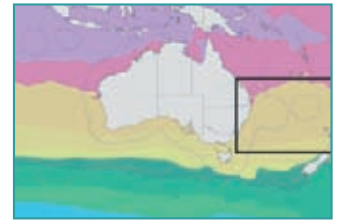


Water Mass P13

Coral Sea Circulation: Pacific Central-South Sub-Tropical Water Mass

Description: The Coral Sea Circulation region contains the East Australian Current waters and associated eddy fields. This current which is the western boundary current in the South Pacific Ocean, leaves the Australian coast at about 34°S to flow around the northern end of New Zealand and down its east coast (East Auckland Current). The path of the current between Australia and New Zealand is known as the Tasman Front. This front separates the cooler, fresher waters of the Tasman Sea region (L2_21) from the warmer and more saline waters of the Coral Sea region (L2_19).



The presence of these fields can be seen in the Level 2 map adjacent (L2_22). These fields can be further refined by the Level 3 energetics map. The path of the East Australian current down the coast and across the Tasman sea (Tasman Front) can be seen clearly. The lighter shades of red to the south of the Tasman Front represent disturbances that move westward with Rossby speed.

When these reach the Australian coast, they separate from the main current and form eddies, which move southwards. Generally, the meander of the Rossby wave extends southward at the Australian coast, trapping the warmer Coral Sea water. The East Australian Current generally spawns only warm-core eddies (anticyclonic eddies). The eddy field can be seen in the Level 2 map as the southward projection of L2_22 along the east coast of Australia.

Examination of the Level 3 energy maps shows that the eddy fields have higher “energetics” than the East Australian Current – an indication that the core jet of that current is relatively stable (as regards temperature variations), while mixing associated with the current occurs at its offshore edge. Note also that the current interacts strongly with the slope/shelf extending south to Tasmania.

Water Mass P13	Mean	Min	Max	Std. Dev.
Temperature (°C)	19.15	12.89	26.25	2.50
Salinity	35.64	35.13	37.56	0.14
Oxygen (mm/l)	5.09	4.61	5.95	0.23
Nitrate (mg/l)	1.36	0.00	13.09	1.57
Silicate (mg/l)	2.55	0.31	16.21	1.58

Depth (m):	70	Longitude (°E):	153.4
Latitude (°S):	-29.1	Volume (km³/106):	1.58

...continued page 2

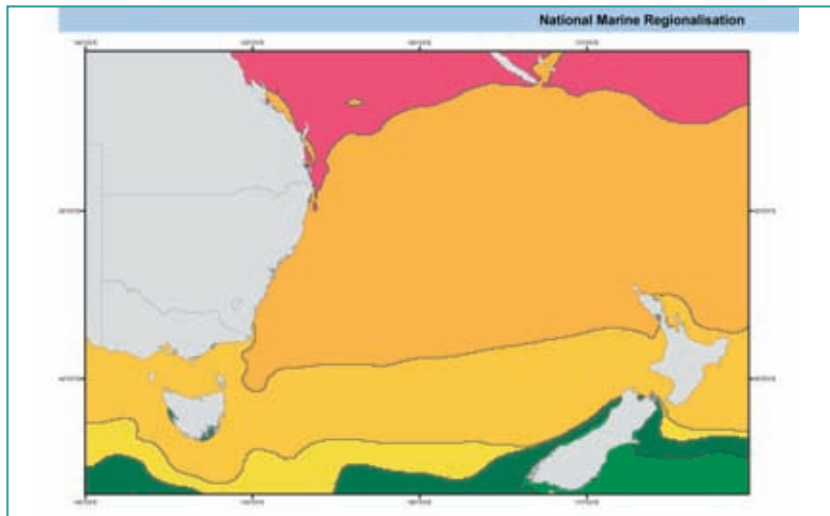
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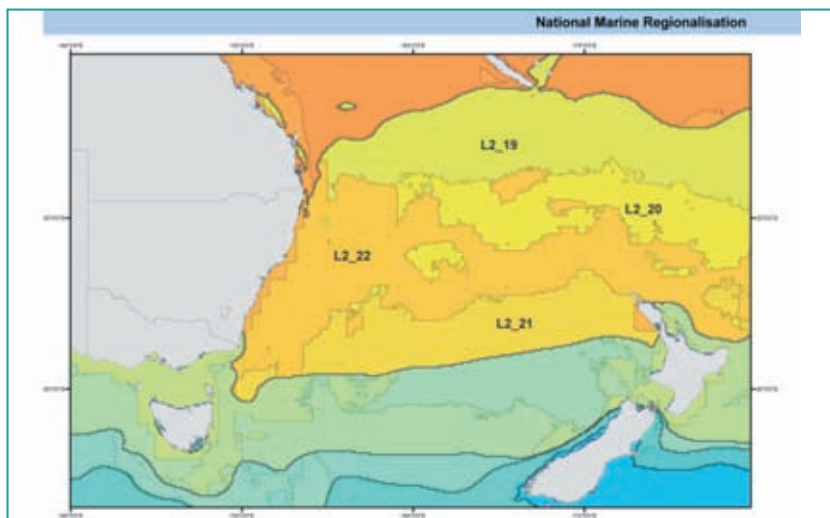


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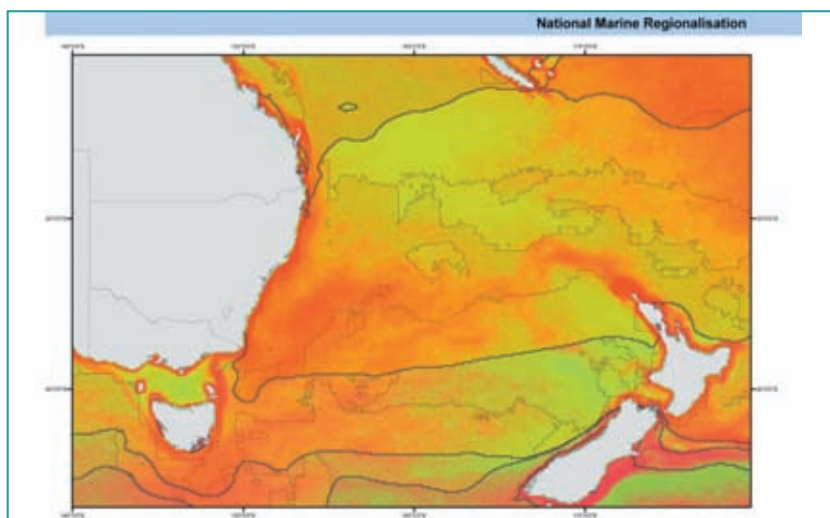




Level 1B



Level 2



Level 3

