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Nearfield Hardbottom Benthic Data Report

for

**Benthic Monitoring: 1995-1997
Tasks 18.2 and 29.10**

MWRA Harbor and Outfall Monitoring Project

June 1995 Survey

submitted to

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Appendix A. Raw data from video tape analysis

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1.0 INTRODUCTION

The Massachusetts Water Resources Authority (MWRA) is currently conducting a Harbor and Outfall Monitoring Program in Boston Harbor and Cape Cod and Massachusetts Bays. The program has two major objectives, (1) to monitor improvements in sediment contaminant concentrations and benthic infaunal communities in Boston Harbor following sludge abatement and (2) provide benthic baseline data to detect any changes related to the new sewage outfall in Massachusetts Bay. Much of the program is focused on softbottom processes; however, since the outfall was placed in an area of high kinetic energy (strong currents) to ensure rapid dilution of the effluent, hardbottom environments and the associated algal and faunal communities play an important role in the detection of any changes as well. To establish a baseline complimenting the data compiled on softbottom environments, the rocky terrain in the vicinity of the new outfall is being surveyed annually during the second half of June. A remotely operated vehicle (ROV) with a color video camera and a 35-mm camera is used for these surveys. This report presents and summarizes the data from the first of three annual hardbottom surveys which took place from 14 to 16 June, 1995.

2.0 METHODS

2.1 Field

Six transects were surveyed for this study (Figure 1, Table 1). The survey vessel, *M/V Christopher Andrew*, was anchored at several waypoints along each transect (only 1 waypoint at the reference transects T7 and T8), and the ROV, a Benthos MiniRover Mk II, with attached 35-mm camera and strobe, was lowered over the starboard side near the bow. Once the ROV reached the seafloor, video footage was recorded on tape while observed in realtime on a monitor aboard ship. One to three excursions, ranging about 70 to 200 feet in length, were undertaken from each waypoint. Each excursion corresponded to about 5 to 20 minutes of bottom time. Still photographs were taken during the survey for "ground truthing" of the identifications to be made during the video tape analysis. Wherever feasible, each transect was recorded on a separate video tape and still photograph roll. Between anchoring points, the ROV was brought back on deck and occasionally tested to ensure proper function of the video and still photo cameras and the lights and strobe.

2.2 Laboratory

For the semiquantitative analysis of the video tapes, each excursion was divided into 5-minute intervals during which all recognizable taxa were recorded and counted or, in the case of colonial organisms such as coralline red algae and hydroids, assessed in terms of rough estimates of percent cover of the available surface areas. Other taxa, such as filamentous red algae and small barnacles and/or spirorbids, were frequently too abundant to count and were assessed in terms of relative abundance categories (see below). Ancillary information recorded for each interval included the size of the rocks (gravel to boulders), the relief of the area (e.g., the presence of a pavement), and the presence and amount of sediment cover. A distinction was made between a sediment dusting, where the rocky surface was still visible through the sedimentary layer and occasionally exposed, and a sediment drape, where a fairly continuous and opaque layer covered the rocky surface. Still photographs were analyzed in a similar way. Raw data are compiled in Appendices A (video tapes) and B (still photographs).

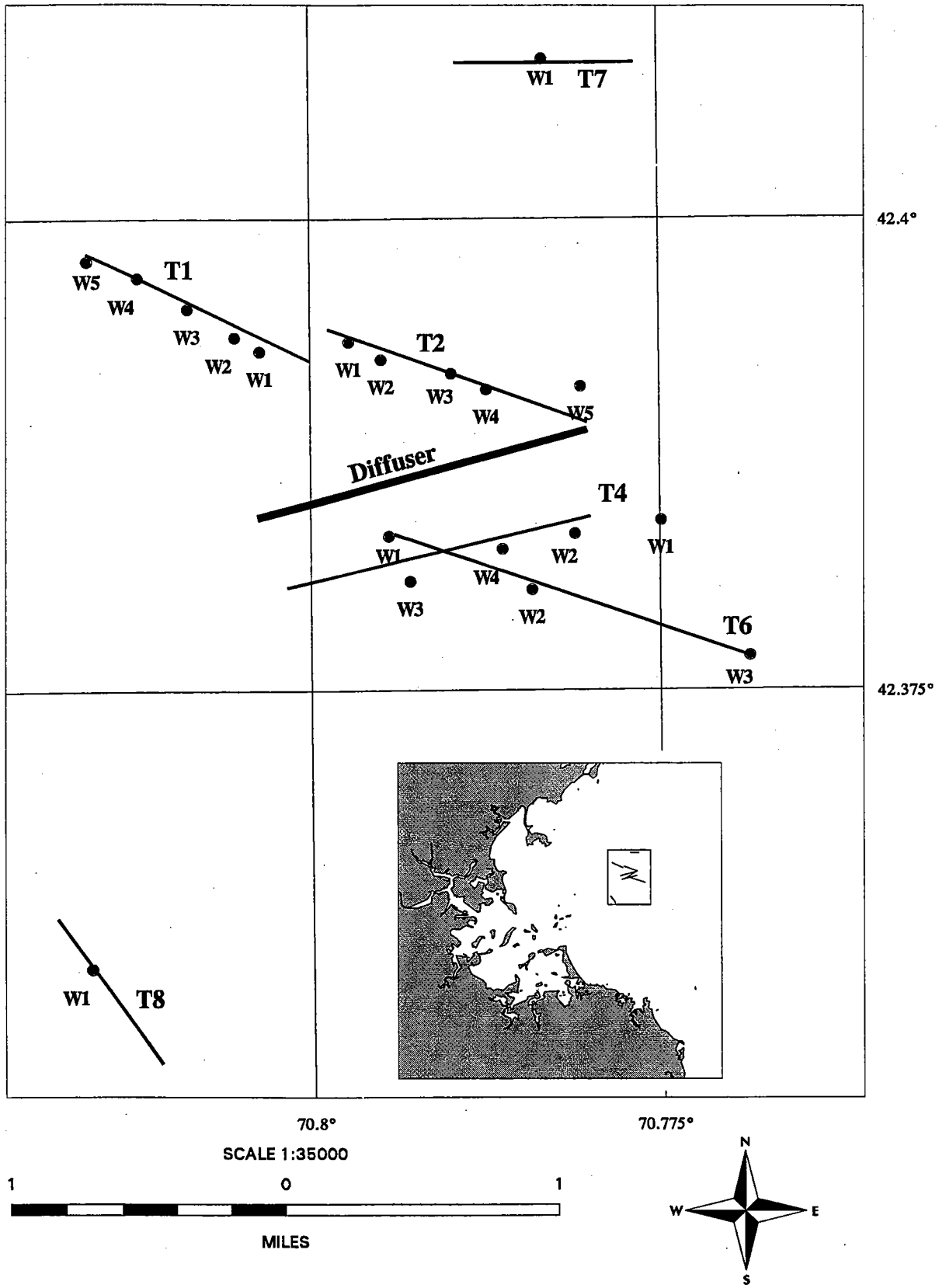


Figure 1. Location of transects and waypoints, Nearfield Hardbottom survey, June 1995.

Table 1. Transects and waypoints visited during Nearfield Hardbottom survey, June 1995.

Transect	Waypoint	Latitude	Longitude	Date	Start Time
T1	1	42°23.580'N	70°48.217'W	6/14/95	09:04
T1	2	42°23.625'N	70°48.324'W	6/14/95	09:38
T1	3	42°23.715'N	70°48.529'W	6/14/95	09:56
T1	4	42°23.815'N	70°48.743'W	6/14/95	10:40
T1	5	42°23.869'N	70°48.957'W	6/14/95	11:23
T2	1	42°23.612'N	70°47.830'W	6/14/95	13:27
T2	2	42°23.553'N	70°47.694'W	6/14/95	14:34
T2	3	42°23.510'N	70°47.394'W	6/14/95	15:05
T2	4A	42°23.457'N	70°47.244'W	6/14/95	15:56
T2	4B	42°23.503'N	70°47.264'W	6/15/95	09:14
T2	5	42°23.469'N	70°46.839'W	6/16/95	09:37
T4	1	42°23.039'N	70°46.493'W	6/15/95	10:21
T4	2	42°22.999'N	70°46.868'W	6/15/95	13:34
T4	3	42°22.847'N	70°47.573'W	6/15/95	15:31
T4	4	42°22.948'N	70°47.180'W	6/16/95	12:32
T6	1	42°22.993'N	70°47.665'W	6/15/95	16:18
T6	2	42°22.821'N	70°47.053'W	6/15/95	17:14
T6	3	42°22.606'N	70°46.114'W	6/15/95	18:07
T6	4 ¹	42°22.948'N	70°47.180'W	6/16/95	12:32
T7	1	42°24.509'N	70°47.000'W	6/16/95	08:05
T8	1	42°21.616'N	70°48.952'W	6/16/95	14:01

¹The fourth waypoints for T4 and T6 are the same (intersection of transects)

The raw data were condensed by establishing five categories to describe the observed abundance of algae, sessile animals, and motile animals per 5-minute interval for each waypoint, and combined waypoints along a transect if they were similar. The categories are:

Category	Number of countable organisms	Percent cover
rare	1	1-5
few	2-10	6-10
common	11-50	11-50
abundant	51-100	51-90
very abundant	>100	>90

It must be emphasized that these categories are rough approximations. The accuracy of the initial counts was limited by the relief of the habitat, properties of the ROV, the quality of the video tape, and the amount of clues needed by the analyst to identify an organism without having a voucher specimen. The ROV did not travel at a constant speed and constant height above the seafloor, and consequently some of the video footage was unsuitable for analysis because images were either blurred when the ROV's speed was too high or dark when the ROV was too far above the bottom. In high relief areas with large boulders, vertical surfaces could often not be fully analyzed because the lights would cause burnout on the tape by the time the camera was close enough to the surface to reveal morphological features of the organisms. Limitations of the video tape itself included a general lack of crispness of the image compared to still photographs.

In addition, over- and underestimates of certain organisms were made by the analysts because the amount of clues such as habitus, surface structures, and color that are needed to identify a specimen differ greatly from species to species. For example, sea urchins are very conspicuous and can be identified even when they are in very bright or very dim light or hidden among rocks, and they were counted even if they were in the background of the surveyed area. On the other hand, delicate animals such as sea vases (translucent tunicates), some bryozoans such as sea lace (*Membranipora*), and well camouflaged animals such as chitons, and small organisms such as brachiopods and juvenile mussels are easily overlooked in a moving image of limited sharpness.

The still photographs were used extensively for the establishment of diagnostic characters for the taxa identified on the tapes. Comparison of the color slides with color photographs and pictorial keys in the literature helped with the compilation of a species list, although some "species" are not named but described by their color and habitus (e.g., "orange tan encrusting organism"), and some taxa are only identified to such categories as "filamentous red algae" or "hydroids" because diagnostic characters needed for further identification can not be seen on an image. These taxa could very likely consist of several species. A list of all identified taxa, based on the observation of about 11,300 individuals, is shown in Table 2. References most frequently used include Martinez and Harlow (1994) and Weiss (1995).

Table 2. List of taxa identified from video tapes and still photographs, June 1995 hardbottom survey. Asterisk indicates taxa identified from still photographs only. Common names are given where available.

Algae

filamentous red (<i>Asparagopsis hamifera?</i>)	
<i>Agarum cribrosum</i>	shotgun kelp
<i>Corallina officinalis</i>	
<i>Lithotamnion</i> spp.	coralline red (pink colored)
<i>Peyssonellia</i> spp.*	coralline red (maroon colored)
<i>Rhodomenia palmata</i>	dulse

Sponges

<i>Aplysilla sulfurea</i>	
<i>Halichondria panicea</i>	crumb-of-bread sponge
<i>Haliclona</i> spp.	finger sponge
<i>Haliclona loosanoffi</i> *	dea man's fingers
<i>Phakellium ventilabrum</i>	chalice sponge
<i>Suberites</i> spp.	fig sponge
encrusting orange tan	
encrusting tan	
encrusting ivory*	
encrusting pale orange*	
encrusting orange	
encrusting gold sponge*	
green lumpy	
orange lumpy*	
pink fuzzy	
dark red brown encrusting*	
whitish translucent*	

Coelenterates

hydroids	
<i>Cerianthus borealis</i>	northern cerianthid
<i>Corymorpha pendula</i>	solitary hydroid
<i>Diadumene leucolena</i>	white anemone
<i>Fagesia lineata</i>	lined anemone
<i>Gersemia rubiformis</i>	red soft coral
<i>Metridium senile</i>	frilly anemone
<i>Obelia geniculata</i>	zig-zag wine-glass hydroid
<i>Urticina felina</i>	northern red anemone

Unidentified encrusting organisms

red encrusting	
reddish orange encrusting	
yellow orange encrusting	
tannish yellow encrusting*	
white divided	

Table 2 (Continued).

white encrusting
 white translucent encrusting*
 dark tan translucent encrusting*

Polychaetes

Myxicola infundibulum slime worm
 polynoid* scale worm
 serpulids*
 spirorbids spiral tube worm

Mollusks

Coryphella sp.* red-gilled nudibranch
Tonicella marmorea mottled red chiton
Notoacmaea testudinalis tortoiseshell limpet
Buccinum undatum waved whelk
Crepidula plana flat slipper shell
Ilyanassa trivittata dog whelk
Neptunea decemcostata ten-ridged whelk
 ?*Arctica islandica* ocean quahog
Modiolus modiolus horse mussel
Placopecten magellanicus sea scallop

Crustaceans

small barnacles*
Balanus spp. acorn barnacle
Cancer spp. rock or Jonah crab
Homarus americanus lobster
Lepas spp. gooseneck barnacle
Pagurus spp. hermit crab

Echinoderms

Strongylocentrotus droebachiensis green sea urchin
 ?*Cucumaria frondosa* orange-footed cucumber
*Psolus fabricii** scarlet psolus
 small white starfish
Asterias vulgaris northern sea star
Crossaster papposus spiny sunstar
Henricia sanguinolenta blood star
Leptasterias spp. slender sea star
Porania insignis badge star
Pteraster militaria winged sea star
Solaster endeca purple sunstar
Ophiopholis aculeata daisy brittle star

Table 2 (Continued).

Bryozoans

<i>?Bugula</i> spp.	spiral tufted bryozoan
<i>?Crisia</i> spp.*	
<i>Membranipora</i> sp.	sea lace
red crust bryozoan*	
unidentified bryozoans	

Brachiopoda

<i>Terebratulina septentrionalis</i> *	northern lamp shell
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Tunicates

<i>Aplidium</i> spp.	sea pork
<i>Boltenia ovifera</i>	stalked tunicate
<i>Ciona intestinalis</i>	sea vase
<i>Dendrodoa carnea</i>	drop of blood tunicate
<i>Didemnum albidum</i> *	northern white crust
<i>Halocynthia pyriformis</i>	sea peach
white globular tunicate*	

Fish

<i>Anarhichas lupus</i>	wolffish
<i>?Centropristis striata</i>	black bass
<i>Cyclopterus lumpus</i>	lumpfish
<i>Gadus morhua</i>	atlantic cod
<i>Hemitripteris americanus</i>	sea raven
<i>Macrozoarces americanus</i>	ocean pout
<i>Myoxocephalus</i> spp.	sculpin
<i>Myoxocephalus octodecimspinosus</i> *	longhorn sculpin
<i>?Myoxocephalus scorpius</i> *	shorthorn sculpin
<i>Pleuronectes americanus</i>	winter flounder
<i>Prionotus carolinus</i>	sea robin
<i>Tautoglabrus adspersus</i>	cunner
<i>?Tautoga onitis</i> *	tautog
<i>Ulvaria subbifurcata</i>	shanny
<i>?Urophycis chuss</i>	squirrel hake
?batfish	
unidentified large fish	

3.0 RESULTS

This section presents a short description of the habitat and major floral and faunal elements observed at each transect. A summary of the abundances and distribution of selected taxa is presented in Table 3.

Transect T1

This transect is located north of the diffuser, running roughly west-northwest to east-southeast. Five waypoints were visited, the first one being at the offshore (eastern) end and the last one at the nearshore (western) end. Waypoints 3 and 4 were on the drumlin top and only 20 to 21 m deep, whereas the other waypoints were on the flanks on either side in about 23 to 26 m depth. During all excursions on transect T1 combined, 33 taxa were observed, a moderate species richness compared to the other five transects. Species richness was relatively low among the algae, sponges, echinoderms, and fish; differences among the waypoints were limited to single occurrences of species that were rare or difficult to identify from video tapes, and the patchy distribution of mussels, which also were much more easily observed when concentrated in mussel beds and may have been overlooked when occurring singly. The species composition varied considerably between the top and flanks of the drumlin (Table 3).

Waypoint 1 - 42°23.580'N, 70°48.217'W, depth about 90 ft (27 m)

Bottom time of the ROV was about 8 minutes during 1 excursion, with 2 minutes spent in one place after touchdown. The substratum consisted of cobble pavement with scattered boulders, covered by a light sediment drape. Overall, algae covered markedly less space than sessile animals. Their abundance ranged from few to common, the most abundant taxon being filamentous red algae; few coralline algae and dulse (*Rhodymenia palmata*) were present. Sessile animals were common to abundant, with the most abundant taxa being hydroids, the white globular sponge *Suberites* sp., and white encrusting organisms (probably a mixture of sponge(s) and the Northern white crust, *Didemnum albidum*, a tunicate). Orange tan encrusting organisms (sponge, tunicate, and/or bryozoan) and sea peaches (*Halocynthia pyriformis*) were common. The most abundant motile animals were unidentified small starfish, most likely juvenile *Asterias*, the sea urchin *Strongylocentrotus droebachiensis*, and one fish species, the cunner *Tautoglabrus adspersus* (Table 4).

One of the two still photographs taken at this waypoint showed thin golden encrusting sponges, a taxon not observed on the video tape.

Waypoint 2 - 42°23.625'N, 70°48.324'W, depth about 82 - 96 ft (25 - 29 m)

Bottom time of the ROV was about 25 minutes during 2 excursions, with about 5 minutes of standstill. The substratum changed from a cobble pavement with scattered boulders to mostly boulders; sediment drape was light to moderate. As at the first waypoint, more surface was covered by sessile animals than by algae. Red filamentous algae were rare to abundant, and coralline algae were rare throughout. Among the sessile animals, the orange tan encrusting organisms, small barnacles/spirorbids, and the sea peach *Halocynthia pyriformis* were the most abundant taxa, all of them common or rare to common. Unidentified starfish, sea urchins, and cunners were the most abundant motile animals, all ranging from few to common or abundant (Table 5).

Six still photographs were taken at this waypoint; one of the more frequently observed organisms on these photographs was the northern white crust, *Didemnum albidum*, which could not be distinguished from other white encrusting organisms on the video tape.

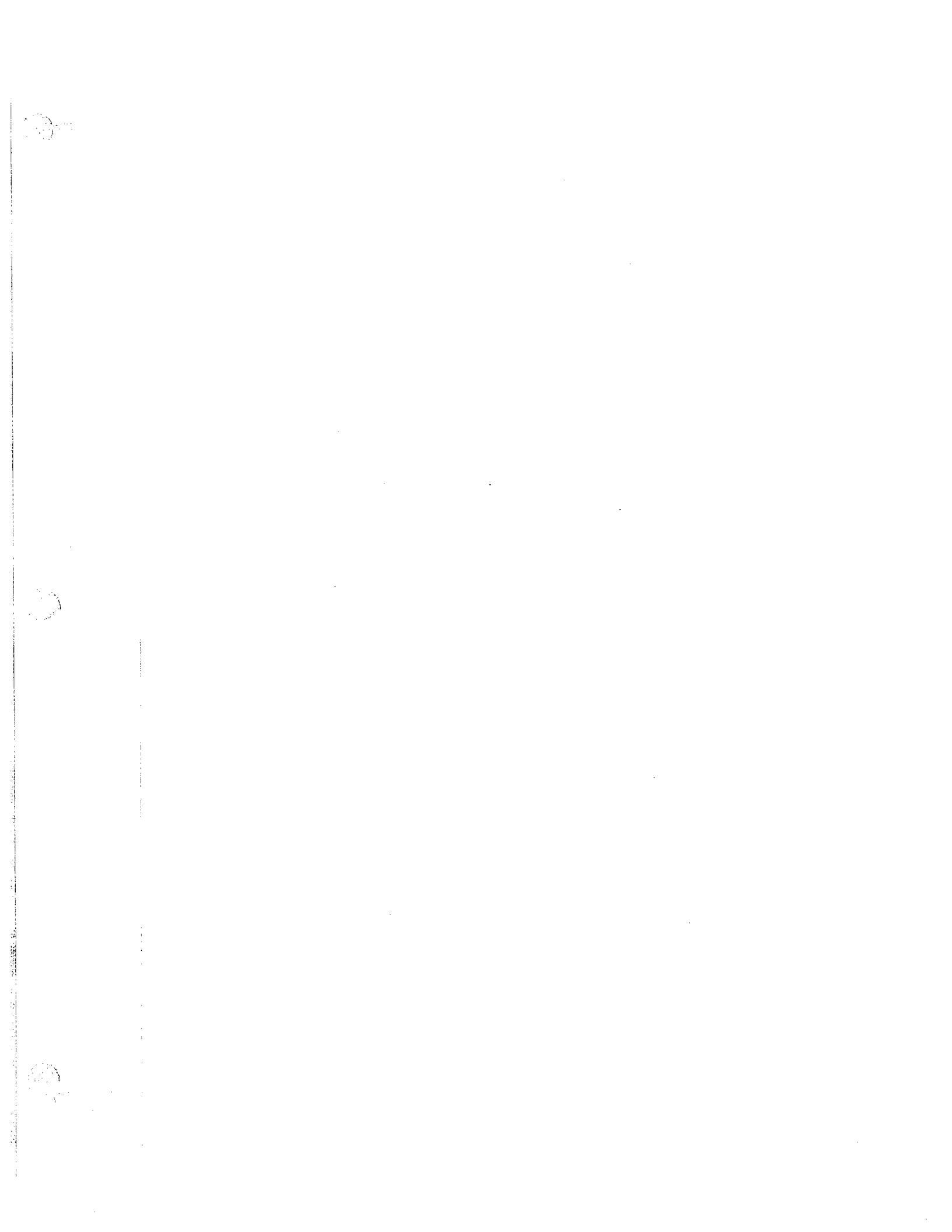


Table 4. Taxa and their abundances at transect T1, waypoint 1, June 1995.

Transect T1	Waypoint 1	Excursion 1			
Taxon	Abundance				
	Interval 1	Interval 2	Interval 3	Interval 4	
filamentous red algae	rare to common				
coralline red algae	rare				
<i>Rhodymenia palmata</i>	1-5				
hydroids	abundant, patchy				
<i>Suberites</i> spp.	11-50				
encrusting white	51-100				
orange tan encrusting	11-50				
<i>Metridium senile</i>	6-10				
<i>Gersemia rubiformis</i>	1-5				
<i>Placopecten magellanicus</i>	1-5				
small barnacles/spirorbids	common				
<i>Balanus</i> spp.	1-5				
small white starfish	11-50				
<i>Henricia sanguinolenta</i>	1-5				
<i>Asterias vulgaris</i>	1-5				
<i>Strongylocentrotus droebachiensis</i>	11-50				
<i>Halocynthia pyriformis</i>	11-50				
<i>Boltenia ovifera</i>	1-5				
<i>Tautogolabrus adspersus</i>	11-50				
<i>Myoxocephalus</i> spp.	1-5				

Table 5. Taxa and their abundances at transect T1, waypoint 2, June 1995.

Transect T1	Waypoint 2		Excursion 1	
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
coralline red algae	rare	rare		
hydroids	rare	rare		
<i>Suberites</i> spp.	1-5	1-5		
encrusting white	11-50	6-10		
orange tan encrusting	11-50	11-50		
<i>Metridium senile</i>		1-5		
<i>Urticina felina</i>	1-5			
<i>Gersemia rubiformis</i>		1-5		
<i>Neptunea decemcostata</i>		1-5		
small barnacles/spirorbids	common			
<i>Balanus</i> spp.		1-5		
<i>Cancer</i> spp.		1-5		
<i>Homarus americanus</i>		1-5		
small white starfish	6-10	11-50		
<i>Asterias vulgaris</i>	6-10	6-10		
<i>Strongylocentrotus droebachiensis</i>	1-5	1-5		
<i>Halocynthia pyriformis</i>	11-50	11-50		
<i>Myoxocephalus</i> spp.		1-5		
<i>Tautoglabrus adspersus</i>	1-5			

Table 5 (Continued).

Transect T1	Waypoint 2			Excursion 2
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	common	common	common	
coralline red algae	rare	rare	rare	
hydroids	common	common	common	
<i>Suberites</i> spp.	1-5	1-5	1-5	
encrusting white	11-50	6-10	1-5	
orange tan encrusting	11-50	11-50	11-50	
<i>Metridium senile</i>	1-5	1-5	1-5	
<i>Urticina felina</i>		1-5		
<i>Diadumene leucolena</i>		1-5		
<i>Gersemia rubiformis</i>	1-5			
small white starfish	51-100	11-50	11-50	
<i>Henricia sanguinolenta</i>			1-5	
<i>Asterias vulgaris</i>	6-10	1-5	1-5	
<i>Strongylocentrotus droebachiensis</i>	11-50	11-50	11-50	
<i>Halocynthia pyriformis</i>	1-5	6-10	1-5	
<i>Tautogolabrus adspersus</i>	11-50	11-50	116-50	

Waypoint 3 - 42°23.715'N, 70°48.529'W, depth about 65 - 72 ft (20 - 22 m)

Bottom time of the ROV was about 19 minutes during 1 excursion. The substratum consisted of mixed boulders and cobbles, a sediment drape was absent. Nearly the entire available surface area was covered with coralline algae, while filamentous algae and sessile animals were all rare. The motile fauna was mainly composed of sea urchins and unidentified small starfish (both common to abundant) and few to very abundant horse mussels (*Modiolus modiolus*) (Table 6).

The nine still photographs of this area contained essentially the same information.

Waypoint 4 - 42°23.815'N, 70°48.743'W, depth about 70 ft (21 m)

Bottom time of the ROV was 18 minutes during 1 excursion, with about 10 minutes of footage suitable for analysis. The substratum was a gravel and cobble pavement with occasional boulders, covered with a

Table 6. Taxa and their abundances at transect T1, waypoint 3, June 1995.

Transect T1	Waypoint 3			Excursion 1
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	rare	rare, patchy	rare, patchy	rare
coralline red algae	very abundant	abundant	abundant	abundant
hydroids	rare	common, patchy	common, patchy	few
encrusting white	6-10	1-5		6-10
orange tan encrusting	1-5	1-5		
<i>Gersemia rubiformis</i>		1-5		
<i>Balanus</i> spp.		1-5	1-5	1-5
small barnacles/spirorbids				
<i>Modiolus modiolus</i>	11-50	>100	1-5	1-5
<i>Notoacmaea testudinalis</i>			1-5	
small white starfish	11-50	51-100	11-50	11-50
<i>Asterias vulgaris</i>	1-5	1-5	1-5	
<i>Strongylocentrotus droebachiensis</i>	11-50	51-100	51-100	51-100
<i>Halocynthia pyriformis</i>	1-5			
<i>Tautoglabrus adspersus</i>	6-10	1-5	1-5	11-50
<i>Myoxocephalus</i> spp.			1-5	
unidentified fish	1-5			

very thin sediment drape. The composition of sessile organisms was much like that at the previous waypoint, with coralline algae being common, filamentous algae and all sessile animals being rare or only a few individuals present. The most abundant motile animal was *Modiolus*, followed by *Strongylocentrotus*, small starfish, and the tortoiseshell limpet *Notoacmaea testudinalis* (Table 7).

Some gold encrusting sponges were seen on one of the five still photos from this waypoint, but generally the photographs resembled the video tape.

Table 7. Taxa and their abundances at transect T1, waypoint 4, June 1995.

Transect T1	Waypoint 4	Excursion 1			
Taxon	Abundance				
		Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	rare				
coralline red algae	abundant, patchy				
hydroids	rare				
<i>Urticina felina</i>	1-5				
<i>Halichondria panicea</i>	1-5				
<i>Gersemia rubiformis</i>	1-5				
<i>Balanus</i> spp.	1-5				
small barnacles/spirorbids	rare				
<i>Modiolus modiolus</i>	>100				
<i>Notoacmaea testudinalis</i>	11-50				
small white starfish	11-50				
<i>Asterias vulgaris</i>	1-5				
<i>Strongylocentrotus droebachiensis</i>	51-100				
<i>Halocynthia pyriformis</i>	1-5				
<i>Tautoglabrus adspersus</i>	6-10				
<i>Myoxocephalus</i> spp.	1-5				

Waypoint 5 - 42°23.869'N, 70°48.957'W, depth about 95 ft (29 m)

Bottom time of the ROV was 15 minutes during 1 excursion. The substratum consisted of mixed boulders and cobbles, with no sediment or a moderate sediment drape present. Except for 1 very small area of coralline algae, sessile animals far outnumbered algae. The predominant sessile organisms were common to abundant orange tan encrusting organisms, common hydroids, and common small barnacles and/or spirorbids. Mussels were rare at this part of transect T1; sea urchins were common, unidentified small starfish ranged from few individuals to common (Table 8).

Six still photographs taken at this waypoint did not provide much additional information. One sculpin was seen and identified as longhorn sculpin.

Table 8. Taxa and their abundances at transect T1, waypoint 5, June 1995.

Transect T1	Waypoint 5			Excursion 1
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
coralline red algae	rare	rare	rare	
hydroids	common, patchy	common, patchy	common, patchy	
<i>Suberites</i> spp.	1-5			
encrusting white	6-10	6-10	11-50	
<i>Haliclona oculata</i>	1-5			
<i>Halichondria panicea</i>	1-5			
orange tan encrusting	11-50	11-50	51-100	
<i>Urticina felina</i>	6-10			
<i>Gersemia rubiformis</i>	1-5	1-5		
<i>Balanus</i> spp.	1-5	11-50	11-50	
small barnacles/spirorbids	common	common	common	
<i>Neptunea decemcostata</i>		1-5		
<i>Buccinum undatum</i>			1-5	
<i>Modiolus modiolus</i>		1-5	1-5	
? <i>Arctica islandica</i>		1-5		
<i>Placopecten magellanicus</i>			1-5	
small white starfish	6-10	11-50	11-50	
<i>Henricia sanguinolenta</i>	1-5		1-5	
<i>Asterias vulgaris</i>	6-10	6-10	6-10	
<i>Strongylocentrotus droebachiensis</i>	11-50	11-50	11-50	
? <i>Cucumaria frondosa</i>		1-5		
<i>Halocynthia pyriformis</i>	6-10	6-10	6-10	
<i>Aplidium</i> spp.		1-5		
<i>Tautoglabrus adspersus</i>	1-5	1-5	1-5	
<i>Myoxocephalus</i> spp.			1-5	
unidentified small fish	1-5			

3.2 Transect T2

This transect was almost an offshore continuation of T1, running in the same direction but located just slightly further north. Five waypoints were positioned on this transect, with the last one being farthest offshore and located in the proximity of a diffuser head which was also visited. Some areas off waypoint 1 and the two middle waypoints 3 and 4 were relatively shallow (22 - 28 m), the remainder of the transect was in about 30 m of water. The species richness at this transect was the highest among all transects; 46 taxa were identified. Algae, sponges, starfish, and fishes were particularly species rich. Waypoint 5 differed somewhat from the other waypoints in the absence of algae, but generally differences among waypoints were limited to rare or easily overlooked species (Table 3).

Waypoint 1 - 42°23.612'N, 70°47.830'W, depth about 71 - 98 ft (22 - 30 m)

Bottom time of the ROV was 30 minutes during 3 excursions, with about 6.5 minutes too far off bottom to use the video footage for analysis. The substratum was very heterogeneous, consisting of mostly boulders and some cobbles with light to moderate sediment dusting along excursions 1 and 3 and of cobbles and gravel with some boulders and moderate to heavy sediment drape along excursion 2. Consequently, all sessile organisms had a patchy distribution. Both filamentous and coralline red algae ranged from completely absent to very abundant, with the filamentous algae overall being more widespread in this area than the coralline algae. The sea colander, or shotgun kelp, *Agarum cribrosum* was absent in some areas and common in others. The most abundant sessile animals were small barnacles and/or spirorbids, ranging from absent to abundant, and the sponge *Suberites* spp., ranging from absent to common. Cunnners were the overall most abundant motile animals, but locally their numbers ranged from few to abundant; small white starfish were more evenly spread with their abundances ranging from few to common (Table 9).

Twenty still photographs were taken at this waypoint, some of which showed ivory colored encrusting organisms and the pinkish encrusting bryozoan *Membranipora* (sea lace), both most likely part of the taxon "white encrusting organism" identified from the video tape. Some whitish translucent encrusting organisms were also seen that were not observed on the video tape, and a yellow encrusting sponge, also not seen on the tape, was identified as *Aplysilla sulfurea*. Two photographs showed the nudibranch *Coryphella* spp., an organism too well camouflaged to be seen on the video tape. A sculpin, not identified to species from the tape, was determined to be a longhorn sculpin (*Myoxocephalus octodecimspinosus*) from the still photograph.

Waypoint 2 - 42°23.553'N, 70°47.694'W, depth about 101 ft (31 m)

Bottom time of the ROV was about 5 minutes during 1 excursion. The substratum consisted mostly of cobbles with a heavy sediment drape; boulders were seen only occasionally. Probably because of the sediment drape and also the considerable water depth, algae were absent except for very few scattered single specimens, and hydroids were rare as well. The most important sessile animals were white encrusting organisms and *Suberites*, their numbers being abundant and common, respectively. The only widespread motile animals were small white starfish which were common throughout (Table 10).

Eight still photographs were taken at this waypoint; on some of these, the translucent whitish encrusting organisms and gold encrusting sponges mentioned above were observed. In addition to coiled spirorbid tubes, some straight serpulid tubes were seen. These small polychaetes could not be observed on the tape. One photograph showed the sea cucumber *Psolus* spp., characterized by a well camouflaged, ventrally flattened body and bright red tentacles. It is possible that this animal was misidentified as the red soft coral *Gersemia rubiformis* on the video tape.

Table 9. Taxa and their abundances at transect T2, waypoint 1, June 1995.

Transect T2	Waypoint 1		Excursion 1	
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	common	abundant		
hydroids	few	few		
<i>Suberites</i> spp.	1-50	6-10		
encrusting white	11-50			
encrusting orange sponge	1-5			
<i>Metridium senile</i>	1-5	1-5		
<i>Gersemia rubiformis</i>	1-5	1-5		
small barnacles/spirorbids	abundant	few		
<i>Modiolus modiolus</i>	1-5			
small white starfish	11-50	1-5		
<i>Henricia sanguinolenta</i>	1-5	1-5		
<i>Asterias vulgaris</i>	1-5			
<i>Strongylocentrotus droebachiensis</i>	11-50	1-5		
<i>Halocynthia pyriformis</i>	6-10	1-5		
<i>Tautoglabrus adspersus</i>		1-5		

Table 9 (Continued).

Transect T2	Waypoint 1	Excursion 2		
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
coralline red algae		rare		
hydroids	rare	rare		
<i>Suberites</i> spp.	1-5			
encrusting white	6-10			
<i>Metridium senile</i>	1-5	1-5		
<i>Urticina felina</i>		1-5		
small barnacles/spirorbids	common	common		
<i>Neptunea decemcostata</i>		1-5		
small white starfish	11-50	11-50		
<i>Henricia sanguinolenta</i>	1-5	1-5		
<i>Asterias vulgaris</i>	1-5	11-50		
<i>Crossaster papposus</i>	1-5			
<i>Strongylocentrotus droebachiensis</i>	1-5	1-5		
<i>Halocynthia pyriformis</i>	1-5	1-5		
<i>Tautoglabrus adspersus</i>	1-5	1-5		
<i>Myoxocephalus</i> spp.		1-5		
<i>Pleuronectes americanus</i>	1-5			

Table 9 (Continued).

Transect T2	Waypoint 1		Excursion 3	
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	abundant	very abundant		
coralline red algae		abundant, patchy		
<i>Rhodomenia palmata</i>	1-5			
<i>Agarum cribrosum</i>	11-50	1-5		
hydroids	few	few		
<i>Obelia geniculata</i>	1-5			
<i>Suberites</i> spp.	11-50	1-5		
encrusting white	6-10	6-10		
<i>Aplysilla sulfurea</i>	1-5	1-5		
lumpy green sponge	1-5			
<i>Metridium senile</i>		1-5		
<i>Gersemia rubiformis</i>	1-5	1-5		
small white starfish	11-50	11-50		
<i>Henricia sanguinolenta</i>	6-10			
<i>Asterias vulgaris</i>	1-5	1-5		
<i>Porania insignis</i>		1-5		
<i>Strongylocentrotus droebachiensis</i>	6-10	6-10		
<i>Halocynthia pyriformis</i>	1-5	1-5		
<i>Boltenia ovifera</i>	1-5			
<i>Tautoglabrus adpersus</i>	51-100	51-100		
<i>Myoxocephalus</i> spp.	1-5			

Table 10. Taxa and their abundances at transect T2, waypoint 2, June 1995.

Transect T2	Waypoint 2			Excursion 2
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	rare			
coralline red algae	rare			
hydroids	rare			
<i>Suberites</i> spp.	11-50			
encrusting white	51-100			
encrusting tan sponge	1-5			
encrusting orange sponge	1-5			
<i>Aplysilla sulfurea</i>	1-5			
<i>Metridium senile</i>	1-5			
<i>Gersemia rubiformis</i>	6-10			
small white starfish	11-50			
<i>Strongylocentrotus droebachiensis</i>	1-5			
<i>Halocynthia pyriformis</i>	6-10			
<i>Tautoglabrus adspersus</i>	1-5			
<i>Myoxocephalus</i> spp.	1-5			

Waypoint 3 - 42°23.510'N, 70°47.394'W, depth about 84 - 91 ft (25 - 28 m)

Bottom time of the ROV was about 8 minutes during 1 excursion. The substratum was heterogeneous, consisting of a cobble pavement interrupted by scattered clusters of boulders; a heavy sediment drape was present. Filamentous red algae were abundant, whereas coralline red algae were rare. Encrusting white organisms, *Suberites*, and tan incrusting sponges were common in at least one of the 5-minute intervals. Cunnners were the predominant motile animals with abundances ranging from common to abundant; small white starfish ranked second with abundances ranging from few to common (Table 11).

The five still photographs from this waypoint did not reveal any additional taxa with the exception of a few whitish translucent encrusting organisms and gold encrusting sponges that could not be observed on the tape.

Table 11. Taxa and their abundances at transect T2, waypoint 3, June 1995.

Transect T2	Waypoint 3			Excursion 1
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	abundant	abundant		
coralline red algae		rare		
<i>Agarum cribrosum</i>	1-5			
<i>Rhodomenia palmata</i>	1-5			
hydroids	common, patchy	rare		
<i>Suberites</i> spp.	11-50	1-5		
encrusting white	11-50	11-50		
encrusting tan sponge	11-50	1-5		
<i>Metridium senile</i>	6-10	1-5		
<i>Urticina felina</i>	1-5			
<i>Gersemia rubiformis</i>	1-5			
small white starfish	11-50	6-10		
<i>Strongylocentrotus droebachiensis</i>	1-5			
<i>Halocynthia pyriformis</i>	1-5	1-5		
<i>Ciona intestinalis</i>	1-5			
<i>Tautoglabrus adspersus</i>	51-100	11-50		
<i>Macrozoarces americanus</i>	1-5			
? <i>Urophycis chuss</i>	1-5			

Waypoint 4 - 42°23.457'N, 70°47.244'W, depth about 93 ft (28 m)

Bottom time of the ROV was about 5 minutes during 1 excursion. The substratum consisted mostly of cobbles with a heavy sediment drape and some boulders. This area was very different from the previous one in terms of algal cover. Coralline algae were abundant, whereas filamentous algae were rare; a few dulse (*Rhodomenia palmata*) were also seen. There was a rich sessile epifauna as well; white encrusting organisms and small barnacles/spirorobids were abundant, *Suberites*, a tan sponge, and sea peaches (*Halocynthia pyriformis*) were common. The only ubiquitous motile animals were small white starfish that were common (Table 12).

Only one still photograph was taken at this waypoint, and it provided little information because the ROV was too high.

Table 12. Taxa and their abundances at transect T2, waypoint 4, June 1995.

Transect T2	Waypoint 4	Excursion 1			
Taxon	Abundance				
		Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	rare				
coralline red algae	abundant				
<i>Rhodymenia palmata</i>	1-5				
<i>Suberites</i> spp.	11-50				
encrusting white	51-100				
encrusting tan sponge	11-50				
encrusting orange sponge	1-5				
<i>Gersemia rubiformis</i>	1-5				
small barnacles/spirorbids	abundant				
<i>Modiolus modiolus</i>	1-5				
small white starfish	11-50				
<i>Henricia sanguinolenta</i>	1-5				
<i>Asterias vulgaris</i>	1-5				
<i>Strongylocentrotus droebachiensis</i>	1-5				
<i>Halocynthia pyriformis</i>	11-50				
<i>Tautoglabrus adspersus</i>	1-5				
<i>Myoxocephalus</i> spp.	1-5				

Waypoint 5 - 42°23.469'N, 70°46.839'W, depth about 101 ft (31 m)

Bottom time of the ROV was about 55 minutes during 3 excursions, with 2 minutes of no movement and about 7 minutes spent at the diffuser head. The substratum consisted of cobbles with a heavy sediment drape and half-buried boulders; some man-made debris was seen, including a soda can and several pieces of metal pipe. Algae were absent from this area, and the fauna was sparse. Hydroids ranged from rare to common, and encrusting white and orange tan organisms from absent to common. The most abundant motile animals were small white starfish and *Asterias*, both ranging from few in number to common in some places (Table 13).

The still photographs (18 frames) were similar to the video tape.

Table 13. Taxa and their abundances at transect T2, waypoint 5, June 1995.

Transect T2	Waypoint 5			Excursion 1
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
hydroids	rare		rare	rare
<i>Cerianthus borealis</i>	1-5	1-5	1-5	6-10
<i>Haliclona oculata</i>			1-5	
<i>Suberites</i> spp.		1-5	1-5	1-5
encrusting white	1-5		11-50	11-50
orange tan encrusting		1-5	11-50	11-50
encrusting orange sponge	6-10	1-5	1-5	1-5
<i>Myxicola infundibulum</i>		1-5		
small barnacles/spirorbids				few, patchy
<i>Balanus</i> spp.	1-5	1-5	1-5	1-5
<i>Homarus americanus</i>	1-5			
<i>Cancer</i> spp.		1-5	1-5	
<i>Modiolus modiolus</i>			1-5	
<i>Placopecten magellanicus</i>	1-5		1-5	
unidentified gastropod	1-5		1-5	
<i>Ilyanassa trivittata</i>				1-5
small white starfish	11-50	11-50	11-50	11-50
<i>Henricia sanguinolenta</i>	1-5			1-5
<i>Asterias vulgaris</i>	6-10	6-10	11-50	11-50
<i>Ophiopholis aculeata</i>			1-5	1-5
<i>Strongylocentrotus droebachiensis</i>				1-5
<i>Boltenia ovifera</i>	1-5			
<i>Tautoglabrus adspersus</i>	1-5	1-5	1-5	
<i>Myoxocephalus</i> spp.	1-5	1-5	1-5	1-5
orange+white bottom fish		1-5		
<i>Macrozoarces americanus</i>		1-5	1-5	

Table 13 (Continued).

Transect T2	Waypoint 5	Excursion 2		
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
hydroids	rare	rare	rare	
<i>Corymorpha pendula</i>		1-5		
<i>Cerianthus borealis</i>	1-5			
encrusting white	11-50	1-5		
orange tan encrusting	1-5	1-5	1-5	
<i>Myxicola infundibulum</i>	1-5			
<i>Balanus</i> spp.	1-5	1-5		
<i>Cancer</i> spp.	1-5			
<i>Neptunea decemcostata</i>	1-5			
small white starfish	11-50	6-10	1-5	
<i>Asterias vulgaris</i>	11-50	11-50	6-10	
<i>Leptasterias</i> spp.			1-5	
<i>Strongylocentrotus droebachiensis</i>	1-5			
unidentified tunicates	6-10			
<i>Tautoglabrus adspersus</i>	1-5			
<i>Myoxocephalus</i> spp.	1-5	1-5		
<i>Pleuronectes americanus</i>		1-5		

Table 13 (Continued).

Transect T2	Waypoint 5		Excursion 3	
Taxon	Abundance			
	Interval 1	Interval 2	Diffuser	Interval 4
hydroids		common, patchy	abundant	
<i>Cerianthus borealis</i>	1-5			
<i>Metridium senile</i>			11-50	
orange tan encrusting	1-5			
<i>Balanus</i> spp.	1-5			
<i>Neptunea decemcostata</i>	1-5			
small white starfish	11-50	6-10	6-10	
<i>Henricia sanguinolenta</i>	1-5			
<i>Asterias vulgaris</i>	6-10	11-50		
unidentified small fish		1-5		
unidentified large fish			6-10	
<i>Gadus morhua</i>			1-5	
<i>Tautoglabrus adspersus</i>	1-5	1-5		

Diffuser head - depth about 93 ft (28 m)

Bottom time of the ROV at the diffuser head and in its close vicinity was about 7 minutes. The substratum around the diffuser head consisted of man-made, very angular, cobble- to boulder-sized rocks; very little sediment was seen. These rocks were essentially devoid of epifauna, but a thick turf of hydroids could be seen on some of the walls of the diffuser head itself. In more protected areas around the future openings there were several frilly anemones (*Metridium senile*); a few small white starfish were also observed (Table 13).

No still photographs were taken at the diffuser head.

3.3 Transect T4

Transect T4 is located south of the diffuser and runs roughly parallel to it. Four waypoints along this transect were visited, starting at the nearshore end and moving toward the offshore end; the last of these waypoints (waypoint 4) was positioned inshore of waypoint 3 over the intersection of T4 with transect T6. The two middle waypoints (2 and 4) were on the top of the drumlin, while the two outer waypoints

(1 and 3) were about 6 m deeper on the flanks on either side. At the nearshore end of the transect, the bottom consisted of mixed boulders and cobbles with a generally light sediment drape; toward the offshore end it changed to mostly cobbles, sometimes forming a pavement, patches of gravel, and a moderate to heavy sediment drape. The intersection of transects T4 and T6 appears to be located in a boulder field surrounded by a more cobbly bottom. Overall, this transect ranked second in terms of species richness, mainly due to a rich algal cover and numerous crustaceans and starfish. The boulder field at the intersection of T4 and T6 had a very abundant, but less species rich flora and fauna (31 taxa total).

Waypoint 1 - 42°23.039'N, 70°46.493'W, depth about 94 - 98 ft (28 - 30 m)

Bottom time of the ROV was about 11 minutes during 1 excursion, with 2 minutes of video tape unsuitable for analysis. The substratum consisted of cobbles, boulders, some shell hash, and a moderate to heavy sediment drape. There was relatively little algal growth, with the only fairly widespread species being coralline algae that ranged from absent during one 5-minute interval to common in another. The predominant sessile animals were white encrusting organisms and *Suberites*, ranging from few or absent to common. The motile fauna was equally depauperate, with only small white starfish and cunner occurring in numbers ranging from few to common (Table 14).

On four of the five still photographs from this waypoint, the coralline algae did not only include the pinkish *Lithothamnion*, but also a second, maroon colored and very smooth species, *Peyssonellia* sp. On the video tapes, a distinction between these two kinds of coralline algae could not be made.

Waypoint 2 - 42°22.999'N, 70°46.868'W, depth about 70 - 77 ft (21 - 23 m)

Bottom time of the ROV was 36 minutes during 2 excursions. The substratum was a mixture of cobbles and boulders with a light to moderate sediment drape. The algal cover at this waypoint was generally rich, with both coralline and filamentous red algae being abundant in some areas and rare in others, indicating a patchy distribution. Dulse (*Rhodomenia palmata*) was also present in many areas, ranging from rare to common. The attached epifauna was rich as well; hydroids ranged from rare to abundant, and encrusting white organisms, *Suberites* and *Metridium* were few in number to common. The most abundant motile animals were cunner and sea urchins (*Strongylocentrotus droebachiensis*), both with a patchy distribution with numbers per 5-minute interval ranging from rare or few to abundant (Table 15).

Twelve still photographs were taken at this waypoint, and they revealed a number of yellow to brownish to red encrusting organisms not seen on the tape, a brachiopod on one exposure, and some serpulids.

Waypoint 3 - 42°22.847'N, 70°47.573'W, depth about 103 ft (31 m)

Bottom time of the ROV was 16 minutes during 1 excursion. The substratum was a cobble pavement with some boulders, light to heavy, silty sediment drape, and some shell hash. Algal cover was negligible, most likely due to the water depth. The only common sessile animals were the orange encrusting organism and small barnacles and/or spirorbids. The sea peach, *Halocynthia pyriformis* ranged from few to common. The motile fauna was dominated by small white starfish (common) and *Asterias vulgaris* (few to common) (Table 16).

The organisms identified from six still photographs from this waypoint were very similar to those observed on the video tape.

Table 14. Taxa and their abundances at transect T4, waypoint 1, June 1995.

Transect T4	Waypoint 1		Excursion 1	
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
coralline red algae		common		
hydroids	rare	rare		
<i>Suberites</i> spp.		11-50		
encrusting white	6-10	11-50		
encrusting tan sponge	1-5	6-10		
encrusting red		1-5		
white divided		11-50		
<i>Metridium senile</i>		6-10		
small barnacles/spirorbids	rare	rare		
<i>Homarus americanus</i>		1-5		
<i>Buccinum undatum</i>	1-5	1-5		
small white starfish	1-5	11-50		
<i>Henricia sanguinolenta</i>		1-5		
<i>Crossaster papposus</i>		1-5		
<i>Strongylocentrotus droebachiensis</i>		1-5		
<i>Halocynthia pyriformis</i>	1-5	1-5		
<i>Tautoglabrus adpersus</i>	1-5	11-50		
<i>Pleuronectes americanus</i>	1-5			
? <i>Hemirhamphus americanus</i>		1-5		

Table 15. Taxa and their abundances at transect T4, waypoint 1, June 1995.

Transect T4	Waypoint 2			Excursion 1
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	abundant	abundant	abundant	common to abundant
coralline red algae	common	common	common	common
<i>Rhodymenia palmata</i>	1-5		1-5	1-5
<i>Agarum cribrosum</i>	6-10	1-5	1-5	1-5
hydroids	abundant	few to common	few to common	common
<i>Suberites</i> spp.	6-10	1-5	11-50	51-100
encrusting white	11-50	6-10	11-50	11-50
encrusting tan sponge	1-5	1-5	1-5	11-50
<i>Aplysilla sulfurea</i>	11-50	1-5		1-5
encrusting orange sponge			1-5	1-5
white divided	11-50	6-10		1-5
<i>Metridium senile</i>			11-50	1-5
<i>Urticina felina</i>			1-5	
<i>Gersemia rubiformis</i>				1-5
small barnacles/spirorbids				common
<i>Modiolus modiolus</i>	6-10			
small white starfish	11-50	11-50	11-50	6-10
<i>Henricia sanguinolenta</i>	1-5		1-5	1-5
<i>Asterias vulgaris</i>	1-5			1-5
<i>Strongylocentrotus droebachiensis</i>	1-5	1-5	51-100	11-50
<i>Halocynthia pyriformis</i>	1-5	1-5	6-10	11-50
<i>Boltenia ovifera</i>			1-5	
<i>Tautoglabrus adpersus</i>	51-100	6-10	6-10	11-50
<i>Myoxocephalus</i> spp.				1-5

Table 15 (Continued).

Transect T4	Waypoint 2	Excursion 1			
Taxon	Abundance				
	Interval 5	Interval 6	Interval 7	Interval 8	
filamentous red algae	abundant				
coralline red algae	few to common				
<i>Rhodomenia palmata</i>	rare to common, patchy				
<i>Agarum cribrosum</i>	1-5				
hydroids	few				
<i>Suberites</i> spp.	11-50				
encrusting white	11-50				
encrusting tan sponge	1-5				
<i>Aplysilla sulfurea</i>	1-5				
<i>Metridium senile</i>	11-50				
<i>Urticina felina</i>	1-5				
<i>Gersemia rubiformis</i>	1-5				
small white starfish	11-50				
<i>Strongylocentrotus droebachiensis</i>	11-50				
<i>Halocynthia pyriformis</i>	6-10				
<i>Tautoglabrus adspersus</i>	11-50				
? <i>Centropristis striata</i>	11-50				
unidentified fish	1-5				

Table 15 (Continued).

Transect T4	Waypoint 2	Excursion 2		
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	few	common to abundant		
coralline red algae	abundant	common		
<i>Agarum cribrosum</i>	1-5	6-10		
<i>Rhodomenia palmata</i>	1-5			
hydroids		rare, patchy		
globular tan	1-5			
white divided		6-10		
<i>Suberites</i> spp.	11-50	11-50		
encrusting white	6-10	6-10		
encrusting orange	1-5			
encrusting tan sponge	1-5	1-5		
<i>Aplysilla sulfurea</i>		1-5		
<i>Halichondria panicea</i>		1-5		
<i>Metridium senile</i>	6-10			
<i>Gersemia rubiformis</i>	1-5	1-5		
<i>Balanus</i> spp.	1-5	1-5		
small barnacles/spirorbids	common	common		
<i>Modiolus modiolus</i>	6-10	1-5		
small white starfish	6-10	11-50		
<i>Henricia sanguinolenta</i>	1-5	1-5		
<i>Crossaster papposus</i>	1-5			
<i>Porania insignis</i>		1-5		
<i>Strongylocentrotus droebachiensis</i>	51-100	11-50		
<i>Halocynthia pyriformis</i>	11-50	1-5		
unidentified tunicate		1-5		
<i>Tautoglabrus adspersus</i>	11-50	11-50		
unidentified fish	1-5			

Table 16. Taxa and their abundances at transect T4, waypoint 3, June 1995.

Transect T4	Waypoint 3			Excursion 1
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
coralline red algae	rare	rare	rare	
<i>Agarum cribrosum</i>		1-5		
hydroids	rare	rare	rare	
<i>Suberites</i> spp.	1-5	1-5	1-5	
encrusting white	1-5	1-5		
encrusting orange sponge	11-50	11-50	1-5	
<i>Aplysilla sulfurea</i>	1-5			
<i>Cerianthus borealis</i>			1-5	
<i>Balanus</i> spp.		1-5		
small barnacles/spirorbids	common	common		
<i>Pagurus</i> spp.	1-5			
<i>Cancer</i> spp.		1-5		
<i>Buccinum undatum</i>	1-5			
<i>Placopecten magellanicus</i>	1-5	1-5	1-5	
small white starfish	11-50	11-50	11-50	
<i>Henricia sanguinolenta</i>	1-5	1-5	1-5	
<i>Asterias vulgaris</i>	1-5	1-5	11-50	
<i>Crossaster papposus</i>	1-5			
<i>Leptasterias</i> spp.	1-5			
<i>Strongylocentrotus droebachiensis</i>	11-50	11-50	6-10	
<i>Halocynthia pyriformis</i>	6-10	11-50	6-10	
<i>Tautoglabrus adspersus</i>	1-5	1-5	1-5	
<i>Pleuronectes americanus</i>	1-5			

Waypoint 4, Intersection T4/T6 - 42°22.948'N, 70°47.180'W, depth about 83 - 91 ft (25 - 28 m)
 Bottom time of the ROV was 40 about minutes during 2 excursions; 2 minutes of video footage were

unsuitable for analysis because the vehicle was too far off bottom. The substratum consisted almost entirely of boulders, resulting in a very high-relief topography. There was no or very little sediment present. The algal cover was rich and diverse; coralline algae were the most ubiquitous and abundant throughout. Dulse was patchily distributed but at least common and very abundant in some areas; filamentous red algae ranged from common to abundant, and shotgun kelp (*Agarum cribrosum*) ranged from few to abundant. The predominant sessile animals were hydroids, abundant throughout. A rich motile fauna was present as well, dominated by small white starfish (common to very abundant), cunner (few to abundant), and sea urchins (few to abundant). The lush flora and fauna gave this waypoint the appearance of a coral reef (Table 17).

Twenty still photographs were taken at this waypoint. Aside from gold encrusting sponges and whitish translucent encrusting organisms, brachiopods, and serpulids were among the organisms not observed on the video tape.

3.4 Transect T6

This transect runs along a drumlin top, parallel to the two northern transects T1 and T2 from west-northwest to east-southeast. It is located south of the diffuser and roughly east of T4, with which it intersects near the offshore end of the diffuser. All four waypoints along this transect are about 22 to 25 m deep and, with the exception of Waypoint 4 in the boulder field at the intersection with T4, are characterized by an essentially flat bottom with cobbles and gravel with relatively few algal and epifaunal colonizers. With only 28 taxa observed, this transect ranks a close second-to-last after T8 (see below). Except for sponges and starfish, both algae and epifauna were depauperate.

Waypoint 1 - 42°22.992'N, 70°47.665'W, depth about 95 ft (29 m)

Bottom time of the ROV was about 10 minutes during 1 excursion. The substratum was a cobble pavement with scattered boulders and moderate to light sediment drape. Algae were nearly absent, but there were numerous hydroids, ranging from rare to abundant. *Suberites* sp., white encrusting and orange tan encrusting organisms were common throughout, and sea peaches were common. The motile fauna was somewhat depauperate, with small white starfish and sea urchins (*Strongylocentrotus droebachiensis*) being common throughout and cunner (*Tautoglabrus adspersus*) ranging from few to common (Table 18).

Three still photographs taken at this waypoint revealed two specimens of daisy brittlestar (*Ophiopholis aculeata*), both of which were lying underneath rocks and only visible by the tips of some of their arms. Such delicate features could not be observed on the video tape. Some gold encrusting sponges, translucent encrusting organisms, and serpulid tubes were also seen.

Waypoint 2 - 42°22.821'N, 70°47.053'W, depth about 88 ft (27 m)

Bottom time of the ROV was about 17 minutes during 2 excursions. Both substratum and fauna were similar to waypoint 1; some shell hash was present in addition to a light to moderate sediment drape over the cobbles and boulders. Algae were rare or absent, but the sessile epifauna was abundant, dominated by white encrusting organisms (abundant to very abundant) and *Suberites* (common to very abundant). Orange tan encrusting organisms and hydroids were also widespread, ranging from few or common to abundant. The only motile animals occurring in noticeable numbers were again small white starfish, urchins, and cunner, all common (Table 19).

Table 17. Taxa and their abundances at the intersection T4/T6, June 1995.

Transect T4/T6	Waypoint 1			Excursion 1
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	moderate to abundant	moderate to abundant	moderate to abundant	moderate to abundant
coralline red algae	abundant	abundant	abundant	abundant
<i>Corallina officinalis</i>	11-50	6-10	1-5	
<i>Agarum cribrosum</i>	>100	51-100	51-100	11-50
<i>Rhodymenia palmata</i>	11-50	>100	11-50	11-50
<i>Obelia geniculata</i>	2 kelp fronds	5 kelp fronds	2 kelp fronds	
hydroids	abundant	abundant	abundant	abundant
<i>Suberites</i> spp.	1-5	1-5	1-5	
encrusting white	6-10	6-10	1-5	1-5
encrusting tan sponge	6-10	6-10	1-5	
encrusting orange	11-50	1-5	1-5	
<i>Halichondria panicea</i>	1-5	1-5	1-5	
orange tan encrusting	1-5	1-5	1-5	
<i>Metridium senile</i>	1-5			
<i>Gersemia rubiformis</i>		1-5	1-5	
<i>Balanus</i> spp.	1-5	1-5		
unidentified bryozoans	2 kelp fronds			
small white starfish	>100	>100	11-50	11-50
<i>Henricia sanguinolenta</i>	1-5	1-5	1-5	1-5
<i>Asterias vulgaris</i>	1-5			
<i>Pteraster militaria</i>		1-5	1-5	1-5
<i>Strongylocentrotus droebachiensis</i>	11-50	51-100	11-50	6-10
<i>Halocynthia pyriformis</i>	1-5	6-10	1-5	
<i>Boltenia ovifera</i>	1-5	1-5		1-5
<i>Tautoglabrus adspersus</i>	51-100	6-10	11-50	1-5
<i>Pleuronectes americanus</i>		1-5	1-5	
<i>Ulvaria subbifurcata</i>		1-5		
unidentified fish	1-5			

Table 17 (Continued).

Transect T4/T6	Waypoint 1			Excursion 2
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	common to abundant	common to abundant	common to abundant	common to abundant
coralline red algae	abundant	abundant	abundant	abundant
<i>Corallina officinalis</i>	11-50	6-10	6-10	1-5
<i>Agarum cribrosum</i>	11-50	51-100	51-100	6-10
<i>Rhodomenia palmata</i>	11-50	?abundant	abundant	?abundant
<i>Obelia geniculata</i>	1 kelp frond	1 kelp frond	11 kelp fronds 4 rocks	
hydroids	abundant	abundant	abundant	
<i>Suberites</i> spp.		1-5		
encrusting white	6-10	6-10	1-5	
encrusting tan sponge		1-5		
encrusting orange sponge	1-5	1-5	1-5	
<i>Halichondria panicea</i>	1-5			
orange tan encrusting	1-5	1-5	6-10	
<i>Metridium senile</i>	1-5	1-5	1-5	
<i>Gersemia rubiformis</i>	1-5	1-5		
<i>Modiolus modiolus</i>	1-5		1-5	1-5
<i>Balanus</i> spp.			1-5	1-5
<i>Lepas</i> spp.		1-5		
unidentified bryozoan			1 kelp frond	
small white starfish	51-100	>100	51-100	11-50
<i>Henricia sanguinolenta</i>	1-5	1-5	6-10	
<i>Pteraster militaria</i>	1-5	1-5		
<i>Strongylocentrotus droebachiensis</i>	11-50	6-10	1-5	
<i>Halocynthia pyriformis</i>	1-5	11-50	11-50	6-10
<i>Boltenia ovifera</i>	1-5	1-5	1-5	
<i>Tautoglabrus adspersus</i>	51-100	6-10	11-50	1-5
<i>Pleuronectes americanus</i>		1-5		

Table 18. Taxa and their abundances at transect T6, waypoint 1, June 1995.

Transect T6	Waypoint 1		Excursion 1	
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	few			
coralline red algae	common			
hydroids	abundant	rare to common		
<i>Suberites</i> spp.	51-100	11-50		
orange sponge	1-5			
lumpy orange	1-5	1-5		
encrusting white	11-50	11-50		
encrusting tan sponge	1-5			
encrusting orange sponge	11-50	11-50		
<i>Aplysilla sulfurea</i>	1-5	6-10		
orange-tan encrusting	11-50	11-50		
<i>Urticina felina</i>	1-5	1-5		
<i>Gersemia rubiformis</i>	1-5			
<i>Balanus</i> spp.	6-10			
Modiolus modiolus		1-5		
<i>Placopecten magellanicus</i>		1-5		
<i>Myxicola infundibulum</i>	1-5			
small white starfish	11-50	11-50		
<i>Henricia sanguinolenta</i>	6-10	1-5		
<i>Asterias vulgaris</i>	1-5			
<i>Crossaster papposus</i>	1-5			
<i>Strongylocentrotus droebachiensis</i>	6-10	11-50		
<i>Halocynthia pyriformis</i>	11-50	11-50		
<i>Boltenia ovifera</i>	1-5			
<i>Tautogolabrus adspersus</i>	11-50	1-5		
<i>Prionotus carolinus</i>	1-5			

Table 19. Taxa and their abundances at transect T6, waypoint 2, June 1995.

Transect T6	Waypoint 2	Excursion 1			
Taxon	Abundance				
	Interval 1	Interval 2	Interval 3	Interval 4	
filamentous red algae	rare				
coralline red algae	rare				
hydroids	common to abundant				
<i>Suberites</i> spp.	11-50				
encrusting white	51-100				
encrusting orange sponge	11-50				
encrusting orange tan	11-50				
<i>Aplysilla sulfurea</i>	1-5				
lumpy orange	1-5				
<i>Haliclona loosanoffi</i>	6-10				
unidentified sponge	1-5				
<i>Metridium senile</i>	11-50				
<i>Gersemia rubiformis</i>	11-50				
small white starfish	11-50				
<i>Henricia sanguinolenta</i>	6-10				
<i>Strongylocentrotus droebachiensis</i>	1-5				
<i>Halocynthia pyriformis</i>	11-50				
<i>Boltenia ovifera</i>	1-5				
<i>Tautoglabrus adspersus</i>	11-50				

Table 19 (Continued).

Transect T6	Waypoint 2		Excursion 2	
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	rare, patchy	rare		
coralline red algae	rare, patchy	rare		
hydroids	common	rare		
<i>Suberites</i> spp.	51-100	<100		
encrusting white	51-100	<100		
encrusting tan sponge		1-5		
encrusting orange sponge	6-10	6-10		
encrusting orange tan sponge	11-50	51-100		
<i>Aplysilla sulfurea</i>	1-5	1-5		
<i>Haliclona loosanoffi</i>	1-5	1-5		
lumpy orange	1-5			
<i>Gersemia rubiformis</i>	11-50	6-10		
unidentified anemone		1-5		
small white starfish	11-50	11-50		
<i>Henricia sanguinolenta</i>	6-10	6-10		
<i>Pteraster militaria</i>		1-5		
<i>Strongylocentrotus droebachiensis</i>	6-10	11-50		
<i>Halocynthia pyriformis</i>	11-50	11-50		
unidentified tunicate		1-5		
<i>Tautoglabrus adspersus</i>	11-50	11-50		

The eleven still photographs from this waypoint were particularly rich in encrusting organisms that were orange, yellow, or tan. While none of them could be identified to species, their diversity gave an impression of the number of species comprising such taxa as "orange encrusting" identified from video tapes. A number of brittlestars were seen as well as some sea lace and other encrusting organisms that might be bryozoans.

Waypoint 3 - 42°22.606'N, 70°46.114'W, depth about 82 - 87 ft (25 - 26 m)

Bottom time of the ROV was about 20 minutes during 1 excursion. The substratum consisted of gravel and cobbles with occasional boulders that had no or very little sediment drape. Algae were absent, and the epifauna was extremely depauperate. Only small barnacles/spirorbids were common throughout, and all motile animals were rare to few in number (Table 20).

Ten still photographs were taken at this waypoint which did not provide any additional information.

Waypoint 4 - see T4

3.5 Transect T7

This transect is one of two "control" sites located on drumlins near the diffuser but further away from it than transects T1 through T6. Only one waypoint was placed on this transect; its location was designed to be the shallowest point on the transect, representing the drumlin top. T7 is in close proximity of the historical hardbottom station E1 (Etter *et al.*, 1987) and roughly north of the diffuser. In terms of species richness, this transect resembled the intersection of transects T4 and T6, most likely because the bottom consisted of mostly boulders in both locations. Algae and sponges were well represented, whereas bivalve, tunicate, and starfish species were low in number.

Waypoint 1 - 42°24.509'N, 70°47.000'W, depth about 61 - 67 ft (18 - 20 m)

Bottom time of the ROV was 43 minutes during 2 excursions. The substratum consisted almost entirely of boulders, with few cobbles and very little sediment present. Coralline algae were by far the predominant attached organisms ranging from abundant to very abundant; filamentous red algae had a patchy distribution and ranged from rare to common. The attached epifauna was dominated by patchily distributed hydroids that ranged from rare to common. The community of motile animals was rich and diverse, with cunners being predominant (common to very abundant), followed by unidentified small white starfish and the sea urchin *Strongylocentrotus droebachiensis* (both common to abundant). Horse mussels (*Modiolus modiolus*) were also widespread, ranging from few to abundant (Table 21).

A total of 29 still photographs was taken at this waypoint. Three encrusting sponges could be identified that were not seen at the other transects, ranging in color from dark brownish red to tannish pink and tannish yellow. Some brachiopods and limpets (*Crepidula plana*) and a scale worm were also seen, all examples of organisms too well camouflaged to be detected on the video tape.

3.6 Transect T8

Transect T8 is the second control site, located roughly to the south of the diffuser. Again a single waypoint was positioned over the shallowest point of the transect which runs nearly perpendicular to the diffuser. T8 is close to the historical hardbottom stations G2 and G5 (Etter *et al.*, 1987). With respect to species richness, it resembles transect T6 and actually ranks lowest with only 27 observed taxa. There were no algae except for *Lithothamnion* and no tunicates except for *Aplidium* (the sea pork).

Waypoint 1 - 42°21.616'N, 70°48.952'W, depth about 88 - 93 ft (27 - 28 m)

Bottom time of the ROV was about 40 minutes during 2 excursions. In sharp contrast to the other "control" transect (T7, see above) the substratum at T8 consisted mostly of cobbles, often arranged in a pavement, with occasional boulders. Shell hash was observed frequently, and a moderate to heavy

Table 20. Taxa and their abundances at transect T6, waypoint 3, June 1995.

Transect T6	Waypoint 3		Excursion 1	
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
encrusting tan sponge			1-5	
encrusting orange sponge			1-5	
small barnacles/spirorbids	common, scattered			
<i>Placopecten magellanicus</i>		1-5		
small white starfish	1-5		1-5	
<i>Asterias vulgaris</i>	1-5	1-5		
<i>Halocynthia pyriformis</i>			1-5	1-5
<i>Tautoglabrus adpersus</i>		1-5		
<i>Myoxocephalus</i> spp.	1-5	1-5		1-5

Table 21. Taxa and their abundances at transect T7, waypoint 1, June 1995.

Transect T7	Waypoint 1			
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	rare, patchy	rare, patchy	rare, patchy	rare, patchy
coralline red algae	abundant	abundant	abundant	abundant
<i>Agarum cribrosum</i>		1-5		
hydroids	common	common	common	common
<i>Obelia geniculata</i>		1-5		
<i>Suberites</i> spp.	1-5	6-10		
encrusting white	6-10	1-5		6-10
encrusting orange sponge	1-5	1-5	1-5	1-5
encrusting orange tan	1-5			
<i>Aplysilla sulfurea</i>				1-5
<i>Phakellium ventilabrum</i>		1-5		
<i>Metridium senile</i>	1-5			
<i>Urticina felina</i>		1-5		
<i>Gersemia rubiformis</i>		1-5	1-5	
<i>Balanus</i> spp.	1-5	1-5		
<i>Modiolus modiolus</i>	6-10	11-50	11-50	6-10
<i>Tonicella marmorea</i>	1-5			
<i>Buccinum undatum</i>	1-5			
<i>Neptunea decemcostata</i>				1-5
small white starfish	11-50	51-100	51-100	11-50
<i>Ophiopholis aculeata</i>		1-5		
<i>Henricia sanguinolenta</i>	1-5	1-5		1-5
<i>Asterias vulgaris</i>			1-5	
<i>Strongylocentrotus droebachiensis</i>	11-50	11-50	11-50	11-50
<i>Halocynthia pyriformis</i>	6-10	1-5	1-5	6-10
<i>Tautoglabrus adspersus</i>	11-50	<100	<100	51-100
<i>Cyclopterus lumpus</i>	1-5			
<i>Gadus morhua</i>		1-5	1-5	

Table 21 (Continued).

Transect T7	Waypoint 1	Excursion 1			
Taxon	Abundance				
	Interval 5	Interval 6	Interval 7	Interval 8	
filamentous red algae	rare, patchy				
coralline red algae	abundant				
hydroids	common				
<i>Suberites</i> spp.	1-5				
globular orange	1-5				
encrusting white	6-10				
encrusting orange tan	6-10				
<i>Aplysilla sulfurea</i>	1-5				
pink fuzzy encrusting sponge	1-5				
<i>Metridium senile</i>	1-5				
<i>Urticina felina</i>	1-5				
<i>Homarus americanus</i>	1-5				
<i>Modiolus modiolus</i>	51-100				
small white starfish	51-100				
<i>Asterias vulgaris</i>	1-5				
<i>Strongylocentrotus droebachiensis</i>	51-100				
<i>Halocynthia pyriformis</i>	11-50				
<i>Tautoglabrus adspersus</i>	51-100				

Table 21 (Continued).

Transect T7	Waypoint 1		Excursion 2	
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
filamentous red algae	rare	rare, patchy to common	rare	rare
coralline red algae	very abundant	very abundant	very abundant	very abundant
<i>Agarum cribrosum</i>		11-50	1-5	1-5
hydroids	rare	common	rare	
<i>Obelia geniculata</i>		1-5		1-5
encrusting white	6-10	6-10	1-5	1-5
encrusting orange sponge	1-5		1-5	1-5
orange tan encrusting	1-5		1-5	
white divided	6-10	1-5		
<i>Phakellia ventilabrum</i>		1-5		
<i>Metridium senile</i>			1-5	
<i>Urticina felina</i>	1-5			
<i>Gersemia rubiformis</i>		1-5		
small barnacles/spirorbids			rare	rare
<i>Balanus</i> spp.	1-5		1-5	
<i>Modiolus modiolus</i>	51-100	11-50	11-50	11-50
<i>Buccinum undatum</i>			1-5	
small white starfish	11-50	51-100	51-100	51-100
<i>Henricia sanguinolenta</i>	1-5		1-5	1-5
<i>Asterias vulgaris</i>	1-5	1-5	1-5	1-5
<i>Strongylocentrotus droebachiensis</i>	51-100	11-50	11-50	11-50
<i>Halocynthia pyriformis</i>	11-50	1-5	6-10	6-10
<i>Tautoglabrus adspersus</i>	11-50	11-50	11-50	11-50
<i>Gadus morhua</i>		1-5		

sediment drape was present. Coralline algae were abundant throughout. The epifauna was relatively sparse; the most widespread attached animals were white and orange-tan encrusting organisms (rare to common) and small barnacles/spirorbids (absent to common). Motile animals seen relatively frequently included *Asterias vulgaris*, small white starfish which were probably juvenile *Asterias*, and sea urchins (all rare or absent to common) (Table 22).

A variety of encrusting organisms could be observed on the 24 still photographs from this waypoint, including brown, pink, and ivory ones, that were most likely reported as part of other taxa from the video tape.

Table 22. Taxa and their abundances at transect T8, waypoint 1, June 1995.

Transect T8	Waypoint 1			
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
coralline red algae	abundant	abundant	abundant	abundant
hydroids	rare	rare	rare	rare
encrusting white	1-5	1-5	6-10	11-50
orange tan encrusting	6-10	1-5	6-10	1-5
fuzzy tan encrusting		1-5		1-5
brown encrusting			1-5	
<i>Halichondria panicea</i>			1-5	
<i>Urticina felina</i>	1-5			
<i>Gersemia rubiformis</i>	1-5	1-5		
small barnacles/spirorbids	common	common	common	common
<i>Myxicola infundibulum</i>			1-5	
<i>Cancer</i> spp.	1-5			
<i>Homarus americanus</i>		1-5		
<i>Modiolus modiolus</i>	1-5	1-5		
small white starfish	1-5	6-10	11-50	11-50
<i>Henricia sanguinolenta</i>	1-5			
<i>Asterias vulgaris</i>	1-5	1-5	6-10	11-50
<i>Solaster endeca</i>				1-5
<i>Strongylocentrotus droebachiensis</i>	11-50	11-50	6-10	6-10
unidentified bryozoans	1-5	6-10	6-10	6-10
<i>Aplidium</i> spp.		1-5	1-5	
<i>Myoxocephalus</i> spp.		1-5	1-5	1-5
<i>Pleuronectes americanus</i>			1-5	
unidentified small fish				1-5

Table 22 (Continued).

Transect T8	Waypoint 1		Excursion 2	
Taxon	Abundance			
	Interval 1	Interval 2	Interval 3	Interval 4
coralline red algae	abundant	abundant	abundant	abundant
hydroids	rare	rare	rare	rare
<i>Suberites</i> spp.		1-5	1-5	
encrusting white	11-50	11-50	11-50	11-50
encrusting tan sponge		1-5		
<i>Halichondria panicea</i>				1-5
orange tan encrusting	6-10	11-50	6-10	11-50
fuzzy tan/pink encrusting sponge		1-5	1-5	1-5
<i>Metridium senile</i>			1-5	
<i>Urticina felina</i>		1-5		
<i>Modiolus modiolus</i>	1-5	1-5		1-5
<i>Placopecten magellanicus</i>	1-5	1-5		
<i>Tonicella marmorea</i>	1-5			
small white starfish	11-50	11-50	11-50	11-50
<i>Henricia sanguinolenta</i>	1-5	6-10		
<i>Asterias vulgaris</i>	6-10	11-50	11-50	11-50
<i>Strongylocentrotus droebachiensis</i>	11-50	11-50	11-50	11-50
unidentified bryozons	6-10	6-10	6-10	11-50
<i>Aplidium</i> spp.	1-5			
<i>Tautogolabrus adspersus</i>			1-5	1-5
<i>Myoxocephalus</i> spp.	1-5	1-5		1-5
<i>Pleuronectes americanus</i>				1-5
unidentified small fish	1-5	1-5		

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Appendix A

MWRA HOM 1995
 Hardbottom Survey June 1995
 Transect T1
 Waypoint 1 Excursion 1
 Interval 1 - 09:04-09:12

Taxon	Count
coralline algae	rare
filamentous red algae	rare to common
hydroids	abundant
small barnacles	common
<i>Rhodymenia palmata</i>	1
<i>Suberites spp.</i>	27
white encrusting	79
orange tan encrusting	40
<i>Metridium senile</i>	7
<i>Gersemia rubiformis</i>	1
<i>Placopecten magellanicus</i>	2
<i>Balanus spp.</i>	1
small white starfish	46
<i>Henricia sanguinolenta</i>	2
<i>Asterias vulgaris</i>	2
<i>Strongylocentrotus droebachiensis</i>	15
<i>Halocynthia pyriformis</i>	27
<i>Boltenia ovifera</i>	1
<i>Tautogolabrus adspersus</i>	12
<i>Myoxocephalus spp.</i>	1
total countable	264

END OF TRANSECT 1 WAYPOINT1

Transect T1
 Waypoint 2 Excursion 1
 Interval 1 - 09:30-09:35

Taxon	Count
coralline algae	rare
hydroids	rare
small barnacles	common
<i>Suberites spp.</i>	5
white encrusting	18
orange tan encrusting	19
<i>Urticina felina</i>	1
small white starfish	9
<i>Asterias vulgaris</i>	8
<i>Strongylocentrotus droebachiensis</i>	2
<i>Halocynthia pyriformis</i>	25
<i>Tautogolabrus adspersus</i>	2
total countable	89

Transect T1

Waypoint 2 Excursion 1

Interval 2 - 09:35-09:40

Taxon	Count
coralline algae	rare
hydroids	rare
<i>Suberites spp.</i>	2
white encrusting	6
orange tan encrusting	15
<i>Metridium senile</i>	1
<i>Neptunea decemcostata</i>	1
<i>Balanus spp.</i>	3
<i>Cancer spp.</i>	2
<i>Homarus americanus</i>	1
small white starfish	26
<i>Asterias vulgaris</i>	6
<i>Strongylocentrotus droebachiensis</i>	2
<i>Halocynthia pyriformis</i>	11
<i>Myoxocephalus spp.</i>	3
total countable	79

Transect T1

Waypoint 2 Excursion 2

Interval 1 - 12:15-12:20

Taxon	Count
coralline algae	rare
filamentous red algae	common
hydroids	few
<i>Suberites spp.</i>	1
white encrusting	12
orange tan encrusting	18
<i>Metridium senile</i>	5
<i>Gersemia rubiformis</i>	5
small white starfish	79
<i>Asterias vulgaris</i>	9
<i>Strongylocentrotus droebachiensis</i>	44
<i>Halocynthia pyriformis</i>	4
<i>Tautogolabrus adspersus</i>	25
total countable	202

Transect T1

Waypoint 2 Excursion 2

Interval 2 - 12:20-12:25

Taxon	Count
coralline algae	rare
filamentous red algae	common
hydroids	few
<i>Suberites spp.</i>	3
white encrusting	8

orange tan encrusting	24
<i>Metridium senile</i>	1
<i>Urticina felina</i>	1
<i>Diadumene leucolena</i>	1
small white starfish	12
<i>Asterias vulgaris</i>	4
<i>Strongylocentrotus droebachiensis</i>	17
<i>Halocynthia pyriformis</i>	9
<i>Tautogolabrus adspersus</i>	39
total countable	119

Transect T1

Waypoint 2 Excursion 2

Interval 3 - 12:25-12:29

Taxon	Count
coralline algae	rare
filamentous red algae	common
hydroids	few
<i>Suberites spp.</i>	5
white encrusting	4
orange tan encrusting	11
<i>Metridium senile</i>	2
small white starfish	23
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	3
<i>Strongylocentrotus droebachiensis</i>	23
<i>Halocynthia pyriformis</i>	4
<i>Tautogolabrus adspersus</i>	39
total countable	115

END OF TRANSECT T1 WAYPOINT 2

Transect T1

Waypoint 3 Excursion 1

Interval 1 - 10:05-10:10

Taxon	Count
coralline algae	very abundant
filamentous red algae	rare
hydroids	rare
white encrusting	6
orange tan encrusting	1
<i>Modiolus modiolus</i>	24
small white starfish	22
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	21
<i>Halocynthia pyriformis</i>	1
<i>Tautogolabrus adspersus</i>	10
small fish	1
total countable	87

Transect T1

Waypoint 3 Excursion 1

Interval 2 - 10:10-10:15

Taxon	Count
coralline algae	abundant
filamentous red algae	rare
hydroids	common
white encrusting	1
orange tan encrusting	5
<i>Gersemia rubiformis</i>	5
<i>Modiolus modiolus</i>	230
<i>Balanus spp.</i>	4
small white starfish	62
<i>Asterias vulgaris</i>	4
<i>Strongylocentrotus droebachiensis</i>	61
<i>Tautogolabrus adspersus</i>	3
total countable	375

Transect T1

Waypoint 3 Excursion 1

Interval 3 - 10:15-10:20

Taxon	Count
coralline algae	abundant
hydroids	rare
<i>Notoacmaea testudinalis</i>	2
<i>Modiolus modiolus</i>	3
<i>Balanus spp.</i>	3
small white starfish	20
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	64
<i>Tautogolabrus adspersus</i>	2
<i>Myxocephalus spp.</i>	1
total countable	96

Transect T1

Waypoint 3 Excursion 1

Interval 4 - 10:20-10:24

Taxon	Count
coralline algae	abundant
filamentous red algae	rare
hydroids	few
white encrusting	6
<i>Modiolus modiolus</i>	5
<i>Balanus spp.</i>	3
small white starfish	22
<i>Strongylocentrotus droebachiensis</i>	58
<i>Tautogolabrus adspersus</i>	21

total countable 115
END OF TRANSECT T1 WAYPOINT 3

Transect T1

Waypoint 4 Excursion 1

Interval 1 - 10:48-11:06

Taxon	Count
coralline algae	abundant
filamentous red algae	rare
hydroids	rare
<i>Halichondria panicea</i>	1
<i>Gersemia rubiformis</i>	2
<i>Urticina felina</i>	1
<i>Modiolus modiolus</i>	186
<i>Notoacmaea testudinalis</i>	16
<i>Balanus spp.</i>	1
small white starfish	15
<i>Asterias vulgaris</i>	2
<i>Strongylocentrotus droebachiensis</i>	92
<i>Halocynthia pyriformis</i>	1
<i>Tautogolabrus adspersus</i>	10
<i>Myoxocephalus spp.</i>	2
total countable	329

END OF TRANSECT 1 WAYPOINT 4

Transect T1

Waypoint 5 Excursion 1

Interval 1 - 11:30-11:35

Taxon	Count
coralline algae	rare
hydroids	few
small barnacles	common
<i>Suberites spp.</i>	2
white encrusting	7
orange tan encrusting	25
<i>Halichondria panicea</i>	1
<i>Haliclona spp.</i>	1
<i>Gersemia rubiformis</i>	1
<i>Urticina felina</i>	7
<i>Balanus spp.</i>	2
small white starfish	10
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	6
<i>Strongylocentrotus droebachiensis</i>	21
<i>Halocynthia pyriformis</i>	10
<i>Tautogolabrus adspersus</i>	3
small fish	1
total countable	98

Transect T1

Waypoint 5 Excursion 1

Interval 2 - 11:35-11:40

Taxon	Count
coralline algae	rare
hydroids	few
white encrusting	10
orange tan encrusting	48
<i>Gersemia rubiformis</i>	1
? <i>Arctica islandica</i>	1
<i>Modiolus modiolus</i>	1
<i>Neptunea decemcostata</i>	1
<i>Balanus</i> spp.	13
small white starfish	27
<i>Asterias vulgaris</i>	9
<i>Strongylocentrotus droebachiensis</i>	33
? <i>Cucumaria frondosa</i>	1
<i>Halocynthia pyriformis</i>	6
<i>Aplidium</i> spp.	1
<i>Tautogolabrus adspersus</i>	4
total countable	156

Transect T1

Waypoint 5 Excursion 1

Interval 3 - 11:40-11:45

Taxon	Count
coralline algae	rare
hydroids	few
small barnacles	abundant
white encrusting	12
orange tan encrusting	53
<i>Buccinum undatum</i>	2
<i>Modiolus modiolus</i>	1
<i>Placopecten magellanicus</i>	1
<i>Balanus</i> spp.	12
small white starfish	11
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	8
<i>Strongylocentrotus droebachiensis</i>	43
<i>Halocynthia pyriformis</i>	6
<i>Tautogolabrus adspersus</i>	1
<i>Myoxocephalus</i> spp.	1
total countable	152

END OF TRANSECT T1

Transect T2

Waypoint 1 Excursion 1

Interval 1 - 13:31-13:36

Taxon	Count
filamentous red algae	few
hydroids	few
small barnacles	abundant
<i>Suberites spp.</i>	28
white encrusting	15
orange tan encrusting	1
<i>Gersemia rubiformis</i>	3
<i>Metridium senile</i>	1
<i>Modiolus modiolus</i>	1
small white starfish	30
<i>Henricia sanguinolenta</i>	5
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	16
<i>Halocynthia pyriformis</i>	10
total countable	111

Transect T2

Waypoint 1 Excursion 1

Interval 2 - 13:36-13:40

Taxon	Count
filamentous red algae	abundant
hydroids	few
small barnacles	few
<i>Suberites spp.</i>	8
<i>Gersemia rubiformis</i>	1
<i>Metridium senile</i>	1
small white starfish	5
<i>Henricia sanguinolenta</i>	2
<i>Strongylocentrotus droebachiensis</i>	2
<i>Halocynthia pyriformis</i>	1
<i>Tautogolabrus adspersus</i>	1
total countable	21

Transect T2

Waypoint 1 Excursion 2

Interval 1 - 13:49-13:54

Taxon	Count
hydroids	rare
small barnacles	common
<i>Suberites spp.</i>	4
white encrusting	10
<i>Metridium senile</i>	1
small white starfish	29
<i>Henricia sanguinolenta</i>	3
<i>Asterias vulgaris</i>	2
<i>Strongylocentrotus droebachiensis</i>	5

<i>Crossaster papposus</i>	1
<i>Halocynthia pyriformis</i>	2
<i>Tautogolabrus adspersus</i>	2
<i>Pleuronectes americanus</i>	1
total countable	60

Transect T2

Waypoint 1 Excursion 2

Interval 2 - 13:54-14:01

Taxon	Count
coralline algae	rare
hydroids	rare
small barnacles	common
<i>Metridium senile</i>	1
<i>Urticina felina</i>	1
<i>Neptunea decemcostata</i>	1
small white starfish	11
<i>Henricia sanguinolenta</i>	2
<i>Asterias vulgaris</i>	14
<i>Strongylocentrotus droebachiensis</i>	3
<i>Halocynthia pyriformis</i>	1
<i>Tautogolabrus adspersus</i>	3
<i>Myoxocephalus spp.</i>	1
total countable	38

Transect T2

Waypoint 1 Excursion 3

Interval 1 - 14:12-14:17

Taxon	Count
filamentous red algae	abundant
hydroids	few
<i>Agarum cribrosum</i>	13
<i>Rhodymenia palmata</i>	3
green lumpy sponge	1
<i>Aplysilla sulfurea</i>	1
<i>Suberites spp.</i>	12
white encrusting	6
<i>Obelia geniculata</i>	3
<i>Gersemia rubiformis</i>	3
small white starfish	29
<i>Henricia sanguinolenta</i>	9
<i>Asterias vulgaris</i>	2
<i>Strongylocentrotus droebachiensis</i>	7
<i>Boltenia ovifera</i>	1
<i>Halocynthia pyriformis</i>	2
<i>Tautogolabrus adspersus</i>	56
<i>Myoxocephalus spp.</i>	1
total countable	149

Transect T2

Waypoint 1 Excursion 3

Interval 2 - 14:17-14:22

Taxon	Count
coralline algae	abundant
filamentous red algae	very abundant
hydroids	few
<i>Agarum cribrosum</i>	2
<i>Aplysilla sulfurea</i>	1
<i>Suberites spp.</i>	5
white encrusting	6
<i>Gersemia rubiformis</i>	5
<i>Metridium senile</i>	3
small white starfish	14
<i>Asterias vulgaris</i>	2
<i>Porania insignis</i>	1
<i>Strongylocentrotus droebachiensis</i>	6
<i>Halocynthia pyriformis</i>	2
<i>Tautogolabrus adspersus</i>	55
total countable	102

END OF TRANSECT T2 WAYPOINT 1

Transect T2

Waypoint 2 Excursion 1

no data

Transect T2

Waypoint 2 Excursion 2

Interval 1 - 14:51-14:56

Taxon	Count
coralline algae	rare
filamentous red algae	rare
hydroids	rare
<i>Aplysilla sulfurea</i>	1
<i>Suberites spp.</i>	26
white encrusting	55
orange encrusting	4
tan encrusting	5
<i>Gersemia rubiformis</i>	7
<i>Metridium senile</i>	1
small white starfish	15
<i>Strongylocentrotus droebachiensis</i>	3
<i>Halocynthia pyriformis</i>	10
<i>Tautogolabrus adspersus</i>	4
<i>Myoxocephalus spp.</i>	1
total countable	132

END OF TRANSECT T2 WAYPOINT 2

Transect T2

Waypoint 3 Excursion 1

Interval 1 - 15:15-15:20

Taxon	Count
filamentous red algae	abundant
hydroids	common
<i>Agarum cribrosum</i>	1
<i>Rhodymenia palmata</i>	1
<i>Suberites spp.</i>	16
white encrusting	37
tan encrusting	19
<i>Gersemia rubiformis</i>	4
<i>Metridium senile</i>	8
<i>Urticina felina</i>	1
small white starfish	13
<i>Strongylocentrotus droebachiensis</i>	1
<i>Halocynthia pyriformis</i>	5
<i>Ciona intestinalis</i>	1
<i>Macrozoarces americanus</i>	1
? <i>Urophycis chuss</i>	1
<i>Tautogolabrus adspersus</i>	89
total countable	198

Transect T2

Waypoint 3 Excursion 1

Interval 2 - 15:20-15:23

Taxon	Count
coralline algae	abundant
filamentous red algae	rare
hydroids	few
<i>Suberites spp.</i>	2
white encrusting	26
tan encrusting	3
<i>Metridium senile</i>	1
small white starfish	8
<i>Halocynthia pyriformis</i>	3
<i>Tautogolabrus adspersus</i>	46
total countable	89

END OF TRANSECT T2 WAYPOINT 3

Transect T2

Waypoint 4 Excursion 1

Interval 1 - 16:03-16:08

Taxon	Count
coralline algae	abundant
filamentous red algae	rare
small barnacles	abundant

<i>Rhodymenia palmata</i>	5
<i>Suberites spp.</i>	37
white encrusting	74
tan encrusting	21
orange encrusting	3
<i>Gersemia rubiformis</i>	5
<i>Modiolus modiolus</i>	1
small white starfish	14
<i>Henricia sanguinolenta</i>	5
<i>Asterias vulgaris</i>	4
<i>Strongylocentrotus droebachiensis</i>	3
<i>Halocynthia pyriformis</i>	11
<i>Myoxocephalus spp.</i>	2
<i>Tautogolabrus adspersus</i>	2
total countable	187
END OF TRANSECT T2 WAYPOINT 4	

Transect T2

Waypoint 5 Excursion 1

Interval 1 - 09:56-10:02

Taxon	Count
hydroids	rare
white encrusting	1
orange encrusting	7
<i>Cerianthus borealis</i>	3
unidentified gastropod	1
<i>Placopecten magellanicus</i>	1
<i>Balanus spp.</i>	2
<i>Homarus americanus</i>	1
small white starfish	19
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	8
<i>Boltenia ovifera</i>	1
<i>Myoxocephalus spp.</i>	1
<i>Tautogolabrus adspersus</i>	1
total countable	47

Transect T2

Waypoint 5 Excursion 1

Interval 2 - 10:02-10:07

Taxon	Count
<i>Suberites spp.</i>	3
orange encrusting	4
orange tan encrusting	2
<i>Cerianthus borealis</i>	4
<i>Myxicola infundibulum</i>	2
<i>Balanus spp.</i>	3
<i>Cancer spp.</i>	1

small white starfish	27
<i>Asterias vulgaris</i>	9
<i>Myoxocephalus spp.</i>	1
<i>Tautogolabrus adspersus</i>	1
<i>Macrozoarces americanus</i>	1
unidentified fish	1
total countable	59

Transect T2

Waypoint 5 Excursion 1

Interval 3 - 10:07-10:12

Taxon	Count
hydroids	rare
<i>Suberites spp.</i>	5
white encrusting	14
orange encrusting	1
orange tan encrusting	13
<i>Haliclona oculata</i>	1
<i>Cerianthus borealis</i>	1
unidentified gastropod	1
<i>Placopecten magellanicus</i>	2
<i>Modiolus modiolus</i>	1
<i>Balanus spp.</i>	4
<i>Cancer spp.</i>	2
small white starfish	28
<i>Ophiopholis aculeata</i>	1
<i>Asterias vulgaris</i>	21
<i>Macrozoarces americanus</i>	1
<i>Myoxocephalus spp.</i>	1
<i>Tautogolabrus adspersus</i>	1
total countable	98

Transect T2

Waypoint 5 Excursion 1

Interval 4 - 10:12-10:17

Taxon	Count
hydroids	rare
small barnacles	few
<i>Suberites spp.</i>	2
white encrusting	11
orange encrusting	1
orange tan encrusting	13
<i>Cerianthus borealis</i>	6
<i>Ilyanassa trivittata</i>	1
<i>Balanus spp.</i>	1
small white starfish	21
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	22

<i>Strongylocentrotus droebachiensis</i>	1
<i>Ophiopholis aculeata</i>	1
<i>Myoxocephalus spp.</i>	1
total countable	82

Transect T2

Waypoint 5 Excursion 2

Interval 1 - 10:18-10:23

Taxon	Count
hydroids	rare
white encrusting	13
orange tan encrusting	5
<i>Cerianthus borealis</i>	2
<i>Neptunea decemcostata</i>	1
<i>Myxicola infundibulum</i>	1
<i>Balanus spp.</i>	5
<i>Cancer spp.</i>	1
small white starfish	22
<i>Asterias vulgaris</i>	21
<i>Strongylocentrotus droebachiensis</i>	1
?juvenile tunicates	10
<i>Myoxocephalus spp.</i>	1
<i>Tautogolabrus adspersus</i>	1
total countable	84

Transect T2

Waypoint 5 Excursion 2

Interval 2 - 10:23-10:28

Taxon	Count
<i>Corymorpha pendula</i>	3
white encrusting	3
orange tan encrusting	2
<i>Balanus spp.</i>	4
small white starfish	10
<i>Asterias vulgaris</i>	17
<i>Myoxocephalus spp.</i>	1
<i>Pleuronectes americanus</i>	1
total countable	41

Transect T2

Waypoint 5 Excursion 2

Interval 3 - 10:28-10:32

Taxon	Count
orange tan encrusting	1
small white starfish	2
<i>Leptasterias spp.</i>	1
<i>Asterias vulgaris</i>	6
total countable	10

Transect T2

Waypoint 5 Excursion 3

Interval 1 - 10:32-10:37

Taxon	Count
orange tan encrusting	4
<i>Cerianthus borealis</i>	1
<i>Neptunea decemcostata</i>	1
<i>Balanus spp.</i>	2
small white starfish	15
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	8
<i>Tautogolabrus adspersus</i>	1
total countable	33

Transect T2

Waypoint 5 Excursion 3

Interval 2 - 10:37-10:45

Taxon	Count
hydroids	common
small white starfish	9
<i>Asterias vulgaris</i>	20
small fish	1
<i>Tautogolabrus adspersus</i>	1
total countable	31

Transect T2

Waypoint 5 Excursion 3

Interval 3 - 10:45-10:52 Diffuser

Taxon	Count
hydroids	abundant
<i>Metridium senile</i>	13
small white starfish	8
large fish	7
<i>Gadus morhua</i>	1
total countable	29

END OF TRANSECT T2

Transect T4

Waypoint 1 Excursion 1

Interval 1 - 11:46-11:51

Taxon	Count
hydroids	few
small barnacles	few
white encrusting	7
tan encrusting	2
<i>Buccinum undatum</i>	1
small white starfish	3

<i>Halocynthia pyriformis</i>	2
<i>Pleuronectes americanus</i>	1
<i>Tautogolabrus adspersus</i>	2
total countable	18

Transect T4

Waypoint 1 Excursion 1

Interval 2 - 11:51-11:57

Taxon	Count
coralline algae	few to common
hydroids	few
small barnacles	few
<i>Suberites spp.</i>	14
white encrusting	15
tan encrusting	6
red encrusting	1
white divided	15
<i>Metridium senile</i>	9
<i>Buccinum undatum</i>	1
<i>Homarus americanus</i>	1
small white starfish	16
<i>Henricia sanguinolenta</i>	2
<i>Solaster endeca</i>	1
<i>Strongylocentrotus droebachiensis</i>	1
<i>Halocynthia pyriformis</i>	4
<i>Prionotus carolinus</i>	1
<i>Tautogolabrus adspersus</i>	11
total countable	98

END OF TRANSECT T4 WAYPOINT 1

Transect T4

Waypoint 2 Excursion 1

Interval 1 - 14:01-14:06

Taxon	Count
filamentous red algae	abundant
hydroids	abundant
<i>Agarum cribrosum</i>	7
<i>Rhodymenia palmata</i>	3
<i>Suberites spp.</i>	8
white encrusting	11
tan encrusting	2
<i>Aplysilla sulfurea</i>	11
white divided	11
<i>Modiolus modiolus</i>	7
small white starfish	13
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	1

<i>Halocynthia pyriformis</i>	5
<i>Tautogolabrus adspersus</i>	57
total countable	138

Transect T4

Waypoint 2 Excursion 1

Interval 2 - 14:06-14:11

Taxon	Count
coralline algae	common
filamentous red algae	abundant
hydroids	few to common
<i>Agarum cribrosum</i>	2
<i>Suberites spp.</i>	5
white encrusting	8
tan encrusting	2
<i>Aplysilla sulfurea</i>	1
white divided	10
small white starfish	14
<i>Strongylocentrotus droebachiensis</i>	1
<i>Halocynthia pyriformis</i>	3
<i>Tautogolabrus adspersus</i>	7
total countable	53

Transect T4

Waypoint 2 Excursion 1

Interval 3 - 14:15-14:20

Taxon	Count
coralline algae	common
filamentous red algae	abundant
hydroids	few
<i>Agarum cribrosum</i>	2
<i>Rhodomenia palmata</i>	2
<i>Suberites spp.</i>	13
white encrusting	11
tan encrusting	4
orange encrusting	4
<i>Metridium senile</i>	13
<i>Urticina felina</i>	2
small white starfish	22
<i>Henricia sanguinolenta</i>	3
<i>Strongylocentrotus droebachiensis</i>	51
<i>Halocynthia pyriformis</i>	6
<i>Boltenia ovifera</i>	1
<i>Tautogolabrus adspersus</i>	6
total countable	140

Transect T4

Waypoint 2 Excursion 1

Interval 4 - 14:20-14:25

Taxon	Count
coralline algae	few
filamentous red algae	few to abundant
hydroids	few
small barnacles	common
<i>Agarum cribrosum</i>	1
<i>Rhodymenia palmata</i>	10
<i>Suberites spp.</i>	55
white encrusting	15
tan encrusting	11
orange encrusting	3
<i>Aplysilla sulfurea</i>	1
white divided	1
<i>Metridium senile</i>	1
<i>Gersemia rubiformis</i>	5
small white starfish	9
<i>Henricia sanguinolenta</i>	2
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	30
<i>Halocynthia pyriformis</i>	12
<i>Myoxocephalus spp.</i>	1
<i>Tautogolabrus adspersus</i>	17
total countable	175

Transect T4

Waypoint 2 Excursion 1

Interval 5 - 14:25-14:32

Taxon	Count
coralline algae	common
filamentous red algae	abundant
hydroids	few
<i>Rhodymenia palmata</i>	few to common
<i>Agarum cribrosum</i>	4
<i>Suberites spp.</i>	28
white encrusting	12
tan encrusting	5
<i>Aplysilla sulfurea</i>	2
<i>Metridium senile</i>	12
<i>Urticina felina</i>	1
<i>Gersemia rubiformis</i>	2
small white starfish	14
<i>Strongylocentrotus droebachiensis</i>	25
<i>Halocynthia pyriformis</i>	8
? <i>Centropristis striata</i>	12
<i>Tautogolabrus adspersus</i>	14
unidentified fish	1
total countable	140

Transect T4
 Waypoint 2 Excursion 2
 Interval 1 - 14:59-15:04

Taxon	Count
coralline algae	abundant
filamentous red algae	few
small barnacles	common
<i>Rhodymenia palmata</i>	3
<i>Agarum cribrosum</i>	2
<i>Suberites spp.</i>	16
white encrusting	7
tan encrusting	4
orange encrusting	1
tan globular	1
<i>Metridium senile</i>	7
<i>Gersemia rubiformis</i>	1
<i>Modiolus modiolus</i>	8
<i>Balanus spp.</i>	2
small white starfish	10
<i>Henricia sanguinolenta</i>	4
<i>Crossaster papposus</i>	1
<i>Strongylocentrotus droebachiensis</i>	58
<i>Halocynthia pyriformis</i>	11
<i>Tautogolabrus adspersus</i>	39
unidentified fish	2
total countable	177

Transect T4
 Waypoint 2 Excursion 2
 Interval 2 - 15:04-15:09

Taxon	Count
coralline algae	common
filamentous red algae	common to abundant
hydroids	rare
small barnacles	common
<i>Agarum cribrosum</i>	6
<i>Suberites spp.</i>	14
white encrusting	7
tan encrusting	2
<i>Aplysilla sulfurea</i>	1
<i>Halichondria panicea</i>	1
white divided	10
<i>Gersemia rubiformis</i>	1
<i>Modiolus modiolus</i>	1
<i>Balanus spp.</i>	1
small white starfish	18
<i>Henricia sanguinolenta</i>	5

<i>Porania insignis</i>	1
<i>Strongylocentrotus droebachiensis</i>	18
<i>Halocynthia pyriformis</i>	3
?tunicate	1
<i>Tautogolabrus adspersus</i>	24
total countable	114
END OF TRANSECT T4 WAYPOINT 2	

Transect T4

Waypoint 3 Excursion 1

Interval 1 - 15:34-15:39

Taxon	Count
coralline algae	rare
hydroids	rare
small barnacles	common
<i>Suberites spp.</i>	2
white encrusting	1
orange encrusting	11
<i>Aplysilla sulfurea</i>	1
<i>Buccinum undatum</i>	1
<i>Placopecten magellanicus</i>	3
hermit crab	1
small white starfish	19
<i>Henricia sanguinolenta</i>	5
<i>Asterias vulgaris</i>	3
<i>Leptasterias spp.</i>	1
<i>Crossaster papposus</i>	1
<i>Strongylocentrotus droebachiensis</i>	13
<i>Halocynthia pyriformis</i>	9
<i>Tautogolabrus adspersus</i>	1
<i>Pleuronectes americanus</i>	1
total countable	73

Transect T4

Waypoint 3 Excursion 1

Interval 2 - 15:39-15:44

Taxon	Count
coralline algae	rare
hydroids	rare
small barnacles	common
<i>Agarum cribrosum</i>	1
<i>Suberites spp.</i>	1
white encrusting	1
orange encrusting	11
<i>Placopecten magellanicus</i>	2
<i>Balanus spp.</i>	3
<i>Cancer spp.</i>	1
small white starfish	12

<i>Henricia sanguinolenta</i>	4
<i>Asterias vulgaris</i>	4
<i>Strongylocentrotus droebachiensis</i>	21
<i>Halocynthia pyriformis</i>	19
<i>Tautogolabrus adspersus</i>	3
total countable	83

Transect T4

Waypoint 3 Excursion 1

Interval 3 - 15:44-15:50

Taxon	Count
coralline algae	rare
hydroids	rare
<i>Suberites spp.</i>	1
orange encrusting	5
<i>Cerianthus borealis</i>	1
<i>Placopecten magellanicus</i>	5
small white starfish	18
<i>Henricia sanguinolenta</i>	4
<i>Asterias vulgaris</i>	16
<i>Strongylocentrotus droebachiensis</i>	9
<i>Halocynthia pyriformis</i>	6
<i>Tautogolabrus adspersus</i>	2
total countable	67

END OF TRANSECT T4

Intersection T4/T6

Waypoint 1 Excursion 1

Interval 1 - 12:17-12:24

Taxon	Count
coralline algae	abundant
filamentous red algae	few to abundant
hydroids	abundant
<i>Agarum cribrosum</i>	113
<i>Rhodymenia palmata</i>	17
<i>Corallina officinalis</i>	19
<i>Obelia geniculata</i>	2
<i>Suberites spp.</i>	3
white encrusting	6
tan encrusting	6
orange tan encrusting	4
orange encrusting	11
<i>Halichondria panicea</i>	4
<i>Metridium senile</i>	2
<i>Balanus spp.</i>	2
small white starfish	115
<i>Henricia sanguinolenta</i>	3
<i>Asterias vulgaris</i>	1

<i>Strongylocentrotus droebachiensis</i>	30
unidentified bryozoans	2
<i>Halocynthia pyriformis</i>	2
<i>Boltenia ovifera</i>	1
unidentified fish	1
<i>Tautogolabrus adspersus</i>	52
total countable	396

Intersection T4/T6

Waypoint 1 Excursion 1

Interval 2 - 12:24-12:29

Taxon	Count
coralline algae	abundant
filamentous red algae	few to abundant
hydroids	abundant
<i>Agarum cribrosum</i>	77
<i>Rhodymenia palmata</i>	133
<i>Corallina officinalis</i>	6
<i>Obelia geniculata</i>	5
<i>Suberites spp.</i>	1
white encrusting	6
tan encrusting	6
orange tan encrusting	3
orange encrusting	4
<i>Halichondria panicea</i>	1
<i>Gersemia rubiformis</i>	1
<i>Balanus spp.</i>	2
small white starfish	158
<i>Henricia sanguinolenta</i>	4
<i>Pteraster militaria</i>	5
<i>Strongylocentrotus droebachiensis</i>	65
<i>Halocynthia pyriformis</i>	7
<i>Boltenia ovifera</i>	3
<i>Pleuronectes americanus</i>	1
<i>Tautogolabrus adspersus</i>	10
<i>Ulvaria subbifurcata</i>	1
total countable	499

Intersection T4/T6

Waypoint 1 Excursion 1

Interval 3 - 12:29-12:34

Taxon	Count
coralline algae	abundant
filamentous red algae	few to abundant
hydroids	abundant
<i>Agarum cribrosum</i>	77
<i>Rhodymenia palmata</i>	45
<i>Corallina officinalis</i>	3

<i>Obelia geniculata</i>	2
<i>Suberites spp.</i>	1
white encrusting	5
tan encrusting	1
orange tan encrusting	3
orange encrusting	1
<i>Halichondria panicea</i>	5
<i>Gersemia rubiformis</i>	1
small white starfish	43
<i>Henricia sanguinolenta</i>	4
<i>Pteraster militaria</i>	1
<i>Strongylocentrotus droebachiensis</i>	25
<i>Halocynthia pyriformis</i>	4
<i>Pleuronectes americanus</i>	1
<i>Tautogolabrus adspersus</i>	43
total countable	265

Intersection T4/T6

Waypoint 1 Excursion 1

Interval 4 - 12:34-12:38

Taxon	Count
coralline algae	abundant
filamentous red algae	few to abundant
hydroids	abundant
<i>Agarum cribrosum</i>	44
<i>Rhodymenia palmata</i>	20
white encrusting	2
small white starfish	15
<i>Henricia sanguinolenta</i>	1
<i>Pteraster militaria</i>	1
<i>Strongylocentrotus droebachiensis</i>	9
<i>Boltenia ovifera</i>	1
<i>Tautogolabrus adspersus</i>	4
total countable	97

Intersection T4/T6

Waypoint 1 Excursion 2

Interval 1 - 12:38-12:43

Taxon	Count
coralline algae	abundant
filamentous red algae	few to abundant
hydroids	abundant
<i>Agarum cribrosum</i>	45
<i>Rhodymenia palmata</i>	50
<i>Corallina officinalis</i>	11
<i>Obelia geniculata</i>	1
white encrusting	8
orange tan encrusting	4

orange encrusting	1
<i>Halichondria panicea</i>	3
<i>Metridium senile</i>	1
<i>Gersemia rubiformis</i>	1
<i>Modiolus modiolus</i>	1
small white starfish	98
<i>Henricia sanguinolenta</i>	1
<i>Pteraster militaria</i>	1
<i>Strongylocentrotus droebachiensis</i>	15
<i>Halocynthia pyriformis</i>	2
<i>Boltenia ovifera</i>	1
<i>Tautogolabrus adspersus</i>	65
total countable	309

Intersection T4/T6
Waypoint 1 Excursion 2
Interval 2 - 12:43-12:48

Taxon	Count
coralline algae	abundant
filamentous red algae	few to abundant
hydroids	abundant
<i>Rhodymenia palmata</i>	?abundant
<i>Agarum cribrosum</i>	52
<i>Corallina officinalis</i>	8
<i>Obelia geniculata</i>	1
<i>Suberites spp.</i>	1
white encrusting	6
tan encrusting	1
orange tan encrusting	2
orange encrusting	4
<i>Metridium senile</i>	1
<i>Gersemia rubiformis</i>	1
<i>Lepas spp.</i>	1
small white starfish	123
<i>Henricia sanguinolenta</i>	2
<i>Pteraster militaria</i>	2
<i>Strongylocentrotus droebachiensis</i>	7
<i>Halocynthia pyriformis</i>	15
<i>Boltenia ovifera</i>	5
<i>Pleuronectes americanus</i>	1
<i>Tautogolabrus adspersus</i>	10
total countable	243

Intersection T4/T6
Waypoint 1 Excursion 2
Interval 3 - 12:48-12:54

Taxon	Count
coralline algae	abundant

filamentous red algae	few to abundant
hydroids	abundant
<i>Rhodomenia palmata</i>	?abundant
<i>Agarum cribrosum</i>	76
<i>Corallina officinalis</i>	6
<i>Obelia geniculata</i>	15
white encrusting	4
orange tan encrusting	9
orange encrusting	1
<i>Metridium senile</i>	2
<i>Modiolus modiolus</i>	2
<i>Balanus spp.</i>	4
small white starfish	90
<i>Henricia sanguinolenta</i>	6
<i>Strongylocentrotus droebachiensis</i>	1
unidentified bryozoans	1
<i>Halocynthia pyriformis</i>	13
<i>Boltenia ovifera</i>	5
<i>Tautogolabrus adspersus</i>	12
total countable	247

Intersection T4/T6

Waypoint 1 Excursion 2

Interval 4 - 12:54-12:57

Taxon	Count
coralline algae	abundant
filamentous red algae	few to abundant
hydroids	abundant
<i>Rhodomenia palmata</i>	?abundant
<i>Agarum cribrosum</i>	8
<i>Corallina officinalis</i>	3
<i>Modiolus modiolus</i>	1
<i>Balanus spp.</i>	1
small white starfish	28
<i>Henricia sanguinolenta</i>	5
<i>Halocynthia pyriformis</i>	9
<i>Tautogolabrus adspersus</i>	2
total countable	57

END OF INTERSECTION T4/T6

Transect T6

Waypoint 1 Excursion 1

Interval 1 - 16:30-16:35

Taxon	Count
coralline algae	common
filamentous red algae	few
hydroids	abundant
<i>Suberites spp.</i>	53

white encrusting	39
tan encrusting	2
orange encrusting	23
orange tan encrusting	42
<i>Aplysilla sulfurea</i>	6
orange sponge	1
orange lumpy sponge	3
<i>Urticina felina</i>	1
<i>Gersemia rubiformis</i>	1
<i>Myxicola infundibulum</i>	1
<i>Balanus spp.</i>	7
small white starfish	33
<i>Henricia sanguinolenta</i>	7
<i>Asterias vulgaris</i>	3
<i>Crossaster papposus</i>	1
<i>Strongylocentrotus droebachiensis</i>	10
<i>Halocynthia pyriformis</i>	21
<i>Boltenia ovifera</i>	1
<i>Tautogolabrus adspersus</i>	21
<i>Prionotus carolinus</i>	1
total countable	277

Transect T6

Waypoint 1 Excursion 1

Interval 2 - 16:35-16:40

Taxon	Count
hydroids	rare to few
<i>Suberites spp.</i>	35
white encrusting	28
orange encrusting	19
orange tan encrusting	41
<i>Aplysilla sulfurea</i>	6
orange lumpy sponge	1
<i>Urticina felina</i>	4
<i>Placopecten magellanicus</i>	1
<i>Modiolus modiolus</i>	1
small white starfish	21
<i>Henricia sanguinolenta</i>	4
<i>Strongylocentrotus droebachiensis</i>	15
<i>Halocynthia pyriformis</i>	21
<i>Tautogolabrus adspersus</i>	5
total countable	202

END OF TRANSECT T6 WAYPOINT 1

Transect T6

Waypoint 2 Excursion 1

Interval 1 - 17:23-17:28

Taxon	Count
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coralline algae	rare
filamentous red algae	rare
hydroids	common to abundant
<i>Suberites spp.</i>	28
white encrusting	77
orange encrusting	21
orange tan encrusting	17
<i>Aplysilla sulfurea</i>	2
unidentified sponge	1
orange lumpy sponge	1
<i>Haliclona loosanoffi</i>	7
<i>Metridium senile</i>	11
<i>Gersemia rubiformis</i>	17
small white starfish	14
<i>Henricia sanguinolenta</i>	10
<i>Strongylocentrotus droebachiensis</i>	4
<i>Halocynthia pyriformis</i>	27
<i>Boltenia ovifera</i>	2
<i>Tautogolabrus adspersus</i>	11
total countable	250

Transect T6

Waypoint 2 Excursion 1

Interval 2 - 17:35-17:42

Taxon	Count
coralline algae	rare
filamentous red algae	rare
hydroids	common
<i>Suberites spp.</i>	53
white encrusting	83
orange encrusting	6
orange tan encrusting	27
<i>Aplysilla sulfurea</i>	2
orange lumpy sponge	1
<i>Haliclona loosanoffi</i>	5
<i>Gersemia rubiformis</i>	19
small white starfish	25
<i>Henricia sanguinolenta</i>	10
<i>Strongylocentrotus droebachiensis</i>	10
<i>Halocynthia pyriformis</i>	22
<i>Tautogolabrus adspersus</i>	16
total countable	279

Transect T6

Waypoint 2 Excursion 1

Interval 3 - 17:42-17:47

Taxon	Count
coralline algae	rare

filamentous red algae	rare
hydroids	few
<i>Suberites spp.</i>	101
white encrusting	152
tan encrusting	2
orange encrusting	9
orange tan encrusting	81
<i>Aplysilla sulfurea</i>	3
<i>Haliclona loosanoffi</i>	1
unidentified anemone	1
<i>Gersemia rubiformis</i>	9
small white starfish	16
<i>Henricia sanguinolenta</i>	6
<i>Pteraster militaria</i>	1
<i>Strongylocentrotus droebachiensis</i>	23
<i>Halocynthia pyriformis</i>	46
unidentified tunicate	1
<i>Tautogolabrus adspersus</i>	12
total countable	464
END OF TRANSECT T6 WAYPOINT 2	

Transect T6

Waypoint 3 Excursion 1

Interval 1 - 18:13-18:18

Taxon	Count
small barnacles	common
small white starfish	2
<i>Asterias vulgaris</i>	3
<i>Myoxocephalus spp.</i>	1
total countable	6

Transect T6

Waypoint 3 Excursion 1

Interval 2 - 18:18-18:23

Taxon	Count
<i>Placopecten magellanicus</i>	3
<i>Asterias vulgaris</i>	1
<i>Tautogolabrus adspersus</i>	1
<i>Myoxocephalus spp.</i>	1
total countable	6

Transect T6

Waypoint 3 Excursion 1

Interval 3 - 18:18-18:23

Taxon	Count
tan encrusting	1
orange encrusting	2
small white starfish	1

<i>Halocynthia pyriformis</i>	2
total countable	6

Transect T6

Waypoint 3 Excursion 1

Interval 4 - 18:28-18:33

Taxon	Count
<i>Halocynthia pyriformis</i>	1
<i>Myoxocephalus spp.</i>	1
total countable	2

END OF TRANSECT T6

Transect T7

Waypoint 1 Excursion 1

Interval 1 - 08:18-08:23

Taxon	Count
coralline algae	abundant
filamentous red algae	rare
hydroids	common
<i>Suberites spp.</i>	2
white encrusting	6
orange encrusting	4
orange tan encrusting	1
<i>Metridium senile</i>	1
<i>Tonicella marmorea</i>	2
<i>Buccinum undatum</i>	1
<i>Modiolus modiolus</i>	7
<i>Balanus spp.</i>	1
small white starfish	49
<i>Henricia sanguinolenta</i>	2
<i>Strongylocentrotus droebachiensis</i>	26
<i>Halocynthia pyriformis</i>	8
<i>Cyclopterus lumpus</i>	1
<i>Tautogolabrus adspersus</i>	27
total countable	138

Transect T7

Waypoint 1 Excursion 1

Interval 2 - 08:23-08:28

Taxon	Count
coralline algae	abundant
filamentous red algae	rare
hydroids	common
<i>Agarum cribrosum</i>	4
<i>Obelia geniculata</i>	1
<i>Suberites spp.</i>	6
white encrusting	4
orange encrusting	4

<i>Phakellium ventilabrum</i>	1
<i>Gersemia rubiformis</i>	3
<i>Urticina felina</i>	1
<i>Modiolus modiolus</i>	19
<i>Balanus spp.</i>	1
small white starfish	52
<i>Henricia sanguinolenta</i>	1
<i>Ophiopholis aculeata</i>	1
<i>Strongylocentrotus droebachiensis</i>	30
<i>Halocynthia pyriformis</i>	5
<i>Gadus morhua</i>	2
<i>Tautogolabrus adspersus</i>	109
total countable	244

Transect T7

Waypoint 1 Excursion 1

Interval 3 - 08:28-08:33

Taxon	Count
coralline algae	abundant
filamentous red algae	rare
hydroids	common
orange encrusting	1
<i>Gersemia rubiformis</i>	1
<i>Modiolus modiolus</i>	22
small white starfish	57
<i>Asterias vulgaris</i>	3
<i>Strongylocentrotus droebachiensis</i>	44
<i>Halocynthia pyriformis</i>	5
<i>Gadus morhua</i>	1
<i>Tautogolabrus adspersus</i>	107
total countable	241

Transect T7

Waypoint 1 Excursion 1

Interval 4 - 08:33-08:38

Taxon	Count
coralline algae	abundant
filamentous red algae	rare
hydroids	common
white encrusting	6
orange encrusting	3
<i>Aplysilla sulfurea</i>	2
<i>Neptunea decemcostata</i>	1
<i>Modiolus modiolus</i>	10
small white starfish	43
<i>Henricia sanguinolenta</i>	2
<i>Strongylocentrotus droebachiensis</i>	24
<i>Halocynthia pyriformis</i>	7

<i>Tautogolabrus adspersus</i>	98
total countable	196

Transect T7

Waypoint 1 Excursion 1

Interval 5 - 08:38-08:42

Taxon	Count
coralline algae	abundant
hydroids	common
small barnacles	few
<i>Suberites spp.</i>	3
white encrusting	10
<i>Aplysilla sulfurea</i>	1
orange tan encrusting	7
pink encrusting sponge	1
orange globular	1
<i>Metridium senile</i>	2
<i>Urticina felina</i>	4
<i>Modiolus modiolus</i>	55
<i>Homarus americanus</i>	1
small white starfish	57
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	63
<i>Halocynthia pyriformis</i>	16
<i>Tautogolabrus adspersus</i>	55
total countable	277

Transect T7

Waypoint 1 Excursion 2

Interval 1 - 08:42-08:48

Taxon	Count
coralline algae	very abundant
filamentous red algae	rare
hydroids	rare
white divided	9
white encrusting	10
orange encrusting	3
orange tan encrusting	2
<i>Urticina felina</i>	2
<i>Modiolus modiolus</i>	83
<i>Balanus spp.</i>	2
small white starfish	48
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	3
<i>Strongylocentrotus droebachiensis</i>	95
<i>Halocynthia pyriformis</i>	12
<i>Tautogolabrus adspersus</i>	36
total countable	306

Transect T7

Waypoint 1 Excursion 2

Interval 2 - 08:48-08:53

Taxon	Count
coralline algae	very abundant
filamentous red algae	rare to common
hydroids	few
<i>Agarum cribrosum</i>	12
<i>Obelia geniculata</i>	1
white divided	5
white encrusting	7
<i>Phakellium ventilabrum</i>	3
<i>Gersemia rubiformis</i>	2
<i>Modiolus modiolus</i>	25
small white starfish	69
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	12
<i>Halocynthia pyriformis</i>	2
<i>Tautogolabrus adspersus</i>	35
<i>Gadus morhua</i>	1
total countable	175

Transect T7

Waypoint 1 Excursion 2

Interval 3 - 08:53-08:58

Taxon	Count
coralline algae	abundant
filamentous red algae	abundant
hydroids	few
small barnacles	rare
<i>Agarum cribrosum</i>	2
white encrusting	1
orange encrusting	1
orange tan encrusting	2
<i>Metridium senile</i>	2
<i>Buccinum undatum</i>	1
<i>Modiolus modiolus</i>	18
<i>Balanus spp.</i>	1
small white starfish	82
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	2
<i>Strongylocentrotus droebachiensis</i>	30
<i>Halocynthia pyriformis</i>	6
<i>Tautogolabrus adspersus</i>	19
total countable	168

Transect T7

Waypoint 1 Excursion 2

Interval 4 - 08:58-09:01

Taxon	Count
coralline algae	abundant
hydroids	few
small barnacles	rare
<i>Agarum cribrosum</i>	1
<i>Obelia geniculata</i>	1
white encrusting	3
orange encrusting	3
<i>Modiolus modiolus</i>	26
small white starfish	65
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	2
<i>Strongylocentrotus droebachiensis</i>	20
<i>Halocynthia pyriformis</i>	7
<i>Tautoglabrus adspersus</i>	27
total countable	156

END OF TRANSECT T7

Transect T8

Waypoint 1 Excursion 1

Interval 1 - 14:04-14:09

Taxon	Count
coralline algae	abundant
hydroids	rare
small barnacles	common
white encrusting	5
orange tan encrusting	7
<i>Urticina felina</i>	1
<i>Gersemia rubiformis</i>	1
<i>Modiolus modiolus</i>	2
<i>Cancer spp.</i>	1
small white starfish	2
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	2
<i>Strongylocentrotus droebachiensis</i>	11
unidentified bryozoans	3
total countable	36

Transect T8

Waypoint 1 Excursion 1

Interval 2 - 14:09-14:14

Taxon	Count
coralline algae	abundant
hydroids	rare
small barnacles	common
white encrusting	5

orange tan encrusting	4
<i>Gersemia rubiformis</i>	1
<i>Modiolus modiolus</i>	2
?spirorbids	2
<i>Homarus americanus</i>	1
small white starfish	8
<i>Asterias vulgaris</i>	4
<i>Strongylocentrotus droebachiensis</i>	12
unidentified bryozoans	7
<i>Aplidium spp.</i>	1
<i>Myoxocephalus spp.</i>	1
total countable	48

Transect T8

Waypoint 1 Excursion 1

Interval 3 - 14:14-14:19

Taxon	Count
coralline algae	abundant
hydroids	rare
small barnacles	common
white encrusting	7
orange tan encrusting	6
tan encrusting sponge	3
<i>Halichondria panicea</i>	1
<i>Myxocola infundibulum</i>	1
small white starfish	11
<i>Asterias vulgaris</i>	8
<i>Strongylocentrotus droebachiensis</i>	7
unidentified bryozoans	9
<i>Aplidium spp.</i>	3
<i>Pleuronectes americanus</i>	1
<i>Myoxocephalus spp.</i>	1
total countable	58

Transect T8

Waypoint 1 Excursion 1

Interval 4 - 14:19-14:25

Taxon	Count
coralline algae	abundant
hydroids	rare
small barnacles	common
white encrusting	20
orange tan encrusting	4
small white starfish	20
<i>Asterias vulgaris</i>	14
<i>Solaster endeca</i>	1
<i>Strongylocentrotus droebachiensis</i>	8
unidentified bryozoans	10

<i>Myoxocephalus</i> spp.	4
small fish	1
total countable	82

Transect T8

Waypoint 1 Excursion 2

Interval 1 - 14:25-14:29

Taxon	Count
coralline algae	abundant
hydroids	rare
small barnacles	common
white encrusting	16
orange tan encrusting	8
<i>Tonicella marmorea</i>	1
<i>Placopecten magellanicus</i>	2
<i>Modiolus modiolus</i>	2
small white starfish	20
<i>Henricia sanguinolenta</i>	3
<i>Asterias vulgaris</i>	9
<i>Strongylocentrotus droebachiensis</i>	19
unidentified bryozoans	8
<i>Aplidium</i> spp.	1
<i>Myoxocephalus</i> spp.	4
small fish	2
total countable	95

Transect T8

Waypoint 1 Excursion 2

Interval 1 - 14:29-14:34

Taxon	Count
coralline algae	abundant
hydroids	rare
small barnacles	common
<i>Suberites</i> spp.	1
white encrusting	16
tan encrusting	2
orange tan encrusting	11
tan encrusting sponge	1
<i>Urticina felina</i>	1
<i>Modiolus modiolus</i>	3
<i>Placopecten magellanicus</i>	2
small white starfish	16
<i>Henricia sanguinolenta</i>	7
<i>Asterias vulgaris</i>	11
<i>Strongylocentrotus droebachiensis</i>	31
unidentified bryozoans	8
<i>Myoxocephalus</i> spp.	2
small fish	1

total countable 113

Transect T8

Waypoint 1 Excursion 2

Interval 2 - 14:34-14:39

Taxon	Count
coralline algae	abundant
hydroids	rare
small barnacles	common
<i>Suberites spp.</i>	1
white encrusting	18
orange brown encrusting	2
orange tan encrusting	9
<i>Metridium senile</i>	4
small white starfish	12
<i>Asterias vulgaris</i>	25
<i>Strongylocentrotus droebachiensis</i>	31
unidentified bryozoans	9
<i>Tautogolabrus adspersus</i>	3
total countable	114

Transect T8

Waypoint 1 Excursion 2

Interval 3 - 14:39-14:45

Taxon	Count
coralline algae	abundant
hydroids	rare
small barnacles	common
white encrusting	20
orange tan encrusting	11
brownish encrusting sponge	3
<i>Halichondria panicea</i>	1
<i>Modiolus modiolus</i>	1
small white starfish	11
<i>Asterias vulgaris</i>	14
<i>Strongylocentrotus droebachiensis</i>	28
unidentified bryozoans	12
<i>Tautogolabrus adspersus</i>	3
<i>Myoxocephalus spp.</i>	1
<i>Pleuronectes americanus</i>	1
total countable	106

END OF DATA

Appendix B

MWRA HOM 1995
Hardbottom Survey, Still Photographs
Transect T1

Waypoint 1 Excursion 1
Roll 1 Frame 2 - 09:10
N 154906.67, E 557310.35
cobble, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	rare
hydroids	common
spirorbids	few
<i>Peyssonellia spp.</i>	rare
yellow tan encrusting sponge	2
serpulids	few
small white starfish	3
<i>Strongylocentrotus droebachiensis</i>	2
<i>Didemnum albidum</i>	1

Transect T1
Waypoint 1 Excursion 1
Roll 1 Frame 3 - 09:12
N 154904.13, E 557304.74

Taxon	Count
<i>Lithothamnion spp.</i>	rare
hydroids	common
white encrusting sponge	5
thin gold encrusting sponge	2
spirorbids	few
serpulids	few
<i>Asterias spp. juvenile</i>	1
<i>Strongylocentrotus droebachiensis</i>	2

Transect T1
Waypoint 2 Excursion 1
Roll 1 Frame 4 - 09:37
N 154987.09, E 557100.78
boulders and cobbles, moderate to heavy sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	rare
hydroids	few
spirorbids	common
orange tan encrusting	1
<i>Modiolus modiolus</i>	1
small white starfish	5
<i>Henricia sanguinolenta</i>	1
<i>Didemnum albidum</i>	5

Transect T1
Waypoint 2 Excursion 1
Roll 1 Frame 4A - 09:37
position not available
boulders and cobbles, moderate to heavy sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	rare
hydroids	few

spirorbids	common
orange tan encrusting	1
<i>Modiolus modiolus</i>	1
small white starfish	5
<i>Henricia sanguinolenta</i>	1
<i>Didemnum albidum</i>	5

Transect T1

Waypoint 2 Excursion 1

Roll 1 Frame 5 - 09:37

N 154986.55, E 557099.69

boulders and cobbles, heavy sediment dusting (mat)

Taxon	Count
<i>Lithothamnion spp.</i>	rare
hydroids	few
spirorbids	few
tannish yellow encrusting	3
<i>Homarus americanus</i>	1
small white starfish	3

Transect T1

Waypoint 2 Excursion 1

Roll 1 Frame 6 - 09:38

N 154982.66, E 557104.35

boulders and cobbles, heavy sediment dusting

Taxon	Count
hydroids	few
spirorbids	few
tan encrusting sponge	5
bright orange encrusting sponge	1
<i>Cancer spp.</i>	1
small white starfish	4
? <i>Didemnum albidum</i>	1

Transect T1

Waypoint 2 Excursion 1

Roll 1 Frame 7 - 09:40

N 154971.68, E 557050.23

boulders and cobbles, heavy sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	rare
hydroids	few
white encrusting sponge	1
spirorbids	few
serpulids	1
<i>Modiolus modiolus</i>	1
small white starfish	3
? <i>Didemnum albidum</i>	1
<i>Myoxocephalus octodecimspinosus</i>	1

Transect T1

Waypoint 2 Excursion 1

Roll 1 Frame 7A - 09:40

boulders and cobbles, heavy sediment dusting

position not available

Taxon	Count
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<i>Lithothamnion</i> spp.	rare
hydroids	few
gold encrusting sponge	1
orange tan encrusting	1
small white starfish	1
<i>Asterias</i> spp. juvenile	1
? <i>Didemnum albidum</i>	3
<i>Myoxocephalus octodecimspinosus</i>	1

Transect T1

Waypoint 3 Excursion 1

Roll 1 Frame 8 - 10:07

position not available

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	very abundant
hydroids	few
<i>Modiolus modiolus</i>	6
<i>Balanus</i> spp.	1
small white starfish	9
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	2
<i>Aplidium</i> spp.	1

Transect T1

Waypoint 3 Excursion 1

Roll 1 Frame 9 - 10:13

N 155356.08, E 556576.92

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	very abundant
hydroids	few
spirorbids	few
<i>Tonicella marmorea</i>	1
<i>Modiolus modiolus</i>	10
<i>Balanus</i> spp.	2
small white starfish	3
<i>Strongylocentrotus droebachiensis</i>	1

Transect T1

Waypoint 3 Excursion 1

Roll 1 Frame 10 - 10:17

N 155152.71, E 556807.67

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	very abundant
small white starfish	1
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	2

Transect T1

Waypoint 3 Excursion 1

Roll 1 Frame 11 - 10:18

N 155162.65, E 556793.72

boulder, no sediment

Taxon	Count
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<i>Lithothamnion</i> spp.	very abundant	
<i>Balanus</i> spp.		1
small white starfish		2
<i>Strongylocentrotus droebachiensis</i>		5

Transect T1

Waypoint 3 Excursion 1
 Roll 1 Frame 12 - 10:19
 N 155259.84, E 556813.05
 boulders, cobbles, and gravel, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
hydroids	common
small barnacles	few
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	3

Transect T1

Waypoint 3 Excursion 1
 Roll 1 Frame 13 - 10:19
 N 155120.58, E 556836.25
 boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
hydroids	common
spirorbids	rare
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	3

Transect T1

Waypoint 3 Excursion 1
 Roll 1 Frame 14 - 10:21
 N 155354.99, E 556728.67
 boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	very abundant
hydroids	few
<i>Notoacmaea testudinalis</i>	1
small white starfish	2
<i>Asterias</i> spp. juvenile	1
<i>Strongylocentrotus droebachiensis</i>	5

Transect T1

Waypoint 3 Excursion 1
 Roll 1 Frame 15 - 10:227
 N 155271.56, E 556843.27
 boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	very abundant
hydroids	few
<i>Tautogolabrus adspersus</i>	6

Transect T1

Waypoint 3 Excursion 1
 Roll 1 Frame 16 - 10:22
 N 155220.32, E 556750.84

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
hydroids	few
<i>Modiolus modiolus</i>	1
small white starfish	2
<i>Strongylocentrotus droebachiensis</i>	5

Transect T1

Waypoint 4 Excursion 1

Roll 1 Frame 17 - 10:51

N 155296.30, E 556537.27

cobbles and gravel pavement with boulders, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant on boulders

Transect T1

Waypoint 4 Excursion 1

Roll 1 Frame 18 - 10:58

N 155490.10, E 556512.76

boulders, cobbles, and gravel, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant on boulders
hydroids	few
spirorbids	few
<i>Notoacmaea testudinalis</i>	1
small white starfish	1
<i>Asterias spp. juvenile</i>	1
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	2

Transect T1

Waypoint 4 Excursion 1

Roll 1 Frame 19 - 10:59

N 155365.50, E 556527.35

boulders, cobbles, and gravel, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant on boulders
hydroids	few
spirorbids	few
gold encrusting sponge	3
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	1

Transect T1

Waypoint 4 Excursion 1

Roll 1 Frame 20 - 11:04

position not available

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
hydroids	abundant
<i>Modiolus modiolus</i>	14
<i>Tonicella marmorea</i>	1
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	4

Transect T1

Waypoint 4 Excursion 1

Roll 1 Frame 21 - 11:06

position not available

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
hydroids	common
<i>Modiolus modiolus</i>	2
<i>Strongylocentrotus droebachiensis</i>	2

Transect T1

Waypoint 5 Excursion 1

Roll 1 Frame 22 - 11:31

N 155417.43, E 556235.31

boulders and cobbles, moderate to heavy sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	few
hydroids	common
spirorbids	few
white encrusting	1
small white starfish	4
<i>Asterias spp. juvenile</i>	1

Transect T1

Waypoint 5 Excursion 1

Roll 1 Frame 23 - 11:32

N 155523.07, E556346.53

boulders and cobbles, moderate to heavy sediment dusting, shell hash

Taxon	Count
<i>Lithothamnion spp.</i>	rare
hydroids	common
orange tan encrusting	3
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	1
<i>Aplidium spp.</i>	1

Transect T1

Waypoint 5 Excursion 1

Roll 1 Frame 24 - 11:34

N 155439.06, E 556211.91

boulders, cobbles, gravel, moderate to heavy sediment dusting, shell hash

Taxon	Count
<i>Lithothamnion spp.</i>	rare
hydroids	few
spirorbids	few
white fuzzy encrusting	1
<i>Haliclona oculata</i>	1
<i>Urticina felina</i>	1
<i>Gersemia rubiformis</i>	1
<i>Strongylocentrotus droebachiensis</i>	3
<i>Aplidium spp.</i>	1

Transect T1

Waypoint 5 Excursion 1

Roll 1 Frame 25 - 11:37

N 155433.37, E 556230.48

boulders and cobbles, moderate to heavy sediment dusting, shell hash

Taxon	Count
<i>Lithothamnion</i> spp.	rare
hydroids	common
spirobids	few
orange tan encrusting	2
ivory encrusting	1
<i>Neptunea decemcostata</i>	1
<i>Balanus</i> spp.	1
<i>Asterias vulgaris</i>	1
small white starfish	5
<i>Strongylocentrotus droebachiensis</i>	1
<i>Didemnum albidum</i>	1
<i>Aplidium</i> spp.	1

Transect T1

Waypoint 5 Excursion 1

Roll 1 Frame 26 - 11:38

N 155434.17, E 556234.55

boulders and cobbles, moderate to heavy sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	rare
hydroids	common
orange tan encrusting	1
spirobids	few
serpulids	1
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	1
<i>Aplidium</i> spp.	2
<i>Tautoglabrus adspersus</i>	1

Transect T1

Waypoint 5 Excursion 1

Roll 1 Frame 27 - 11:44

N 155455.96, E 556219.16

boulders and cobbles, moderate to heavy sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	rare
hydroids	few
orange tan encrusting	2
small barnacles	few
<i>Balanus</i> spp.	3
small white starfish	5
<i>Henricia sanguinolenta</i>	2
<i>Strongylocentrotus droebachiensis</i>	2
<i>Aplidium</i> spp.	3
<i>Myoxocephalus octodecimspinosus</i>	1

END OF TRANSECT T1

Transect T2

Waypoint 1 Excursion 2

Roll 2 Frame 4 - 13:52

N 154958.83, E 557855.65

gravel, cobbles, boulders, moderate sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	few
hydroids	few
orange tan encrusting	6
spirorbids	few
small white starfish	9
<i>Asterias vulgaris</i>	4
<i>Crossaster papposus</i>	1
<i>Strongylocentrotus droebachiensis</i>	1
<i>Aplidium</i> spp.	1

Transect T2

Waypoint 1 Excursion 2

Roll 2 Frame 5 - 13:53

N 155137.79, E 557924.90

gravel, cobbles, boulders, heavy sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	rare
hydroids	rare
orange tan encrusting	1
<i>Notoacmaea testudinalis</i>	1
spirorbids	few
small white starfish	4
<i>Henricia sanguinolenta</i>	1

Transect T2

Waypoint 1 Excursion 2

Roll 2 Frame 6 - 13:55

N 154968.50, E 557839.73

gravel, cobbles, boulders, heavy sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	rare
hydroids	rare
thin white translucent encrusting	1
spirorbids	rare
<i>Balanus</i> spp.	5
<i>Neptunea decemcostata</i>	1
small white starfish	5
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	3

Transect T2

Waypoint 1 Excursion 3

Roll 2 Frame 7 - 14:11

N154932.45, E 557809.43

gravel, cobbles, boulder, heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion</i> spp.	rare
filamentous red algae	common
hydroids	common
ivory encrusting sponge	1
pale orange encrusting	1
thin white encrusting	1
thin white translucent encrusting	2
spirorbids	rare
serpulids	2

Strongylocentrotus droebachiensis 1
Aplidium spp. 1

Transect T2

Waypoint 1 Excursion 3

Roll 2 Frame 8 - 14:13

N 154936.92, E 557810.63

boulders and gravel, moderate sediment drape, matting

Taxon	Count
<i>Lithothamnion</i> spp.	rare
filamentous red algae	abundant
<i>Corallina officinalis</i>	4
<i>Rhodomenia palmata</i>	5
hydroids	common
<i>Aplysilla sulfurea</i>	13
orange tan encrusting	1
<i>Balanus</i> spp.	2
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	2
<i>Didemnum albidum</i>	1
<i>Dendrodoa carnea</i>	1

Transect T2

Waypoint 1 Excursion 3

Roll 2 Frame 9 - 14:14

N 154938.34, E 557808.87

boulder, gravel, sand, shell hash, heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion</i> spp.	rare
filamentous red algae	abundant
<i>Rhodomenia palmata</i>	1
hydroids	common
<i>Haliclona</i> spp.	1
<i>Aplysilla sulfurea</i>	1
tan orange encrusting	3
<i>Tonicella marmorea</i>	1
<i>Balanus</i> spp.	3
<i>Henricia sanguinolenta</i>	1
<i>Aplidium</i> spp.	1

Transect T2

Waypoint 1 Excursion 3

Roll 2 Frame 10 - 14:15

N 154971.44, E 557735.75

boulders, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	abundant
hydroids	few
<i>Rhodomenia palmata</i>	11
<i>Agarum cribrosum</i>	1
<i>Aplysilla sulfurea</i>	2
orange tan encrusting	3
thick white translucent sponge	1
<i>Modiolus modiolus</i>	1
<i>Strongylocentrotus droebachiensis</i>	1

Aplidium spp. 2
 ?*Tautoga onitis* 1

Transect T2

Waypoint 1 Excursion 3
 Roll 2 Frame 11 - 14:16
 N 154952.94, E 557791.01
 boulder, light sediment dusting

Taxon	Count
filamentous red algae	abundant
<i>Rhodomenia palmata</i>	few
<i>Corallina officinalis</i>	1
<i>Agarum cribrosum</i>	2
<i>Obelia geniculata</i>	1

Transect T2

Waypoint 1 Excursion 3
 Roll 2 Frame 12 - 14:17
 N 154968.32, E557793.50
 boulder

Taxon	Count
filamentous red algae	abundant
<i>Rhodomenia palmata</i>	few
<i>Agarum cribrosum</i>	3
<i>Obelia geniculata</i>	1
<i>Modiolus modiolus</i>	1
<i>Balanus</i> spp.	2
small white starfish	2
<i>Tautogolabrus adspersus</i>	2

Transect T2

Waypoint 1 Excursion 3
 Roll 2 Frame 13 - 14:18
 N 155015.83, E 557779.59
 boulders

Taxon	Count
<i>Lithothamnion</i> spp.	rare
filamentous red algae	abundant
<i>Corallina officinalis</i>	3
<i>Agarum cribrosum</i>	4
<i>Obelia geniculata</i>	1
orange tan encrusting	1
thin white translucent encrusting	1
small white starfish	3

Transect T2

Waypoint 1 Excursion 3
 Roll 2 Frame 14 - 14:18
 N 154973.38, E 557800.90
 boulders, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	rare
filamentous red algae	very abundant
hydroids	few
orange tan encrusting	2
<i>Gersemia rubiformis</i>	3

<i>Balanus spp.</i>	1
small white starfish	2
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	1
<i>Didemnum albidum</i>	2
<i>Tautogolabrus adspersus</i>	6

Transect T2

Waypoint 1 Excursion 3

Roll 2 Frame 15A - 14:20

position not available

boulders, some cobbles, moderate sediment drape, matting

Taxon	Count
<i>Lithothamnion spp.</i>	common
filamentous red algae	common
hydroids	common
<i>Metridium senile</i>	1
<i>Gersemia rubiformis</i>	1
<i>Suberites spp.</i>	1
orange tan encrusting	3
<i>Aplysilla sulfurea</i>	2
white encrusting	1
<i>Coryphella spp.</i>	1
<i>Modiolus modiolus</i>	10
<i>Balanus spp.</i>	1
small white starfish	6
<i>Strongylocentrotus droebachiensis</i>	2
<i>Membranipora spp.</i>	1
<i>Aplidium spp.</i>	1

Transect T2

Waypoint 1 Excursion 3

Roll 2 Frame 15 - 14:20

N 154974.59, E 557813.40

boulder, moderate sediment drape, matting

Taxon	Count
filamentous red algae	abundant
hydroids	abundant
orange tan encrusting	3
<i>Metridium senile</i>	1
<i>Coryphella spp.</i>	1
<i>Balanus spp.</i>	1
small white starfish	1
<i>Strongylocentrotus droebachiensis</i>	1
<i>Dendrodoa carnea</i>	1

Transect T2

Waypoint 1 Excursion 3

Roll 2 Frame 16 - 14:21

N 154950.13, E 557847.73

cobbles, gravel, boulder, moderate sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	abundant
hydroids	few
<i>Aplysilla sulfurea</i>	1

orange tan encrusting	2
thin white translucent encrusting	1
<i>Modiolus modiolus</i>	5
<i>Strongylocentrotus droebachiensis</i>	1
small white starfish	1
<i>Aplidium spp.</i>	1
<i>Tautogolabrus adspersus</i>	3

Transect T2

Waypoint 2 Excursion 1

Roll 2 Frame 17 - 14:40

N 154874.93, E 558061.17

boulders, some cobbles, heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion spp.</i>	rare
filamentous red algae	few
<i>Rhodomenia palmata</i>	3
hydroids	abundant
<i>Suberites spp.</i>	2
orange tan encrusting	4
thin white translucent encrusting	4
<i>Modiolus modiolus</i>	5
<i>Myxicola infundibulum</i>	7
spirorbids	rare
<i>Strongylocentrotus droebachiensis</i>	1
small white starfish	4

Transect T2

Waypoint 2 Excursion 1

Roll 2 Frame 18 - 14:41

N 154865.11, E 558049.02

cobbles and boulders, heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion spp.</i>	few
filamentous red algae	common
<i>Rhodomenia palmata</i>	3
hydroids	few
<i>Fagesia lineata</i>	1
gold encrusting sponge	3
orange tan encrusting	2
<i>Modiolus modiolus</i>	5
spirorbids	few
serpulids	few
small white starfish	2
<i>Henricia sanguinolenta</i>	5
<i>Aplidium spp.</i>	2
<i>Didemnum albidum</i>	1
red crust bryozoan	1

Transect T2

Waypoint 2 Excursion 1

Roll 2 Frame 19 - 14:42

N 154850.86, E 558002.66

cobbles, boulders, gravel, shell hash, moderate sediment drape, matting

Taxon	Count
<i>Lithothamnion spp.</i>	common

filamentous red algae	common
<i>Rhodymenia palmata</i>	1
<i>Corallina officinalis</i>	2
hydroids	common
<i>Urticina felina</i>	1
<i>Aplysilla sulfurea</i>	3
white encrusting	6
<i>Modiolus modiolus</i>	1
spirorbids	few
small white starfish	2
<i>Psolus fabricii</i>	1
<i>Aplidium</i> spp.	2
<i>Dendrodoa carnea</i>	2

Transect T2

Waypoint 2 Excursion 1

Roll 2 Frame 20 - 14:43

N 154856.98, E 557997.82

boulder, heavy sediment drape, matting

Taxon	Count
filamentous red algae	common
hydroids	abundant
<i>Boltenia ovifera</i>	1

Transect T2

Waypoint 2 Excursion 1

Roll 2 Frame 21 - 14:44

N 154865.74, E 558058.90

boulders, heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion</i> spp.	rare
hydroids	common
<i>Metridium senile</i>	1
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	1
? <i>Ciona intestinalis</i>	1

Transect T2

Waypoint 2 Excursion 2

Roll 2 Frame 22 - 14:53

N 154914.59, E 558068.86

boulders, cobbles, gravel, very heavy sediment drape, matting

Taxon	Count
filamentous red algae	rare
hydroids	few
gold encrusting sponge	3
white encrusting	5
<i>Modiolus modiolus</i>	8
small white starfish	2
? <i>Myoxocephalus scorpius</i>	1

Transect T2

Waypoint 2 Excursion 2

Roll 2 Frame 23 - 14:55

N 154867.41, E 558136.30

boulders, cobbles, heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion spp.</i>	few
orange tan encrusting	2
thick orange tan organism	1
gold encrusting sponge	3
white encrusting	3
<i>Urticina felina</i>	1
<i>Modiolus modiolus</i>	3
spirorbids	few
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	2
<i>Didemnum albidum</i>	2
<i>Aplidium spp.</i>	2

Transect T2

Waypoint 2 Excursion 2

Roll 2 Frame 24 - 14:56

N 154877.70, E 558126.18

boulders, cobbles, shell hash, very heavy sediment drape, matting

Taxon	Count
hydroids	common
gold encrusting sponge	5
white encrusting	2
tan encrusting	1
spirorbids	few
serpulids	few
<i>Modiolus modiolus</i>	1
small white starfish	2
<i>Didemnum albidum</i>	2

Transect T2

Waypoint 3 Excursion 1

Roll 2 Frame 25 - 15:16

N 154788.64, E 558443.24

cobbles, shell hash, heavy sediment drape

Taxon	Count
filamentous red algae	abundant
<i>Rhodomenia palmata</i>	1
hydroids	few
<i>Suberites spp.</i>	1
white translucent encrusting	1
<i>Modiolus modiolus</i>	7
spirorbids	few
small white starfish	2
<i>Didemnum albidum</i>	2
<i>Tautogolabrus adspersus</i>	2

Transect T2

Waypoint 3 Excursion 1

Roll 2 Frame 26 - 15:17

N 154782.03, E 558432.07

boulders and cobbles, heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion spp.</i>	rare
filamentous red algae	abundant
white encrusting	3

tan encrusting	1
orange tan encrusting	3
<i>Gersemia rubiformis</i>	2
spirorbids	few
serpulids	few
<i>Modiolus modiolus</i>	2
small white starfish	4
<i>Henricia sanguinolenta</i>	5
<i>Asterias vulgaris</i>	1
<i>Tautogolabrus adspersus</i>	1

Transect T2

Waypoint 3 Excursion 1

Roll 2 Frame 27 - 15:18

N 154820.95, E 558413.19

boulders, heavy sediment drape, matting

Taxon	Count
filamentous red algae	common
hydroids	abundant
white encrusting	2
whitish thick encrusting	1
other encrusting	abundant
small white starfish	6
<i>Henricia sanguinolenta</i>	5
? <i>Ciona intestinalis</i>	1
<i>Macrozoarces americanus</i>	1

Transect T2

Waypoint 3 Excursion 1

Roll 2 Frame 28 - 15:19

N 154824.28, E 558415.03

cobbles and gravel, heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	few
<i>Rhodymenia palmata</i>	3
hydroids	few
<i>Suberites spp.</i>	1
white translucent lumpy encrusting	1
gold encrusting sponge	1
tan encrusting	3
orange tan encrusting, ?bryozoans	3
<i>Halichondria panicea</i>	1
<i>Modiolus modiolus</i>	10
spirorbids	few
small white starfish	4
<i>Aplidium spp.</i>	1

Transect T2

Waypoint 3 Excursion 1

Roll 2 Frame 29 - 15:22

position not available

cobbles, gravel, shell hash, heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion spp.</i>	few
filamentous red algae	very abundant

<i>Rhodymenia palmata</i>	1
hydroids	common
small white starfish	1
<i>Henricia sanguinolenta</i>	1
<i>Aplidium</i> spp.	1
<i>Tautogolabrus adspersus</i>	2

Transect T2

Waypoint 4 Excursion 1

Roll 2 Frame 30 - 16:06

position not available

boulders, heavy sediment drape, too high

Taxon	Count
<i>Lithothamnion</i> spp.	few
filamentous red algae	very abundant
hydroids	common
<i>Gersemia rubiformis</i>	1
small white starfish	1
<i>Tautogolabrus adspersus</i>	2

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 3 - 09:58

N 2967410.37, E 850584.25

cobbles, shell hash, heavy sediment drape

Taxon	Count
hydroids	few
thin white encrusting	1
small white starfish	1

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 4 - 10:04

N 2967395.77, E 850607.13

cobbles, shell hash, heavy sediment drape, matting

Taxon	Count
hydroids	few
<i>Cerianthus borealis</i>	1

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 5 - 10:04

N 2967370.50, E 850605.32

cobbles, heavy sediment drape, matting

Taxon	Count
hydroids	few
<i>Cerianthus borealis</i>	1
<i>Myxicola infundibulum</i>	2
<i>Modiolus modiolus</i>	2

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 6 - 10:06

N 2967356.39, E 850606.22

cobbles, heavy sediment drape, matting

Taxon	Count
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hydroids	few
lumpy orange tan encrusting	2
<i>Cerianthus borealis</i>	1
<i>Myxicola infundibulum</i>	2
<i>Ilyanassa trivittata</i>	1

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 7 - 10:06

N 2967339.84, E 850604.57

cobble pavement, heavy sediment drape, matting

Taxon	Count
orange encrusting	1
<i>Cancer spp.</i>	1
small white starfish	1
<i>Pteraster militaria</i>	1
<i>Modiolus modiolus</i>	

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 8 - 10:06

N 2967386.86, E 850628.06

cobble pavement, shell, heavy sediment drape, matting

Taxon	Count
hydroids	few
<i>Asterias vulgaris</i>	1

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 9 - 10:07

N 2967405.20, E 850629.52

cobble pavement, heavy sediment drape, matting

Taxon	Count
hydroids	few
thin white encrusting	1
<i>Placopecten magellanicus</i>	1
<i>Macrozoarces americanus</i>	1

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 10 - 10:13

N 2967413.51, E 850621.95

cobble pavement, shell hash, heavy sediment drape, some matting

Taxon	Count
hydroids	few
orange tan encrusting	1
<i>Didemnum albidum</i>	1

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 11 - 10:13

N 2967414.02, E 850610.87

sediment, cobbles with heavy sediment drape, shell hash

Taxon	Count
hydroids	few
unidentified starfish	1

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 12 - 10:14

N 2967315.08, E 850506.30

cobbles, partially buried in sediment, gravel, shell hash

Taxon	Count
<i>Myoxocephalus spp.</i>	1

Transect T2

Waypoint 5 Excursion 1

Roll 6 Frame 13 - 10:16

N 2967324.40, E 850513.16

cobbles and gravel, tube mat

Taxon	Count
hydroids	few

Transect T2

Waypoint 5 Excursion 2

Roll 6 Frame 14 - 10:19

N 2967324.94, E 850511.94

cobbles, partially buried in sediment

Taxon	Count
hydroids	few
<i>Cerianthus borealis</i>	1
small white starfish	1
<i>Asterias vulgaris</i>	1

Transect T2

Waypoint 5 Excursion 2

Roll 6 Frame 15 - 10:21

N 2967324.70, E 850493.63

cobbles, boulder, shell hash, heavy sediment drape, matting

Taxon	Count
<i>Cerianthus borealis</i>	1
<i>Myxicola infundibulum</i>	2
small white starfish	1

Transect T2

Waypoint 5 Excursion 2

Roll 6 Frame 16 - 10:22

N 2967312.73, E 850499.01

cobbles, partially buried in sediment, shell hash

Taxon	Count
hydroids	few
<i>Balanus spp.</i>	1
<i>Asterias vulgaris</i>	1

Transect T2

Waypoint 5 Excursion 2

Roll 6 Frame 17 - 10:23

N 2967416.87, E 850611.02

sand, gravel, shell hash

Taxon	Count
hydroids	few
<i>Corymorpha pendula</i>	3

Transect T2

Waypoint 5 Excursion 2

Roll 6 Frame 18 - 10:24

N 2967405.51, E 850613.64

cobbles, partially buried in sediment, gravel, shell hash

Taxon	Count
<i>Balanus spp.</i>	1

Transect T2

Waypoint 5 Excursion 2

Roll 6 Frame 19 - 10:26

N 2967369.04, E 850614.43

cobbles, partially buried in sediment, shell hash

Taxon	Count
<i>Asterias vulgaris</i>	1

Transect T2

Waypoint 5 Excursion 2

Roll 6 Frame 20 - 10:27

N 2967351.33, E 850498.91

cobbles, partially buried in sediment, shell hash

Taxon	Count
hydroids	few
small white starfish	1
<i>Pleuronectes americanus</i>	1

END OF TRANSECT T2

Transect T4

Waypoint 1 Excursion 1

Roll 3 Frame 3 - 11:52

position not available

cobbles, shell hash, moderate sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	common
<i>Peyssonellia spp.</i>	few
hydroids	rare
spirobids	rare
<i>Buccinum undatum</i>	1
small white starfish	2
? <i>Bugula spp.</i>	1

Transect T4

Waypoint 1 Excursion 1

Roll 3 Frame 4 - 11:53

position not available

boulder, moderate sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	rare
<i>Peyssonellia spp.</i>	rare
white encrusting	6
tan encrusting	1
reddish encrusting	few
<i>Metridium senile</i>	2
<i>Crepidula plana</i>	31
small barnacles	common

small white starfish	1
<i>Henricia sanguinolenta</i>	1
<i>Asterias vulgaris</i>	1
<i>Terebratulina septentrionalis</i>	1
<i>Tautogolabrus adspersus</i>	1

Transect T4

Waypoint 1 Excursion 1

Roll 3 Frame 5 - 11:55

N 2965627.30, E 852351.27

cobbles, shell hash, moderate sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	few
<i>Peyssonellia spp.</i>	rare
white encrusting	1
<i>Fagesia lineata</i>	1
<i>Tonicella marmorea</i>	1
<i>Homarus americanus</i>	1
spirorbids	few

Transect T4

Waypoint 1 Excursion 1

Roll 3 Frame 6 - 11:57

N 2965629.72, E 852358.06

cobbles and boulders, moderate to heavy sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	common
<i>Suberites spp.</i>	2
white encrusting	3
white divided	11
orange encrusting	4
bright orange encrusting	3
gold encrusting sponge	1
hydroids	common
spirorbids	few
serpulids	few
<i>Modiolus modiolus</i>	3
small white starfish	2
<i>Tautogolabrus adspersus</i>	1

Transect T4

Waypoint 1 Excursion 1

Roll 3 Frame 7 - 11:57

N 2965633.86, E 852345.81

boulders and cobbles, moderate sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	common
<i>Suberites spp.</i>	4
orange encrusting sponge	1
tan encrusting	1
hydroids	common
spirorbids	rare
serpulids	rare
small white starfish	2
<i>Henricia sanguinolenta</i>	2
<i>Asterias vulgaris</i>	1

<i>Didemnum albidum</i>	1
<i>Aplidium</i> spp.	1
<i>Ciona intestinalis</i>	1
<i>Hemitripteris americanus</i>	1

Transect T4

Waypoint 2 Excursion 1

Roll 3 Frame 8 - 14:04

N 2965469.55, E 850670.11

cobbles and boulders, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	abundant
<i>Rhodomyenia palmata</i>	3
white encrusting	3
hydroids	common
spirorbids	common
<i>Modiolus modiolus</i>	8
small white starfish	9
<i>Henricia sanguinolenta</i>	1
<i>Halocynthia pyriformis</i>	3

Transect T4

Waypoint 2 Excursion 1

Roll 3 Frame 9 - 14:05

N 2965358.1, E 850689.26

boulder and cobbles, shell hash, moderate sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	abundant
<i>Rhodomyenia palmata</i>	1
<i>Aplysilla sulfurea</i>	10
reddish orange encrusting	2
yellow tan encrusting sponge	6
hydroids	common on boulder
spirorbids	few
serpulids	few
<i>Modiolus modiolus</i>	2
<i>Balanus</i> spp.	1
small white starfish	4
<i>Henricia sanguinolenta</i>	3
<i>Halocynthia pyriformis</i>	3
white translucent encrusting tunicate	1

Transect T4

Waypoint 2 Excursion 1

Roll 3 Frame 10 - 14:08

N 2965159.90, E 850417.92 (ship)

boulder and cobbles, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	abundant
<i>Agarum cribrosum</i>	1
hydroids	few
spirorbids	common
small white starfish	2

<i>Strongylocentrotus droebachiensis</i>	2
<i>Didemnum albidum</i>	1
<i>Aplidium</i> spp.	1

Transect T4

Waypoint 2 Excursion 1

Roll 3 Frame 11 - 14:18

N 2965219.34, E 850531.15 (ship)

boulders, moderate sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	few
<i>Aplysilla sulfurea</i>	3
yellow orange encrusting	1
orange tan encrusting	4
other encrusting	few
hydroids	common
<i>Metridium senile</i>	1
spirorbids	common
small white starfish	7
<i>Strongylocentrotus droebachiensis</i>	1
<i>Henricia sanguinolenta</i>	2
<i>Asterias vulgaris</i>	1
<i>Ciona intestinalis</i>	2
<i>Tautogolabrus adspersus</i>	2

Transect T4

Waypoint 2 Excursion 1

Roll 3 Frame 12 - 14:30

N 2965203.90, E 850503.50 (ship)

boulders, light to moderate sediment drape, too high

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	abundant
white encrusting	1
<i>Suberites</i> spp.	1
orange encrusting sponge	3
<i>Metridium senile</i>	1
<i>Gersemia rubiformis</i>	2
small white starfish	5
large red starfish	1
<i>Strongylocentrotus droebachiensis</i>	1
<i>Henricia sanguinolenta</i>	2
<i>Terebratulina septentrionalis</i>	1
<i>Halocynthia pyriformis</i>	1
<i>Aplidium</i> spp.	1

Transect T4

Waypoint 2 Excursion 1

Roll 3 Frame 13 - 14:31

N 2965200.44, E 850526.31 (ship)

boulder, moderate sediment drape, matting; too close

Taxon	Count
filamentous red algae	abundant
<i>Agarum cribrosum</i>	1
<i>Suberites</i> spp.	1

hydroids abundant
Tautogolabrus adspersus 1

Transect T4

Waypoint 2 Excursion 2
Roll 3 Frame 14 - 15:01
N 2965211.75, E 850530.87 (ship)
boulders, no sediment

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
orange encrusting sponge	2
<i>Modiolus modiolus</i>	9
spirorbids	few
small white starfish	2
<i>Strongylocentrotus droebachiensis</i>	6
<i>Crossaster papposus</i>	1
<i>Henricia sanguinolenta</i>	2
<i>Aplidium</i> spp.	1

Transect T4

Waypoint 2 Excursion 2
Roll 3 Frame 15 - 15:02
N 2965218.11, E 850538.58 (ship)
boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	common
<i>Halichondria panicea</i>	3
<i>Suberites</i> spp.	1
tan encrusting	1
orange tan encrusting	1
orange encrusting sponge	1
hydroids	few
<i>Myxicola infundibulum</i>	1
serpulids	few
<i>Modiolus modiolus</i>	6
spirorbids	common
small white starfish	9
<i>Strongylocentrotus droebachiensis</i>	8
<i>Henricia sanguinolenta</i>	1
<i>Halocynthia pyriformis</i>	2
<i>Aplidium</i> spp.	1
<i>Tautogolabrus adspersus</i>	3

Transect T4

Waypoint 2 Excursion 2
Roll 3 Frame 16 - 15:02
N 2965220.54, E 850546.44 (ship)
boulders and cobbles, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	common
<i>Agarum cribrorum</i>	1
tan encrusting	2
orange encrusting sponge	1
hydroids	few
spirorbids	few

<i>Modiolus modiolus</i>	4
<i>Balanus</i> spp.	1
small white starfish	3
<i>Strongylocentrotus droebachiensis</i>	7
<i>Henricia sanguinolenta</i>	6
<i>Dendrodoa carnea</i>	2
reddish fish	1

Transect T4

Waypoint 2 Excursion 2
 Roll 3 Frame 17 - 15:03
 N 2965216.51, E 850543.78
 boulders, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	abundant
<i>Agarum cribrosum</i>	1
<i>Rhodymenia palmata</i>	1
<i>Halichondria panicea</i>	1
orange tan globular	1
orange tan encrusting	5
<i>Aplysilla sulfurea</i>	1
hydroids	few
<i>Gersemia rubiformis</i>	1
orange tan anemone	1
small white starfish	4
<i>Henricia sanguinolenta</i>	1
<i>Porania insignis</i>	1
<i>Strongylocentrotus droebachiensis</i>	3
<i>Dendrodoa carnea</i>	3
reddish fish	1

Transect T4

Waypoint 2 Excursion 2
 Roll 3 Frame 18 - 15:05
 N 2965228.26, E 850541.70
 boulders, shell hash, light sediment drape
 Taxon Count
 same as Frame 17

Transect T4

Waypoint 2 Excursion 2
 Roll 3 Frame 19 - 15:07
 N 2965232.72, E 850547.52
 boulders, heavy sediment drape, matting

Taxon	Count
filamentous red algae	abundant
<i>Rhodymenia palmata</i>	14
red encrusting sponge	1
orange tan encrusting	1
<i>Aplysilla sulfurea</i>	1
hydroids	common
<i>Gersemia rubiformis</i>	1
spirorbids	rare
<i>Balanus</i> spp.	3
small white starfish	1

<i>Strongylocentrotus droebachiensis</i>	3
<i>Henricia sanguinolenta</i>	5
<i>Aplidium</i> spp.	1

Transect T4

Waypoint 2 Excursion 2

Roll 3 Frame 20 - 15:10

N 2965231.83, E 850537.97

boulders and cobbles, no to heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	common
<i>Rhodymenia palmata</i>	1
<i>Aplysilla sulfurea</i>	2
orange tan encrusting	1
red encrusting	6
dark tan translucent encrusting	2
hydroids	few
spirobids	few
serpulids	few
<i>Balanus</i> spp.	4
small barnacles	few
small white starfish	9
<i>Strongylocentrotus droebachiensis</i>	2
brachiopod	1
<i>Aplidium</i> spp.	1
<i>Dendrodoa carnea</i>	3

Transect T4

Waypoint 3 Excursion 1

Roll 3 Frame 21 - 15:34

N 2964550.60, E 847218.35

boulders, no to heavy sediment drape, matting

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	few
<i>Rhodymenia palmata</i>	12
<i>Aplysilla sulfurea</i>	1
red encrusting	1
white encrusting sponge	2
orange tan encrusting	2
hydroids	abundant
<i>Gersemia rubiformis</i>	1
<i>Modiolus modiolus</i>	3
<i>Homarus americanus</i>	1
small white starfish	9
<i>Henricia sanguinolenta</i>	2
<i>Halocynthia pyriformis</i>	1
<i>Aplidium</i> spp.	1
? <i>Tautogolabrus adspersus</i>	2

Transect T4

Waypoint 3 Excursion 1

Roll 3 Frame 22 - 15:36

N 2964559.21, E 847227.33

cobbles and gravel, shell hash, heavy sediment drape

Taxon	Count
hydroids	rare
<i>Modiolus modiolus</i>	1
spirorbids	rare
small white starfish	1

Transect T4

Waypoint 3 Excursion 1

Roll 3 Frame 23A - 15:37

position not available

boulders and cobbles, partially buried, shell hash, heavy sediment drape

Taxon	Count
hydroids	few
orange tan encrusting	4
spirorbids	few

Transect T4

Waypoint 3 Excursion 1

Roll 3 Frame 23 - 15:45

N2964568.19, E 847227.44

boulders, cobbles, and gravel, shell hash, moderate sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	rare
hydroids	few
<i>Balanus spp.</i>	1
spirorbids	common
small white starfish	2
<i>Tautogolabrus adspersus</i>	1

Transect T4

Waypoint 3 Excursion 1

Roll 3 Frame 24 - 15:46

N 2964531.50, E 847239.26

cobbles and gravel, shell hash, heavy sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	rare
<i>Agarum cribrosum</i>	1
hydroids	few
spirorbids	few
unidentified gastropod	1
<i>Placopecten magellanicus</i>	1
small white starfish	2

Transect T4

Waypoint 3 Excursion 1

Roll 3 Frame 25 - 15:47

N 2964536.81, E 847246.40

boulder, moderate sediment drape

Taxon	Count
hydroids	few
spirorbids	few
small gastropod	1
<i>Balanus spp.</i>	2
small white starfish	2
<i>Asterias vulgaris</i>	2

END OF TRANSECT T4

Intersection T4/T6

Waypoint 1 Excursion 1

Roll 7 Frame 10 - 12:31

N 2965263.83, E 849030.34

boulder, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	common
<i>Corallina officinalis</i>	1
<i>Rhodomenia palmata</i>	20
<i>Agarum cribrosum</i>	1
hydroids	abundant
spirorbids	few
serpulids	1
small white starfish	9
<i>Dendrodoa carnea</i>	1
<i>Ciona intestinalis</i>	2

Intersection T4/T6

Waypoint 1 Excursion 1

Roll 7 Frame 11 - 12:32

N 2965228.16, E 848954.63

boulders, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	abundant
<i>Agarum cribrosum</i>	1
orange lumpy encrusting	1
unidentified encrusting	few
hydroids	few
? <i>Metridium senile</i>	2
spirorbids	few
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	1
<i>Henricia sanguinolenta</i>	1
<i>Dendrodoa carnea</i>	2
<i>Aplidium</i> spp.	1

Intersection T4/T6

Waypoint 1 Excursion 1

Roll 7 Frame 12 - 12:39

N 2965198.79, E 848974.43

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	abundant
<i>Rhodomenia palmata</i>	1
<i>Agarum cribrosum</i>	2
orange encrusting	1
hydroids	few
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	8
<i>Henricia sanguinolenta</i>	1
<i>Didemnum albidum</i>	2
<i>Tautoglabrus adspersus</i>	2

Intersection T4/T6

Waypoint 1 Excursion 1

Roll 7 Frame 13 - 12:40

N 2965191.49, E 848990.16

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	abundant
<i>Rhodymenia palmata</i>	7
<i>Agarum cribrosum</i>	2
orange tan encrusting	6
gold encrusting sponge	1
hydroids	few
<i>Gersemia rubiformis</i>	2
<i>Obelia geniculata</i>	1
small white starfish	1
<i>Strongylocentrotus droebachiensis</i>	2
<i>Henricia sanguinolenta</i>	6
<i>Crossaster papposus</i>	1
<i>Didemnum albidum</i>	2

Intersection T4/T6

Waypoint 1 Excursion 1

Roll 7 Frame 14 - 12:42

N 2965172.68, E 848978.84

boulders, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	abundant
<i>Agarum cribrosum</i>	1
orange tan encrusting	1
hydroids	common
spirorbids	few
small white starfish	2
<i>Tautogolabrus adspersus</i>	1

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 15 - 12:45

N 2965117.15, E 848818.02

boulders, light sediment dusting; too high

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	common
<i>Agarum cribrosum</i>	1
orange encrusting	1
<i>Balanus</i> spp.	1
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	1
<i>Henricia sanguinolenta</i>	1
<i>Dendrodoa carnea</i>	1
<i>Tautogolabrus adspersus</i>	8

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 16 - 12:47
N 2965211.35, E 848962.76
boulder, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	few
filamentous red algae	abundant
<i>Rhodomyenia palmata</i>	6
<i>Agarum cribrosum</i>	2
orange tan encrusting	1
small white starfish	1
<i>Henricia sanguinolenta</i>	3
<i>Dendrodoa carnea</i>	1
<i>Halocynthia pyriformis</i>	1

Intersection T4/T6
Waypoint 1 Excursion 2
Roll 7 Frame 17 - 12:48
N 2965211.19, E 848947.42
boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	abundant
<i>Rhodomyenia palmata</i>	11
<i>Agarum cribrosum</i>	3
orange tan encrusting	2
gold encrusting sponge	1
hydroids	common
<i>Obelia geniculata</i>	1
spirorbids	few
small white starfish	2
<i>Strongylocentrotus droebachiensis</i>	2
<i>Henricia sanguinolenta</i>	1

Intersection T4/T6
Waypoint 1 Excursion 2
Roll 7 Frame 18 - 12:48
N 2965198.09, E 848934.89
silt cloud in water

Taxon	Count
<i>Boltenia ovifera</i>	1

Intersection T4/T6
Waypoint 1 Excursion 2
Roll 7 Frame 19 - 12:50
N 2965278.75, E 849046.84
boulder, cobbles, gravel

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	abundant
<i>Agarum cribrosum</i>	2
orange encrusting	1
hydroids	few
<i>Obelia geniculata</i>	1
small white starfish	1
<i>Henricia sanguinolenta</i>	4
<i>Didemnum albidum</i>	3

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 20 - 12:51

N 2965201.02, E 848935.04

boulder, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
filamentous red algae	few
<i>Agarum cribrosum</i>	2
orange tan encrusting	4
tan encrusting	2
<i>Halichondria panicea</i>	1
hydroids	common
<i>Metridium senile</i>	1
<i>Balanus spp.</i>	2
<i>Lepas spp.</i>	1
small white starfish	18
<i>Strongylocentrotus droebachiensis</i>	5
<i>Henricia sanguinolenta</i>	6
<i>Terebratulina septentrionalis</i>	1

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 21 - 12:54

N 2965207.25, E 848987.25

boulder

Taxon	Count
<i>Lithothamnion spp.</i>	common
filamentous red algae	common
<i>Agarum cribrosum</i>	1
orange tan encrusting	4
translucent white encrusting	1
hydroids	abundant
<i>Obelia geniculata</i>	2
? <i>Myxicola infundibulum</i>	1
spirorbids	few
serpulids	few
<i>Balanus spp.</i>	3
small white starfish	17
<i>Henricia sanguinolenta</i>	3
<i>Pteraster militaria</i>	2
<i>Dendrodoa carnea</i>	1
small white solitary tunicate	1

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 22 - 12:57

N 2965138.31, E 848960.67

boulders and cobbles, clean

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
filamentous red algae	few
<i>Agarum cribrosum</i>	2
tan encrusting	1
hydroids	few

small white starfish	5
<i>Strongylocentrotus droebachiensis</i>	4
<i>Henricia sanguinolenta</i>	2
<i>Dendrodoa carnea</i>	1

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 23 - 12:59

N 2965185.69, E 848980.29

boulders, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	abundant
<i>Rhodymenia palmata</i>	6
<i>Agarum cribrosum</i>	2
orange tan encrusting	1
tan encrusting	1
white translucent encrusting	1
hydroids	few
spirorbids	few
small white starfish	1
<i>Henricia sanguinolenta</i>	4
<i>Dendrodoa carnea</i>	2
<i>Didemnum albidum</i>	2
<i>Tautogolabrus adspersus</i>	1

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 24 - 13:00

N 2965184.10, E 848972.50

too high

Taxon	Count
<i>Tautogolabrus adspersus</i>	2

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 25 - 13:00

N 2965199.02, E 848991.58

boulder, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
filamentous red algae	abundant
<i>Rhodymenia palmata</i>	15
<i>Agarum cribrosum</i>	3
orange tan encrusting	3
<i>Halichondria panicea</i>	1
red encrusting	1
hydroids	abundant
spirorbids	few
small white starfish	1

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 26 - 13:00

N 2965197.21, E 848988.66

boulder; double exposure

Taxon	Count
filamentous red algae	abundant
orange tan encrusting	1
hydroids	abundant
<i>Obelia geniculata</i>	1
<i>Gersemia rubiformis</i>	1
small white starfish	few
<i>Strongylocentrotus droebachiensis</i>	few
<i>Henricia sanguinolenta</i>	1
<i>Didemnum albidum</i>	1
<i>Tautogolabrus adspersus</i>	1

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 27 - 13:01

N 2965197.12, E 848990.05

boulders; too high

Taxon	Count
<i>Lithothamnion spp.</i>	common
filamentous red algae	abundant
<i>Rhodymenia palmata</i>	2
<i>Agarum cribrorum</i>	2
hydroids	few
<i>Gersemia rubiformis</i>	1
spirorbids	few
serpulids	few
small white starfish	1

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 28 - 13:01

N 2965197.85, E 848989.06

too high

Taxon	Count
<i>Obelia geniculata</i>	1
<i>Boltenia ovifera</i>	1

Intersection T4/T6

Waypoint 1 Excursion 2

Roll 7 Frame 29 - 13:??

position not available

boulders and cobbles, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
filamentous red algae	common
<i>Rhodymenia palmata</i>	6
<i>Agarum cribrorum</i>	1
orange encrusting	2
tan encrusting	1
hydroids	common
spirorbids	common
<i>Tonicella marmorea</i>	1
small white starfish	5
<i>Strongylocentrotus droebachiensis</i>	1
<i>Henricia sanguinolenta</i>	1
<i>Aplidium spp.</i>	2

Tautogolabrus adspersus 4
END OF INTERSECTION T4/T6

Transect T6

Waypoint 1 Excursion 1

Roll 4 Frame 2 - 16:32

N 2965570.75, E 846850.8

boulders and cobbles, moderate sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	few
hydroids	common
gold encrusting sponge	2
white encrusting	1
<i>Gersemia rubiformis</i>	1
serpulids	few
<i>Modiolus modiolus</i>	1
<i>Balanus</i> spp.	1
spirorbids	few
small white starfish	2
<i>Henricia sanguinolenta</i>	2
<i>Aplidium</i> spp.	1

Transect T6

Waypoint 1 Excursion 1

Roll 4 Frame 3 - 16:35

N 2965495.81, E 846803.49

boulders, cobbles, and gravel, heavy sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	rare
hydroids	few
gold encrusting sponge	4
<i>Modiolus modiolus</i>	4
spirorbids	few
small white starfish	2
<i>Henricia sanguinolenta</i>	1
<i>Ophiopholis aculeata</i>	2
<i>Aplidium</i> spp.	1

Transect T6

Waypoint 1 Excursion 1

Roll 4 Frame 4 - 16:37

N 2965479, E 846819.24

boulders and cobbles, shell hash, moderate sediment drape, some matting

Taxon	Count
<i>Lithothamnion</i> spp.	rare
hydroids	few
tannish encrusting sponge	6
white translucent sponge	1
<i>Urticina felina</i>	1
<i>Modiolus modiolus</i>	7
<i>Balanus</i> spp.	1
spirorbids	few
gold encrusting bryozoan	1
<i>Aplidium</i> spp.	3
<i>Didemnum albidum</i>	2

Transect T6

Waypoint 2 Excursion 1

Roll 4 Frame 6 - 17:23

N 2964467.68, E 849519.77

cobbles, gravel, and boulders, moderate sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	few
hydroids	few
orange tan encrusting	2
white encrusting	1
white translucent sponge	1
spirorbids	few
serpulids	few
<i>Modiolus modiolus</i>	3
<i>Strongylocentrotus droebachiensis</i>	1
<i>Ophiopholis aculeata</i>	1
<i>Aplidium</i> spp.	1
<i>Terebratulina septentrionalis</i>	1

Transect T6

Waypoint 2 Excursion 1

Roll 4 Frame 7 - 17:24

N 2964437.13, E 849522.76

boulders, moderate sediment drape, some matting

Taxon	Count
<i>Lithothamnion</i> spp.	rare
filamentous red algae	few
orange encrusting	1
white encrusting	1
white translucent encrusting	3
translucent globular	1
<i>Tonicella marmorea</i>	1
<i>Balanus</i> spp.	2
small barnacles	few
<i>Strongylocentrotus droebachiensis</i>	1
small white starfish	1
<i>Henricia sanguinolenta</i>	2
<i>Aplidium</i> spp.	1
<i>Dendrodoa carnea</i>	1
<i>Tautoglabrus adpersus</i>	1

Transect T6

Waypoint 2 Excursion 1

Roll 4 Frame 8 - 17:25

N 2964674.36, E 849515.34

boulder, heavy sediment drape, too high

Taxon	Count
thick orange encrusting	2
<i>Haliclona loosanoffi</i>	1
<i>Metridium senile</i>	1
small white starfish	6
<i>Henricia sanguinolenta</i>	4
<i>Dendrodoa carnea</i>	1

Transect T6

Waypoint 2 Excursion 1

Roll 4 Frame 9 - 17:26

N 2964513.97, E 849437.49

cobbles and boulders, moderate sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	few
hydroids	abundant
<i>Rhodomenia palmata</i>	1
orange tan encrusting	6
white encrusting	1
serpulids	few
<i>Crepidula plana</i>	19
spirorbids	few
<i>Strongylocentrotus droebachiensis</i>	1
small white starfish	2
<i>Henricia sanguinolenta</i>	2
<i>Aplidium</i> spp.	2
<i>Didemnum albidum</i>	3
<i>Dendrodoa carnea</i>	3
small stalked ?tunicates	8
thin tannish ?bryozoan	1
<i>Tautogolabrus adspersus</i>	1

Transect T6

Waypoint 2 Excursion 2

Roll 4 Frame 10 - 17:37

N 2964460.01, E 849401.58

boulders and cobbles, moderate sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	common
filamentous red algae	few
<i>Rhodomenia palmata</i>	5
hydroids	common
orange tan encrusting	1
gold encrusting sponge	2
white encrusting	1
<i>Aplysilla sulfurea</i>	5
serpulids	few
<i>Modiolus modiolus</i>	1
<i>Crepidula plana</i>	1
<i>Tonicella marmorea</i>	1
spirorbids	few
small white starfish	1
<i>Henricia sanguinolenta</i>	1
<i>Aplidium</i> spp.	1
<i>Didemnum albidum</i>	4
<i>Dendrodoa carnea</i>	1

Transect T6

Waypoint 2 Excursion 2

Roll 4 Frame 11 - 17:37

N 2964506.20, E 849405.79

boulder and cobbles, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	rare
hydroids	few
orange tan encrusting	1

white encrusting	1
<i>Gersemia rubiformis</i>	3
<i>Myxicola infundibulum</i>	1
<i>Balanus spp.</i>	1
spirorbids	few
<i>Strongylocentrotus droebachiensis</i>	2
small white starfish	4
whitish globular tunicate	1

Transect T6

Waypoint 2 Excursion 2

Roll 4 Frame 12 - 17:38

N 2964533.90, E 849436.87

boulders and cobbles, gravel, shell hash, moderate sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	rare
filamentous red algae	few
hydroids	few
orange tan encrusting	5
orange encrusting	4
white encrusting sponge	1
<i>Suberites spp.</i>	2
spirorbids	few
serpulids	few
small white starfish	1
<i>Crisia spp.</i>	1
<i>Didemnum albidum</i>	1
<i>Dendrodoa carnea</i>	4
whitish globular tunicate	6

Transect T6

Waypoint 2 Excursion 2

Roll 4 Frame 13 - 17:39

N 2964528.86, E 849438.02

boulders and cobbles, moderate sediment drape

Taxon	Count
<i>Lithothamnion spp.</i>	common
<i>Corallina officinalis</i>	1
hydroids	few
orange tan encrusting	6
orange encrusting	3
white encrusting	2
<i>Suberites spp.</i>	1
<i>Aplysilla sulfurea</i>	1
spirorbids	common
<i>Notoacmaea testudinalis</i>	1
<i>Strongylocentrotus droebachiensis</i>	1
small white starfish	2
<i>Henricia sanguinolenta</i>	1
<i>Ophiopholis aculeata</i>	2
<i>Aplidium spp.</i>	1
white globular tunicate	3

Transect T6

Waypoint 2 Excursion 2

Roll 4 Frame 14 - 17:40

N 2964523.17, E 849446.17

cobbles and boulders, moderate to heavy sediment drape

Taxon	Count
hydroids	few
orange tan encrusting	3
orange encrusting	3
orange lumpy encrusting	1
gold encrusting sponge	1
white encrusting	3
<i>Aplysilla sulfurea</i>	2
<i>Suberites</i> spp.	1
<i>Gersemia rubiformis</i>	1
spirorbids	few
serpulids	few
<i>Myxicola infundibulum</i>	1
<i>Strongylocentrotus droebachiensis</i>	1
small white starfish	1
<i>Ophiopholis aculeata</i>	1
<i>Membranipora</i> spp.	2
<i>Dendrodoa carnea</i>	6

Transect T6

Waypoint 2 Excursion 2

Roll 4 Frame 15 - 17:42

N 2964517.19, E 849466.15

boulders and cobbles, shell hash, light sediment drape

Taxon	Count
<i>Lithothamnion</i> spp.	common
hydroids	few
orange tan encrusting	6
orange lumpy encrusting	1
white encrusting	2
<i>Gersemia rubiformis</i>	3
<i>Fagesia lineata</i>	2
spirorbids	rare
serpulids	few
<i>Strongylocentrotus droebachiensis</i>	4
<i>Ophiopholis aculeata</i>	1
<i>Aplidium</i> spp.	1
white globular tunicate	1

Transect T6

Waypoint 2 Excursion 2

Roll 4 Frame 16 - 17:43

N 2964483.83, E 849444.77

boulders and cobbles, moderate to heavy sediment drape

Taxon	Count
hydroids	few
orange tan encrusting	10
orange encrusting	2
orange lumpy encrusting	1
<i>Aplysilla sulfurea</i>	3
tan encrusting	1
translucent encrusting	1
<i>Gersemia rubiformis</i>	1
serpulids	few

small white starfish	2
unidentified starfish	1
<i>Aplidium</i> spp.	3
<i>Didemnum albidum</i>	3

Transect T6

Waypoint 3 Excursion 1

Roll 4 Frame 17 - 18:14

N 2963210.70, E 853829.79

cobbles and gravel pavement, boulders, very light sediment dusting

Taxon	Count
hydroids	few
<i>Gersemia rubiformis</i>	1
small barnacles	common

Transect T6

Waypoint 3 Excursion 1

Roll 4 Frame 18 - 18:14

N 2963248.61, E 853763.89

cobbles and gravel pavement, clean surfaces

Taxon	Count
small barnacles	few

Transect T6

Waypoint 3 Excursion 1

Roll 4 Frame 19 - 18:15

N 2963350.69, E 853860.72

cobbles and gravel pavement, boulders, light sediment dusting

Taxon	Count
hydroids	few
small barnacles	few
<i>Asterias vulgaris</i>	1

Transect T6

Waypoint 3 Excursion 1

Roll 4 Frame 20 - 18:16

N 2963307.87, E 853748.20

cobbles and gravel pavement, very light sediment dusting

Taxon	Count
small barnacles	few

Transect T6

Waypoint 3 Excursion 1

Roll 4 Frame 21 - 18:20

N 2963305.77, E 853783.49

cobbles and gravel pavement, very light sediment dusting

Taxon	Count
small barnacles	common
<i>Tautoglabrus adspersus</i>	1

Transect T6

Waypoint 3 Excursion 1

Roll 4 Frame 22 - 18:23

N 2963307.07, E 853779.90

cobbles and gravel pavement, boulders, very light sediment dusting

Taxon	Count
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small barnacles	few
unidentified organism with tentacles	1

Transect T6

Waypoint 3 Excursion 1
 Roll 4 Frame 23 - 18:25
 N 2963327.27, E 853772.59
 cobbles and gravel pavement, fecal casts, very light sediment dusting

Taxon	Count
small barnacles	common

Transect T6

Waypoint 3 Excursion 1
 Roll 4 Frame 24 - 18:27
 N 2963335.09, E 853771.43
 cobbles and gravel pavement, fecal casts, light sediment dusting

Taxon	Count
white encrusting	1
small barnacles	few

Transect T6

Waypoint 3 Excursion 1
 Roll 4 Frame 25 - 18:27
 N 2963319.11, E 853837.78
 cobbles and gravel pavement, fecal casts, light sediment dusting

Taxon	Count
small barnacles	common

Transect T6

Waypoint 3 Excursion 1
 Roll 4 Frame 26 - 18:30
 N 2963351.89, E 853795.05
 cobbles and gravel pavement, very light sediment dusting

Taxon	Count
small barnacles	common

END OF TRANSECT T6

Transect T7

Waypoint 1 Excursion 1
 Roll 5 Frame 3 - 08:19
 N 2974648.06, E 849923.92
 boulders, very light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	few
hydroids	common
dark red brown encrusting sponge	2
white encrusting	1
whitish translucent encrusting	1
<i>Modiolus modiolus</i>	2
spirorbids	few
small white starfish	5
<i>Asterias vulgaris</i>	1
<i>Aplidium spp.</i>	2

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 4 - 08:19

N 2974648.10, E 849928.42

boulders, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
hydroids	common
white encrusting	1
<i>Tonicella marmorea</i>	1
spirorbids	few
small white starfish	6
<i>Strongylocentrotus droebachiensis</i>	3

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 5 - 08:19

N 2974648.06, E 849923.92

boulders, clean

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	few
<i>Agarum cribrosum</i>	1
hydroids	common
orange lumpy encrusting	1
white encrusting	3
yellow tan encrusting sponge	1
whitish translucent encrusting	1
? <i>Urticina felina</i>	1
<i>Metridium senile</i>	1
<i>Modiolus modiolus</i>	7
spirorbids	few
small white starfish	1
<i>Henricia sanguinolenta</i>	1
<i>Ciona intestinalis</i>	1
<i>Cyclopterus lumpus</i>	1

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 6 - 08:21

N 2974641.98, E 849923.97

boulders, clean

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	common
hydroids	common
<i>Obelia geniculata</i>	1
yellow tan encrusting sponge	4
white encrusting	1
orange lumpy encrusting	1
<i>Metridium senile</i>	1
<i>Tonicella marmorea</i>	1
small white starfish	7
<i>Strongylocentrotus droebachiensis</i>	4
<i>Aplidium</i> spp.	2

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 7 - 08:25

N 2974641.95, E 849919.47

boulders and cobbles, clean

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
filamentous red algae	few
hydroids	common
orange lumpy encrusting	1
dark red brown encrusting sponge	1
<i>Modiolus modiolus</i>	4
small white starfish	3
<i>Strongylocentrotus droebachiensis</i>	2
<i>Aplidium spp.</i>	1
<i>Didemnum albidum</i>	1

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 8 - 08:26

N 2974641.98, E 849923.97

boulders and cobbles, gravel, shell hash, very light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
filamentous red algae	few
hydroids	few
<i>Obelia geniculata</i>	1
<i>Modiolus modiolus</i>	6
<i>Notoacmaea testudinalis</i>	1
small white starfish	5
<i>Strongylocentrotus droebachiensis</i>	1
<i>Didemnum albidum</i>	2
<i>Tautoglabrus adspersus</i>	2

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 9 - 08:27

N 2974635.87, E 849919.52

boulders and cobbles, very light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
filamentous red algae	few
hydroids	few
dark red brown encrusting sponge	1
spirobids	rare
<i>Modiolus modiolus</i>	4
<i>Balanus spp.</i>	1
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	3
<i>Henricia sanguinolenta</i>	1
<i>Aplidium spp.</i>	1
<i>Didemnum albidum</i>	1

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 10 - 08:30

N 2974629.80, E 849919.57

boulders and cobbles, very light dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
hydroids	few
orange lumpy encrusting	2
spirorbids	rare
<i>Modiolus modiolus</i>	6
small white starfish	5
<i>Strongylocentrotus droebachiensis</i>	1
<i>Didemnum albidum</i>	2

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 11 - 08:32

N 2974647.98, E 849914.91

boulders and cobbles, very light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
filamentous red algae	few
hydroids	few
yellow tan encrusting	1
<i>Balanus spp.</i>	1

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 12/13 - 08:34

N 2974641.95, E 849919.47

boulders and cobbles, very light dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
filamentous red algae	few
hydroids	common
<i>Obelia geniculata</i>	1
orange tan encrusting	1
dark red brown encrusting sponge	2
white translucent encrusting	1
white encrusting	1
<i>Modiolus modiolus</i>	5
<i>Notoacmaea testudinalis</i>	1
<i>Balanus spp.</i>	2
small white starfish	4
<i>Asterias vulgaris</i>	1
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	1
<i>Didemnum albidum</i>	1
<i>Tautoglabrus adspersus</i>	1

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 14 - 08:34

N 2974629.88, E 849928.57

boulder, very light sediment dusting, too close

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
hydroids	few
<i>Terebratulina septentrionalis</i>	2

small white starfish 2

Transect T7

Waypoint 1 Excursion 1

Roll 5 Frame 15 - 08:38

N 2974629.72, E 849910.57

boulders, very light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
hydroids	common
yellow tan encrusting sponge	6
translucent whitish encrusting	4
orange lumpy encrusting	1
<i>Modiolus modiolus</i>	2
<i>Homarus americanus</i>	1
spirorbids	few
small white starfish	4
<i>Strongylocentrotus droebachiensis</i>	1
<i>Terebratulina septentrionalis</i>	1
<i>Aplidium</i> spp.	14
<i>Didemnum albidum</i>	2

Transect T7

Waypoint 1 Excursion 2

Roll 5 Frame 16 - 08:45

N 2974629.76, E 849915.07

boulder, clean, sediment cloud in water

Taxon	Count
<i>Lithothamnion</i> spp.	very abundant
hydroids	common
<i>Obelia geniculata</i>	1
<i>Crepidula plana</i>	5
<i>Homarus americanus</i>	1
<i>Balanus</i> spp.	2
small white starfish	1
<i>Henricia sanguinolenta</i>	2
<i>Strongylocentrotus droebachiensis</i>	2
<i>Didemnum albidum</i>	1
<i>Dendrodoa carnea</i>	1

Transect T7

Waypoint 1 Excursion 2

Roll 5 Frame 17 - 08:47

N 2974589.99, E 849949.76

boulders and cobbles, very light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	very abundant
filamentous red algae	few
hydroids	few
spirorbids	rare
<i>Modiolus modiolus</i>	2
<i>Tonicella marmorea</i>	2
small barnacles	rare
small white starfish	6
<i>Asterias vulgaris</i>	2
<i>Strongylocentrotus droebachiensis</i>	3

<i>Dendrodoa carnea</i>	1
<i>Tautogolabrus adspersus</i>	1

Transect T7

Waypoint 1 Excursion 2
 Roll 5 Frame 18 - 08:49
 N 2974586.85, E 849945.86

boulders and cobbles, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
filamentous red algae	abundant
hydroids	few
spirorbids	few
<i>Modiolus modiolus</i>	7
small white starfish	3
<i>Asterias vulgaris</i>	1

Transect T7

Waypoint 1 Excursion 2
 Roll 5 Frame 19 - 08:49
 N 2974564.57, E 849879.31

boulders and cobbles, gravel, shell hash, very light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	very abundant
filamentous red algae	abundant
<i>Agarum cribrosum</i>	2
hydroids	few
spirorbids	rare
<i>Modiolus modiolus</i>	3
<i>Notoacmaea testudinalis</i>	1
small white starfish	1
<i>Membranipora spp.</i>	1

Transect T7

Waypoint 1 Excursion 2
 Roll 5 Frame 20 - 08:50
 N 2974562.95, E 849933.66

boulders and cobbles, gravel, shell hash, fecal casts, very light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	abundant
<i>Rhodymenia palmata</i>	1
hydroids	few
yellow tan encrusting	2
spirorbids	rare
<i>Modiolus modiolus</i>	2
small white starfish	2
<i>Strongylocentrotus droebachiensis</i>	1
<i>Dendrodoa carnea</i>	2

Transect T7

Waypoint 1 Excursion 2
 Roll 5 Frame 21 - 08:51
 N 2974566.87, E 849934.78

boulders and cobbles, very light sediment dusting

Taxon	Count
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<i>Lithothamnion spp.</i>	abundant
filamentous red algae	common
<i>Agarum cribrosum</i>	1
hydroids	few
spirorbids	rare
<i>Modiolus modiolus</i>	1
small white starfish	1
<i>Asterias vulgaris</i>	1
<i>Dendrodoa carnea</i>	1

Transect T7

Waypoint 1 Excursion 2

Roll 5 Frame 22 - 08:51

N 2974558.63, E 849930.86

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	common
<i>Agarum cribrosum</i>	1
hydroids	few
spirorbids	rare
serpulids	few
small white starfish	1
<i>Dendrodoa carnea</i>	1

Transect T7

Waypoint 1 Excursion 2

Roll 5 Frame 23 - 08:51

N 2974543.22, E 849927.88

boulders and cobbles, very light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	abundant
<i>Agarum cribrosum</i>	1
hydroids	common
<i>Obelia geniculata</i>	1
spirorbids	rare
<i>Modiolus modiolus</i>	5
<i>Asterias vulgaris</i>	1
<i>Didemnum albidum</i>	1

Transect T7

Waypoint 1 Excursion 2

Roll 5 Frame 24 - 08:52

same as 23

N 2974536.54, E 849917.52

boulders and cobbles, very light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	abundant
<i>Agarum cribrosum</i>	1
hydroids	common
<i>Obelia geniculata</i>	1
spirorbids	rare
<i>Modiolus modiolus</i>	5
<i>Asterias vulgaris</i>	1
<i>Didemnum albidum</i>	1

Tautogolabrus adspersus 2

Transect T7

Waypoint 1 Excursion 2

Roll 5 Frame 25 - 08:53 same as 23

N 2974605.20, E 849858.41

boulders and cobbles, very light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	abundant
<i>Agarum cribrosum</i>	1
white encrusting	1
hydroids	common
<i>Obelia geniculata</i>	1
spirorbids	rare
<i>Modiolus modiolus</i>	5
small white starfish	2
<i>Balanus spp.</i>	2
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	1
<i>Didemnum albidum</i>	1

Transect T7

Waypoint 1 Excursion 2

Roll 5 Frame 26 - 08:53

N 2974685.96, E 849904.53

boulder, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
<i>Rhodymenia palmata</i>	abundant
pink tan fuzzy encrusting	abundant
orange encrusting	1
gold encrusting sponge	1
hydroids	abundant
spirorbids	few
polynoid	1
<i>Modiolus modiolus</i>	3
small barnacles	rare
<i>Strongylocentrotus droebachiensis</i>	2
small white starfish	18
<i>Henricia sanguinolenta</i>	2
<i>Asterias vulgaris</i>	3
<i>Aplidium spp.</i>	1

Transect T7

Waypoint 1 Excursion 2

Roll 5 Frame 27 - 08:54

N 2974685.96, E 849904.53

cobbles and boulders, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
filamentous red algae	abundant
pink tan fuzzy encrusting	1
spirorbids	rare
unidentified starfish	1
<i>Modiolus modiolus</i>	3

Didemnum albidum 2
Aplidium spp. 1

Transect T7

Waypoint 1 Excursion 2
 Roll 5 Frame 28 - 08:55
 N 2974697.58, E 849891.55
 boulders, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	common
<i>Rhodomenia palmata</i>	1
red brown encrusting	1
hydroids	few
spirorbids	few
<i>Balanus</i> spp.	4
small white starfish	3
<i>Aplidium</i> spp.	1

Transect T7

Waypoint 1 Excursion 2
 Roll 5 Frame 29 - 08:58
 N 2974561.84, E 849862.11
 boulders and cobbles, sand, shell hash, very light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	common
hydroids	abundant
<i>Obelia geniculata</i>	2
<i>Metridium senile</i>	1
<i>Gersemia rubiformis</i>	1
<i>Modiolus modiolus</i>	2
small white starfish	2
<i>Aplidium</i> spp.	1
<i>Tautoglabrus adpersus</i>	2
<i>Anarhichas lupus</i>	1

Transect T7

Waypoint 1 Excursion 2
 Roll 5 Frame 30 - 08:59
 N 2974626.51, E 849906.45
 boulders and cobbles, sand, shell hash, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
filamentous red algae	few
<i>Rhodomenia palmata</i>	few
orange encrusting	1
hydroids	common
<i>Modiolus modiolus</i>	1
small white starfish	4
<i>Asterias vulgaris</i>	1
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	3
<i>Didemnum albidum</i>	1

Transect T7

Waypoint 1 Excursion 2

Roll 5 Frame 31 - 09:00

N 2974572.03, E 849894.95

cobbles, light sediment dusting

Taxon	Count
hydroids	abundant
<i>Notoacmaea testudinalis</i>	1
<i>Modiolus modiolus</i>	7
small white starfish	2
<i>Asterias vulgaris</i>	2

END OF TRANSECT T7

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 3 - 14:15

N 2957062.20, E 840993.23

cobbles, some gravel, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
orange tan encrusting	1
spirorbids	common
<i>Didemnum albidum</i>	2

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 4 - 14:16

N 2957063.71, E 840995.65

cobble pavement, shell hash, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
orange tan encrusting	1
orange encrusting	1
gold encrusting sponge	1
spirorbids	few
<i>Homarus americanus</i>	1
<i>Strongylocentrotus droebachiensis</i>	2

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 5 - 14:16

N 2957066.70, E 840981.58

cobbles, some gravel, moderate sediment dusting

same as Frame 4, close-up

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 6 - 14:17

N 2957085.41, E 840987.16

pavement of partially buried cobbles, gravel, shell hash, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
hydroids	1
spirorbids	few
<i>Aplidium spp.</i>	2
<i>Myoxocephalus spp.</i>	1

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 7 - 14:20

N 2957097.27, E 841015.18

pavement of partially buried cobbles, gravel, boulder, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
orange tan encrusting	3
thick white encrusting	1
hydroids	few
spirorbids	few
<i>Modiolus modiolus</i>	2
small white starfish	2
<i>Didemnum albidum</i>	1

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 8 - 14:21

N 2957114.13, E 840971.16

cobbles and boulders, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
orange encrusting	1
thin tan encrusting	1
hydroids	common
spirorbids	few
<i>Mixicola infundibulum</i>	1
<i>Modiolus modiolus</i>	2

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 9 - 14:22

N 2957116.44, E 840991.03

cobble pavement, some buried, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
hydroids	common
spirorbids	common
<i>Modiolus modiolus</i>	2
<i>Aplidium spp.</i>	2
<i>Didemnum albidum</i>	1

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 9A - 14:23

position not available

cobbles and some boulders, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
hydroids	few
<i>Myoxocephalus octodecimspinosus</i>	1

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 10 - 14:24

N 2957112.32, E 841014.71

too high	
Taxon	Count
<i>Pleuronectes americanus</i>	1

Transect T8
 Waypoint 1 Excursion 1
 Roll 8 Frame 11 - 14:25
 N 2957113.72, E 840984.24
 cobble pavement and boulders, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
thick white encrusting sponge	1
spirorbids	common
small white starfish	1
<i>Strongylocentrotus droebachiensis</i>	1
<i>Didemnum albidum</i>	1

Transect T8
 Waypoint 1 Excursion 1
 Roll 8 Frame 12 - 14:26
 N 2957127.62, E 841055.37
 cobbles and small boulders, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
orange tan encrusting	1
hydroids	few
spirorbids	common
small gastropod	1
<i>Modiolus modiolus</i>	3
small white starfish	2
<i>Henricia sanguinolenta</i>	1
<i>Dendrodoa carnea</i>	1
<i>Ciona intestinalis</i>	2

Transect T8
 Waypoint 1 Excursion 1
 Roll 8 Frame 13 - 14:26
 N 2957095.61, E 840987.08
 cobbles and small boulders, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
orange tan encrusting	1
tan encrusting	2
hydroids	common
spirorbids	common
<i>Modiolus modiolus</i>	3
<i>Strongylocentrotus droebachiensis</i>	1

Transect T8
 Waypoint 1 Excursion 1
 Roll 8 Frame 14 - 14:27
 N 2957087.68, E 840988.51
 pavement, partially buried cobbles and boulders, shell hash, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
hydroids	few

spirorbids	few
small white starfish	2
<i>Aplidium</i> spp.	1

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 15 - 14:28

N 2957082.61, E 840975.46

pavement, partially buried cobbles and boulders, shell hash, moderate sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	common
hydroids	few
spirorbids	few
<i>Strongylocentrotus droebachiensis</i>	1

Transect T8

Waypoint 1 Excursion 1

Roll 8 Frame 16 - 14:30

N 2957070.84, E 841005.12

boulders and cobbles, shell hash, light to moderate sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
orange tan encrusting	5
orange encrusting	2
hydroids	common
spirorbids	common
<i>Modiolus modiolus</i>	2
small white starfish	1
<i>Strongylocentrotus droebachiensis</i>	1
<i>Ophiopholis aculeata</i>	1
bryozoans on hydroids	2
<i>Didemnum albidum</i>	2

Transect T8

Waypoint 1 Excursion 2

Roll 8 Frame 17 - 14:31

N 2957059.59, E 840978.85

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	common
orange tan encrusting	2
hydroids	few
spirorbids	common
serpulids	2
<i>Modiolus modiolus</i>	2
<i>Balanus</i> spp.	1
small white starfish	1
<i>Strongylocentrotus droebachiensis</i>	2
<i>Henricia sanguinolenta</i>	1
<i>Tautogolabrus adspersus</i>	1
<i>Myoxocephalus</i> spp.	1

Transect T8

Waypoint 1 Excursion 2

Roll 8 Frame 18 - 14:31

N 2957073.25, E 840998.43

boulders and cobbles, shell hash, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
orange tan encrusting	1
pink encrusting sponge	1
hydroids	few
spirorbids	common
<i>Modiolus modiolus</i>	3
<i>Tonicella marmorea</i>	1
small white starfish	1
<i>Strongylocentrotus droebachiensis</i>	2
<i>Didemnum albidum</i>	1

Transect T8

Waypoint 1 Excursion 2

Roll 8 Frame 19 - 14:32

N 2957089.14, E 841036.27

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	abundant
orange tan encrusting	1
orange encrusting	1
thin ivory encrusting	1
hydroids	common
spirorbids	common
<i>Asterias vulgaris</i>	1
<i>Aplidium spp.</i>	1

Transect T8

Waypoint 1 Excursion 2

Roll 8 Frame 20 - 14:36

N 2957068.68, E 841009.34

boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
orange tan encrusting	1
tan encrusting	1
hydroids	few
spirorbids	common
<i>Strongylocentrotus droebachiensis</i>	3
<i>Asterias vulgaris</i>	2
<i>Didemnum albidum</i>	1
small fish	1

Transect T8

Waypoint 1 Excursion 2

Roll 8 Frame 21 - 14:37

N 2957070.97, E 841003.10

boulders and cobbles, moderate sediment dusting

Taxon	Count
<i>Lithothamnion spp.</i>	common
orange tan encrusting	3
translucent white encrusting	1
hydroids	few
spirorbids	common
small white starfish	1

<i>Aplidium</i> spp.	1
<i>Didemnum albidum</i>	1

Transect T8
 Waypoint 1 Excursion 2
 Roll 8 Frame 22 - 14:38
 N 2957066.03, E 840961.57
 too high

Taxon	Count
<i>Myoxocephalus</i> spp.	1

Transect T8
 Waypoint 1 Excursion 2
 Roll 8 Frame 23 - 14:40
 N 2957085.84, E 840945.55
 too close, out of focus

Transect T8
 Waypoint 1 Excursion 2
 Roll 8 Frame 24 - 14:43
 N 2957066.15, E 840975.88
 cobbles, shell hash, light to moderate sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
orange tan encrusting	2
brown encrusting	1
hydroids	common
spirorbids	common
<i>Henricia sanguinolenta</i>	1
<i>Strongylocentrotus droebachiensis</i>	2
<i>Aplidium</i> spp.	1
<i>Tautoglabrus adspersus</i>	1

Transect T8
 Waypoint 1 Excursion 2
 Roll 8 Frame 25 - 14:44
 N 2957068.97, E 840983.57
 boulders and cobbles, light to moderate sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant
brown encrusting	1
thin translucent white encrusting	1
pink encrusting sponge	1
hydroids	common
spirorbids	common
<i>Modiolus modiolus</i>	1
<i>Asterias vulgaris</i>	1
<i>Strongylocentrotus droebachiensis</i>	1

Transect T8
 Waypoint 1 Excursion 2
 Roll 8 Frame 26 - 14:45
 N 2957071.55, E 840991.37
 boulders and cobbles, light sediment dusting

Taxon	Count
<i>Lithothamnion</i> spp.	abundant

brown encrusting	1
hydroids	few
spirorbids	common
<i>Modiolus modiolus</i>	2
small white starfish	1
<i>Asterias vulgaris</i>	3
<i>Aplidium</i> spp.	3
END OF DATA	