RGSQ Bulletin

ISSN 1832-8830

August 2020
Vol 55 no 07

Published by The Royal Geographical Society of Queensland Ltd., a not-for-profit organisation established in 1885 that promotes the study of geography and encourages a greater understanding and enjoyment of the world around us.

Patron: H.E. Paul de Jersey AC, Governor of Queensland
President: Dr Iraphne Childs

From the President

Dear Fellow Members, I hope you are continuing to stay safe as we move into further lifting of COVID-19 restrictions in Queensland. At the time of writing, we wait with concern to see how this and also the recent influx of interstate visitors and the unfortunate resurgence of cases in Victoria and NSW affect our state. I hope that any of your family and friends are safe in Victoria and NSW. If all continues to go well in Qld, we will aim to resume more RGSQ activities from August.

Qld landscapes photo competition

In phone conversations with members over the past few months many have reported that sorting out years of family and travel photos has kept them busy during the "stay at home" period. We thought it would be interesting to see some of the places in Qld that you have visited on your trips, so RGSQ is pleased to announce a ***Qld landscapes photo competition*** with enticing prizes – see details in this Bulletin. I hope you will participate and look forward to seeing some of your excellent photography.

Border restrictions? This amazing little bird doesn't adhere to them and doesn't carry a GPS!

In June 2020, local critically endangered Eastern Curlew "AAJ" successfully made her maiden flight to China, flying non-stop some 8,000 kilometres from the mudflats of Queensland's Moreton Bay to Shanghai.

For the past two and a half years researchers have been tracking the movements of three-year-old AAJ as she foraged for crabs and other crustaceans on the mudflats of Moreton Bay. When the mature Eastern Curlews migrated north in mid-March, AAJ remained behind. The waders usually arrive at breeding grounds in Eastern Russia by May, making AAJ's late departure unusual. It may be a new discovery about young Eastern Curlews, that they leave later than older birds. AAJ was one of three Eastern Curlews that were fitted with tiny trackers so their movements could be monitored on the way from Brisbane to China. In late April, under the cover of darkness AAJ began her epic non-stop journey. She headed up the Queensland coast, over the New Guinea Central Highlands and across the western Pacific Ocean.

Ten days after taking off, AAJ landed on mudflats adjacent to Yinyangzhen, north-east of Shanghai. She will spend the northern summer feeding on crustaceans along the Yellow Sea Coastline.

The Eastern Curlew population has declined by more than 80 per cent in the past 30 years mostly due to the destruction of mudflats along the ***East Asian Australasian Flyway***, which is a migration superhighway for birds. Around 1,400 critically endangered Eastern Curlews roost around Moreton Bay, the last large flock in Australia. There is pressure to develop parts of the Moreton Bay wetlands close to where AAJ was first found. The area is listed under the Ramsar Convention, an international treaty to protect important wetland habitats. In 2013 Toondah Harbour was declared a Priority Development Area by then premier Campbell Newman. The controversial $1.3 billion development proposal would see part of the wetlands reclaimed to make way for 3,600 residential dwellings, a new port facility, ferry terminals and a 200-berth marina. Around 43 hectares of the development will encroach on the Ramsar wetlands. There's also the broader impact of up to 10,000 more people, noise pollution, increased watercraft disturbing birds, feeding grounds and roost sites. After two proposals were knocked back by the Federal Government, a revised plan was given the green light in 2018 to proceed to the Environmental Impact Statement (EIS) phase. In July 2020, a petition, gaining more than 5000 signatures, was presented to the Queensland Government by community group *Redlands2030* calling for an independent inquiry into the Toondah Harbour development. Meanwhile, AAJ is foraging on the Shanghai mudflats, fattening up ahead of her return journey to Moreton Bay in a few months' time.

Dr. Iraphne Childs

President

References

ABC News. ***Eastern Curlew's 10-day flight to China stuns bird enthusiasts calling for greater habitat protections*** by Dea Clark https://www.abc.net.au/news/2020-06-06/eastern-curlew-flight-toondah-harbour-cleveland-qld/12322856

Redlands 2030.***Will Toondah kill off the Cleveland CBD?*** https://redlands2030.net/cleveland-cbd-economic-report/ April 10 2018

PO Box 625, Spring Hill, Qld 4004
Level 1, 28 Fortescue St, Spring Hill Qld 4000
email: info@rgsq.org.au
ph: 07 3368 2066

UPCOMING EVENTS

www.rgsq.org.au

25 August – Virtual Monthly Lecture – 7:30pm

"Landscapes of the Ancient Maya: insights from geoarchaeology, geomorphology, and remote sensing"

presented by Duncan Cook

Image taken by Duncan Cook at the historic Maya settlement of Tikal, Guatemala.

This will be a virtual lecture delivered online via Zoom. For further details and to register, visit the event link at: https://rgsq.org.au/event-3669598

Treks and Activities are recommencing!

There are four activities that the Committee have organised for the rest of this year.

For details and to book see https://rgsq.org.au/whatson.

SEPTEMBER 2. **Spicers Gap, near Aratula**

This was postponed in February and those 10 people who have already booked and paid will be transferred to this new event. Another five spaces are available. Bob Reid has done a lot of work on the history of this very interesting area and will be issuing trek notes.

September 16. **Scenic Rim**

Already fully booked.

OCTOBER 22. **Binna Burra Walk**

The road will be open and there will be an opportunity to see how the area is recovering from the bush fires. We will be accompanied by a geologist. 12 people.

NOVEMBER 10. **South Bank, Brisbane and Land Use Changes**

Promises to be an interesting trip with history and geology covered by local guides; 16 people.

The **Christmas party** this year will be on 1 December at Fortescue Street.

We have already planned most of next year with all the treks postponed this year being organised again next year, with some additional ones. Details to follow. Those who have paid already will automatically be included on their trip.

President attends launch of Fernberg Estate Bird Book at Government House

On 23rd June, I represented the RGSQ at the launch of the 2020 "*Birds of the Fernberg Estate*" book, published by the Office of the Governor of Queensland, our SocietyPpatron His Excellency, Sir Paul de Jersey AC. A copy of the book which identifies around 50 species of birds, has been donated to the RGSQ library. Over the many years since Fernberg House became the Government House estate in 1910, Governors of Queensland, their families and staff, have contributed to the gathering of information on the flora and fauna that reside on or visit the 10 hectares of natural bushland and three hectares of formal grounds.

In the 1920s Sir John Goodwin (Governor of Queensland 1927-1932) and Lady Goodwin had the estate declared a Sanctuary for Animals and Birds and created "woodland walks" through the bushland. In the early 1990s, Sir Walter Campbell (Governor of Queensland 1985-1992) and Lady Campbell, oversaw the design and construction of the ponds which have become a vital waterbird habitat. As one of the few natural bushland reserves in metropolitan Brisbane, the Fernberg estate is an important breeding and nesting site and safe rest area for many native and migratory bird species and a unique remnant of original forest in inner-city Brisbane.

Contributed by Iraphne Childs

Australian Geography Competition

Thank you to all the RGSQ member volunteers who have assisted with the AGC in 2020. Currently there are several members assisting with the scanning of returned Competition answer sheets. The final date for return of answer sheets is Friday 14 August.

Certificate and Prize Mailout

Wednesday 7th to Friday 8th October

The next time the Competition would welcome RGSQ member assistance is for the Certificate and Prize mailout in the first week of October. This involves sorting school and student certificates and results sheets, ensuring all are selected for each school and placed with a cover letter in large envelopes, Australia Post satchels, or boxes. Attention is required to ensure all the correct Certificates and Results sheets are sent to the correct school. A few hours on any of these days would be greatly appreciated. A maximum of eight (8) volunteers each day would be appreciated.

If you can help, please register online, or call the AGC office on 3330 6907.

CONTRIBUTORS

Iraphne Childs, Duncan Cook, Jonathan Corcoran, Bernard Fitzpatrick, Jamie Shulmeister, Chris Spriggs, The Conversation

WELCOME NEW MEMBERS

We have much pleasure in welcoming *Leonine Brown, Dusty Currie, Fransiska Bekti and Souvik Chakraborty* as new members of The Royal Geographical Society of Queensland. We hope your association with your new Society is long and mutually enjoyable.

Get to know your Councillor

Jonathan Corcoran

I am Jonathan, a recently elected RGSQ councillor. Here is a little bit of my geography journey…

High altitude travels in Tibet in June, 2016. Looking towards Mount Everest from base camp at 5,200 metres (17,056 feet). Courtesy of Jonathan Corcoran.

Growing up in the county of Devon, England was where my interest and passion for geography was first seeded. From family trips to the Jurassic Coast in Dorset to hunts for ammonites and belemnites to regular weekend hikes with my father letterboxing on Dartmoor to navigating the Exe estuary in my single-handed Optimist sailing dinghy, the long reach of geography was ever present.

"For me, it was, and still remains, the fieldtrips that distinguish geography from all other subjects."

Secondary school would see my interests in geography come alive inspired by passionate geography teachers. During my school years I was very lucky to experience the breadth that our discipline has to offer from studying the way in which the glacial landscapes in the Alps formed to understanding how processes of gentrification and urban renewal have reshaped live and livelihoods in inner city Paris. There was never any doubt that I would study geography at University.

It was the University of Portsmouth where I studied an honours degree in Geographical Science followed by a Masters in Geographical Information Science in the mid-90s before doing what all card carrying geographers need to do, work for the Ordnance Survey, the mapping agency for Great Britain. With its long history dating back to 1747 the power and importance of maps was most definitely palpable whilst working at the Agency.

"Australia presents the ideal home for the geographer and 15 years on and many trips under my belt to the rich myriad of places, there remains much more to explore."

However, it was not too long before the call of academia rang loud and I commenced a PhD in Wales in early 2000 where I refocussed my academic efforts on the human end of the discipline, looking at the geography of crime. And it was during this time that the opportunity to travel to new and farther flung destinations beyond Europe emerged, an opportunity I happily accepted with open arms.

The move to Australia to begin life as a research fellow at The University of Queensland (UQ) came in 2005, a part of the world I had heard much about but never visited. Departing the UK was both exciting if a little daunting; however my 3 year plan has quickly become 15 years in the making with Brisbane quickly establishing itself as my new home - I will never forget that feeling of the barrage of humidity as you first step out of the terminal, a very distinctive 'welcome to the sub-tropics'!

I am now a Professor in Human Geography at UQ and continue to research and teach (human) geography wherein I try to evoke that same passion for understanding the way in which the world works through a geographers' eye that my father and my own schooling experience gave to me.

The world viewed through the lens of geography for me continues to provide an incredibly rich and rewarding experience and one that will no doubt be a lifelong affair.

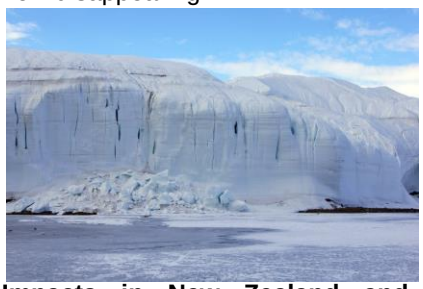
What was the climate and sea level like at times in Earth's history when carbon dioxide in the atmosphere was at 400ppm?

***Professor Jamie Shulmeister** is a geomorphologist and Quaternary Scientist who specialises in the long-term climate history of the Australasian region. He has run a major ARC Discovery project on the last glacial maximum in SE Australia and co-leads the Southern Hemisphere Last Glacial Maximum project. He was previously a Professor in the School of Earth and Environmental Sciences, University of Queensland, a former President and current member of the RGSQ. In early 2020 he moved to New Zealand to take up the role of Head of School of Earth and Environment at the University of Canterbury.*

The last time global carbon dioxide levels were consistently at or above 400 parts per million (ppm) was around four million years ago during the Pliocene Era (between 5.3 million and 2.6 million years ago). The world was about 3℃ warmer and sea levels were higher than today. We know how much carbon dioxide the atmosphere contained in the past by studying ice cores from Greenland and Antarctica. As compacted snow gradually changes to ice, it traps air in bubbles that contain samples of the atmosphere at the time. We can sample ice cores to reconstruct past concentrations of carbon dioxide, but this record only takes us back about a million years.

Beyond a million years, we don't have any direct measurements of the composition of ancient atmospheres, but we can use several methods to estimate past levels of carbon dioxide. One method uses the relationship between plant pores, known as stomata, that regulate gas exchange in and out of the plant. The density of these stomata is related to atmospheric carbon dioxide, and fossil plants are a good indicator of concentrations in the past. Another technique is to examine sediment cores from the ocean floor. The sediments build up year after year as the bodies and shells of dead plankton and other organisms rain down on the seafloor. We can use isotopes (chemically identical atoms that differ only in atomic weight) of boron taken from the shells of the dead plankton to reconstruct changes in the acidity of seawater. From this we can work out the level of carbon dioxide in the ocean. The data from four-million-year-old sediments suggest that carbon dioxide was at 400ppm back then.

Sea levels and changes in Antarctica: During colder periods in Earth's history, ice caps and glaciers grow and sea levels drop. In the recent geological past, during the most recent ice age about 20,000 years ago, sea levels were at least 120 metres lower than they are today. Sea-level changes are calculated from changes in isotopes of oxygen in the shells of marine organisms. For the Pliocene Era, research shows the sea-level change between cooler and warmer periods was around 30-40 metres and sea level was higher than today. Also during the Pliocene, we know the West Antarctic Ice Sheet was significantly smaller and global average temperatures were about 3℃ warmer than today. Summer temperatures in high northern latitudes were up to 14℃ warmer. This may seem like a lot but modern observations show strong polar amplification of warming: a 1℃ increase at the equator may raise temperatures at the poles by 6-7℃. It is one of the reasons why Arctic sea ice is now disappearing.



Recent research shows that west Antarctica is now melting. Elaine Hood/NSF

Impacts in New Zealand and Australasia: In the Australasian region, there was no Great Barrier Reef, but there may have been smaller reefs along the northeast coast of Australia. For New Zealand, the partial melting of the West Antarctic Ice Sheet is probably the most critical point. One of the key features of New Zealand's current climate is that Antarctica is cut off from global circulation during the winter because of the big temperature contrast between Antarctica and the Southern Ocean. When it comes back into circulation in springtime, New Zealand gets strong storms. Stormier winters and significantly warmer summers were likely in the mid-Pliocene because of a weaker polar vortex and a warmer Antarctica.

It will take more than a few years or decades of carbon dioxide concentrations at 400ppm to trigger a significant shrinking of the West Antarctic Ice Sheet. But recent studies show that West Antarctica is already melting. Sea-level rise from a partial melting of West Antarctica could easily exceed a metre or more by 2100. In fact, if the whole of the West Antarctic melted it could raise sea levels by about 3.5 metres. Even smaller increases raise the risk of flooding in low-lying cities including Auckland, Christchurch and Wellington.

Source: Initially published in The Conversation July 8, 2020

https://theconversation.com/climate-explained-what-the-world-was-like-the-last-time-carbon-dioxide-levels-were-at-400ppm

Additional comment from Prof. Shulmeister

In response to my article, a comment was posted highlighting a key difference between the Pliocene and now. Through geological time greenhouse gases have been both significantly lower and higher than the present time and the planet has continued unaffected. When I say unaffected, the implications of changing carbon dioxide had little impact on the earth *per se* but significant impacts on biota and that comes to the problems we face.

The difference between the Pliocene and now is about 8 billion humans. We have built a complicated modified environment for our benefit: cities, farms, parkland. Most of this human environment depends on relatively stable conditions. It is not the severity of the situation that counts - we are good at dealing with extremities. What we are not very good at is dealing with changing conditions and particularly rapidly changing conditions e.g. sea-level change where a 60cm change by 2100 does not sound like much but geologically this is very fast. It would result in coastal retreat on the Gold Coast. The higher sea-levels would also cause increased flooding in low lying areas of Brisbane especially at high tides and raise the general risk of flooding during cyclones and coastal storms. Risks are very high around agriculture, also. Australia's agriculture is already highly susceptible to drought (and floods). Increasing the energy in the atmosphere through greenhouse gas warming increases the capacity of the atmosphere to hold moisture. This means both more frequent and intensive droughts and bigger floods when the rains come.


RGSQ
2020
GEOGRAPHIC
LANDSCAPES
PHOTOGRAPHY
COMPETITION
Submissions will be judged by the RGSQ Publications committee
Submission due date: Monday August 31st
1ST PRIZE
2-NIGHTS' ACCOMMODATION
AT O'REILLY'S
RAINFOREST RETREAT
2ND PRIZE
ONE-YEAR FREE RGSQ
MEMBERSHIP
RGSQ invites members to submit their excellent landscape photos* of Queensland locations for a photography competition. The Competition is open to RGSQ members only and for new unpublished work
SEND YOUR ENTRIES TO
INFO@RGSQ.ORG.AU
The 12 best entries could be included on an RGSQ calendar** which may be produced later this year for sale in time for Christmas.
* For sending in your images please follow these steps: a maximum of 3 images submitted per member; minimum 1800 pixels x 2400 pixels stored as a high quality jpg. Landscape orientation not portrait orientation. Include a caption (<20 words) for each image you submit. Please include your name, the location of your image and the year it was taken.
** By submitting your photos to the RGSQ 2020 Geographic Landscapes Photography Competition, you agree to share the photos with RGSQ for future use. All photos will be copyrighted under a Creative Commons Attribution 4.0 license, which means that each photo is owned by the creator (you as the photographer), and it can be shared and adapted freely when appropriate credit is given.
O'Reilly's
RAINFOREST RETREAT
Inquiries to
i.childs@uq.edu.au or kayrees@gmail.com

What's happening on Council?

On 21 July Council met online using RGSQ Microsoft Teams with ten Councillors "in attendance". Reports were received from Iraphne Childs (President), Chris Spriggs (Treasurer and TAAC Chair), John Tasker and Kath Berg (AGC), Pamela Tonkin (Property), Paul Feeney, Young Geographers (John Tasker) and Lilia Darii (Business Manager). Matters discussed included:

- RGSQ continues to receive Job Keeper support for Lilia and Bernard but we are following closely the Government's proposed changes to these support packages from September which may change the situation for RGSQ.
- Budget for 2020-2021 was passed.
- Final plans for our photographic competition were confirmed (see details in this Bulletin).
- The Publications Committee is planning to produce a 2021 RGSQ calendar displaying the best entries from the photo competition – more on this later.
- Following Qld Health advice and staged lifting of COVID-19 restrictions, through August we will maintain limitation of members and volunteers present at any time in the premises to 5 persons (including staff). If you are intending to visit, please ring in advance as there may be no staff present. Providing there is no surge of cases in Queensland, we are hoping to be able to welcome members back to RGSQ for our September Members' meeting. We will keep you informed about this.
- Member Connect #5 will be produced in August after which we will review continuing this extra newsletter. If you have contributions please send them through to Lilia at info@rgsq.com.au

RGSQ Bulletin

August 2020

Virtual Lecture/Meeting: Tuesday 25 August

"Landscapes of the Ancient Maya: insights from geoarchaeology, geomorphology, and remote sensing" *presentation by Duncan Cook*

Activity: 20-21 August

Map Group event - *Exploring the Scenic Rim*

W: www.rgsq.org.au
E: info@rgsq.org.au
P: 07 3368 2066

The August Council will meet on the third Tuesday of the month.

The Royal Geographical Society of Queensland Ltd
PO Box 625, Spring Hill QLD 4004

POSTAGE PAID AUSTRALIA