

A MARINE ASSESSMENT REPORT APPENDIX

IN SUPPORT OF A RESORT DEVELOPMENT DUNCANS TRELAWNEY



July 2007



Amaterra Development

A

Silver Sands

FIGURE 1A – Location of Project Site (A).

Duncans

Image © 2007 DigitalGlobe
© 2007 Europa Technologies

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Pointer 18°28'55.44" N 77°32'22.17" W elev 21 m

Streaming .| 23%

Duncans

Eye alt 4.54 km



**FIGURE 1B – Close-up of
Location of Project Site
(A).**

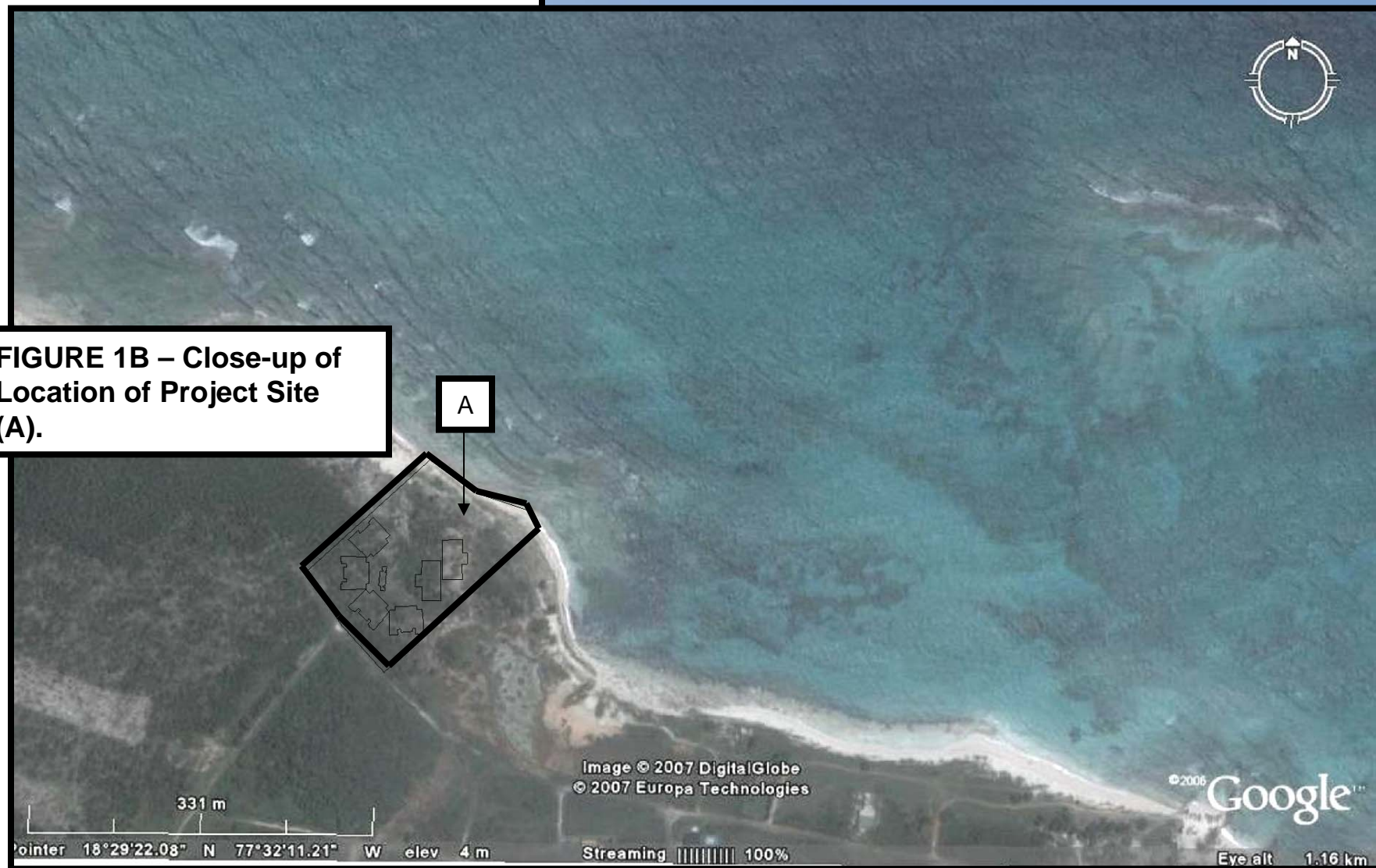


FIGURE 2
Study Area Defined for
Marine Survey

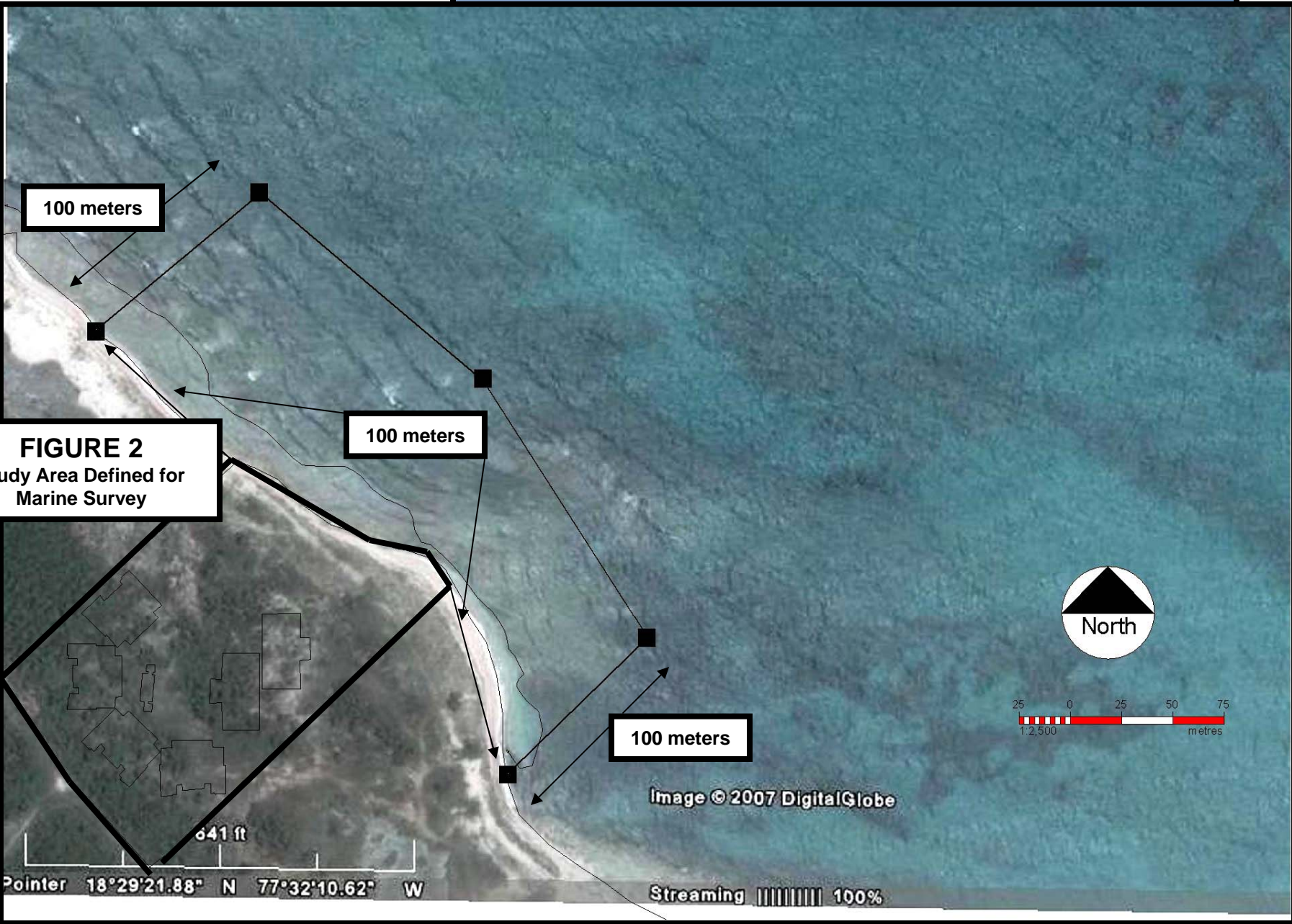
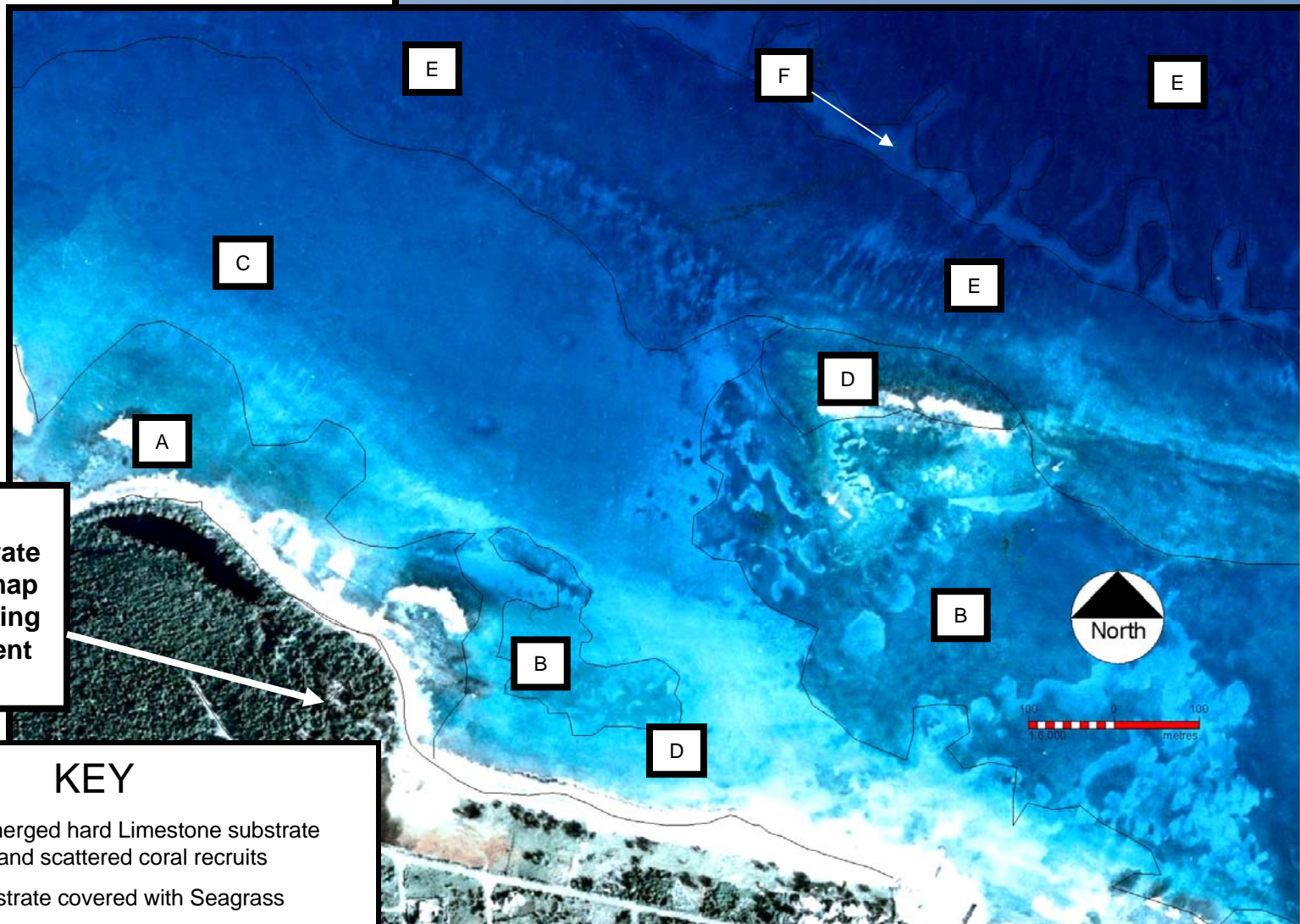


FIGURE 3
Benthic Substrate and Lifeform map
of areas adjoining
the development
site.

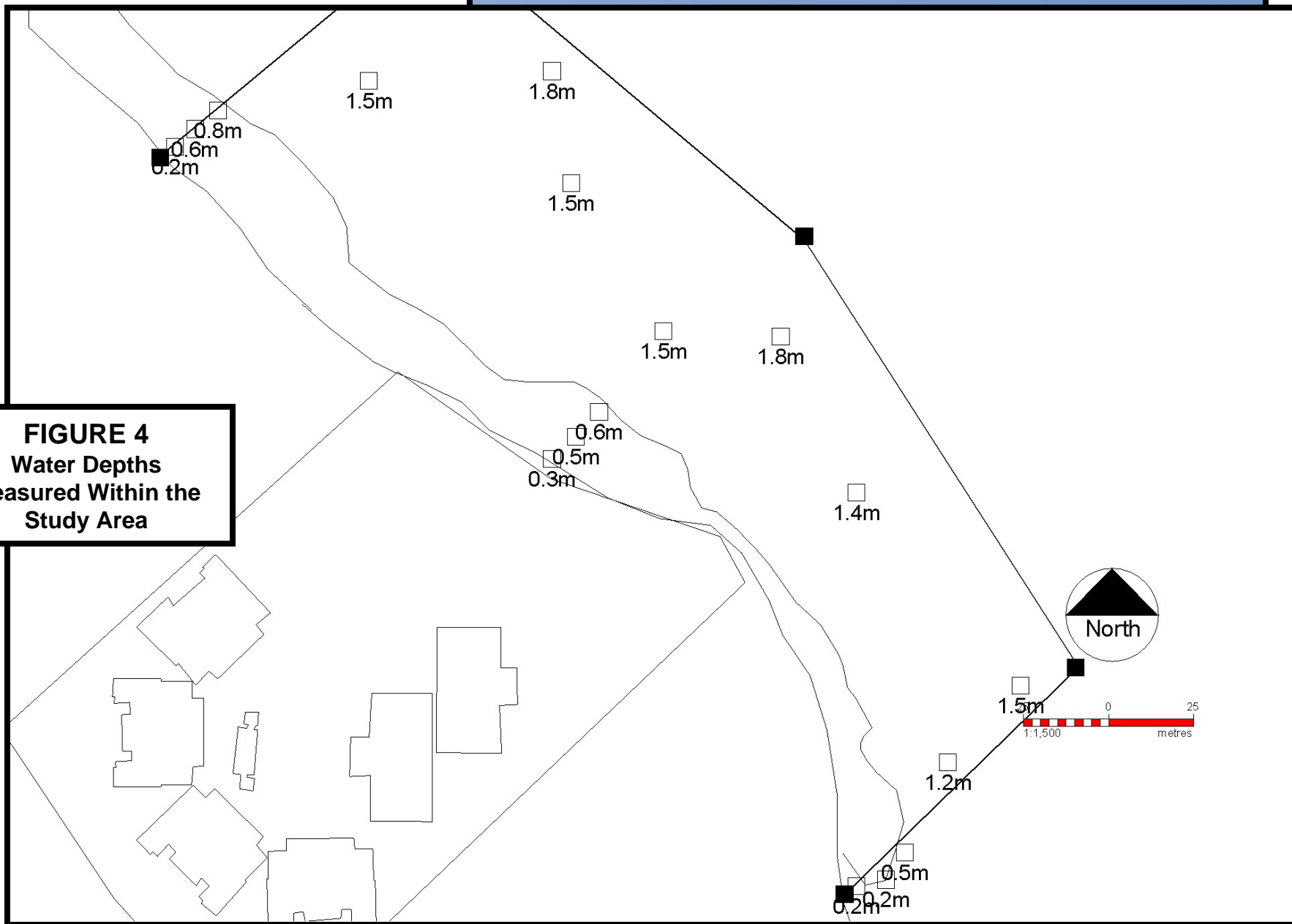


KEY

- A. Semi-submerged hard Limestone substrate with algae and scattered coral recruits
- B. Sandy substrate covered with Seagrass
- C. Shallow (1-2-6m) submerged hard limestone substrate (contiguous with A.) with algae and scattered coral
- D. Hard limestone substrate supporting shallow coral reef.
- E. Hard limestone substrate supporting deep water coral reef (10 -20m depth)
- F. Deep water sandy substrates.



FIGURE 4
Water Depths
Measured Within the
Study Area



Substrate – Hard Carbonate
Lifeform – Algae (A)
DAFOR - Abundant

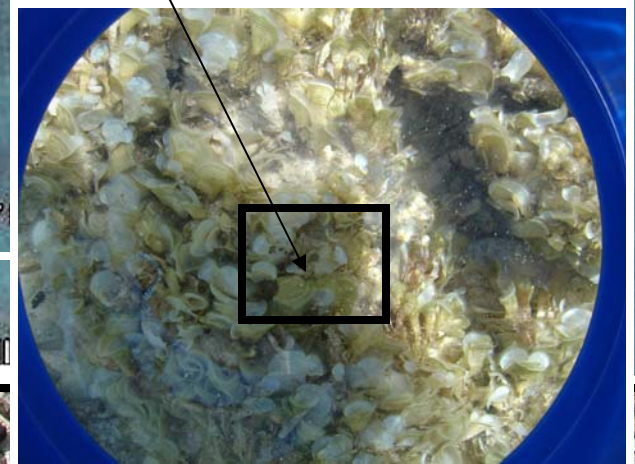
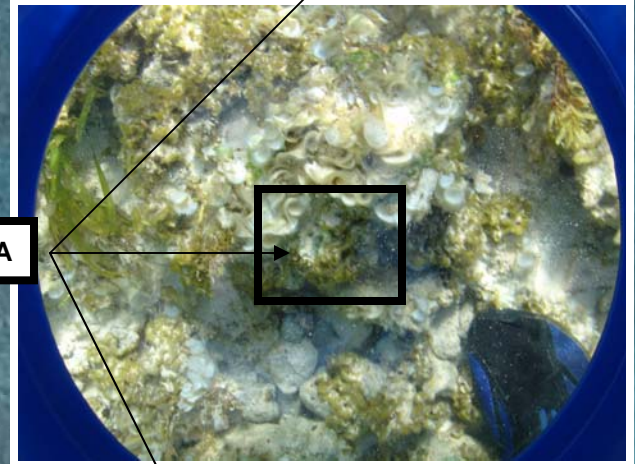
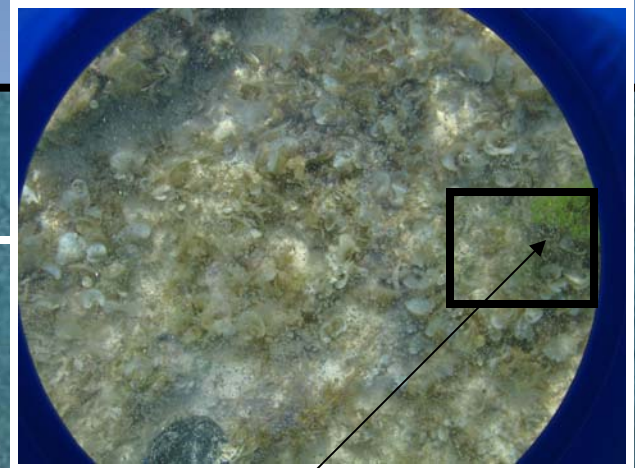


FIGURE 5A

Substrate form and
character for shallow
locations (<0.8m)
within
study area



Substrate – Hard Carbonate
Lifeform – Algae
DAFOR – Abundant
Lifeform - Coral (Mustard hill)
Note A.
DAFOR - Occasional

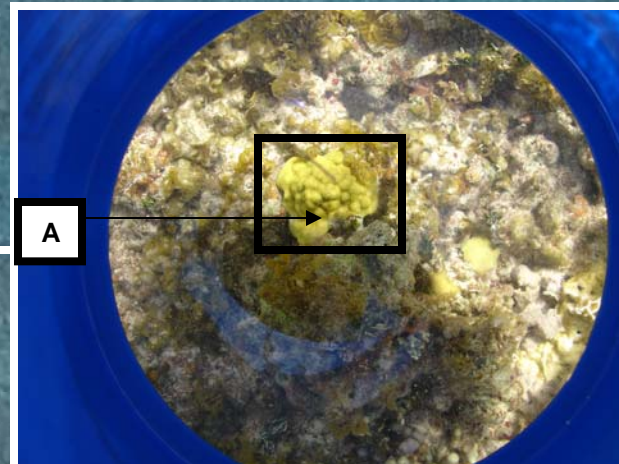


FIGURE 5B

Substrate form and
character for shallow
locations (<1m)
within study
area



Substrate – Hard Carbonate
Lifeform – Algae
DAFOR – Abundant
Lifeform – Turtle Grass (A)
DAFOR - Occasional

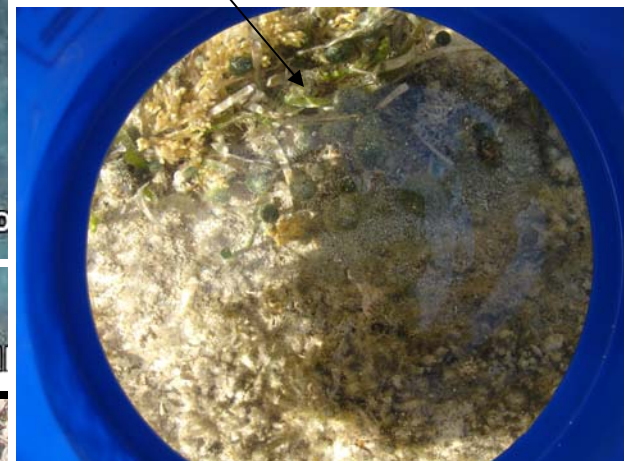


FIGURE 5C
Substrate form and
character for shallow
locations (<1m) within study
area



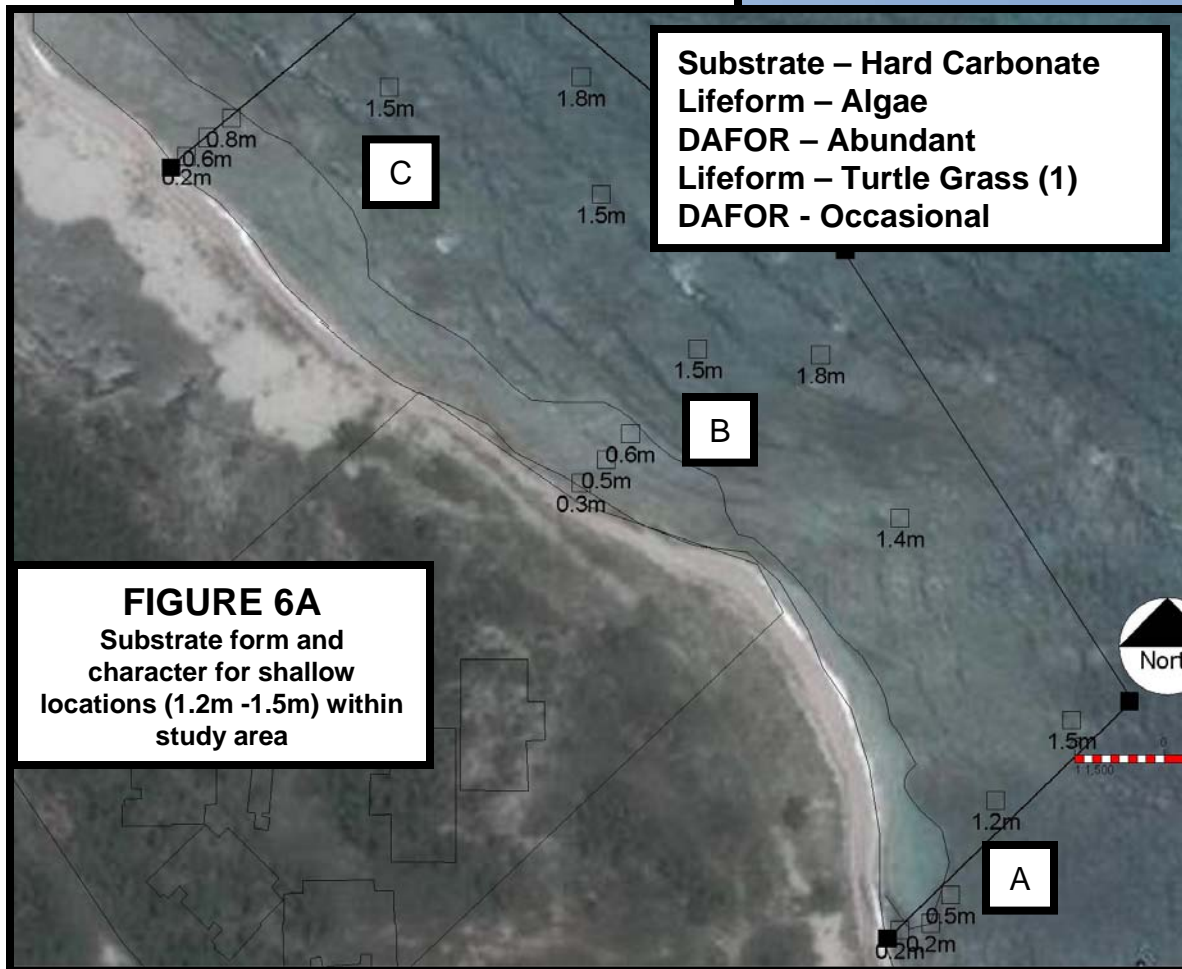
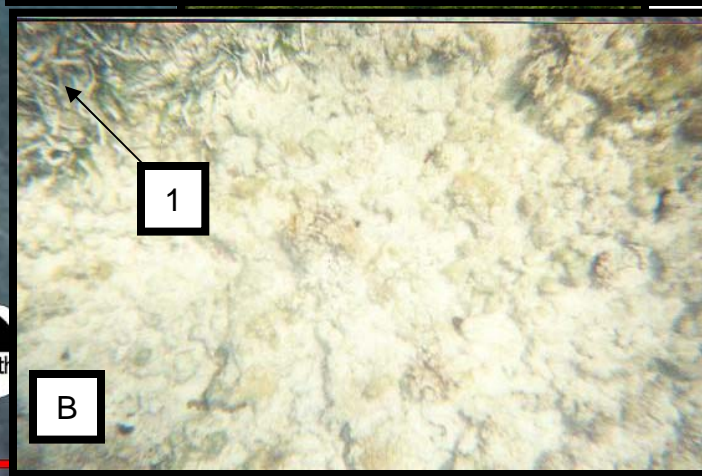
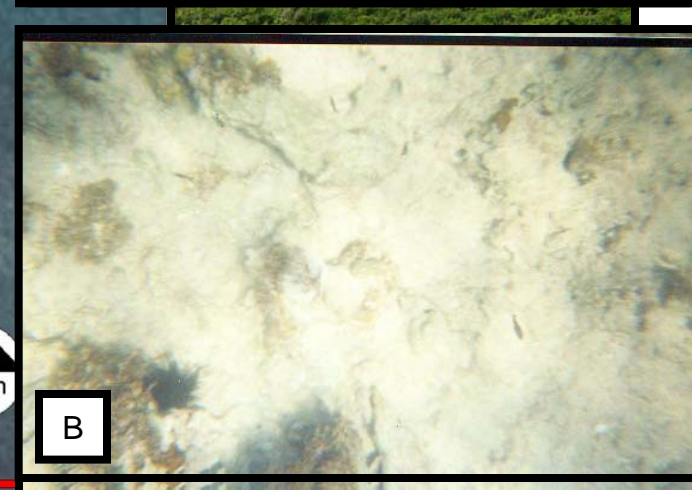
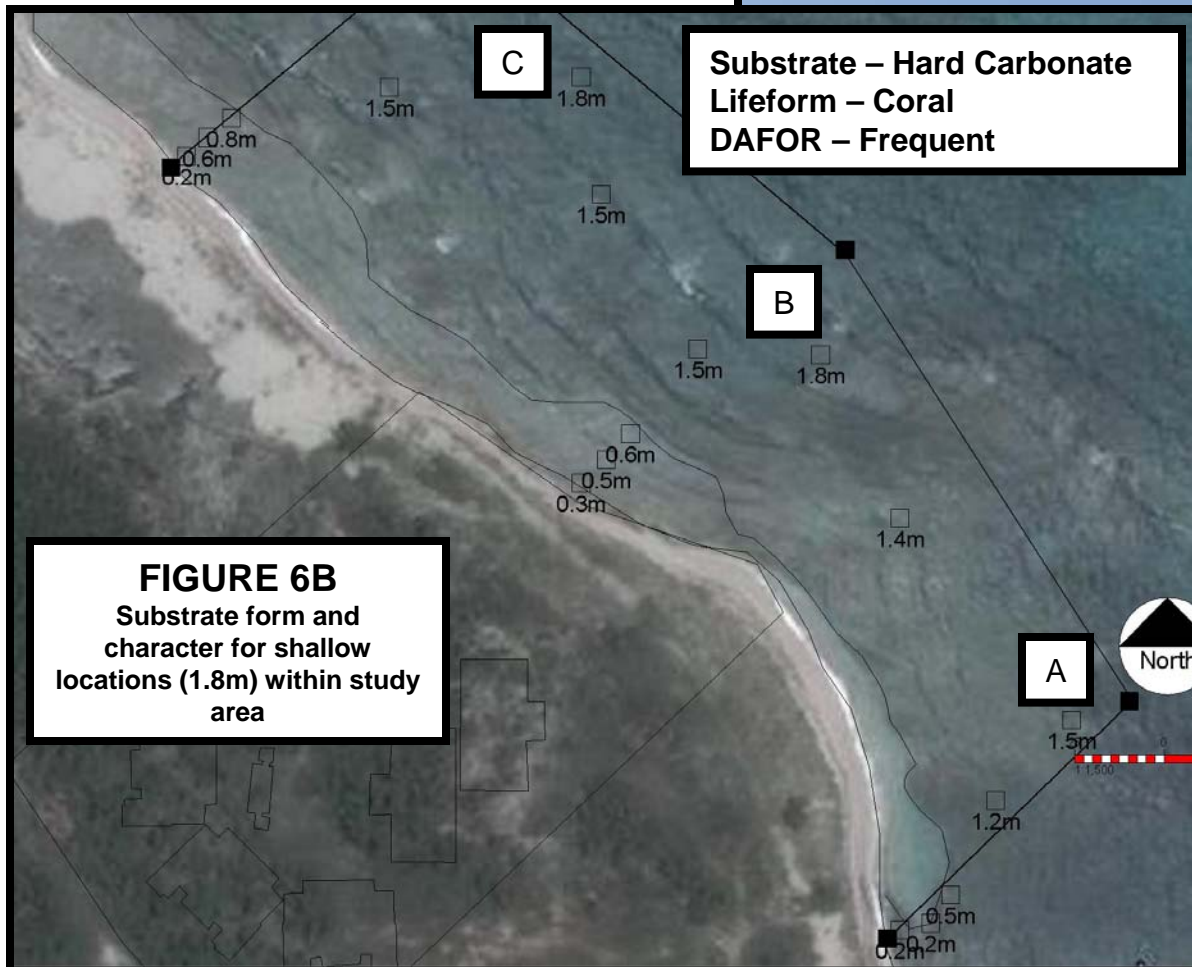
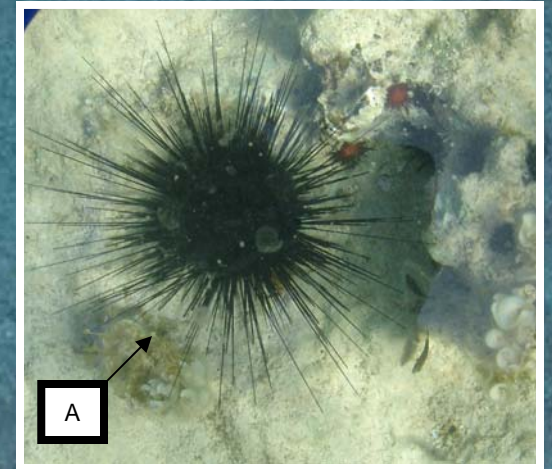


FIGURE 6A
Substrate form and
character for shallow
locations (1.2m -1.5m) within
study area

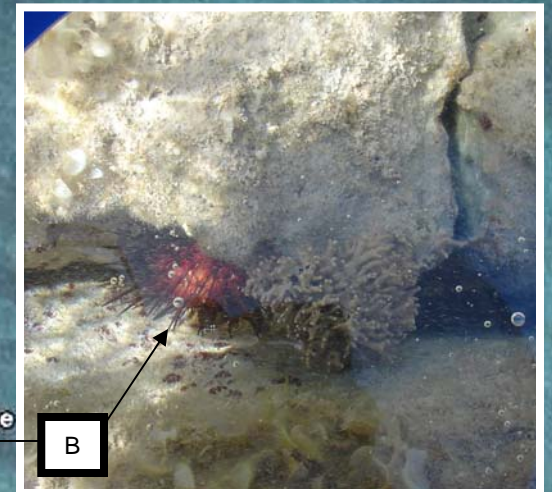




Substrate – Hard Carbonate
Lifeform – Urchins
DAFOR – Frequent



Black Spiny Urchin



Rock Boring Urchin

FIGURE 7A.
Mobile Benthic Organisms
Found Within the Project Study
Area



Lifeform – Fish
DAFOR – Frequent



a. Sergeant Major



b. Juvenile Yellowtail Damselfish



c. Juvenile Dusky Damselfish



d. Bluehead Wrasse



50 75
metres

FIGURE 7B.
Mobile Free-Swimming
Organisms Found Within the
Project Study Area
(Images obtained from the web)

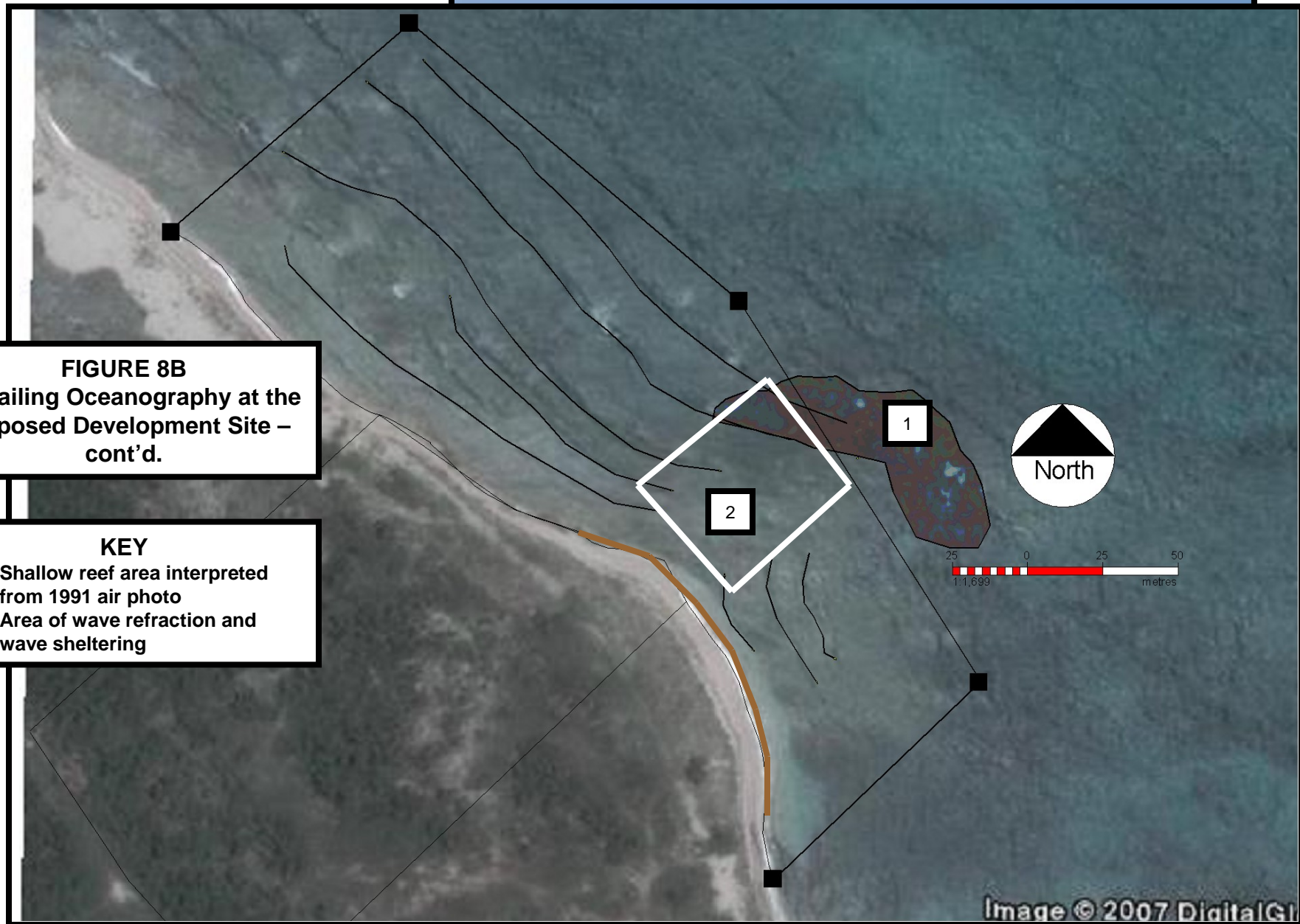
641 ft
Pointer 18°29'21.88" N 77°32'10.62" W

Streaming ||||| 100%

FIGURE 8B
Prevailing Oceanography at the
Proposed Development Site –
cont'd.

KEY

1. Shallow reef area interpreted
from 1991 air photo
2. Area of wave refraction and
wave sheltering



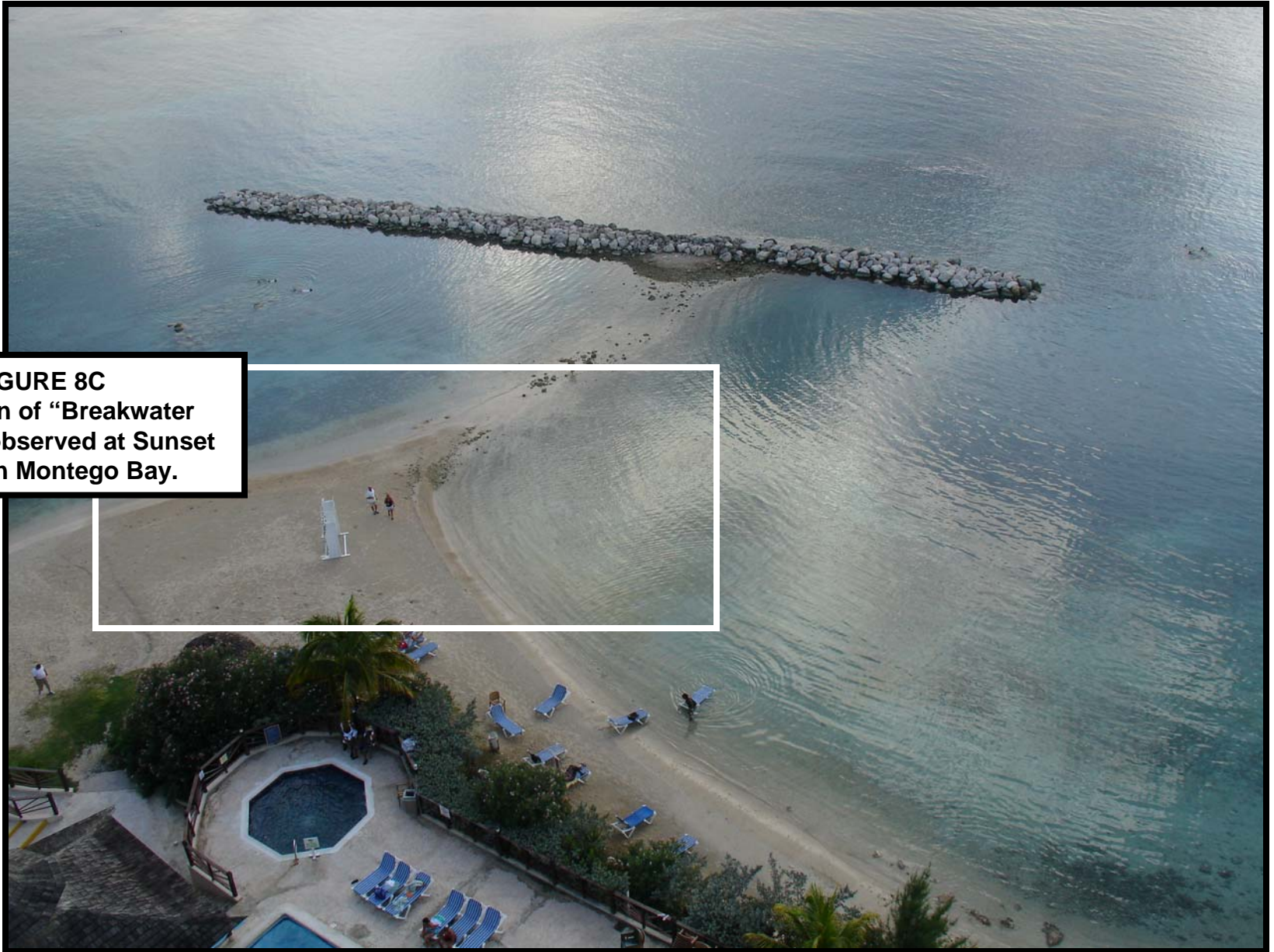


FIGURE 8C
Illustration of “Breakwater
Effect” as observed at Sunset
Resort in Montego Bay.

FIGURE 8D
Nearshore Current Directions
and Speeds Within the Marine
Study Area.



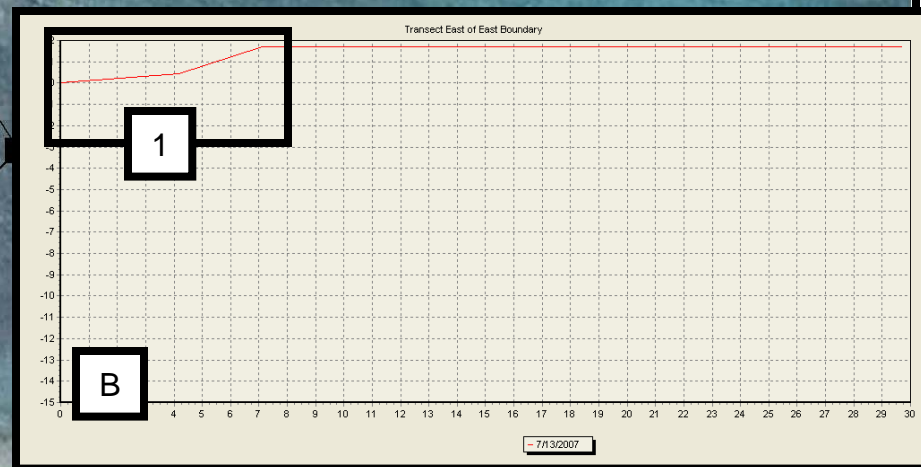
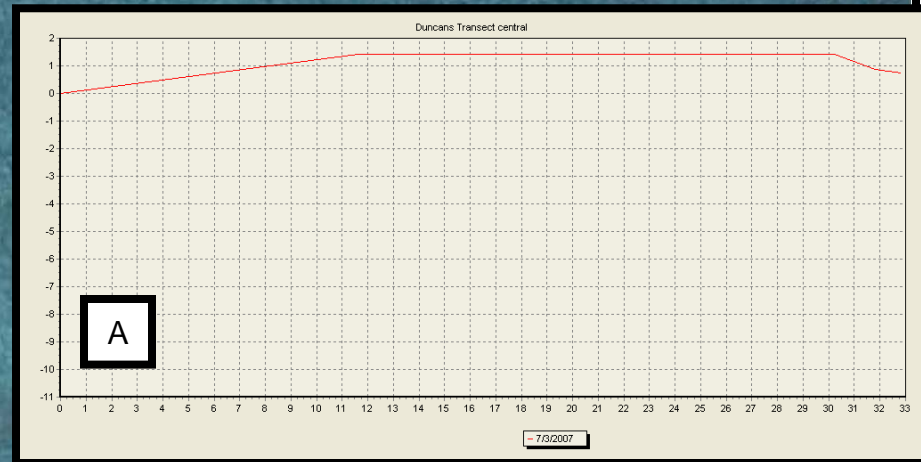
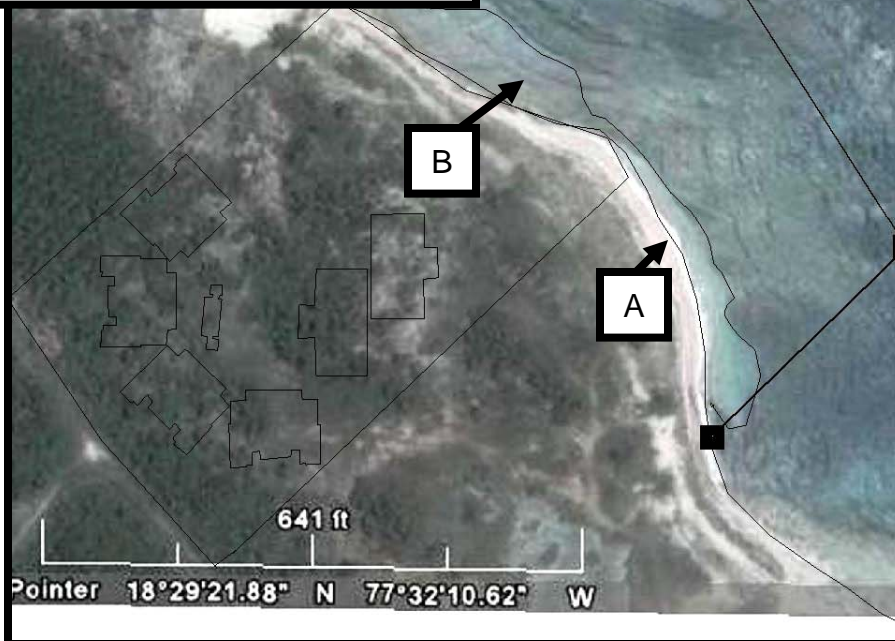


FIGURE 9A
Beach Sand Width (inland to
shoreline) – 2006 (A)





FIGURE 9C
Shoreline Crosssections – 2006
Erosion scarp – (1)



Streaming ||||| 100%



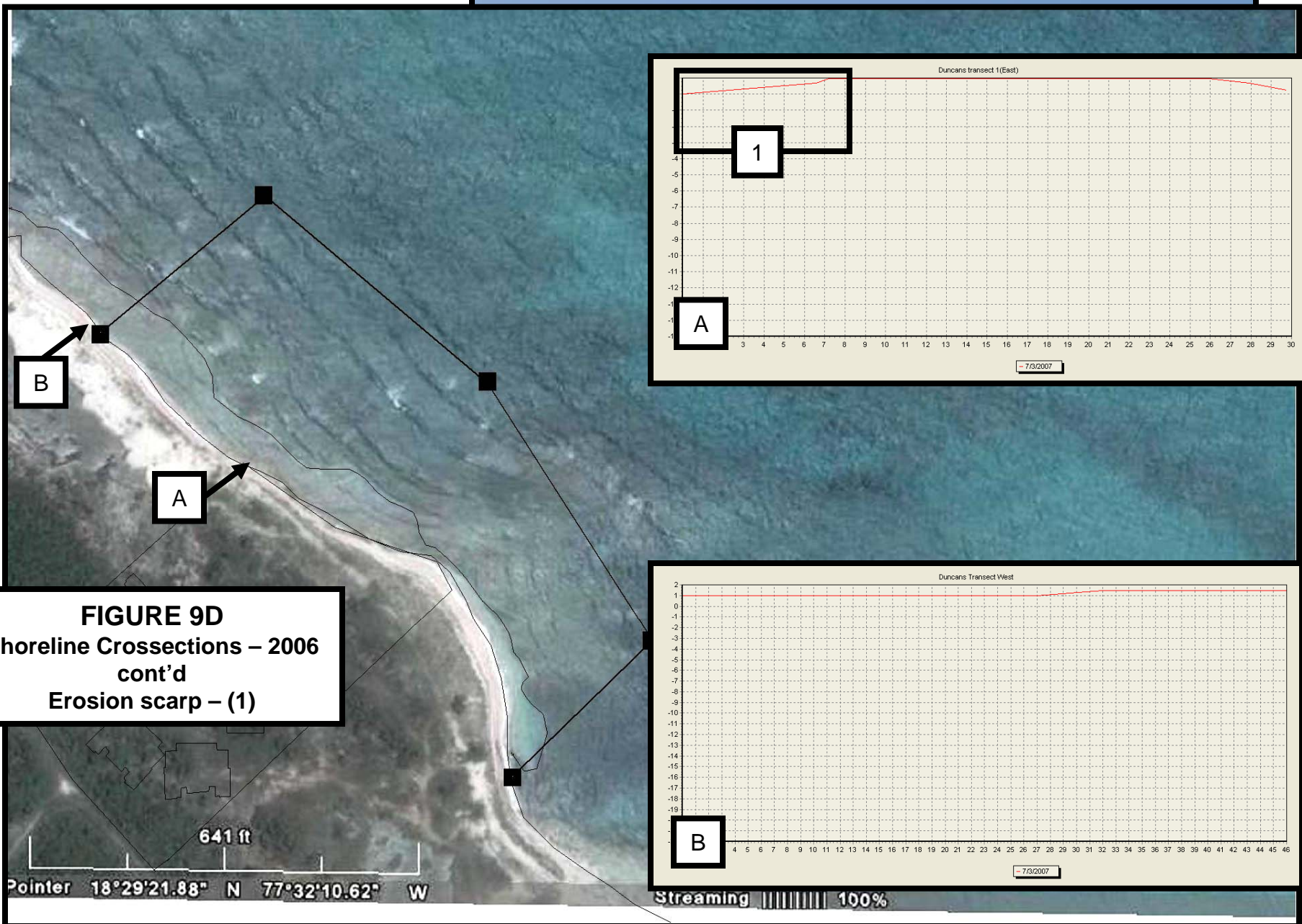


FIGURE 10 Water Quality Analysis

A

Total Suspended Solids – **36 mg/l**
BOD – **0.38mg/l**
Faecal Coliform – **<3mpn/100ml**
Nitrates – **<0.76 mg/l**
Total Phosphorus – **0.03 mg/l**

NEPA Standards

Total Suspended Solids – 10 mg/l
BOD – 0.7-1.7mg/l
Faecal Coliform – 200mpn/100ml
Nitrates – 0.6 mg/l
Total Phosphorus – 0.1 mg/l

B

A

B

Total Suspended Solids – **14 mg/l**
BOD – **0.15 mg/l**
Faecal Coliform – **<3mpn/100ml**
Nitrates – **<0.76 mg/l**
Total Phosphorus – **0.00 mg/l**



Image © 2007 D

Streaming

641 ft

Pointer 18°29'21.88" N 77°32'10.62" W

DOCUMENT END.

