



# IPReM

*Greater Caribbean 2023*

IDENTIFICATION | PROTECTION | RESTORATION | MANAGEMENT

**JUNE 28th-30th, PANAMA**

*Science and technology for sustainable beaches  
in a climate change scenario*



## SANDY SHORELINES PROYECT. FOCAL POINT OF CUBA

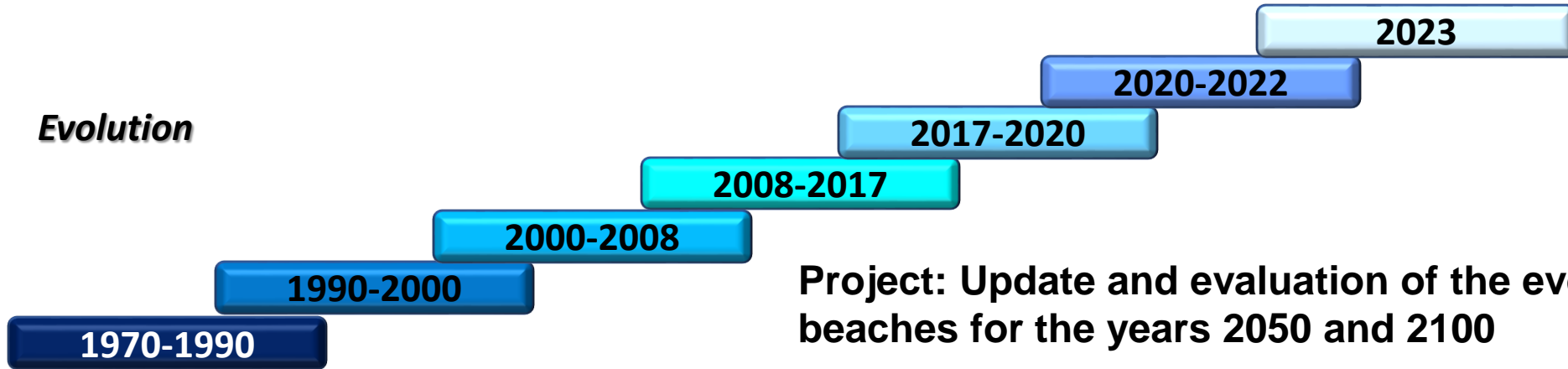


### RESULTS OF THE MONITORING OF COASTAL EROSION AS A SUPPORT FOR THE CONSERVATION OF BEACHES AND TOURISM DEVELOPMENT IN CAMAGÜEY

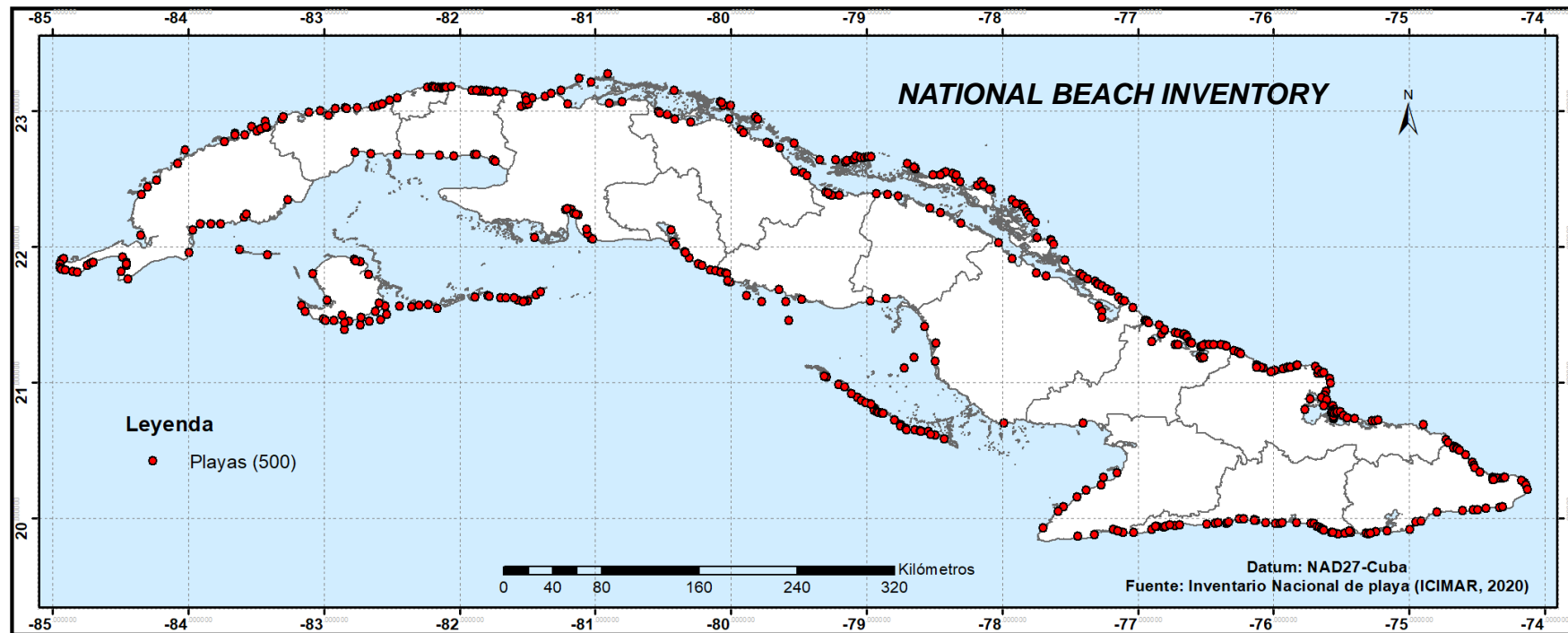
*MSc. Isis Hernández Sosa*



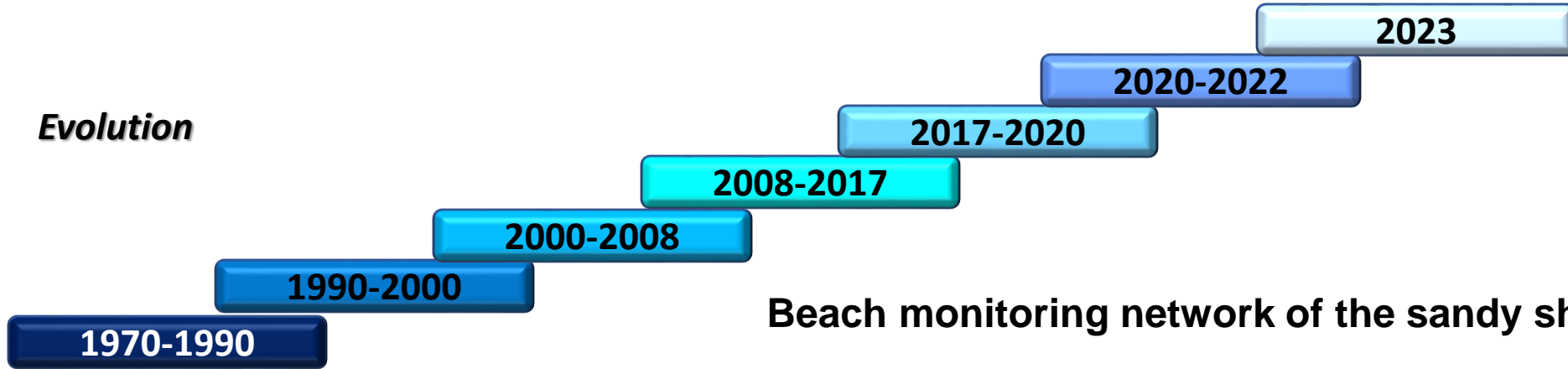
**Evolution**



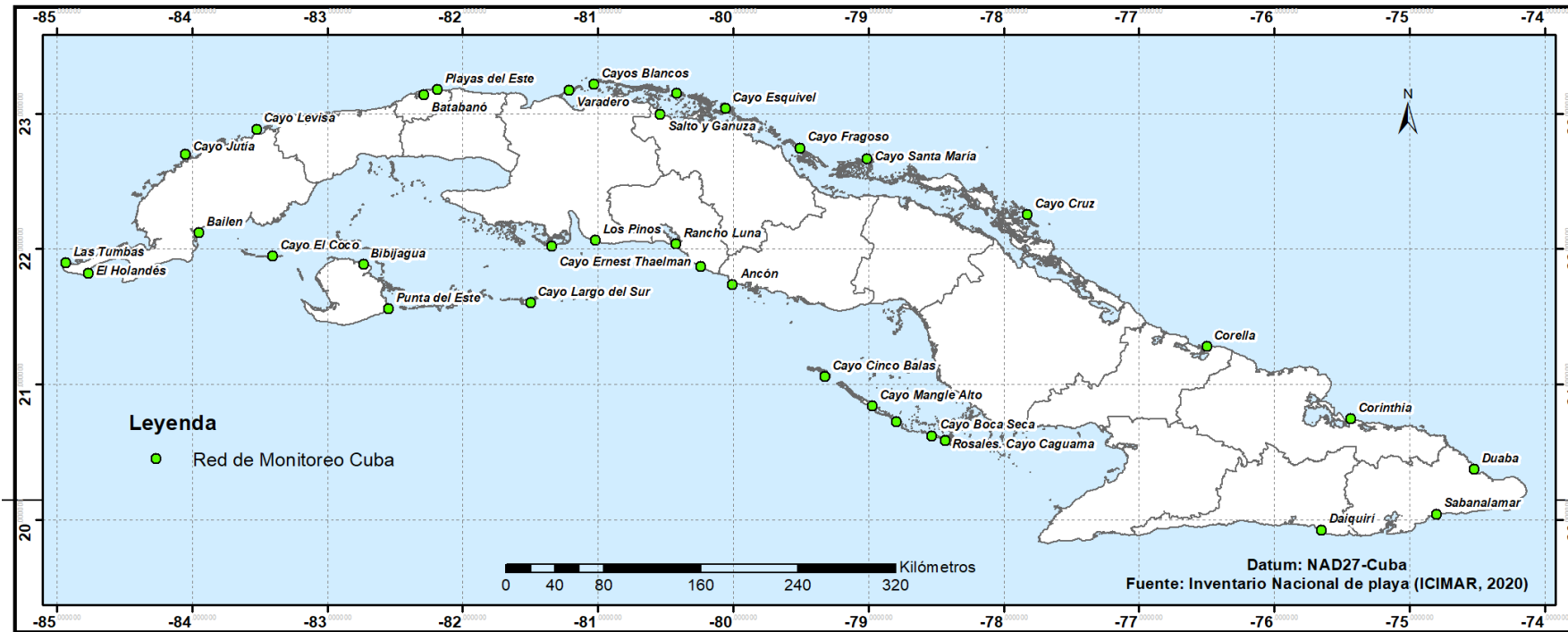
**Project: Update and evaluation of the evolution of the beaches for the years 2050 and 2100**



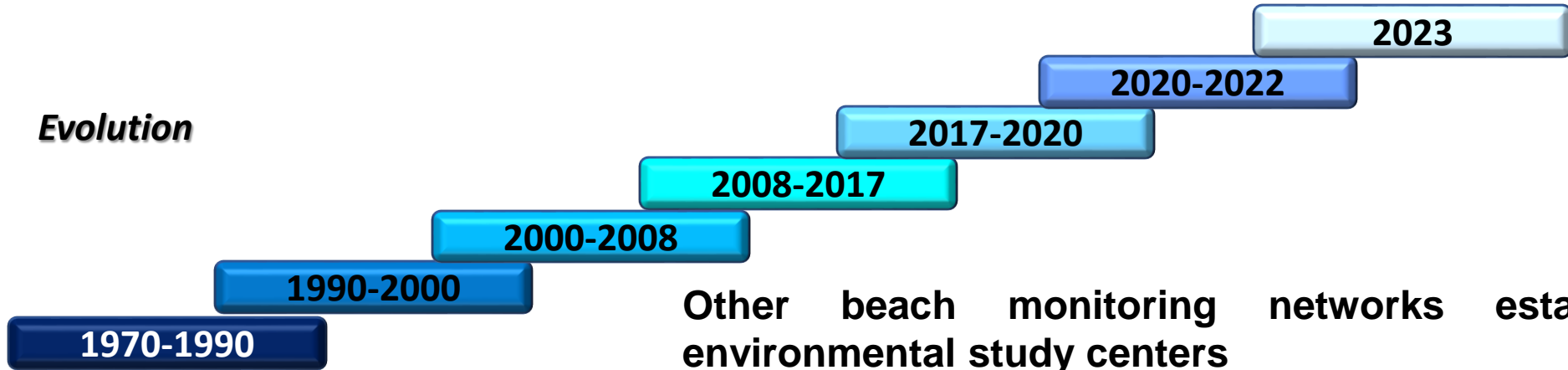
**Evolution**



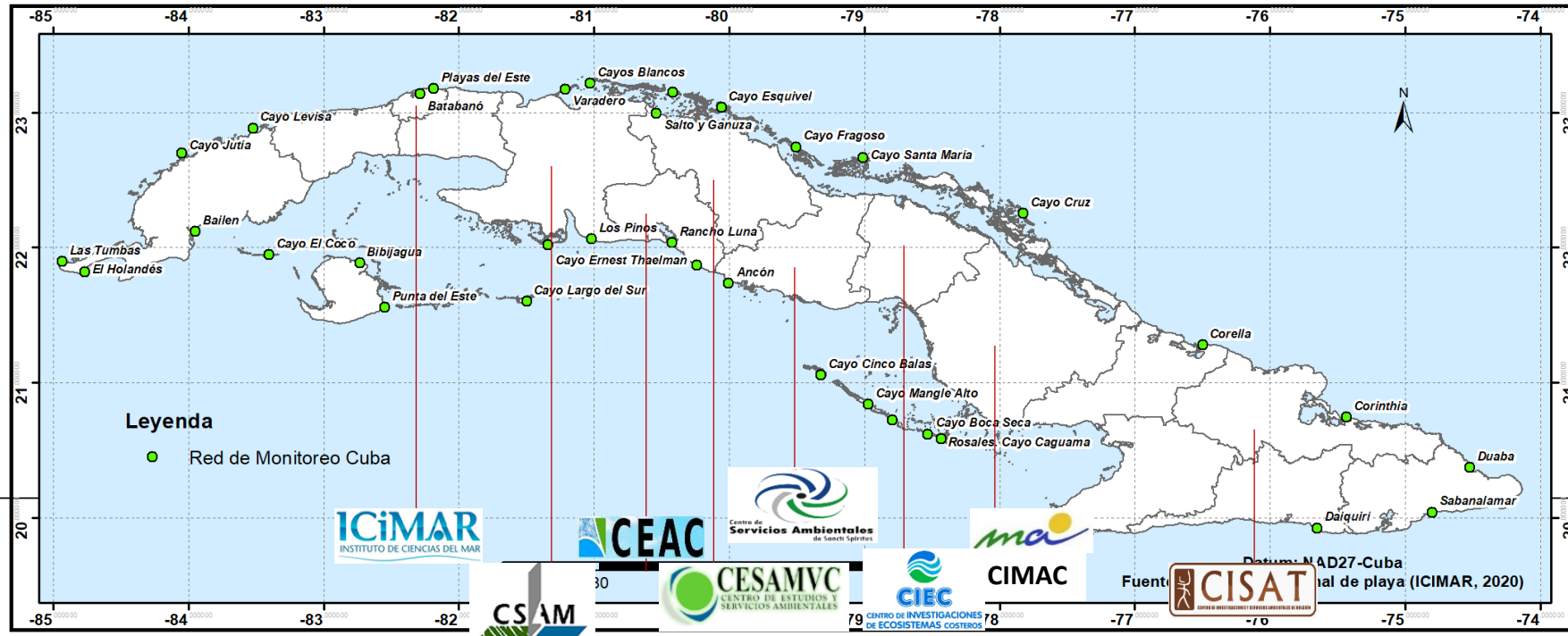
**Beach monitoring network of the sandy shores project**



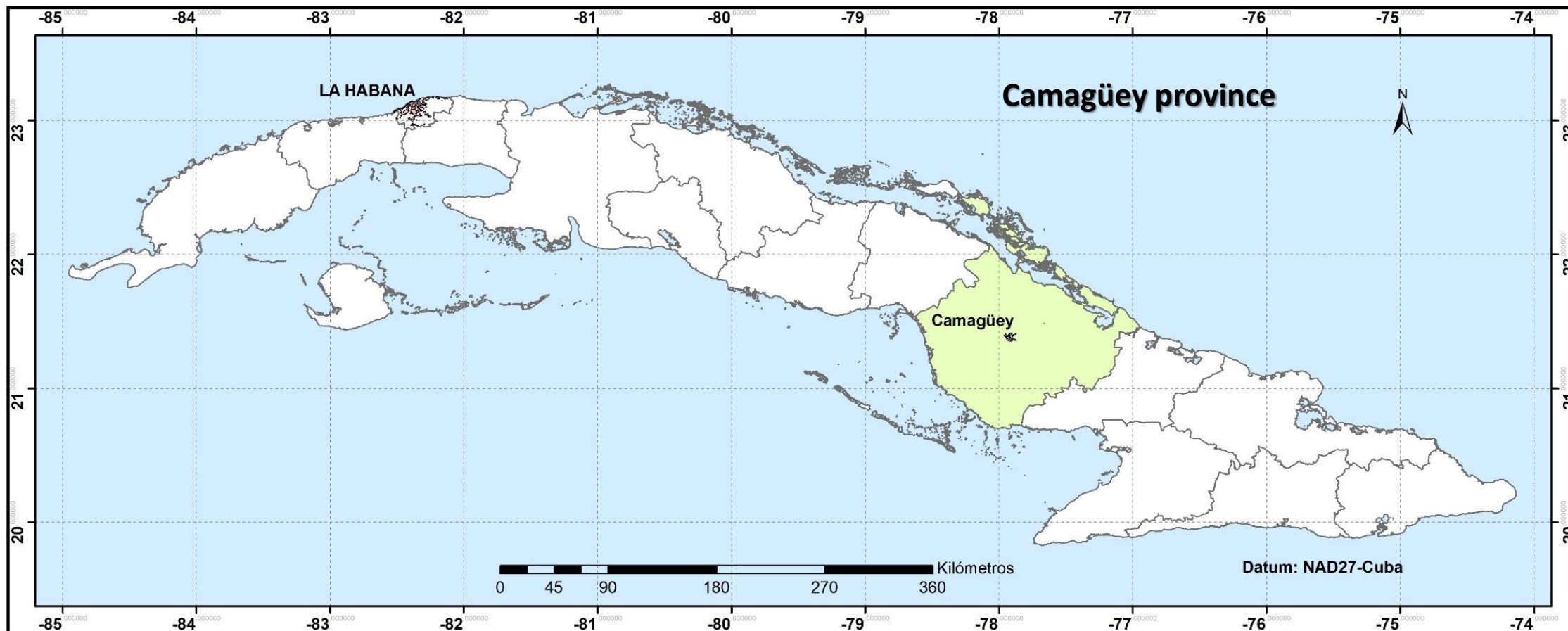
**Evolution**



Other beach monitoring networks established by environmental study centers

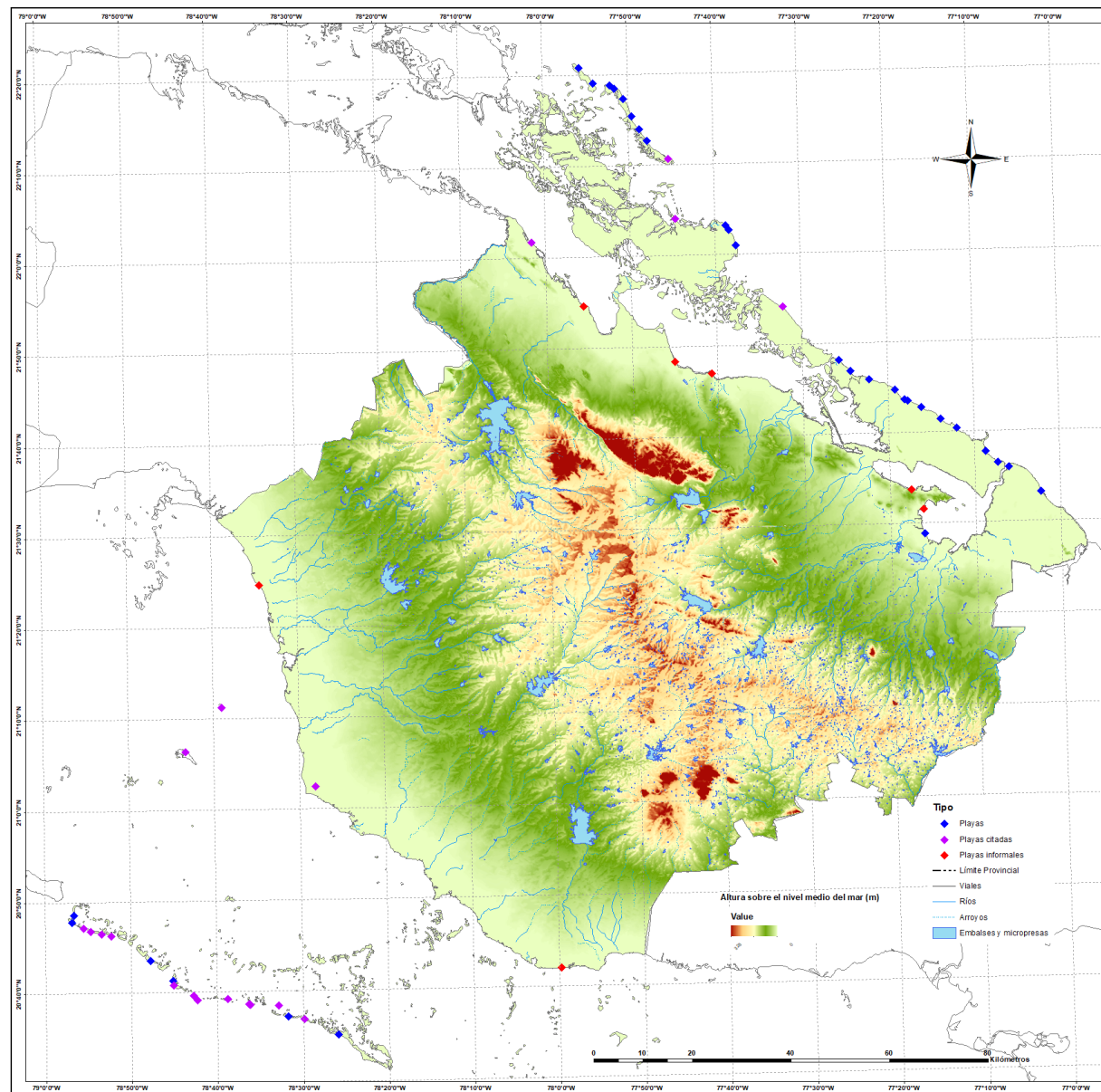


**Extension 15 413.82 square kilometers, represents 14.0 percent of the total surface of the country.**

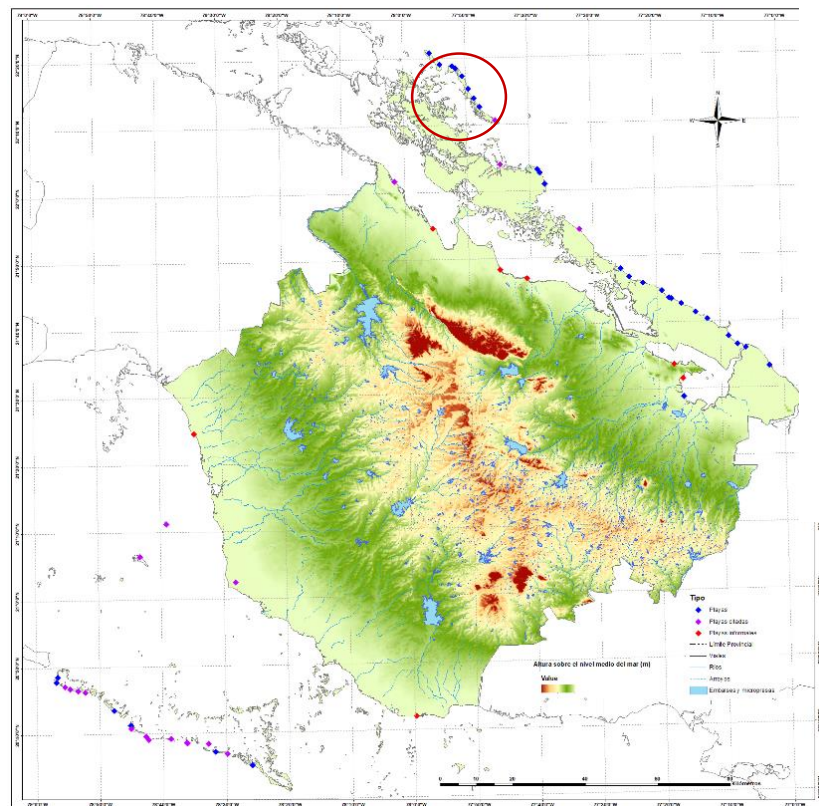


<b>Number of beaches</b>	<b>58</b>
North shore	34
South shore	24
North falls	25
South falls	20
<b>Km of beaches</b>	<b>111.41</b>
North shore	97.41
South shore	14
North falls	72.09
South falls	11.3

- 45% do not present any type of activity
- 5% is used for tourist activity
- 14% associated with coastal settlements



2017



The construction process begins in 2015 and the tourist exploitation in 2022

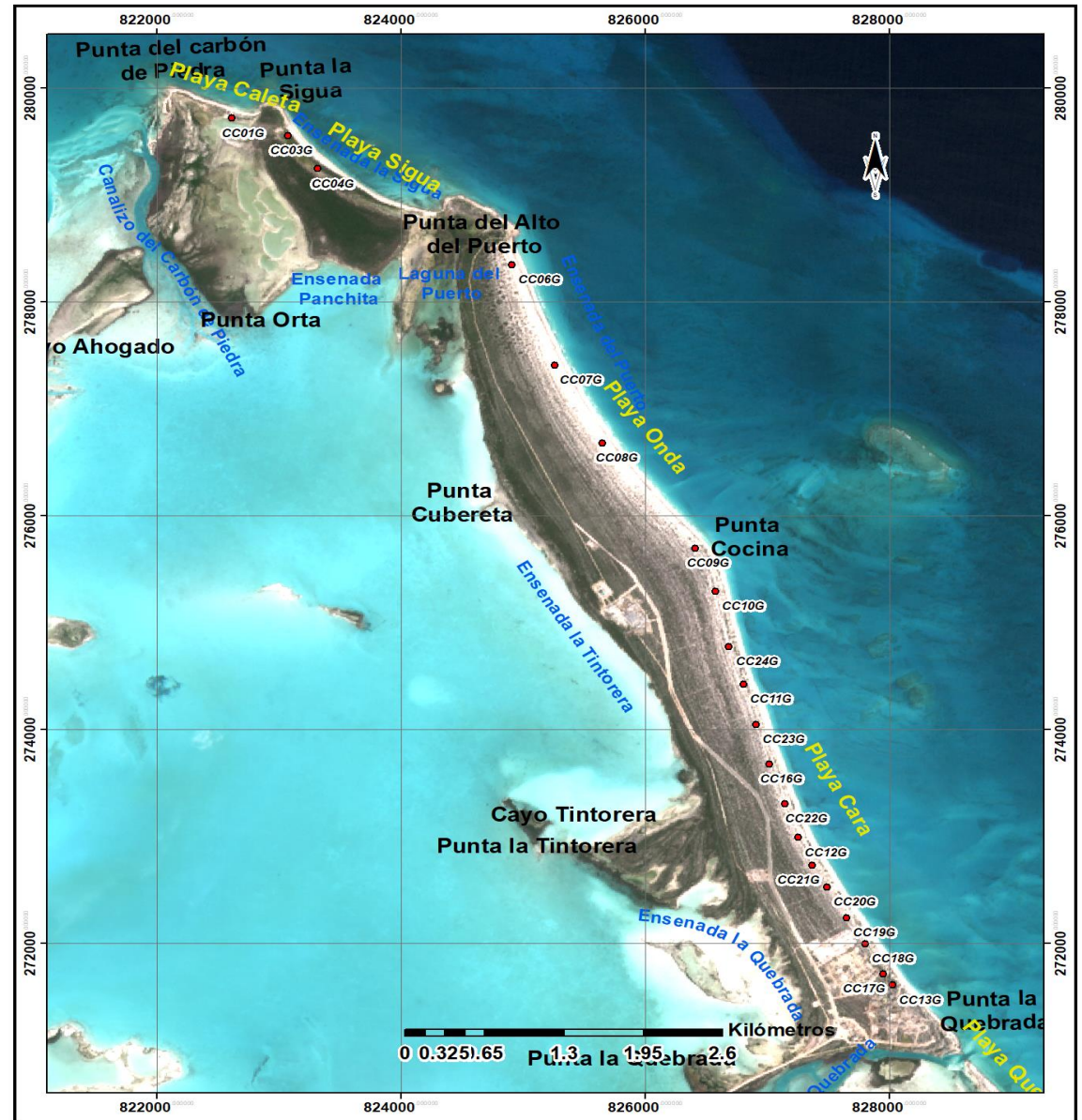


## Current beach monitoring network

2013

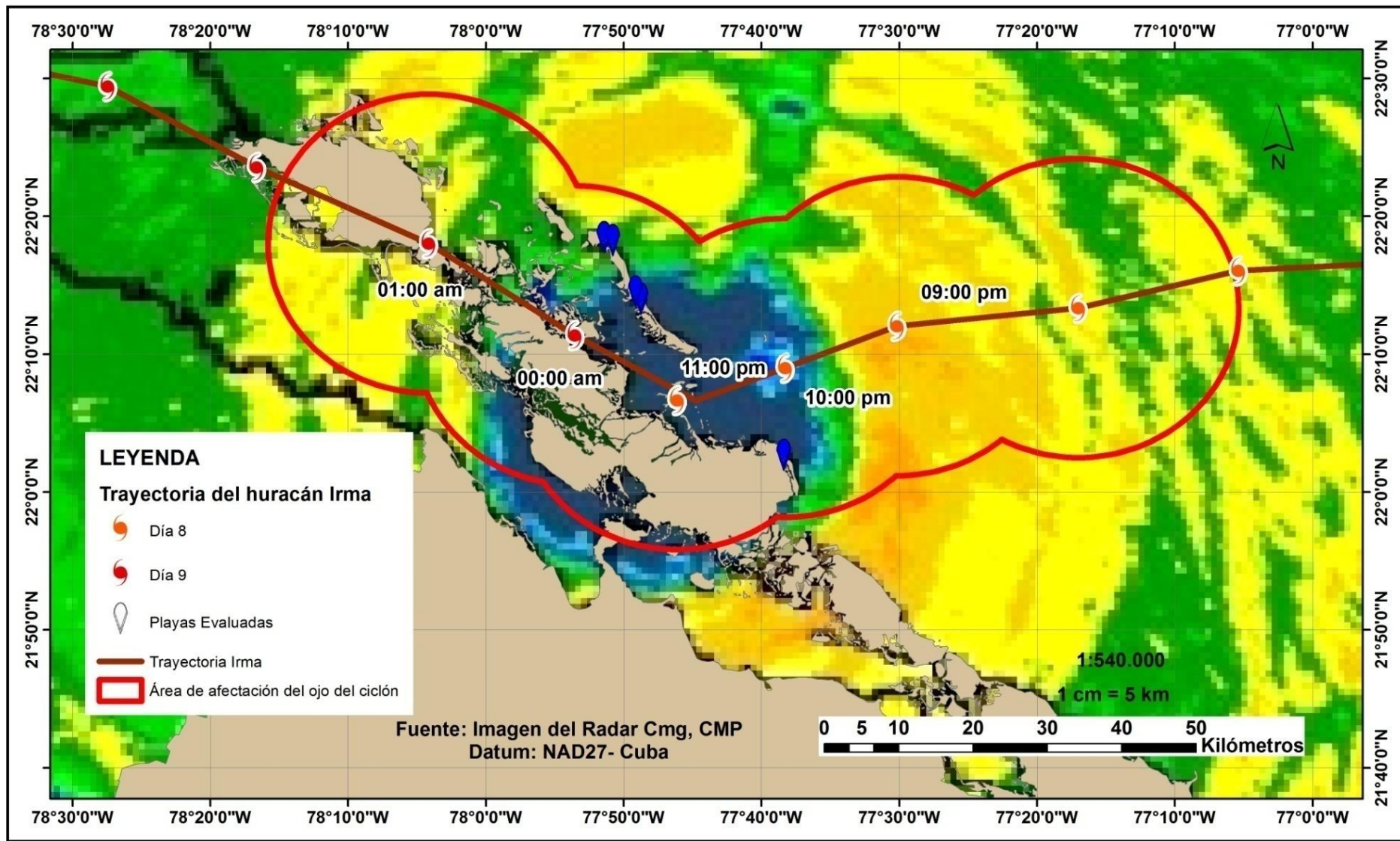
2023

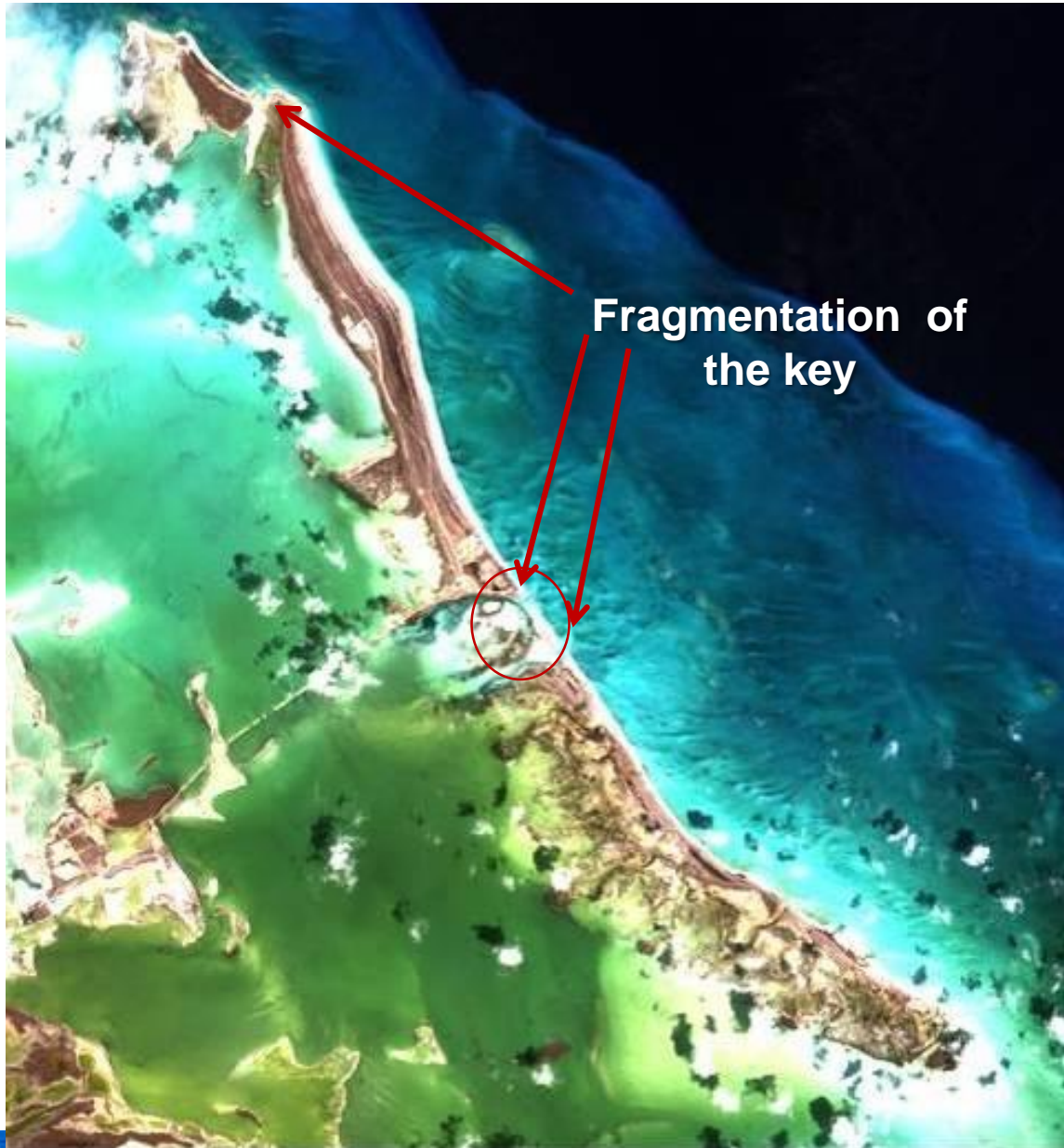
10 years of monitoring



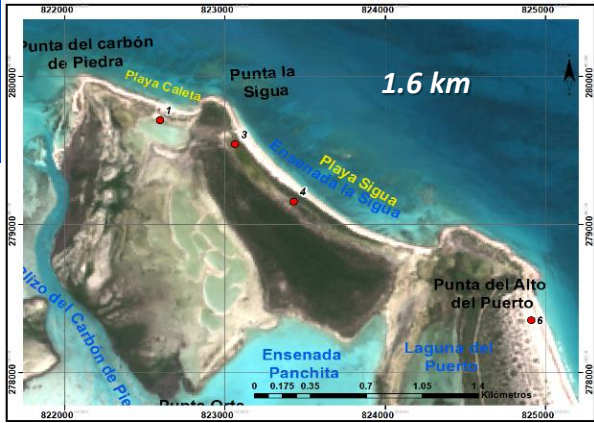
# IRMA, 2017

- Maximum sustained winds up to 260 km/h
- Diameter of the eye of the hurricane: 20 km

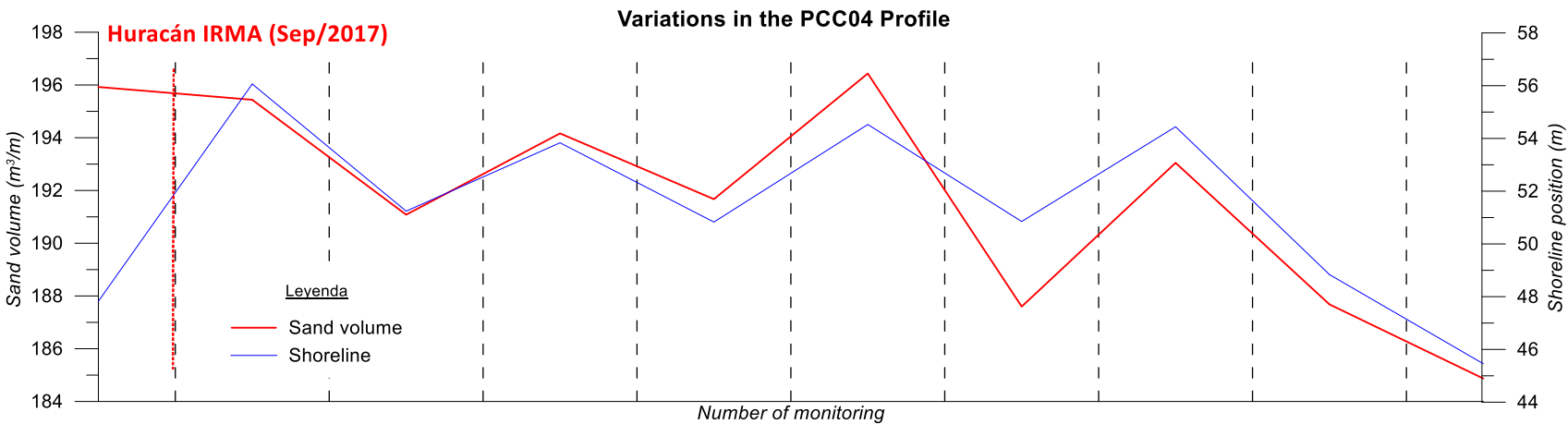
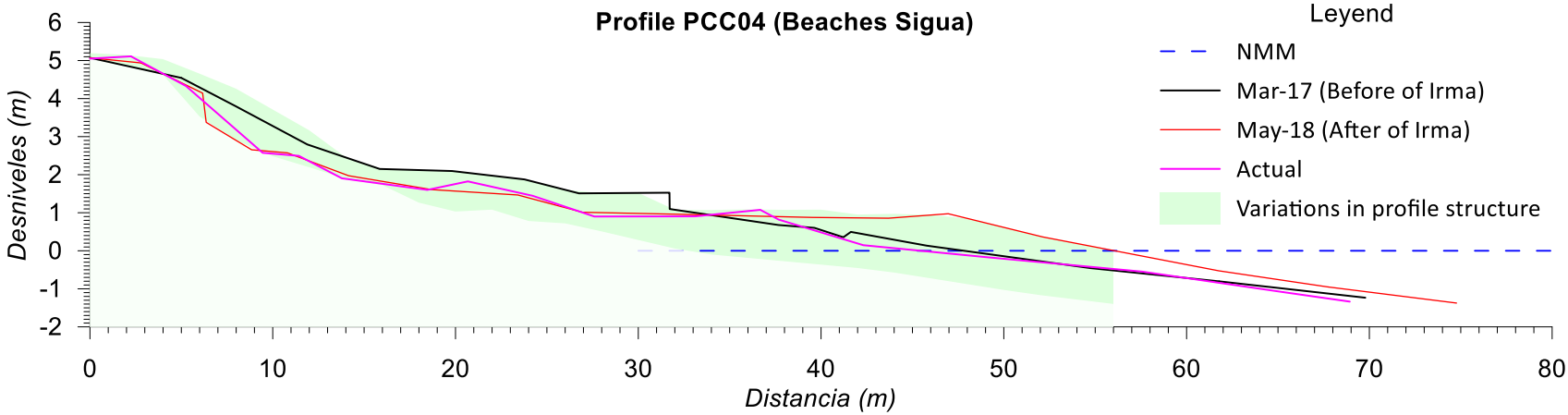


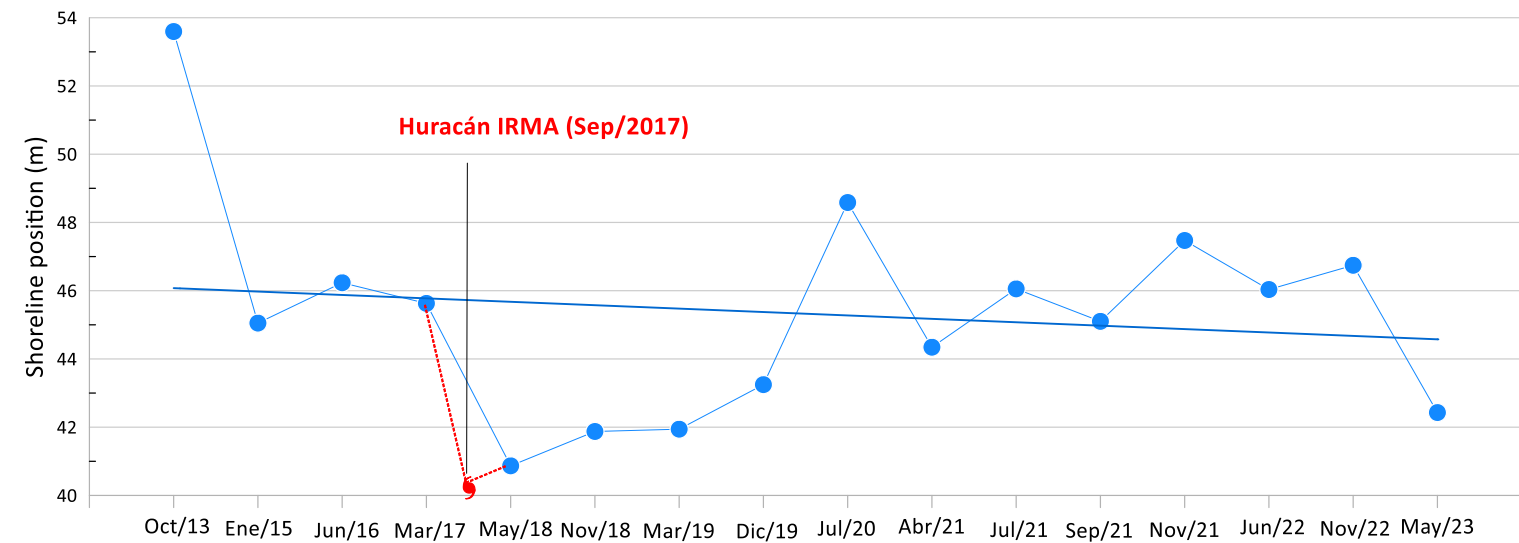
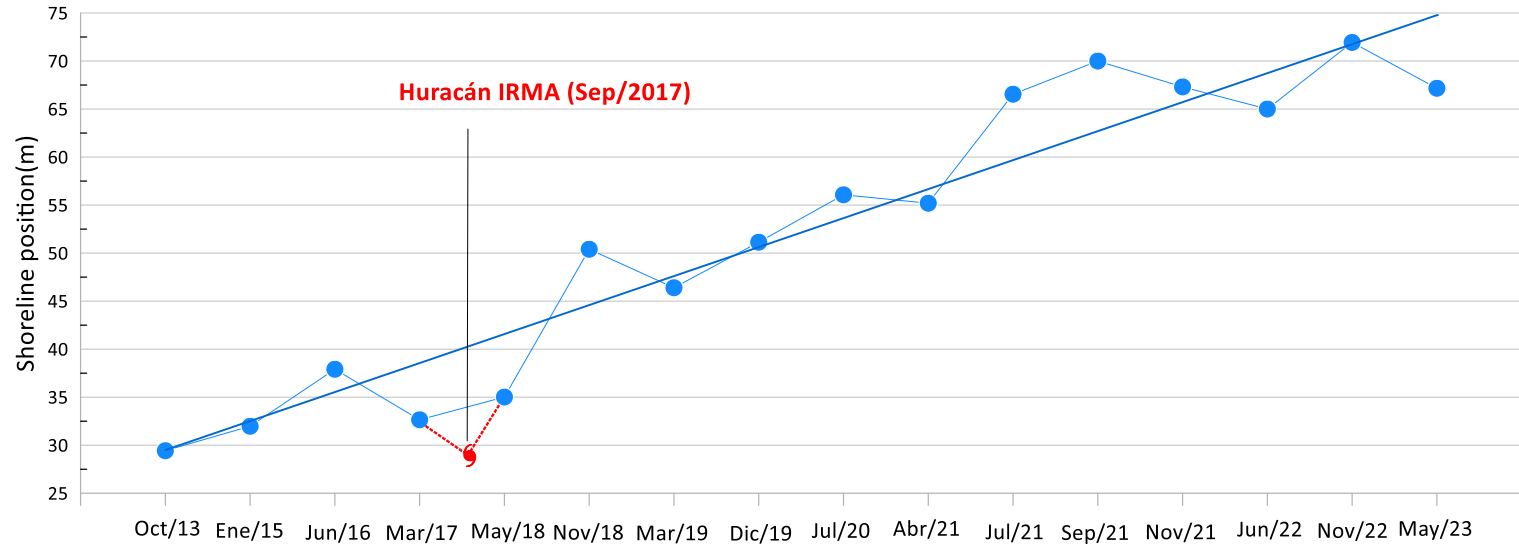
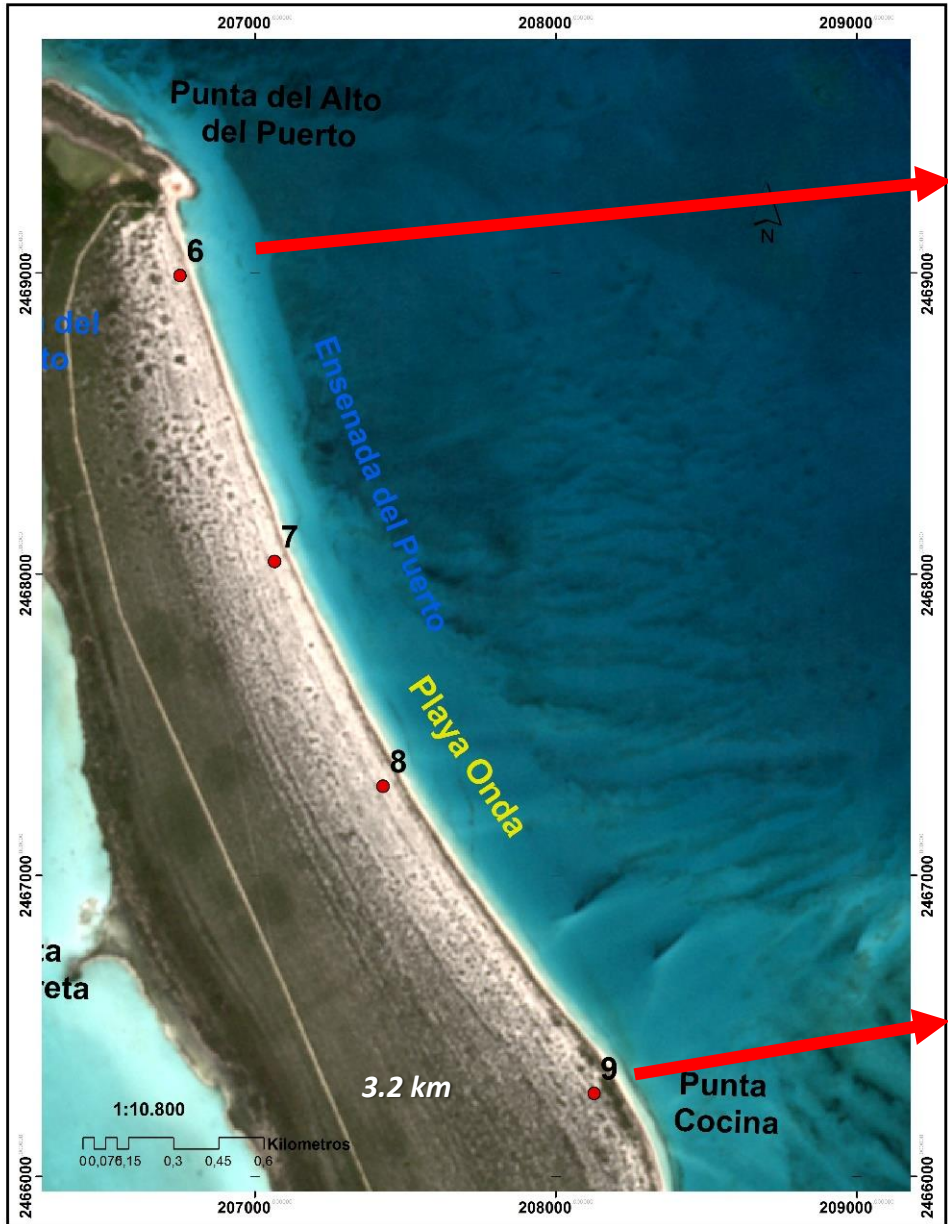


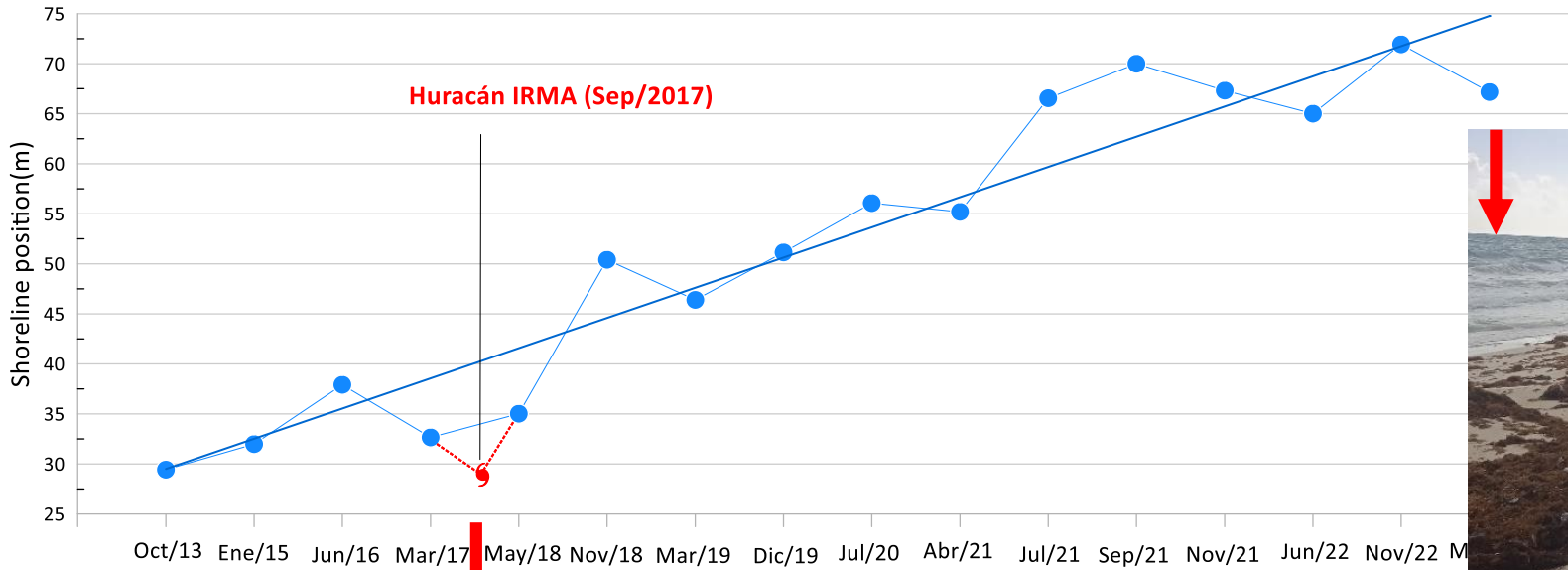
# **MAIN RESULTS OF THE MONITORING OF EROSION PROCESSES**



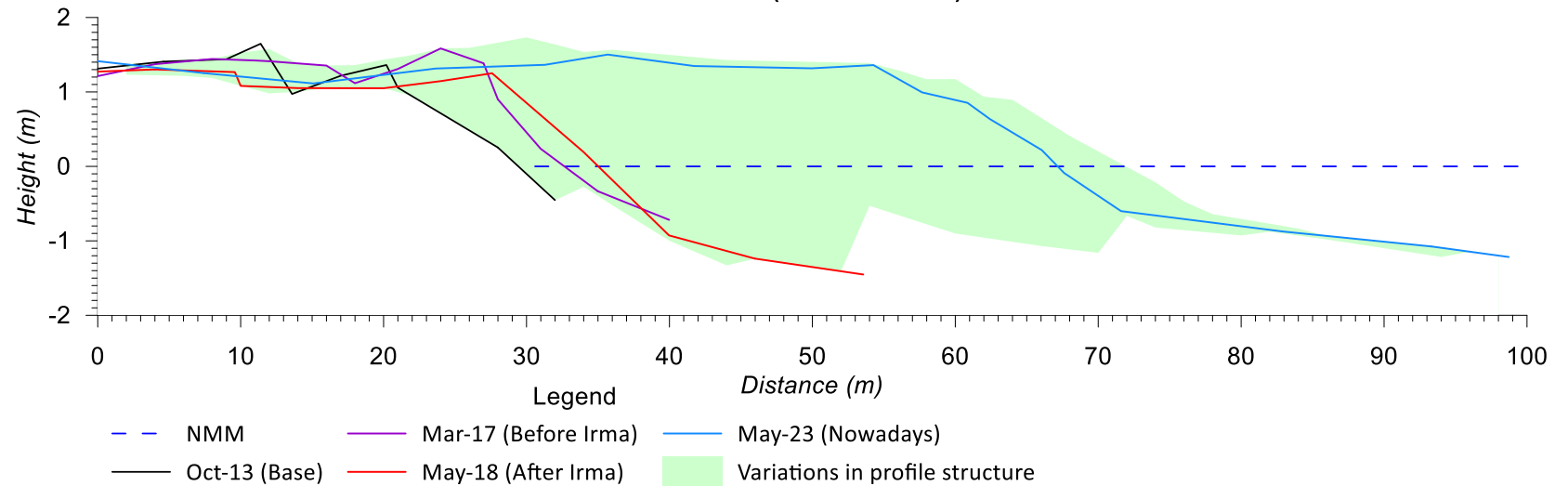
**Increase in the distance to the coastline, but similar volumes of sand are maintained**

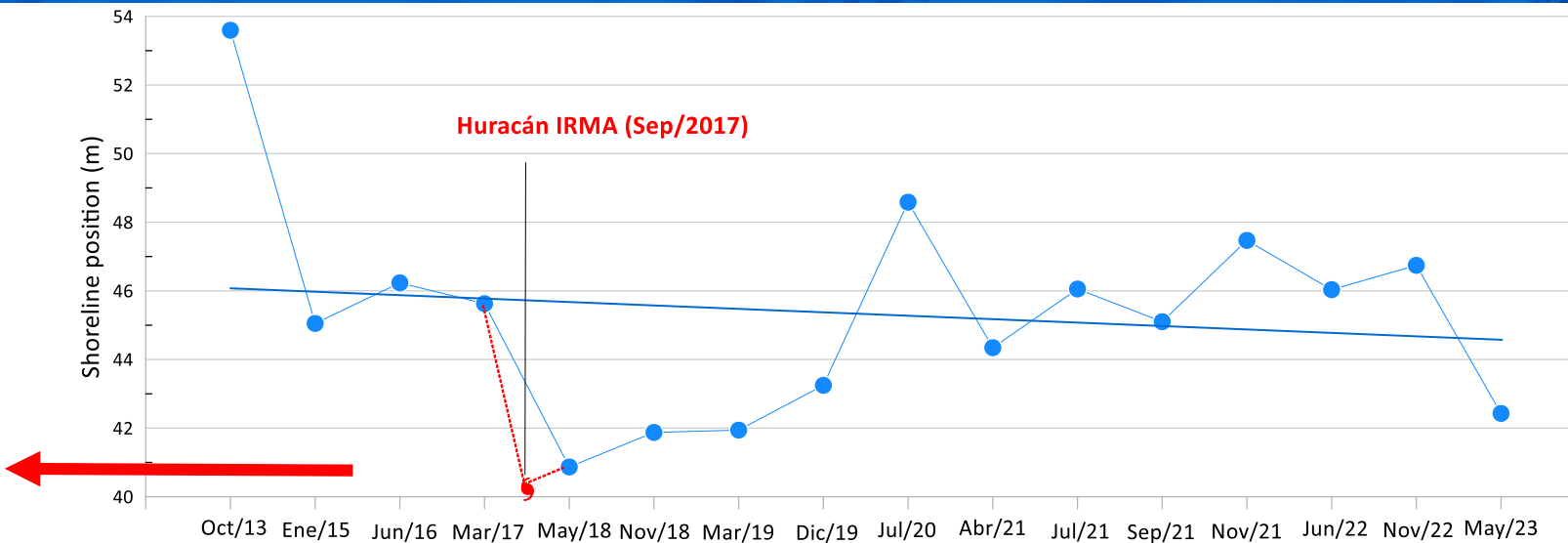




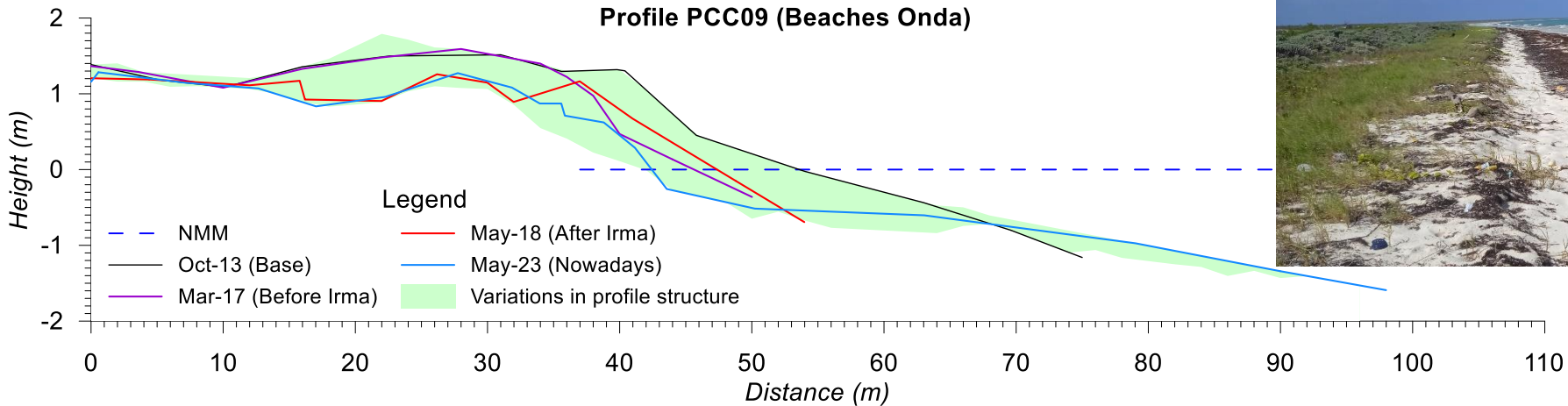


**Profile PCC06 (Beaches Onda)**

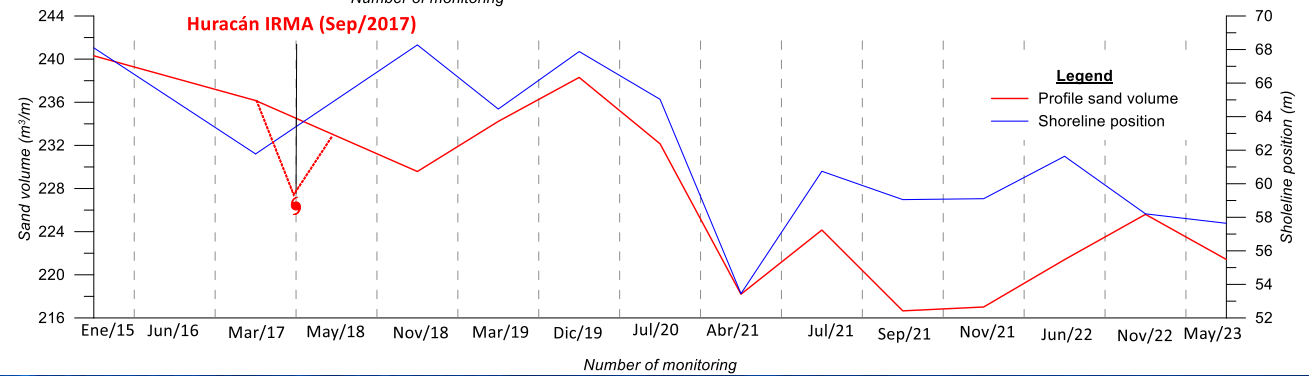
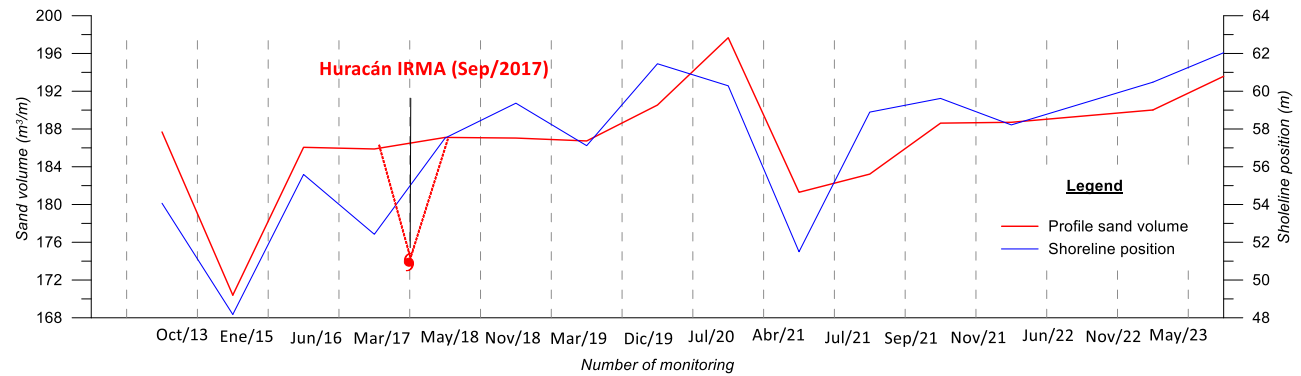
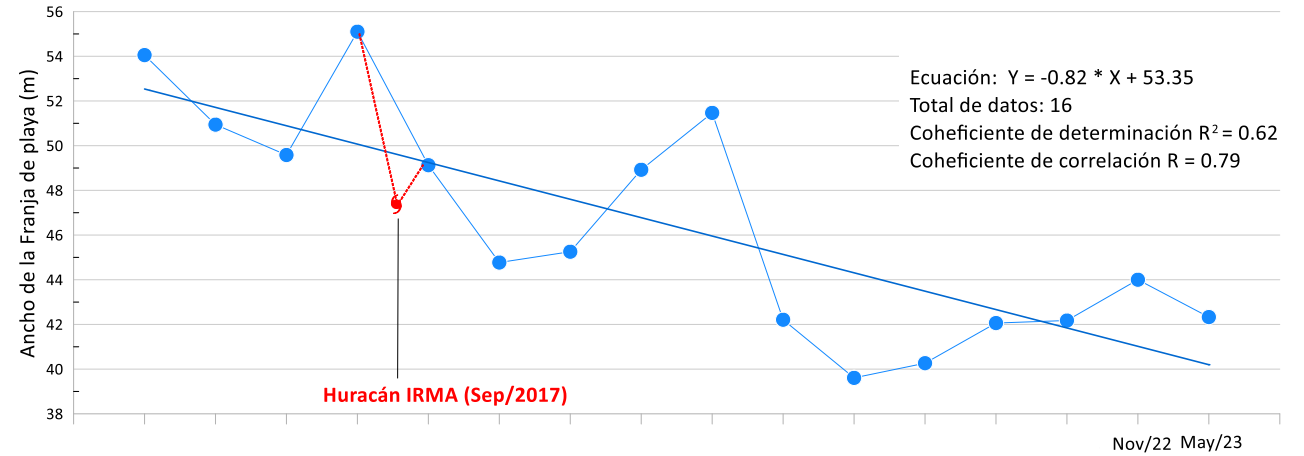
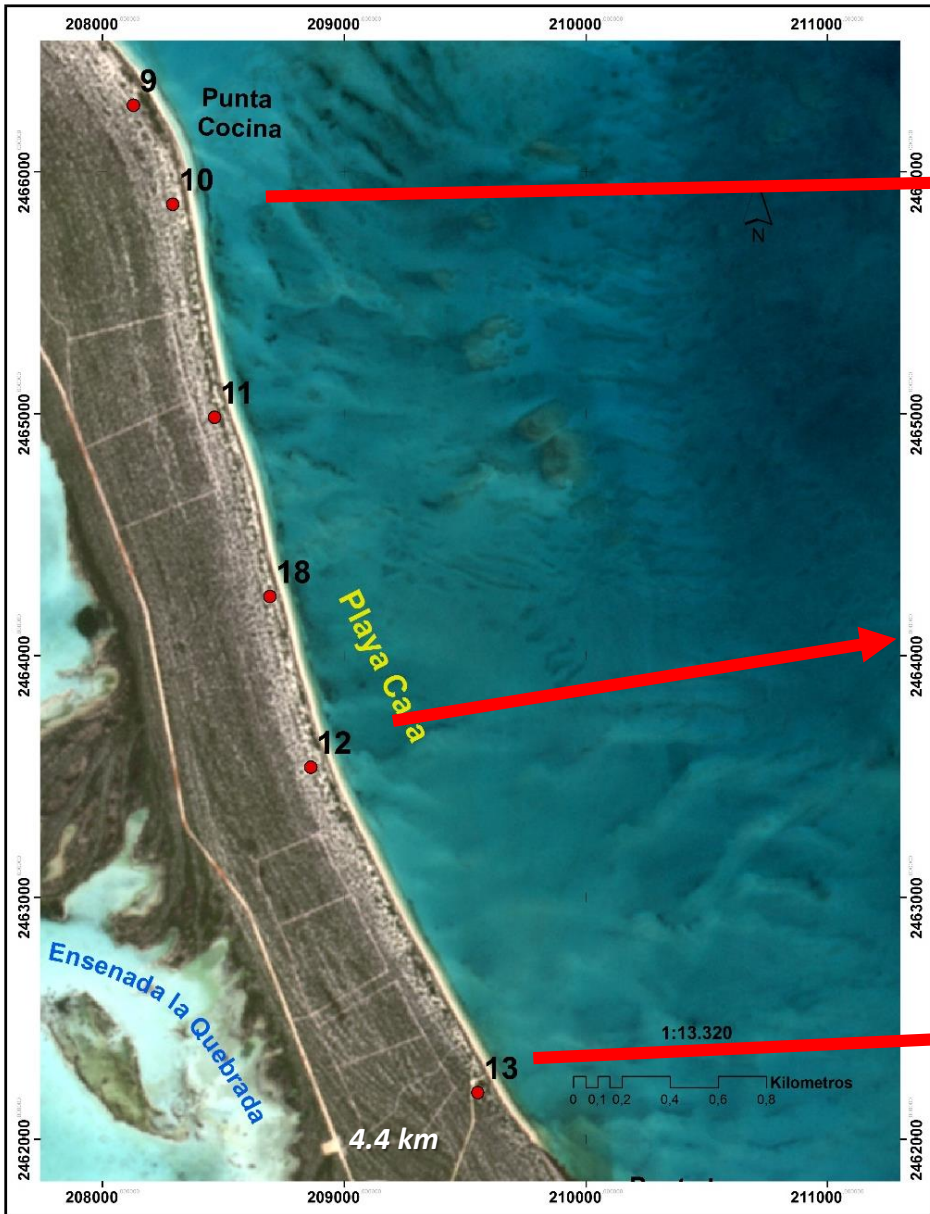


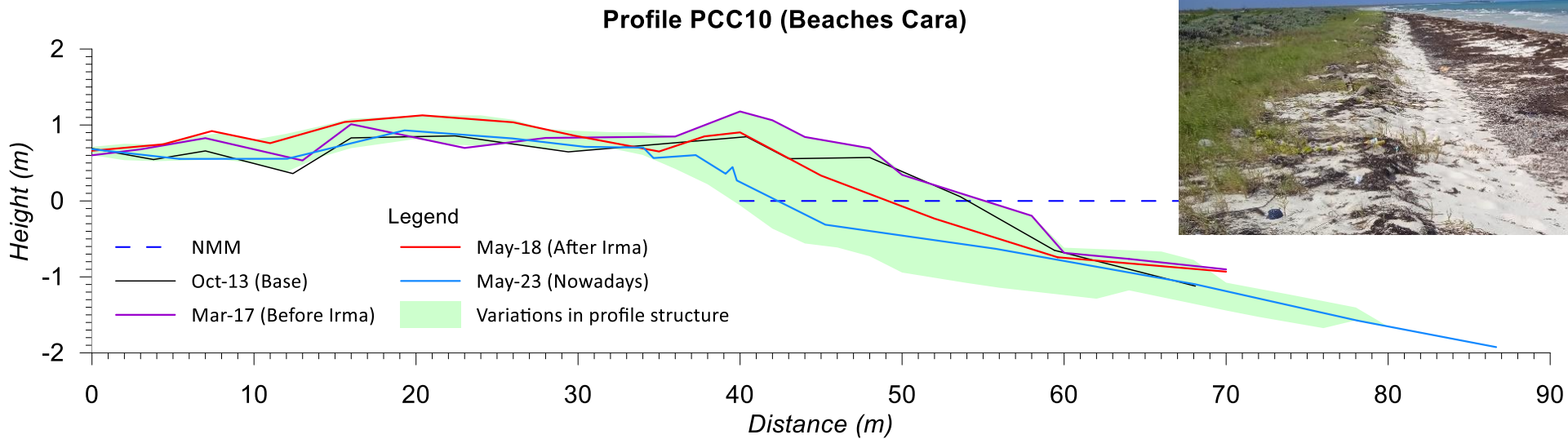
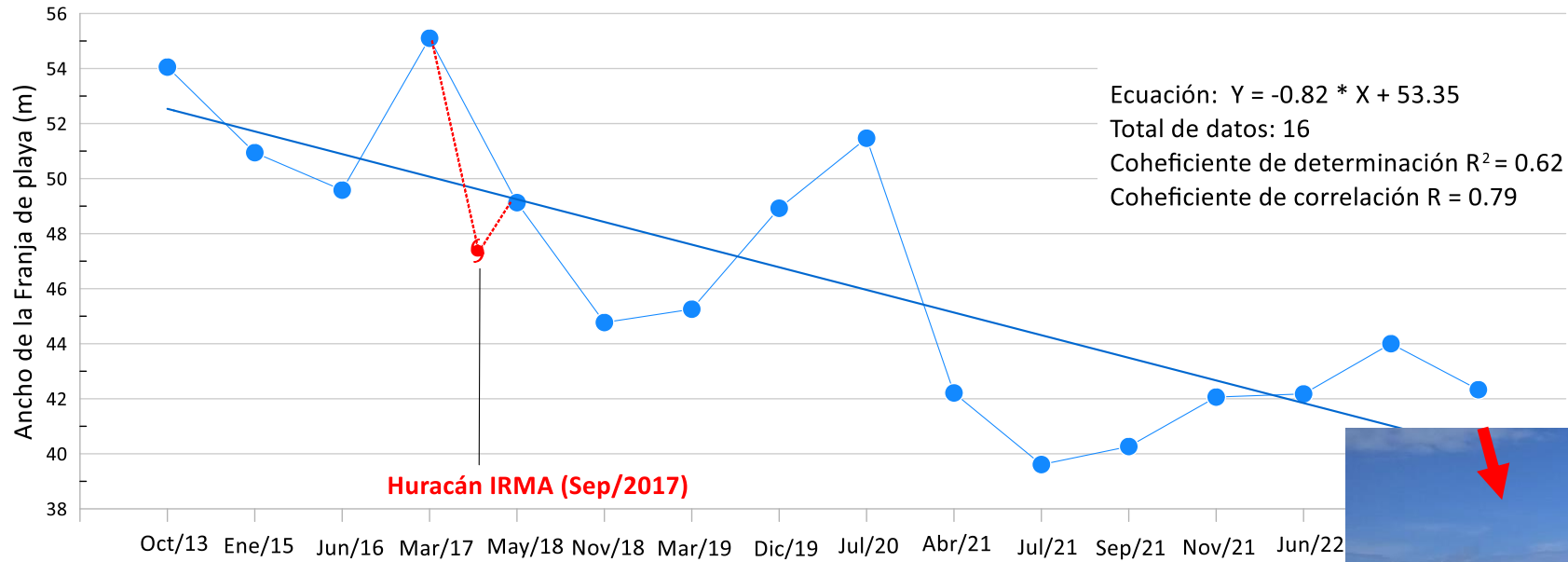


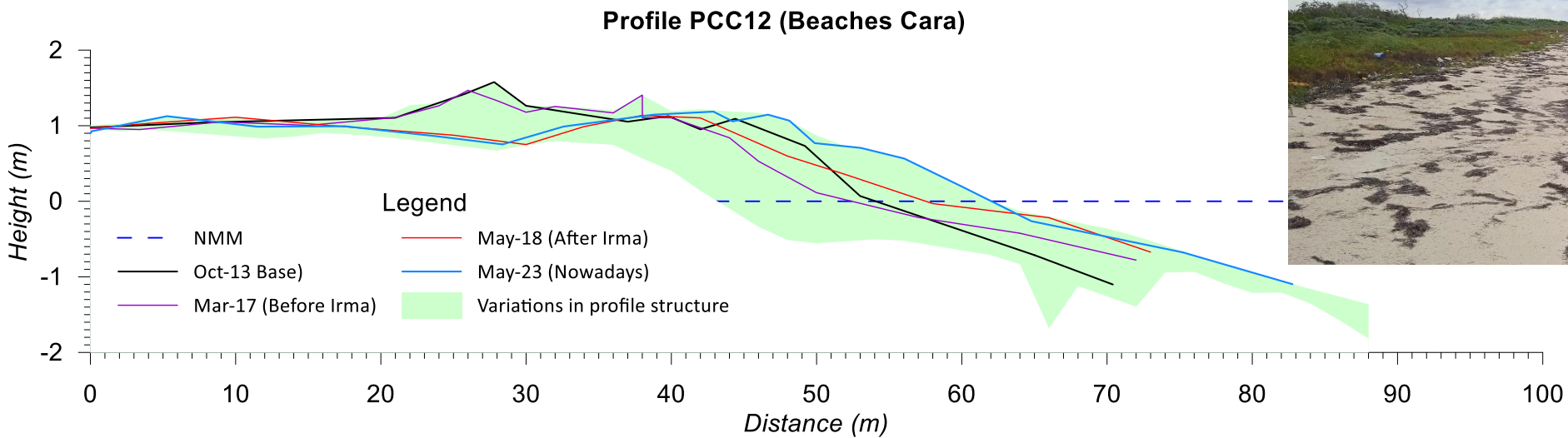
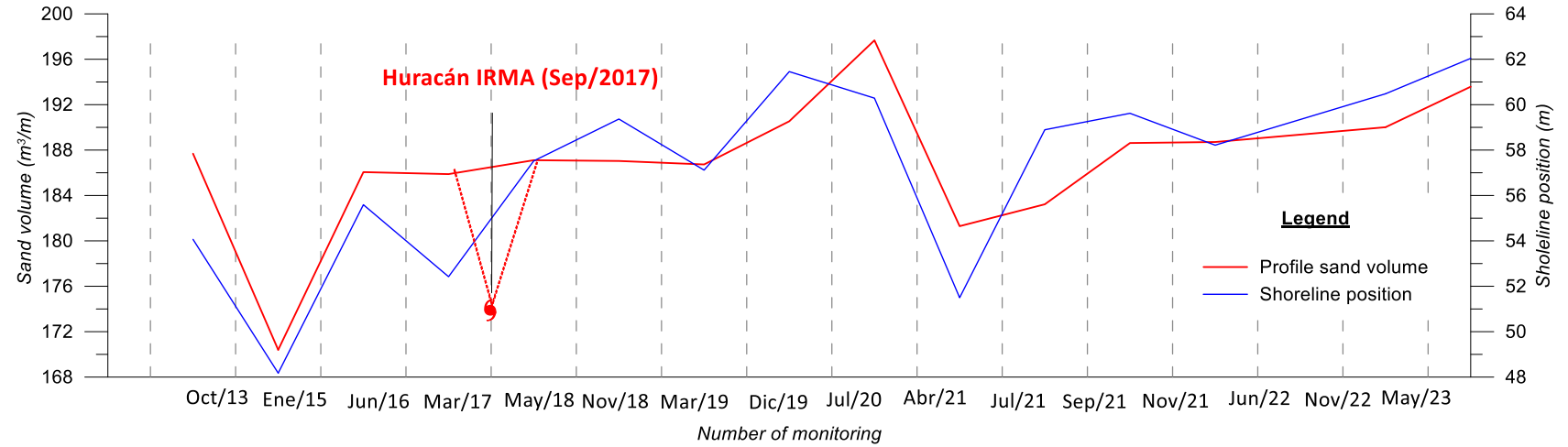
**Profile PCC09 (Beaches Onda)**

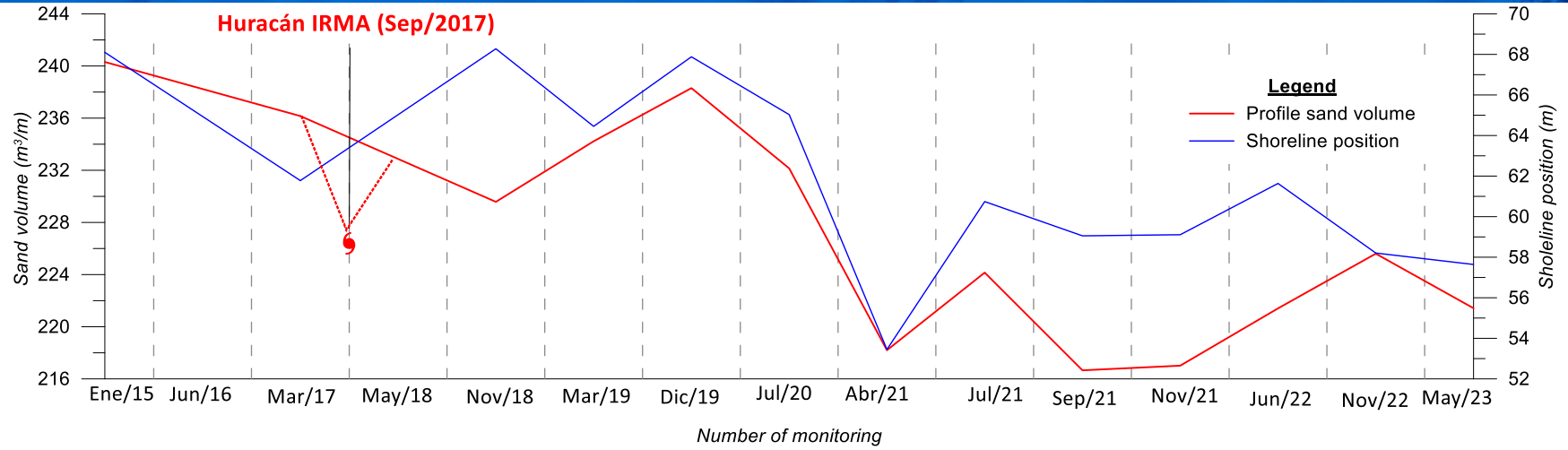




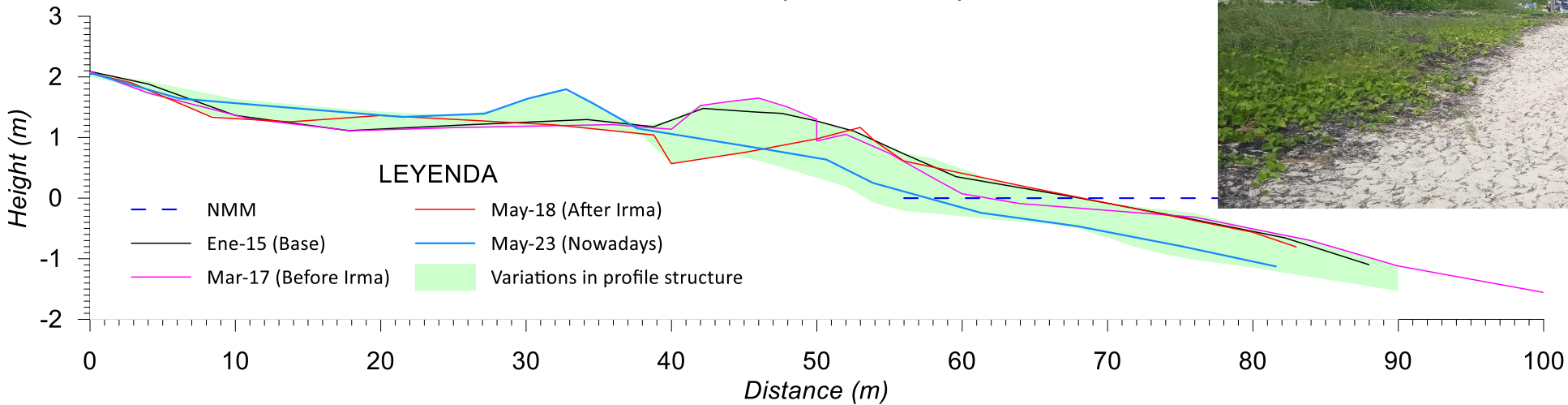




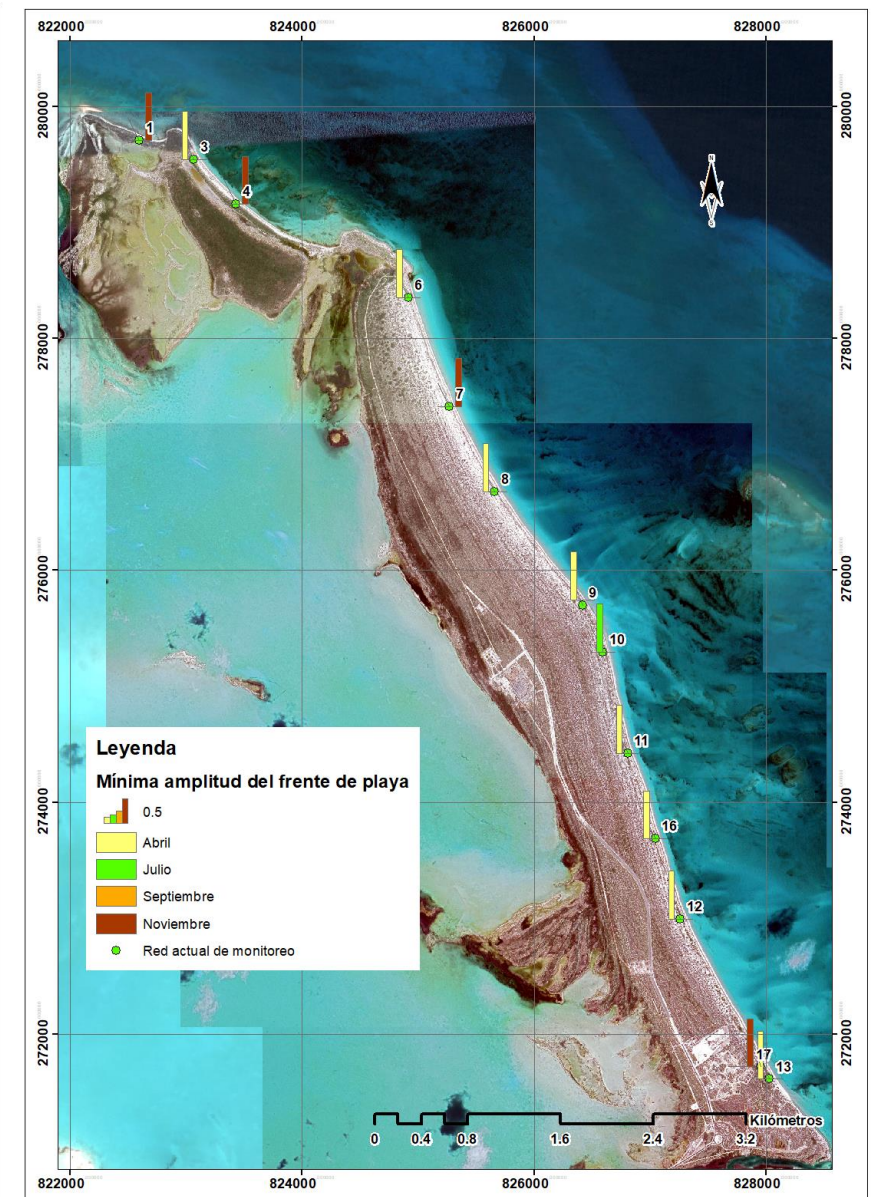
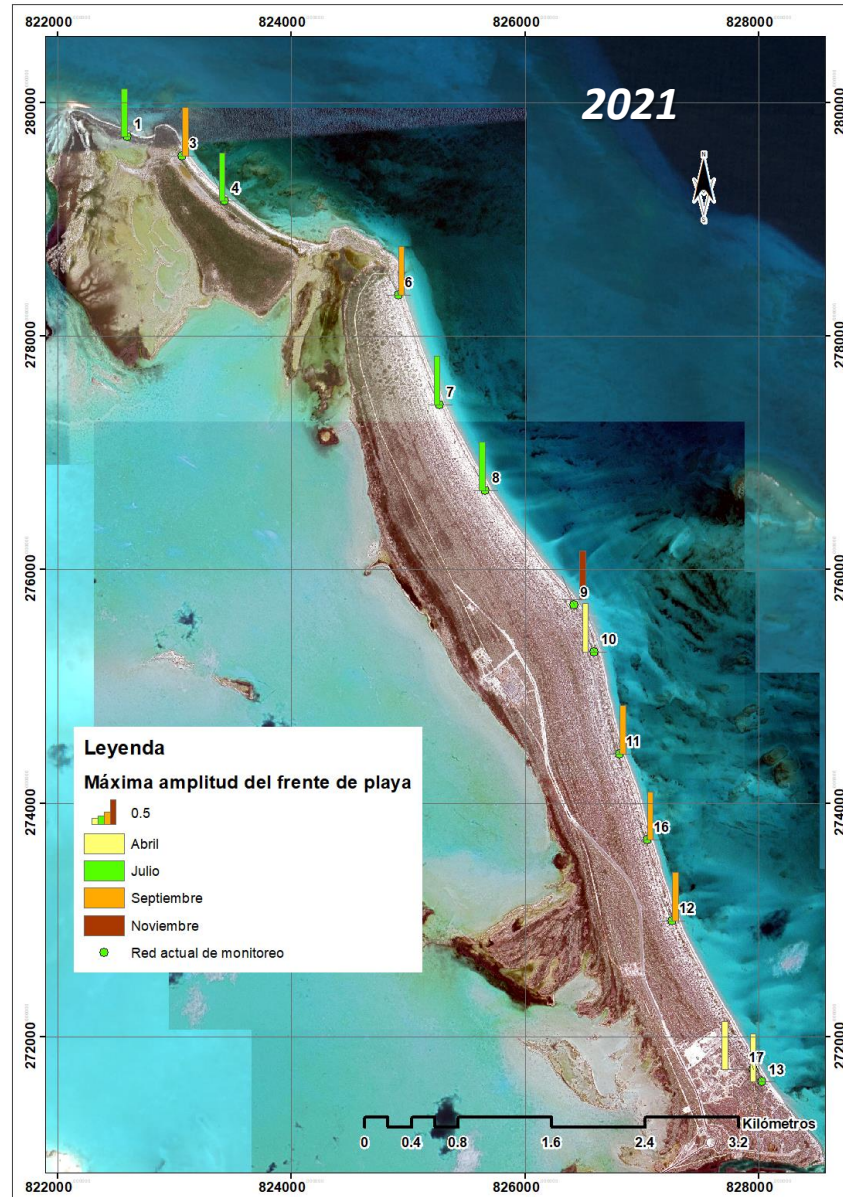


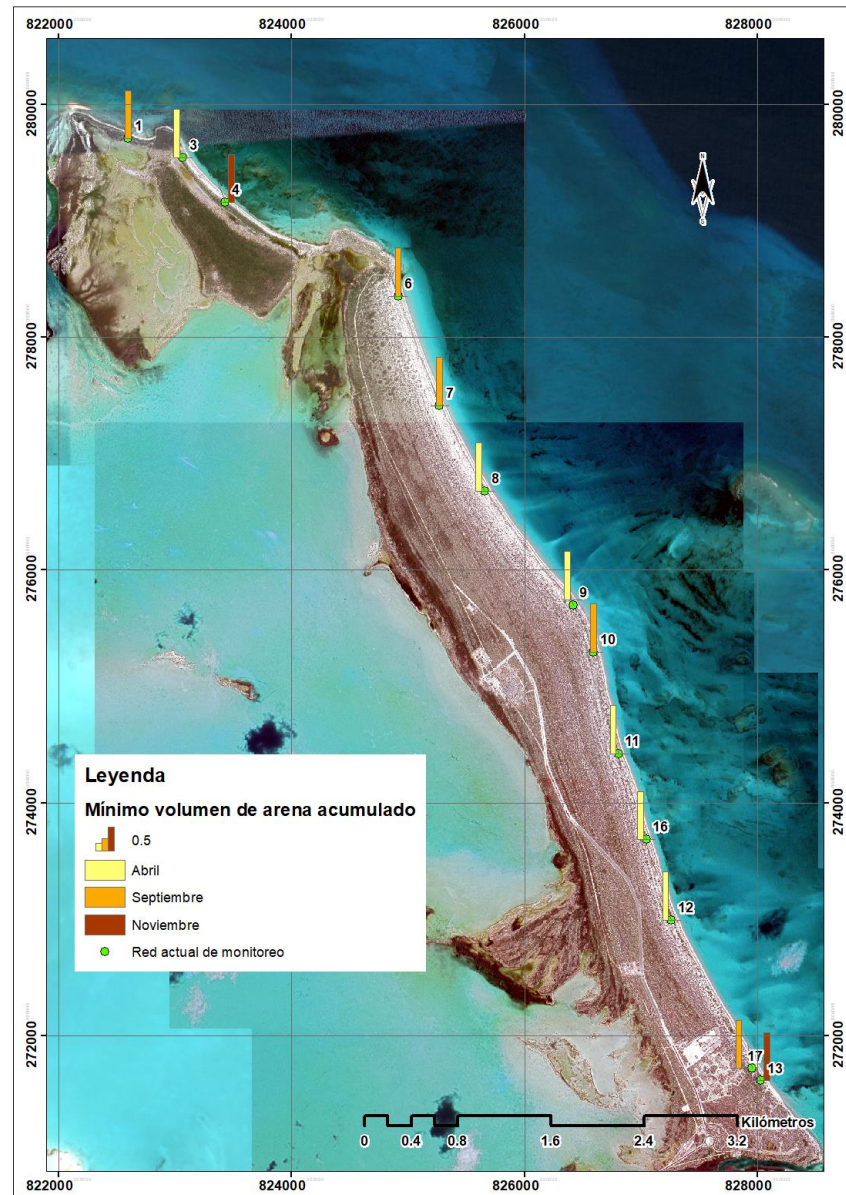
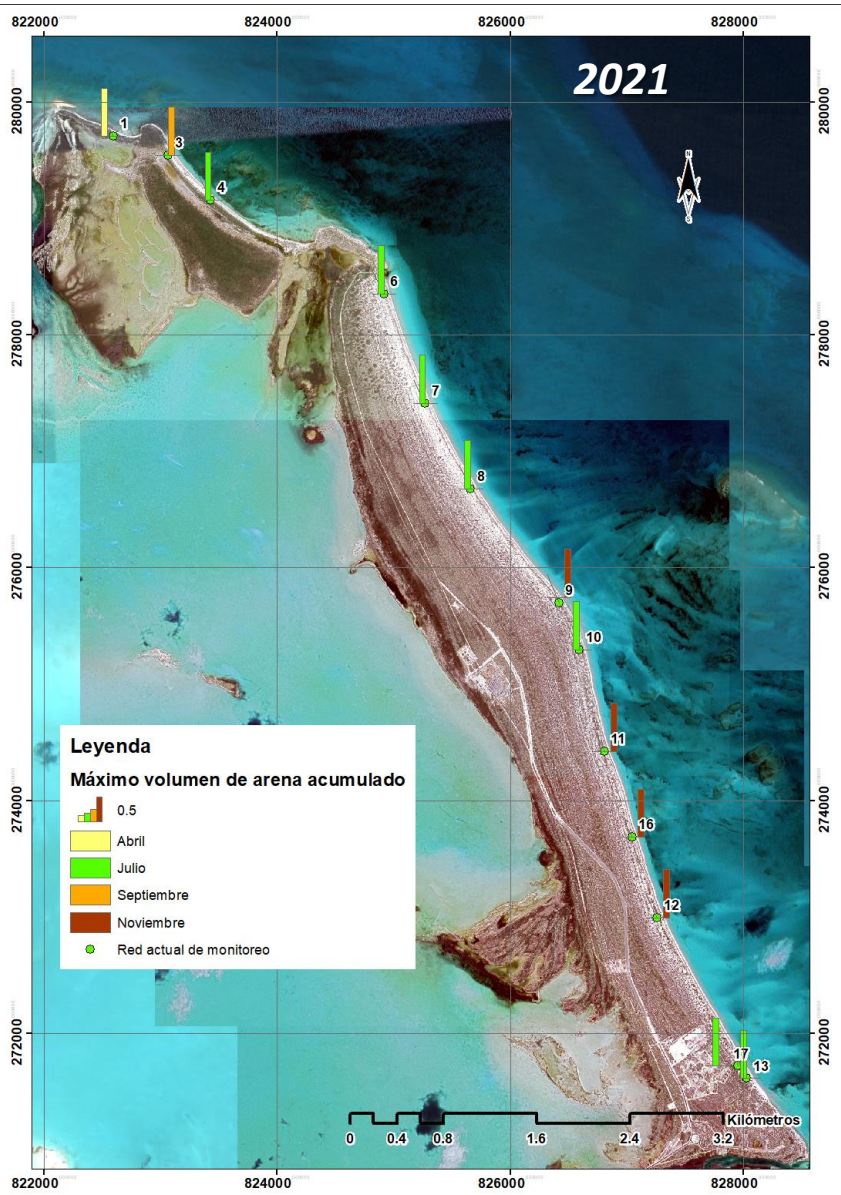


**Profile PCC17 (Beaches Cara)**



**Spatial relationship of the profiles with the monitoring periods with respect to the width of the beach**





***Spatial relationship of the profiles with the monitoring periods with respect to the volume of sand***



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***MUCHAS GRACIAS***