



# THE BARIMA-MORA PASSAGE

REGION ONE, GUYANA



Written and Produced by the Guyana Marine Conservation Society





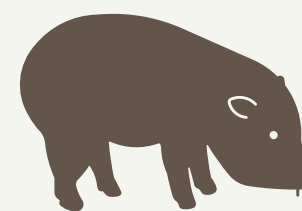
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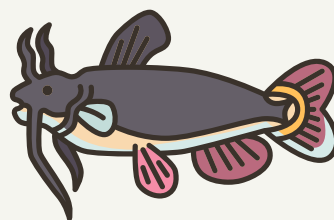
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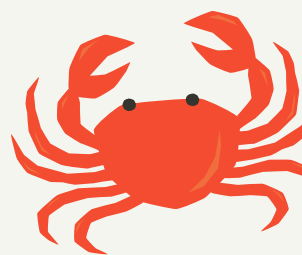
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# CHAPTER 1: BARIMA-MORA PASSAGE

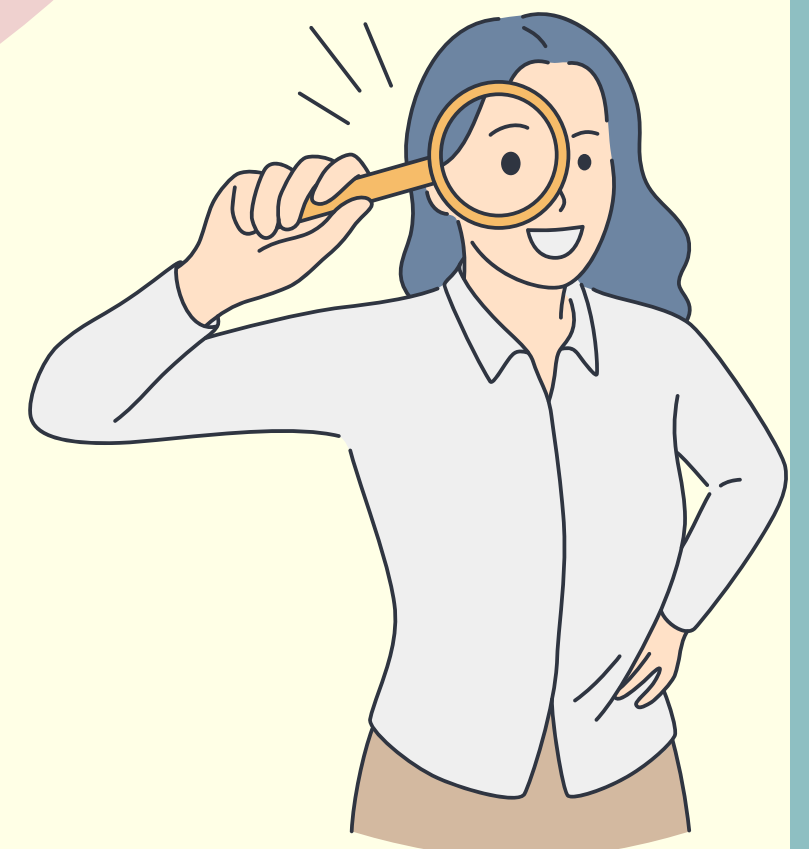


The Mora Passage is located in Region 1, Barima-Waini. It was once a small creek that flowed from the Barima River into the Waini River before emptying into the Atlantic Ocean. Over time, the creek became wider because of all the big boats travelling through the creek to access the Barima River. Today, the creek is almost as wide as the Barima River in some parts.

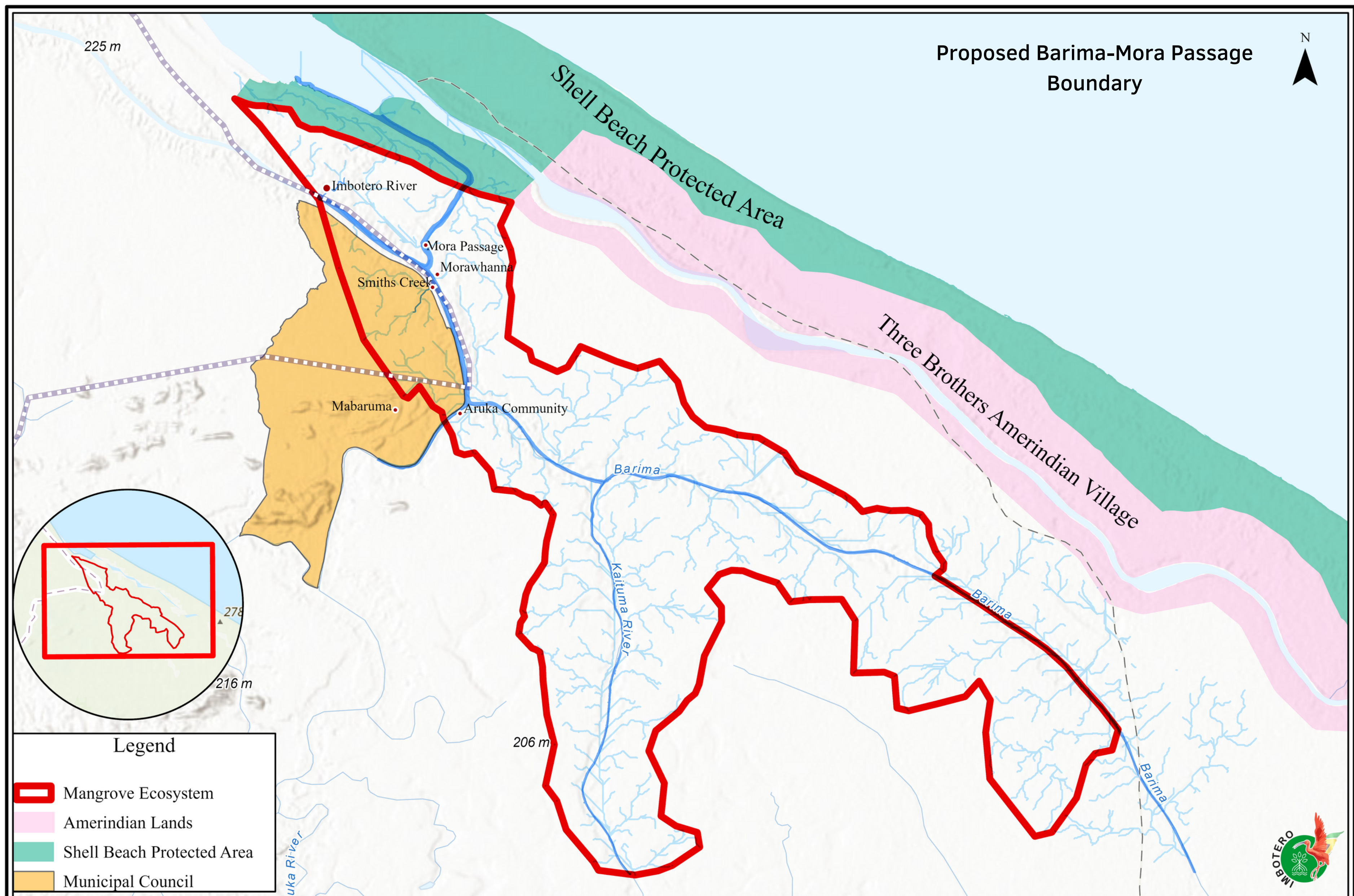


In 2019, a study done by researchers from the University of Guyana showed that the Mora Passage and other areas along the Barima and lower Kaituma rivers were a part of Guyana's largest mangrove forest. The Guyana Marine Conservation Society (GMCS) saw the importance of this area and the name 'Barima-Mora Passage' was given to it. GMCS is working with the communities to secure the protection of the mangroves and all the animals living there. As a result, the people living there will benefit from a healthy environment, a source for their food and a way to earn money.

A researcher is a person whose job is to study and discover information that will teach us something new.







**LATITUDE GEOSPATIAL**  
SCIENCE CREATING A BETTER FUTURE

## BARIMA MORA PASSAGE MANGROVE ECOSYSTEM

COUNTRY: Guyana | REGION: 1 | LOCALITY: Barima

CRS: WGS84

0 1.75 3.5 7 Kilometers

**SCALE: 1: 250,000**



The Barima-Mora Passage is a very special place for mangroves because it is Guyana's largest mangrove forest. There are freshwater swamps, wetlands, and savannahs that can be found within this area. It has rich resources that support many communities in and around the area for fishing, crabbing, and transportation along the rivers and creeks.

A wetland is a large area of land that is covered by swamps.





# CHAPTER 2: THE MANGROVES

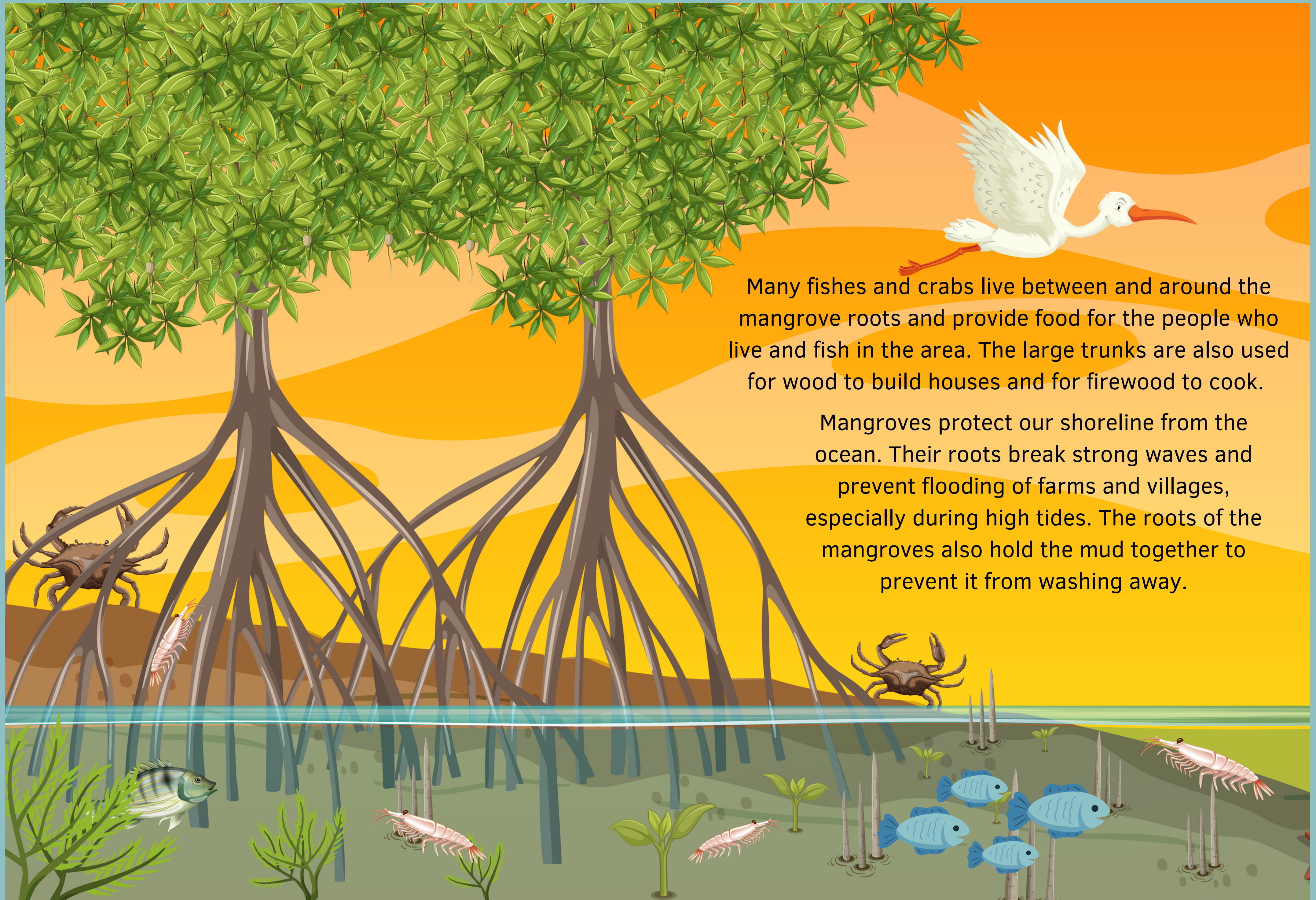
An illustration of a mangrove forest. Two large mangrove trees with dense green foliage and prominent prop roots are in the foreground. The ground is brown and uneven. In the background, there is a body of water and a blue sky. A callout box is in the bottom left corner.

Mangroves are a special group of trees found growing along the coastline and the riverbanks. They can survive in both saltwater and freshwater. There are different types of mangrove trees but all of them are protected under the Forest Act. The main ones found in the Barima-Mora Passage are the Red mangrove (wild mango), shown on this page, the Black mangrove (cruda), and the White mangrove (kiara).

Mangrove forests are among the richest and most diverse ecosystems in the world. The most common mangrove in the Barima-Mora Passage is the Red mangrove, which is found in front of the river banks while the black mangroves are found behind.

Diverse means that there are a lot of different types of plants and animals.



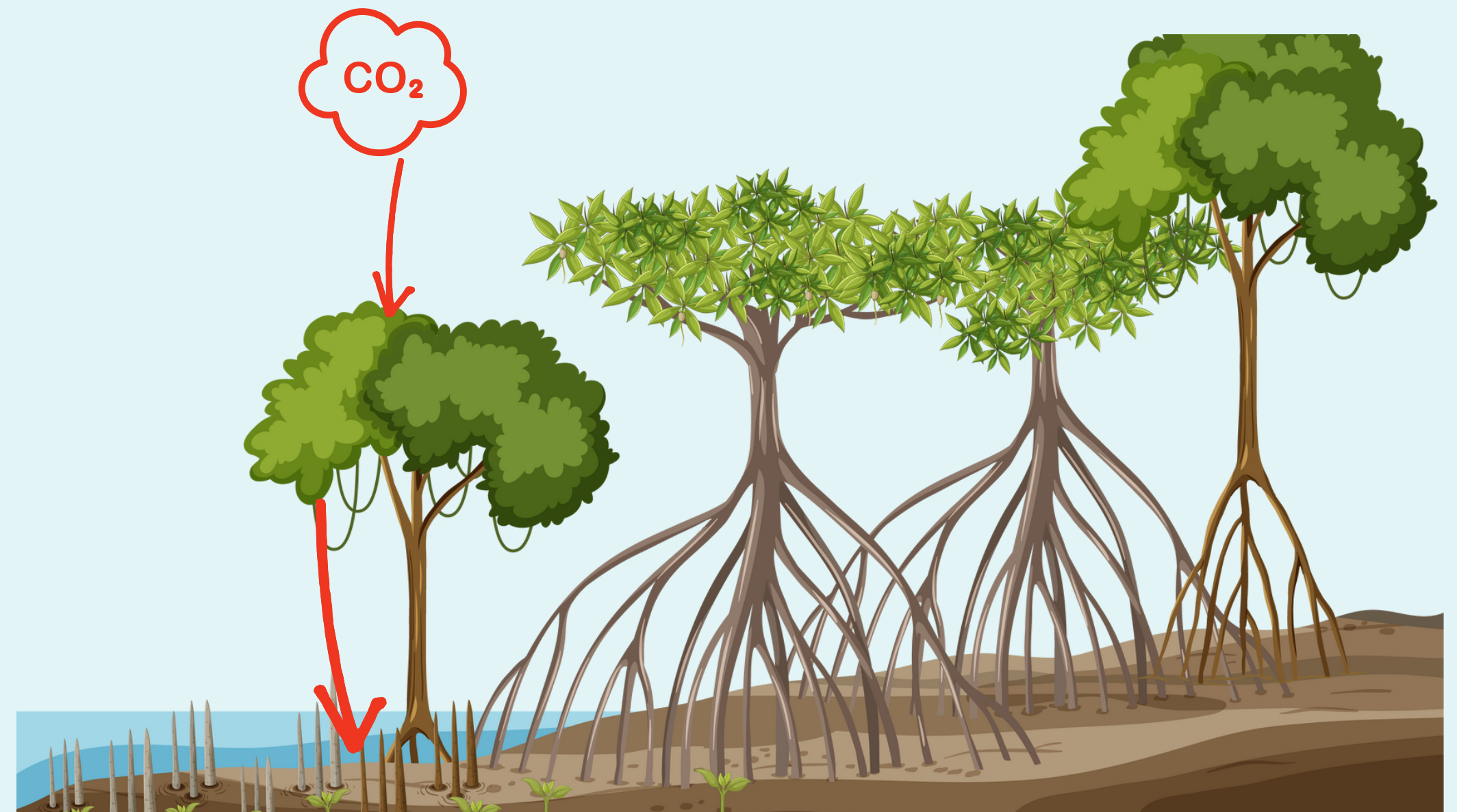


Many fishes and crabs live between and around the mangrove roots and provide food for the people who live and fish in the area. The large trunks are also used for wood to build houses and for firewood to cook.

Mangroves protect our shoreline from the ocean. Their roots break strong waves and prevent flooding of farms and villages, especially during high tides. The roots of the mangroves also hold the mud together to prevent it from washing away.



Mangroves are now more important than ever because they absorb and store large amounts of carbon dioxide (a gas) in their roots and the soil. They help us to slow down the effects of climate change, but we need to keep them healthy.



**Climate change** is the change in weather patterns over a long period. For example, when it rains more than usual during the dry season or when it does not rain for a long time in the wet season. This is because of the increase in temperature or rainfall throughout the world, which is caused by the release of carbon dioxide from human activities such as the cutting down of trees. In Guyana, we experience climate change through flooding, droughts, and a rise in seawater.

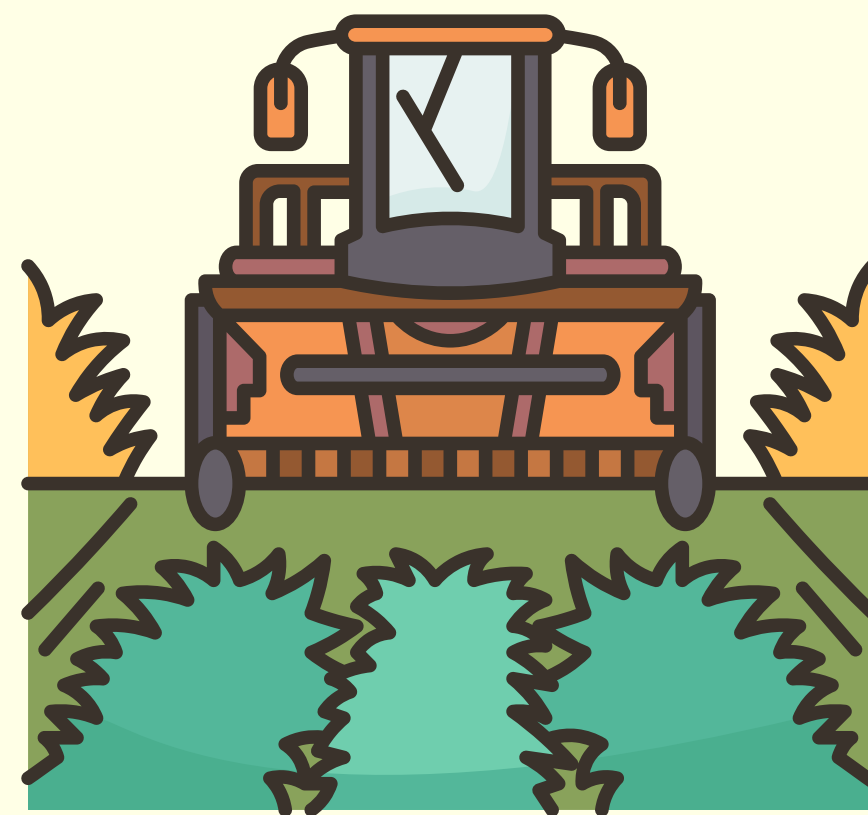


Even though mangroves are important they still face many threats in Guyana and in other countries around the world.

Many of the threats are from human activities such as:



Cutting down  
of mangrove  
trees



Large-scale farming



Littering of  
rivers, creeks  
and the ocean

# CHAPTER 3: THE MAMMALS

A mangrove ecosystem is full of life such as plants and animals including birds, reptiles, mammals, amphibians, and fishes. However, in this chapter, we will focus on mammals!

Mammals are warm-blooded animals with backbones and hair or fur. They breathe by lungs and usually give birth to live young. Mammals are important to the mangrove forest.

The biodiversity found in an area can affect the environment and the food chains.

An ecosystem is made up of all plants and animals and the environment in which they live.

Biodiversity is all the plants and animals found in an environment.



# FIND & NAME THE MAMMALS!





The Barima-Mora Passage is home to at least 25 different kinds of mammals of which some are very important and need to be protected if they are to survive. The 6 mammals shown below have been identified by scientists for special protection.



Giant River Otter (Water dog)



White-lipped Peccary (Wild/Bush hog)



Red Brocket Deer (Deer)



Jaguar (Tiger)



Margay (Tiger cat)



Giant Anteater (Barim)



Some of the animals found in the area are hunted for their meat and are the main part of the Indigenous Peoples' diet, especially those like deer, bush hog, and bush cow. Sometimes people take more wild meat than they need and this causes the animals to become scarce. It is then harder for hunters to catch these animals and they would now have to go even further into the forest to find them.

Scarce means  
very small in  
amount or  
number, not  
plentiful.

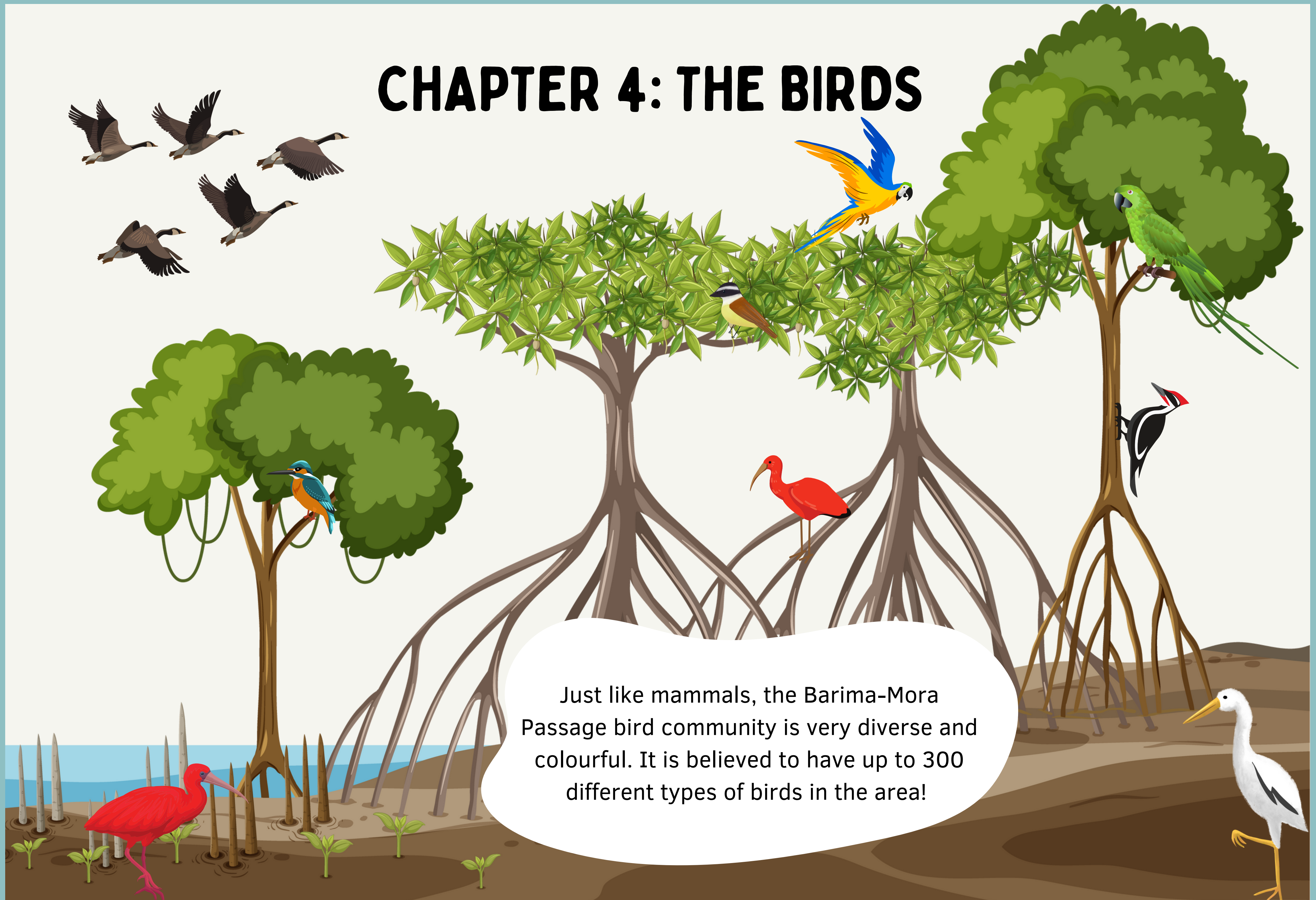
**TOO  
MUCH  
HUNTING**

can lead to

**LESS  
ANIMALS**



# CHAPTER 4: THE BIRDS



Just like mammals, the Barima-Mora Passage bird community is very diverse and colourful. It is believed to have up to 300 different types of birds in the area!



### **Black-chested tyrant**

*(Taeniotriccus andrei)*



### **Crimson-hooded manakin**

*(Pipra aureola)*



### **Belted Kingfisher**

*(Megaceryle alcyon)*

In 2021, a bird study done by GMCS found two new species in the Barima-Mora Passage that was never before seen anywhere else in Guyana!

These birds are the Belted Kingfisher and the Black-chested Tyrant.

The Crimson Hooded Manakin is another colourful bird that is commonly seen here.

Species are a group of living things that are similar to each other.



One of the most attractive birds in the Barima-Mora Passage is the Scarlet Ibis (*curri-curri*). These brightly coloured birds can mostly be seen on the mangrove trees or feeding on the mudflats. There are also parrots, macaws, and herons which can be seen flying home in the hundreds during the early mornings and late afternoons.

Ecotourism is a type of tourism that is focused on the natural environment and wildlife.



Because of this, many people would travel from far places to do birdwatching just to get a chance to see these beautiful birds. Therefore, communities and people with local knowledge about these birds can benefit from ecotourism.





However, some of these birds are also threatened by human activities such as the cutting down of trees and bird trapping.

If persons continue to trap birds, especially the young ones in large amounts, then in a few years there will be fewer birds to see in this area.

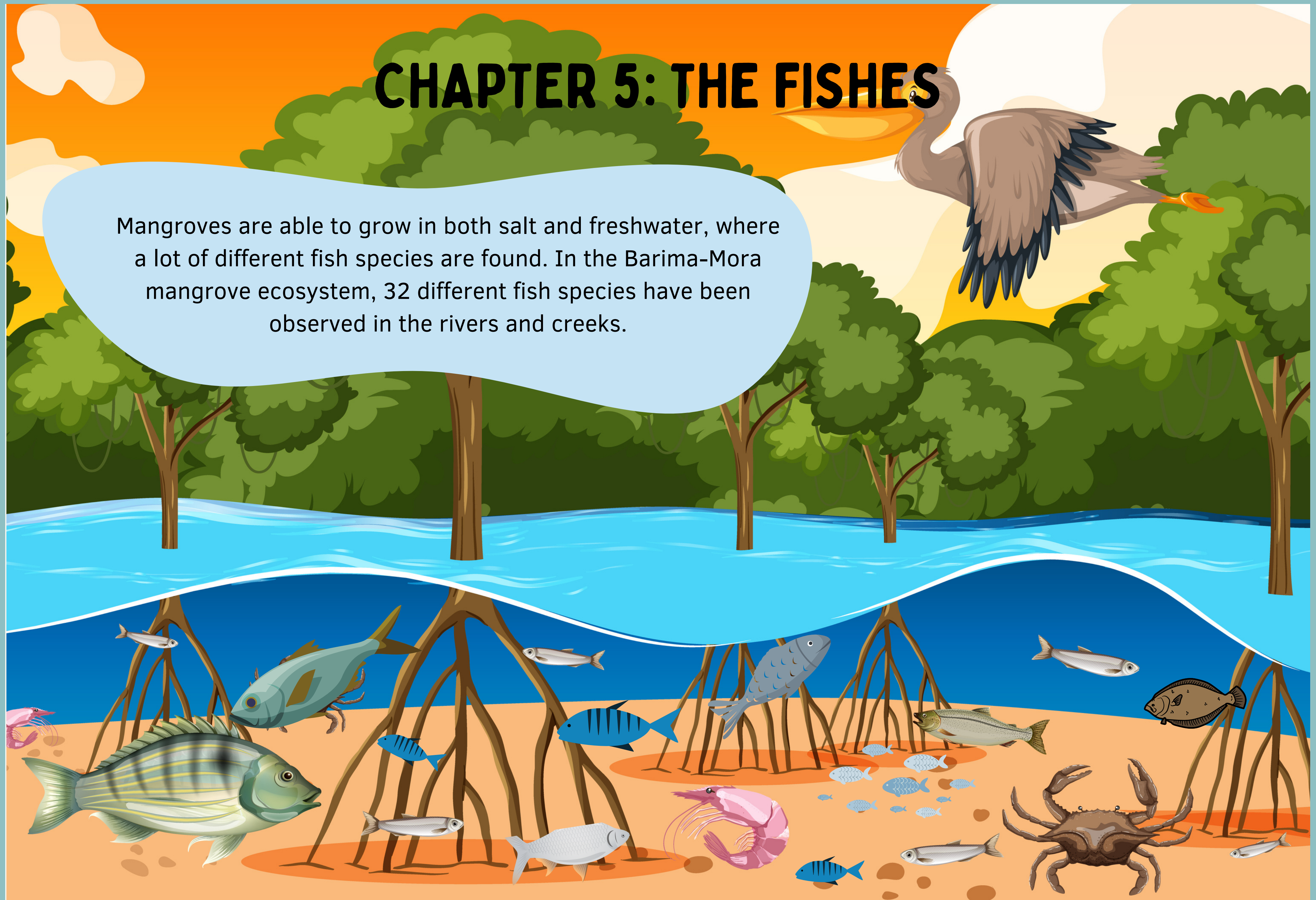
This would affect people in the communities who are earning money from taking visitors to see the birds.





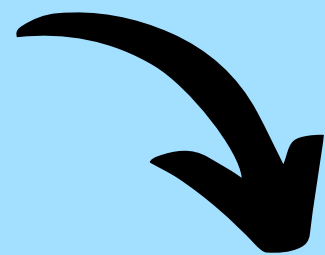
# CHAPTER 5: THE FISHES

Mangroves are able to grow in both salt and freshwater, where a lot of different fish species are found. In the Barima-Mora mangrove ecosystem, 32 different fish species have been observed in the rivers and creeks.





We can see many different species of fish in the Barima-Mora Passage waters, including:



These fishes are important to the surrounding communities because people depend on catching fish every day to eat or to sell and earn money.



Cuffum



Morocut



High water fish



Basha



An illustration of a mangrove forest. In the background, there are several tall trees with thick brown trunks and dense green foliage. The ground is covered in green bushes. In the foreground, there is a body of water with various fish and marine life. The water is dark blue, and the sky is a bright orange color. Two callout boxes are present: one on the left and one on the right, both containing text about the importance of mangroves to the fish community.

Mangroves are important to the fish community in two ways:

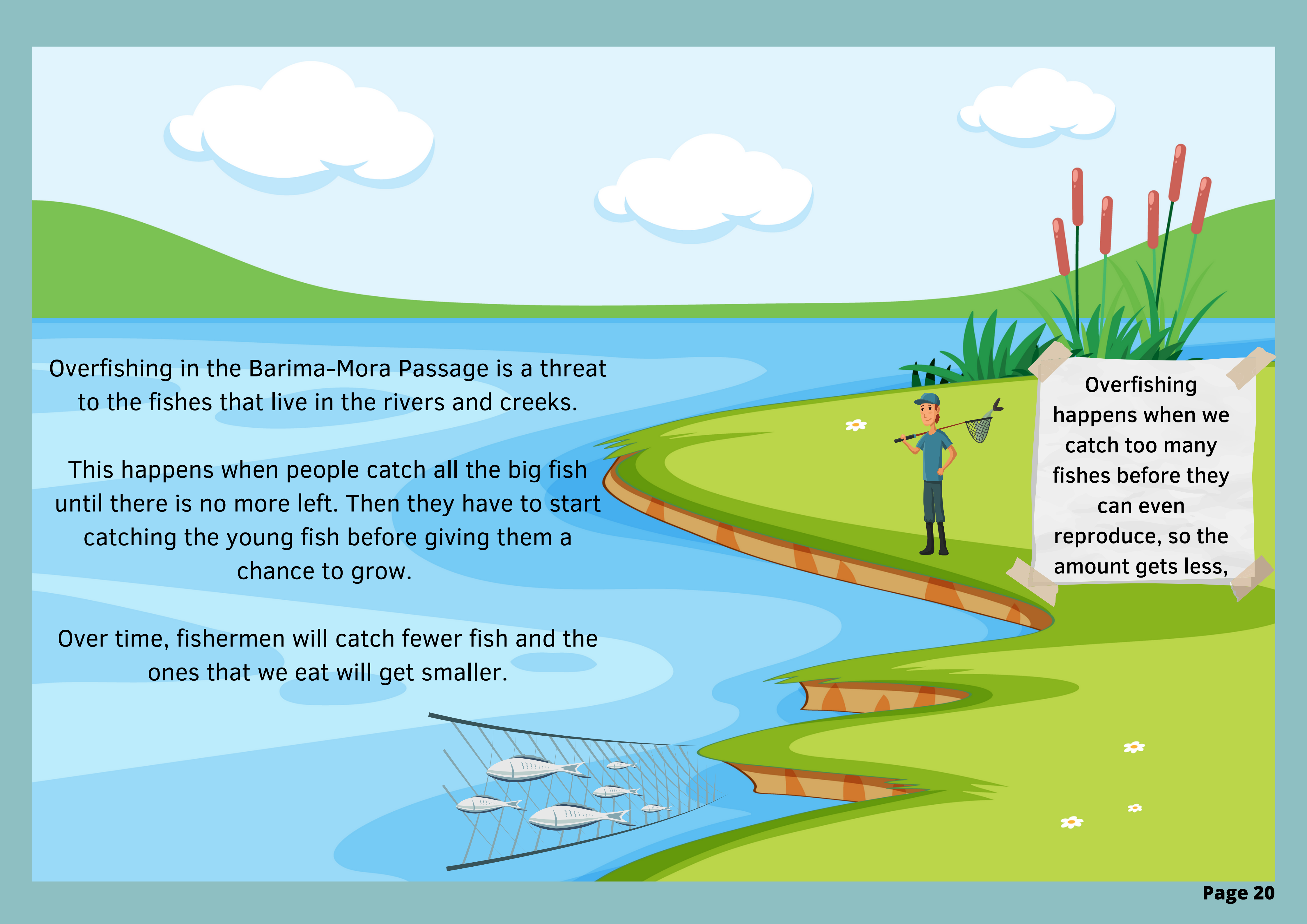
1

Mangroves provide food for many fishes to feed on to grow big and healthy.

2

The roots of the red mangroves serve as a nursery for little fishes to hide from the larger fishes that may want to eat them. Once they grow into adults they leave the mangrove roots to live in the river or open ocean.



The illustration depicts a river flowing through a green landscape under a blue sky with white clouds. On the right bank, a fisherman in a blue shirt and cap stands with a net. In the foreground, a large net is shown filled with many small fish. A sign on the right bank explains the concept of overfishing. The riverbank is marked with orange and white stripes.

Overfishing in the Barima-Mora Passage is a threat to the fishes that live in the rivers and creeks.

This happens when people catch all the big fish until there is no more left. Then they have to start catching the young fish before giving them a chance to grow.

Over time, fishermen will catch fewer fish and the ones that we eat will get smaller.

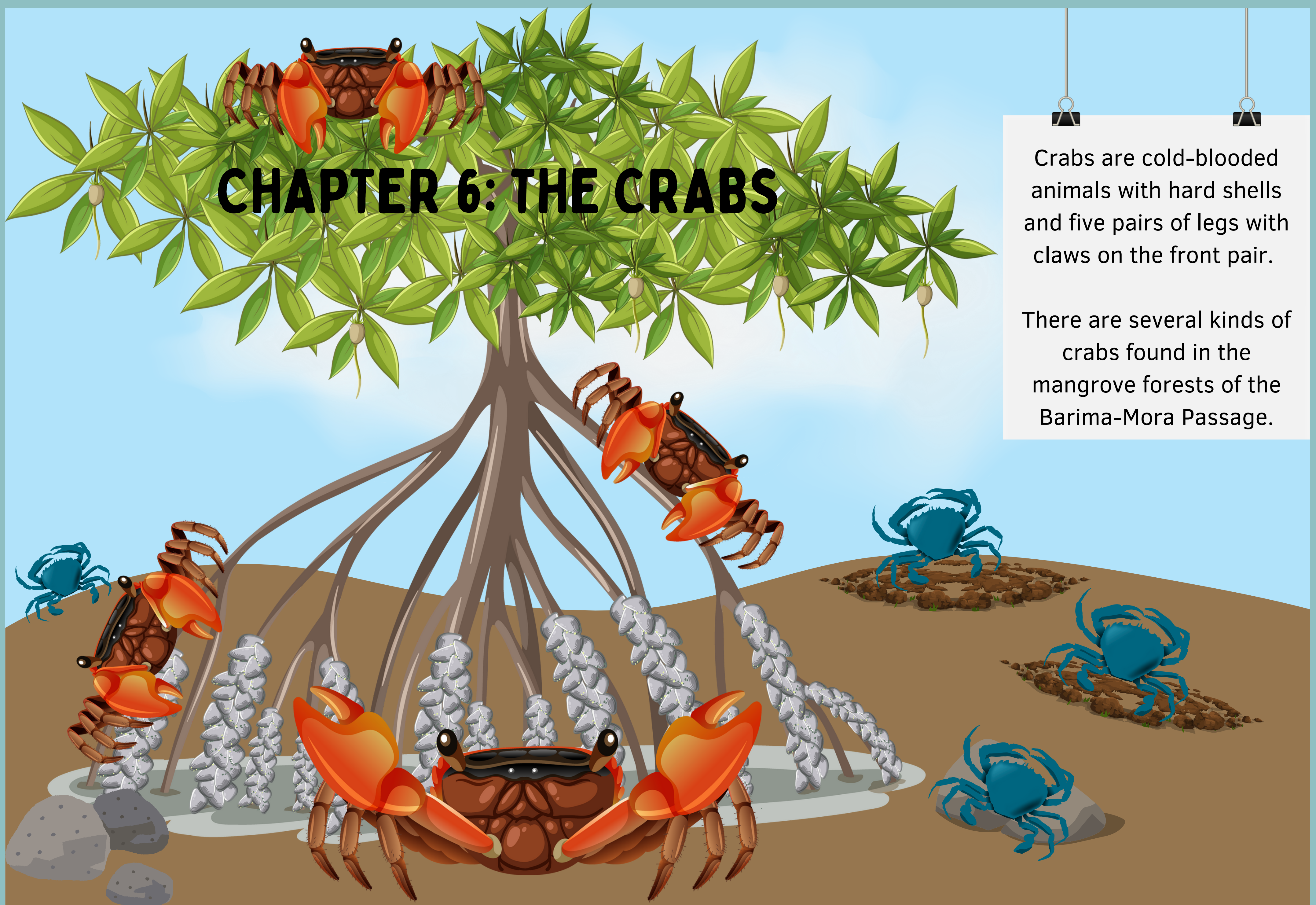
Overfishing happens when we catch too many fishes before they can even reproduce, so the amount gets less,



# CHAPTER 6: THE CRABS

Crabs are cold-blooded animals with hard shells and five pairs of legs with claws on the front pair.

There are several kinds of crabs found in the mangrove forests of the Barima-Mora Passage.







Some of the crabs in the Barima-Mora Passage are very important because they are used as food, and are sold to earn money. Scarlet ibises and flamingoes get their bright red and pink colors after eating crabs.

### Kinds of crabs:



Sherriger crab



White crab



Boasin crab



Jumbie crab



Rain crab



Moonshine crab



Highbak crab

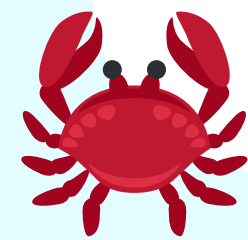


Bunduri (blue) crab

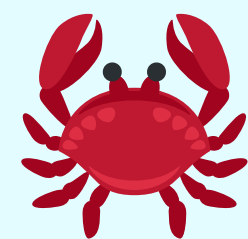


Bok (red) crab

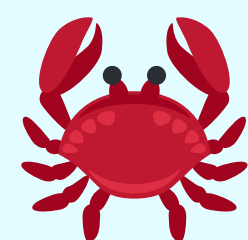




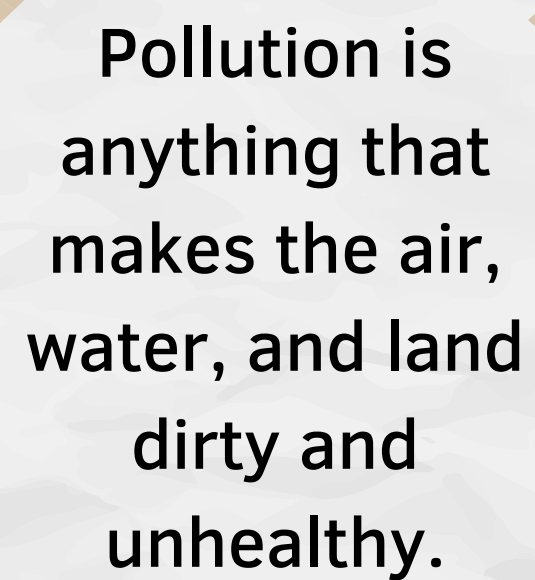
The crabs are being affected when people dump fuel and waste oil in the rivers. which causes people to become sick after eating the unsafe crabs.



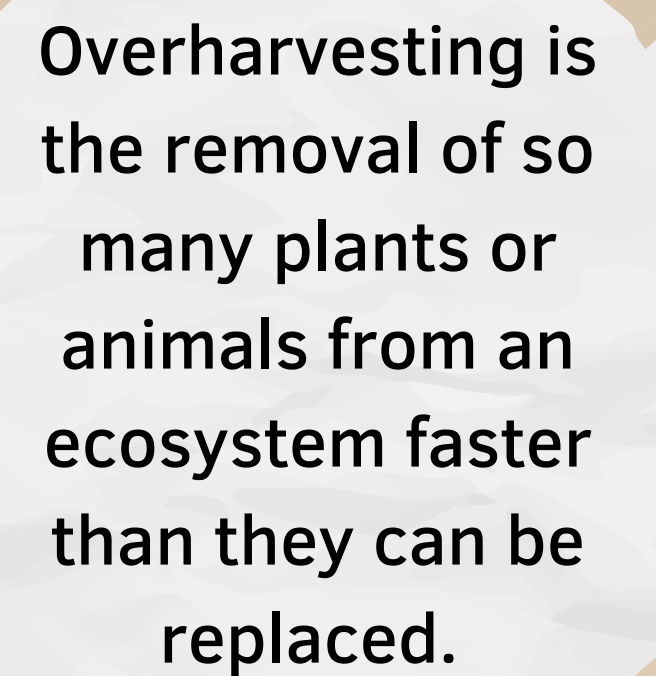
The crabs are being overharvested, which lessens the number of crabs in the area.



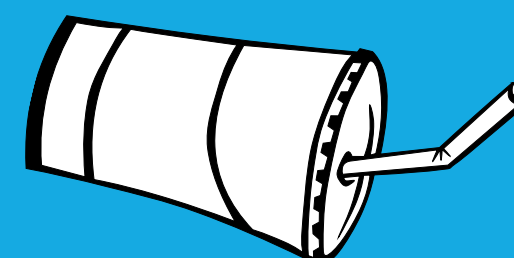
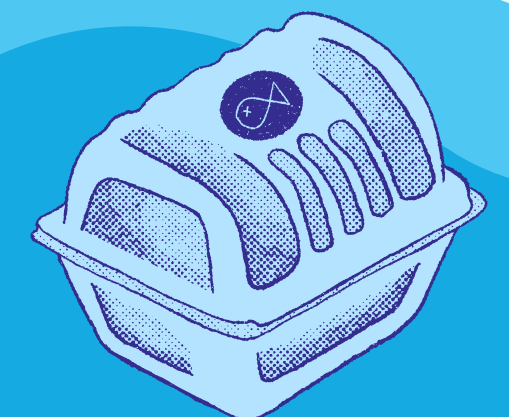
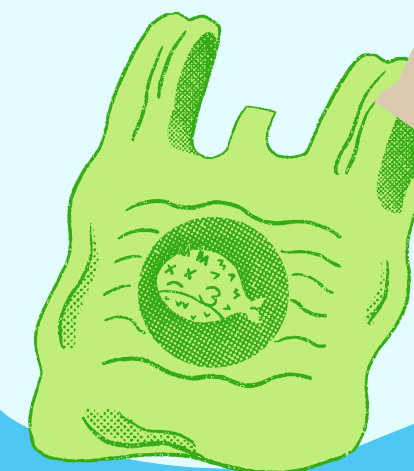
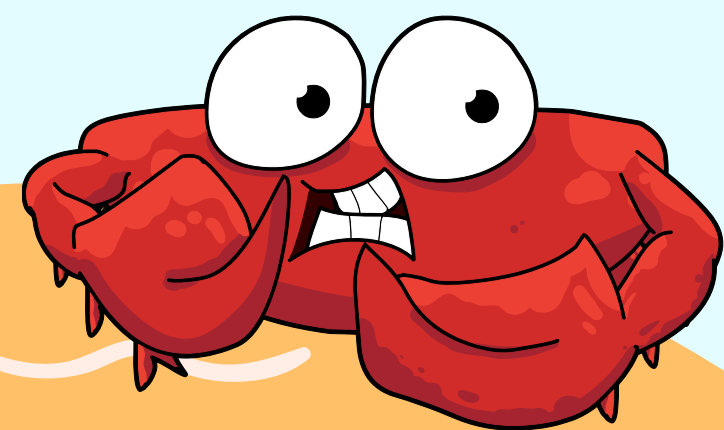
The crabs appear to be marching later than usual.



Pollution is anything that makes the air, water, and land dirty and unhealthy.



Overharvesting is the removal of so many plants or animals from an ecosystem faster than they can be replaced.





# CHAPTER 7 - THE PEOPLE





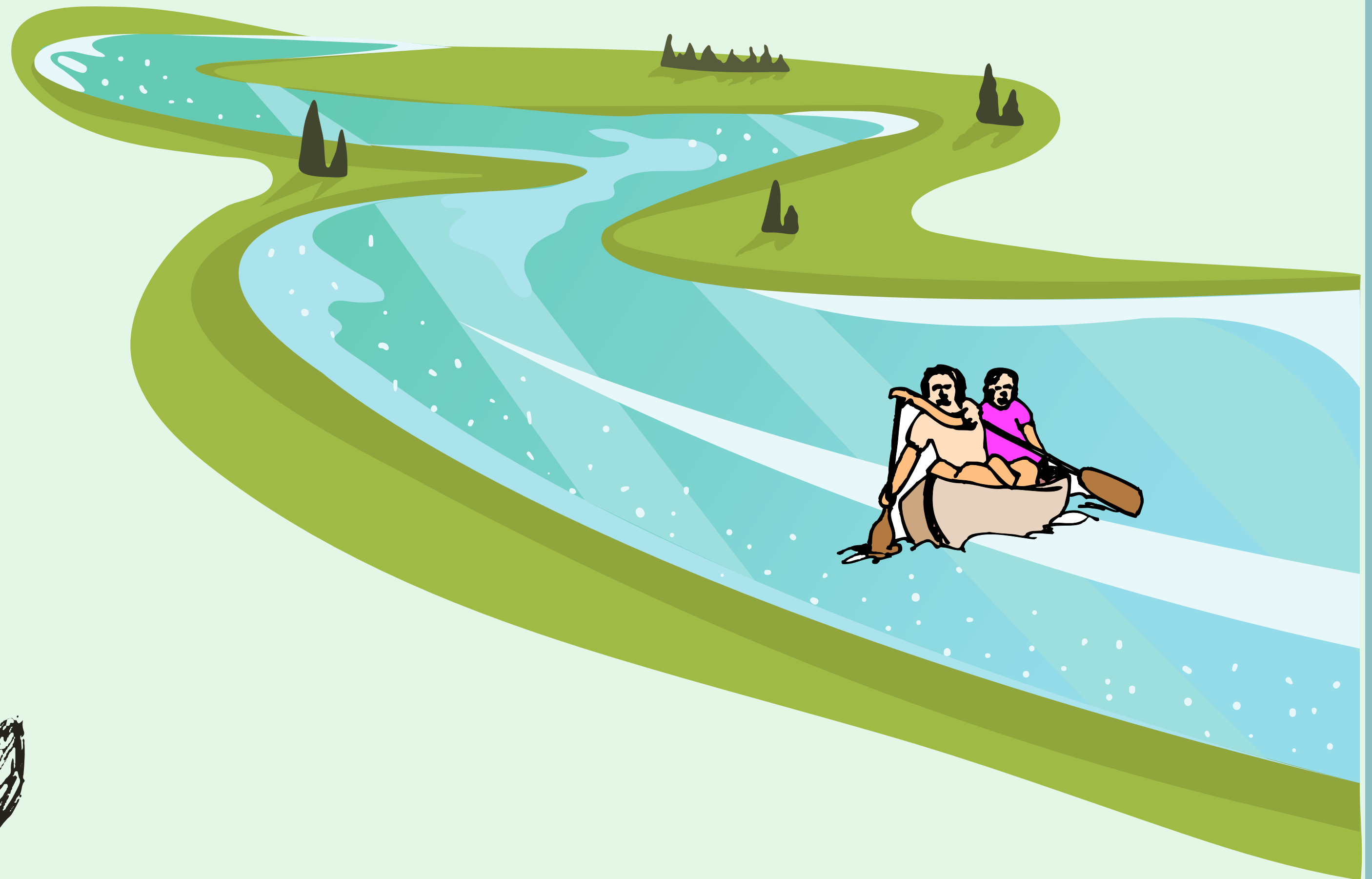
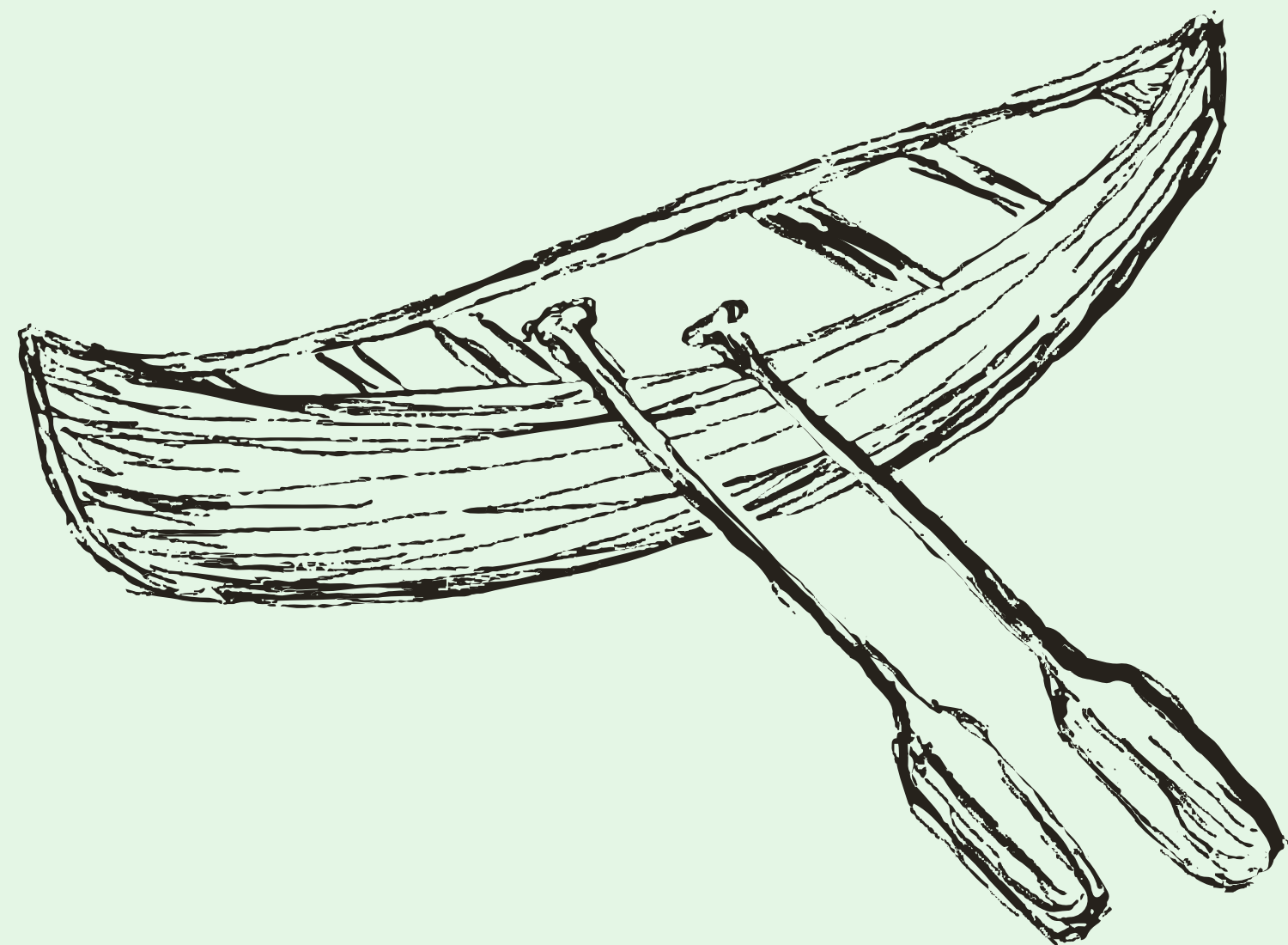
Besides the Barima-Mora Passage being a special place for mangroves and animals, it is also special because of the Indigenous people who live there. This area is home to the Warrau, Lokono (Arawak), and Kalina (Carib) people who have been using the plants and animals for thousands of years without destroying or harming the environment.





The main group of people that can be found in the Barima-Mora Passage are the Warrau people. The word 'Warrau' means 'canoe owner' in the Warrau language.

Traditionally, the Warrau people have always lived along the river banks of the North-West. They are very good at making canoes and using them to fish.





Maintaining a clean and healthy environment for the people who live in this area is important since they depend directly on it for food, water, medicine and shelter.



In order for these ecosystems to continue to survive and be healthy, it is important that the surrounding communities give their full support and participation in the protection and preservation of the Barima-Mora Passage. This will not only benefit communities close by but also people nationally and internationally to help the fight against climate change.







This book was funded by Iwokrama International Centre (ICC) and Environmental Management Consultants (EMC) in collaboration with the Guyana Marine Conservation Society (GMCS).

