

HOW CLIMATE CHANGE IS DRIVING COASTAL EROSION INVERLOCH CASE STUDY



2010 aerial photograph of Wreck Creek, Surf Parade and adjoining housing



Figure 6 Annotated Google Earth image of the Wreck Creek coastline (SLC to Eastern end of Rock Wall) showing Dune Loss from 14/3/2010 to 19/9/2020



Inverloch

Inverloch Surf Beach

Navigation controls: a person icon, a crossed-out person icon, and a 3D button.





Inverloch Surf Beach Lifesaving Tower



2004 (?) – photo Steve Dunn



28 Oct 2013
Photo: The Star

12 October 2013



5 December 2014





11 May 2015



2016







8 July







December 2018





25 March 2019



WET SAND FENCING

25 March 2019







10 Sept 2019



Sept 13
Photo Geoff Ellis



28 September 2019

The Victorian Government has provided \$1.15 million in further funding towards addressing coastal erosion issues along the Inverloch foreshore



+

\$700,000 has been provided to form a pilot Regional and Strategic Partnership (RaSP) under the new *Marine and Coast Act* 2018, over the wider Inverloch marine and coastal area.

\$450,000 to install a 70-metre sand-filled geotextile container wall at the lifesaving clubhouse



Excavating to
install sand bags

Filling sand bags

21 February 2020



5 May





December



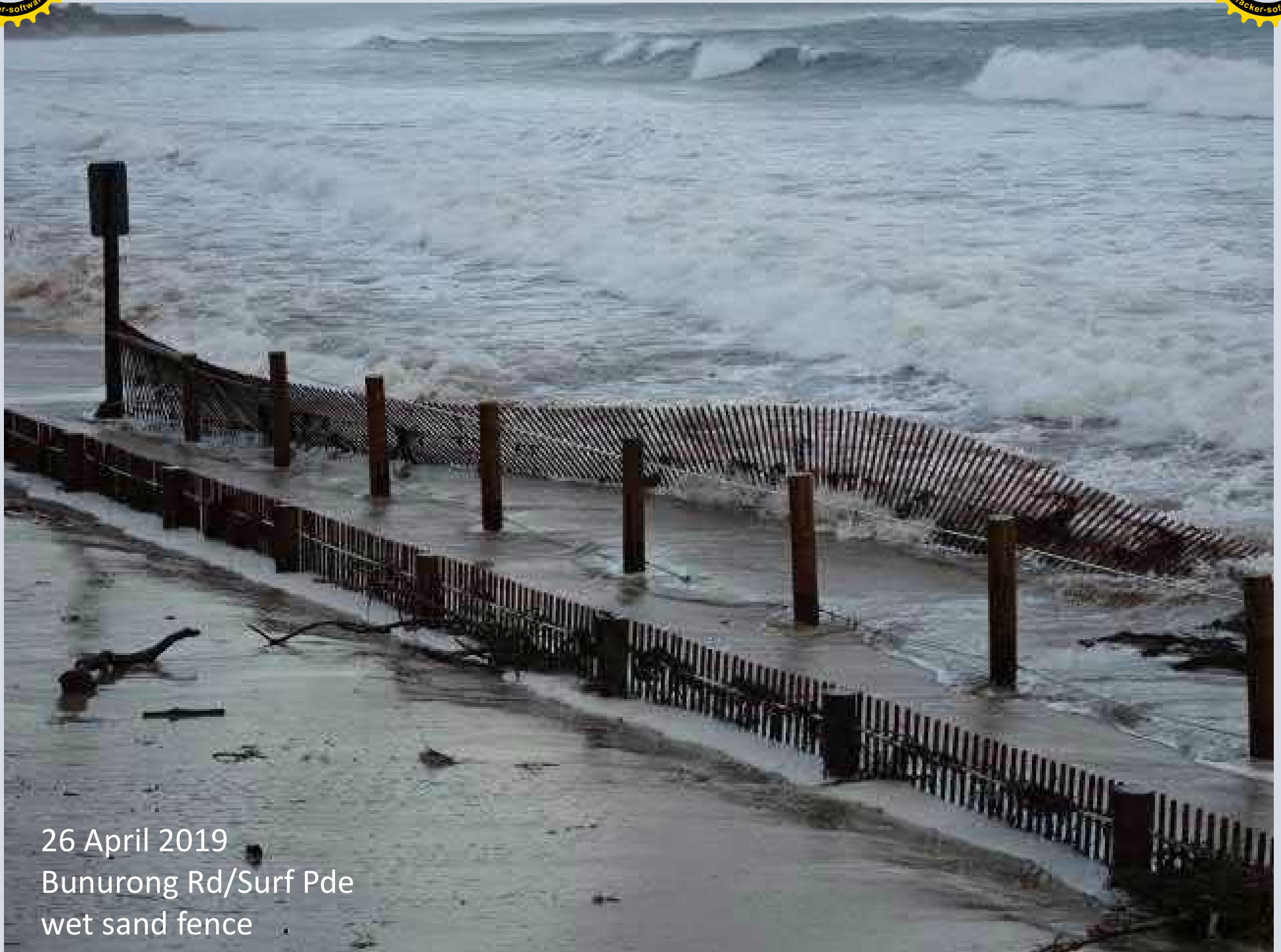


18 August 2021





Bunurong Road Corner



26 April 2019
Bunurong Rd/Surf Pde
wet sand fence



1 April 2020







October 2021 looking east towards SLSC from Bunurong Rd corner. The next 5 photos taken from here



September 2022



February 2023



June





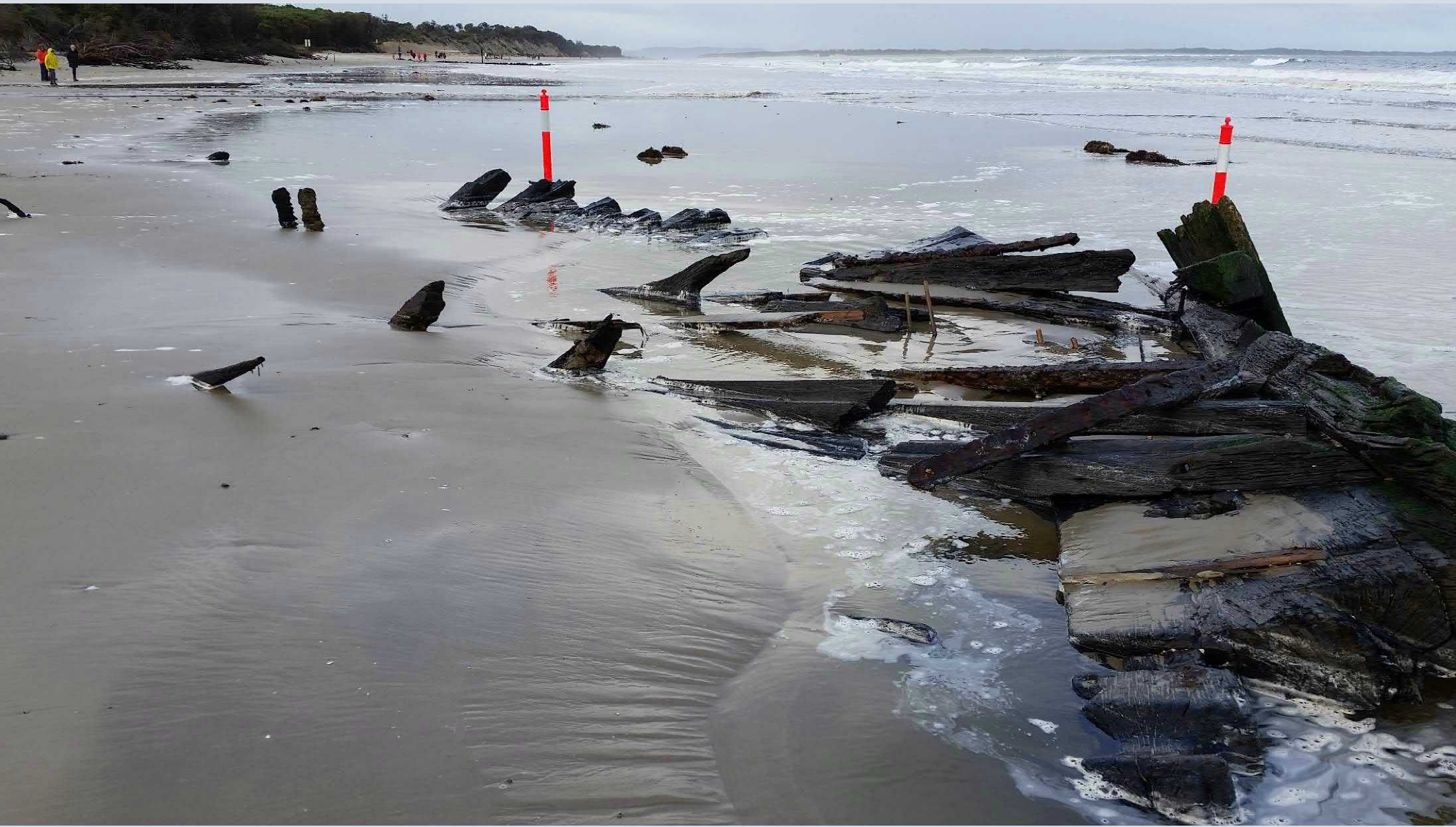
3 September





Where's the creek?
January 28 2015





Amazon shipwreck July 2020



Amazon flooded
a new site
September 2017





2010 aerial photograph of Wreck Creek, Surf Parade and adjoining housing



Overloch beach erosion worsens after 'huge' storms high tides

William Howard ABC Gippsland 4 September 2024



3 September 2024



Note: excavator at work.
Image supplied ISLSC

The state government is planning to use a dredge & pump 150,000cum sand back to the surf beach later 2025. **(soft engineering)**

solution to erosion at Inverloch – an offshore artificial reef to break up wave energy

PALM BEACH, GOLD COAST artificial reef

COST: \$18.2 million

270 metres offshore, 160 metres long and 80 metres wide. Constructed using 60,000 tonnes of boulders



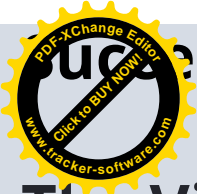
GROYNES? Would disrupt eastward movement of sand at Inverloch





This Apollo Bay restoration suggested as a solution at Inverloch. See details next slide





Successful foreshore protection at Apollo Bay April 26, 2022

The Victorian Department of Environment, Land, Water and Planning (DELWP) recently announced the successful completion of the \$7.4 million Apollo Bay Foreshore Protection project.

Works included:

- three groynes comprising around 63,833 tonnes of rock;
- 675 metres of rock seawall;
- two heavy vehicle access ramps;
- one light vehicle access ramp;
- four wooden beach access stairs;
- 475 metres of reinstated foreshore path.

The construction of new groynes was followed by **sand renourishment** to fill the space next to the structures and prevent scouring of the beach to the north, and **revegetation works** will also take place.



Mr Cross says in the last seven years 70 metres of beach track has been washed away. Keith Godridge, Shire Engineer for the former Shire of Woorayl says only 53 metres of sand dunes

"It's 30 metres from being exposed," said Mr Cross. Members of the Inverloch Foreshore Action Group say what DEECA (Victorian Department of Energy, Environment and

"Sand falling from the eroded cliffs could end up on top of beachgoers," said Mr Cross. "It's highly dangerous." By comparison to Apollo Bay, on the Great Ocean, which has also had its own fair share of erosion problems, DEECA agreed

The Inverloch Foreshore Action Group wants hard engineering, rocks, and sandbags for the Inverloch surf beach. "Sandbags work well

Over a thousand holiday-makers and local residents are expected at the rally which will be chaired by former Liberal Leader and committed advocate for the protection of Inverloch foreshore Alan Brown AM. Inverloch Surf Life Saving Club President Glenn Arnold and Inverloch



SAVE INVERLOCH FORESHORE

MAJOR PUBLIC RALLY, SUNDAY, JANUARY 5, 2025.

ON THE BEACH, IN FRONT OF
INVERLOCH SURF LIFESAVING CLUBHOUSE.

In the past eight years, 70 metres of foreshore in the locality near the Inverloch Surf Lifesaving Clubhouse has been lost due to erosion. After 4 years of operation, a Victorian Government Committee has not made one recommendation to address what is now a Crisis situation. The Inverloch Surf Lifesaving Clubhouse and a section of the coast road between Inverloch and Cape Paterson are both in imminent danger of being lost as well as what is left of the sand dunes. If the road is lost, hundreds of homes are also at risk in the long term.

A PUBLIC RALLY ON JANUARY 5, 2025 AT 2.00PM

has been called to demand the State Government acts as a matter of urgency and put in place permanent protective measures to save these vital assets as they have recently done at Apollo Bay and in other coastal locations.

We need your help by attending the Public Rally so that the Government gets a clear message that we require action now to save and protect the Inverloch Foreshore. People power is needed as the Government is considering an adapt and retreat policy which would decimate Inverloch and must opposed.

Come and hear prominent guest speakers including triple Olympic Gold Medalist, Drew Ginn address the Crisis which now exists in Inverloch and why it is critical the Victorian State Government acts immediately.

WE NEED YOUR HELP BY ATTENDING THE RALLY.

For more information and updates, Facebook-Inverloch Foreshore Action Group.

Sentinel-Times

TUESDAY, JANUARY 7, 2025

COVERING SOUTH GIPPSLAND AND BASS COAST

PRICE \$2.00



Some of Sunday's attendees and speakers unite in a powerful statement at the rally's conclusion, as they demand decisive action. A15_0125

ACTION NOW

Inverloch community demands coastal action

Rock walls are 'hard engineering'. At Inverloch if they can be afforded they can save the SLSC but beach will be lost. Waves crash against rocks & drag sand away.

"We will lose the beach because sand in front of rock walls always, everywhere around the world, there are examples of it having disappeared." Byron Bay Residents' Group





BEFORE

Cowes East beach restoration

AFTER



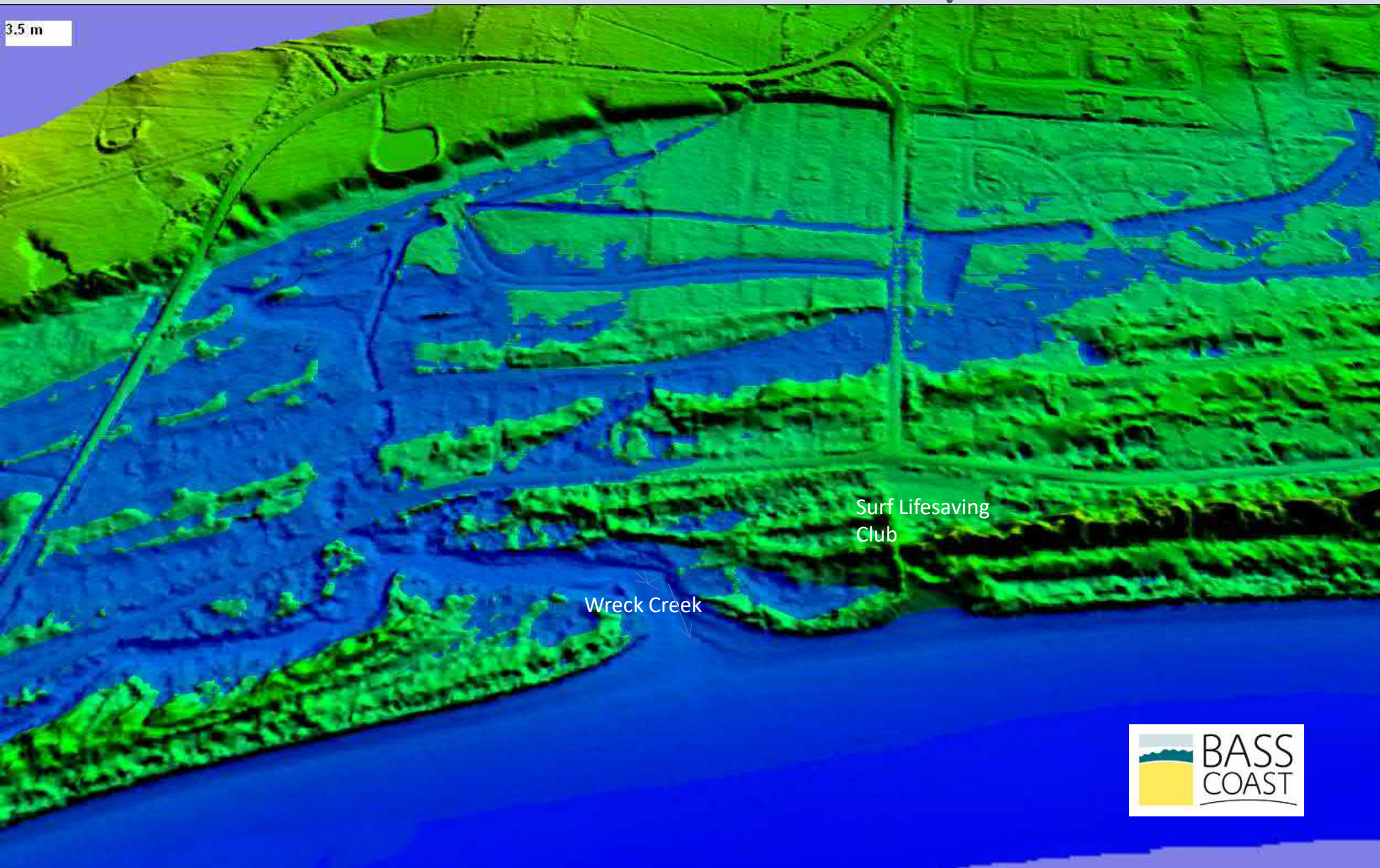


Surf beach sand transported
to Anderson Inlet
New lagoon at Ayr Creek
Photo: Alison & Leo Brewster Jan 2016



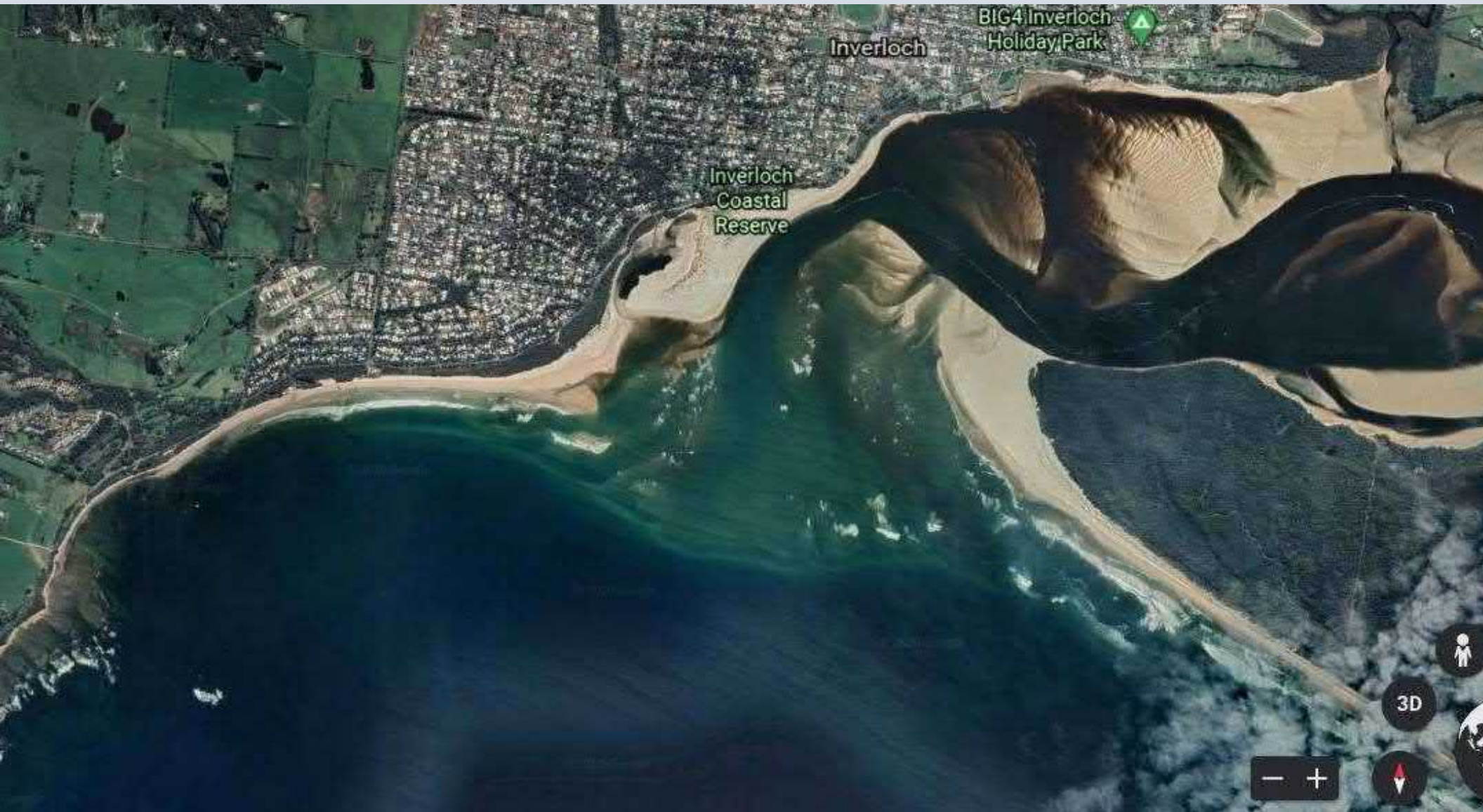


Wreck Creek catchment with .8 metre sea level rise by 2100





Mid 2020

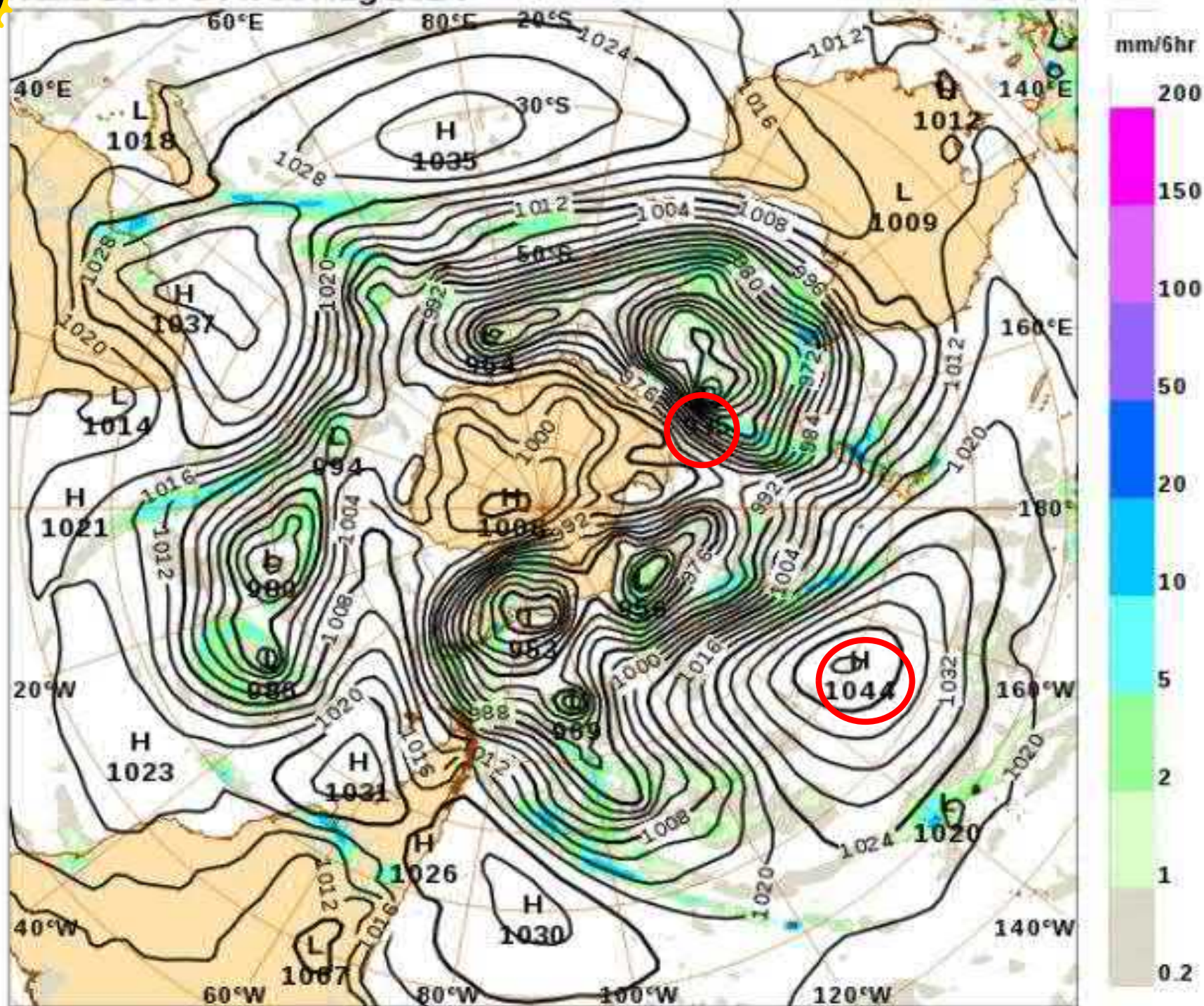


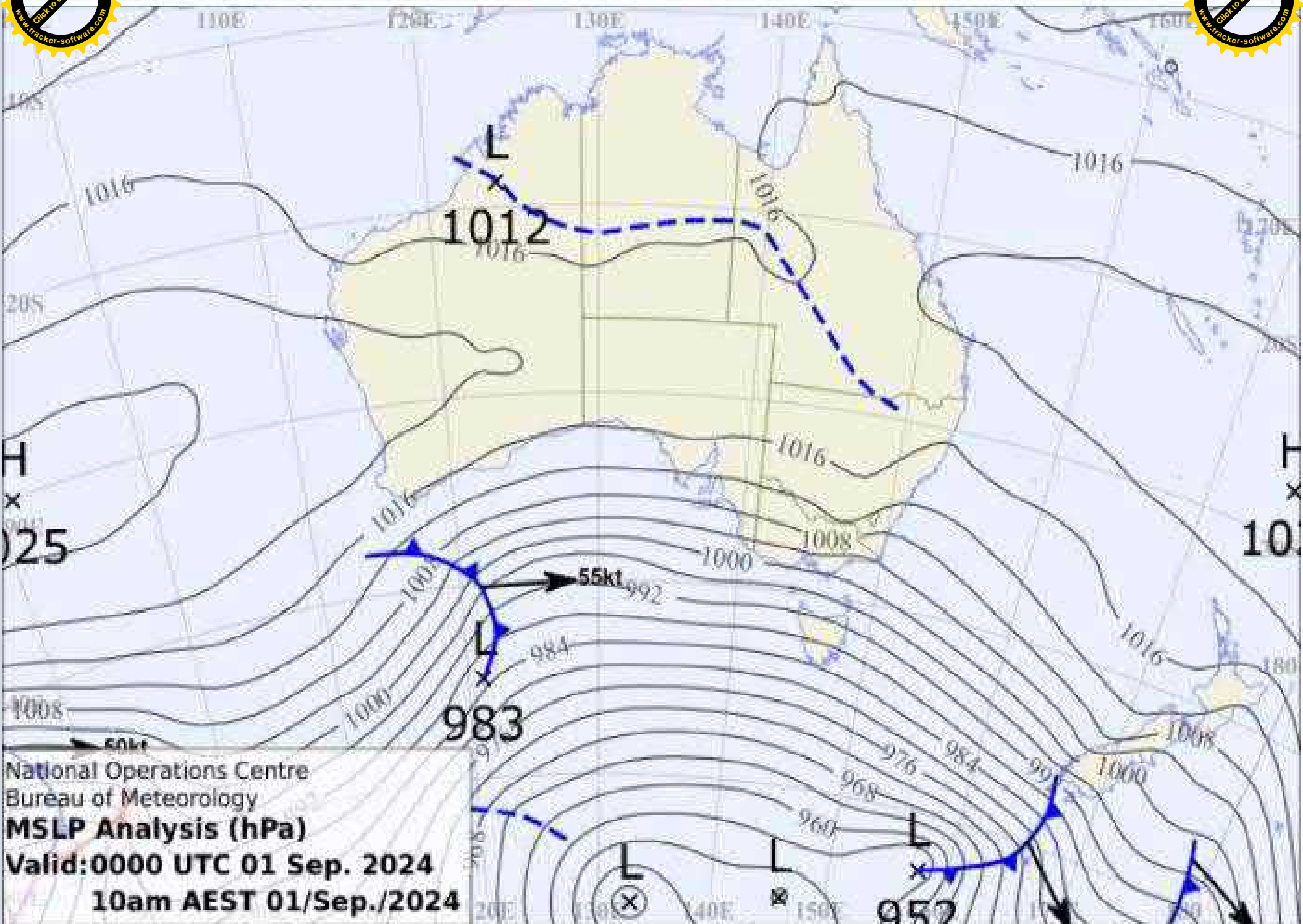




MSLP / Precip (06 hourly)
Valid 18UTC Fri 30 Aug 2024

ACCESS-G3
t+006





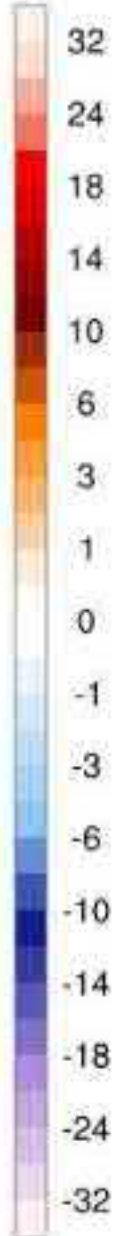
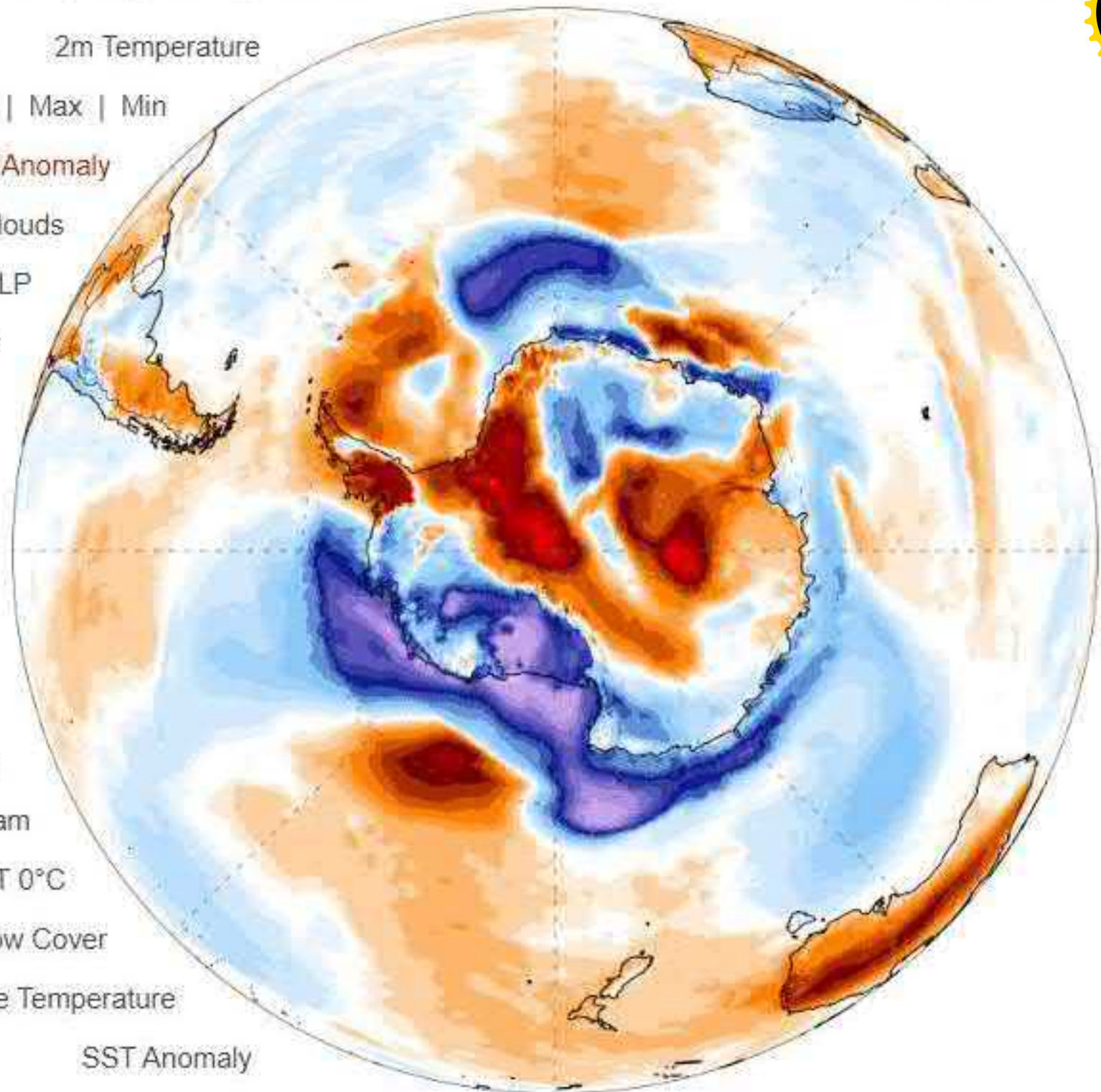


1-day Avg | Fri, Aug 30, 2024

Climate Change Institute | University of



- Avg | Clim | Max | Min
- 2m Temperature
- 2m Temp Anomaly
- Precipitation / Clouds
- Precipitation / MSLP
- Precipitable Water
- PWtr Sd Anomaly
- 10m Wind Speed
- Mean SL Pressure
- MSLP Sd Anomaly
- 500hPa Geopot. Hgt
- 500hPa GPH Anom
- 500hPa Jetstream
- 250hPa Jetstream
- Snow Depth / T 0°C
- Sea Ice / Snow Cover
- Sea Surface Temperature
- SST Anomaly





OISST SST Anomaly (°C) [1971-2000 baseline]

1-day Avg | Thu, Aug 29, 2024 [preliminary]

ClimateReanalysis
Climate Change Institute | University of Maine

2m Temperature

Avg | Clim | Max | Min

2m Temp Anomaly

Precipitation / Clouds

Precipitation / MSLP

Precipitable Water

PWtr Sd Anomaly

10m Wind Speed

Mean SL Pressure

MSLP Sd Anomaly

10hPa Geopot. Hgt

500hPa GPH Anom

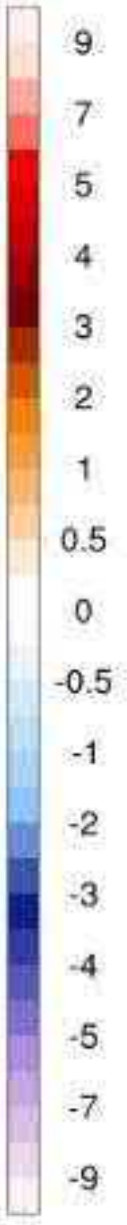
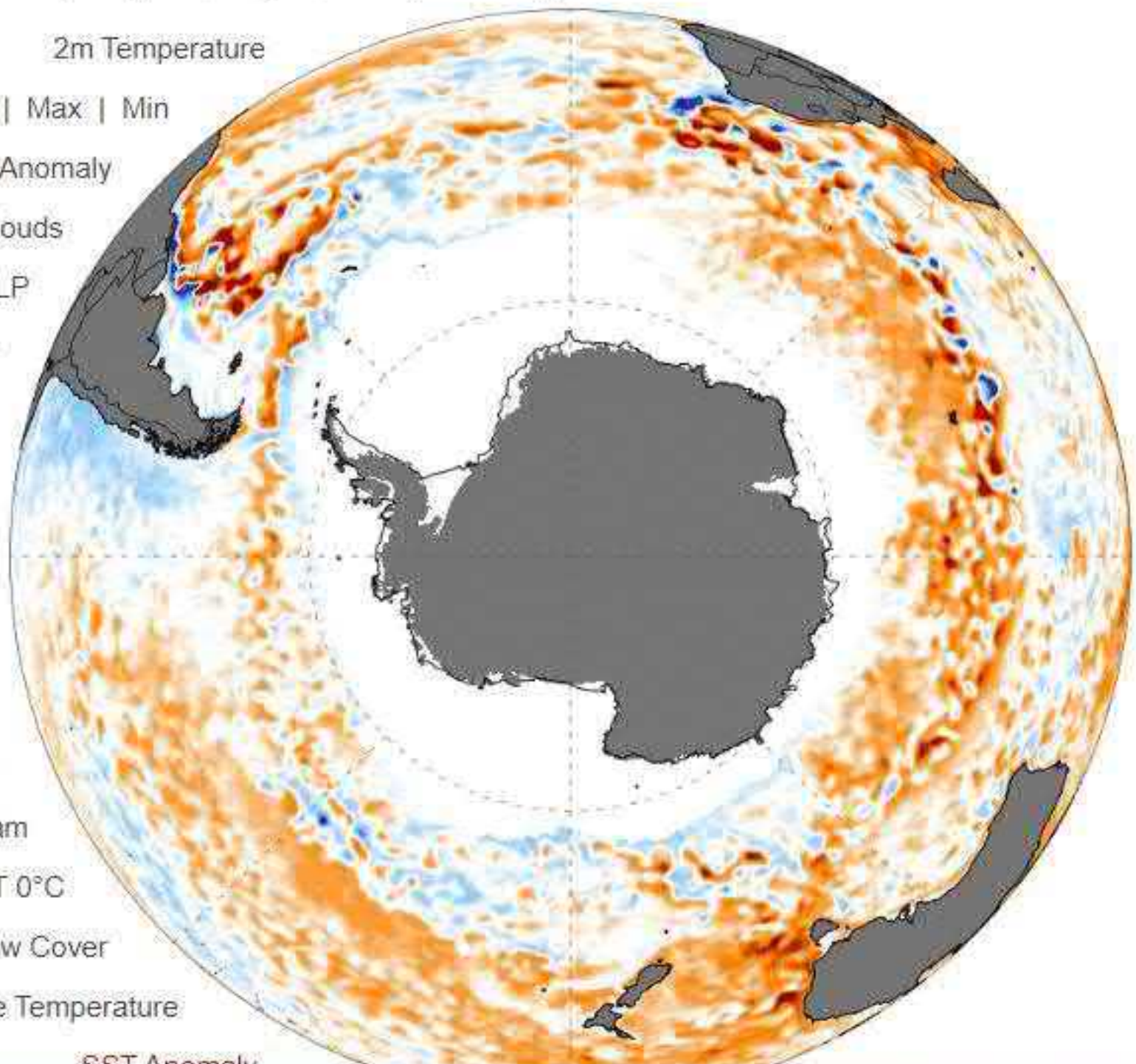
500hPa Jetstream

250hPa Jetstream

Snow Depth / T 0°C

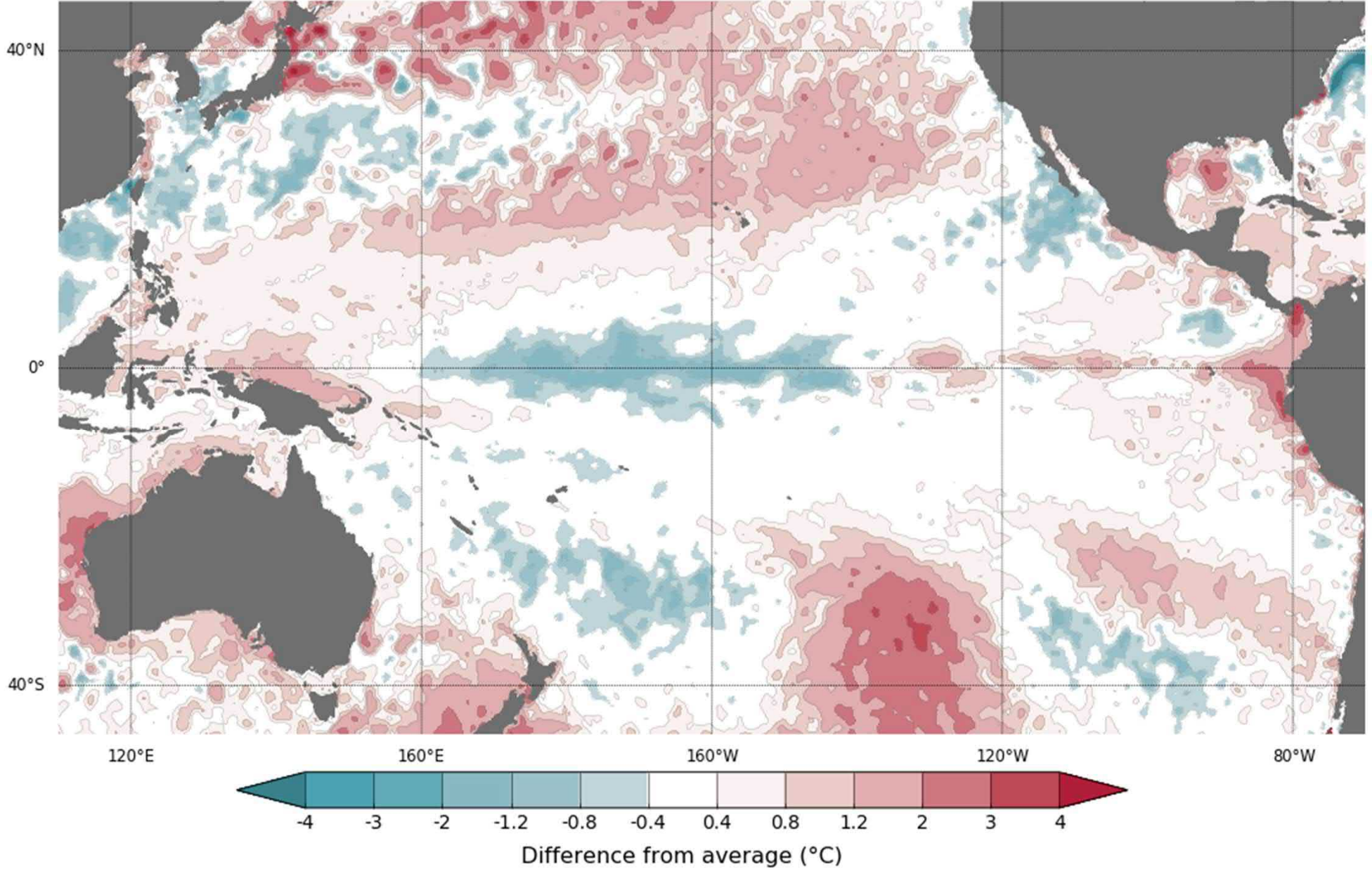
Sea Ice / Snow Cover

Sea Surface Temperature





Difference from average sea surface temperature observations 24 February to 2 March 2025

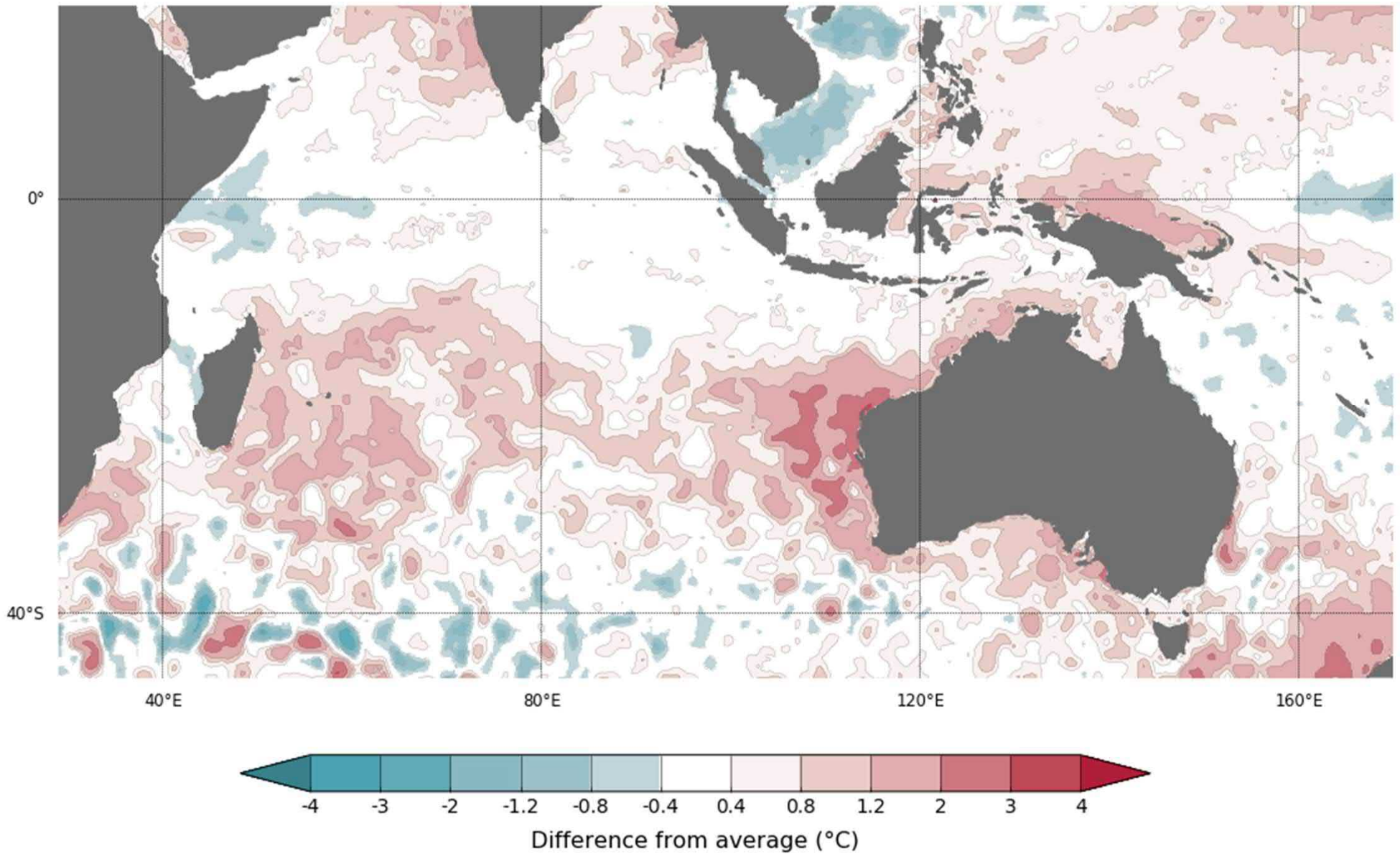


Data: GAMSSA SST
Climatology baseline: 1991 to 2020
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<http://www.bom.gov.au/climate>
Weekly average: 2 March 2025
Created: 03/03/2025



Difference from average sea surface temperature observations 24 February to 2 March 2025



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<http://www.bom.gov.au/climate>
Weekly average: 2 March 2025
Created: 03/03/2025



Inverloch Surf Beach

Inverloch

1,000 m

Camera: 6,018 m

38°3



3D