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|  | Fore Reef | Reef Core | Back Reef |
| Water Characteristics:  Temperature,  Oxygen  Salinity | Temperature stable and normal marine  Oxygen stable and normal marine  Salinity stable and normal marine  This environment borders the open ocean, and so gets constant influx of new normal marine water. | Temperature somewhat variable, usually normal marine due to water washing in from open ocean.  Salinity variable depending on rainfall and evaporation.  Oxygen more stable and high due to breaking waves | Temerature variable due to shallow water, could be high to low  Salinity variable depending on evaporation, rain and run-off, could be very high to very low.  Oxygen depends on plant productivity (high) and amount of organic decay (low). |
| What is the substrate like? | Sandy from broken up reef debris (packstone, grainstone) | Hardground, broken fragments, so boundstone and grainstone | Can be muddy (mudstone, wackestone) or sandy (packstone, grainstone) |
| What are the advantages of living in this zone? | Stable conditions, lower wave energy, lots of food particles falling from reef | Abundant oxygen, shallow water means high plant production and high zooxanthellae production for framework organisms | Well-lit, quiet water, so good for plant production and delicate organisms. Protection from predators of open ocen |
| What are the challenges of living in this zone? | Few – mostly unstable blocks falling from reef and sand flows down the slope – better for mobile or weedy species | High wave energy means organisms need to be robust, encrusters, or able to cling on; or else live in the little cryptoenvironments in crevices | Chemically challenging with swings in oxygen and salinity, physically challenging with swings in temperature. Deeper lagoons are less challenging. |
| Paleozoic: who lived here? | Filter feeders: crinoids, bryozoans, brachiopods, bivalves, worms  Predators: cephalopods, trilobites, rugose corals  Grazers: gastropods  Algae | Tabulate corals, sponges, ostracods, rugose corals, brachiopods, gastropods, bivalves | Bryozoans, brachiopods, gastropods, bivalves, cephalopods |
| Modern: who lives here? | Scleractinian corals, soft corals, echinoids, crustaceans, starfish, fish, worms, coralline algae, squid | Robust scleractinian corals, crustaceans, gastropods, coralline algae | Grass, mangroves, fish, turtles, algae, crustaceans, gastropods, bivlaves |