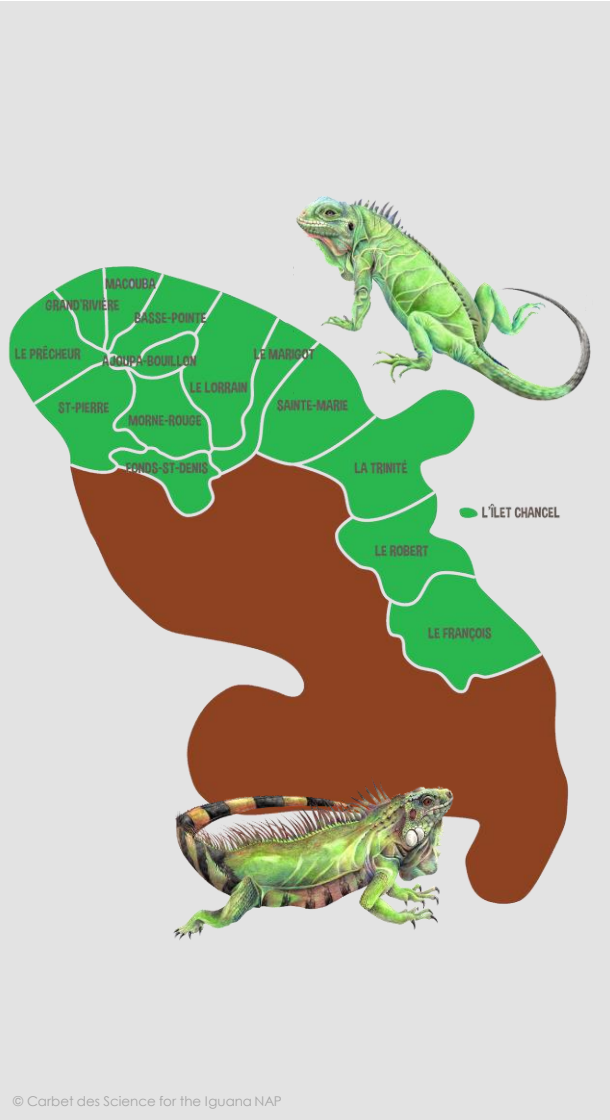
The Martinique Iguana early detection Network: hopes and challenges

Nathalie Duporge*, Emy Njoh-Ellong**, Kévin Urvoy** and Nicolas Paranthoen**

*Iguana early detection Network coordinator, for the Office National des Forêts Martinique.
**Martinican and Regional PNA for *Iguana delicatissima* Conservation animators, Office National des Forêt, Martinique and Guadeloupe.



© Carbet des Science for the Iguana NAP

Martinique Iguana situation

- The Lesser Antillean Iguana (*Iguana delicatissima*) previously inhabits several places in F.W.I. but nowadays, only scarce remaining populations can be found in Martinique.

- Major threats : Habitat lost, predation on eggs and juveniles, and most of all hybridization with the common or striped iguana (*Iguana iguana*).

- The Striped Iguana:
  - more prolific, larger individuals, competing with *I. delicatissima* for biotopes, food resources and reproduction.
  - Hybridizing with *I. delicatissima* results to first generation hybrids showing a mixture of morphological and genetic traits of both species and within a few generations leads to a virtually complete disappearance of the traits of *I. delicatissima*
  - To date, no hybrids have been detected in Martinique whereas presence of hybrids has been confirmed in Guadeloupe.

- A 2020 distance-sampling survey* provided a baseline for evaluating the **abundance in the port areas of Fort-de-France** : 723 common iguanas (confidence interval: 387-1350), giving a density of **3.96 striped iguanas/ha**. This estimate is an initial statement of the iguana densities in this area.

© Carbet des Science for the Iguana PNA

(*)Angin, Warret Rodrigues et Belfan (Le Carouge) 2020. Mise en place d'un suivi de la population d'Iguane rayé Iguana iguana dans les zones portuaires de Fort de France et du Lamentin (Martinique)

A National Action Plan for *Ig. delicatissima* Conservation

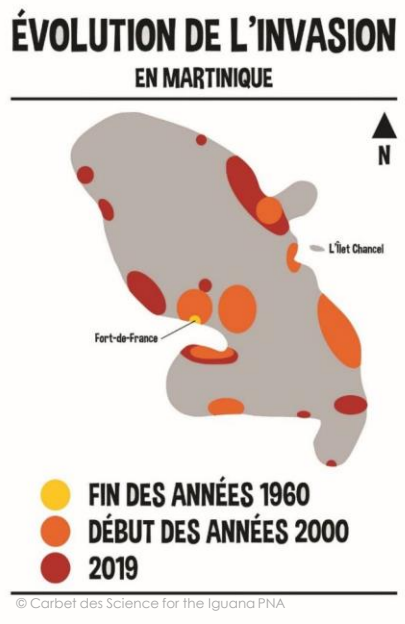
- The French National Action Plan (PNA):
  - Long term strategy: ensure the conservation of the Lesser Antillean iguana and its natural habitats and contribute to prevent its extinction.
- 3 specific objectives:
  - Objective #1: restore the Lesser Antillean iguana and its habitat to a favorable state through appropriate conservation actions
  - Objective #2: raise awareness and train stakeholders about conservation stakes
  - Objective #3: monitor the population dynamics and the evolution of the natural habitats

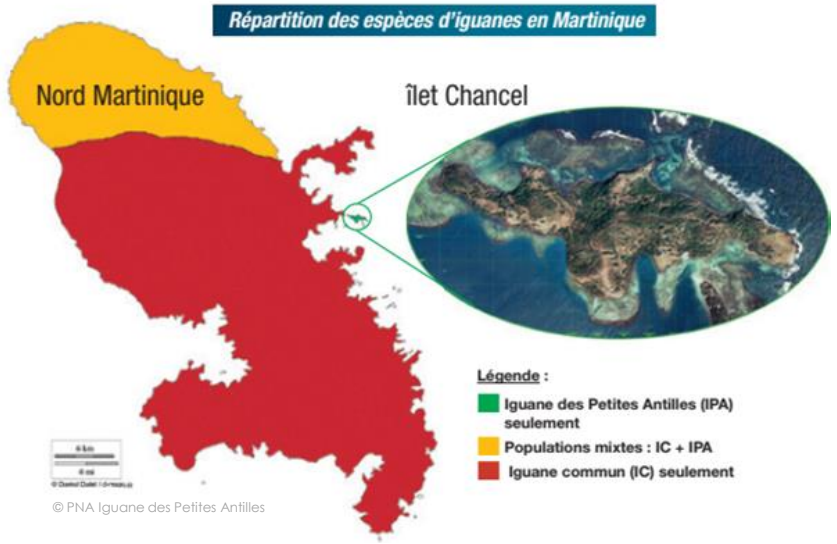
RÉSEAU POUR LA CONSERVATION D'IGUANA DELICATISSIMA

OFB

Office National des Forêts Martinique

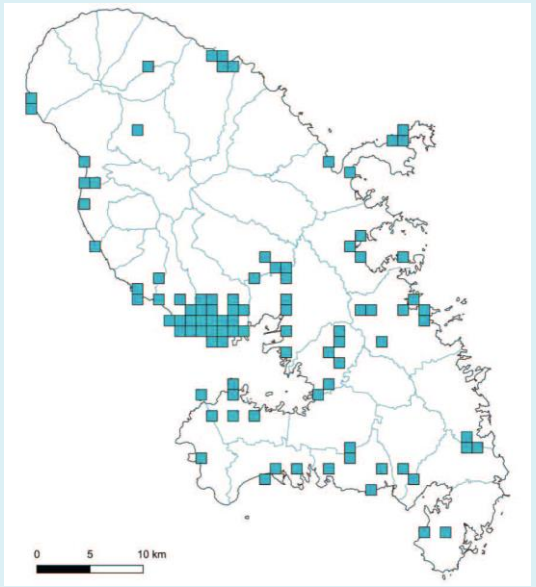
Threat # 1: a worrying *Ig. iguana's* spreading



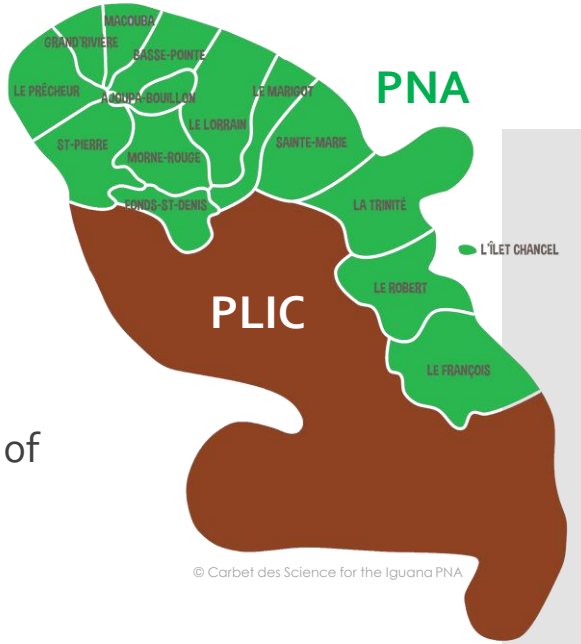


- Originating from the Fort-de-France area in the 60's, due to anthropologic introduction, *Ig. Iguana* has slowly but constantly spread on the lower third of the island
- Bringing the hybridization risk at higher level each passing years with individuals gradually heading north

2020 *Ig. Iguana* reported sightings



A National Action Plan for *Ig. delicatissima* Conservation



© Carbet des Science for the Iguana PNA

- Objective #1 - Action #1 : reduce the competition exerted by the Common iguana
- Two main objectives:
  - limit the expansion of *I. iguana* to the northern territories of Martinique and on the islet Chancel,
    - targeted as a priority action of the PNA, based on Early Detection Network, led by the ONF;
  - regulate *I. iguana* populations in urban areas with high densities, in order to limit its sanitary and economic impacts and to avoid its northward expansion
    - targeted by several actions of the PLIC in the French West Indies, led by the DEAL.

Objective	Action Plan and concerned area	Animator	Management strategy				
			Iguana's removal			Early detection network	Population and politics education
			Large scale regulation	Ponctual regulation	Removal on reports		
Limit the expansion of of *I. iguana* towards the north of Martinique and on the islet Chancel	**PNA**	**ONF**	**NO**	**NO**	**YES**	**YES**	**YES**
Regulate *I. iguana* populations in urban areas where they are present in high density	**PLIC**	**DEAL**	**Not Yet**	**YES**	**YES**	**YES**	**YES**

© DEAL and ONF Martinique

Martinique Iguana Early Detection Network

- PNA objective for the Early Detection Network :
  - implemented in 2019
  - on territories of the Atlantic coast and the north of Martinique
  - proper functioning depending on :
    - Good information of the population to the common iguana issue, which will allow to favor the reports;
    - Recruiting, training and equipping active members
- PNA framework :
  - An evolving legislative context :
    - Local law enforcement with 2013 then 2019 decrees,
    - IAS status strengthened on national and local level,
  - Facilitating actions :
    - experience sharing on capture and killing methods at the regional workshop on IAS of the IUCN French Committee in February 2020 for all the concerned ultramarine actors .
    - helping the granting of equipment on request for the county institutions

Direction de l'Environnement, de l'Aménagement et du Logement (DEAL)
Direction de l'Agriculture, de l'Alimentation et de la Forêt (DAAF)
Gendarmerie Nationale
Police Nationale
Police Municipale
SDIS Martinique
Office National de la Chasse et de la Faune Sauvage (ONCFS)
Office National de l'Eau et des Milieux Aquatiques (ONEMA)
Office National des Forêts (ONF)
Conservatoire du Littoral (CdL)
Parc Naturel Régional de Martinique (PNRM)
Brigades du littoral des mairies du Robert et du François
Gardes du littoral
Vétérinaires

PRÉFET DE LA MARTINIQUE

ARRETE N° R02-2019-08-22-001

Le préfet de la Martinique

RÉSEAU POUR LA CONSERVATION D'IGUANA DELICATISSIMA

MIEDN first intention tools

© Carbet des Science for the Iguana PNA

© DEAL Martinique

© DEAL Martinique

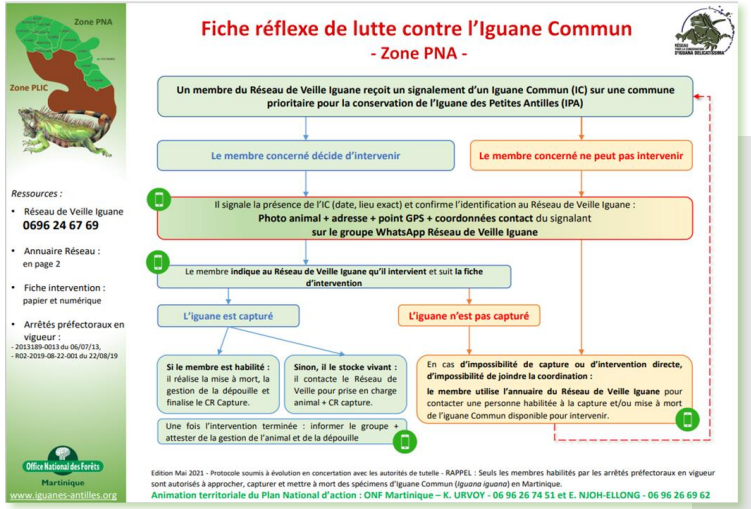
- Raising citizens awareness
- Educating publics to distinction between the two species
- Recruiting and training of the first MIEDN members :
  - Police and law agents, firemen, counties and cities services, volunteers from conservation associations, …

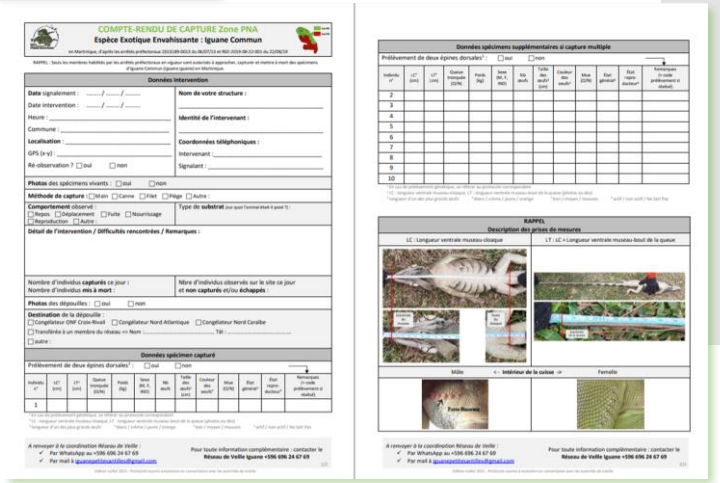
© ONF Martinique

Martinique Iguana Early Detection Network Coordination - +596 696 24 67 69

MIEDN dedicated intern tools

- Operation Reflex Sheet
- Whatsapp intern communication group
- Catch, transport and management equipment
- Standardized catch report
- Dedicated network coordinator and number since 2021



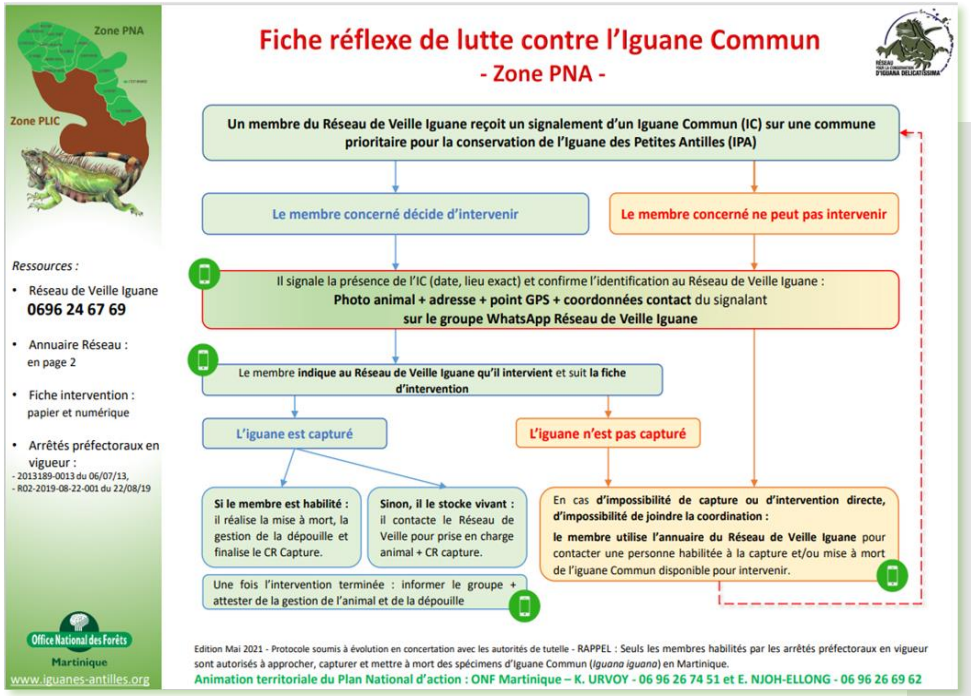


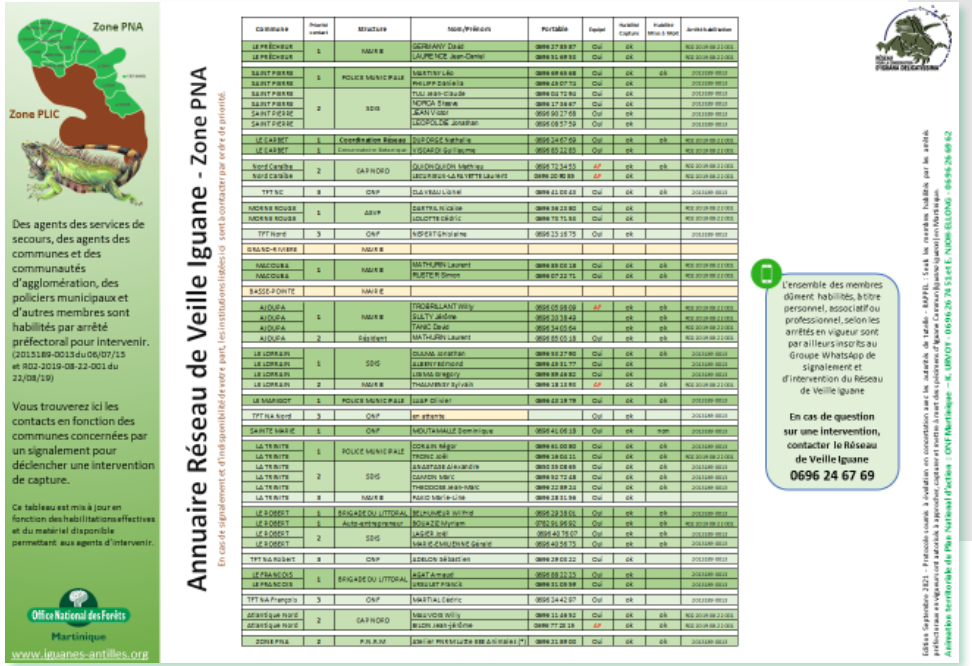
Martinique Iguana Early Detection Network Coordination - +596 696 24 67 69

MIEDN organization

Based on :

- recruitment, training and equipment of territorial actors
- Regular training sessions, dynamic reminders
- Standardized operation process : catching, restraint, transport and destruction unified methods
- Operation communication group to manage efficient answer to each report
- Compiling data for any operation done





MIEDN organization

© DEAL and ONF Martinique

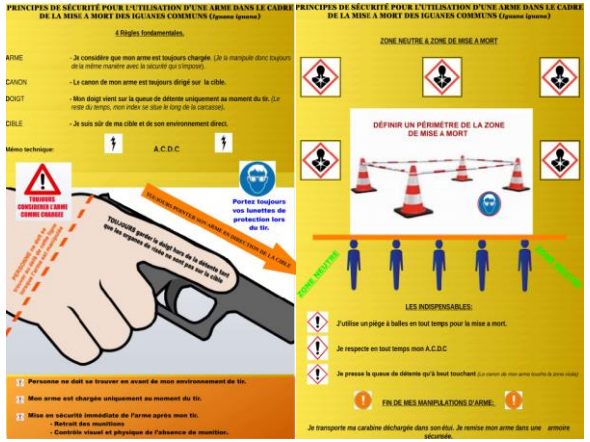
© DEAL and ONF Martinique

- Catch equipment and methods: SAFETY FIRST !

© DEAL and ONF Martinique

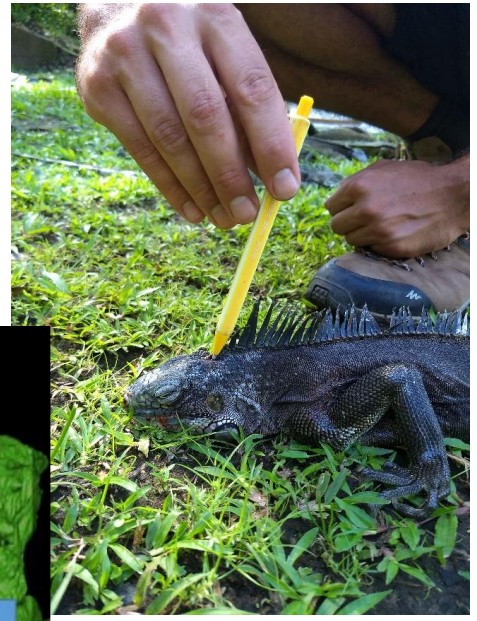
MIEDN organization

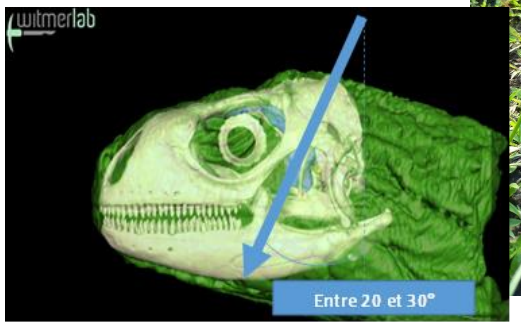
- Individuals destruction: members safety, data collection and care for the animal wellbeing

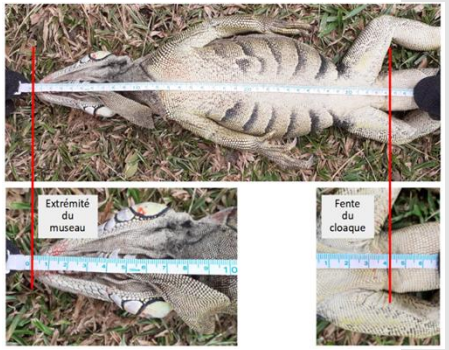


Source : ONCFS

© DEAL Martinique


© ONF Martinique





© DEAL Martinique

Hopes for the MIEDN

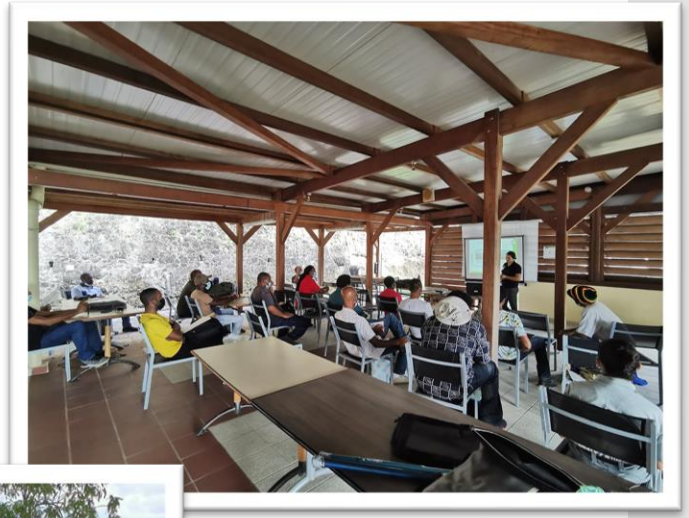
- Raise awareness among officials and the general public
- Recruit and train a sufficient pool of members
- Generate sighting reports from members AND citizens
- Get early detections in the area at risk
- Achieve quick and efficient interceptions of detected individuals
- Head for effective and simple management of captured animals

© Carbet des Science for the Iguana PNA

© MIDEN / PNA

2021 first assessment

- Financial cost for ONF from 2018 to 2020: 100 000€ (11 000 material / 89 000 agent time)
- From 2018 to 2020, several training sessions were organized by the ONF and 14 new members were trained within the framework of the PNA.
- In 2021, 19 additional people were trained, raising to 63 the number of people currently accredited and engaged in the MIEDN.



© MIDEN / PNA / DEAL

© MIDEN / PNA / DEAL

RÉSEAU POUR LA CONSERVATION D'IGUANA DELICATISSIMA

2021 first assessment

- *Ig. Iguana* reports and captures:

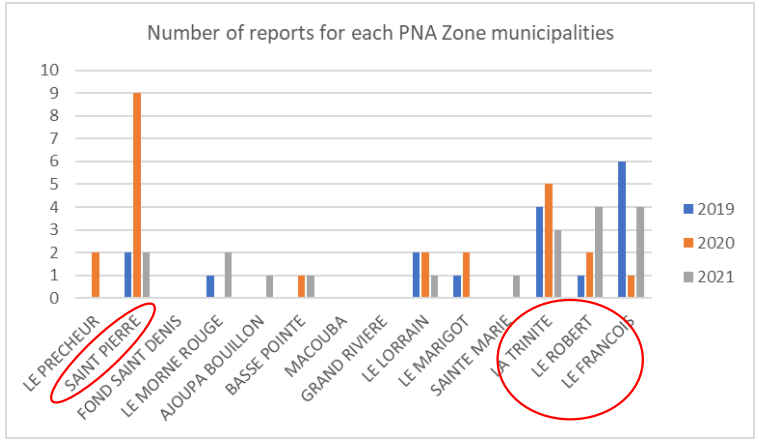
MIEDN Start

First PNA

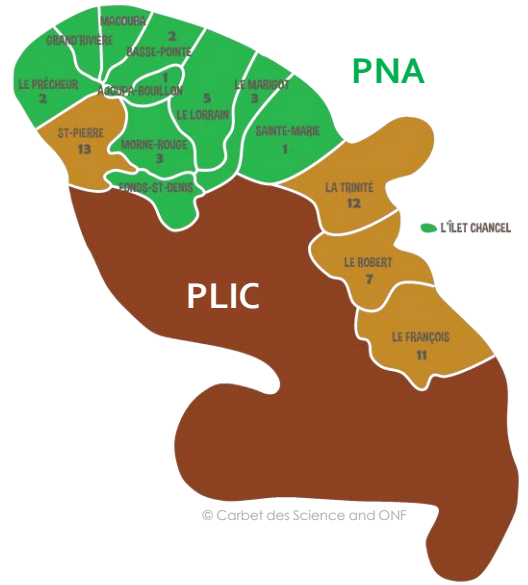
Second PNA

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
PNA Zone	Ig. Iguana reports	4	1	2	2	1	5	3	17	24	17
	Nbr of iguanas reported	6	1	2	2	1	5	3	17	25	17
	Captured iguanas	5	1		0	1	1		3	7	6
	Nbr of operations	3	1		2	1	1		5	12	10
PLIC Zone	Ig. Iguana reports	23	14	23	49	24	20	14	42	56	33

Source : MIEDN/ONF

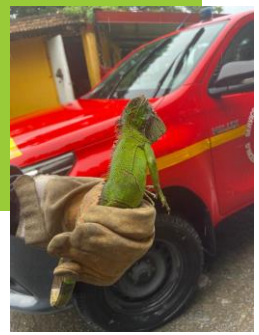


Source : MIEDN/ONF



© Carbet des Science and ONF

- From April to September 2021:
  - 10 MIEDN reports in 2021 : 50% of effective captures
  - All the individuals reported by MIEDN members have been captured
  - 40% were reported on awareness actions and 10% by elected officials : not captured

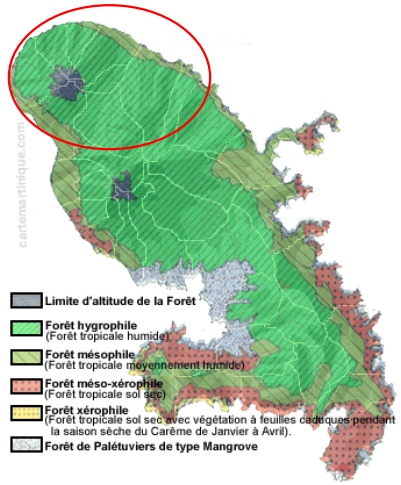


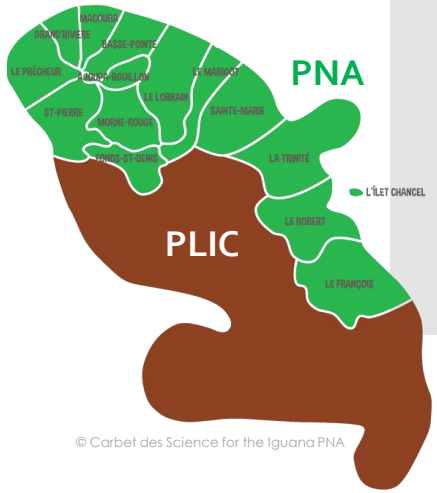
© MIDEN / PNA

MIEDN challenges for the future

- **EXTERNAL**
- Inherent complexity of the action:
  - with regard to the chosen model (network of volunteers, even if from professional institutions), size and geography of the territory, and biology of the targeted species
- General public communication:
  - Arouse the patrimonial adherence for the "Peyi Iguana" to increase the detectability of individuals
  - Deal with the little but persistent local customs of consumption of the 2 species
  - Enhance general public acceptance of the management of individuals (destruction issue)
  - Identify the MIEDN as a tool for the PNA zone vs. PLIC zone

Source : PNRM

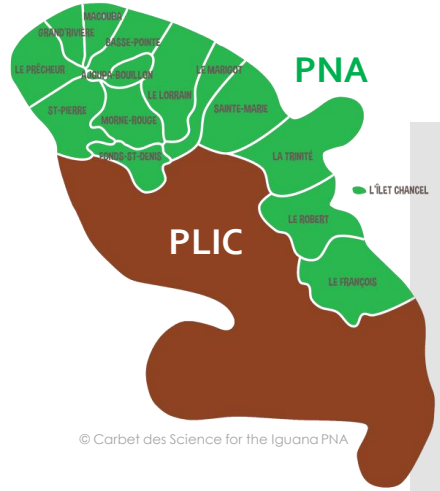




© Carbet des Science for the Iguana PNA

MIEDN challenges for the future

- **INTERNAL**
- Support and boost the network activity
- Improve the network tools (google form to come, …)
- Improve the territorial coverage :
  - recruitment and training of members in missing areas: e.g. hiking association, …
  - ensure the continuity of the trainings
  - enlargement to other actors (naturalists, relevant touristic structures,…)
- Manage to optimize the interventions :
  - reactivity, networking, accessibility,
  - support to the implementation of destruction actions,
  - management of captured animals, of the corpses…



Conclusion

- The MIEDN seams to show good results regarding to the collected reports and the operation relative success.
- It benefits a pool of 63 habilitated, equipped and motivated members and a dedicated animation, leading to enhance the internal dynamic.
- Reports and capture numbers / years are low :
  - Positive to think that there is not that much Ig. iguana in the PAN Zone
  - But in fact a lot more animals are probably present but not reported
- The MIEDN is indeed fighting a competitive, sneaky and insidious enemy which is an camouflage expert in a territory with dense vegetation cover and unfavorable topography to easy sightings.
- It will be necessary to share information and keep improving the efficiency of this tool in the future if we want to keep it effective for limiting the hybridization risk for *I. delicatissima*.

RÉSEAU POUR LA CONSERVATION D'IGUANA DELICATISSIMA

Thank you for your attention

RÉSEAU POUR LA CONSERVATION D'IGUANA DELICATISSIMA

© MIDEN / PNA / DEAL