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## CONFIDENTIAL

Project No. 1034000

February 27, 2008

Mr. Jim Wooder  
Laurentian Energy  
10 Marine Drive  
Edwardsville, NS B2A 4S6

Dear Mr. Wooder:

**Re: Proposed Sydport Container Terminal-Sydney Harbor Benthic Survey**

### Introduction

Based on the preliminary design specifications of the Sydport Container Terminal Facility, water depths of South Arm and Sydney Harbor will not accommodate Post-Panamax sized vessels, and channel dredging will be necessary. At the request of Sydney Port Corporation, Jacques Whitford conducted a benthic survey which reviewed videographic results obtained from the professional services of Connor's Diving. The purpose of this study was to obtain preliminary information on benthic habitat relative to three specific areas. This report includes a summary of program results providing a brief characterization of the habitat surveyed.

### Methods

The benthic survey was performed in three separate regions of Sydney Harbor (Figure 1) between January 7 and 11, 2008. The first survey area was at the proposed port footprint. The survey area was divided into three segments by transects labeled PF1 – PF3 (Figure 2). The second area surveyed was along the proposed navigational channel delineated by nine transects with the alpha numerical designation C1- C9 inclusive (Figure 3). The third area surveyed was the small cove south of the international piers. This area was delineated by transects NA1 - NA3 (Figure 4).

The benthic survey began along the proposed channel starting from the south arm transect (C1), working from west to east along each transect. The C transects were located at nine separate areas along the length of the channel, each 160m transect ran perpendicular to the length of the navigational channel of the Sydney Harbor.

Three 300 m PF transects ran perpendicular from the western shore to deeper water along Keating Cove in the South Arm. The transects covered the marine area proposed for the Sydport Terminal Footprint, and included tidal and subtidal habitats.

Three New Area Transects (NA) were located south of the international piers and due east of Barchois bar. Two of the transects NA1 and NA2 ran parallel in a

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south-east to north-west direction while the third NA3 intersected NA1 and NA2 at their midpoints. All three transects were 300 m in length.

## Results

Detailed results of the video survey interpretation are included in the attached Tables A1, A2, and A3.

### Channel (C) Transects

Water quality was clear at each transect along the channel with very little detritus in the water column. Each transect was entirely sub-tidal, as this is an existing navigation lane.

Along the C1 Transect the sediment was entirely composed of silty-sand and was easily disturbed as evidenced by marks left on the sea floor from the transect line. Benthic macro fauna was characterized by northern ceranthids (*Cerianthus borealis*) with an average density of less than one per square meter. There was evidence of clams buried in the substrate and soft-shelled clam (*Mya arenaria*) shells on the surface. The clams, as well as atlantic rock crab (*Cancer irroratus*) and northern sea stars (*Asterias vulgaris*), were present in densities of less than one per square meter. The benthic flora consisted of rockweed along the initial 30 m of the transect (approximately 10% coverage).

The C2 Transect sediment was similar to C1, composed of silty-sand with the occasional area of cobble along the initial 10 m. The substrate was primarily silt; as evidenced by the transect line disturbing the sediment and causing it to become suspended in the water column. This silty-sand substrate continued for the length of the 160 m transect. The benthic community was sparse in terms of benthic macro fauna, with atlantic rock crab the most abundant species along the length, at an average density of less than one per square meter. The majority of the crab observed were in the initial 50 m of the transect (15 of the 17 crabs observed). There were pockets of northern ceranthids nearing the 150 m mark of the transect. The average density of northern ceranthids for the entire transect was below one per square meter. The flora along this transect was uniform along the length with species including: rockweed (*Fucus vesiculosus*), eelgrass (*Zostera sp.*) and oarweed (*Laminaria saccharina*). The dominant species was rockweed in some areas covering up to 25% of the seafloor.

The substrate along Transect C3 was silty-sand with little variation in benthic flora along the length. Species observed during the survey included rockweed, eelgrass and oarweed. Rockweed reached 20% coverage at the 110-120 m segment, this area corresponds to a 10 m zone of cobble not present in the remainder of the transect. The benthic macro fauna included northern ceranthids common along the entire length as well as seven rock crab. The greatest rock crab density along the transect occurred along the 10 m zone of cobble described previously, with two rock crab recorded in that segment.

Transects C4 and C5 were similar enough to be grouped together for reporting purposes. Both exhibited a substrate composed of silty-sand interspersed with

clam shell fragments along the initial 30 m. The flora was minimal and the most abundant flora observed along on each transect was rockweed with approximately 2% coverage. Benthic fauna included northern ceranthids which were present along the entire length of Transect C4 as well as rock crab present along both C4 and C5 Transects. Species observed solely along Transect C5 were the sand dollar (*Echinarachinus parma*) and numerous northern moon snails (*Lunatia heros*). Each of these species was present in average densities of less than one per square meter along the length.

There were no shell fragments along Transect C6. The sediment was observed to be silty-sand with particle size increasing to cobble along the 130 m segment. There was no observable flora along the seafloor until the 110 m position where oarweed and rockweed were identified at a percent coverage of less than 1%. Northern sea anemones were the only fauna consistently observed along the transect. Sand dollars were common along the initial 20 m, but none were observed in the remainder. Green sea urchins (*Strongylocentrotus droebachiensis*) were present along the 30-40 m segment. Two hermit crabs (*Pagurus acadianus*) were observed along the transition from silt and cobble at the 130 m position.

Transect C7 substrate had more cobble than the other transects along the area of channel surveyed. Along the initial 40 m of the transect, cobble provided an attachment point for rockweed which was observed at approximately 50% coverage. Fauna was difficult to observe. One snail was observed in this segment of the transect where the cobble diminished and rockweed subsided. Further along the transect the cobble became more diffuse and the substrate of silty-sand sediment was prevalent. Along this segment observable plant life decreased and sand dollars, snails, and rock crabs became apparent. The amount of cobble increased beyond the 80 m mark and was observed to be approximately 50% in the 110-140 m segment. As previously observed in this transect, the flora coverage increased with the substrate variation (approximately 25% rockweed coverage). Benthic fauna was not observable throughout this segment.

Transects C8 and C9 were similar in substrate and flora composition. The substrate for both transects was silty-sand with no observable flora on either transect. The fauna included sand dollars which were the most abundant, with a density reaching 50/m<sup>2</sup> along Transect C8, and 15/m<sup>2</sup> along Transect C9. One rock crab was observed along Transect C9. Moon snails were present in both transects with densities of less than one per square meter.

#### Port Footprints (PF) Transects

Due to the length of the transects and the variation within the PF Transects, segments have been created to provide a more accurate description.

PF1

0-30 m

The substrate was cobble and boulders, covering silty-sand sediment. This was the intertidal zone and small snails were present but could not be identified to species from the video. The initial 10 m of cobble and boulders dissipated revealing the silty-sand sediment. Flora in this segment was predominately eelgrass which covered 50% of the seafloor. Rockweed the next abundant plant species with 2% coverage.

30-80 m

This segment of the transect is entirely subtidal and is 80-90% silty-sand with the remainder classified as cobble. The population of small snails continued, eelgrass coverage remained the dominant flora at 75% coverage. One northern sea star was observed during the survey.

80-160m

The cobble observed previously in this transect was not present in this segment and the substrate was composed entirely of silty-sand. Eelgrass was the most abundant flora and covered 50-75% of the seafloor within the segment. Lacy red weed (*Euthoria cristata*) was observed in the segment with average seafloor coverage of 2%. Small snails were the only benthic macrofauna observed.

160-300 m

Cobble and boulders began at the 160 m position with approximately 5% coverage. This increased to 50% by the end of the transect. With the increase of rocky substrate and depth the lacy red weed population increased, covering 20% by the end of the transect. Very little fauna was observed, however when rocky substrate increased sea star abundance rose. Interspersed within the cobble were northern ceranthids but their abundance was less than one per square meter.

PF2

0-70 m

The initial segment of this transect was almost entirely composed of rocky substrate which covered silty-sand. Rockweed, the most abundant plant material, was attached to 75% of the substrate. Lacy redweed coverage increased in this segment of the transect. The only fauna observed at this time were small snails which were common along the entire segment.

70-90 m

Along this portion of the transect the size of the substrate diminished from rocks to cobbles and finally to silty-sand. Lacy red weed and rockweed each covered

approximately 25% of the substrate, with the lacy red weed covering more of the sediment than the rocky substrate. Two atlantic rock crab were observed in this segment.

#### 90-300 m

The transect was generally uniform for the remainder of the PF2 Transect. The substrate was silty-sand with the exception of 20 m where cobble emerged to cover 5% of the seabed (at the 180-200 m position). The only flora observed was the lacy red weed which reached a maximum coverage of 5% in the 120-130 m segment. Rock crab were present in diminishing numbers. Northern ceranthid density increased and were common at the 230 m position. This population decreased near the end of the transect.

#### PF3

The substrate was uniform along the entire length of this transect and consisted of rock and cobble layered over a silty-sand sediment. Rockweed was the most abundant plant-life and the occurred in the greatest abundance at the 0-80 m segment where percent coverage reached 75%. Over the remainder of the transect the rockweed abundance diminished to an average of 20% coverage. Lacy red weed was the next most abundant flora observed at the time of the survey and increased from 2% coverage along the 100 m position to 20% at the 190-230 m segment.

The initial 50 m intertidal zone was populated by small snails and northern rock barnacles (*Balanus balanoides*), after which the barnacle population decreased and the snail remained the most abundant fauna. Northern ceranthids were observed at the 140 m position and were common until the end point of the transect. The occasional sea star, rock crab and one acadian hermit crab (*Pagurus acadianus*) were observed.

#### New Area (NA) Transects

Transect NA1 consisted of silty-sand throughout the entire length. No flora were observed with the exception of patches of oarweed and rockweed located at the 180-190 m and 290-300 m segments, respectively. Fauna was consistent with groups of northern ceranthids observed at an abundance of less than 1/10m<sup>2</sup>. Three rock crabs were observed scattered along the transect.

The substrate observed along Transect NA2 was entirely silty-sand with very little variation. Flora was limited to three areas of rockweed. Each area covered less than 1m<sup>2</sup> of the seafloor. Northern ceranthids were common along the transect. One rock crab was observed and there were sand casings in one position from an unidentified species of benthic infauna.

Transect NA3 began closer to shore than the previous transects and therefore a different substrate was observed. The substrate began as cobble with a heavy layer of silt deposition. Between the 0 and 20 m mark rockweed was observed, covering 20% and 40% of the substrate for the 0-10 m and 10-20 m segments,

respectively. Essentially, no flora was recorded for the remainder of the transect. The cobble diminished in size to pebbles at the 30-50 m segment. After the transition, the silty-sand that was observed in the previous two transects was the primary substrate type. A total of seven rock crab were observed along this transect and northern ceranths became increasingly common as the substrate changed from cobble to silty-sand.

## **Discussion**

The benthic habitat was similar in composition at each transect grouping in terms of substrate type, and water clarity. For the majority of the transects silty-sand was the primary substrate with occasional rock and cobble areas.

The greatest variation, in numbers of species, occurred at the transition between tidal and subtidal zones this occurred in transects PF1, PF2, PF3 and NA3. This zone is where different species of snails were observed as well as larger crustaceans, such as rock crabs and hermit crabs. Anemones such as northern ceranths and mollusks such as the soft-shelled clam also inhabited this transitional zone.

The Channel (C) Transects consisted largely of silty-sand, exhibited sparse flora and a low diversity on benthic fauna.

The PF transects, located in the proposed terminal footprint generally exhibited vegetation closer to shore which diminished as the survey line moved into deeper waters away from shore. Vegetation growth was more apparent in areas with hard substrate (cobble/boulder). A low diversity of benthic fauna were observed.

The NA transects exhibited very little plant growth and few benthic fauna species. Substrate in that area was observed to be almost exclusively silty-sand.

## **Closing**

This report has been prepared for the sole benefit of Sydney Port Corporation and Laurentian Energy and may not be used by any other person or entity without express written consent of Jacques Whitford Limited and Sydney Port Corporation.

Any use that a third party makes of this report, or any reliance or decisions made based on it, are the responsibility of such third parties. Jacques Whitford Limited accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made, or actions taken, based on this report.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. Conclusions and recommendations presented in this report should not be construed as legal advice.



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The conclusions presented in this report represent the best technical judgment of Jacques Whitford Limited based on the data obtained from the work. The conclusions are based on the site conditions observed by Jacques Whitford Limited at the time the work was performed at the specific testing and/or sampling locations, and can only be extrapolated to an undefined limited area around these locations.

Yours very truly,

**JACQUES WHITFORD**

***ORIGINAL SIGNED***

Angela Swaine, B.Sc.  
Project Manager

AS/mh

**Table A1. Benthic Habitat Characterization (January 7-11, 2008) Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
C1	0-10	Silty-sand (100%)	Rockweed (10%) Common Southern Kelp (1%) Eelgrass (1%)	Burrowing Sea Anemone (common) Clam holes (abundant)
	10-20	Silty-Sand (100%)	Eelgrass (1%) Common Southern Kelp (<1%)	Clam holes (abundant)
	20-30	Silty-Sand (100%)	Eelgrass (<1%)	Clam holes (abundant)
	30-40	Silty-Sand (100%)	Eelgrass (<1%)	Clam holes (abundant)
	40-50	Silty-Sand (100%)	None	Clam holes (abundant)
	50-60	Silty-Sand (100%)	Rockweed (<1%)	Clam holes (abundant) Rock Crab (2) Burrowing Sea Anemone (uncommon)
	60-70	Silty-Sand (100%)	Common Southern Kelp (<1%) Eelgrass (<1%)	Clam holes (abundant) Rock Crab (1)
	70-80	Silty-Sand (100%)	Eelgrass (2%)	Clam holes (abundant) Rock Crab (2)
	80-90	Silty-Sand (100%)	Eelgrass (2%) Common Southern Kelp (<1%)	Clam holes (abundant)
	90-100	Silty-Sand (100%)	Eelgrass (<1%) Rockweed (<1%)	Clam holes (abundant)
	100-110	Silty-Sand (100%)	Eelgrass (<1%)	Clam holes (uncommon) Sea Star (1)
	110-120	Silty-Sand (100%)	Eelgrass (<1%)	Clam holes (uncommon) Burrowing Sea Anemone (uncommon) Sea Star (1)
	120-130	Silty-Sand (100%)	Eelgrass (1%) Common Southern Kelp (<1%)	Clam holes (uncommon) Sea Star (1)
	130-140	Silty-Sand (100%)	Eelgrass (1%)	Clam holes (uncommon) Burrowing Sea Anemone (uncommon)
	140-150	Silty-Sand (100%)	Eelgrass (1%) Rockweed (1%) Common Southern Kelp (<1%)	Clam holes (uncommon) Burrowing Sea Anemone (uncommon)
150-160	Silty-Sand (100%)	Eelgrass (2%) Rockweed (<1%)	Burrowing Sea Anemone (common) Sea Star (3)	
C2	0-10	Silty-Sand (100%)	Rockweed (75%) Eelgrass (15%) Common Southern Kelp (5%)	Rock Crab (1)

**Table A1. Benthic Habitat Characterization (January 7-11, 2008) Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	10-20	Silty-Sand (95%) Boulder (5%)	Rockweed (15%) Eelgrass (5%) Common Southern Kelp (2%)	Rock Crab (2)
	20-30	Silty-Sand (100%)	Eelgrass (5%) Rockweed (<1%)	Rock Crab (5)
	30-40	Silty-Sand (100%)	Rockweed (15%) Eelgrass (5%) Common Southern Kelp (<1%)	Rock Crab (5)
	40-50	Silty-Sand (100%)	Eelgrass (2%) Rockweed (<1%) Unidentified Brown Algae (1%)	Rock Crab (2)
	50-60	Silty-Sand (100%)	Eelgrass (2%)	None
	60-70	Silty-Sand (100%)	Eelgrass (2%) Rockweed (<1%)	None
	70-80	Silty-Sand (100%)	Eelgrass (2%) Rockweed (<1%)	None
	80-90	Silty-Sand (100%)	Eelgrass (1%) Rockweed (<1%)	Rock Crab (1)
	90-100	Silty-Sand (100%)	Eelgrass (1%) Rockweed (<1%)	None
	100-110	Silty-Sand (100%)	Eelgrass (1%)	Rock Crab (1)
	110-120	Silty-Sand (100%)	Eelgrass (<1%) Common Southern Kelp (<1%)	None
	120-130	Silty-Sand (100%)	Rockweed (10%) Eelgrass (5%) Common Southern Kelp (<1%) Unidentified Brown Algae (<1%)	Rock Crab (1)
	130-140	Silty-Sand (100%)	Eelgrass (1%)	Burrowing Sea Anemone (common)
	140-150	Silty-Sand (100%)	Eelgrass (<1%)	None
	150-160	Silty-Sand (100%)	Eelgrass (<1%)	Burrowing Sea Anemone (uncommon)
<b>C3</b>	0-10	Silty-Sand (100%)	None	None
	10-20	Silty-Sand (100%)	Eelgrass (<1%)	Burrowing Sea Anemone (uncommon) Rock Crab (1)
	20-30	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (common)
	30-40	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (common)

**Table A1. Benthic Habitat Characterization (January 7-11, 2008) Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	40-50	Silty-Sand (100%)	None	Burrowing Sea Anemone (abundant)
	50-60	Silty-Sand (100%)	None	Burrowing Sea Anemone (abundant) Rock Crab (1)
	60-70	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	70-80	Silty-Sand (100%)	Eelgrass (<1%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (uncommon)
	80-90	Silty-Sand (100%)	Eelgrass (<1%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (common) Rock Crab (1)
	90-100	Silty-Sand (100%)	Rockweed (<1%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (common)
	100-110	Silty-Sand (100%)	Eelgrass (<1%)	Burrowing Sea Anemone (common)
	110-120	Silty-Sand (90%) Boulder (10%)	Rockweed (20%) Common Southern Kelp (1%)	Rock Crab (2) Broken mussel shells (common)
	120-130	Silty-Sand (100%)	None	Burrowing Sea Anemone (common) Rock Crab (1)
	130-140	Silty-Sand (100%)	Eelgrass (<1%) Rockweed (<1%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (common) Rock Crab (1)
	140-150	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (common)
	150-160	Silty-Sand (100%)	Eelgrass (<1%) Rockweed (<1%)	Burrowing Sea Anemone (common)
<b>C4</b>	0-10	Silty-Sand (100%) Broken shell fragments	Rockweed (2%) Eelgrass (<1%) Common Southern Kelp (<1%)	Sea Stars (Common) Sea Urchins (Common) Rock Crab (1)
	10-20	Silty-Sand (100%) Broken shell fragments	Rockweed (2%)	Burrowing Sea Anemone (common)
	20-30	Silty-Sand (100%)	Rockweed (<1%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (common)
	30-40	Silty-Sand (100%)	Rockweed (<1%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (abundant) Rock Crab (1)
	40-50	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (common)
	50-60	Silty-Sand (100%)	Rockweed (<1%) Eelgrass (<1%)	Burrowing Sea Anemone (abundant)
	60-70	Silty-Sand (100%)	Rockweed (1%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (common)

**Table A1. Benthic Habitat Characterization (January 7-11, 2008) Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	70-80	Silty-Sand (100%)	Rockweed (1%) Eelgrass (<1%)	Burrowing Sea Anemone (abundant)
	80-90	Silty-Sand (100%)	Rockweed (2%)	Burrowing Sea Anemone (abundant)
	90-100	Silty-Sand (100%)	Rockweed (2%)	Burrowing Sea Anemone (abundant) Large Snail (1)
	100-110	Silty-Sand (100%)	Rockweed (<1%) Eelgrass (<1%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (common)
	110-120	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (common) Rock Crab (1)
	120-130	Silty-Sand (100%)	Rockweed (1%) Eelgrass (<1%)	Burrowing Sea Anemone (common)
	130-140	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (common) Sea Star (1) Rock Crab (1)
	140-150	Silty-Sand (100%)	Rockweed (1%) Eelgrass (<1%) Common Southern Kelp (<1%) Unidentified Brown Algae (<1%)	Burrowing Sea Anemone (common) Rock Crab (1)
	150-160	Silty-Sand (100%) Broken shell fragments	Rockweed (<1%)	Burrowing Sea Anemone (uncommon)
<b>C5</b>	0-10	Silty-Sand (100%)	Green Algae covering on substrate (<1%)	None
	10-20	Silty-Sand (100%)	Green Algae covering on substrate (<1%) Rockweed (<1%)	None
	20-30	Silty-Sand (100%) Clam shells	Green Algae covering on substrate (<1%) Rockweed (<1%)	Large Snail (1)
	30-40	Silty-Sand (100%) Clam shells	None	Large Snail (3)
	40-50	Silty-Sand (100%) Broken shell fragments	Rockweed (<1%)	Large Snail (1)
	50-60	Silty-Sand (100%) Broken shell fragments	Rockweed (<1%)	Large Snail (3)
	60-70	Silty-Sand (100%) Broken shell fragments	Common Southern Kelp (<1%)	Sand Dollar (1) Large Snail (2)
	70-80	Silty-Sand (100%) Broken shell fragments	Rockweed (<1%)	Sand Dollar (2) Rock Crab (1)
	80-90	Silty-Sand (100%) Broken shell fragments	Rockweed (2%) Common Southern Kelp (<1%)	Sand Dollar (2) Rock Crab (1) Large snail (1)

**Table A1. Benthic Habitat Characterization (January 7-11, 2008) Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	90-100	Silty-Sand (100%) Broken shell fragments	Rockweed (2%)	Large Snail (3)
	100-110	Silty-Sand (100%) Broken shell fragments	Rockweed (2%)	Sand Dollar (1)
	110-120	Silty-Sand (100%) Broken shell fragments	Rockweed (2%) Common Southern Kelp (<1%)	None
	120-130	Silty-Sand (100%) Broken shell fragments	Rockweed (1%)	None
	130-140	Silty-Sand (100%) Broken shell fragments	Rockweed (1%)	Sand Dollar (1) Large Snail (1)
	140-150	Silty-Sand (100%) Broken shell fragments	Rockweed (1%)	Large Snail (5)
	150-160	Silty-Sand (100%) Broken shell fragments	Rockweed (1%)	Large Snail (1)
<b>C6</b>	0-10	Silty-Sand (100%)	None	Sand Dollar (common)
	10-20	Silty-Sand (100%)	None	Sand Dollar (common) Burrowing Sea Anemone (uncommon)
	20-30	Silty-Sand (100%)	None	Sand Dollar (uncommon) Burrowing Sea Anemone (uncommon)
	30-40	Silty-Sand (100%)	None	Burrowing Sea Anemone (common) Sea Urchin (3) Rock Crab (1)
	40-50	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon) Large Snail (1)
	50-60	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	60-70	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon) Rock Crab (1)
	70-80	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	80-90	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	90-100	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	100-110	Silty-Sand (100%)	None	Large Snail (1)
	110-120	Silty-Sand (100%)	Common Southern Kelp (1%)	Burrowing Sea Anemone (common)
	120-130	Silty-Sand (100%)	Common Southern Kelp (1%)	Burrowing Sea Anemone (common) Hermit Crab (1) Unidentified Sponge (1)
	130-140	Silty-Sand (50%) Fine cobble (50%)	Common Southern Kelp (1%)	Hermit Crab (1)

**Table A1. Benthic Habitat Characterization (January 7-11, 2008) Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	140-150	Silty-Sand (80%) Fine cobble (20%)	Rockweed (<1%)	None
	150-160	Silty-Sand (100%)	Rockweed (<1%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (uncommon)
<b>C7</b>	0-10	Silty-Sand (50%) Boulder (50%)	Rockweed (30%) Common Southern Kelp (10%)	None
	10-20	Silty-Sand (50%) Boulder (50%)	Rockweed (30%) Common Southern Kelp (10%)	None
	20-30	Silty-Sand (70%) Boulder (30%) Broken shell fragments	Rockweed (15%) Common Southern Kelp (5%)	None
	30-40	Silty-Sand (90%) Boulder (10%) Broken shell fragments	Rockweed (50%) Common Southern Kelp (5%) Unidentified Brown Algae (5%)	Large Snail (1)
	40-50	Silty-Sand (90%) Boulder (10%)	Rockweed (5%) Common Southern Kelp (1%) Unidentified Brown Algae (1%)	None
	50-60	Silty-Sand (100%) Broken shell fragments	None	Large Snail (1) Sand Dollar (uncommon)
	60-70	Silty-Sand (100%)	None	Rock Crab (1) Large Snail (1)
	70-80	Silty-Sand (100%)	None	Rock Crab (1) Large Snail (1)
	80-90	Silty-Sand (95%) Boulder (5%)	Rockweed (<1%)	Sand Dollar (uncommon) Large Snail (1)
	90-100	Silty-Sand (75%) Boulder (25%)	Rockweed (40%) Unidentified Brown Algae (5%)	None
	100-110	Silty-Sand (60%) Boulder (40%)	Rockweed (25%) Common Southern Kelp (2%) Unidentified Brown Algae (2%)	None
	110-120	Silty-Sand (50%) Boulder (50%)	Rockweed (25%) Common Southern Kelp (2%) Unidentified Brown Algae (2%)	Sand Dollar (uncommon)
	120-130	Silty-Sand (50%) Boulder (50%)	Rockweed (25%) Common Southern Kelp (2%) Unidentified Brown Algae (2%)	None

**Table A1. Benthic Habitat Characterization (January 7-11, 2008) Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	130-140	Silty-Sand (50%) Boulder (50%)	Rockweed (25%) Common Southern Kelp (2%) Unidentified Brown Algae (2%)	None
	140-150	Silty-Sand (90%) Boulder (10%)	Rockweed (5%) Common Southern Kelp (1%) Unidentified Brown Algae (2%)	None
	150-160	Silty-Sand (60%) Boulder (40%)	Rockweed (30%) Unidentified Brown Algae (10%)	None
<b>C8</b>	0-10	Silty-Sand (100%) Broken shell fragments	None	Sand Dollar 1-2/m2 (common)
	10-20	Silty-Sand (100%) Broken shell fragments	None	Sand Dollar (common) Large Snail (3)
	20-30	Silty-Sand (100%)	None	None
	30-40	Silty-Sand (100%)	None	Sand Dollar (common)
	40-50	Silty-Sand (100%)	None	5/m2 Sand Dollar (common)
	50-60	Silty-Sand (100%)	None	Sand Dollar (common) Large Snail (1)
	60-70	Silty-Sand (100%) Broken shell fragments	None	Sand Dollar (common)
	70-80	Silty-Sand (100%) Broken shell fragments	None	Sand Dollar (common) Large Snail (2)
	80-90	Silty-Sand (100%) Broken shell fragments	None	Sand Dollar (common)
	90-100	Silty-Sand (100%) Broken shell fragments	None	Sand Dollar (common)
	100-110	Silty-Sand (100%) Broken shell fragments	None	Sand Dollar (common) Large Snail (1)
	110-120	Silty-Sand (100%) Broken shell fragments	None	20/m2 Sand Dollar (abundant) Large Snail (1)
	120-130	Silty-Sand (100%)	None	50/m2 Sand Dollar (abundant) Large Snail (1)
	130-140	Silty-Sand (95%) Fine cobble (5%)	None	Sand Dollar (abundant)
	140-150	Silty-Sand (95%) Fine cobble (5%)	None	Sand Dollar (abundant) Large Snail (3)
150-160	Silty-Sand (100%) Broken shell fragments	None	Sand Dollar (common) Large Snail (4)	
<b>C9</b>	0-10	Fine cobble (95%) Boulder (5%)	None	Large Snail (1)
	10-20	Silty-Sand (100%)	None	Sand Dollar (uncommon) Sea Urchin (1)



**Table A1. Benthic Habitat Characterization (January 7-11, 2008) Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	20-30	Silty-Sand (100%)	None	Sand Dollar (uncommon) Large Snail (1) Rock Crab (1)
	30-40	Silty-Sand (100%)	None	Sand Dollar (3-5 m2common) Large Snail (2)
	40-50	Silty-Sand (100%)	Eelgrass (<1%)	Sand Dollar (common) Large Snail (2)
	50-60	Silty-Sand (100%)	None	Sand Dollar (common) Large Snail (2)
	60-70	Silty-Sand (100%)	None	Sand Dollar (common) Large Snail (1)
	70-80	Silty-Sand (100%)	None	Sand Dollar (common) Large Snail (1)
	80-90	Silty-Sand (100%)	None	Sand Dollar (common) Burrowing Sea Anemone (uncommon)
	90-100	Silty-Sand (100%)	None	Sand Dollar (common) Large Snail (4)
	100-110	Silty-Sand (100%)	None	Sand Dollar (common)
	110-120	Silty-Sand (100%)	None	15/m2 Sand Dollar (common)
	120-130	Silty-Sand (100%)	None	Sand Dollar (common)
	130-140	Silty-Sand (100%)	None	Sand Dollar (common)
	140-150	Silty-Sand (100%)	None	Sand Dollar ( 1uncommon)
	150-160	Silty-Sand (100%)	None	None

**Table A2. Benthic Habitat Characterization (January 7-11, 2008) – Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
PF1	0-10	Boulder /Cobble (75%) Silty-sand (25%)	Unidentified Brown Algae (10%) Rockweed (5%) Eelgrass (1%)	None
	10-20	Silty-sand (100%)	Eelgrass (75%) Unidentified Brown Algae (2%)	None
	20-30	Silty-sand (100%)	Eelgrass (60%) Unidentified Brown Algae (1%) Rockweed (<1%)	Small Snails (common) Clam holes (common)
	30-40	Silty-sand (95%) Boulder /Cobble (5%)	Eelgrass (75%) Rockweed (2%) Unidentified Brown Algae (1%)	Small Snails (common)
	40-50	Silty-sand (80%) Boulder /Cobble (20%)	Eelgrass (75%) Rockweed (1%) Unidentified Brown Algae (1%)	Small Snails (common)
	50-60	Silty-sand (80%) Boulder /Cobble (20%) Mussel shells	Eelgrass (75%) Unidentified Brown Algae (1%) Rockweed (<1%)	Small Snails (common)
	60-70	Silty-sand (80%) Boulder /Cobble (20%) Mussel shells	Eelgrass (60%) Unidentified Brown Algae (1%) Rockweed (<1%)	Small Snails (common)
	70-80	Silty-sand (90%) Boulder /Cobble (10%) Mussel and clam shells	Eelgrass (60%) Common Southern Kelp (<1%)	Sea Star (1)
	80-90	Silty-sand (95%) Boulder /Cobble (5%) Shells	Eelgrass (60%) Unidentified Brown Algae (<1%)	
	90-100	Silty-sand (100%)	Eelgrass (60%) Unidentified Brown Algae (1%) Common Southern Kelp (<1%)	None
	100-110	Silty-sand (100%)	Eelgrass (60%) Unidentified Brown Algae (2%)	None
	110-120	Silty-sand (100%)	Eelgrass (60%) Unidentified Brown Algae (2%)	None
	120-130	Silty-sand (100%)	Eelgrass (75%) Lacy Red Weed (2%) Unidentified Brown Algae (2%) Common Southern Kelp (<1%)	None

**Table A2. Benthic Habitat Characterization (January 7-11, 2008) – Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	130-140	Silty-sand (100%)	Eelgrass (75%) Lacy Red Weed (2%) Unidentified Brown Algae (1%) Rockweed (<1%) Common Southern Kelp (<1%)	None
	140-150	Silty-sand (100%)	Eelgrass (50%) Lacy Red Weed (2%) Common Southern Kelp (2%) Unidentified Brown Algae (2%)	Small Snails (uncommon)
	150-160	Silty-sand (100%)	Eelgrass (50%) Lacy Red Weed (2%) Unidentified Brown Algae (2%) Common Southern Kelp (<1%)	None
	160-170	Silty-sand (95%) Boulder /Cobble (5%)	Eelgrass (5%) Lacy Red Weed (1%) Unidentified Brown Algae (1%) Common Southern Kelp (<1%)	Sea Star (1)
	170-180	Silty-sand (100%)	Lacy Red Weed (2%) Common Southern Kelp (<1%)	None
	180-190	Silty-sand (90%) Boulder (10%)	Lacy Red Weed (2%) Unidentified Brown Algae (2%) Eelgrass (<1%)	None
	190-200	Silty-sand (80%) Boulder (20%)	Lacy Red Weed (2%) Unidentified Brown Algae (2%)	None
	200-210	Silty-sand (80%) Boulder (20%)	Lacy Red Weed (2%) Unidentified Brown Algae (2%)	None
	210-220	Silty-sand (80%) Boulder (20%)	Lacy Red Weed (10%) Unidentified Brown Algae (5%) Common Southern Kelp (<1%)	None
	220-230	Silty-sand (50%) Boulder (50%)	Lacy Red Weed (10%) Unidentified Brown Algae (5%)	Sea Star (1)
	230-240	Silty-sand (50%) Boulder (50%)	Lacy Red Weed (10%) Unidentified Brown Algae (5%)	Sea Star (2) Burrowing Sea Anemone (uncommon)
	240-250	Silty-sand (50%) Boulder (50%)	Lacy Red Weed (10%) Unidentified Brown Algae (5%)	Sea Star (1) Burrowing Sea Anemone (uncommon)

**Table A2. Benthic Habitat Characterization (January 7-11, 2008) – Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	250-260	Silty-sand (50%) Boulder (50%)	Lacy Red Weed (10%) Unidentified Brown Algae (5%) Eelgrass (<1%)	Burrowing Sea Anemone (common)
	260-270	Silty-sand (50%) Boulder (50%)	Lacy Red Weed (20%) Unidentified Brown Algae (5%)	Sea Star (4)
	270-280	Silty-sand (50%) Boulder (50%)	Lacy Red Weed (20%) Unidentified Brown Algae (5%) Common Southern Kelp (<1%)	Sea Star (2)
	280-290	Silty-sand (50%) Boulder (50%)	Lacy Red Weed (40%) Unidentified Brown Algae (10%) Common Southern Kelp (<1%)	None
	290-300	Silty-sand (50%) Boulder (50%)	Lacy Red Weed (20%) Unidentified Brown Algae (10%)	None
<b>PF2</b>	0-10	Boulder /Cobble (100%)	Rockweed (75%)	Barnacles (abundant) Small Snails (abundant)
	10-20	Boulder /Cobble (100%)	Rockweed (75%) Lacy Red Weed (<1%)	Small Snails (common)
	20-30	Boulder /Cobble (100%)	Rockweed (75%) Lacy Red Weed (<1%)	Small Snails (common)
	30-40	Boulder /Cobble (100%)	Rockweed (75%) Lacy Red Weed (<1%)	Small Snails (common)
	40-50	Boulder /Cobble (100%)	Rockweed (90%) Common Southern Kelp (5%) Lacy Red Weed (5%)	Small Snails (common)
	50-60	Boulder /Cobble (100%)	Rockweed (50%) Common Southern Kelp (5%) Lacy Red Weed (5%)	Small Snails (common)
	60-70	Boulder /Cobble (100%)	Rockweed (20%) Lacy Red Weed (15%) Common Southern Kelp (2%)	Small Snails (common)
	70-80	Boulder /Cobble (50%) Silty-sand (50%)	Rockweed (25%) Lacy Red Weed (25%) Common Southern Kelp (2%)	None
	80-90	Silty-sand (95%) Boulder /Cobble (5%)	Lacy Red Weed (15%) Rockweed (10%) Common Southern Kelp (1%)	Small Snails (common)
	90-100	Silty-sand (100%)	Lacy Red Weed (2%)	Rock Crab (2)
	100-110	Silty-sand (100%)	Lacy Red Weed (2%) Common Southern Kelp (<1%)	

**Table A2. Benthic Habitat Characterization (January 7-11, 2008) – Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	110-120	Silty-sand (100%)	Lacy Red Weed (1%)	None
	120-130	Silty-sand (100%)	Lacy Red Weed (5%) Rockweed (1%)	Rock Crab (2)
	130-140	Silty-sand (100%)	Lacy Red Weed (2%)	None
	140-150	Silty-sand (100%)	Lacy Red Weed (2%)	Sea Star (1)
	150-160	Silty-sand (100%)	Lacy Red Weed (2%)	Rock Crab (2)
	160-170	Silty-sand (100%)	Lacy Red Weed (2%)	Rock Crab (1)
	170-180	Silty-sand (100%)	Lacy Red Weed (1%)	Sea Star (1) Burrowing Sea Anemone (uncommon)
	180-190	Silty-sand (95%) Boulder (5%)	Lacy Red Weed (1%) Common Southern Kelp (<1%)	Sea Star (1)
	190-200	Silty-sand (95%) Boulder (5%)	None	Burrowing Sea Anemone (uncommon) Sea Star (1)
	200-210	Silty-sand (100%)	None	Burrowing Sea Anemone (uncommon)
	210-220	Silty-sand (100%)	Lacy Red Weed (<1%)	Burrowing Sea Anemone (uncommon)
	220-230	Silty-sand (100%)	None	Burrowing Sea Anemone (uncommon)
	230-240	Silty-sand (100%)	Lacy Red Weed (<1%)	Burrowing Sea Anemone (common)
	240-250	Silty-sand (100%)	None	Burrowing Sea Anemone (common) Rock Crab (1)
	250-260	Silty-sand (100%)	None	Burrowing Sea Anemone (common)
	260-270	Silty-sand (100%)	None	Burrowing Sea Anemone (uncommon)
	270-280	Silty-sand (100%)	None	Burrowing Sea Anemone (uncommon) Barnacles (uncommon)
	280-290	Silty-sand (100%)	None	Clam holes
	290-300	Silty-sand (100%)	None	Clam holes
<b>PF3</b>	0-10	Boulder /cobble (100%)	Rockweed (75%)	Small Snails (abundant) Barnacles (abundant)
	10-20	Boulder /cobble (100%)	Rockweed (40%)	Small Snails (abundant) Barnacles (abundant)
	20-30	Boulder /cobble (100%)	Rockweed (40%)	Small Snails (abundant) Barnacles (abundant)
	30-40	Boulder /cobble (100%)	Rockweed (75%) Unidentified Brown Algae (2%)	Barnacles (common)

**Table A2. Benthic Habitat Characterization (January 7-11, 2008) – Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	40-50	Boulder /cobble (100%)	Rockweed (75%) Unidentified Brown Algae (2%)	Barnacles (common)
	50-60	Boulder /cobble (100%)	Rockweed (75%)	Small Snails (uncommon)
	60-70	Boulder /cobble (100%)	Rockweed (75%) Lacy Red Weed (2%)	None
	70-80	Boulder /cobble (100%)	Rockweed (75%) Lacy Red Weed (2%)	Small Snails (abundant)
	80-90	Boulder /cobble (100%)	Rockweed (50%)	Small Snails (abundant)
	90-100	Boulder /cobble (100%)	Rockweed (30%) Lacy Red Weed (2%)	Small Snails (abundant)
	100-110	Boulder /cobble (100%)	Rockweed (40%) Lacy Red Weed (2%) Unidentified Brown Algae (1%)	Small Snails (abundant)
	110-120	Boulder /cobble (100%) Mussel shells	Rockweed (10%) Lacy Red Weed (1%) Unidentified Brown Algae (<1%)	Small Snails (common)
	120-130	Boulder /cobble (100%) Mussel shells	Rockweed (30%) Lacy Red Weed (2%) Common Southern Kelp (<1%)	Small Snails (common)
	130-140	Boulder /cobble (100%) Mussel shells	Rockweed (20%) Lacy Red Weed (2%)	Small Snails (common)
	140-150	Boulder /cobble (100%) Mussel shells	Rockweed (20%) Lacy Red Weed (1%) Unidentified Brown Algae (1%)	Small Snails (common) Burrowing Sea Anemone (abundant)
	150-160	Boulder /cobble (100%) Mussel shells	Rockweed (20%) Lacy Red Weed (5%) Common Southern Kelp (1%)	Small Snails (abundant) Burrowing Sea Anemone (abundant)
	160-170	Boulder /cobble (100%) Mussel shells	Lacy Red Weed (10%) Rockweed (5%) Common Southern Kelp (1%)	Burrowing Sea Anemone (common) Sea Star (1)
	170-180	Boulder /cobble (100%) Mussel shells	Rockweed (10%) Lacy Red Weed (10%) Common Southern Kelp (1%) Unidentified Brown Algae (<1%)	Small Snails (common) Burrowing Sea Anemone (common)
	180-190	Boulder /cobble (100%) Mussel shells	Lacy Red Weed (20%) Rockweed (10%) Common Southern Kelp (1%)	Small Snails (common) Hermit Crab (1)

**Table A2. Benthic Habitat Characterization (January 7-11, 2008) – Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	190-200	Boulder /cobble (100%) Mussel shells	Lacy Red Weed (20%) Rockweed (2%)	Burrowing Sea Anemone (common) Small Snails (common) Sea Star (1) Rock Crab (1)
	200-210	Boulder /cobble (100%) Mussel shells	Lacy Red Weed (20%) Rockweed (2%)	Burrowing Sea Anemone (common) Small Snails (common)
	210-220	Boulder /cobble (100%) Mussel shells	Lacy Red Weed (20%) Rockweed (2%) Common Southern Kelp (<1%)	Burrowing Sea Anemone (common)
	220-230	Boulder /cobble (100%) Mussel and Clam shells	Lacy Red Weed (20%) Rockweed (2%)	Burrowing Sea Anemone (common)
	230-240	Boulder /cobble (90%) Silty-sand (10%) Mussel and Clam shells	Lacy Red Weed (20%) Rockweed (2%)	Burrowing Sea Anemone (common)
	240-250	Boulder /cobble (90%) Silty-sand (10%) Mussel shells	Lacy Red Weed (20%) Rockweed (2%) Common Southern Kelp (1%)	Burrowing Sea Anemone (common)
	250-260	Boulder /cobble (50%) Silty-sand (50%)	Lacy Red Weed (5%) Rockweed (1%) Common Southern Kelp (1%)	Burrowing Sea Anemone (common) Sea Star (1)
	260-270	Silty-sand (90%) Boulder /cobble (10%) Mussel and Clam shells	Lacy Red Weed (1%)	Burrowing Sea Anemone (common) Rock Crab (1)
	270-280	Silty-sand (90%) Boulder /cobble (10%)	None	Burrowing Sea Anemone (common) Rock Crab (3)
	280-290	Silty-sand (100%)	None	Burrowing Sea Anemone (uncommon) Unidentified Sponge (1)
	290-300	Silty-sand (100%)	None	Rock Crab (1)

**Table A3. Benthic Habitat Characterization (January 7-11, 2008) –Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
NA1	0-10	Silty-Sand (100%)	None	None
	10-20	Silty-Sand (100%)	None	None
	20-30	Silty-Sand (100%)	Thin covering of Green Algae on substrate	None
	30-40	Silty-Sand (100%)	Thin covering of Green Algae on substrate	Burrowing Sea Anemone (Common)
	40-50	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	50-60	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	60-70	Silty-Sand (100%)	Common Southern Kelp (<1%)	Burrowing Sea Anemone (uncommon) Sand Shrimp (1)
	70-80	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	80-90	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	90-100	Silty-Sand (100%)	None	None
	100-110	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon) Rock Crab (1)
	110-120	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	120-130	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	130-140	Silty-Sand (100%)	None	None
	140-150	Silty-Sand (100%)	None	None
	150-160	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	160-170	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	170-180	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	180-190	Silty-Sand (100%)	Common Southern Kelp (<1%)	None
	190-200	Silty-Sand (100%)	None	None
200-210	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)	
210-220	Silty-Sand (100%)	None	None	
220-230	Silty-Sand (100%)	None	None	
230-240	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)	



**Table A3. Benthic Habitat Characterization (January 7-11, 2008) –Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	240-250	Silty-Sand (100%)	None	Burrowing Sea Anemone (common) Rock Crab (2)
	250-260	Silty-Sand (100%)	None	Burrowing Sea Anemone (abundant)
	260-270	Silty-Sand (100%)	None	Burrowing Sea Anemone (common) Sea Urchin (1)
	270-280	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	280-290	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	290-300	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (uncommon)
<b>NA2</b>	0-10	Silty-Sand (100%)	Common Southern Kelp (<1%)	Burrowing Sea Anemone (Common)
	10-20	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	20-30	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	30-40	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	40-50	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	50-60	Silty-Sand (100%)	None	Burrowing Sea Anemone (abundant)
	60-70	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common) Unidentified Sand Casings (abundant)
	70-80	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	80-90	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	90-100	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	100-110	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	110-120	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	120-130	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	130-140	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	140-150	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	150-160	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
160-170	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)	
170-180	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (Common)	

**Table A3. Benthic Habitat Characterization (January 7-11, 2008) –Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	180-190	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	190-200	Silty-Sand (100%)	Rockweed (<1%) Unidentified Red Algae (<1%)	Burrowing Sea Anemone (Common)
	200-210	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	210-220	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	220-230	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (uncommon)
	230-240	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	240-250	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	250-260	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon) Rock Crab (1)
	260-270	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	270-280	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	280-290	Silty-Sand (100%)	None	Burrowing Sea Anemone (Common)
	290-300	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
<b>NA3</b>	0-10	Boulder/Cobble (100%)	Rockweed (20%)	Rock Crab (2)
	10-20	Boulder/Cobble (100%)	Rockweed (40%)	Rock Crab (1)
	20-30	Silty-Sand (70%) Boulder (30%)	None	Burrowing Sea Anemone (uncommon) Rock Crab (2)
	30-40	Silty-Sand (90%) Fine cobble (10%)	None	None
	40-50	Silty-Sand (90%) Fine cobble (10%)	None	None
	50-60	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	60-70	Silty-Sand (100%)	Rockweed (<1%)	Burrowing Sea Anemone (uncommon) Sea Anemone (uncommon)
	70-80	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon) Rock Crab (1)
	80-90	Silty-Sand (100%)	None	Rock Crab (1)
	90-100	Silty-Sand (100%)	None	None
	100-110	Silty-Sand (100%)	None	None

**Table A3. Benthic Habitat Characterization (January 7-11, 2008) –Sydney Harbour, Sydney, NS.**

Survey Line ID	Position (m)	Substrate	Flora	Fauna
	110-120	Silty-Sand (100%)	None	None
	120-130	Silty-Sand (100%)	None	None
	130-140	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	140-150	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	150-160	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon) Rock Crab (1)
	160-170	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	170-180	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	180-190	Silty-Sand (100%)	None	None
	190-200	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	200-210	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)
	210-220	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	220-230	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	230-240	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	240-250	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	250-260	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	260-270	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	270-280	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	280-290	Silty-Sand (100%)	None	Burrowing Sea Anemone (common)
	290-300	Silty-Sand (100%)	None	Burrowing Sea Anemone (uncommon)