**Cross Shelf Patterns – Physical Oceanography**

The 3 northern sites had increasing velocity over previous month and all crossed from cool inshore waters into the warm EAC water. This is contrasted by the Diamond Head transect which was located in colder waters south of the separation zone and did not include the EAC. All transects showed low chlorophyll levels (<1.4 mg m-3) peaking at the surface.

All sites had low Chlorophyll a in the preceding month with negligible wind effects in the 3 days prior to the transects.

**Cape Byron**

This transect was dominated by the EAC which had a strong southward flow (1.50 m s-1) centred over the 200m isobath (27.6 km offshore). The EAC also showed slight onshore movement which increased offshore and with depth (up to 0.26 m s-1).

There was strong current driven uplift of the isotherms inshore of the EAC with the 21 °C isotherm rising to the surface from 70 m depth over 5 km and the 20 °C isotherm rising to the surface from 100m depth over 15 km.

**Evans Head**

This transect was dominated by the EAC which had a strong southward flow (1.47 m s-1) centred 36.1 km offshore (bathy?). The EAC had a slight offshore movement (0.27 m s-1) which increased with distance offshore.

There was strong current driven uplift of the isotherms inshore of the EAC with the 21 °C isotherm rising to the surface from 70m depth over 6 km and the 20 °C isotherm rising to the surface from 100m depth over 15 km.

**North Solitary**

This transect was dominated by the EAC which had a strong southward flow (1.59 m s-1) centred 37.7 km offshore (bathy). The EAC showed slight onshore movement offshore and at depth (0.15 m s-1).

There was strong current driven uplift of the isotherms inshore of the EAC with the 21 °C isotherm rising to the surface from 70m depth over 3 km and the 20 °C isotherm rising to the surface from 100m depth over 10 km.

**Diamond Head**

The transect at this site did not cross into the EAC which had separated from the coast to the north. Within the transect the, along shore velocities are low (< 0.43 m s-1) with corresponding low onshore movement of water (0.11 m s-1) in the surface waters with offshore movement (0.27 m s-1) in the deeper waters.

There was minor uplift of the temperature isotherms with all isotherms rising approximately 20 – 40 m as they came onto the continental shelf.

