

Harmful Algal Bloom (HAB) Fleurieu Peninsula

Date: 14th May 2025

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Position: Senior Scientific Officer (Marine)

Development of the bloom

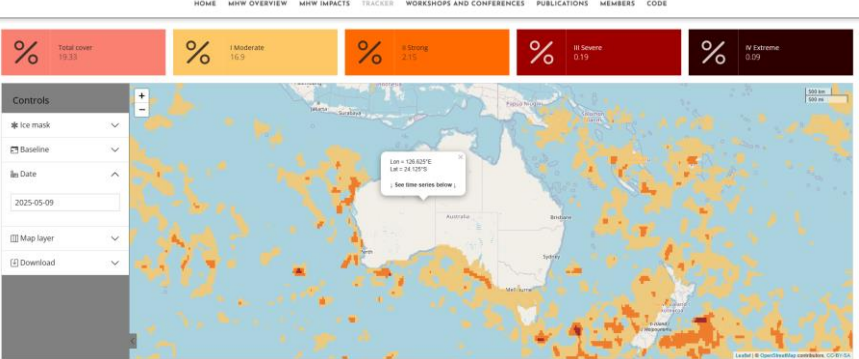
- Public reports of impacts were received from the 15th of March, reports suggests the harmful algal bloom (HAB) started affecting people around 8-9th of March, east of Cape Jervis.
- Over the following weeks public reports of impacts spread throughout Fleurieu, Kangaroo Island and southern Yorke Peninsula. PIRSA has sampled many areas to confirm the HAB and to identify the dominant species.



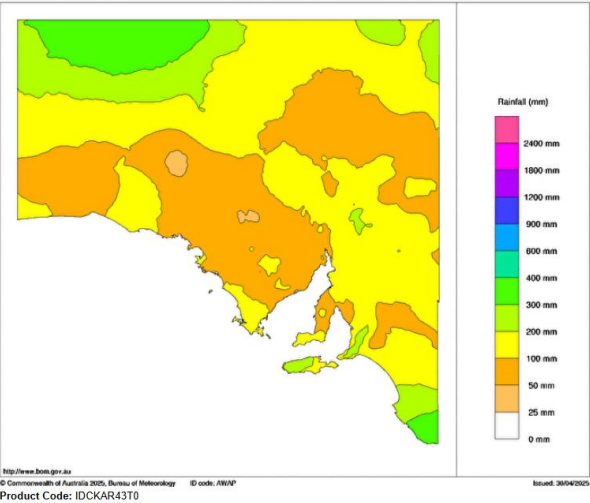
Tools at hand

Marine Heat Wave Tracker

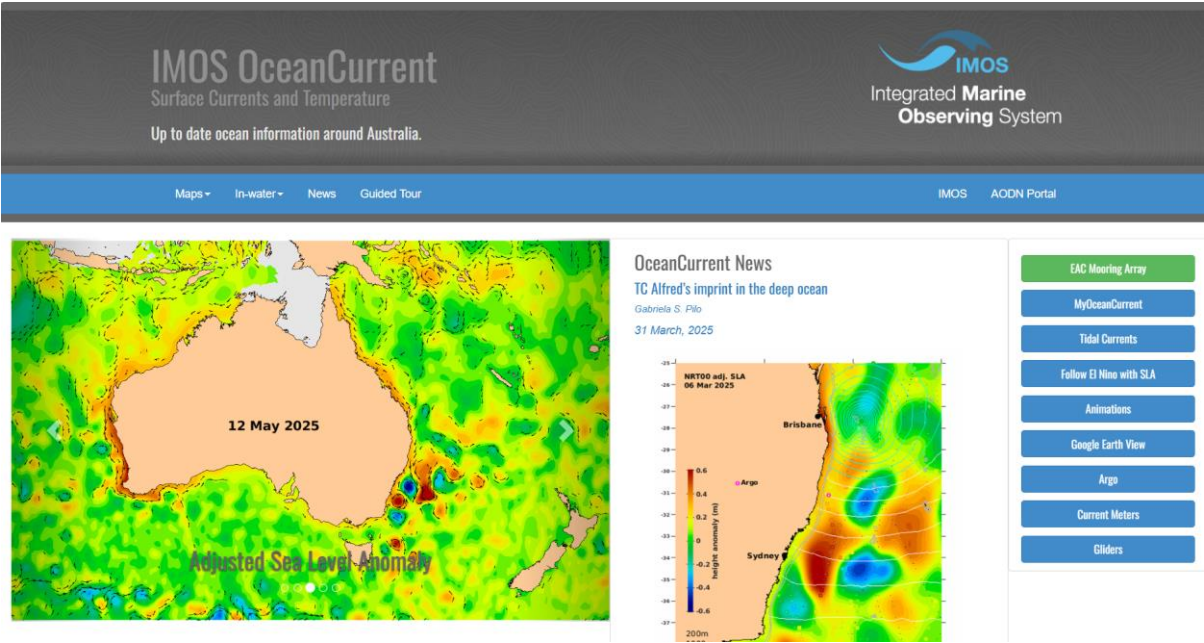
www.marineheatwave.org



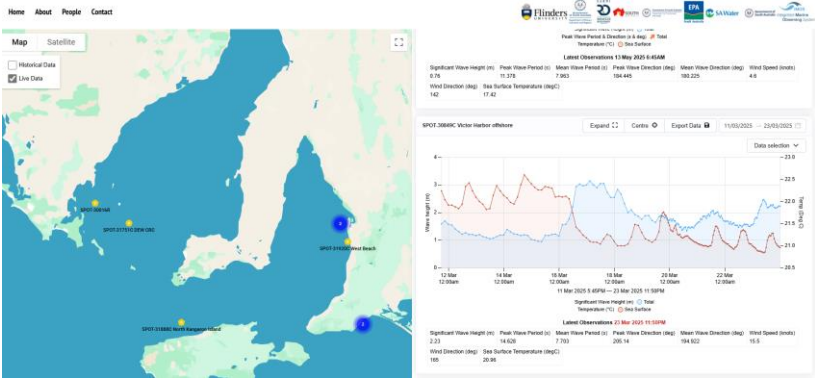
BOM [Australia's official weather forecasts & weather radar - Bureau of Meteorology](http://www.bom.gov.au)



IMOS <https://oceancurrent.aodn.org.au/>



SA Waves



Environmental Assessment

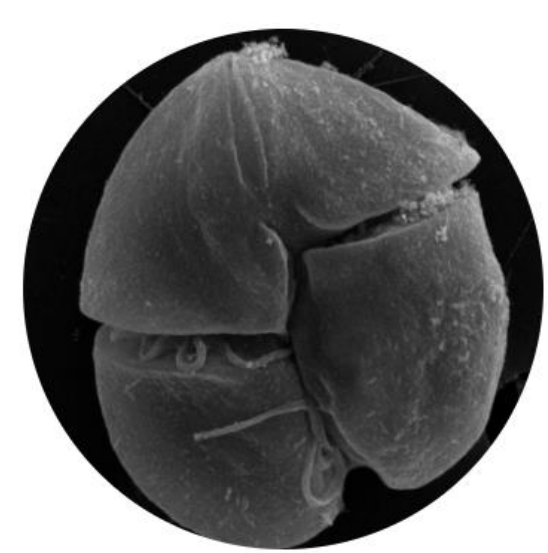
Water Samples collected

- 17th and 18th - Parsons, Waitpinga, Encounter Bay
- *Karenia mikimotoi* Identified as the most abundant species in samples collected along the Fleurier Peninsula on the 17th and 18th

Karenia mikimotoi

Literature Review

- Dinoflagellate
 - Often detected in SA
 - Has caused blooms in Japan and the UK
 - No long term harm to humans (irritant)
 - Toxic to fish gills
- Not Strongly dependent on nutrients
 - Mixotrophic behaviour
 - Environmental Triggers
 - Stratified water column
 - Warm temperatures
 - Stable salinity and light conditions



Karenia mikimotoi - Photo by FWC Fish and Wildlife Research

K. Mikimotoi at Parsons & Waitpinga Beachs

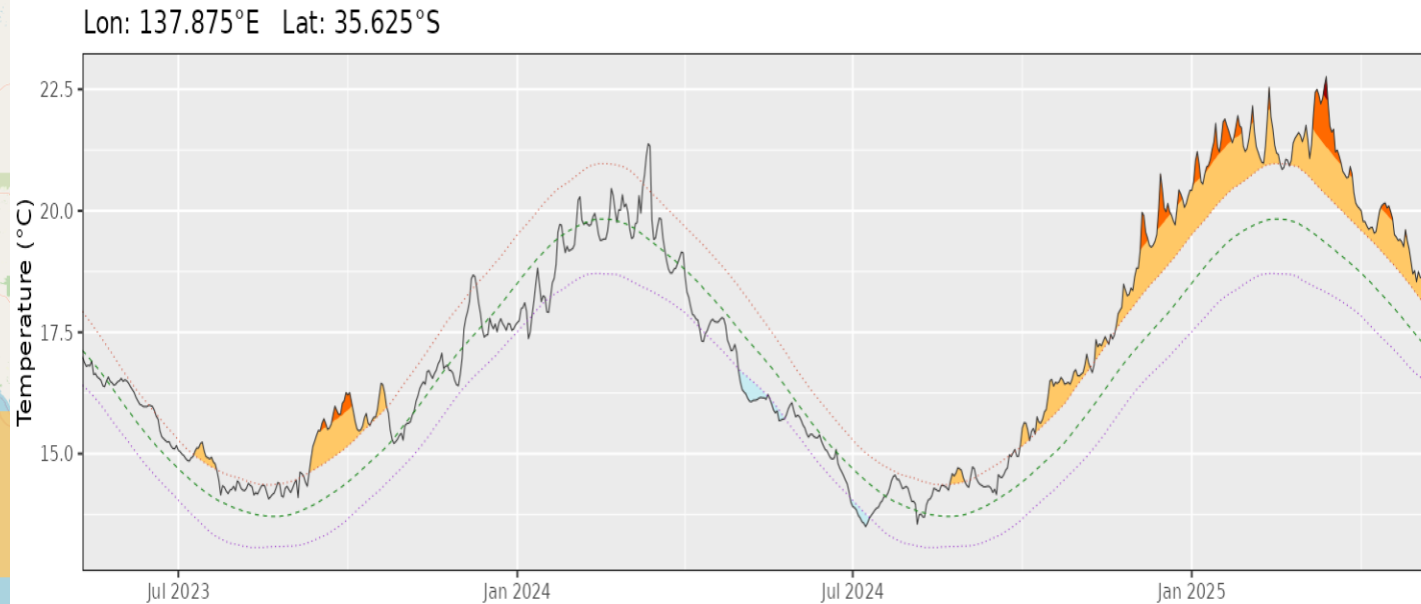
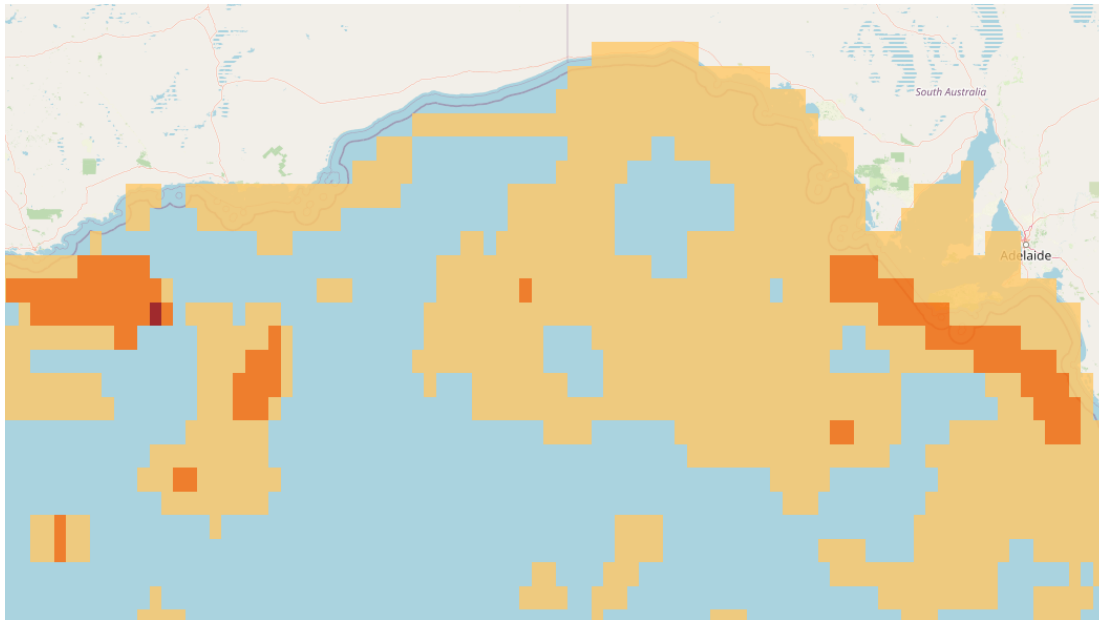


What other factors have been scientifically ruled out

- The Bureau of Meteorology shows that at the time of the bloom initiating, there has been insufficient rainfall to generate runoff into waters which would transport nutrients from urban or agricultural areas
- PIRSA have confirmed that fish samples have not detected any infectious disease
- There are no known pollution sources that are within the areas affected that would contribute to an algal bloom of this scale
- The location of the Adelaide desalination plant is over 100 km from the location of the algal bloom. This results in comprehensive mixing, dilution and dispersion of any brine prior to reaching the Fleurieu region

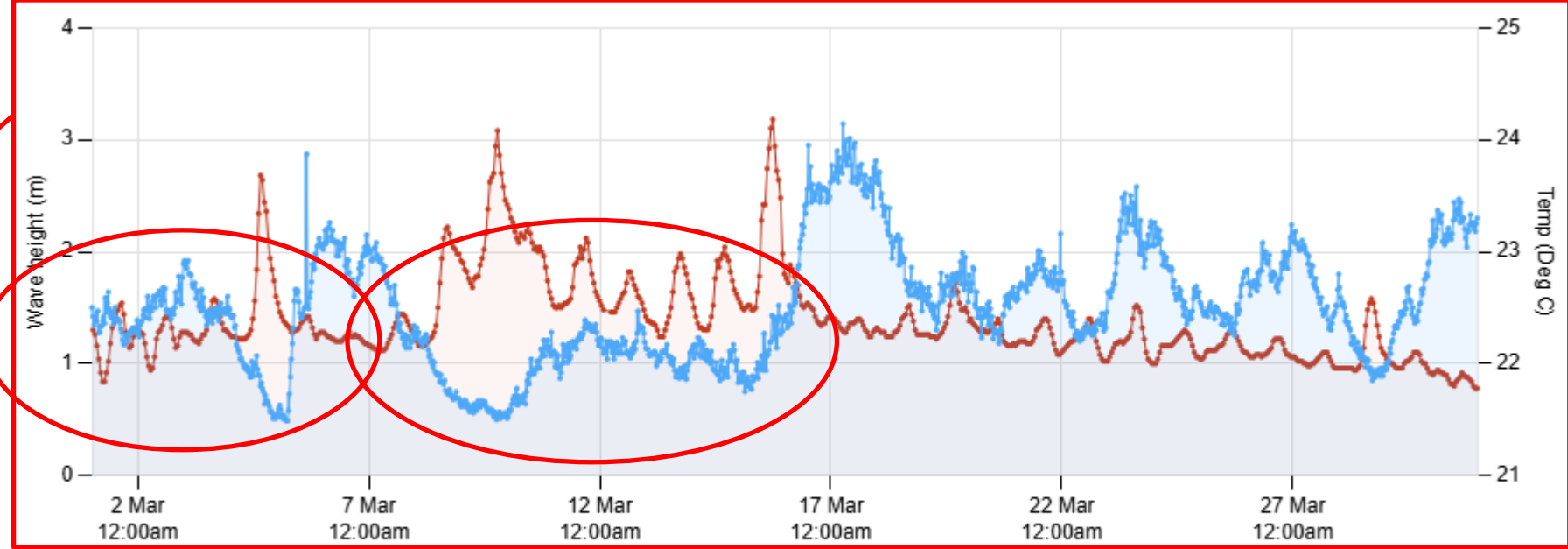
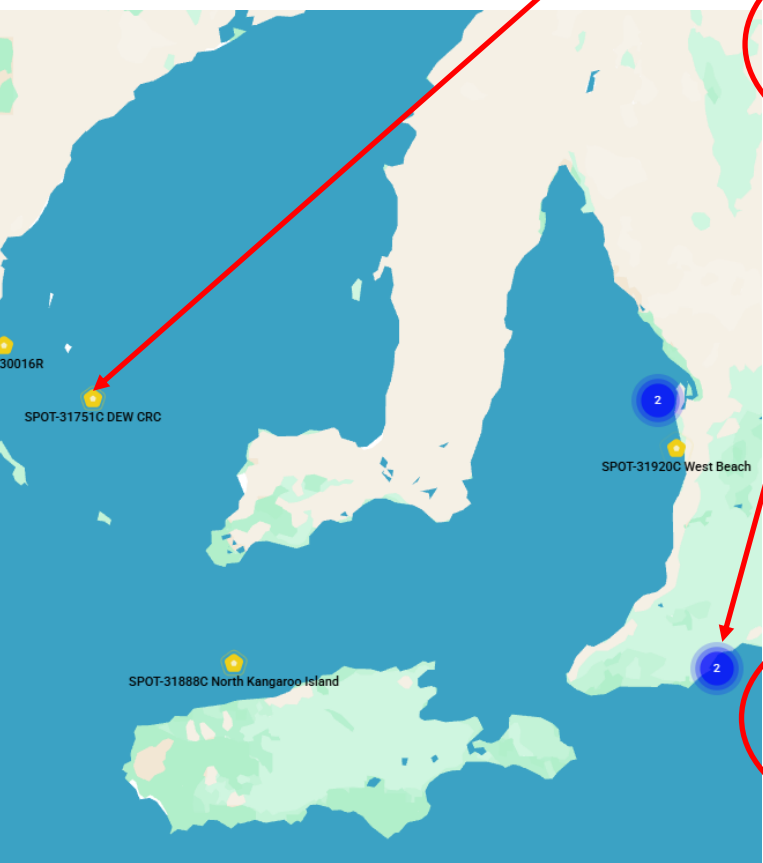
Main factor driving bloom persistence

Southern Australia is experiencing a marine heat wave



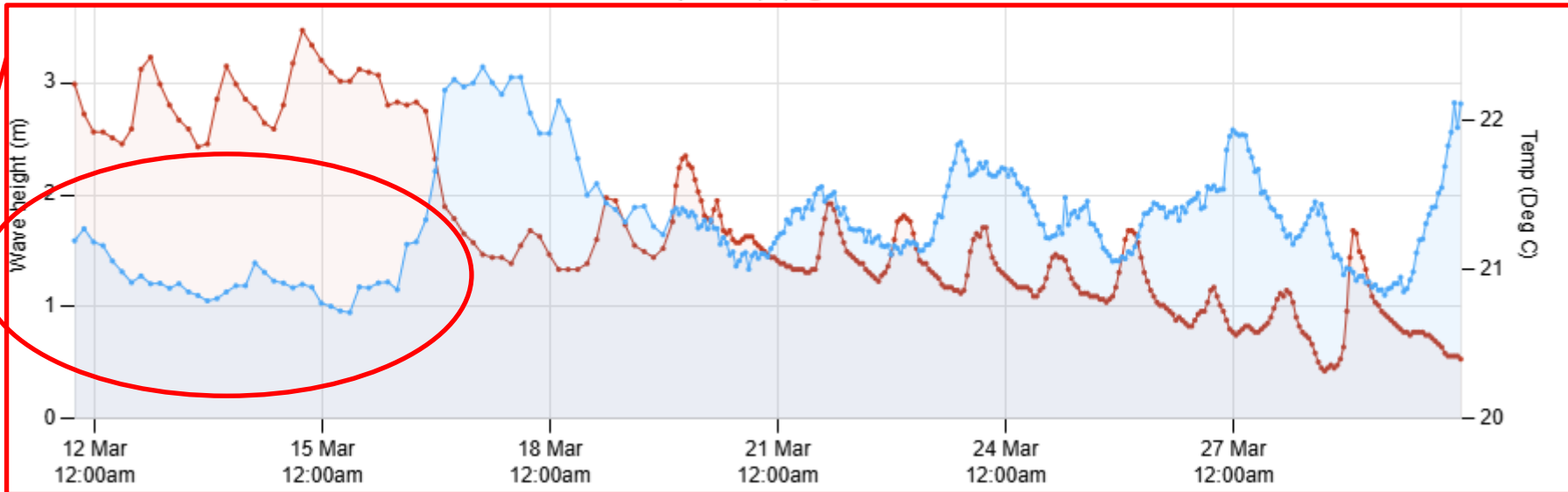
- Long period of relatively calm winds
- Warmer sea surface temperatures (min, ave and max) compared to other years, particularly March 2025

Periods of prolonged calm seas across the state.



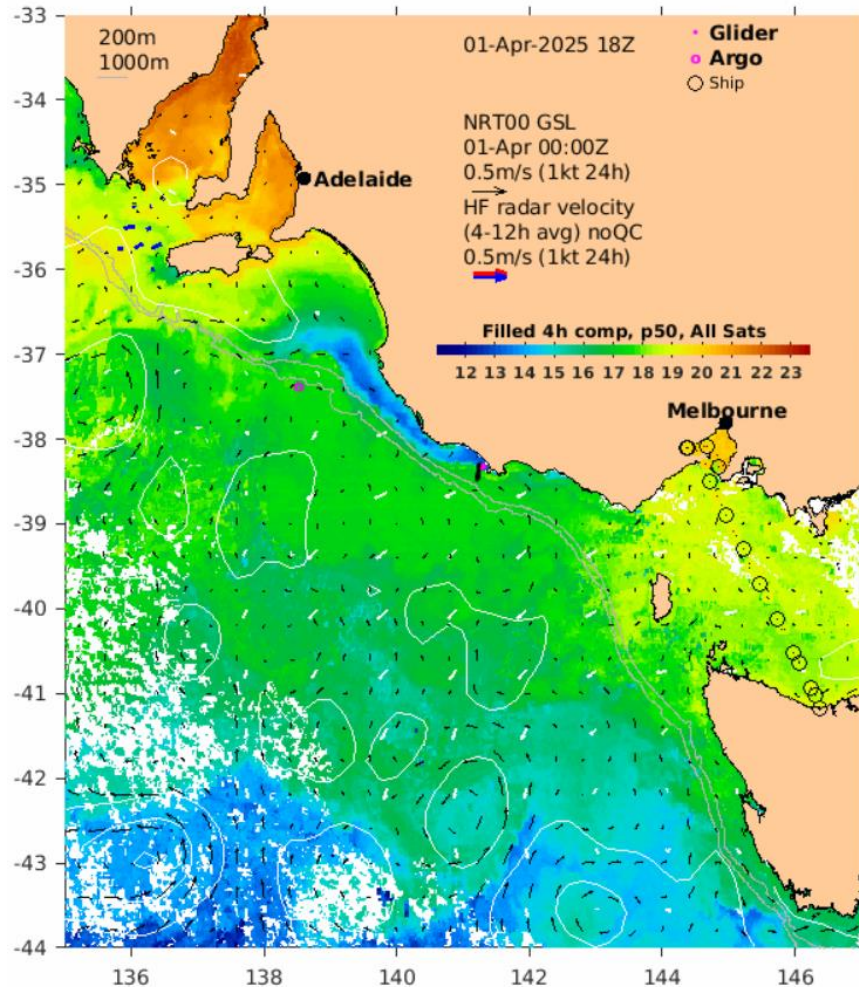
01 Mar 2025 12:15AM — 30 Mar 2025 11:55PM

Significant Wave Height (m) ● Total
Temperature (°C) ● Sea Surface

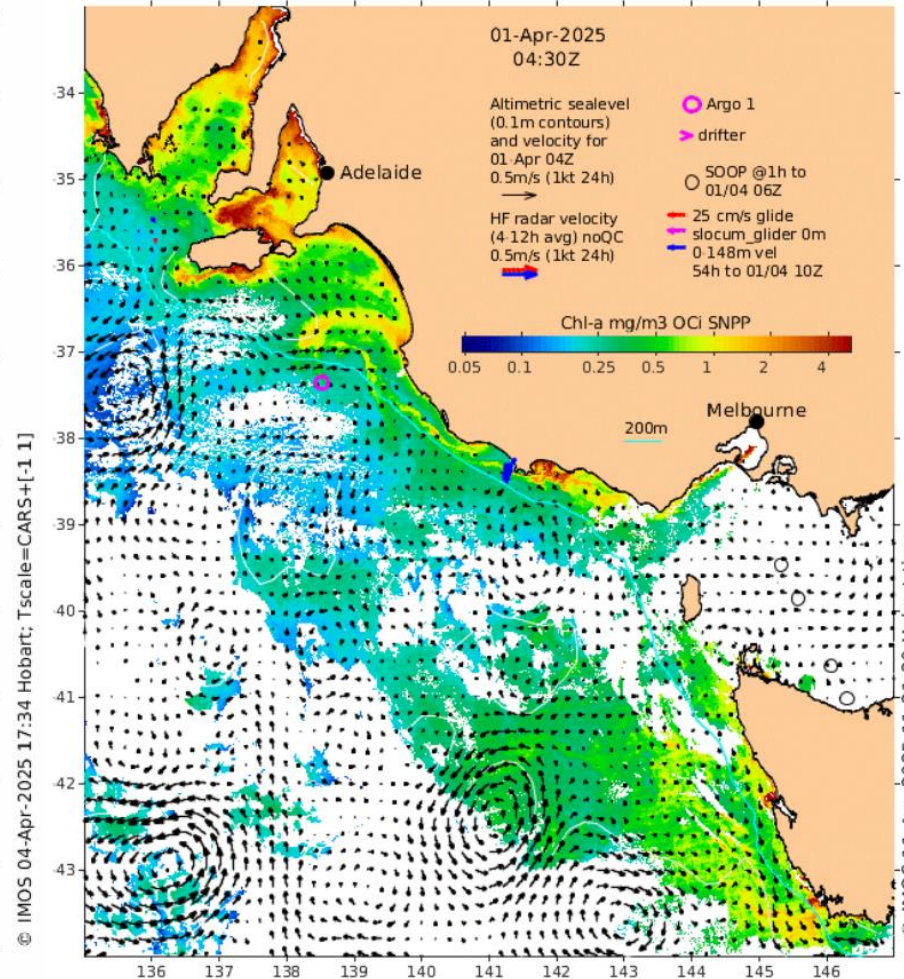


Environmental Assessment

Sea Surface Temperature



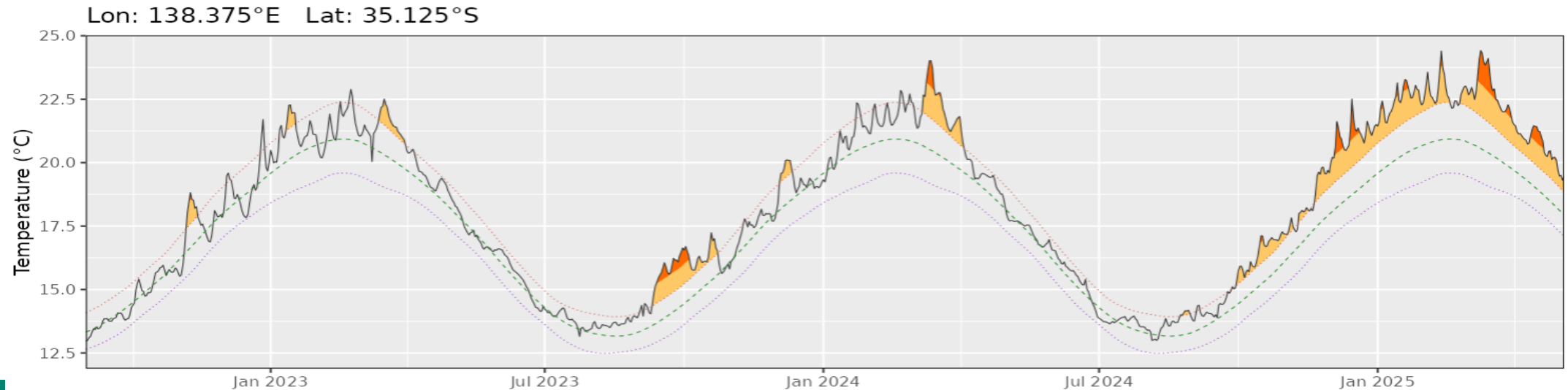
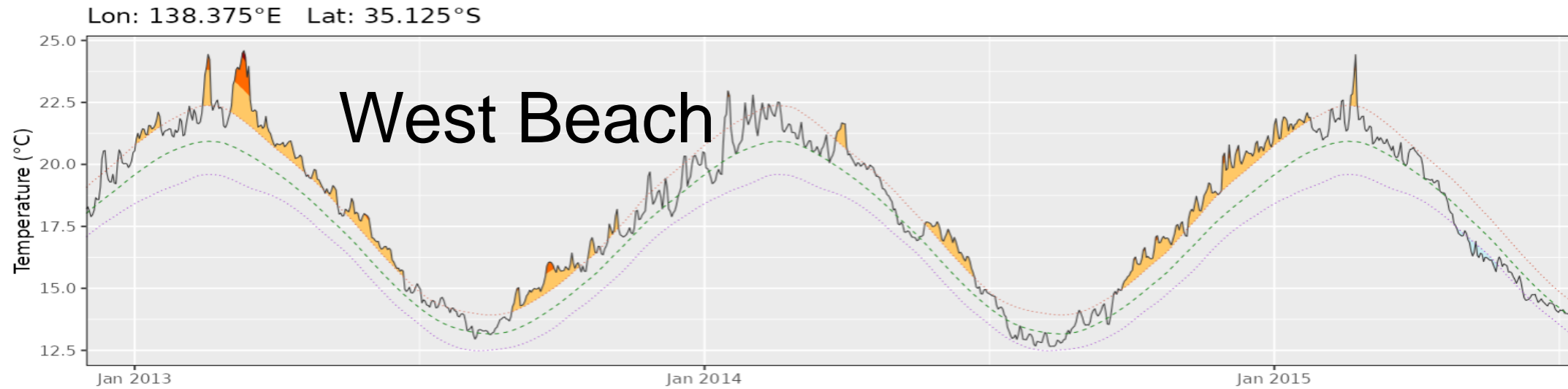
Chlorophyll a concentrations



Features to Note:

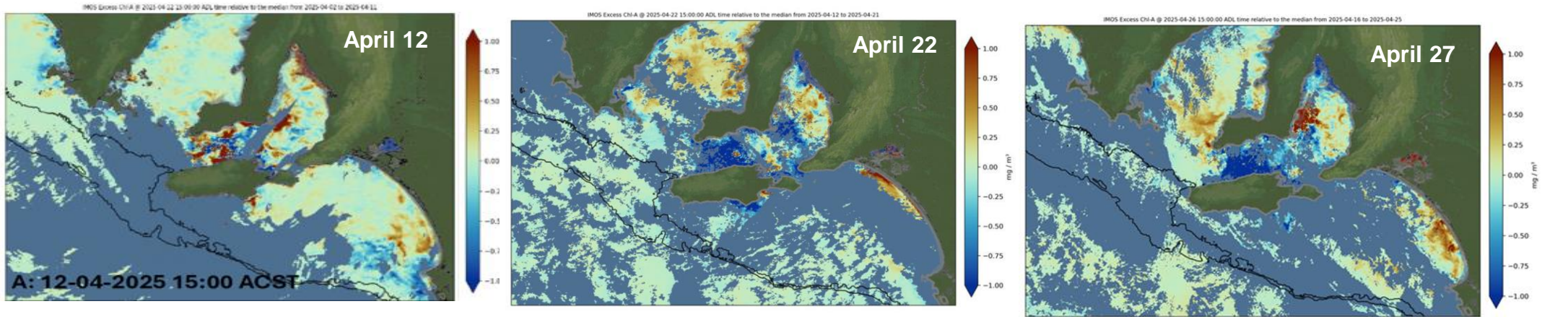
- Chlorophyll a is used as an indicator of productivity.
- Chlorophyll a in seagrass can also be detected in shallow waters. Red areas on the Chl a map need to be interpreted in context of location.
- Red areas in deep water is likely highly productive algae in the water.

Marine Heat Waves occur frequently

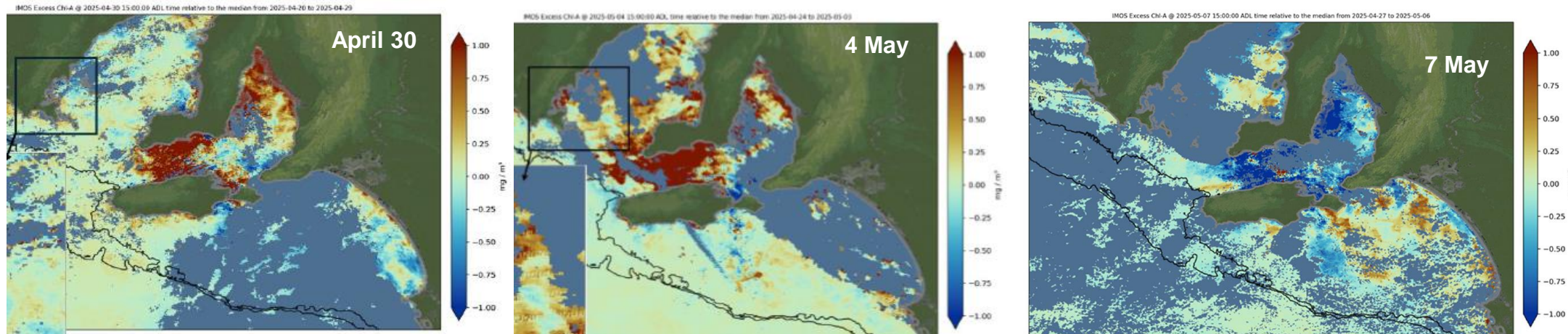


Progression of bloom

10d median - Bloom index

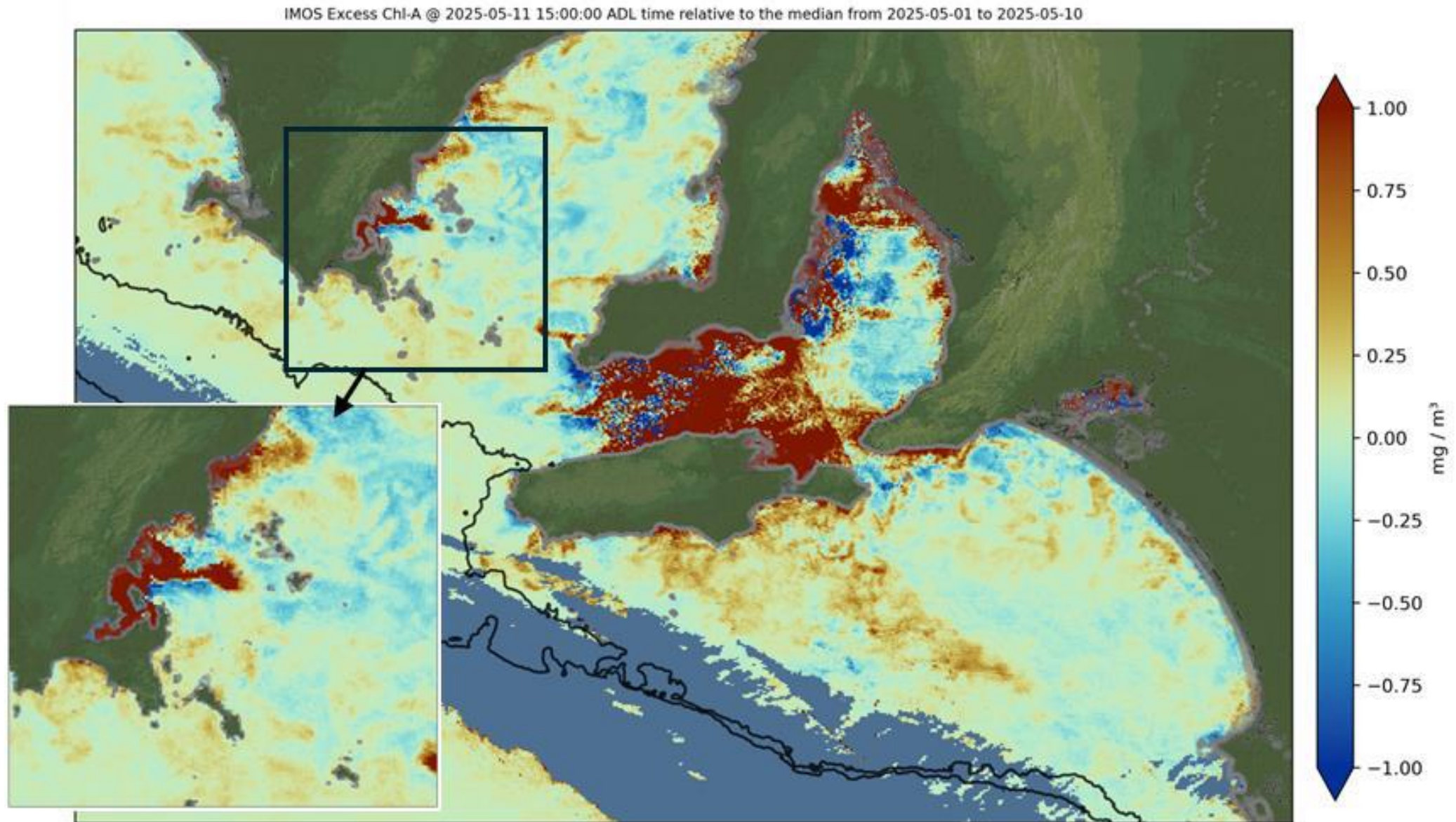


- April continued the hotter than average sea conditions and the marine heat wave persisted
- The Bloom is dynamic

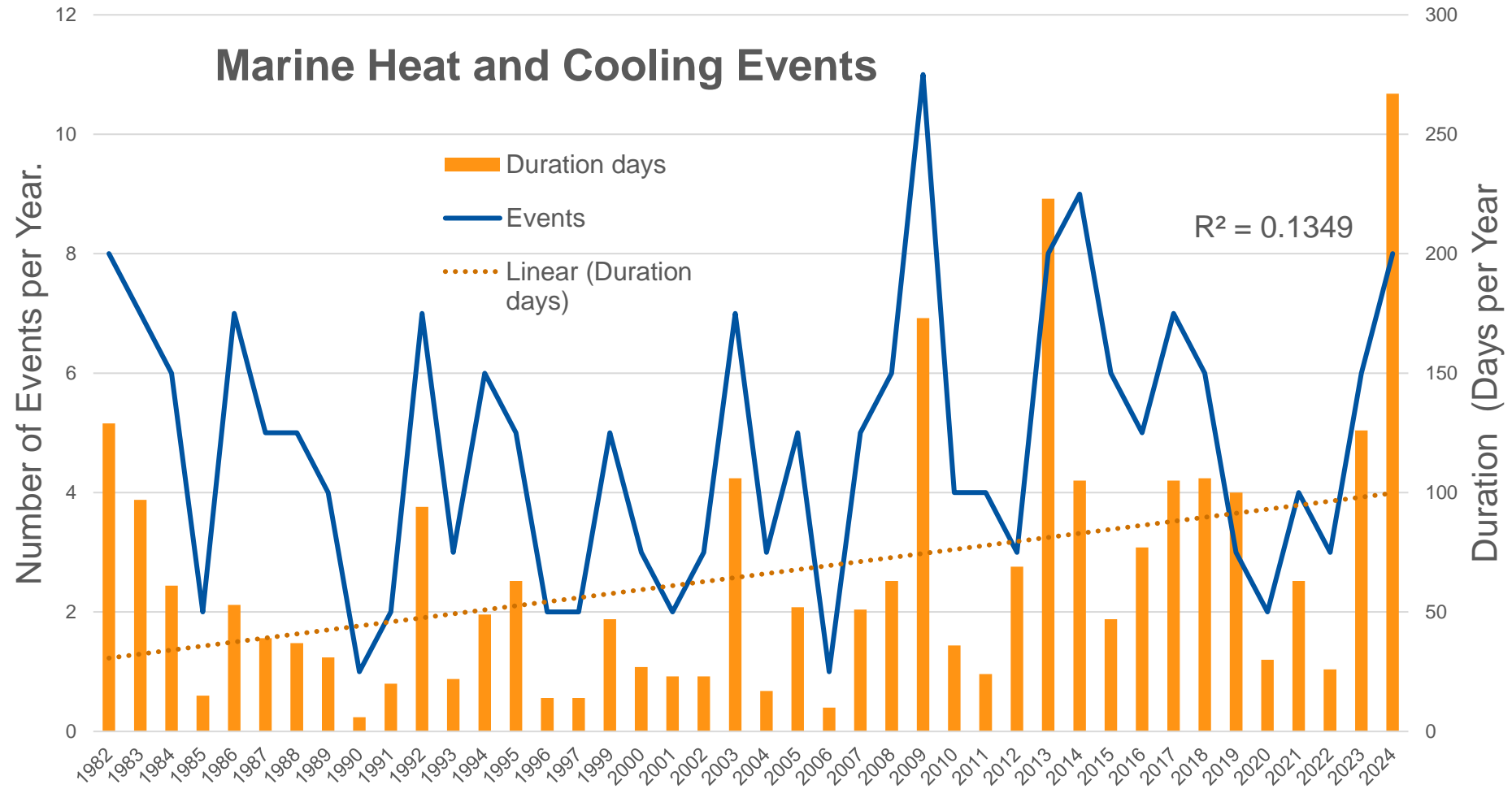


Latest 10d median - Bloom index 11th May

OFFICIAL



What's next?



Thank you

Environment Protection Authority

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