



## Daily Drilling and Scientific Report for IODP Expedition 325, Great Barrier Reef Environmental Change

18<sup>th</sup> February 2010 (0000 - 2400 local time)

### 1. Location

Site HYD\_01C Site 6 (Hole M0033A) and Site 3 (Hole M0034A).

Time zone: Brisbane Australia Time, UTC +10

Position at midnight:

Latitude: 19° 41.535 S

Longitude: 150° 13.815 E

### 2. Activity summary

Coring activities continued at M0033A until the target depth was reached. The vessel then transited to M0034A (HYD\_01C Site 3), where camera deployment occurred and the drill floor was prepared for coring operations.

### 3. Science report

Core 10R was drilled to 14.3mbsf and recovered a continuous sequence of massive corals (*Acropora?*) with visible coralline algal crusts and microbialite. Cores 11R-19R covered an interval from 14.3 to 25.3mbsf with recoveries ranging from 30-80%. The lithologies continue to be dominated by framestones composed of coral (*Acropora* sp, massive Favid), coralline algal and microbialites with some continuous sequences, and others broken but likely *in situ*. Corals and associated sediments are likely characteristic of shallow, high energy depositional settings.

Core 20R advanced another 1.5m recovering mainly unlithified carbonate sediments indicating a change in lithology at about 25-26 mbsf from the mainly coral framestones above. Core 21R reached to 28.3mbsf and consisted of lime pebbles and few sand sized fragments. The major component of Core 22R were lime pebbles, and the core catcher was mainly occupied by well cemented packstone including fragments of *Halimeda* plates and branching corals. A final 3 metre run was conducted to recover Core 23R to confirm that we had advanced below the facies boundary between the Pleistocene and the last deglacial sequences. Three dating samples were selected from the core catchers of 3R, 7R and 15R.

#### 4. Core recovery details

<b>Hole</b>	M0033A
<b>Cores recovered</b>	14
<b>Drilled length</b>	20.0m
<b>Recovered length</b>	8.67m
<b>Recovery</b>	43.35%
<b>Depth at midnight</b>	32.8mbsf

#### 5. Weather

Sea state: slight (3) to moderate (4) with swell of 0.5 – 1.5m; wind direction ENE becoming NE force 3 becoming 4 (7-16 knots) and 6 later (22 – 27 knots); partly cloudy becoming overcast in the afternoon; 28°C.

Next 24 hrs: Sea state moderate with swell of ~1.7m becoming 2.2m; wind direction E/SE 15-20knots increasing to 20-25knots in the evening; scattered showers and isolated thunderstorms.