# The State of the Belize Coastal Zone. 2014-2018

# The Belize Coastal Zone

Orange Wall

Burrell

🖲 San Pe

City

Dangriga

It is a complex and dynamic terrestrial-marine system in which several abiotic, biotic and social systems interact and evolve.



It is home to a growing population 410,000 16 68 400,000 400,000 16.5 Number of inhabitants 390.000 0.000 16.04 16 380.000 380.000 370.000 **3**60,000 õ 360,000 350,000 340.000 14.5 2014 2015 2016 2017 2018 - • - Number of inhabitants - Population Density

145,615 Belizeans in 2018 lived in the coastal zone. Almost 4 out of 10 from the Belizean population live in the coastal zone.



Spanist Lookou

San Ignacio

3 km. Coastal

zone.\*

Santa Elena

ch

Belmopal

Punta Gorda

# What are the pressures on Belize's coastal zone and its environmental services?

(Based on literature, a survey and the perception of national experts)



Dredging activities are necessary for navigational channels maintenance, beach replenishment and land reclamation.

### **Resource extraction**

Except for dredging, resource extraction has no impact on coastal resources. No toxic substances are produced by these processes.

### Invasive species

Invasion of the lionfish is a threat to various fisheries in the Caribbean region. The lionfish invasion in Belize is extensive.

### Sargassum

The tourism sector was severely affected by the unprecedented levels of sargassum that reached the beaches of the Caribbean in 2018 and that resulted in estimated cleaning costs of US \$120 million.

## Lobster fisherv

Fisheries impacts in Belize are minimal. There are impacts through illegal, undeclared and unregulated fishing activities.

### Nutrient pollution

Agricultural, livestock and aquaculture activities contribute to nutrient pollution through runoff.

### Marine transport

Vessels collide with marine species and engine noise pollution displaces others.

### species; however, it is not clear what the trend is. **Symbols** Level of impact Trend Confidence level on the trend (quality and amount of evidence data and consensus) not feasible to make Very Getting Getting No-Very high High Low Very low No Limited Somewhat Adequate better consensus impact impact impact worse changes an assessment little adequate impact

### Tourism

Development for tourism and recreational activities has direct impacts on mangroves, littoral forests and modify wildlife's breeding, feeding and resting areas.

Atoll

Dredging



Coastal development and land use Hol Chan

### Sea level rise

37 localities with more than 200 inhabitants along the coast are located below a height of 1 meter.

### Marine pollution

Inadequate infrastructure for wastewater management remains a problem.

### Mariculture

There are limited possibilities of establishing feasible adaptation measures for mariculture in the marine environment due to unpredictable adverse weather conditions.

is unknown. Erosion

Energy

No new energy plants were constructed in

These two activities displace mangroves, littoral

inappropriate disposal of garbage and wastewater

**Climate and weather** 

forest and turtle nesting areas. Additionally,

has impacts faraway from the source.

The barrier reef, mangroves and littoral

change. However settlements and the

impacts from climate change and severe

Sediment transport

productive sectors experience strong

The construction of beach protection

infrastructure extracts sediments that are

not rapidly replenished by natural process.

Saline intrusion

Saltwater intrusion contaminates coastal

freshwater aquifers. However, the extent

weather events.

forests provide protection against hurricanes and tropical storms and up to now thet have low impacts from climate

the coastal zone. Therefore, there are no

impact on mangroves, littoral forests or

beaches by energy generation.

There are severe erosion problems along the entire coast of Belize with rates of up to -2.61 m/year and beach losses of 113 meters in 50 years.

## Aquaculture

There is evidence that aquaculture has impacts on the health of biodiversity due to the unwanted introduction into the wild of exotic

### **Sport fishing**

Galles

Point



Species populations for sport fishing are vulnerable to fish nets and coastal development.



# 🕡 🖲 Dangriga



# What is the state of the coastal habitats and species ?

(Based on literature, a survey and the perception of national experts)

### **Coastal habitats**





**2%** of the original mangrove has been lost since 2010

Land clearing for urban development was the main cause of mangrove deforestation.





### **2.8 RHI** In 2018 the Healthy Reefs Report

The overall reef health in Belize was in fair condition. The coral cover was still fair compared to 2015. In Belize, parrotfish biomass continued to increase after protection in 2009.

# Species populations

### Antillean manatee

manatee stranding between 2014-2018 Mortalities were mainly due to collisions with watercrafts. There were more females stranding than males.

### **Marine turtles**

### Marine turtles nesting sites protected between 2014-2018

The number of nest were almost stable for the green and hawksbill turtles while there was a decrease in number of nest for loggerheads.



### Fish spawning aggregations

Nassau grouper spawning aggregations sites were fully protected in 2014. These sites are used by various other species such as the mutton, cubera and yellowtail snappers.





Estimated area covered by 25 Km<sup>2</sup> littoral forest

Defined as a narrow band of trees which grow along the sandy beaches bordering the coastlines, coastal littoral forests are severely threatened and can become globally extinct.

Seagrasses





Seagrass was dying due to the lack of sunlight for photosynthesis and anaerobic conditions created by the decaying sargassum along the coastline and cayes.

### Water quality



Along the coastal zone, mainly in front of coastal settlements, there is a significant increase of chlorophyll content in the water. This is an indicator of nutrient pollution as a result of wastewater discharges.

# Protected areas 🗾 🚽



21.7 % of Belize national marine area is protected

There are 16 protected areas under the Fisheries and Forest Departments with co-management of some areas by nongovernmental organizations.



### **Symbols**



worse changes



better consensus

Confidence level on the trend

(quality and amount of evidence data and consensus)

Limited

not feasible to make Very an assessment little

Somewhat Adequate adequate



934



# What is the effectiveness of the coastal management? (Based on literature, a survey and the perception of national experts)

