

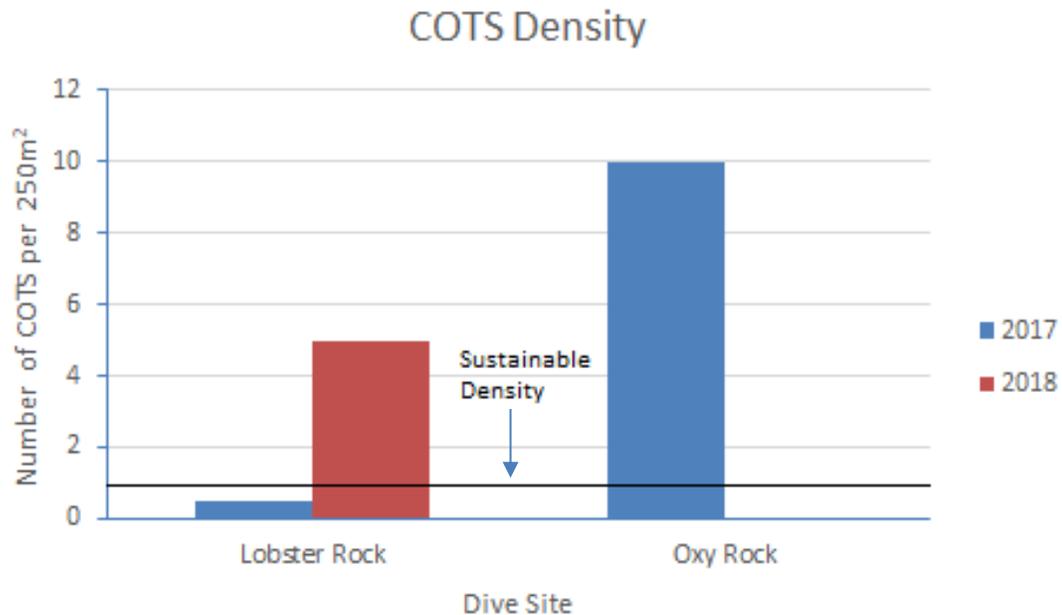
Crown-of-Thorns in the Outer Islands

By Matthew Morgan, Desroches Island Conservation Officer

The Crown-of-Thorns starfish (*Acanthaster planci*) abbreviated to COTS, is one of the world's largest sea stars (starfish) reaching over 50cm and a voracious predator of hard coral. Each starfish can consume an area the size of its body every day. 'Outbreaks' of these starfish are responsible for significant coral loss globally, most notably on the Great Barrier Reef in Australia.

In Seychelles there has been two outbreaks recorded, 1997 and 2014 occurring mainly in the Glacis region of north west Mahe. Though the exact cause of 'outbreaks' is unclear, overfishing of natural predators and high nutrient levels are thought to be contributing factors. Large aggregations destroy years of growth in a matter of weeks and reduce the fitness of coral reefs. Up until recently there has been no record of outbreaks in the outer islands.

However, in May 2017 Island Conservation Society (ICS) staff identified large numbers of COTS around Desroches whilst carrying out routine work. Basic observations were quickly followed up with density monitoring protocols designed by Dr Udo Engelhardt, a world leading expert on the subject. Results from 3 sites revealed that the densities were 10 times higher than sustainable in one location, confirming the first case of an outbreak in the outer islands.



Though the outbreak warranted control, logistics at the time could not make this feasible. A year on ICS has been able to carry out another survey revealing the COTS numbers remain in an outbreak status and have continued to increase, see graph.



Image label: The extent of predation is represented by large tracts of whitish-green shades resulting from the various ages of dead coral being covered by algae. (Photo credits: Matthew Morgan, Hannah Harries).

ICS is currently initiating control to reduce the stress on these important reef sites, preliminary efforts took the form of manual extraction with help from the FourSeasons Resort Dive Centre *Blue Safari* and resident marine educators *WiseOceans*. In total 23 adult starfish were removed from approximately 750m² at one site, an area which could only sustain 3 individuals.

The ICS team has now received a vinegar gun on loan from SNPA which will provide greater efficiency and lower resource demands. The technique means eradication dives can be carried out at more frequently. Control of COTS has been carried out in Seychelles since 1997 by MCSS, SNPA and local dive centres, removing thousands of starfish over years of hard work. ICS hopes to continue this national effort by controlling populations in the less accessible outer islands.

Reefs around Desroches were heavily affected by the 2016 El Niño event with some sites losing up to 70% coral cover. Through controlling COTS the reef can be relieved of just one of the many stresses which are reducing the resilience of these critically important habitats.

Further studies are required to comprehend factors which cause outbreaks, ICS hope to understand and mitigate the source of the problem if possible. Water quality monitoring protocols are currently being developed under the GOS-UNDP-GEF Outer Islands Project and will play a critical part of helping determine why COTS are affecting a very localised patch of reef around Desroches Island.

To see the team in action on Desroches visit www.islandconservationseychelles.com