

Single Reef Zonation

Subject matter: The reef is build up in different zones (e.g. reef slope, reef crest/rim, lagoon/back reef).

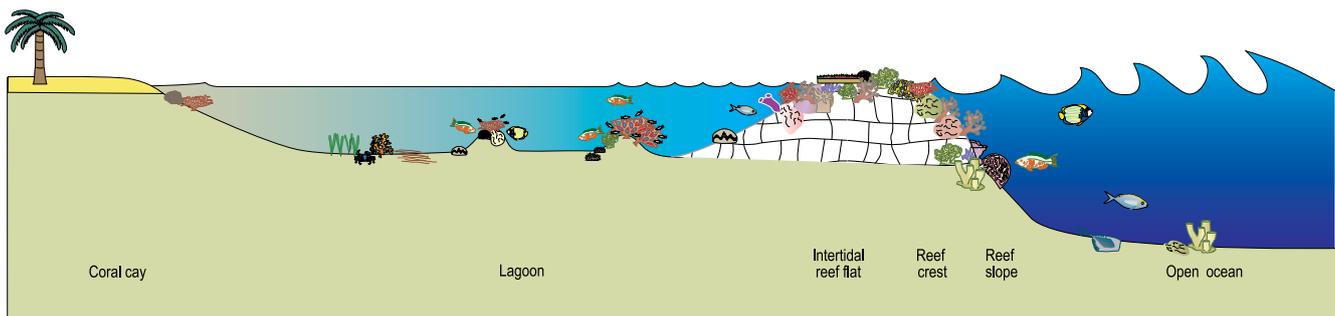
Recommended reading: Coral Reefs and Climate Change - Single reef zonation (p.95)

Reef habitats from beach to ocean

As you walk or snorkel across a reef, you will come across different habitats. Each habitat contains plants and animals that have adapted to the particular conditions. Closest to the shore is the reef flat and lagoon. The lagoon and reef flat are usually shallow, with high levels of sunlight and high temperatures. Here, corals will be protected from waves, but they have to tolerate high temperatures. Reef flats include sandy areas and small patches of coral. Common reef invertebrates include sea stars and sea cucumbers.

Beyond the lagoon, there is a ridge where corals may be exposed at low tide - this is called the reef crest. The reef crest is exposed to strong waves and currents. Here, corals tend to have 'short and stubby' (digitate) or encrusting growth forms to protect themselves from waves. Corals on the reef crest produce mucus to protect them from sunlight exposure at low tide. Coralline algae are common on reef crests, where they cement reef rubble together. Many invertebrates are also found in this area.

Moving out, the reef then descends down what is called the reef slope. On the reef slope, large and diverse coral colonies can be seen, along with a large range of fish species, especially pelagic (ocean) species.



Reef profile- Field

1. Decide on a suitable location in which you will walk to conduct the survey (avoiding large areas of live coral and using sandy tracks if possible).
2. Position a staff upright on the edge of the water with one of end of a 20m string attached at its base (the length of string can be altered depending on your reef).
Please note, for permanent structures on the reef you will need to apply for a permit. Temporary structures also need to be attended at all times and should not impact the marine environment.
3. From the shoreline, walk out 20m, hold the second staff upright and pull the string tight, raising and lowering it along the staff until it is level (when the bubble is in the centre of the window on the spirit level).
4. Stop and make the following observations of the area around you and record them in the 'Reef profile data' table:
 - a. distance travelled
 - b. height of string on the staff
 - c. dominant coral type nearby (branching, boulder, plate or soft)
 - d. substrate (sand, coral rubble, algae, live coral)
5. Leave the staff furthest from shore in place and carry the other staff from its current position out towards the reef crest, making sure the string is once again level before making your height measurements.
6. Repeat this procedure until you have reached the edge of the reef.
7. Use these observations to plot the reef profile in the area provided.

