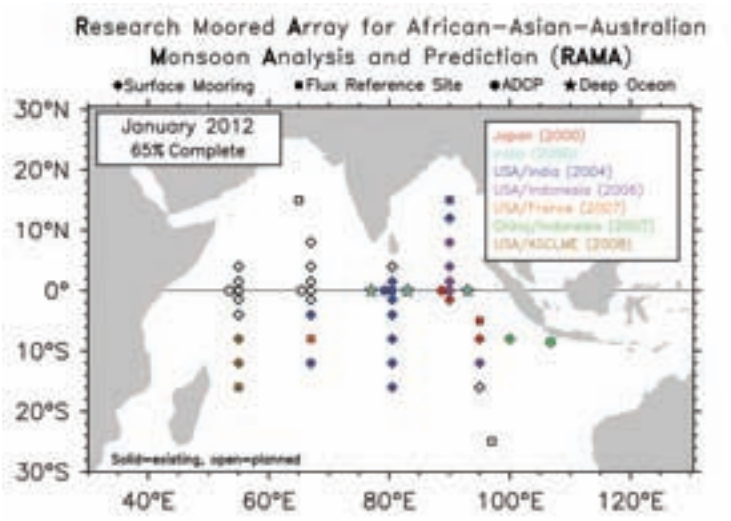

Fig.3 Schematic of RAMA as of Jan 2012. Filled symbols indicate occupied sites. Color coding indicates national support, with year of first involvement shown in the upper-right box. Open symbols indicate sites not yet instrumented. ASCLME is a consortium of nine African nations including Kenya, Tanzania, Mozambique, South Africa, Madagascar, Mauritius, Seychelles, Somalia, and Comoros.

Naming a western boundary current from Australia to the Solomon Sea

SPICE Community

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Upon arrival into the Coral Sea, the tropical part (~12°S-18°S) of the South Equatorial Current (SEC), encounters the coast of Australia and forms an equatorward western boundary current. This current carries important climate signals, which led to measurement campaigns in the early '80s, and more recently the emergence of the CLIVAR Southwest Pacific Ocean circulation and Climate Experiment (SPICE). Along the coast of Queensland, this boundary current begins as the subsurface Great Barrier Reef Under Current (GBRUC); as it expands to the surface north of about 15°S it is known as the North Queensland Current (NQC) (Figure 1). South of the Louisiade Archipelago, a strong eastward current was noticed and labeled with several different names over the years: NGCUC, NQC, and "Hiri Current" (HC), referring to a traditional trade route of the Motu people of Papua New Guinea. The western boundary current is continuous with the New Guinea Coastal Undercurrent (NGCU) in the Solomon Sea. However, the NGCU in the Solomon Sea has a different character because it is fed by both the Coral Sea boundary current and by a direct inflow from SEC waters of lower latitudes.

The pathways inside the Gulf of Papua, from the coast of Queensland to the Louisiade Archipelago, are nevertheless little documented, and both numerical models and Argo float data are showing a continuous western boundary current along the coast. Because of its continuity in both dynamics and water properties, it is proposed here that this current be given a unique name which would encompass the GBRUC, NQC and Hiri Current. For clarity, and referring to historical practice in physical oceanography, we propose to use the geographical denomination "Gulf of Papua Current" (GPC), referring mainly to subsurface waters (σ =26.5). This would not preclude the use of the aforementioned regional names, but clearly identify this continuum. We encourage referring to this unique name, which would be an achievement of the regional coordination that was initiated with SPICE, and would avoid perpetuation of confusing references.

Recent SPICE references are listed on http://www.ird.nc/UR65/SPICE/spice.html

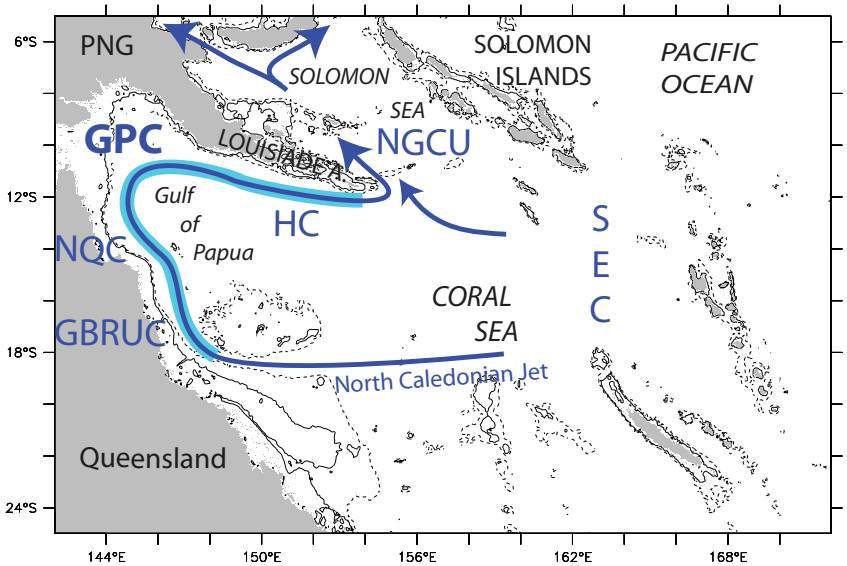

Fig 1: Topography and equatorward currents of the northwest Coral Sea. The westward flowing South Equatorial Current (SEC) feeds the Coral Sea western boundary current system: the Great Barrier Reef Under Current (GBRUC); the North Queensland Current (NQC); Hiri Current (HC) which constitute the continuous current around the Gulf of Papua, which we propose to name the "Gulf of Papua Current" (GPC). The 50 m and 1000 m isobaths are given respectively by the solid and continuous contour lines.