

**From:** [NSW Government](#)  
**To:** [Flood Inquiry](#)  
**Subject:** Floods Inquiry  
**Date:** Saturday, 21 May 2022 6:22:49 PM

---

## Your details

---

**Title** Dr

---

**First name** Graham

---

**Last name** Jones

---

**Email**

---

**Postcode** 2480

---

## Submission details

---

**I am making this submission as** An academic/researcher

---

**Submission type** I am making a personal submission

---

**Consent to make submission public** I give my consent for this submission to be made public

---

## Share your experience or tell your story

---

### Terms of Reference (optional)

The Inquiry welcomes submissions that address the particular matters identified in its [Terms of Reference](#)

---

**1.1 Causes and contributing factors** I have carried out research on climate change in the Great Barrier Reef for nearly forty years on substances produced from coral reefs and ocean

phytoplankton that produce cloud cover, that affects seawater temperatures and rainfall; and quite possibly cyclonic activity. The Lismore floods in 2017 occurred due to cyclone Debbie that formed in the Coral Sea and travelled to the Whitsunday region, bringing extensive flooding and damage. This cyclone then travelled down the east coast of Australia bringing serious flooding to Lismore and the region, and travelling down to Sydney and across the Tasman Sea to New Zealand where it caused further flooding. The damage bill for this event was several billion dollars.

Whilst the 2022 flooding did not start as a cyclone, it did originate as far as I can make out as a tropical depression. The Bureau of Meteorology (BoM) needs to be asked to write a report on the origin of this tropical depression and where it's earliest location was, and it's route down the east coast with associated rainfall. The report needs to cover one week before, during the depression activity and after it for comparison. Whilst there was clearly an El Nino event going on which increases rainfall and a further southward track of the monsoonal depression to locations further south than normal. However, the proximity to coral reefs also need to be studied as part of this report. One fact that we have researched is that increased rainfall onto coral reefs potentially causes more cloud cover to occur causing more rainfall and so on. Over 95% of the Earths coral reefs occur just offshore of Australia and we believe this process significantly affects the climate of the NE coast of Australia.

Why is this important? We clearly need an early warning system developed by the BoM for cyclones and tropical depressions which bring extensive rainfall to coastal communities along the east coast of Australia. It could be similar to the cyclone watch and cyclone warning system developed for Qld but needs to include these

tropical depressions. Such a system would give residents in local coastal communities an early warning of the potential of such systems to affect their area in the next 3 days (watch alert), 2 days (watch alert), 1 day (extreme warning alert) and 12 hours (extreme warning alert). This will give businesses time to evacuate stock from their businesses etc. etc. The warning system needs to be functional in day and at night -just like cyclone warnings. In addition a comprehensive research program needs to be implemented.

---

### **Supporting documents or images**

---

---