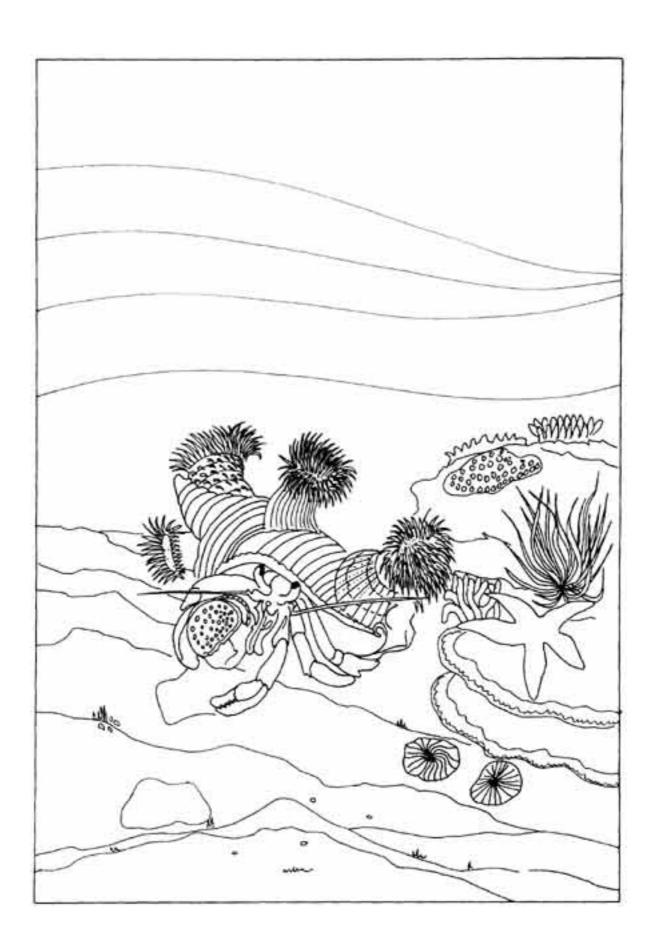
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24. COMMENSALISM

Most organisms live within groups of their own kind. But some plants and animals live with organisms that are not from their own group or family.

If such a relationship helps only one organism, while the other is not harmed, then the organism helped is called a **COMMENSAL**. The relationship is known as **COMMENSALISM**. The word comes from the Greek language and means 'eating at the same table'. So we know that commensalism has something to do with food.

Is there commensalism in the Maldivian coral reefs? Yes. Let's look at the Sharksuckers and sharks. The Sharksucker sticks to the shark. It gets a 'free ride' and saves energy. At the same time, it gets all the left-overs from the shark's meals. Does the shark gain in any way? No. Is it harmed? No. This is commensalism. The Sharksucker is a commensal.



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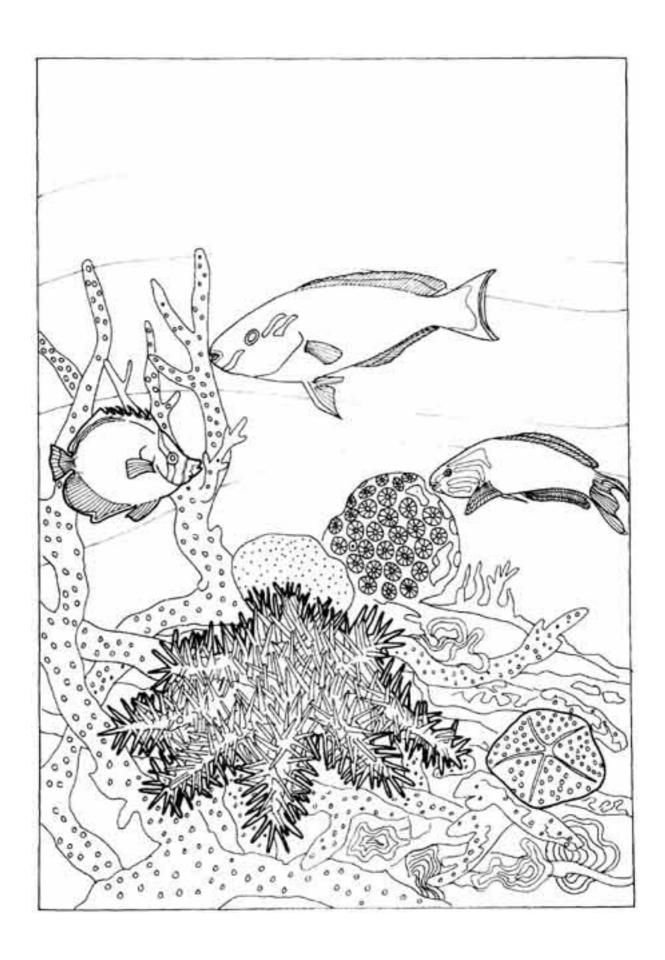
25. MUTUALISM

When two organisms live closely together and they both gain, the relationship is called **MUTUALISM**.

Again, let us look at an example.

There is a mutualism between the Hermit Crab and the Sea Anemone. As the Hermit Crab moves from one empty shell to another, the Sea Anemone (which lives on top of the same shell) moves with it. The Sea Anemone gets a firm base on which to live. As the crab feeds, some bits of food will float up and make a meal for the Sea Anemone.

How does the crab gain? It gets some protection, because the Sea Anemone's stinging tentacles keep away the crab's enemies.



26- وَوْ مَرْمِ وَمُرْمُ وْ مَرْمُ وِ مَا وَمُرْمَ وِ مَا وَرُورُ

منفوهم ودفر ودعو عملا عرصومته دعودد مفيدور وبرهدي ودو وعانيه فدوري دودوه ودووه وُوْرَمِ وَمُوْرِهُ وَمُوْرَهُ مَدُو وَرَدُو وَدُوْرُ جِفَارُهِ مَعْدُونَ وَرُوْرُ ورُورُتُ رُورُرُو وَوَوَرُورُ وَوَوْرُورُ وَوَوْرُ وَمِورُورُ رَوْدُ رَوْدُ وَوْرُ وَارْدِ ترردة لوثر لللروا بالدل وقائر للؤم بمؤترة لزفر ترلونا ئے تروور درور دروں کے ورو وسمورو ورودو، وروو ہ وهوه مردول دولودي وهودانا هوه ددوهول دي وهرو 12 2x3 41 5x4x 4x4x 4x4x 2x4x 2x4x 4x4x 4x4x 2x4x 2 دُدْ مُوَدُدُونَ دُرُورُ دُورُ وَيُرْ وَدُورُ لُمُورُورُ لُمُ مِوْرُورُورُورُ ووري وورو ورور ووود وبورد ومرو وور وورو وورو . 353 - 356 دُورَ وِدَهُمُودُ فِيدُومُو وَمُنَا مَارُو هُوِ مَا وَمُوْ وَوْمِوْمُ يردولاً لله وزوع أو وروغ فرد عيدة له يرو ورو لارو عَدُو مِنْ وَدُو وَقُو مَنِي وَمُؤْدُونُونَ وَمُو دُورُهُ وَدُورُورُ وَدُورُورُ مَنِي عدد عدد دسوم درور درو عدو ، ودرور وهم رهد لتنفذ رسه روزلل وللتنمي تنزو لأولا لأ وللفرناء .32522

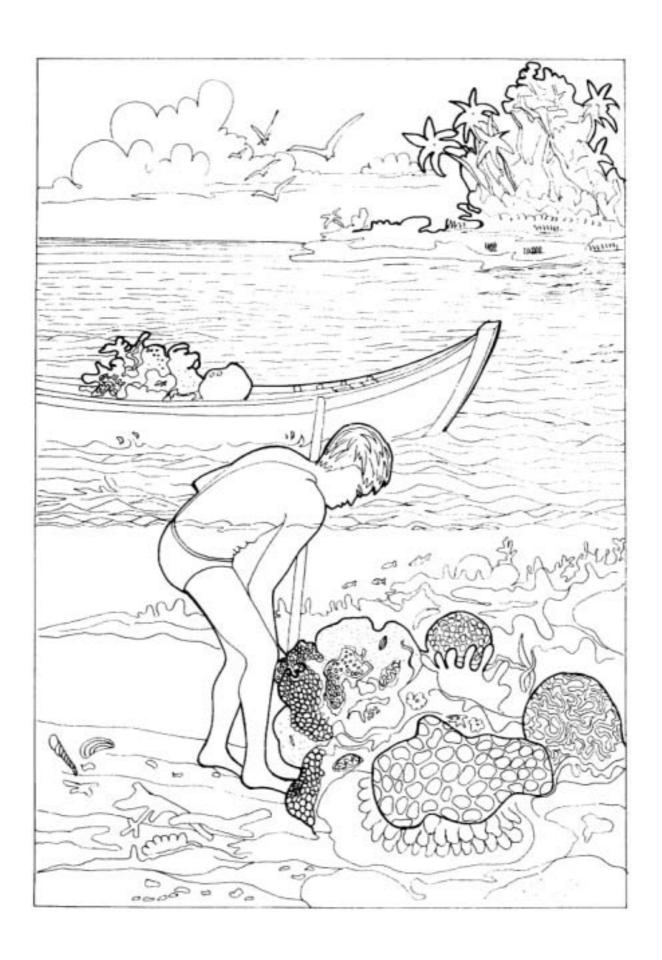
26. HOW NATURE DAMAGES REEFS?

This exciting world of animals and plants that we have learnt abOut can easily be destroyed.

Both Nature and Man damage coral reefs. Can a damaged reef recover? Yes, if it is not badly damaged, it can repair itself _ but only very slowly. It takes about forty years for a reef to recover, if you leave it alone. Destruction on a big scale, however, can be very serious and the reef may die.

There are many ways in which nature can damage a reef. Here are some

- Heavy storms break up certain kinds of delicate corals, like the branching corals.
- The Crown of Thorns (COT), a very large purple starfish, eats the living coral polyps. So colony-building slows down.
- Certain kinds of fish, such as the Parrotfish and Angelfish, eat into the face of the live coral. They have long, tubelike mouths which they use to bite off coral polyps.



27 - ورشر و ترشر فر د درو مر

عهرزووور ومرزوو شرووق لاو ستهد ولاندازووو. شرودووور زوزو وفوولود.

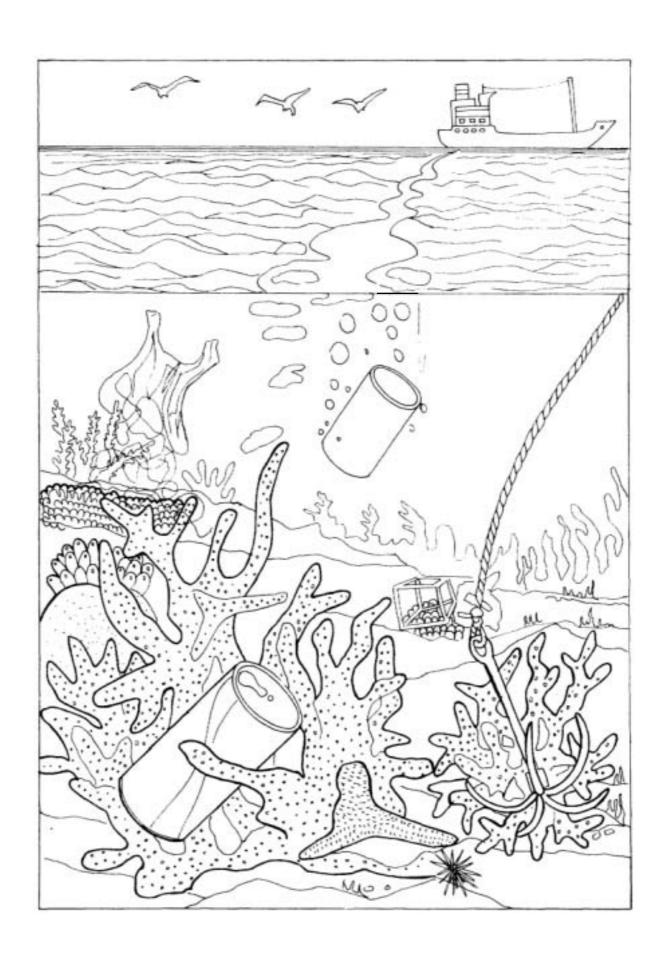
المراود و المرددون والمؤلمات المردد والوارد الموادور المردود المردود

عَجْدَهُمُو وَدَهُ وِدَّوَيْ وِهُوَدُلِ وَفَرَدُو لَلْوَلَهُمُوا الْأَوْمُولُولُو الْمُوْمُولُولُو غُوْمُ وَلَا قُوِمُومُ رِرَوْمِهُ وِلْمُعْرِمُو الْحَلَّا فَوْلُ وَجُمُ رَوْمُولُولُو لِرُحُولُونَ

ﻨﯩﺮﺯﯗ ﺋﯘﺯﯗﯞﯗﭖ ﻳﯘ ﮔﺮﯗﺯﯗﺩﯗﯗﭖ ﻳﯘﭘﯘ ﮔﺮﮔﺮﯗ ﻗﯘﺯﯗﺯﯗ. ﺩﯗﭼﯘﺭ ﻗﯘﺯﯗﺩﯗ ﺋﯘﻧﯘﻝ ﺋﺎﻧﯘﻧﯘ ﺋﯘﭼﯘﺭﯗ ﮔﻮﮔﯘﻝ ﺋﻮﯗ ﺳﺎﻧﯘﻧﯘﺭ ﻧﯘﻧﯘﻟﯘﻟﯘﺭﯗ.

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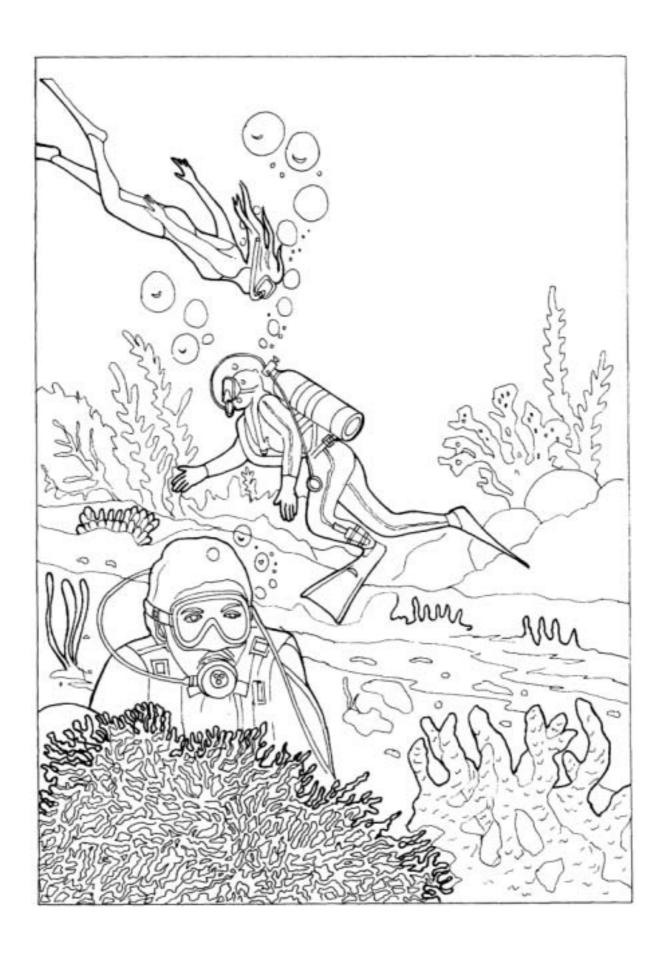


27. HOW MAN DAMAGES REEFS?

Man damages coral reefs in many ways

- People dump their garbage and waste (sewage) into the ocean. The water becomes so dirty that sunlight can no longer pass through the water. When plants cannot get sunlight, they die and the coral polyps stop growing.
- Oil spills from ships and *dhonis* pollute the water and can kill the reefs.
- When harbours are dredged, the waters become very dirty. Mud covers the tiny coral polyps so they cannot breathe or feed.
- By operating nets and traps to catch bait fish, reef fish and lobster, the reefs get damaged. Even the capture of some ornamental fish for export and the collection of seashells can cause damage to the reefs.
- You have learnt about the food chain. If any one organism is caught (fished) too often, it upsets the way of life in the reefs.
- More and more corals are mined to get the material needed for our houses and for our roads.
- Underwater explosives are used to break the coral and make harbours. This blasts away the work of a thousand years.
- And when dhonis drop anchor, the anchors hammer the reef and break it up.

All of us must be very careful about what we do to coral.



28- وَيُرْوَعُهِ وَرِسْوَ مُدْكُونَا ثِنْ وَيِهِ وَمِرْدُهُ وَقَاءً

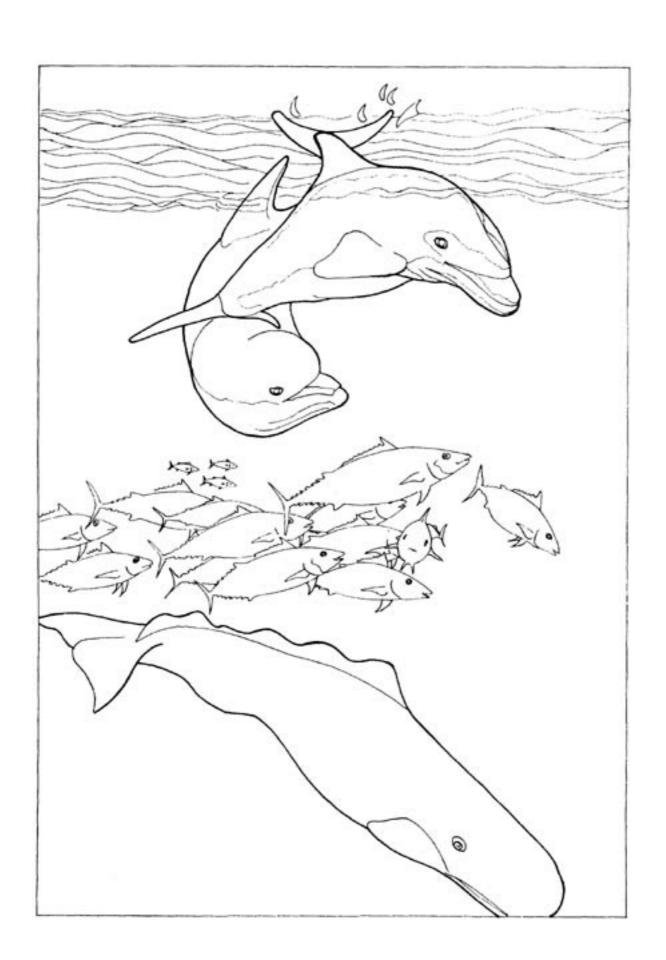
نز باشخبیدی کاب دور دروور بی برود شور این زودور دروورد دورو بدور ایروو درون در بوسموار بازو زودور درو درور درور بروور ایروو درون در در درور زودو درور درور درور دروان دو درش درون دورور داور

رِدَرِدُولِ دُولُودُوكُ لِرَبِرِدُ رَدُولُ وَلَامٍ الْدُولُو. وَرِ وَدُولُ الْرِدُ وَكُولُولُ وَلَامٍ رِهْرِكُ وَلَا رَدُولُولُ وِلْمُولُ وَلَا رَدُولُولُ الْدُولُولُولُولُ وَدُو قَالًا وِسْمَتِولُولُولُ

النفر والزوا الرو مِمِنَّوَا أَرِا وَرَا وَلِيَانِ أَرِ اللهِ عِنْوَارِ الْوَوَارِطِ الروازوارِ،

غيران دور سازون خزواد اود اوساوا كاشه دروزاو، زون دو خاه سازهادو نو زون دفر خاه زوودود درو الافرود ومشاروا زوزو تزويما الروان نارا خزون ودواد.

ولاي وشاؤن و مشافرة وهائول والمواه المنهام التواوع والمتسمون والمهال. المدر والماط بالمواد المولاد الموار كلاله، أو الموال والمواد المار بوازول والمواد المار والمادة المواد الم



28. WHY ARE CORAL REEFS IMPORTANT?

- When strong ocean waves and storms hit our lovely island beaches, they cause
 the land to slowly reduce. This is called **EROSION**. The coral reefs act as a
 barrier and provide protection. The waves hit the reefs and slow down before
 they reach the shore.
- Corals built the reefs that make up the Maldives. They also give us the materials
 to build our houses. But we must be careful about how much coral we take
 for house-building.
- The LIVING REEFS attract tourists from all over the world. These visitors go diving and snorkelling. Maldivians are needed as guides and to run hotels for them. So, many jobs depend on tourism.
- Coral reefs provide us with reef fish for food and for sale to other countries.
 They also give us the bait necessary for tuna fishing. Vividly coloured coral reef fishes are kept in aquariums all over the world.
- Some corals are so exquisite that they can be used as jewellery or as decoration in people's homes.
- Chemicals from sponges are used to treat cancer. Poisons produced by coral reef animals and plants are used to fight human disease. Coral skeletons are used in bone surgeries.

As you can see from some of these examples, the reefs can earn money for us because they produce things that we can sell. They also bring tourists, who enjoy coming to see the living reefs.

SO REMEMBER: Damage caused by nature cannot be helped. But damage and overuse caused by people can be stopped. Every one of us must help to look after our coral reefs. Why not get together with your friends in school and form a **Coral Reef Protection Club?**

Help our country to protect its reefs.