

# Taking Back the Reef:

## Crown-of-Thorn collection day on reefs around Zanzibar

Text and photos by Peter Bennett



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**T**here were at least 721 good reasons for going out on Sunday morning, the first of June 2008.

It was sunny, as usual, a few distant clouds but otherwise blue sky. A motley crew of researchers, divers, and volunteers met on the beach of Stone Town, just near Livingstone's Bar.

Besides the usual snorkels, masks and fins, we had been issued with some extra equipment: thick (gardening) gloves, nylon (rice) sacks, and carefully prepared pointy sticks – some with a vicious looking metal spike.

Zanzibar is beautiful, no doubt about it, and no more so than along its coral reefs. Many visitors take the opportunity to do some snorkelling or diving, and are invariably delighted with the fantastic fish and colourful coral. Of course this is special. That's one of the reasons to come here, right?

But, inevitably these days, the balance of nature is changing, and today's problem is that one particular type of starfish is eating-up the coral.

According to Dr. Chris A Muhando at Institute of Marine Sciences (IMS), Zanzibar, these creatures can grow up to 80 cm in diameter and are covered by numerous sharp, 40-50mm spines. "This large starfish makes a formidable sight when encountered under water," he said. "Most sea stars have five arms but the crown of thorns has up to 21."

At the briefing we were told to swim in pairs, to use the gloves, sacks and sticks provided. We were instructed not to touch the Crown of Thorns Starfish (COTS) as their spines are poisonous and not to break them into pieces as a detached leg (and they have enough of them) can grow back a whole new body.

2008 is the International Year of the Reef (IYOR), and one of the local initiatives – to increase awareness of the COTS problem and of the value of healthy coral reefs – was this day out on three reefs close to Stone Town, to collect as many of these menaces as we could find.

This is about the balance of nature. It's been upset. The natural predators are the giant triton shells which are often collected to sell to tourists. The humphead wrasse, star pufferfish, and the titan triggerfish also feed on COTS but with over-fishing there are fewer of these around. There has also been an increase in nutrients, particularly off the coast of Stone Town, which increases the abundance of plankton, and that in turn feeds the COTS larvae.

Over the past four years, Chumbe Island Coral Park has systematically collected and killed these starfish within the marine park, to keep the numbers down, and to minimize the damage. Within the protected reef more than 3000 starfish have been collected. The park rangers continue to be vigilant, monitoring the reef area on a more-or-less daily basis when snorkelling with tourists and arranging special COTS collections whenever they see live sea stars or notice feeding scars (patchy bleached areas) on the corals.



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Muhando explains that since 2004, this continuous removal of COTS in Chumbe Marine Park has “prevented decline in coral cover contrary to other reefs off Zanzibar. Continuous recovery of Acropora corals after the big bleaching event in 1998 has been sustained.”

Altogether, we used three boats, each visiting a different reef. My boat went snorkelling, whilst the other two went diving. We had a slight onshore breeze and waves were splashing over the bow as we took a 30 minute ride out to the reef at Bawe Island. The water was beautifully clear and the snorkellers enthusiastically teamed up and slipped over the side. For the uninitiated, the first challenge was finding out what we were looking for. Even in the company of experts from IMS and Chumbe, it took us five minutes to find the first one. It was on a large flat plate coral. At first sight it looked rather dull in colour and bristly – like something useful for scouring cooking pans.

Having spotted one, the snorkeller would dive 2-3m and expertly spear the starfish with the pointy stick, so as to kill it. Then, using the stick, he'd lift it off the coral, taking care not to break it into pieces, and carefully shake it into a slightly open rice sack so the starfish could be removed and destroyed.

Once we found the first one or two, the others seemed to come a little more easily, although they were few and far between and by the end of the session the snorkellers' boat collected just 52 sea stars in about as many minutes.

The second boat went to Murogo reef. It had few COTS and the team returned with only ten of the blighters.

Back on the beach, somewhere between Tembo and Serena Hotels, a deep pit had been dug and officials and organisers waited patiently. There was excitement as the first and second boats returned. A TV crew and photographers jostled for position. Passers-by were keen to see what the





fuss was all about. What have they “caught?” What are they worth? What do they look like, how many have they got, and how big? Can you eat them?

Inquisitive eyes watched on as the sacks were emptied and a wooden ruler was held nearby ready for systematic measuring and logging. Instead, we were treated to a speech from our guest of honour, A. M. Outhman, Manager of the Menai Bay Conservation Area, who ceremonially cast the first COTS into the open pit.

As exciting as it all was, this formal acknowledgement of our efforts was concluded and has dispersed before the third boat arrived back. If only they had realised the real achievement was yet to come.

The third boat had gone out further away from town, to Nyange reef. Seven divers went down to the reef, at a depth of around 7metres. Sure enough, the problem was clear to see. There were COTS everywhere, clinging to the branching

staghorn corals like wind strewn plastic bags caught on thorn bushes.

The team systematically worked their way along the reef, filling bags as they went, but by the end of the session they had only cleared around 50 metres, leaving behind two or three times as many to be collected sometime soon.

They returned excitedly to the beach – not knowing how many they had collected and unsure how it compared to the other boats. They brought ashore 12 large gear bags stuffed full. It was immediately apparent that they had collected a phenomenal number. Enthusiastically the bags were tipped out and each COTS counted as it was tossed into the pit. Their tally came to 659.

So the final total for the day was an incredible 721. This was a great contribution towards ensuring the beauty of our reefs for all to enjoy.

