

Marli

The fabulous
parrotfish
that could do
(almost)
everything

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LIFE CYCLE OF THE PARROTFISH AND ITS ECOLOGICAL IMPORTANCE

JUVENILE PHASE

Parrotfish larvae do not settle on the coral reef right away. Larvae settle in nursery habitats, such as mangroves. The parrotfish will stay in the mangrove forest until they are bigger and then will migrate to the coral reef.

PLANKTONIC PHASE

Parrotfish have a complex life history, which includes a planktonic larval phase and a series of color changes. Almost all species of parrotfish are hermaphroditic. They begin their life as females, which exhibit duller colors and they eventually change into brightly colored males.

Parrotfish excrete sand and produce the majority of the sand on beaches.

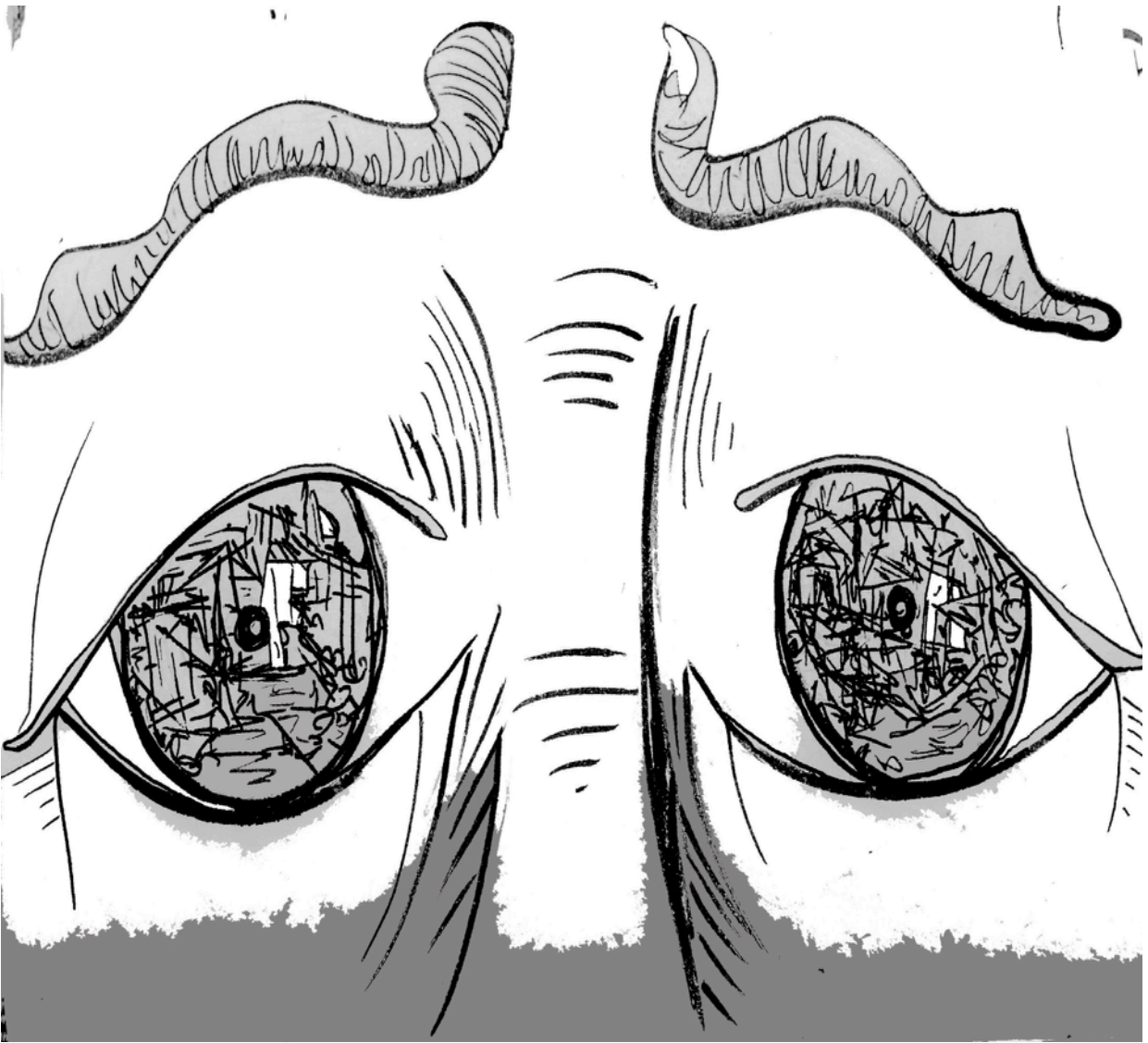
FEEDING

Parrotfish are important to the coral reef health because they keep the reef clean. They graze on benthic algae, a competitor to coral, and dead corals.

The name "parrotfish" comes from the numerous teeth that are arranged forming a parrot-like beak. They are a marine species that live on seagrass beds and coral reefs. There are 16 species of parrotfish in the Caribbean.



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Three days after the passing of the enormous hurricane that crossed the Caribbean with all its fury, my Grandma Mabel began to worry about everything that had occurred to the natural environment. News arrived from the neighboring islands of how the trees remained leafless and barren, of the brown waters full of sediment that flowed from the rivers that came from the mountains; and of the bats and the bees that could hardly be seen in the fields. What made us most sad was to find that many of the flowers and the trees appeared as if an unruly fire had burned them all.

And yet the effects were felt more harshly on the coast expressed my grandma. "We need to go to the beach as soon as we can to see what has happened to our reefs," she said.

Two weeks later our family finally made it to the beach. It seemed as if my grandma had planned the visit beforehand because when we arrived she said, "Get in the water, swim and have fun, but come back in two hours because I need to tell you all something very important."

Two hours later, all of the grandchildren, gathered before Grandma Mabel awaiting to hear what was so important.



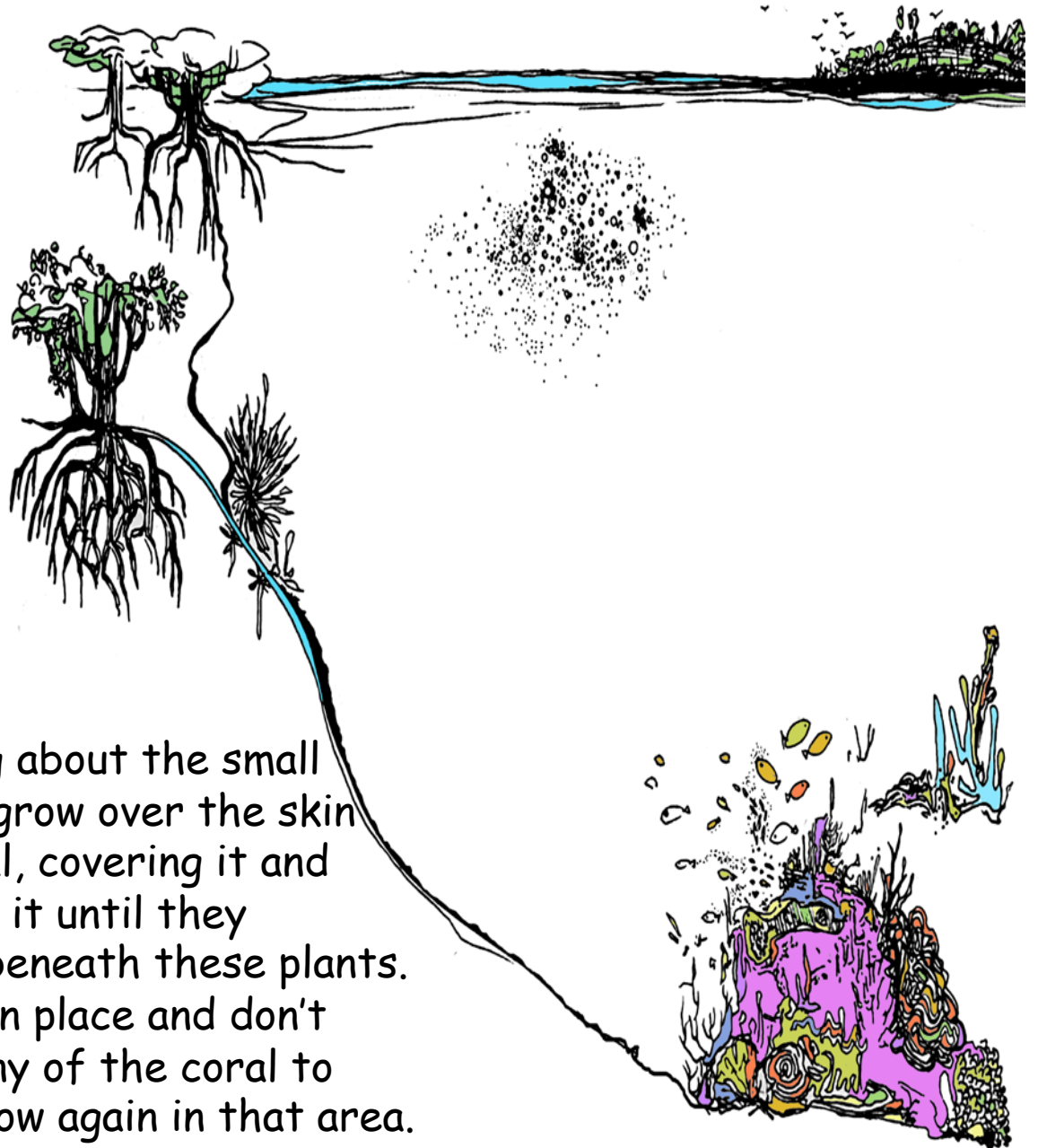
She didn't wait for us to sit when Grandma Mabel began her story. "These days I've been worried about the reefs, and I've also been worried about the parrotfish. I'm going to explain to you the importance of the parrotfish, the cousin of the parrot. Parrotfish is what most people call them; however, different communities have other names for them. In Spanish they are known as pez loro or pez cotorra."




"Much like the parrots in the forest help to brighten the gray colors with their colorful plumage in between the trees; similarly, the parrotfish bring color to tropical reefs with their vivid fish scales full of yellow, red, purple, and phosphorescent green. However, that's not really the most important task for parrotfish at the bottom of the sea.

The real task of the parrotfish is much more important; they protect their home and the reef twenty-four hours a day."


"Protect them from what?" interrupted Ryan, who had just sat down to listen. "From the algae," said Grandma without flinching. She proceeded to ask, "Remember those vines in the forest that grow on top of the plants and trees? Remember the time the rose bush was suffocated by these vines? Well, something similar happens to the corals. They are threatened by the algae everyday."



"I'm talking about the small algae that grow over the skin of the coral, covering it and smothering it until they disappear beneath these plants. They stay in place and don't allow for any of the coral to begin to grow again in that area. They become the owners of the space," she explained.

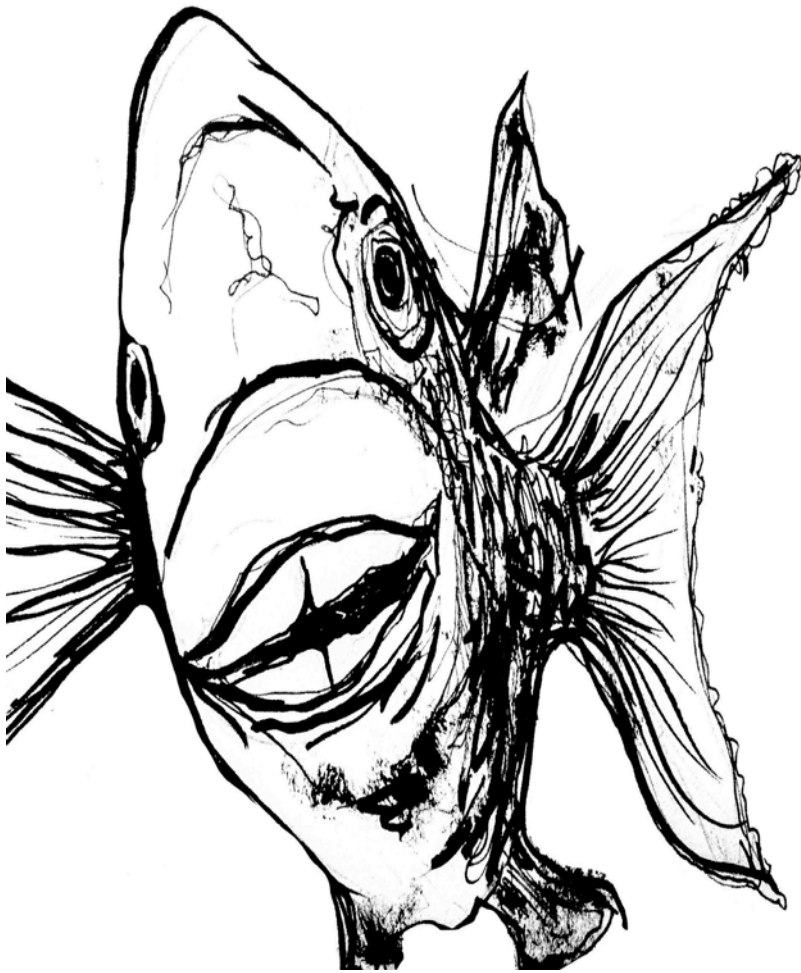


"Thank goodness we have herbivores like the parrotfish," I said. "Her-bi-vores" mean that they feed on herbs or plants, like algae in the sea." Do you see how the land and the sea are not so different?" she asked.

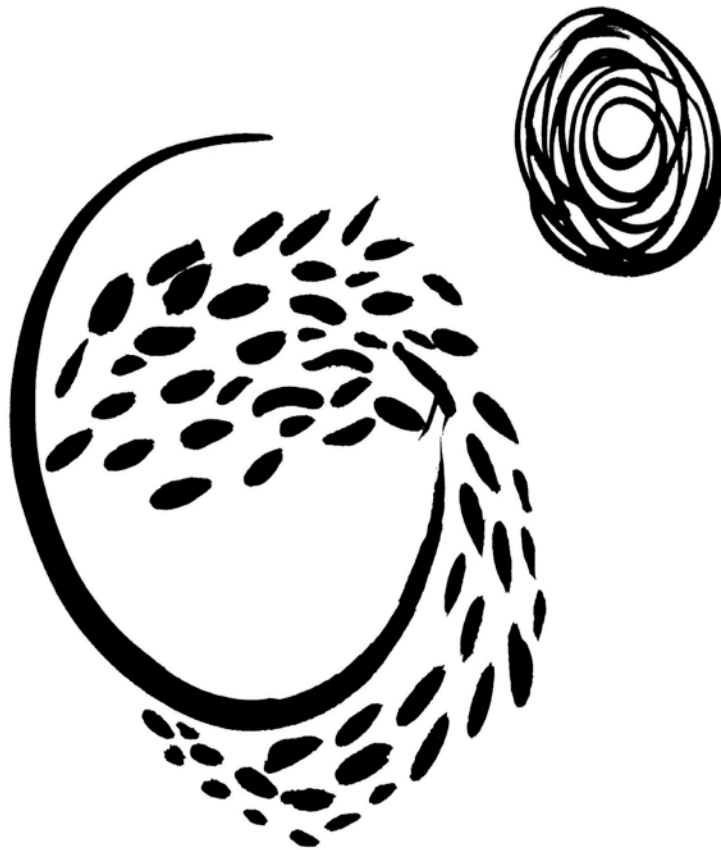


"The way the parrotfish defend the reefs is unlike any other fish or animal whether big or small," said Grandma. Out of the blue, Grandma Mabel came up with a marvelous idea. She looked us in the eyes and said, "As soon as each of you get the training and the equipment, I will take you SCUBA diving to go see the parrotfish and the coral. All the beaches we find in the tropics have parrotfish." (You can't find them in the rivers or lakes.)

"Meanwhile we can see the parrotfish through the pictures that the biologist and oceanographers have shared on the Internet." As she spoke to us about the parrotfish, she showed us some images of them she had saved on her cell phone. "Look at their teeth, they look like human teeth or that of a horse or a mule, and look at that smile!" she said.



And it was true, the parrotfish was always smiling. Grandma wouldn't stop talking about her photos: "It has so many colors, even more than its cousin, the parrot: purple, green, blue, red, and yellow... That's why they are always happy because they have the most beautiful scales amongst all the fish in the sea."



Grandma continued to educate us on the parrotfish and the multiple species that existed in the Caribbean. That's when Ryan once again interrupted asking a very important question.

"Grandma," said the smallest grandson, stumbling to finish his question.

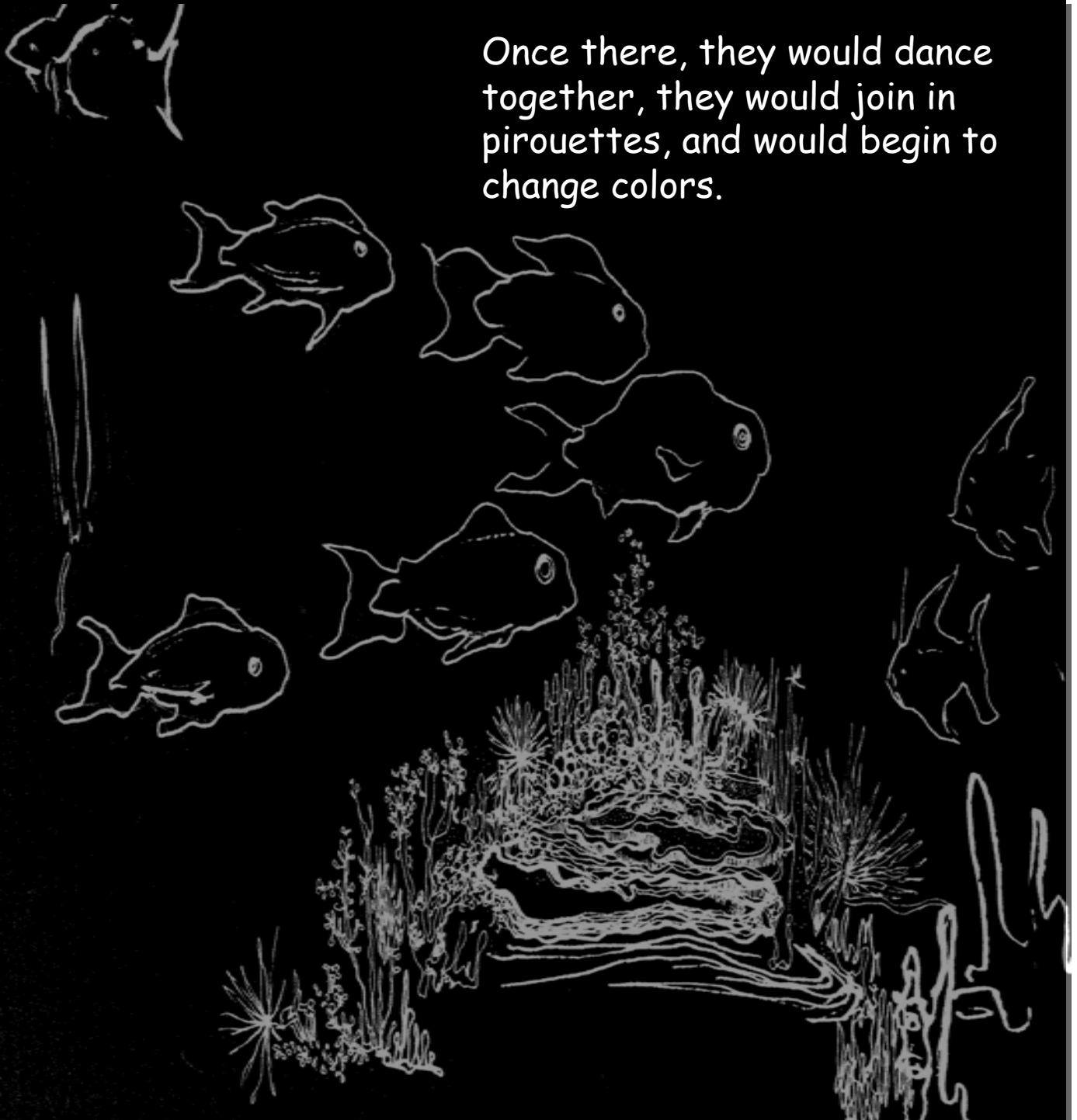
"Tell me Ryan," said Grandma curiously. That's when he regained focus and finished his question.

"Well you see, you said you were going to tell us something very important and until now you have only given us information."

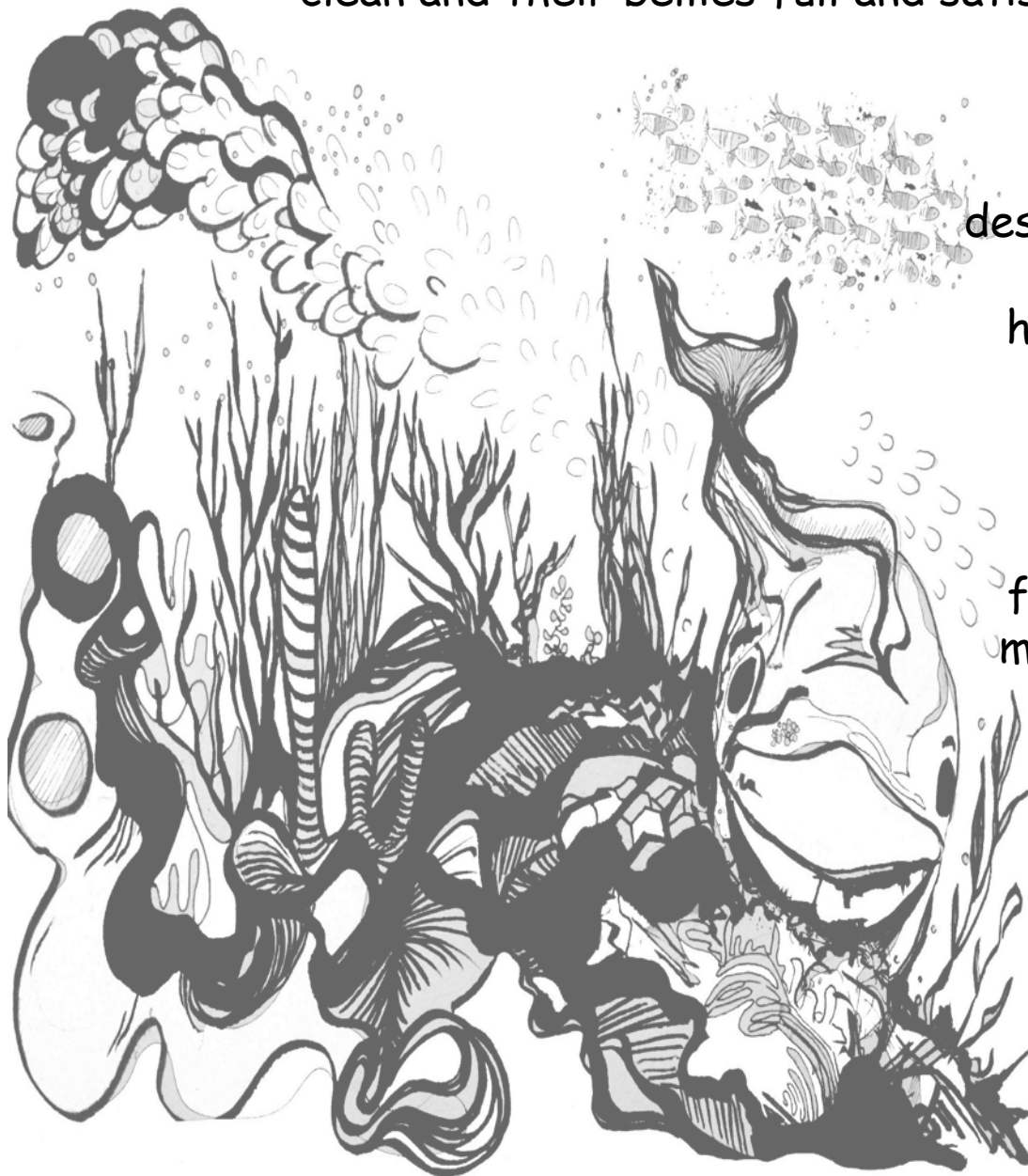
"That's true," grandma responded.

Let me tell you the story of Marli the fabulous parrotfish that could do almost anything. Marli loved swimming and sliding between the warm currents letting the algae tickle her body as she swam about. Marli swam happily anticipating her arrival to the mangroves, a happy place where she would meet her friends.

Once there, they would dance together, they would join in pirouettes, and would begin to change colors.

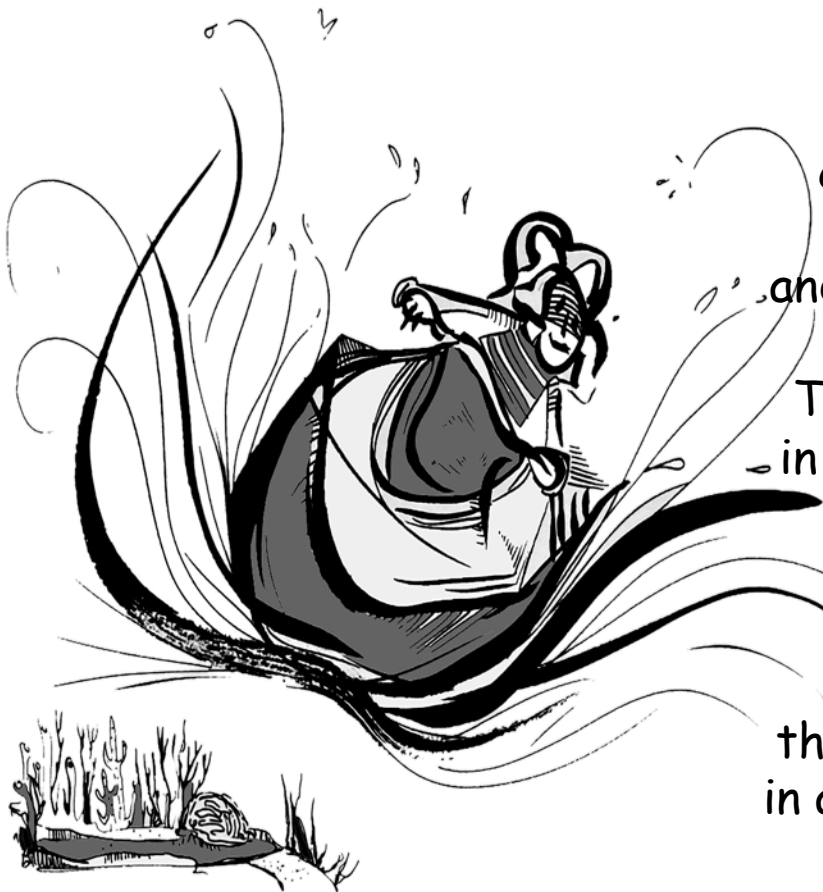


The sea, like a sparkly glass mirror, would smile back at Marli while she would admire her own reflection witnessing the change of colors in her body as well as in some of her friends. They had reached maturity changing from brown to green, from red to orange, and from black to purple, turning from females to males. They frolicked and sang turning in circles as they approached the coral reef. Now their favorite task would begin... to chew, to clean, to munch and crunch until they ate all of the algae that covered the coral reef leaving the area nice and clean and their bellies full and satisfied.



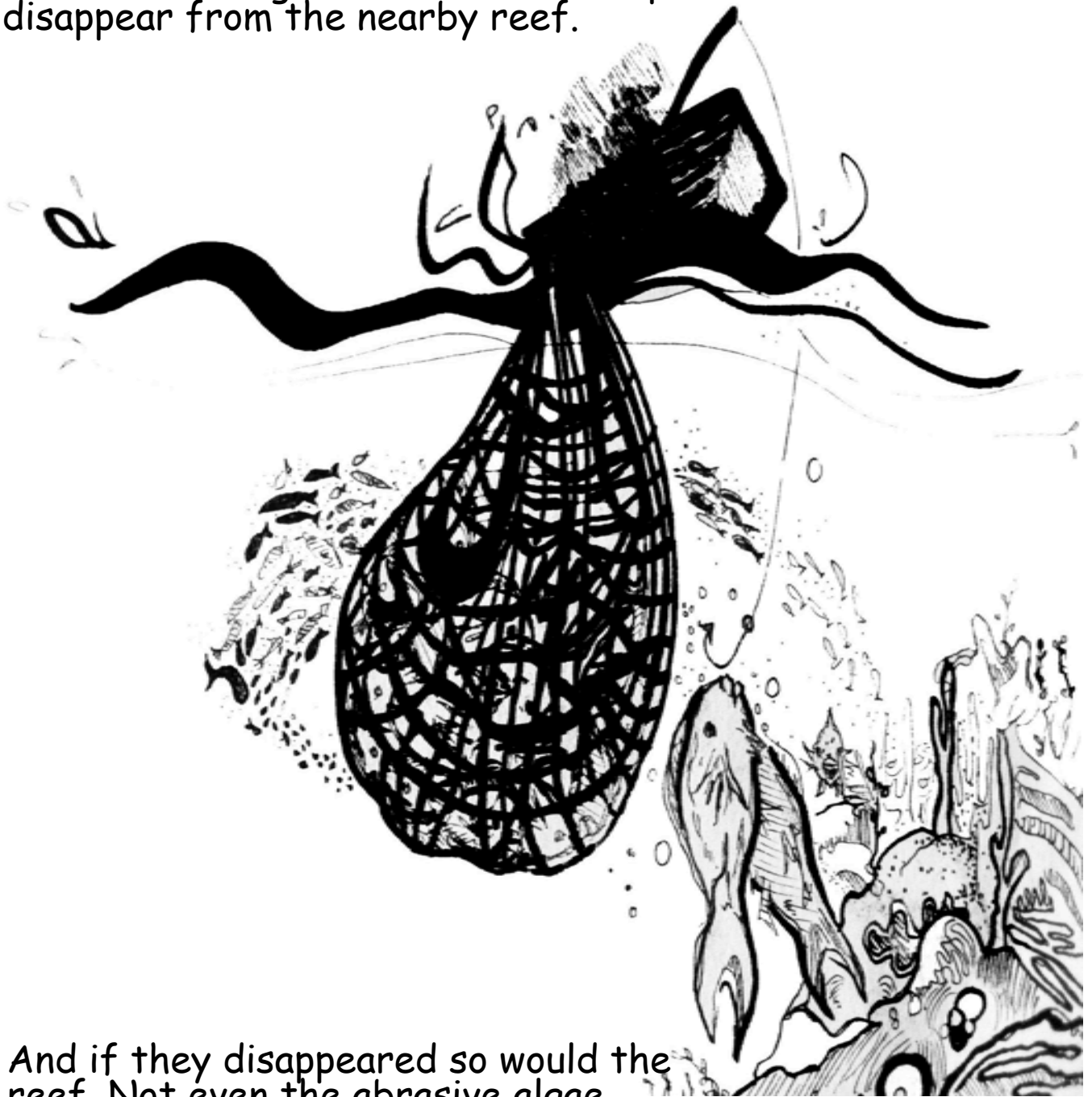
After a well deserved moment of rest and having digested the algae, the parrotfish did their magic, these colorful fish pooped out mounds of sand.

What a joy! Soon they would form a small sandy island, a habitat for many more fish, and a home for birds and crabs. "All was good, until one day Marli and his friend's dancing and singing was interrupted. A loud sound startled them. They had heard this noise closer to shore before. Jet-skis? Impossible? Marli swam to the surface to see what the commotion was about and there he saw the jet-skis coming fast their way as the roar got louder. The sound of the motors overwhelmed the reef and its inhabitants as it passed above. Marli had to dive quickly to avoid being hit by them.



That's when Marli remembered the stories shared by their land cousins, the parrots. They spoke of a changing earth and that some humans would destroy its equilibrium. They also spoke of changes in our climate causing water pollution and temperature levels to increase. Marli, began to get agitated, he lost his smile. He thought these changes would happen in a million years, but now he saw how it was all taking place here and now.

The next day something worse happened: while Marli was cleaning a coral, a human came from above and caught one of his friends in a net. That same week it happened again. Many of Marli's friends disappeared that week. No doubt, if things continued this way it wouldn't be long before all of the parrotfish would disappear from the nearby reef.



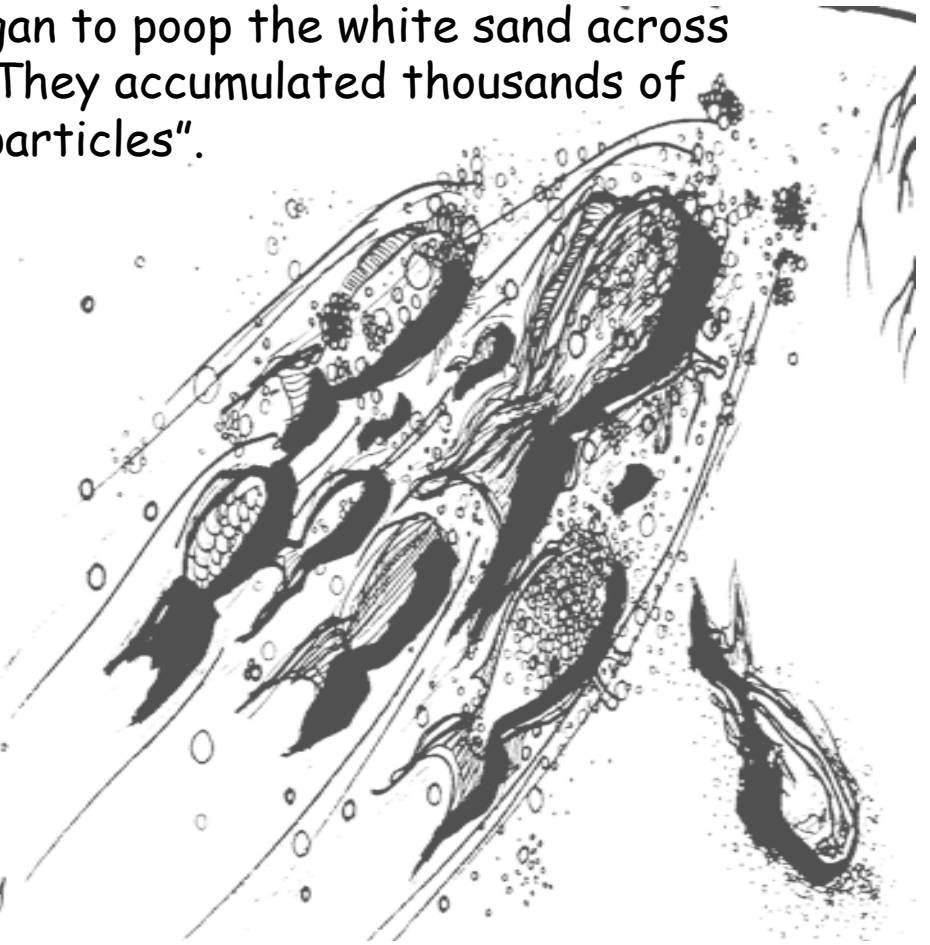
And if they disappeared so would the reef. Not even the abrasive algae would be able to survive the pollution caused human waste, garbage, motor oils and gasoline.

What was Marli to do? How was Marli to confront this horrible situation? There was no time to lose. Marli swam as quickly as he could; farther than he had ever gone before. He reached the shores of Brazil where he alerted other friends. Those fish sent message to others on the coast of western Africa and slowly all the fish around the world heard the news. Marli did not have wings, but he knew that there were parrotfish in all tropical waters of the world who would respond to his call for help.



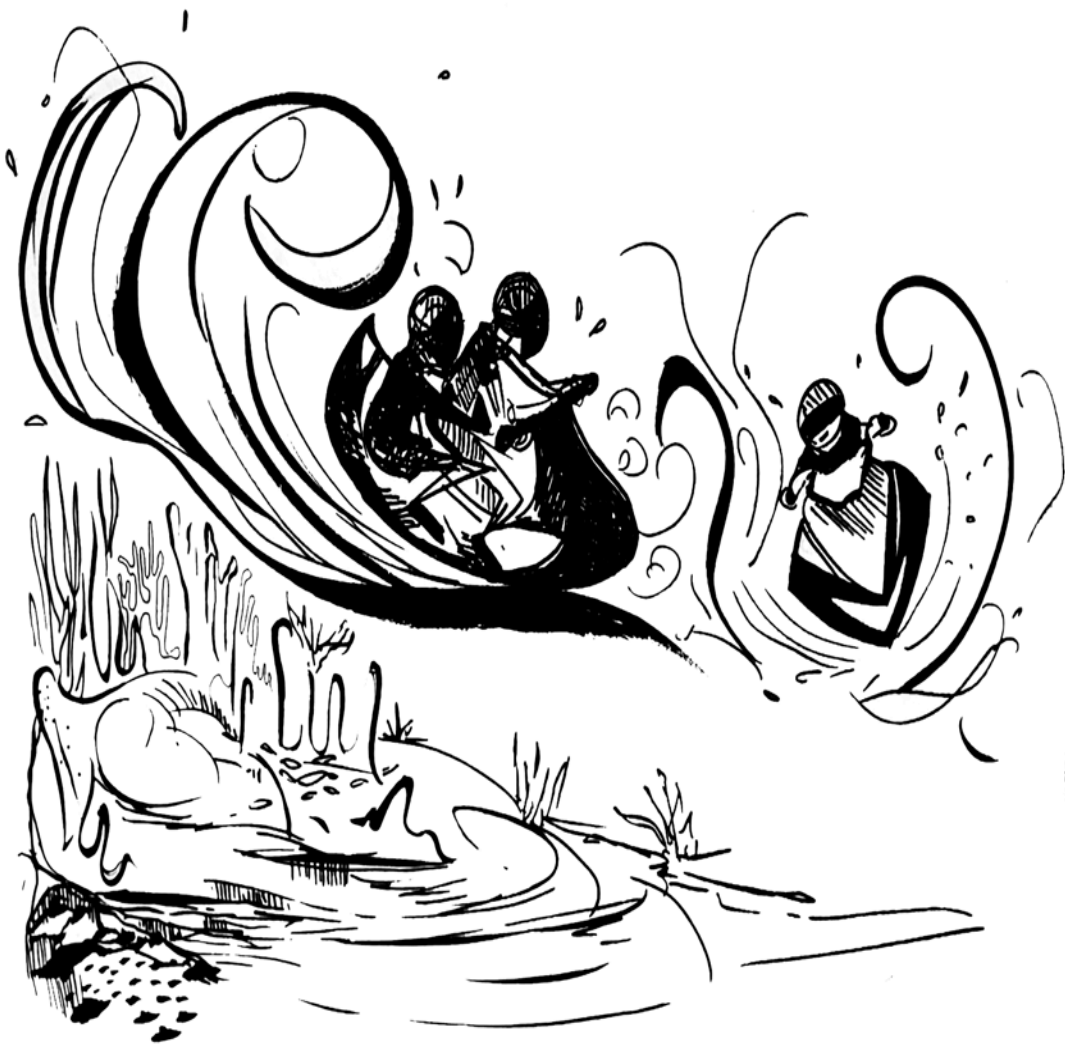
In only one night parrotfish representatives from all over the tropics in the world met in the Mona Passage in the Caribbean, where they devised a solid plan. If humans were to destroy their coral homes, then they had the right to defend themselves.

During the late hours of the night when everyone was asleep on land, the fish came together to put their plan in motion. The parrotfish from all corners of the world gathered to eat algae until their bellies were full. Although by the end of the night they were exhausted and sleepy, at least half of their plan was accomplished. Now, early in the morning, it was time to poop. They gathered together and began to poop the white sand across the ocean floor. They accumulated thousands of millions of sand particles".



Little by little with no rest (that day resting was forbidden!) they built an island. It was small, but enough to occupy the space that humans were destroying. Yes, an island sprung out of nowhere. Who would believe it? No way!

Thanks to all the effort done by the parrotfish, that day, when the first human showed up on the noisy jet-ski, he was very confused. He waited for more people to join him, but it was worthless because everyone that got close to the beach was lost. Nobody could believe it. This isn't the same place? It was not possible that in one night an island would be created out of nowhere.



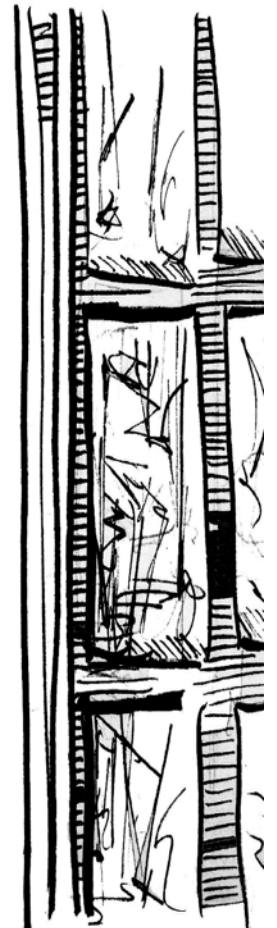
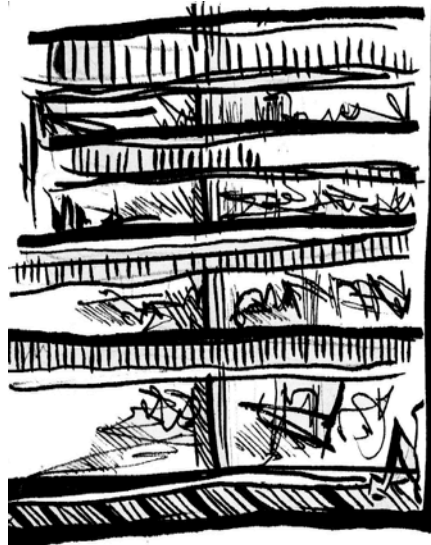


Thousands of hermit crabs, pelicans and land crabs took over the island created by the parrotfish. Humans could not explain what had happened. The humans and their jet skis that had arrived were confused. "How could it be? This island has always been here. Most likely we made a mistake getting here," they said. That's how humans little by little abandoned this beautiful reserve. There was no space for their jet-skis. They were unable to pass over the reef with their motors or to dump their garbage onto the coral.

This is when Grandma became silent. We were speechless. All of the grandchildren were in silence until by chance I asked, "And Marli, what happened to Marli?"

Grandma began to laugh. Remember that Marli and his friends had swum thousands of miles far away from the Caribbean and had returned to eat algae until their bellies were full; then they took the task to create a solid and permanent island to distract inconsiderate humans... All of that in less than a day.

What do you think happened with Marli and the other parrotfish that visited him from all of the reefs of the Planet...? They were taking a long nap, such a long nap that we haven't seen a parrotfish around this coast lately. But that doesn't mean they aren't here. They will be back! Its just that some of them have yet to wake up!



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Did you know?

The name "parrotfish" comes from the numerous teeth that are arranged forming a parrot-like beak.

Parrotfish are very special because they begin their life as a female and then turn into a male when they grow to a certain size. They change colors through this transition and the males are characterized by bright colors.

Parrotfish are very important because they keep coral reefs healthy. They eat the algae that competes with other organisms, like the corals.

Parrotfish excrete white sand, and they produce the majority of the sand on beaches. They can produce more than 200 kg of sand per year.

