



Eroded fragments of coral showing evidence of the various bioeroders at work. Most of the bioeroders bore into the coral skeleton and are therefore not easily visible on the surface. Some, like the molluscs, are more plainly visible.

Bioerosion

Bioerosion is the breakdown of live or dead corals, coral rubble, or sediment grains by biological activity. A wide range of organisms are capable of bioerosion, from microscopic fungi to sponges, bivalve molluscs, shrimps, crabs and grazing parrotfish and sea urchins. Bioerosion is one of the main processes in the life cycle of a coral reef: corals grow, die, are bioeroded and broken down into rubble and sand which becomes stabilized by encrusting organisms and cementation, providing a new substrate for new corals to grow. The relative rates of these processes are therefore important in determining the fate of coral reefs¹.

In Chagos, where coral death was widespread after the 1998 bleaching event², a large amount of dead coral suddenly became available for bioerosion. A field survey in 2001 showed that the previous thick coral stands had more or less disappeared in many areas, and that coral colonies had either broken up and tumbled down the reef slopes or been reduced to rubble. A closer investigation of the rubble³ showed that levels of bioerosion were high (present in 94% of all split surfaces). Sponges were the most abundant bioeroders, (81% of split surfaces), followed by various worms (57%).

Breakdown had been very rapid at most sites, leaving small loose rubble, with little consolidation after 3 years into a firm framework on which new coral recruits could thrive. On the other hand, continuing removal of large amounts of dead coral had left bare rock that was often covered in crustose coralline algae, which provided good potential substrate for new coral settlement.

¹ Scoffin, T.P. (1992). Taphonomy of coral reefs: a review. *Coral Reefs* 11:57-77.

² Sheppard, C.R.C. (1999). Coral decline and weather patterns over 20 years in the Chagos Archipelago, central Indian Ocean. *Ambio* 28: 472-478.

³ Sheppard, C.R.C., Spalding, M., Bradshaw, C. and Wilson, S. (2002). Erosion vs. Recovery of Coral Reefs after 1998 El Niño: Chagos Reefs, Indian Ocean. *Ambio* 31(1): 40-48

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).

Visit www.chagosconservationtrust.org