

Project Manta

East Australian Current (EAC) Region: Oceanographic conditions report

March – May 2013
(Part 1)

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Overview

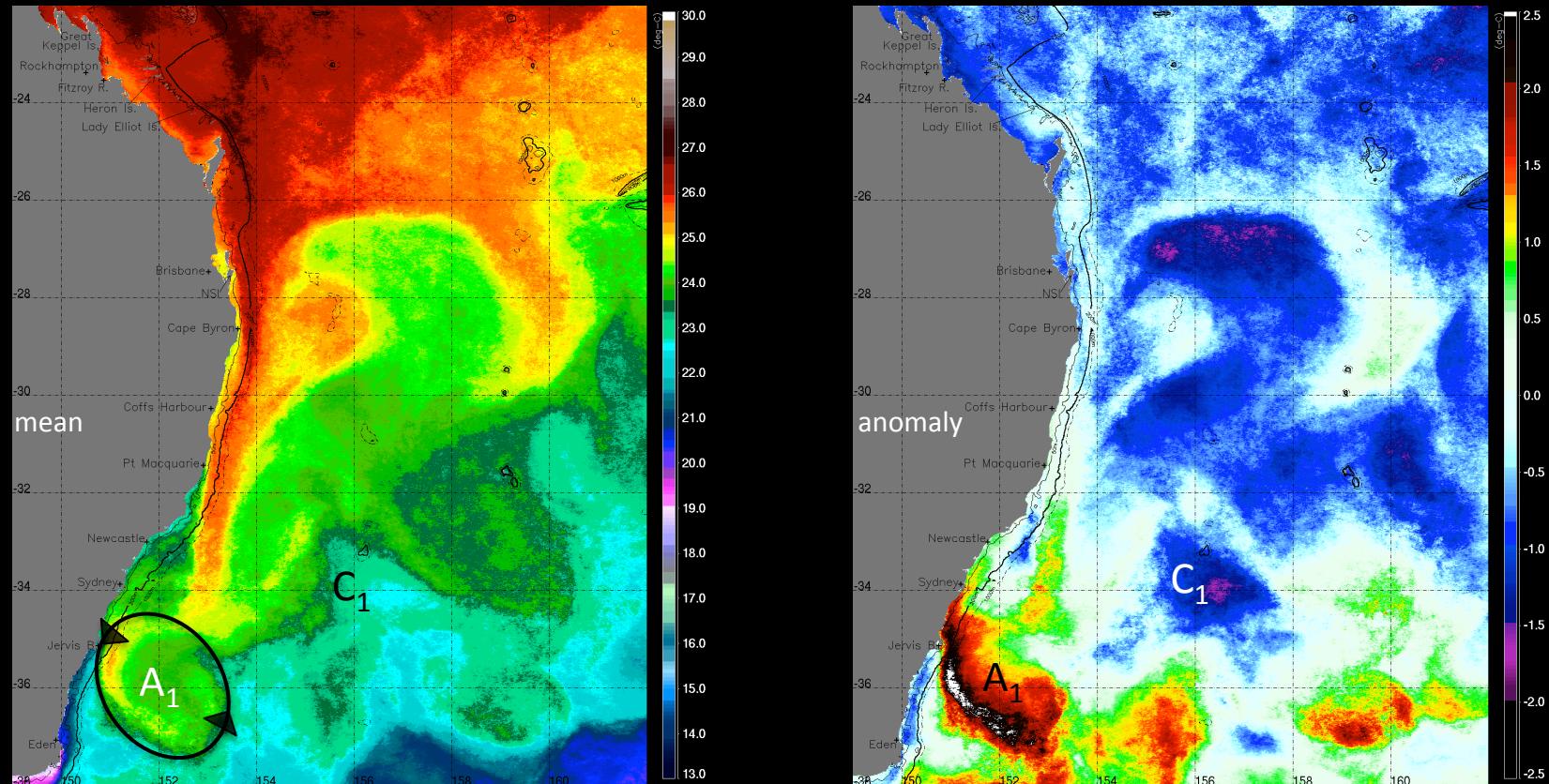
PART 1

- Monthly and weekly means and anomalies of MODIS SST for March and April 2013 indicating strong eddy activity.

PART 2

- Monthly and weekly means and anomalies of MODIS chlorophyll-a concentrations for March and April. Chlorophyll patterns related to the behavior of the EAC and strong eddy activity.
- Monthly means and anomalies of photic depth for March and April.
- Monthly means of surface oceanic currents (OceanMAPS).
- Summary of manta sightings at NSI and Byron Bay during April.

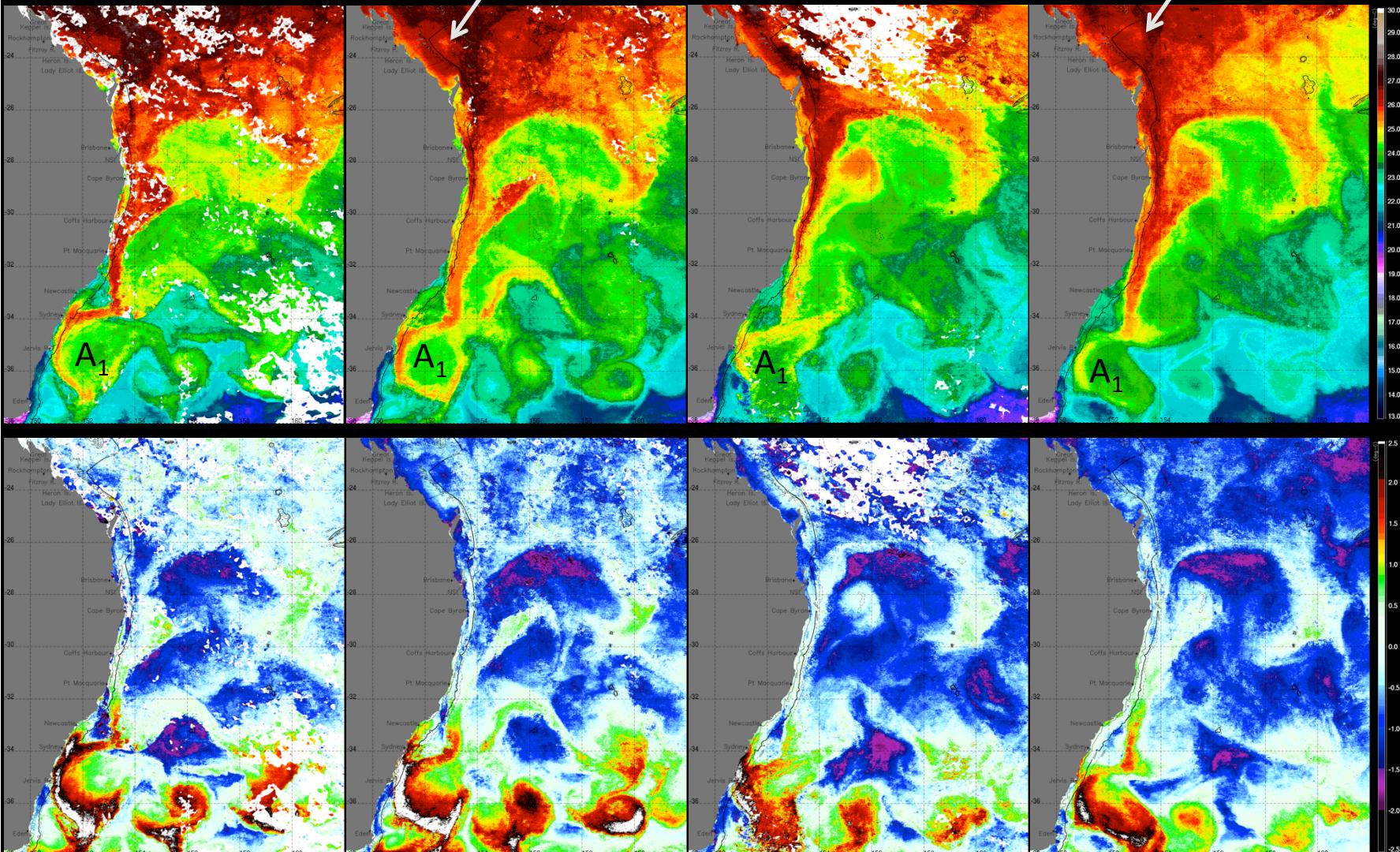
EAC Monthly MODIS SST (D+N): March 2013



- Strong EAC primary flow encroaching onto the shelf down to $\sim 33^{\circ}\text{S}$. From this point, EAC extends $\sim 200\text{km}$ further south before separating (from the shelf) north-eastward into the Tasman Sea
- Eddy pair from previous month still persistent in March:
 - * Anticyclonic eddy (A_1) now located further south and closer inshore off Jervis Bay resulting in intense positive SST anomalies on the shelf between Sydney and Jervis Bay and offshore along the southern boundary of the eddy/EAC extension.
 - * Cyclonic eddy (C_1) now located further offshore associated with relatively weaker negative SST anomalies compared to previous month.
- Mild negative to average SST anomalies south to 32°S associated with the EAC primary flow while strong positive SST anomalies characterise the southern extension. Average to strong negative SST anomalies characterise offshore regions (to $\sim 35^{\circ}\text{S}$). Also apparent is an offshore cyclonic eddy feature off Newcastle and Sydney with strong negative SST anomalies within its core.

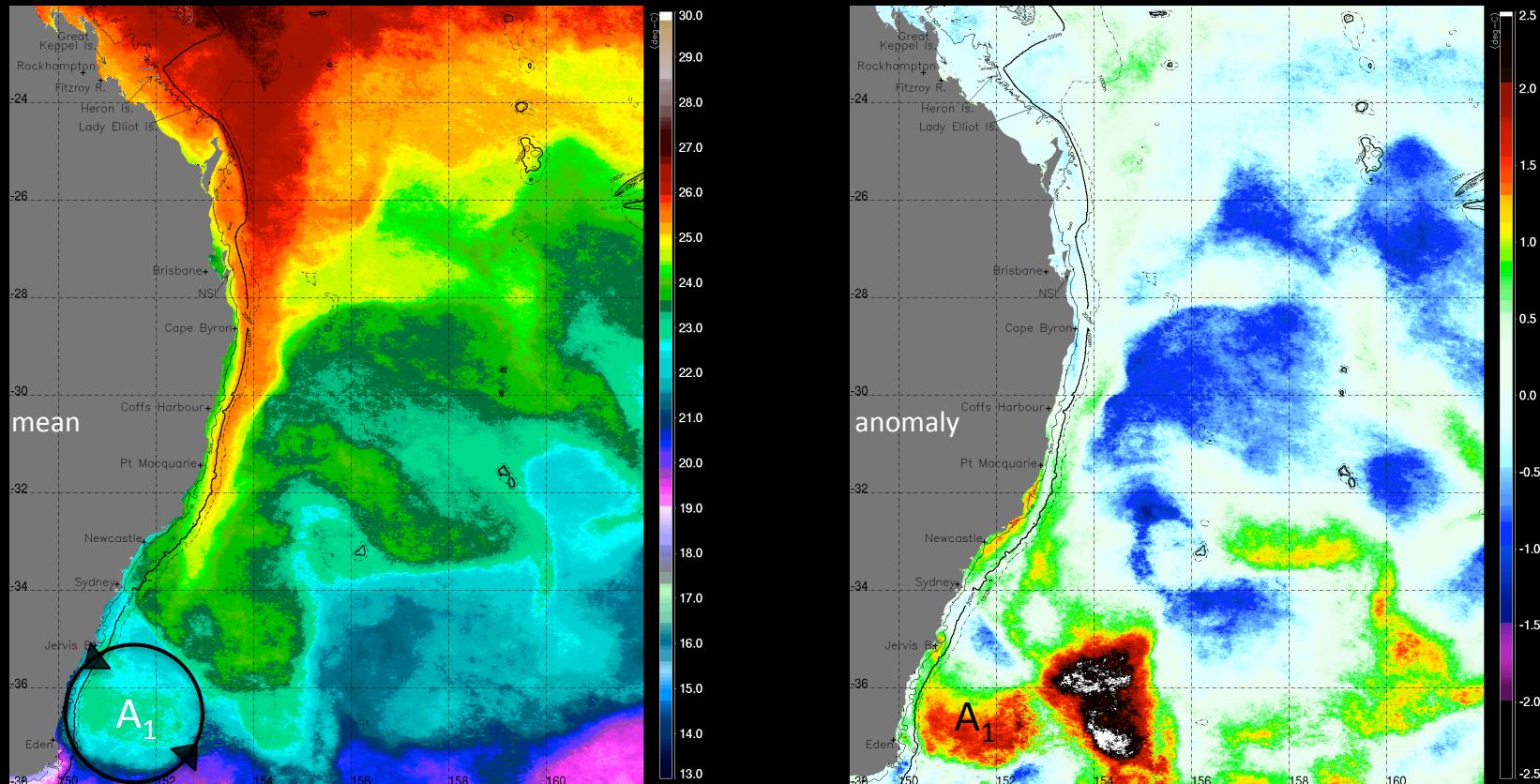
Weekly MODIS SST means (top panel) and anomalies (bottom panel)

From 1-7 Mar 2013



- Weekly means showing the dynamics of the anticyclonic eddy (A_1) pinching off from the main EAC flow and continuing southwestward, & associated with intense positive SST ($+4^{\circ}\text{C}!$) anomalies.
- Surface manifestation of the Capricorn Eddy apparent during the second & last weeks

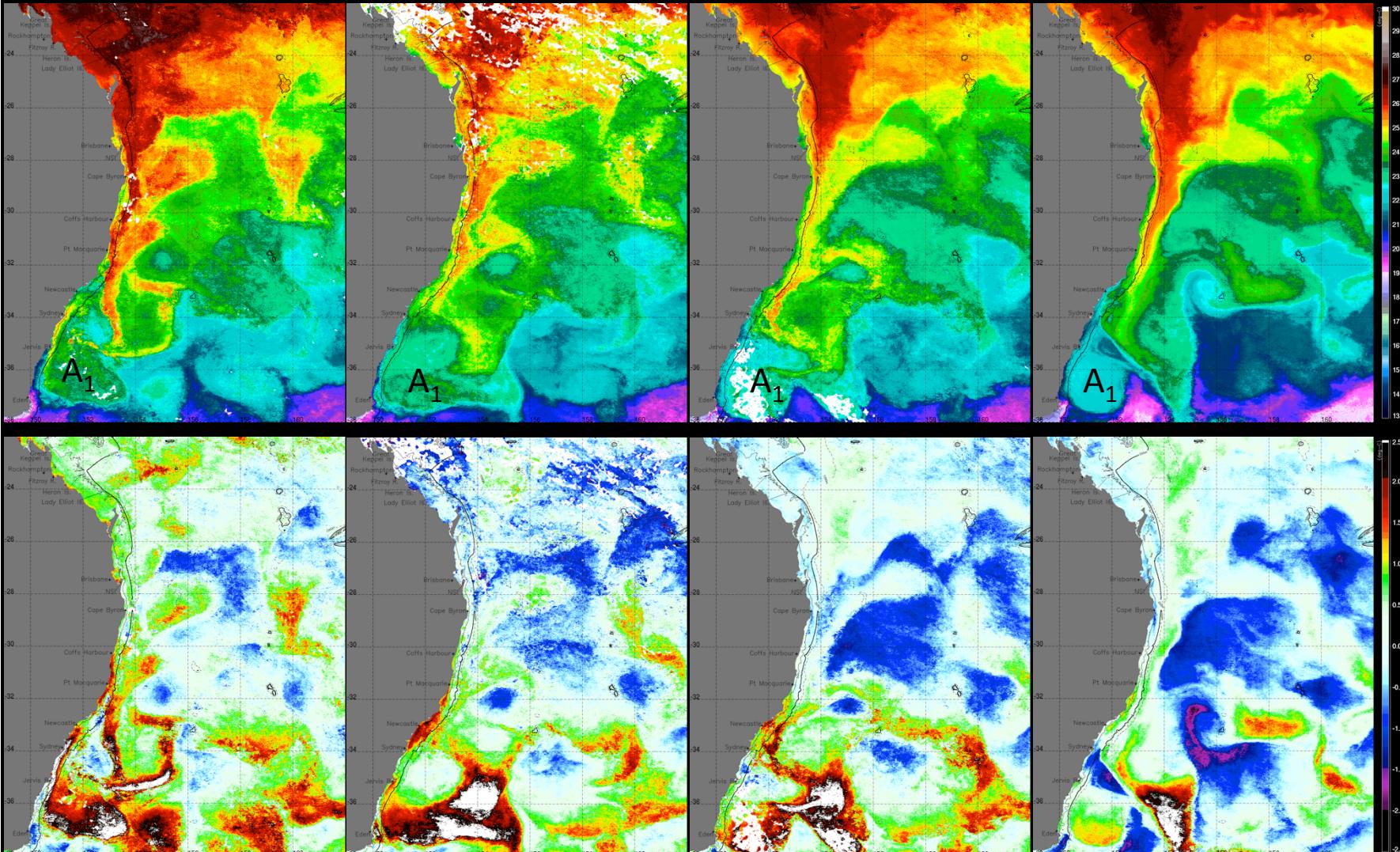
EAC Monthly MODIS SST (D+N): April 2013



- EAC primary flow relatively weaker compared to March as EAC slowly retreats northward and becomes cooler
- Anticyclonic eddy (A_1) has moved southwestward close inshore during April, as it is shed from the primary EAC - A_1 now located between Jervis Bay and Eden.
 - Core of the eddy is associated with persistent strong positive SST anomalies.
- Adjacent offshore: intense positive SST anomalies related to EAC separation from the coast as it pushes/extends around eddy, A_1

Weekly MODIS SST means (top panel) and anomalies (bottom panel)

From 1-7 Apr 2013



- Weekly means showing the movement Anticyclonic eddy (A_1) further southwestward as it is shed from the primary EAC flow
- Also apparent are the intense positive SST anomalies (+4°C!) related to the EAC separation from the coast as it pushes/extends around eddy, A_1