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Distribution of Crown of Thorns (*Acanthaster planci*) Outbreaks along the North Shore of Tutuila

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ABSTRACT

Outbreak levels of Crown of Thorns starfish (*Acanthaster planci*, COTs) have been occurring around Tutuila since 2011. These outbreaks are thought to be caused by increased nutrients due to terrestrial runoff. Outbreaks were confined to the south side of Tutuila in 2011 and 2012, but spread to the north side in 2013. A possible reason for the observed outbreaks on the south side could be that most of Tutuila's population live on the south side of the island. Thus, we hypothesize that due to the small population of people on the north side of Tutuila, there should be limited COTs outbreaks on the north shore.

Our study was conducted by using the tow boarding method along the north side of Tutuila Island. Tow boarding is conducted by towing two snorkelers behind a boat over a reef slope. While being towed, the reef is scanned and GPS coordinates are taken for any outbreaks that are seen. After taking the coordinates, the average depth, time, and intensity of each outbreak are noted. Each site is recorded as light, moderate, or heavy. During our tow board surveys, we came along a stretch of moderate and heavy outbreaks along Fagasa Bay to Fatuelo point, as well as between Fagamalo and Aloau Bay. Contrary to our hypothesis, the data collected showed that there were large outbreaks on the north shore, and that the outbreaks were very heavy. With this data, divers have eradicated 1115 COTs to date in the area that was surveyed.

Key Words: *Acanthaster planci*, Crown of Thorns, Tow boarding, Outbreaks, Coral reefs

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