

Coral reefs: lesson 3 of 4

Reef neighbours

Mangroves, seagrass and
coral reefs work as a team

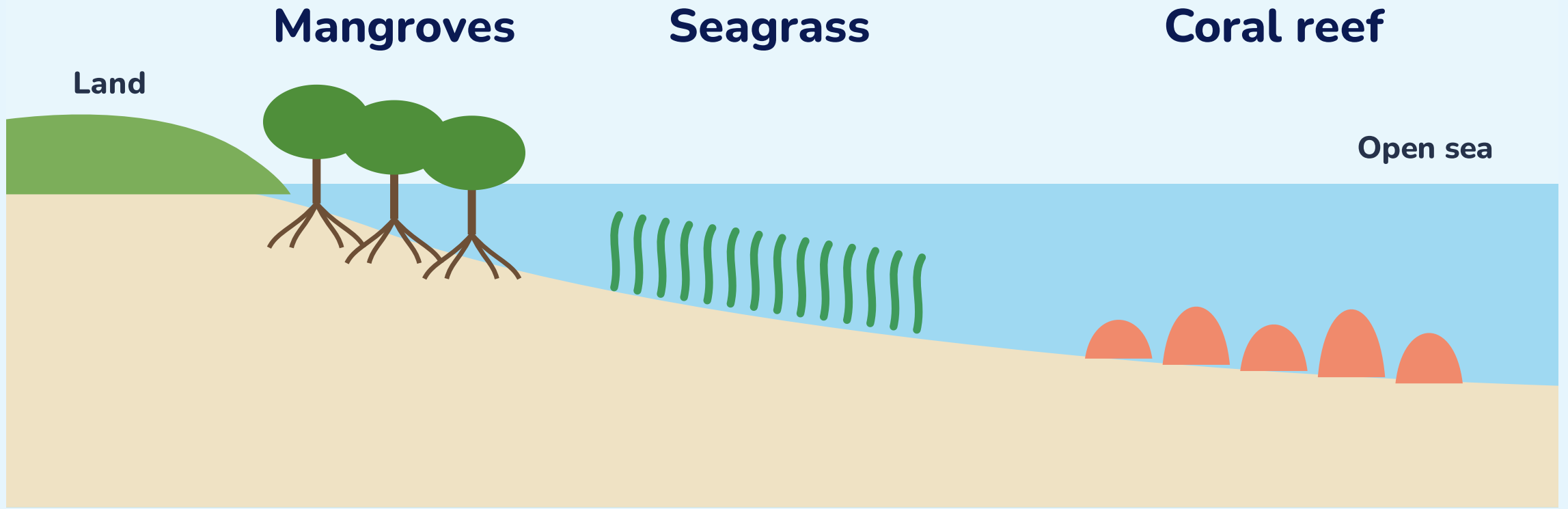


Mangroves in Negros Oriental. Photo: MCP



From land to sea

Along many Philippine coasts, three ecosystems sit side by side. What happens in one affects the others.



Mangroves

Mangroves are trees that grow in salty water where the tide comes in and out. Their tangled roots hold the mud together and shelter young fish and crabs.

Per hectare, mangrove forests can store up to four times more carbon than most other tropical forests, most of it in their deep, muddy soil.



Mangroves from the air, Negros Oriental. Photo: MCP



Seagrass

Seagrasses are flowering plants that live completely underwater, not seaweeds. Their meadows feed green turtles and dugongs.

Seagrass shelters young fish and helps many more reef fish survive. It also traps mud and stores carbon.



Seagrass meadow. Photo: Benjamin Jones



How they help each other



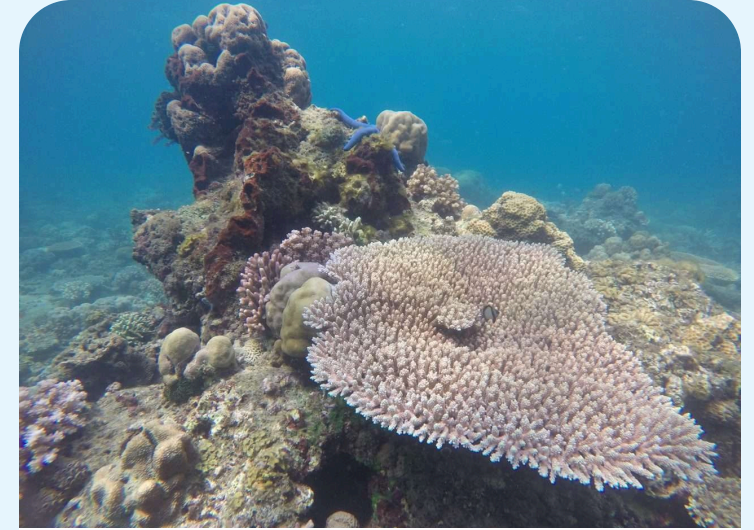
Mangroves trap mud

so the water stays clear for seagrass and corals.



Seagrass is a nursery

where many young reef fish hide and grow before moving to the reef.



Reefs break the waves

so calmer water reaches the seagrass and mangroves.



Reef 1 and reef 2

1. Fold a sheet of paper in half. Label one side Reef 1 and the other Reef 2.
2. On Reef 1, draw a coast with mangroves, a seagrass meadow and a coral reef.
3. On Reef 2, draw the same coast, but the mangroves and seagrass have been cleared.
4. Add young fish, turtles, crabs and big fish where you think they can live.
5. Compare with your partner. Which reef has more life? Why?

Think about

Where can young fish hide on Reef 2?

What will the turtles eat?

What happens to the water when mud washes in?



Mangrove or seagrass, or both?

Sort the 12 statements on your worksheet into the Venn diagram. Some belong to both.



The storm shield experiment

1. Pile wet sand at one end of a tray to make a beach. Pour water in the other end.
2. Make waves by gently pushing a ruler up and down in the water 20 times. Draw what happens to the beach.
3. Rebuild the beach. Push twigs, straws or pencils into the sand to be mangrove roots.
4. Make the same 20 waves. Draw what happens this time.
5. Which beach lost less sand? Why?

You need

A shallow tray or plastic box

Sand and water

A ruler

Twigs, straws or pencils



What is happening to them?

450,000 ha

of mangroves in the
Philippines in 1918

over half

of them have since been
lost, mostly to fishponds

19-29%

of the world's known
seagrass has been lost
since the late 1800s

The good news: people are now restoring both, including MCP volunteers working with local communities.

How we know: Inquirer, 2024. Dunic and others, 2021. Waycott and others, 2009.



Planting mangroves the right way



Plant where mangroves grew before

Old, abandoned fishponds are often the best places to restore.



Don't plant on seagrass or bare mudflats

Seedlings planted in the wrong place often die, and can harm other habitats.



Look after the seedlings

Keep checking them, and replace the ones that don't survive.



Talk about it

Why do fishers need healthy mangroves and seagrass?

What did the storm shield experiment show?

Why is it so important to plant mangroves in the right place?

Is there a mangrove or seagrass area near your school?

Next time: the future of the reef, and what we can do to help



Photos and sources

Photos: mangroves, mangrove planting and reef by MCP, Negros Oriental. Seagrass by Benjamin Jones. All illustrations drawn for this lesson by Marine Conservation Philippines.

Sources:

- Donato, D.C. and others (2011). Nature Geoscience.
- Waycott, M. and others (2009). PNAS.
- Dunic, J. and others (2021). Global Change Biology, via Simon Fraser University.
- Inquirer (2024). Groups urge PH to restore mangroves in abandoned fishponds.
- Primavera, J.H. and others (2013), via ACRS 2016.
- Wetlands International Philippines.

Full links are in the teacher reading. Free to use and share for education. Made by Marine Conservation Philippines. More free lessons: marineconservationphilippines.org/resources/teachers-resources/

