# Australian Coral Reef Society Inc.

A society promoting scientific study of Australian Coral Reefs
ACRS Correspondence
c/- Biological Sciences
The University of Queensland
St Lucia QLD 4072
(07) 3365 1686
austcoralreefsoc@gmail.com


**Science-based policy plan for the Great Barrier Reef**

## Comments on reef policy plans in the 2016 election

29th June 2016

Australia is a world leader in the management of marine ecosystems, yet the threats faced by reefs are growing at an unprecedented rate. Solutions to these problems lie in environmental governance and climate change mitigation. Below we highlight the primary threats to coral reefs, and the policies proposed to address them by the two major parties running in the Australian 2016 election.

## Climate change

In 2016, abnormally high sea temperatures caused the worst **mass coral bleaching** in history on the Great Barrier Reef (GBR). It demonstrated the **severity**, and **large spatial extent** of climate-inflicted damage.

Mass bleaching can lead to widespread **coral mortality**. If the time between mortality events becomes **shorter** than a reefs **recovery time,** our reefs will suffer irreversible damage.

Given the consequences of climate-related impacts, and the likelihood of their occurrence, we assert that the **greatest threat** facing reefs is **rising temperatures**, driven by the **global release** of **greenhouse gases**. Extracting and exporting fossil fuels to be burnt in Australia, or elsewhere, must be reduced in the near future, and subsequently stopped.

| Current policy plans | ACRS advised actions |
|---|---|
| **Coalition:** 23% renewable energy by 2020 [1]<br>28% reduction of 2005 emission levels by 2030 [1]<br><br>**Labor:** 50% renewable energy by 2030 [4]<br>45% reduction of 2005 emission levels by 2030 [4]<br>Zero net emissions by 2050 [4] | Proposed **transitions** from coal-fired power stations to renewable energy [1,4] must occur alongside a reduction in the **extraction, trading** and **export** of coal.<br><br>To reduce global emissions, stop the development of **new coal mines,** and reduce the **extraction and export of coal** in the short term [5] |

## Water Quality

Sediment & pollutant runoff from land use have **increased 2-3 fold** since 1850 [7]. The impacts of runoff include increased coral sensitivity to bleaching and disease, a shift in balance of coral and algae abundance, and a build-up of pollutants in species that are long lived or high in the food web.

Policies aiming to improve water quality will aid in increasing the **health of reef organisms,** and the potential for reefs to **bounce back** from disturbances [6]

| Current policy plans | ACRS advised actions |
|---|---|
| **Coalition:** $1bn over 10 years ($100m per year) [1]. Reduce 50% nitrogen & 20% sediment runoff by 2025 [3]<br><br>**Labor:** $500m over 5 years ($100m per year) [2]. Reduce 80% nitrogen & 50% sediment runoff by 2025 [2] | Given the total estimated **value** of the GBR [6,8] and past **progress** in runoff reductions [6,7], an investment appropriate for the scale of the GBR **should exceed $500m per year** [7] |


President: Dr Andrew Hoey; Tel: 0458 174 583; Email: andrew.hoey1@jcu.edu.au
Vice-President: Dr Anna Scott; Tel: 02 6648 3923; anna.scott@scu.edu.au
Hon Secretary: Dr O. Selma Klanten; Tel: 0417 341 941; Email: osklanten@me.com
Hon Treasurer: Dr Jennifer Donelson; Tel: 0402 062 046; Email: jennifer.donelson@my.jcu.edu.au

# Ports & development

**Increased sediment** affects the growth and survival of marine organisms because of turbidity and smothering [2]. In the last decade, the release of dredge spoil onto reefs has **roughly doubled** the amount of sediment naturally delivered to the GBR [9]

Dredging and port infrastructures also result in substantial **seafloor disturbance**, and **habitat destruction,** leading to total loss of ecosystems [6]

| Current policy plans | ACRS recommendations |
|---|---|
| **Coalition & Labor:** Whilst capital dredge dumping is now banned, maintenance dredge dumping is still allowed. | Implement a **total ban on dredge spoil dumping at sea**; dispose properly on land. |

# Fisheries

Sustainable fishing promotes **stable fish populations**, allowing important reef processes to be maintained. **Herbivorous** fish keep reefs from being overgrown by seaweeds. **Top predators** have widespread, cascading effects on entire marine assemblage structures.

The **zoning and re-zoning** of the GBR marine park and coastal marine park has become benchmark for marine park management worldwide. However, despite efforts, **unsustainable fishing, illegal fishing** and **poorly planned zoning** still affects the GBR world heritage area [6]

| Current policy plans | ACRS recommendations |
|---|---|
| **Coalition & Labor:** Marine reserves, or no-take zones currently occupy one third of the GBR marine park<br><br>There has been a decrease in the resources available for compliance and enforcement at a time of increasing infringement [6]<br><br>Limits on commercial shark fishing have begun [6], but many sharks are still caught in the Queensland shark control program [10] | Enforce **strict limits** on the harvest of **key predators** & **ban** the harvest of **herbivores**<br><br>Increase the funding and resources available for **compliance and enforcement of fishery regulations**, such as the joint field management program, and an independent fishery observer program [6]. Increase **education programs** that will promote compliance in recreational and commercial fishers. |

King Regards,

**Dr Andrew Hoey**
President, Australian Coral Reef Society

**ACRS** thanks councillors Mike McWilliam & Steve Doo for writing and the ACRS council for editing

References:

1. *Our Plan.* Liberal Party (28th June 2016) https://www.liberal.org.au/our-plan/protecting-our-environment
2. *Great Barrier Reef Plan*. Labor Party (28th June 2016) http://www.100positivepolicies.org.au/great_barrier_reef_plan_fact_sheet
3. *Reef 2050 long-term sustainability plan.* Liberal Party (2015) https://www.environment.gov.au/marine/gbr/long-term-sustainability-plan
4. Climate Change Action Plan. Labor Party (28th June 2016) http://www.laborsclimatechangeactionplan.org.au
5. ACRS Policy plan for Australia's Coral Reefs (2016) http://goo.gl/dghdze
6. Great Barrier Reef Marine Park Authority (2014) Great Barrier Reef Outlook Report. 2014. GBRMPA, Townsville.
7. Brodie & Pearson (2016) Ecosystem health of the Great Barrier Reef: Time for effective management action based on evidence
8. Stoekl et. al. (2016). A new approach to the problem of overlapping values: A case study in Australia's Great Barrier Reef.
9. Hughes et. al. (2015) Securing the future of the great barrier reef.
10. ACRS comments on the Expansion of the Great Barrier Reef Marine Parks Shark Control Program Associated with application G33288.1 (2015). http://goo.gl/ths1c5