



Submission on Extreme Weather, January 18, 2013

Attn: Senate Standing Committee on Environment and Communications

Please accept the following submission concerning extreme weather events from the Conservation Council of Western Australia.

**General Approach to Extreme Weather and Climate Adaptation Policy**

1. It is submitted that extreme weather events are having a profound effect on the Western Australian environment and on Western Australian communities.
2. It is submitted that climate adaptation strategies should take into account that extreme weather events in WA are likely to become more prevalent over time as climate impacts are felt more strongly
3. It is submitted that Government agencies should prepare thoroughly for extreme weather events. It is appropriate for this work to be done in close consultation with specialists in projections with regards to regional impacts of climate change, as there will be close links between climate change impacts, and changing patterns with regards to extreme weather events

4. It is submitted that approaches to mitigating the effects of extreme weather events on the environment and on the community should be developed only on the basis of robust scientific evidence and forward modelling concerning likely climate change impacts

#### **WA Specific Extreme Weather Impacts on the Environment**

5. Extreme weather events are occurring across WA. These include heat waves. The sustained period of very hot weather at the start of 2013 was unprecedented in length – the first time that Perth has ever experienced seven successive days of over 35 degrees. Related phenomena include ocean warming and extremely severe storms, particularly in the north west of the state
6. A longer term trend is of declining rainfall across south west WA. Government does not presently have an adequate plan to deal with issues relating to this trend - in particular in relation to reducing water consumption and reducing impacts and stresses on at-risk ecosystems such as unique jarrah and tuart forests, wetlands, banksia woodlands and coastal heathlands. Consideration of extreme weather events and climate change effects should lead to an overhaul of WA environmental management practices (especially forest management) with an eye to ensuring the long-term viability of state icons such as the Karri and Red Tingle forests of the SW, and vulnerable, special environments such as the incredibly bio-diverse Kwongan Heathland.
7. A particular risk that flows from the SW WA drying trend is increased risk of bushfire, with WA's southern forests becoming more vulnerable to fire events as they dry out and certain woodland flora (e.g., the Karri forests, which require average rainfall of over 1250ml a year in order to survive) are rendered marginal
8. The WA government is promoting and funding a continuing unsustainable prescribed burning program across much of WA with a particular focus on the south west region. In part this is said to be necessary to protect communities from climatic factors such as drought and high temperatures. This prescribed burning program is not based on sound science, places communities at risk and is likely to exacerbate the serious stresses much of the environment across the south west is already experiencing
9. An unprecedented ocean warming event has been observed in the Indian Ocean over the last couple of years, with temperatures degrees over long-term averages. This warming has had a range of consequences. For instance:

- a. It is widely believed that high temperatures have driven sharks in closer to shore, which may help to explain the rise in shark attacks that WA has seen over the last few years
- b. There have been local species extinction – e.g., a species of kelp in the oceans off the Midwest
- c. Yields in Australia’s most valuable fishery (WA’s rock lobster) have halved, probably because young lobsters have been unable to survive in warmer waters

10. North West WA is expected to become wetter as climate effects kick in, with increasing risk of extreme weather events (especially cyclones), with correlated risks to industrial infrastructure.

Risks include:

- a. Dangerous pollution escaping from uranium tailing ponds and onshore gas produced water ponds. Both types of mining necessarily involve the above-ground storage of dangerous mining by-products.
- b. Mine inundation (see, e.g., costly recent work stoppages at the major Collie coal mine)
- c. Major incidents in offshore gas developments on the North West shelf and in the Timor Sea
- d. Accidents at the string of major LNG developments along the Northern Coast of WA. It is to be noted that LNG facilities in WA, which process extremely large quantities of extremely flammable gas, have not been required to develop management plans tailored to foreseeable disasters caused by extreme weather (e.g., cyclones) – this is a matter of particular concern with regards to (for instance) the loading of liquid natural gas into tanker ships. A major LNG leak would have vast climate warming consequences

11. SW WA will see increases in periods of extremely hot (>35 degrees) weather. There is a tight correlation between periods of hot weather and ‘super-peaks’ in energy demand. In these cases increases in demand are caused by higher use of household air conditioning. Supplying super-peak energy demand requires massive investment in energy plant and network, most of which is rarely used – mothballed for use only on the hottest days of the year. Such investment (‘gold-plating’) is the single greatest driver of increases in energy prices in recent years. WA currently has energy generation surplus to existing demand, even during super-peaks, but it is unclear that it will continue to do so with predictions of a rapidly growing population for the state over the coming years (with Perth’s population predicted to increase by 500,000 by 2030).

## Extreme Weather and Public Policy

12. It is to be noted that the effects of extremely hot weather are likely to be greatest on people of low socio-economic status, due to the 'urban heat-island effect', with these populations generally clustered in inland areas away from the cooling effect of the ocean. In the case of Perth areas of low socio-economic status are found in the inland eastern plains, before areas of wealth began to be found as one heads into the regions known locally as the 'hills.'
13. It is to be anticipated that extreme weather events will be a major driver of state expenditure in coming decades, as they become more common, and as existing communities become more vulnerable to their effects. Recent examples of costly extreme weather events include the Tasmanian fires earlier this year, and the floods of 2011 (particularly severe in Queensland and Northern NSW).

Of particular concern is systematic planning failure with regards to low-lying coastal communities. To a great extent, recent WA development has not factored in foreseeable impacts caused by storms in combination with rising sea levels. The rate of sea level rise in WA is approximately 200% the global mean, with rises of over 1cm per year currently being recorded.

The cost to government and to the community more widely of protecting these communities from the rising oceans in the coming decades is likely to be considerable; so too the expense of post-incident clean-ups.

Regards,

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Conservation Council of WA