

Protect
our coast.
Protect
OUR future.



**An Integrated Coastal
Zone Management Initiative**
by The Coastal Zone Management Unit







INTEGRATED COASTAL ZONE MANAGEMENT (ICZM)

is a way to manage the coast, which includes all aspects of the coastal zone. The goal is to maintain our natural resources properly.

Stay safe from STORM SURGE

What's the problem?

Storm surge happens when the high winds from tropical storms and hurricanes push abnormal amounts of seawater onshore. As a result, storm surge poses a threat to Barbados' coastline.

What's the impact?

Storm surge impacts coastlines financially, structurally and socially through

- Displacement of people and communities
- Destruction of shoreline's natural and artificial defenses
- Destruction of marine life and habitats

When we litter and fail to keep our surroundings clear and clean, excess dead leaves, litter and other foreign materials can block drains and prevent storm water from running off in a timely fashion. And not just on the beach! Litter and debris can travel over land or through underground watercourses, creating blockages in the drainage systems which are needed if storm surge happens.

You Can Help

- Don't Litter
- Build further inland if you can
- Have an evacuation plan

Keisha





WHAT CZMU IS DOING

As part of our integrated management approach the CZMU mapped the coast and wave activity to highlight areas most affected by storm surge. These efforts will help protect our coast through better planning and designing coastal protection structures to reduce risk of damage from climate events.

So what can we do?

Pay attention! Prevention is better than cure.

- Before a storm, build a better Barbados! When planning your piece of the rock, choose to build further inland on higher ground, reducing the risk of injury and damage due to storm surge
- Have an evacuation plan before the storm comes to know what to do in case of emergency
- Keep drains clear of litter and debris
- Properly dispose of garbage to avoid blockage of drains and litter washing into the ocean
- When out at sea, fishermen should report issues with offshore buoys (collecting data on wave conditions at North Point, East Point, and Oistins) to CZMU

Get to Higher Ground

- During a storm, don't wait to evacuate! Know the nearest shelter, family or friends where you can go to be safe from storm surge.

Better Protection

With the combined efforts of the CZMU, government, visitors, and every resident doing their part, we can help lessen the impact of storm surge. As a result, our coastline, our people and our nation will be better protected.

Protect our home from

COASTAL EROSION



What's the problem?

Living on an island means that the coast is in everyone's backyard, even St. George. Which means, any erosion of the coastline impacts not just tourism but the lives of everyone who lives here. And believe it or not, we impact the coast as well.

Since the 1950s, the shoreline of Barbados has changed quite a bit. Almost 10% of our coastline is eroding, while only 2% is growing through the depositing of sand.

Most coastal erosion has occurred on the northern-west coast of the island, making this stretch of shoreline more vulnerable to climate change and climate events.

What's the impact?

Building along the coast impacts how sand moves with the natural tides. It's important to build with guidance from government and the coastal experts to ensure your structure helps maintain the coast's wellbeing.

You Can Help

- Don't remove beach plants & sand
- Dispose of garbage responsibly
- Consult experts before building on the coast

Andy

Ethan

An illustration showing the movement of sand along the Barbados Coast



WHAT CZMU IS DOING

The CZMU conducted a study to better understand how sand is made and how it moves around the coastline. This has helped to better identify and prepare for the activities and events that cause coastal erosion.

Did you know that 85% of the sand on the south coast comes from the south east? This helps us to understand how we can better manage all of our beaches on the south coast, including Carlisle Bay.

What can we do?

- Like the sand at the beach? Leave it there! Removing sand from the beach increases the risk of coastal erosion
- Leave plants and trees on the beach
- Don't litter

Happy Beaches

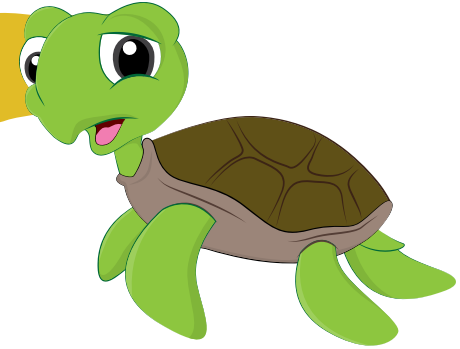
The CZMU is using what was discovered in the study to create programmes that will positively impact our beaches. Every little bit helps! When we all play our part in protecting our coastline, we can be sure that we are doing all we can to leave a healthier coast and country for the next generation.

Contribute to

CORAL HEALTH



Terry



What's the problem?

Coral reefs provide protection from waves and supply sand to the beaches. Without them, our coastline would be exposed to the dangers of coastal erosion and storm surge from major climate events.

Pollution from sources on land is making its way to the coast, contaminating the nearshore marine environment and threatening coral health. A CZMU study highlighted that there is less than 20% coral cover around Barbados, a situation that will only get worse with time if we don't do something about it.

What's the impact?

Tests of the water quality revealed that nitrates in our wastewater and groundwater are negatively impacting the health of coral reefs around the island.

- Chemicals used in agriculture, along with wastewater disposal from homes and hotels were found to be major sources of contamination to our marine environment near the shore.
- Land-based chemicals such as fertilizers that include nitrogen, and human waste disposal, get into the soil and underground water systems and flow out to sea, creating a harmful environment for coastal and marine life.

Did you know?

80% of all pollution in the ocean comes from people on land.





- In 2017 alone, over 800lbs of garbage were removed from South Coast beaches. Divers typically remove over 100lbs of garbage from underwater at Carlisle Bay during an underwater clean up.
- In 2016, 4 tonnes of garbage were collected on a few beaches around the island.

And worldwide:

- 8 million tons of plastic per year ends up in the ocean, wreaking havoc on wildlife, fisheries and tourism.
- Plastic pollution costs the lives of 1 million seabirds and 100,000 marine mammals per year.
- Fish eat plastic, and we eat the fish.
- Plastic causes \$8 billion in damage to marine ecosystems each year.

You Can Help

- Use chemicals that breakdown harmlessly
- Reduce use of nitrogen-based fertilizers
- avoid damaging reefs with boat anchors

WHat CZMU is Doing

To find out more about the negative elements impacting coral health and what we can do to help solve the problem, CZMU conducted a study to measure the quality of water and the impact that the waste we generate on land has on coral and the coastal marine environment on the whole.

So what can we do?

We can positively impact coral health by improving the processes we use in agriculture, along with finding better ways to treat and dispose of our household wastewater, but we have to have an integrated approach.





Vinegar, lemon juice, salt and baking soda break down harmlessly in the environment and are powerful cleaning agents as well. By swapping out stronger chemicals for products based on these, we can reduce the harmful impact wastewater run off has on the coastal and marine environment. Residents, farmers, tourists, boat operators and fishermen can care for Coral Reefs by:

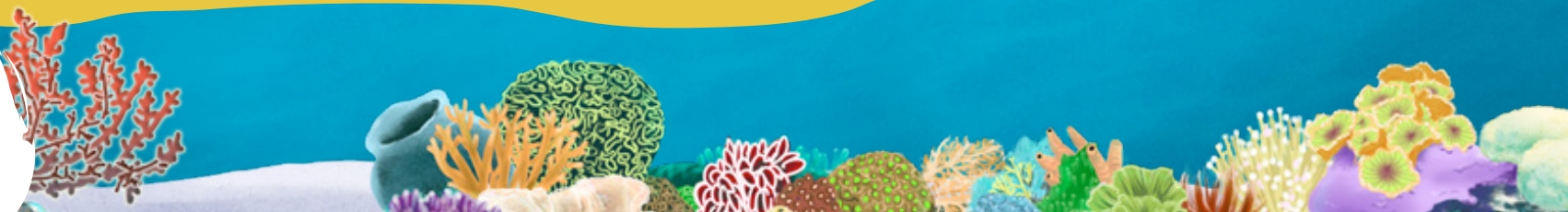
- not polluting
- not using / reducing nitrates
- not harvesting coral
- not overfishing
- avoiding damage to the reefs with boat anchors

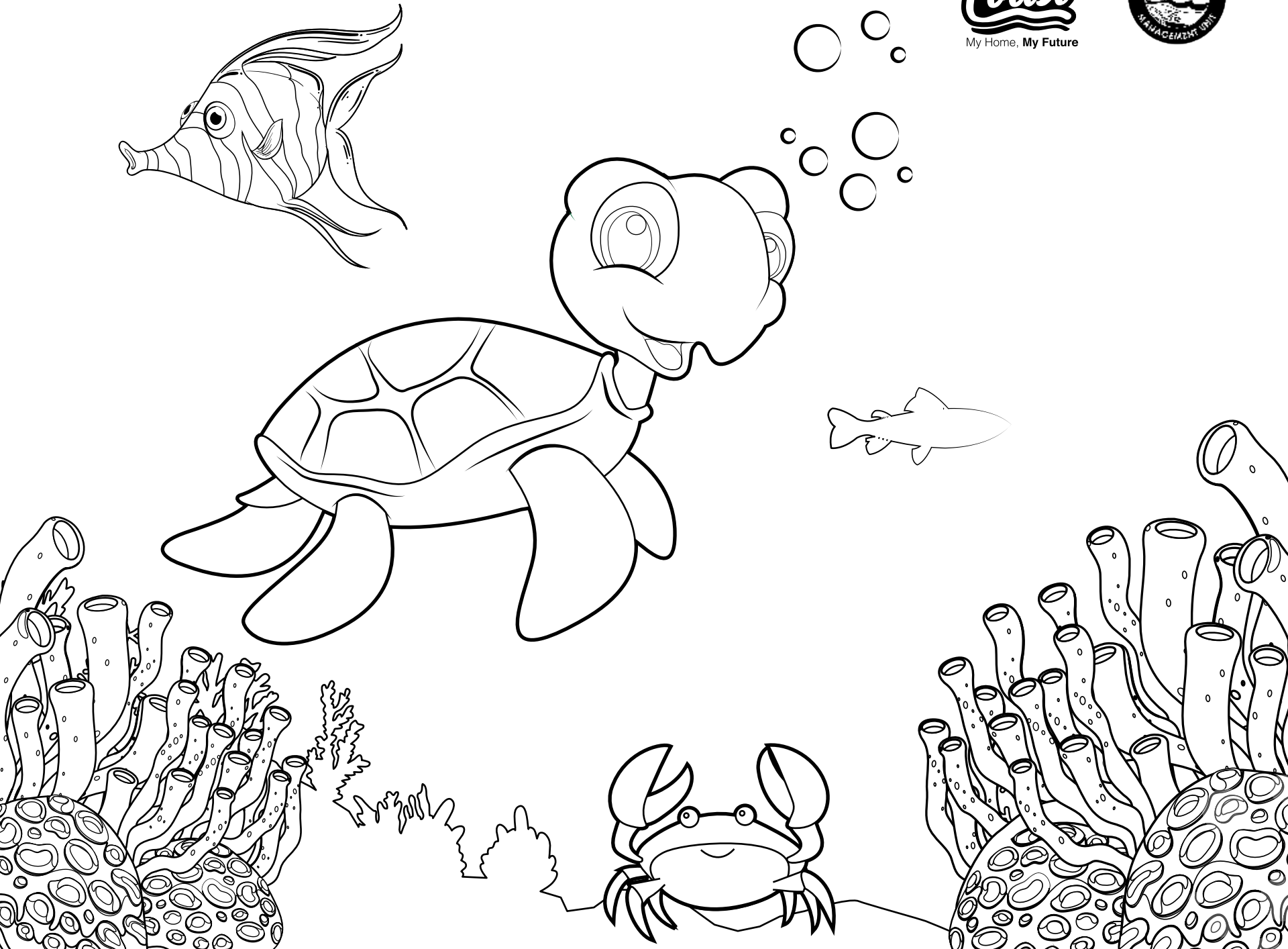


On a national level, maintaining our sewerage system, which is the collection of pipes and treatment facilities, is key to ensuring harmful nitrates and waste water don't make it into the sea.

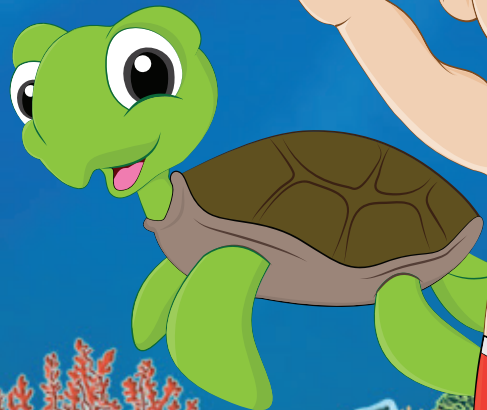
Thrive Coral, thrive!

By having an integrated approach to reducing chemicals in agricultural and wastewater disposal processes, along with properly disposing of our land-based waste, we can take a new approach to making sure our coral and marine environment remain healthy and thrive; all part of keeping Barbados beautiful.





LET'S PROTECT OUR BEACHES,
OUR COAST, OUR HOME,
OUR BARBADOS



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