

Thank you Chair, and good evening Senators,

Thank you for the opportunity to provide an opening statement on behalf of the Australian Institute of Marine Science.

As it has been quite a while since AIMS last appeared before the committee, and there are a number of new members of the committee, I thought it might be useful to provide a very brief overview of the Institute's strategic research foci, and highlight two recent significant outputs of national interest.

As is the case for each of Australia's publically funded research agencies, AIMS research strategy is agreed with our Minister, and guides our investment of Government funding. This Government appropriation base is supplemented by external revenue earned from contracts with government, industry and philanthropic organizations. In 2017, AIMS expects to bring in approximately \$20 million in external revenue, or 30% of our total budget.

While the AIMS Act of 1972 provides a mandate to work throughout Australia's EEZ, over the last 43 years, we have focussed our efforts on the Australia's tropical north, where the opportunities and challenges associated with our marine estate are significant.

AIMS commitment to excellence sees us ranked #1 in Australia and #2 worldwide in academic rankings of marine biology, but at the same time our commitment to working with key stakeholders ensures that this excellence is translated into delivering the evidence base for policy development and decision making by Governments, industry and the community.

We have an extensive research portfolio on the Great Barrier Reef, extending into Torres Strait; we work with coastal industries such as ports and resource companies, local and state planners and with traditional sea country owners across northern Australia; and for over 20 years have been a lead environmental research provider to the offshore oil and gas industry and associated regulators across the NW Shelf, Timor and Arafura Seas.

Over the last decade, AIMS investment in world leading infrastructure and research, all focussed on the critical issues, has resulted in growing demand for, and use of, our research in assisting industry investment, environmental management and conservation decisions.

It is clear that a key driver of our growth in our business has been a period of very significant growth in marine industry sectors in Australia.

Since 2008, AIMS has worked with Deloitte Access Economics, to produce the AIMS Index of Marine Industry which documents the value of this sector to the national economy.

The 2016 AIMS Index was launched recently by Minister Sinodinos and it indicates that in 2014-15 Australia's marine industries – fisheries, aquaculture, tourism, ship building, offshore oil and gas etc – contributed \$73.1 billion in direct value to the economy.

The value of this "Blue Economy" sector has doubled in the last decade, is growing much faster than the national economy and contributes more than agriculture. It is projected to be worth more than \$100 billion by 2025.

Given this rapid expansion, the requirement for a strong evidence base on which to make wise decisions is arguably greater now than ever.

Recognising this, in 2015 the National Marine Science Committee, led by AIMS, developed a National Marine Science Plan. I'd commend this to you as a reference to Australia's future marine science needs.

Finally, I'll like to provide a summary of the 2016 update of the AIMS Great Barrier Reef Long Term Monitoring Program which was released on the AIMS website this evening.

This is the 33<sup>rd</sup> year that AIMS has undertaken its large scale monitoring of the reef. The data set we have collected provides a comprehensive and authoritative overview of the state of the GBR, and allows us to put the major bleaching event of 2016 in the context of the last three decades.

You will no doubt be aware that in 2012, the Australian Institute of Marine Science [reported](#) that average coral cover on the Great Barrier Reef (GBR) had fallen by half over the preceding 27 years. The decline was the result of the cumulative impacts of severe tropical cyclones, outbreaks of the crown-of-thorns starfish and coral bleaching. In 2012, coral bleaching had been responsible for only 10% of the long term decline.

During 2016, parts of the reef were subjected to the most severe bleaching event on record, while other parts suffered from an ongoing and significant Crown of Thorns plague that has been slowly moving south from Cairns to Townsville over the last 12 months.

By the end of 2016, coral cover in the Northern GBR was less than half of what it was in 2011, due to mortality caused by two severe cyclones, an ongoing crown-of-thorns starfish outbreak and severe coral bleaching in 2016. This decline is unprecedented in the 30+ year time series.

Over the long term, coral cover on reefs in the Central GBR has shown a general decline, falling to its lowest level in 2011 following Tropical Cyclone Yasi. Between 2011 and 2015 it showed a steady recovery, but in 2016, in response to coral bleaching and increasing crown-of-thorns activity in the region we saw a small decline.

Coral cover on reefs in the Southern GBR fell to their lowest levels (less than 10% cover) in 2009, following a series of storms and Tropical Cyclone Hamish. However, in the absence of any major disturbances since, these reefs have rebounded strongly over the last seven years, and by the end of 2016 coral cover was back up to more than 30%.

Averaged for the whole GBR, coral cover has declined by about a quarter during 2016.

I'd emphasize that these data do not include the impacts of severe bleaching during the summer of 2017, nor the ongoing devastation of COTS in the central GBR, nor the impacts of Cyclone Debbie. 2017 has been a year where the cumulative impacts of different stressors have created a "Perfect Storm" for the GBR, and we expect that they will have had led to very significant mortality, particularly in the central region.

Our assessment of 2017 will be provided in early 2018.

While there is clearly much interest in what this second bleaching event means for the reef, and an apparent thirst for a single estimate of damage, our experience monitoring the GBR over three decades suggest that it is best to wait for at least six months post a bleaching event to examine the final impacts of the severe heat stress of 2017.

And while the prognosis for the reef following two years of bleaching is dire, we need to be aware that at the same time as portions of the reef are in perilous decline, others may be recovering.