

# Photo-identification of sea turtles in the

*Caribbean French West Indies*



**WIDECAST 2015**

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*Document prepared by Higuero Emilie (Kap Natirel)*



# Status of marine turtles in the Caribbean French West Indies

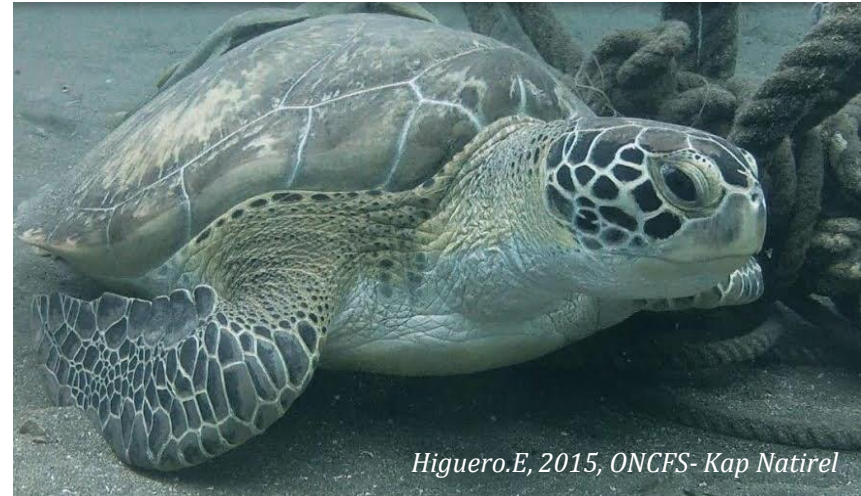
> All marine turtles are classified as Endangered or Critically Endangered on the IUCN Red List

## Protection :

> Guadeloupe : since 1991

> Martinique : since 1993

> Recovery action about sea turtles in French West Indies (since 2006)



Higuero.E, 2015, ONCFS- Kap Naturel

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# Usual marking methods

## External tags

**Flipper tags (since 1998)**  
*(plastic, monel, titanium)*



Bedel S., 2013, Kap Naturel

## Internal tags

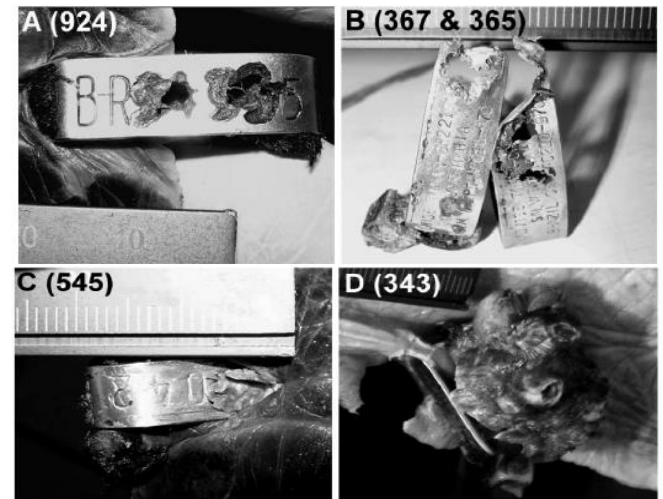
**Passive Integrated Transpondeur (PIT)**



ONCFS, 2013

# Disadvantages

- > Lack of compatibility in tag readers
- > Problems of tag loss  
*(Reisser et al., 2008)*
- > Traumatic and costly  
*(Reisser et al., 2008; Scofield et al., 2008)*
- > Not last for a lifetime
- > Can induce errors in CMR estimates  
*(van Dam & Diez, 1999)*



*Reisser et al., 2008*

# Photographic identification of individual organisms

## Why ?

- > Population size,
- > Distribution,
- > Habitat use,
- > Movement,
- > Life history traits



## Conservation tools



# Advantages

- > Cheap and reliable method (*Lloyd et al., 2012*)
- > Based on distinctive individual morphological characteristics (*Carter et al., 2014*) that may be photographically captured (*Jean et al., 2010*)
- > Useful method in studies of threatened and endangered long-lived species (*Reisser et al., 2008*)
- > Non invasive technique
- > Reduce stress and handling of capturing sea turtles (*Jean et al., 2010*)
- > Used from hatchling to adults
- > Implicate divers community



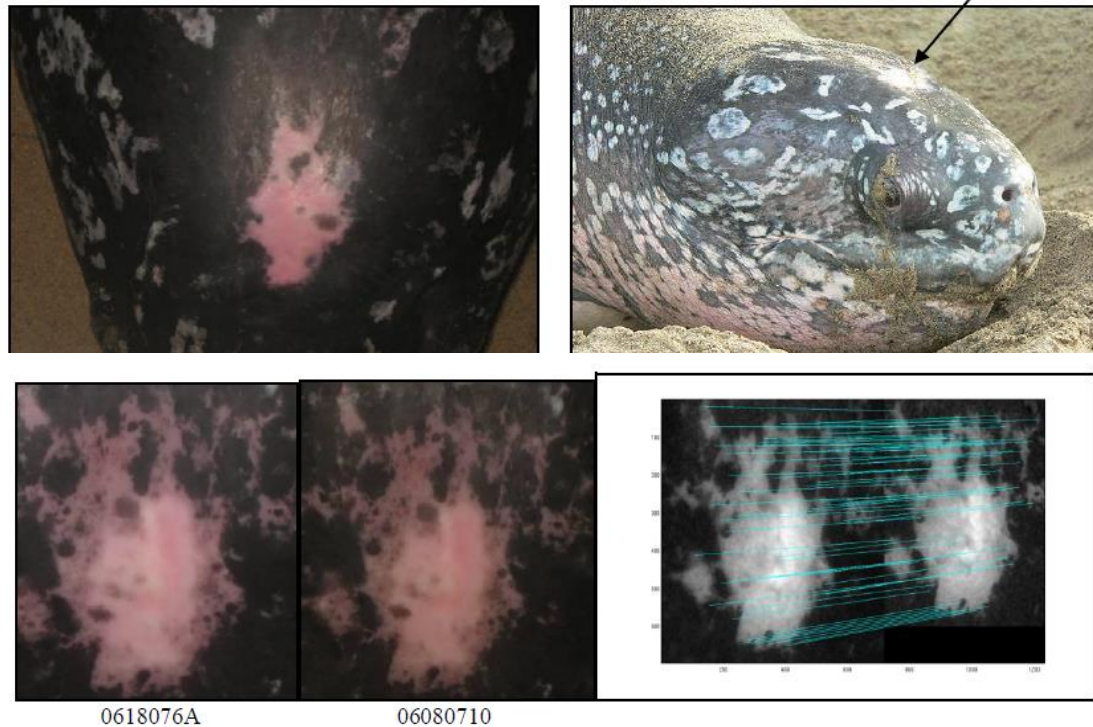
# Leatherback turtles

*(Dermochelys coriacea)*

*Mc Donald et al., 1996*

*Buonantony, 2008 (A)*

(A)

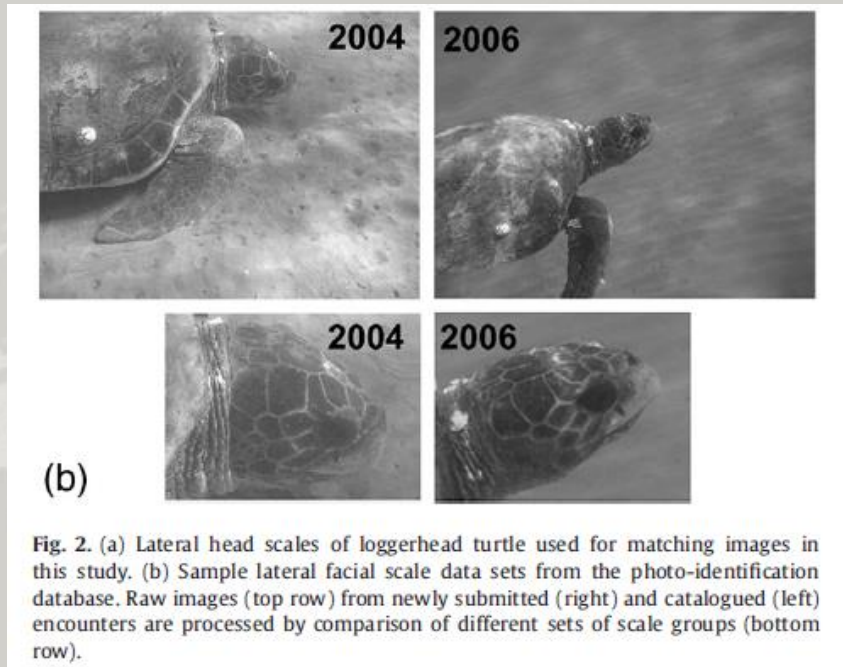


« Pineal Spot Identification »

# Loggerhead turtles

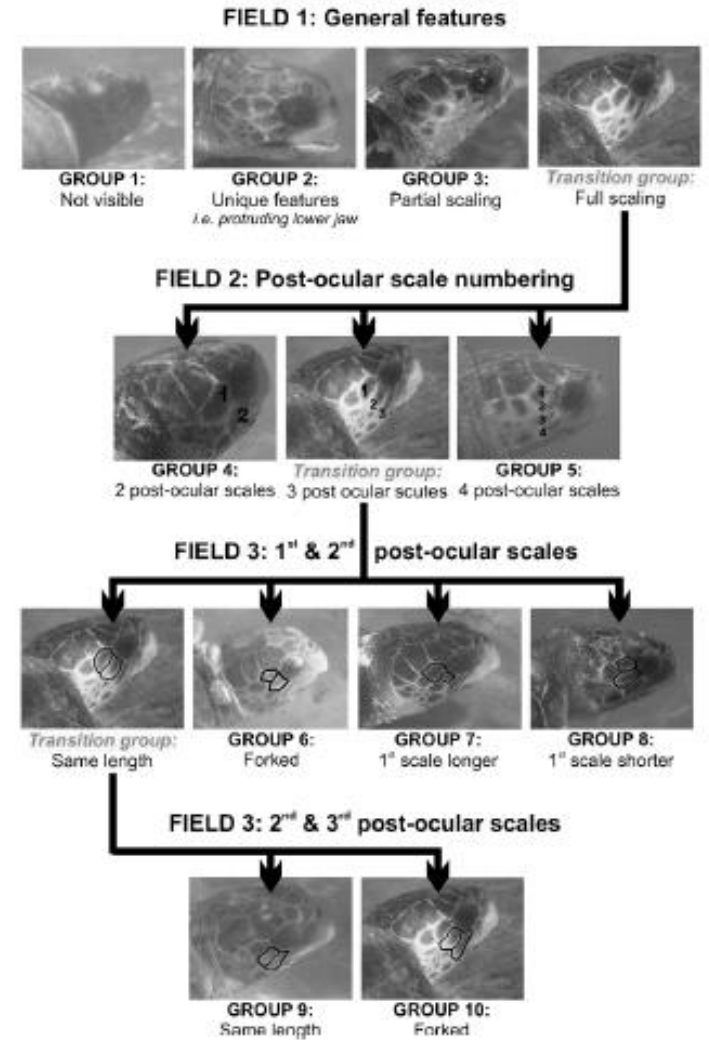
(*Caretta caretta*)

Schofield et al., 2008



Method based on facial (post-ocular) scale patterns

## IDENTIFICATION TREE: GROUP ASSIGNATION of the right lateral facial scales





# Green turtles

*(Chelonia mydas)*

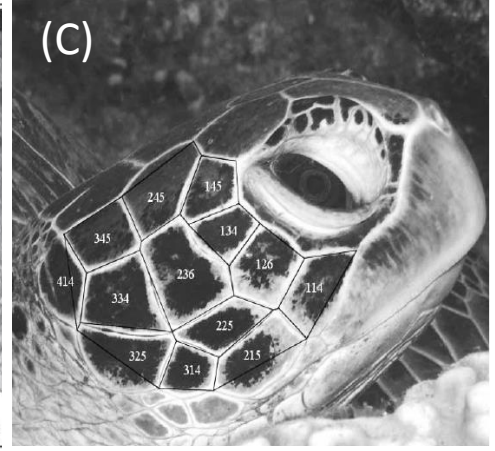
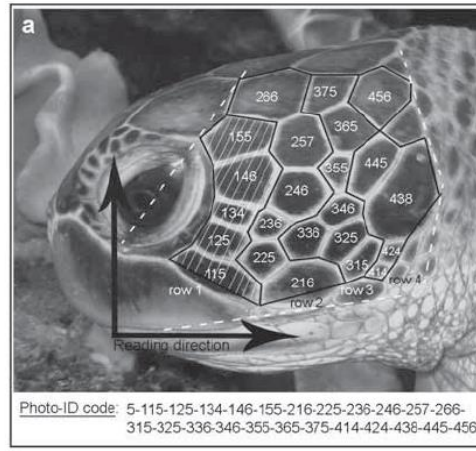
*Reisser et al., 2008 (A)*

*Jean et al., 2010 (B)*

*Chassagneux et al., 2013 (C)*

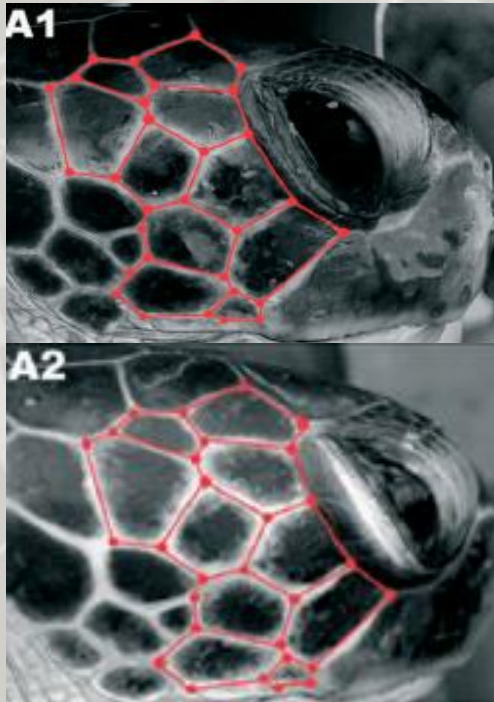
*Carter et al., 2014 (D)*

(B)

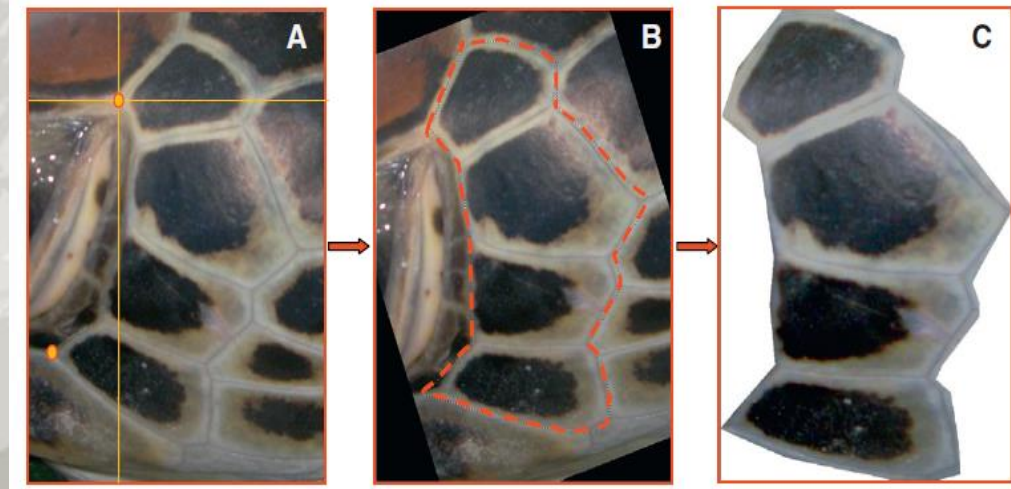


Use of the facial profile photographs of marine turtles

(A)



(D)



Use of the facial profile of marine turtles

Use of the post-ocular scutes



# Hawksbill turtles

*Eretmochelys imbricata*

Reisser et al., 2008 (A)

Jean et al., 2010 (B)

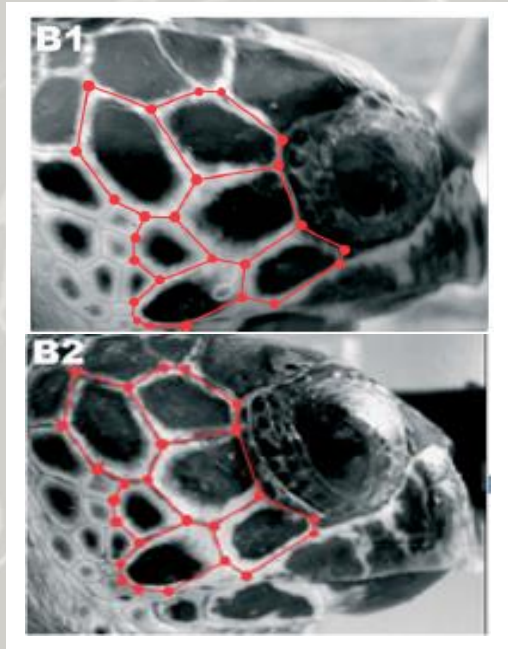
Dunbar et al., 2014 (C)

(B)



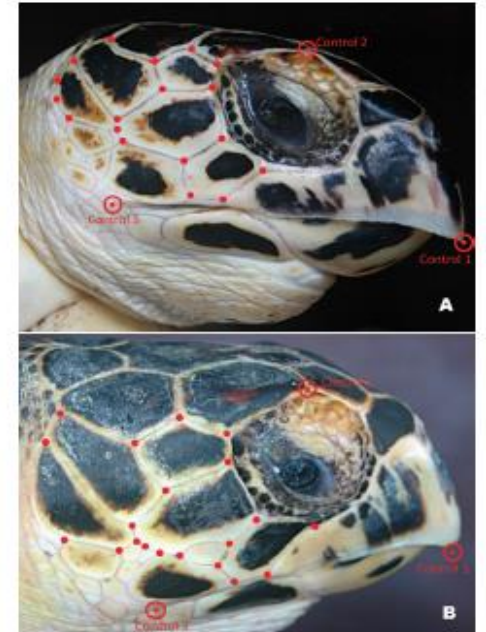
Use of the facial profile of marine turtles

(A)



Use of the facial profile of marine turtles

(C)



Investigate automated recognition of turtles in a database by using the spot recognition program, I3S

# The photo-ID method



> Based on the individual scute pattern on either side of the head  
*(Jean et al., 2010; Chassagneux et al., 2013)*



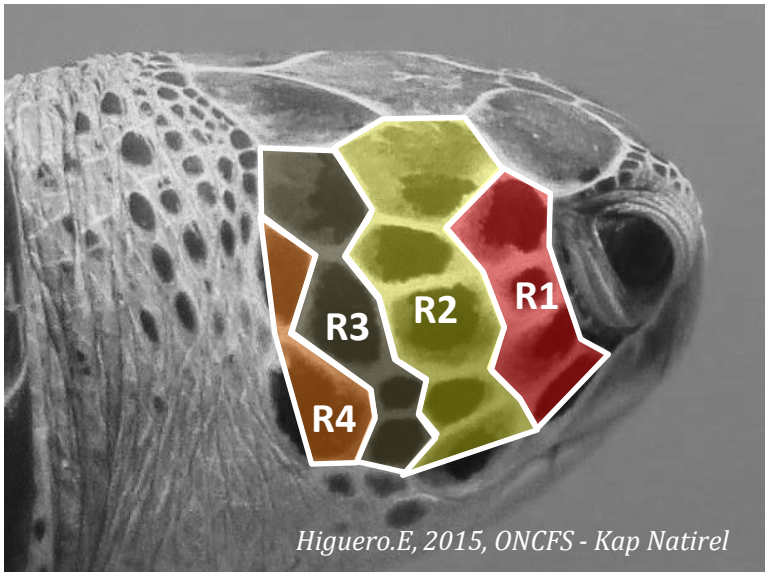
2 distinctive profiles for each individual



# The photo-ID method



« Method of photo-ID based on a computer assisted process using the coding of the facial profiles according to the position and the shape of the scutes using photographs »  
(Jean et al., 2010)

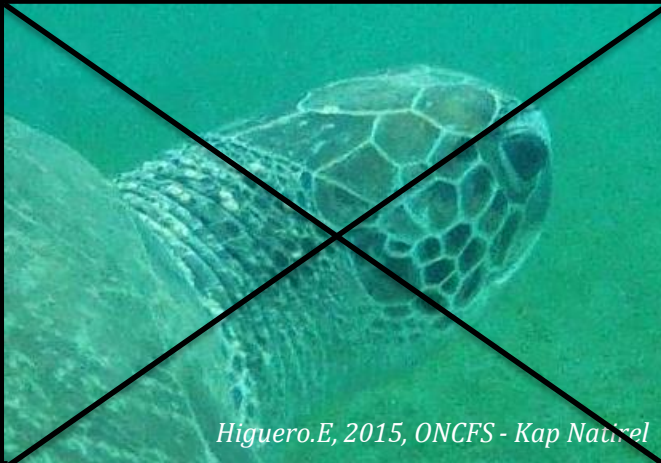


Code : 114 – 126 – 134 – 145 – 215 – 225 – 236  
– 245 – 314 – 325 – 334 – 345 – 414

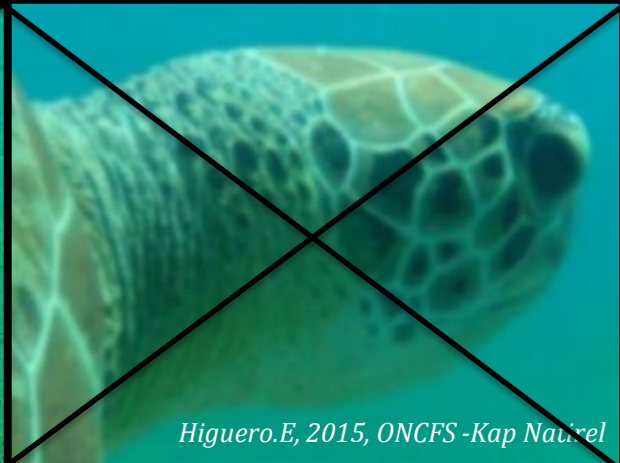
# The photo-ID method



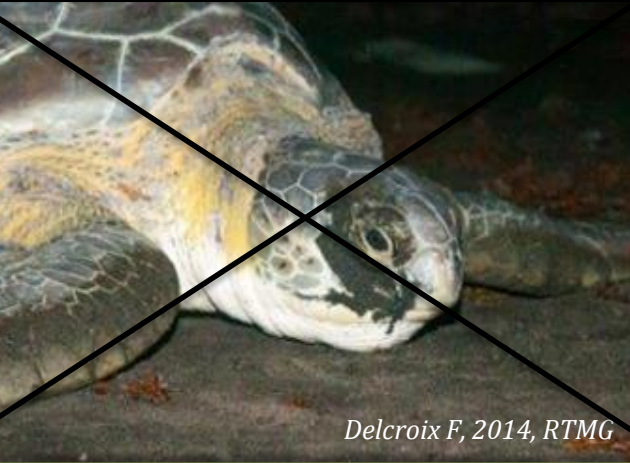
Higuero.E, 2015, ONCFS - Kap Natirel



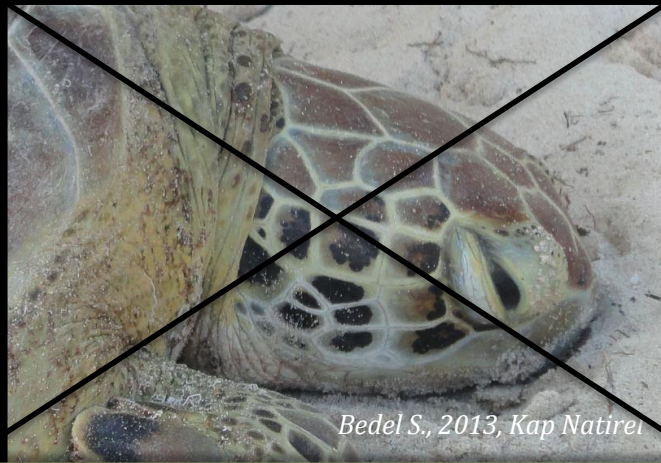
Higuero.E, 2015, ONCFS - Kap Natirel



Higuero.E, 2015, ONCFS - Kap Natirel



Delcroix F, 2014, RTMG



Bedel S., 2013, Kap Natirel



ONCFS, 2013



# TORSOOI database



base de données  
tortues marines  
du sud-ouest de l'océan indien



KEOLONIA  
l'observatoire des tortues marines



## INDIVIDUAL MONITORING / PHOTO ID

### Select of the picture

Select your picture :

Aucun fichier sélectionné.

Picture name :

### Additional information

Name of the photographer :

Email :

Site name :

GPS Position in decimal degrees (WGS84)

Latitude :

Longitude :

Date of observation :

Species :

Sex :

Other comments :




# TORSOOI database

(2014 © TORSOOI / KELONIA / IFREMER)

**Définition du profil**

Nombre de post-orbitales :

Profil :  Droit  Gauche



Annuler Tout effacer



114	126	135	146	
216	225	236	246	255
314	326	335	346	357
414	426	434		

**torsooi** base de données tortues marines du sud-ouest de l'océan indien

Enquête PhotoID Déconnexion

KELONIA Observatoire des tortues marines ifremer

### HISTORIQUE DE LA FICHE



Accueil  
Saisie  
Requêtes/Exports

Actions possibles  
Détails de la fiche  
Historique de la fiche

Date du suivi	Intitulé de l'action
01/01/2014	Photo Identification
01/01/2014	Photo Identification

[Retour en haut de la page](#)

Copyright kelonia/ifremer - Design et conception : AxeDesign Web Agency



# Photo-ID in Guadeloupe and Martinique



**6 months (January – June 2015)**

Baie de Malendure  
Réserve Naturelle de Petite-Terre

*Chelonia mydas*  
*Eretmochelys imbricata*



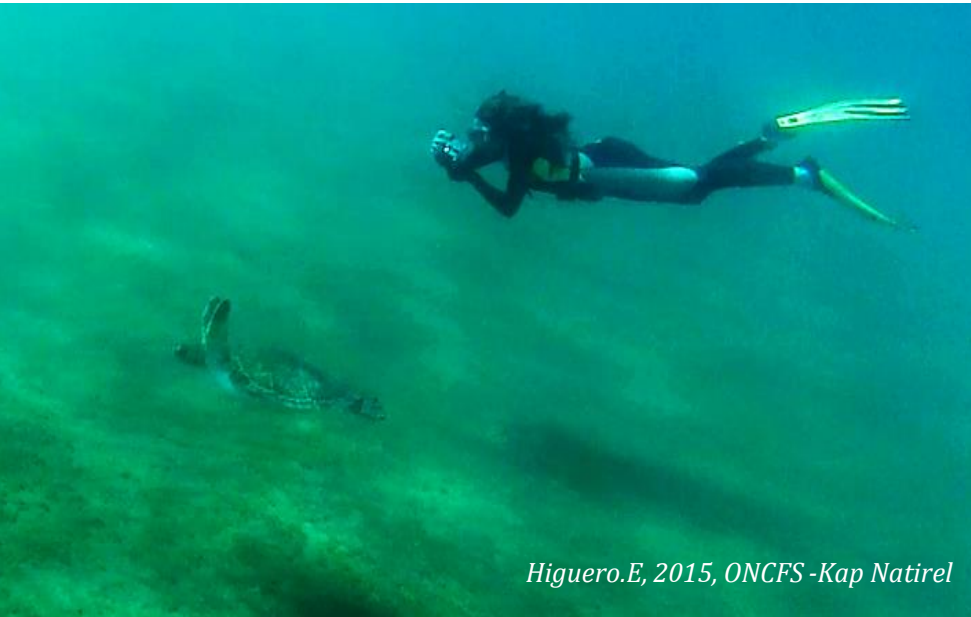
**6 months (April – September 2015)**

Les Anses d'Arlet

*Chelonia mydas*  
*Eretmochelys imbricata*



# Photo-ID in Guadeloupe



Higuero.E, 2015, ONCFS -Kap Natirel



Higuero.E, 2015, ONCFS -Kap Natirel

**TORSOOI (13/01/15 – 27/02/15)**

**Photo-ID count : 56**

**Left profiles : 19**

**Right Profiles : 37**

**Total turtles count : 9**

**Reviewed turtles : 4**

# First match in Guadeloupe (*Malendure*)



ONCFS, 2013



Beaufort O., 2015, Kap Natirel



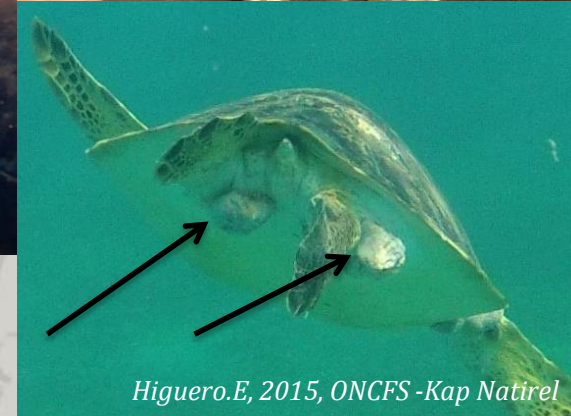
ONCFS, 2013



ONCFS, 2013



Beaufort O., 2015, Kap Natirel



Higuero.E, 2015, ONCFS -Kap Natirel

**gpcm3 (24/10/13 - 24/01/15 - 31/01/15 - 16/02/15)**



*Thank you for your attention*



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