**Rib reef**

*Rib reef was last surveyed in May 2016*

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| Figure 1 a) map showing location of Rib reef, b) hard coral cover around the perimeter of Rib reef in 2016, number of COTS (symbol), diving sites/ intensive survey sites (symbol=circle).  **Summary of status and trends**  Table 1.   | **Survey method** | **Measure** | 1990s  Average (range) | 2000s  Average (range) | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Manta tows on reef perimeter | Average percent cover of hard coral | 34%  (1-50%) | 11%  (1-30%) | 5-10% | 0-5% | 20-30% | 30-40% | 40-50% | 62-75% | | Crown-of-thorns starfish/tow | 1.068  (0-6.06) | 1.226  (0-8.545) | 0 | 0 | 0.029 | 0 | 0.053 | 0.143 | | Outbreak status\* |  |  | RE | RE | RE | NO | NO | NO | |  |  |  |  |  |  |  |  |  |  | | Fixed transects on survey sites | Average percent cover of hard coral | 46%  (28-66%) | 8%  (3-23%) | 9% | 10% | 16% | 19% | 36% | 38% | | Average juvenile coral abundance | Not surveyed | (16)  9-20 colonies | 6 colonies | 14 colonies | 36 colonies | 52 colonies | 46 colonies | 29 colonies | | Total Fish species | 76  (70-82) | 81  (70-90) | 75 | 83 | 87 | 82 | 79 | 91 |   Color coding reflects an assessment of the status of hard coral cover relative to long-term GBR-wide averages:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Low  (0-10%) | Moderate  (10-30%) | High  (30-50%) | Very High  (50-75%) | Extremely high  (75-100% ) |   \* AO = Active outbreak, IO= Incipient outbreak, RE = Recovering from past outbreak, NO = No outbreak after recovering or no history of outbreaks.  *For explanation of terminology please click here for more information* | *Photos of different habitats* |



Figure 1. Estimates of COTS (*Acanthaster planci ),* benthic cover and fish abundance at Rib Reef. Data for manta tows are median hard coral cover and number of *Acanthaster* planci individuals sighted per tow. Estimates for benthic data and fish abundance from permanent fixed transects are raw means plus or minus one standard error. Fitted lines and confidence bands are mean estimates plus or minus one standard error derived from general additive models (gam), with a cubic regression and fifteen knots*.* For explanation of terminology and ranges of values click here

*Results of manta tow surveys.*

Rib Reef has been surveyed using manta tow regularly since 1987. A residual COTS population and large areas of old dead coral indicated that Rib Reef had been subject to high COTS populations prior to 1987. No COTS were observed in 1988 and the reef was classified as Recovering. In the absence of COTS activity, median reef-wide live coral cover (coral cover) increased markedly from low levels in 1990 to high levels (40-50%) by 1994 and remained high until 1998. In 1999 large numbers of COTS were observed and the reef was reclassified as Active Outbreak. COTS numbers remained at Active Outbreak levels until 2003, with a corresponding decline in coral cover to a very low (0-5%) level by 2001. By 2004 COTS numbers had dropped and Rib Reef was reclassified as Recovering. No COTS were recorded in 2005. Coral cover then proceeded to increase after 2005, and had reached moderate (20-30%) levels by 2010. However surveys in 2011 showed a decline in coral cover to a low level (5-10%). This was due to the effects of Severe Cyclone Yasi that passed 90km to the north in February 2011. Surveys from 2013 to 2016 showed a remarkable recovery in coral cover to a historically very high (50-62%) level. Low levels of coral bleaching and signs of white syndrome disease were observed on small numbers of individual scattered coral colonies around the reef perimeter. No signs of black-band disease were observed. COTS numbers have increased on this reef in recent years and once again Small numbers of COTS were observed (at localised incipient outbreak levels on the second flank) however overall COTS numbers were below those considered to impact coral cover and Rib Reef remained classified as No Outbreak in 2016.