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This resource has been developed for communities or groups interested in discussing the features, value and health of local coral reef ecosystems. The ideas and questions presented are provided as catalysts for discussion, reflection and shared learning. It is not meant to be prescriptive or exhaustive nor privilege or replace other ways of knowing. We humbly recognise the diverse experiences, perspectives and worldviews that participants will bring with them when engaging with this material.

We invite you to use this resources as a template and adapt it to best meet the needs of your intended audiences. This resource was developed by the GEF Coral Reef Rescue Project to support local coral reef conservation with limited access to online activities and resources. For online resources, please refer to the website <https://coralreefrescue.iwlearn.net/>



The speech bubble icon indicates suggested discussion and reflection questions.



The information icon indicates sections where information is being presented to support and spark ideas for discussion.

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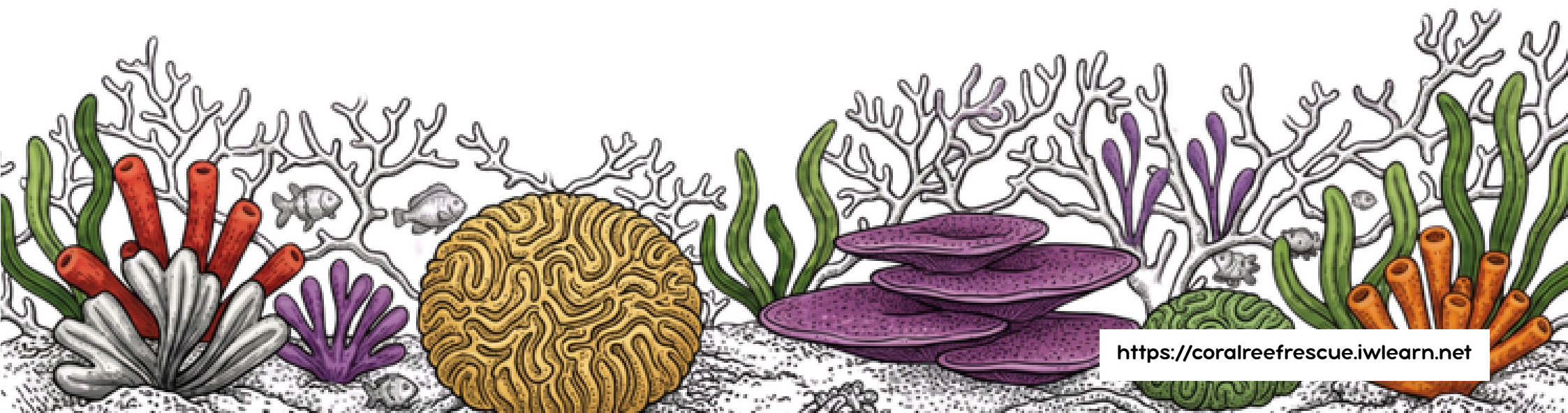
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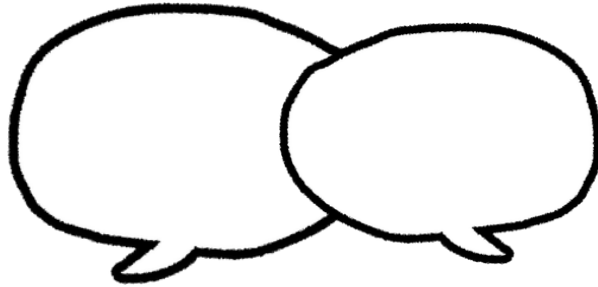
Coral Reef Rescue: Resilient Reef, Resilient Communities Project

What is Beneath the Waves?

Understanding and Protecting
Our Coral Reefs

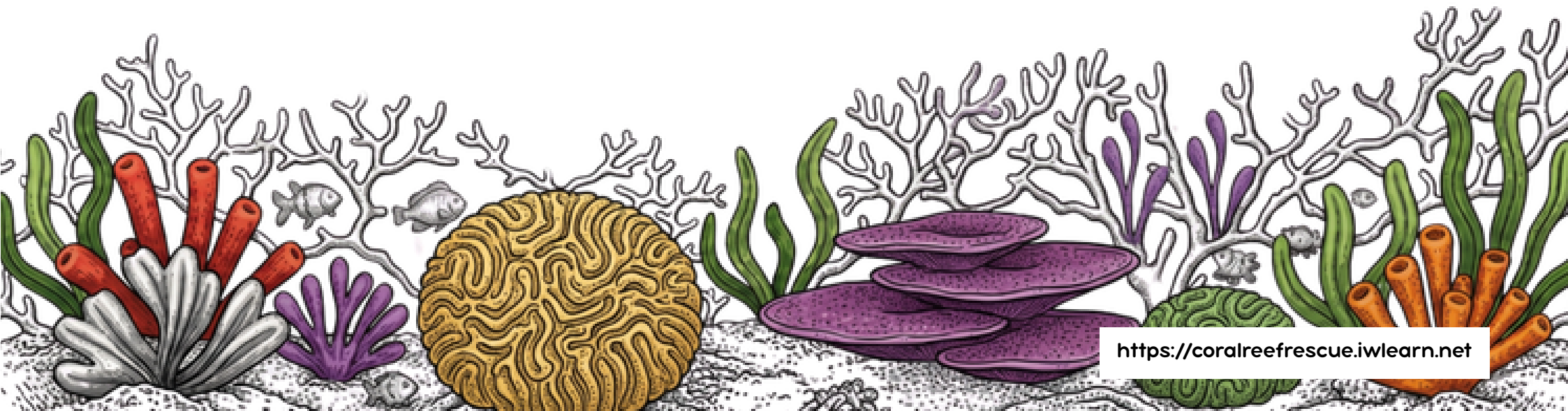


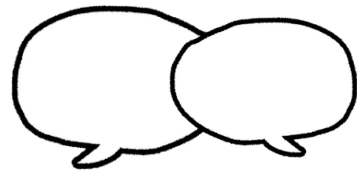
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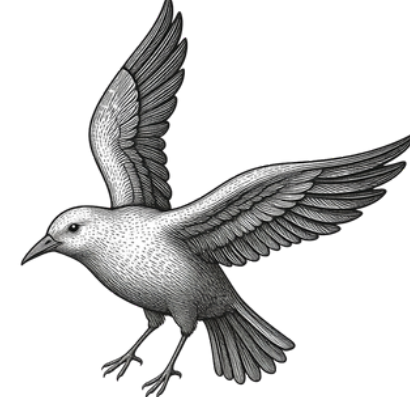
**Have you visited the sea or coastline
recently?**

What did you do there?





What did you see there?



Above the waves?

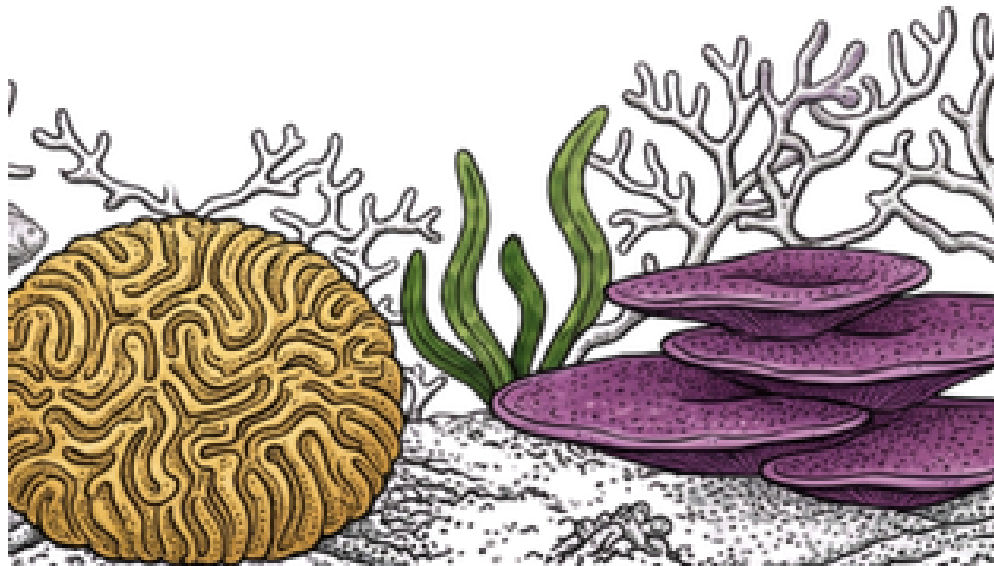
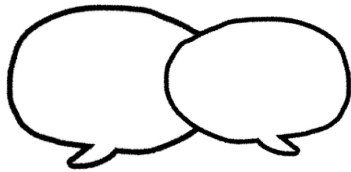


Below the waves?

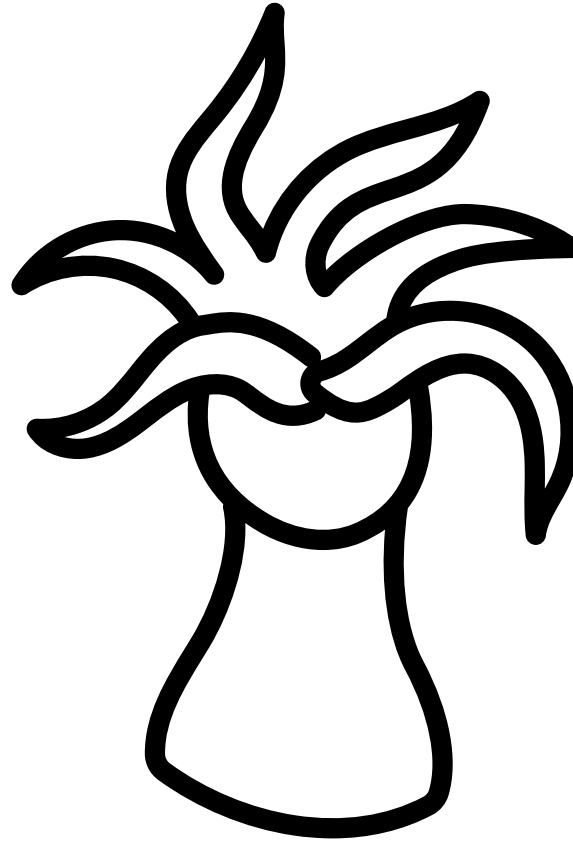


If you looked below the waves, you might have seen coral!

Coral



Is it a plant, animal or rock?

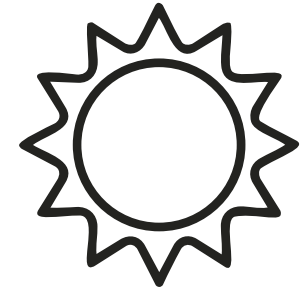


It is an animal!

This creature is called a coral polyp. They are small, clear & grow on hard surfaces. They are related to jelly fish and sea anemones.



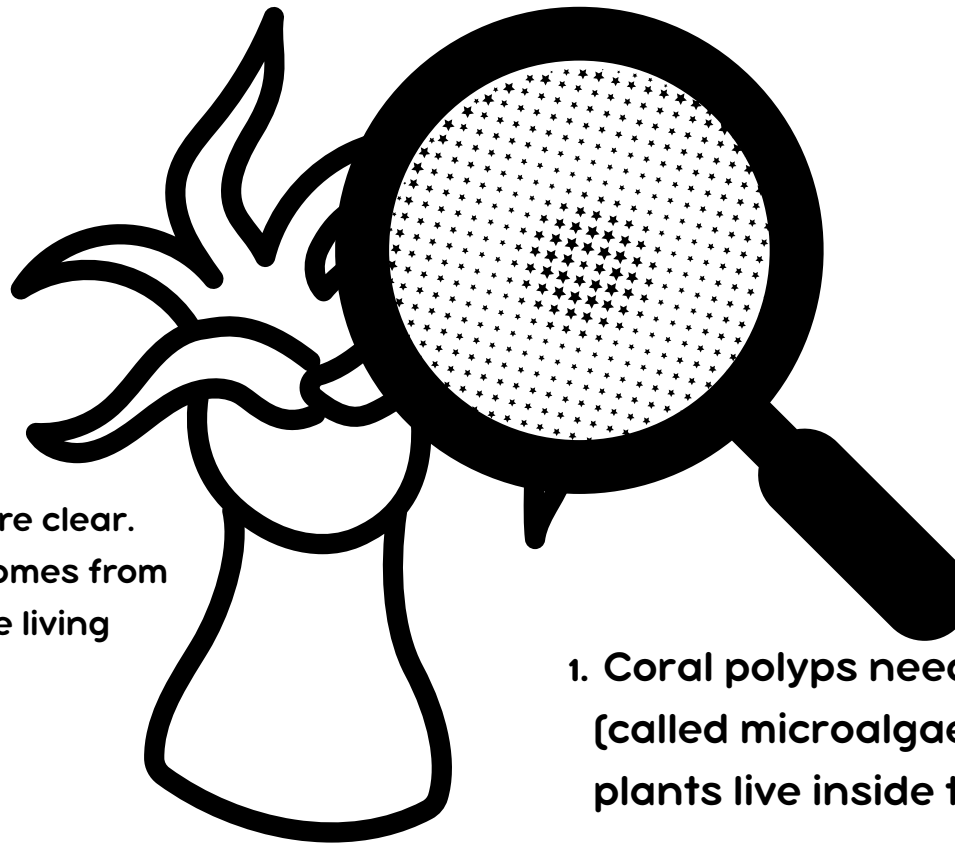
They form colonies containing millions of little polyps, which together form coral reefs. However, they cannot do it alone.



2. The plants use the sun to make energy (food) for the coral in a process called photosynthesis.

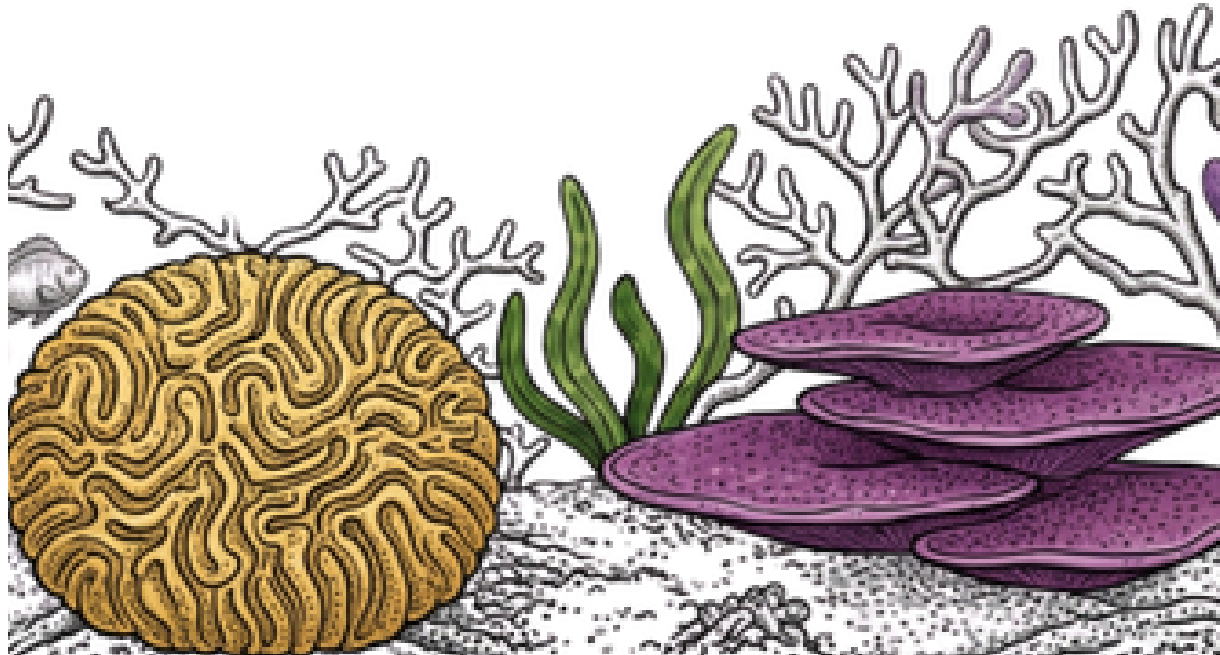
4. Coral can also filter feed, but because the water in coral reefs is usually clear, they need the partnership with the microalgae to survive.

3. Coral polyps are clear. Their colour comes from the microalgae living inside them.



1. Coral polyps need the help of tiny plants (called microalgae) to survive. These tiny plants live inside the coral polyp.

5. In the case of hard coral, the coral animal uses this energy to grow their hard skeletons, which eventually form the reef itself.



So coral is amazing because it's an animal, with plant partners, that builds something that looks like a rock!

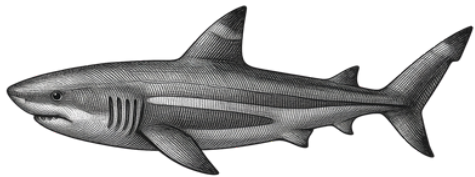


What does a healthy coral reef look like?

Each plant and animal in the coral reef ecosystem has an important role in keeping the reef balanced and healthy.

Reef Sharks

Healthy reefs support all levels of marine life—from the smallest coral polyp to the largest reef predator.



Fish

Small colorful fish, larger reef fish, and herbivores (plant-eaters) such as parrotfish that help keep algae under control.



Seaweed/algae

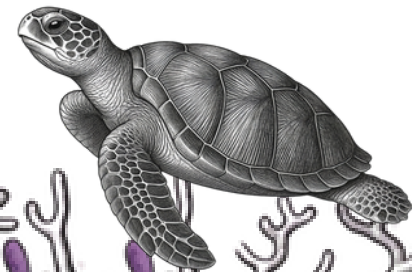
Green, brown, or red growths on rocks and dead coral that provide food for some reef animals.

Corals

Lot of colourful corals including hard corals that build the reef and soft corals that sway in the water.

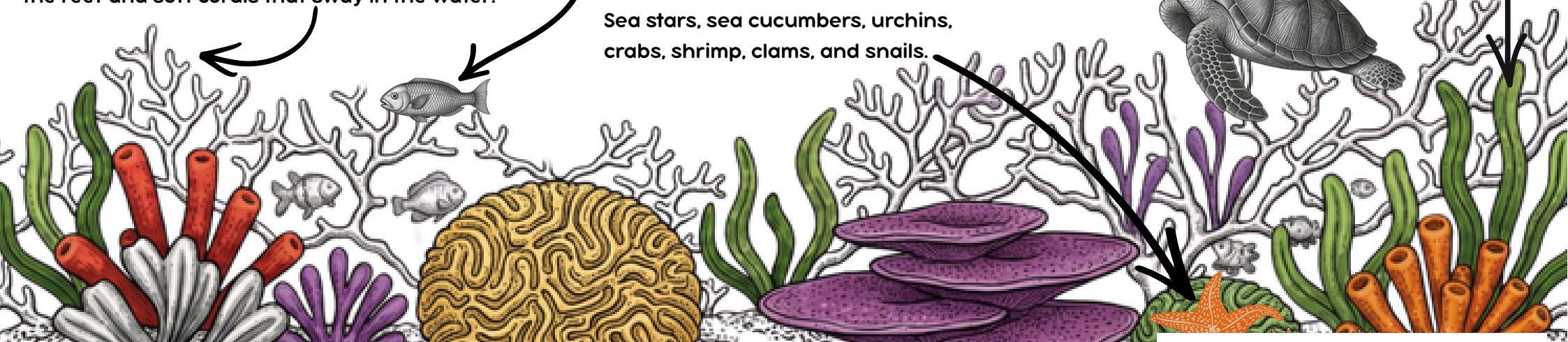
Sea turtles

Turtles may rest on reefs or feed on seagrass and algae nearby.



Invertebrates

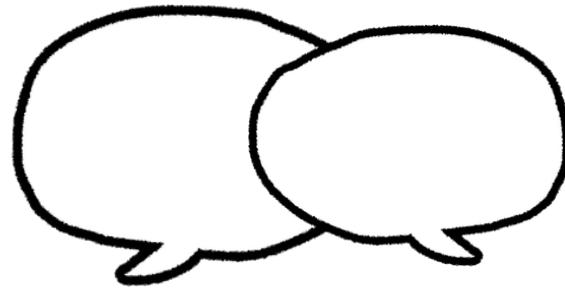
Sea stars, sea cucumbers, urchins, crabs, shrimp, clams, and snails.



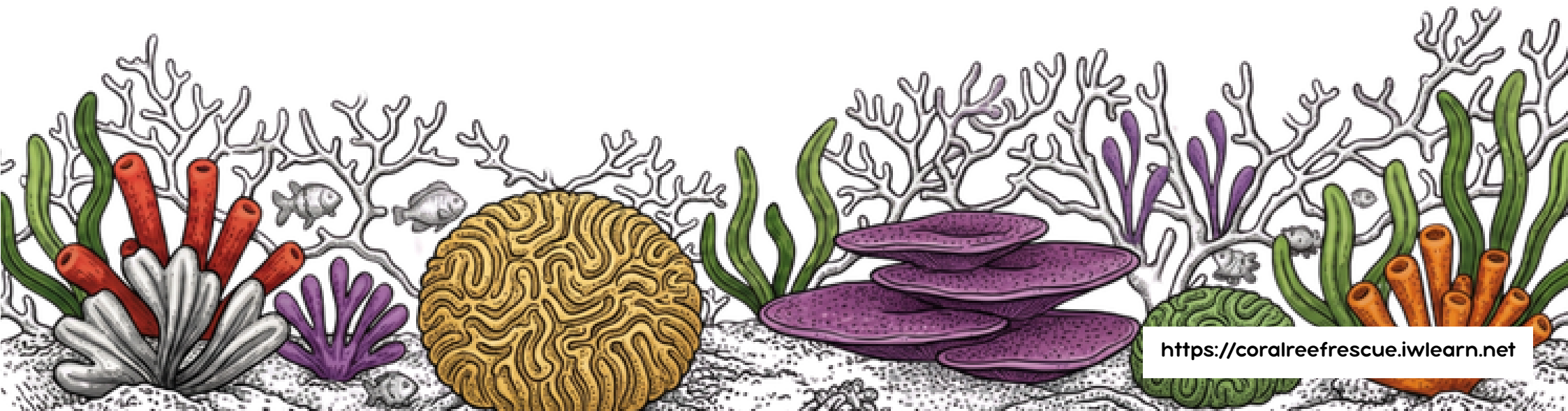
Reef structure: Ridges, crevices, caves, and sandy patches created by the reef itself, which provide shelter for many species.

<https://coralreefrescue.iwlearn.net>

Coral Reefs often play a very important role in the lives of coastal communities.



Which of the things you see on the reef or the coastline are important to you, your family and your community? Why?

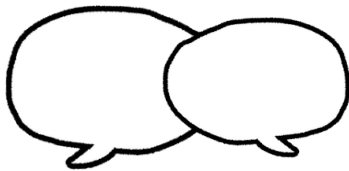




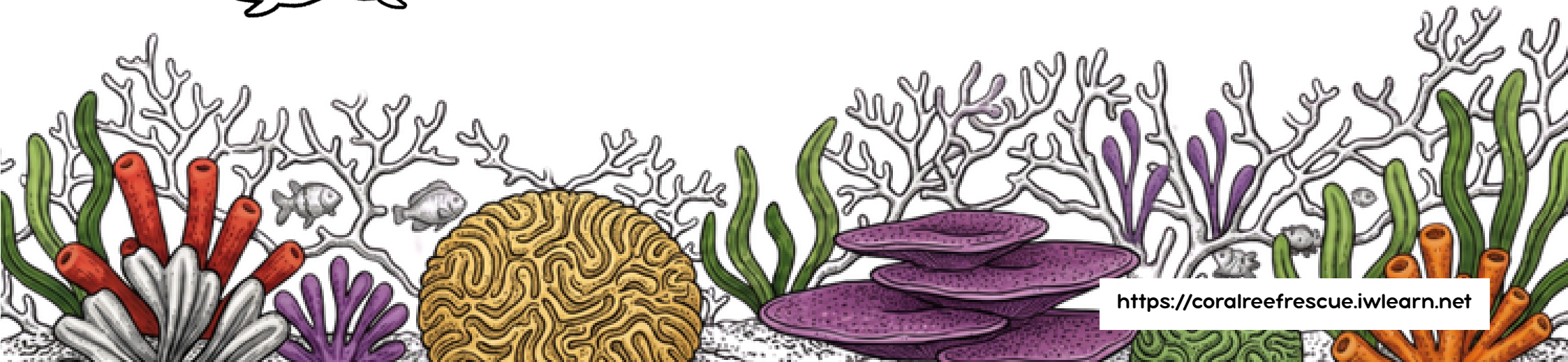
Food and Livelihoods

Coral reefs are home to a large number of marine plants and animals. Some live their whole lives on the reef. Others use the reef as a nursery for their young before they grow up and head out to open water.

Healthy numbers of fish and other sea life mean food and income for communities.



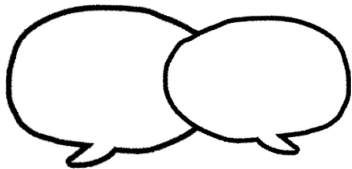
How does your community use the coral reef?





Protection from Storms and Waves

Coral reefs act as a natural barrier between ocean waves and the shore. Coastal communities are protected from an average of 97% of wave energy thanks to coral reefs. This means erosion is reduced and communities are safer.



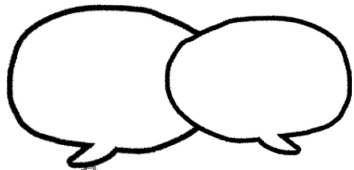
If the reef disappeared what risks would your community face?





Recreation (fun) and Cultural Importance

Coral reefs provide more than just physical benefits to communities. They often hold cultural and spiritual value and meaning.



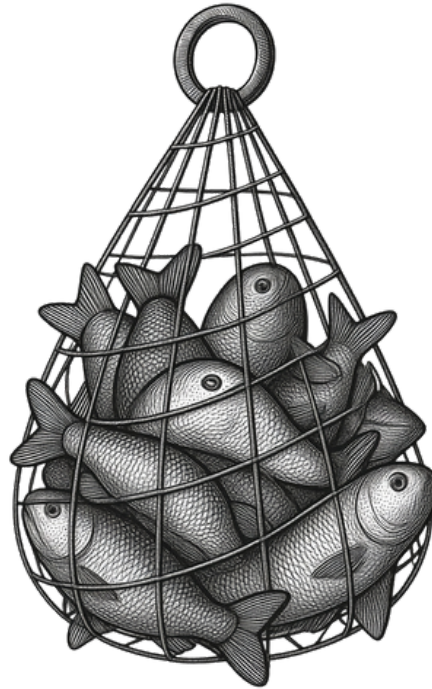
What does the reef mean to you and your community culturally or spiritually?
[Think about stories, rituals, beliefs, identity and connection to place]





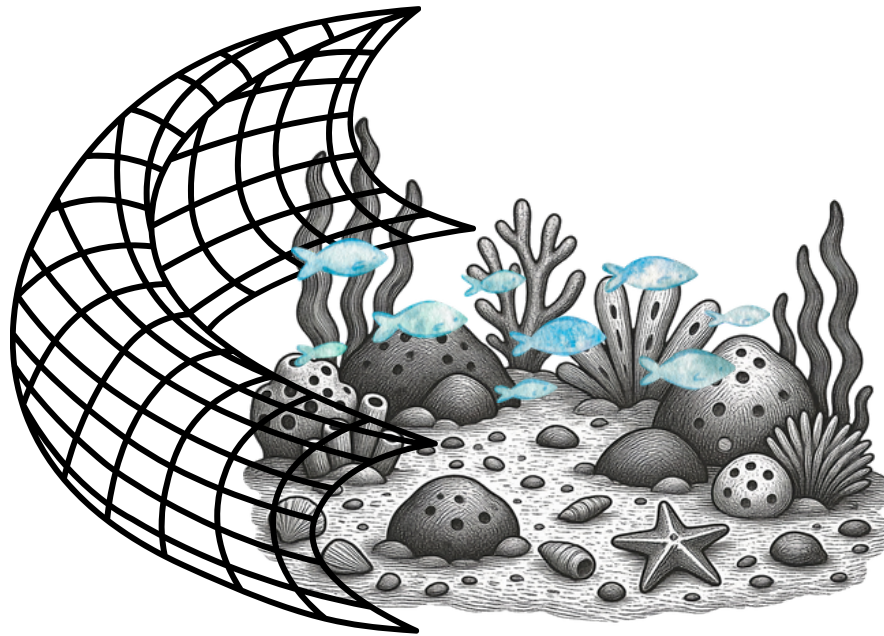
What can damage or harm the reef?





Taking more from the reef than can naturally be replaced

If we take more fish (or other plant/animal) than can be replaced through breeding, the population can shrink over time and may eventually be lost. This is a problem for communities that rely on fish for their food and income. It can also have a flow on effect on the reef ecosystem as the job that the fish was doing is no longer happening. This can cause problems in the ecosystem e.g. an over growth of algae.

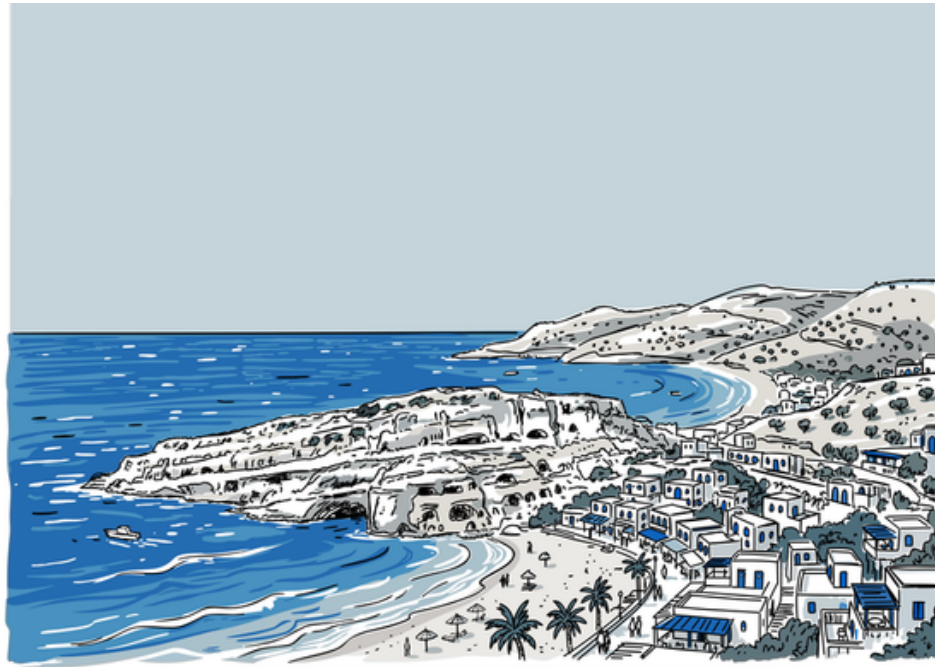


Using fishing methods that are likely to damage the reef

Blast fishing for example uses explosives to catch fish . Despite the obvious potential for damaging coral reef environments the practice still poses a serious threat in some places. This is not however the only fishing method that can damage reefs. Nets such as ring nets and beach seines, when used in shallow reef areas, can break corals and disturb the reef ecosystem.



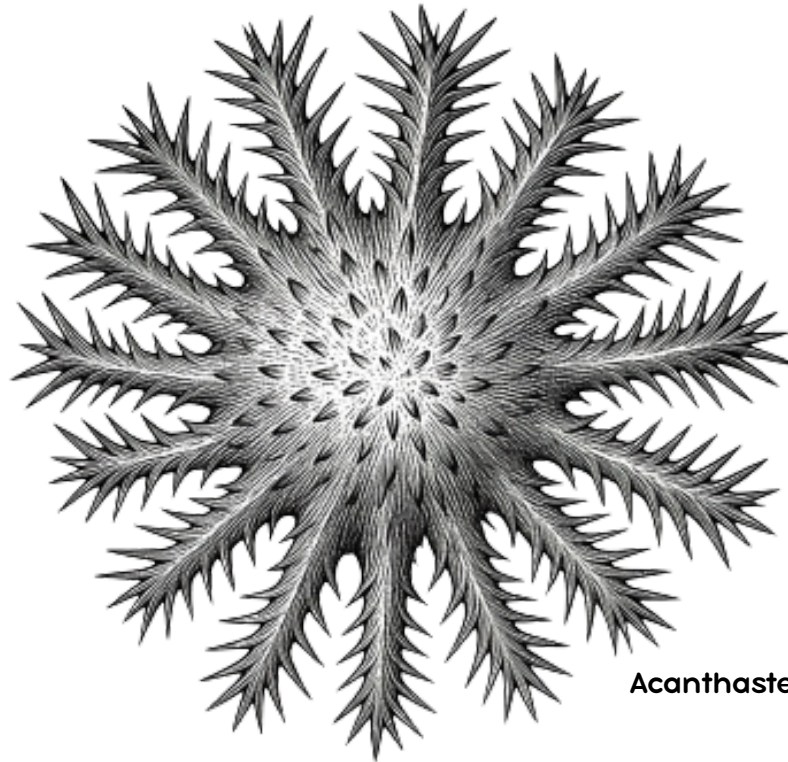
Construction and development



Coral reefs and other dependent ecosystems can be directly damaged by construction or development that happens near the coastline. Construction and development can also harm coral reefs indirectly by increasing sediment and pollution runoff from the land. Mud and sediment can block sunlight and smother corals (sedimentation), while nutrient pollution can lead to algal growth that damages reef ecosystems (eutrophication).



Introduced species that cause harm



Acanthaster Planci

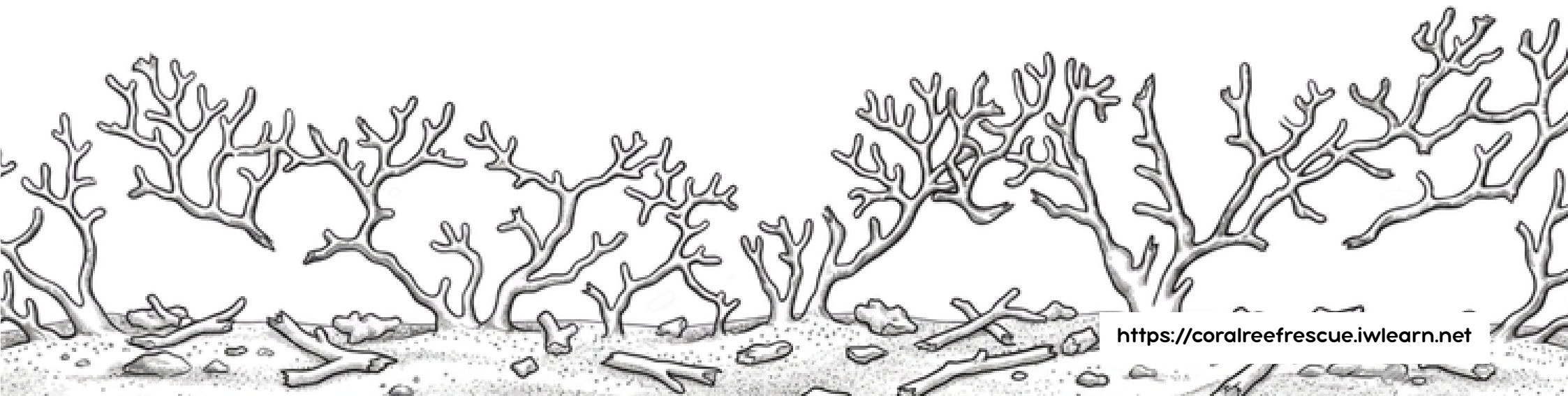
When an animal or plant arrives in a new place and has no natural predators populations often explode. This can upset the balance of the ecosystem and cause harm. For example, large crown of thorns (COTs) starfish outbreaks can destroy reefs because they eat coral, but nothing eats them.

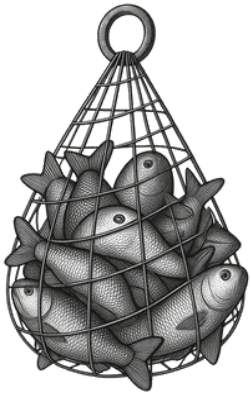


Coral bleaching



When oceans get too warm, coral can become stressed and turn white. This is called **coral bleaching**. The corals turn white because they expel the microalgae from their bodies. Remember, microalgae help provide food for coral so if they go too long without this important partner they can die.

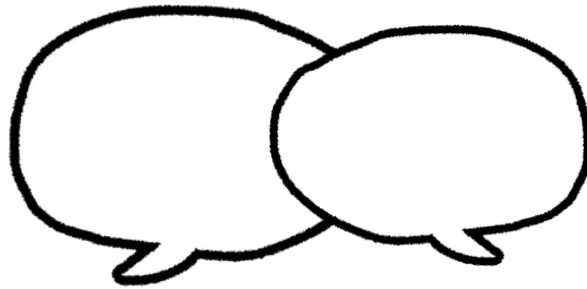




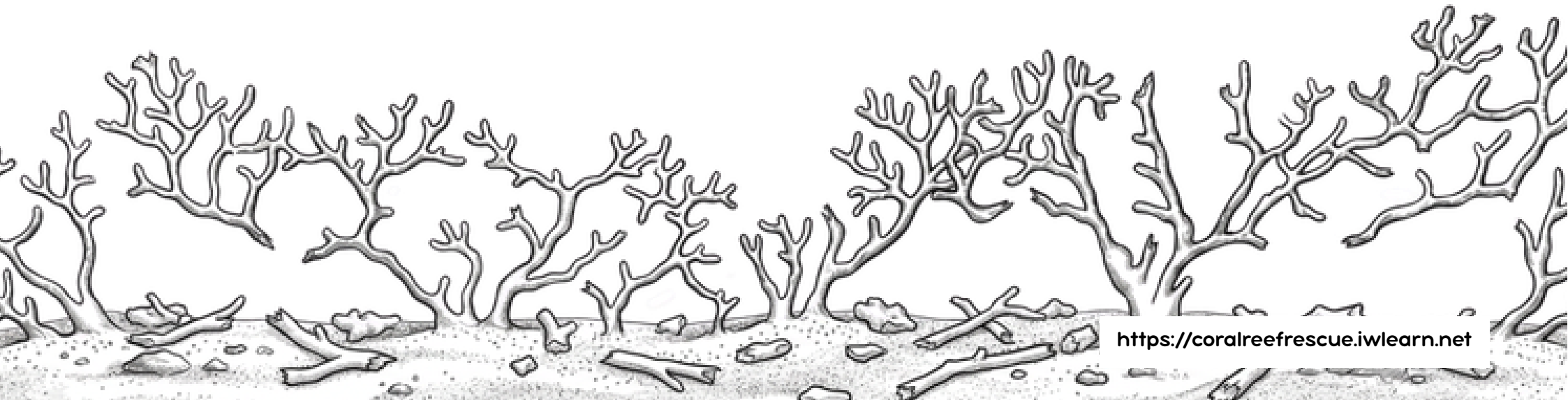
When more than one of these events take place they can amplify (and sometimes mitigate) each other's impacts.



So, we know that coral reefs are important, and we know that they are under threat... so what can we do?



Is your community already taking steps to protect coral reef systems? What are some next steps you could take individually or as a group to take action to respond to these threats and stressors and secure the long-term future of your local coral reefs?





Personal Actions



Reduce your carbon footprint at home or work



Reduce single-use plastics in your daily life



Choose reef-safe sunscreen



Avoid touching or standing on coral when swimming or diving



Register for the GEF7 Coral Reef Rescue Online Courses



Make sustainable seafood choices



Community Actions



Organise or participate in a local beach or reef clean-up



Advocate for better land management practices in your local area



Start or join a community reef monitoring group



Work with local schools to include reef education in the curriculum



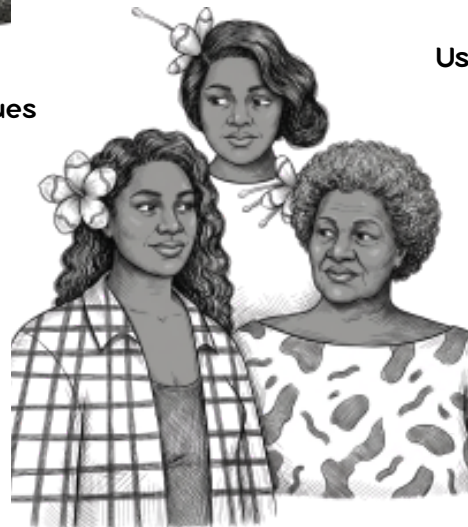
Sharing Knowledge



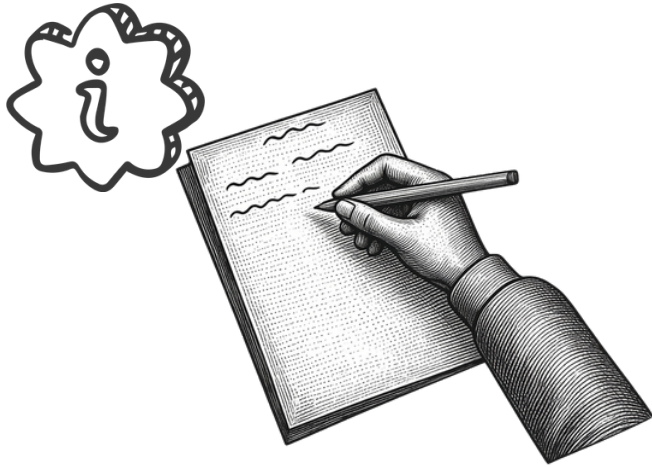
Share what you've learned today with family, friends or colleagues



Use social media to raise awareness about local reef health



Connect with local Traditional Owners or community groups who have reef knowledge



Write to your local councillor or member of parliament about reef protection

Advocacy



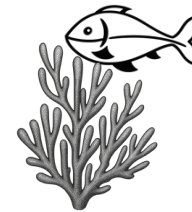
Support or volunteer with a local conservation organisation



Engage with local businesses to encourage sustainable tourism practices



Monitoring and Research

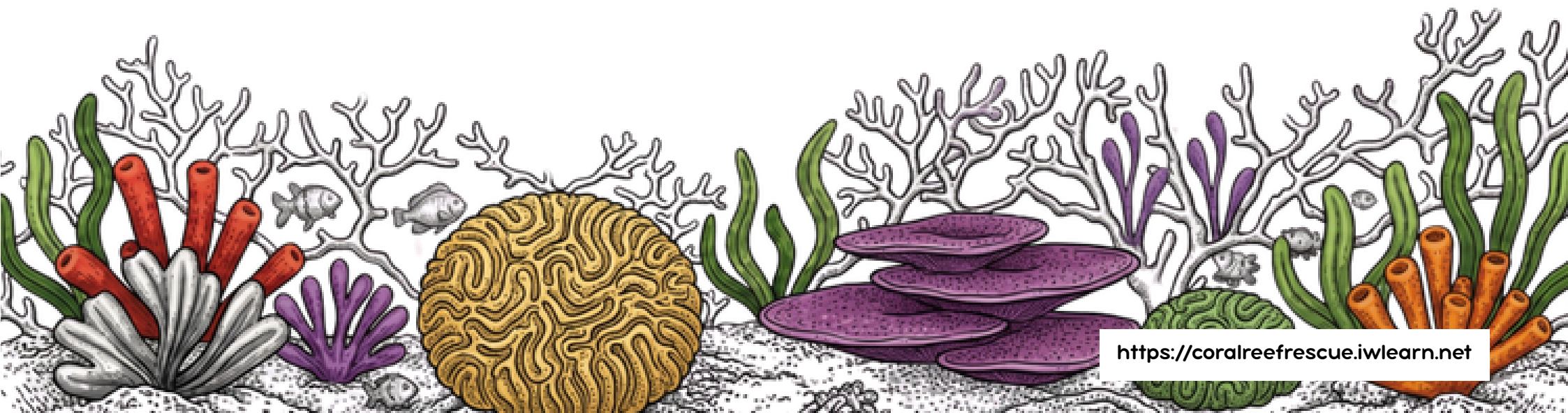


Participate in citizen science programs such as CoralWatch or Eye on the Reef



Document and report coral bleaching events when you see them

What are the top 5 things your community can start doing today to protect your reefs?



Glossary

Algae: Algae are a large, diverse group of primarily aquatic organisms that perform photosynthesis to produce energy. Unlike land plants, they lack true roots, stems, leaves, and vascular systems. They range from microscopic, single-celled organisms to complex, multicellular structures like giant kelp (Britannica, 2026).

Coral Polyp: Coral polyps are defined as tiny, soft-bodied marine invertebrates (creatures that do not have a backbone) belonging to the phylum Cnidaria, they have a cylinder shaped body topped with a mouth and tentacles. They can exist as solitary individuals or in large colonies that form coral reefs (Investigating Seafloors and Oceans, 2017)

Eutrophication: the process where a water body becomes enriched with excess nutrients, particularly nitrogen and phosphorus. These nutrients can come from sources such as fertilisers, sewage, and stormwater runoff. This can cause algal blooms, a reduction in sunlight reaching underwater plants and animals, lower oxygen levels and harm to fish, corals and other aquatic organisms.

Herbivores: An herbivore is an organism that eats mostly plants. Herbivores range in size from tiny insects such as aphids to large, lumbering elephants (National Geographic, 2006).

Micro-algae: Microscopic, single-celled organisms that live in aquatic environments and produce organic matter through photosynthesis. They form the base of the food web and produce roughly half of the oxygen in our atmosphere (Science Direct, 2026).

Photosynthesis: Photosynthesis is the process by which plants, algae, and certain bacteria transform sunlight into chemical energy. By using green pigments called chlorophyll, these organisms convert water, carbon dioxide, and sunlight into oxygen and energy-rich sugars (glucose) (Monash University, 2026).

Predator: A predator is an organism that hunts, kills, and eats other animals (known as prey) for survival (Cambridge Dictionary).



About the Coral Reef Rescue Project

The Coral Reef Rescue Project is a US\$7M Project funded by the Global Environment Facility to build capacity and solutions that ensure the long-term survival of climate refuge coral reef ecosystems and the communities that depend on them. The project is implemented by the World Wildlife Fund and executed by The University of Queensland in partnership with Wildlife Conservation Society (Fiji, Madagascar, Solomon Islands), Yayasan Reef Check Indonesia, Palawan Council for Sustainable Development, Philippines and Marine Parks and Reserves Unit, Tanzania.

Free Online Resources for Coral Reef Conservation

The GEF 7 CRR project has released free online courses on coral reefs. These include Coral Reefs: Introduction to Challenges and Solutions, Coral Reefs: Sustainable Blue Economy, Coral Reefs: Data and Monitoring, Coral Reefs: Climate Resilient Communities. These free online courses are available in English, Bahasa Indonesia, and French.

Alongside these courses, a new free online decision support tool was created: Coral Reef Rescue Portal. This brings together over 70 existing coral reef datasets and resources in one easy-to-use, searchable platform.