION			
Sharing knowledge about sea turtles	Raising public awareness about the conservation of sea turtles and their habitats	33	Continuing to raise awareness among the general public and schoolchildren
	Raising awareness and training professionals and decision-makers	34	Create and manage a common “marine turtle” website and/or social networks for all NAP territories.
Socio-economic value of sea turtles	Understanding the economic value of sea turtles in PNA territories	35	Set up specific tools and actions for elected officials, local authority technicians, fishing, boating and tourism professionals
		36	Studying the socio-economic aspects of sea turtles and making the most of data for decision-makers

5) Outreach



General public and schoolchildren outreach programs



Guadeloupe > 3 000 citizens

Martinique > 12 000 citizens

Saint-Martin 350 citizens



Guadeloupe 1 637 hours of school activities

Martinique 1 026 hours, > 7 000 kids

St-Martin 2 000 kids



5) Outreach



Communication plan

Les vidéos des réseaux Guadeloupe et Martinique



2024 - ONF : projet de réhabilitation de sites de ponte de tortues marines à Marie-Galante

Présentation du projet de réhabilitation de sites de ponte des tortues marines à Marie-Galante, réalisé par l'Office National des Forêts (ONF) et financé par la DEAL Guadeloupe sur le programme "France relance", dans le cadre du PNATMAF



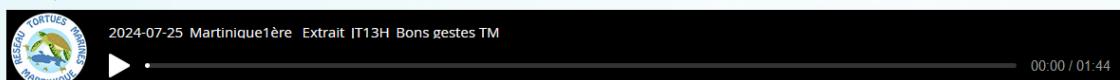
2022 - Bilan 2018-2022 du PNA TM AF - Colloque GTMF 2022
Présentation filmée de Nicolas PARANTHOEN sur les actions menées dans le cadre du Plan National d'Action pour les Tortues Marines aux Antilles Françaises

Les podcasts des réseaux Guadeloupe et Martinique

2024 - Martinique- Découvrez ou redécouvrez le spot radio du Réseau Tortues Marines Martinique diffusé sur les ondes en 2024: "Pou pa déranjé sé toti-a, mi sé sa pou fe"



2024 - Martinique- Découvrez ou redécouvrez l'extrait du JT de 13H diffusé sur les ondes de Martinique 1ère : "Pou pa déranjé sé toti-a, mi sé sa pou fe"



DOSSIER DE PRESSE

PARCE QUE NOUS AIMONS LES TORTUES MARINES, LAISSEZ-LES TRANQUILLES



APPRENEZ LES BONS GESTES
ET RETROUVEZ TOUTES LES INFOS SUR
WWW.TORTUES-MARINES-GUADELOUPE.ORG

EN CAS DE TORTUES MORTES OU EN DÉTRESSE, APPELEZ LE 0690 74 03 81

6) Prospects for exchanges with the WIDECAST folks



1) POPULATION MONITORING

- Feedbacks/reports on estimations of **nesting success**, **hatching success**, **clutch frequency** and/or **remigration interval** per species
- Feedbacks/reports on **in-water survey protocols and statistics**, especially related to **aerial surveys**, **boat-towed transect counts** and/or **photo-id**

2) CONSERVATION

- Feedbacks on **legal or illegal use of trammel nets**
- Folks interested in **Collaborative Fisheries Research** to foster voluntary behaviour changes by fishers in **developping bycatch mitigation techniques**
- Feedbacks on **mongoose impact and regulation** to improve efficiency

3) REGULATIONS

- Feedback on **local laws** that would officially **prohibit touching** turtle and/or **getting closer to a certain distance**



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Thanks for your attention !