



Reef flat to the west of Peros Banhos. The tide is receding, and the flat will shortly dry. The rubble and boulders are made of stony algae and dead corals thrown here by the breakers seen on the left at the edge of the platform.

Reef flats

The reefs flats are a striking feature of Chagos islands, most of which, but not all, are ringed by horizontal platforms which extend out to sea from 50 to over 500 metres. These break much of the energy of the oceanic waves, protecting the islands and are composed of very dense limestone. These platforms of coral rock are a mixture of many corals in growth position, surrounded and cemented together by solidified sand and rubble, which is itself derived mostly from broken and ground-down corals. On most ocean facing reef flats (as compared with lagoon facing), the outer, wave-breaking perimeter is constructed by calcareous red algae, and behind that is a boulder zone, named from the numerous lumps of deeper reef tossed up by waves. On very narrow flats which are found on western islands of Peros Banhos and Salomon atolls, the island's beach may lie immediately behind the boulder zone.

On ocean facing reef flats, little live coral grows because of the harsh environmental conditions. They dry out at low spring tides, and in Chagos such tides can occur near noon. This exposes any marine life, including corals, to the air and to intense heating from the sun, including exposure to strong ultra-violet rays, which are sufficient to kill all but the hardiest marine life. In some other parts of the world, reef flats may be located a little deeper, so they are rarely exposed to air, in which case they may support more profuse marine life. Some deeper reef flats can be seen in Chagos on lagoonal sides of some islands and, on those, more luxuriant marine life may be seen.

A different and equally important stress to marine life on reef flats can come from heavy rainfall too. Heavy rain deluges these salt-water adapted species with fresh water, which disrupts their body tissues. In the course of a single day, even where drying does not occur, species may be bathed in water which swings from hot, with a high salinity which has been raised by intense evaporation, to water with very low salinity. For many species, these rapid changes are more difficult than exposure to any one of the extremes. Closest to shore is the most extreme habitat for marine species, as it is uncovered by water for most of the time, so therefore species living there are exposed to more drying, heat, UV, freshwater and to predation from land animals. For this reason, most of the marine life is to be found farthest out from the shore.

Species that are hardy enough to survive there may be fairly common. Mobile forms of marine life can best be seen at night with a torch. Night-time predatory molluscs appear, as do octopus and several species of crustaceans, especially crabs, lobsters and hermit crabs. During the day these all usually take refuge in crevices, though some may move into deeper water instead. Care should be taken when walking on the reef flat as it is possible to kill or injure many species which are hiding.

The Chagos Conservation Trust is a charity (Registered in the UK No. 1031561), whose aims are to promote conservation, scientific and historical research, and to advance education concerning the archipelago. The Trust is a non political association.

If you would like more information on the publications or membership, please contact the Secretary (simonhughes@hughes-mccormack.co.uk) or visit www.chagos-trust.org.