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Data Report ERL MESA-30



DISTRIBUTION AND ABUNDANCE OF BENTHIC ORGANISMS
IN THE NEW YORK-NEW JERSEY OUTER CONTINENTAL SHELF

John Pearce Janice Caracciolo Martha Halsey Leslie Rogers

Marine Ecosystems Analysis Program Boulder, Colorado December 1977 NOAA Data Report ERL MESA-30

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Marine Ecosystems Analysis Program Boulder, Colorado December 1977



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Distribution and Abundance of Benthic Organisms in the New York-New Jersey Outer Continental Shelf\*

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Division of Environmental Assessment Northeast Fisheries Center Highlands, New Jersey 07732

December 1977

\*These data were generated by personnel of the Division of Environmental Assessment, Northeast Fisheries Center, NMFS, with partial financial support from the NOAA-MESA-New York Bight Project. The data are being made available in the present form for timely assistance to user groups. The data are being further analyzed by staff members of the Northeast Fisheries Center and will form the basis for future publications.

### Introduction

Sandy Hook Laboratory, Northeast Fisheries Center, has been examining the impact of ocean waste disposal on the ecosystem of the New York Bight apex since 1968 (Pearce et al., 1976a; 1977). The New Jersey Coastal Study, initiated in 1972, extended our area of interest south to Cape May, New Jersey (Radosh, unpublished data)<sup>1</sup>. In 1974, the Alternate Dumpsite Study (DUPI) (Pearce et al., 1976b) and Baltimore Canyon Trough Investigation (Pearce, unpublished data)<sup>1</sup> yielded information on areas farther offshore.

The Outer Continental Shelf Survey was undertaken to provide information on a large area of the continental shelf beyond the 20 fm contour (Fig. 1). The information obtained from benthic samples taken from this area will be useful as a basis against which future changes in the ecosystem, due to natural or man-induced phenomena, can be evaluated. The five replicate grab samples from each station will provide a measure of within station variability.

This data report was prepared in order to provide machine listed data and certain statistical calculations, diversity and equitability (Shannon and Weaver, 1963; Pielou, 1969), con-

<sup>&</sup>lt;sup>1</sup>John Pearce and David Radosh are members of the staff of the Sandy Hook Laboratory, Northeast Fisheries Center, Highlands, N. J.

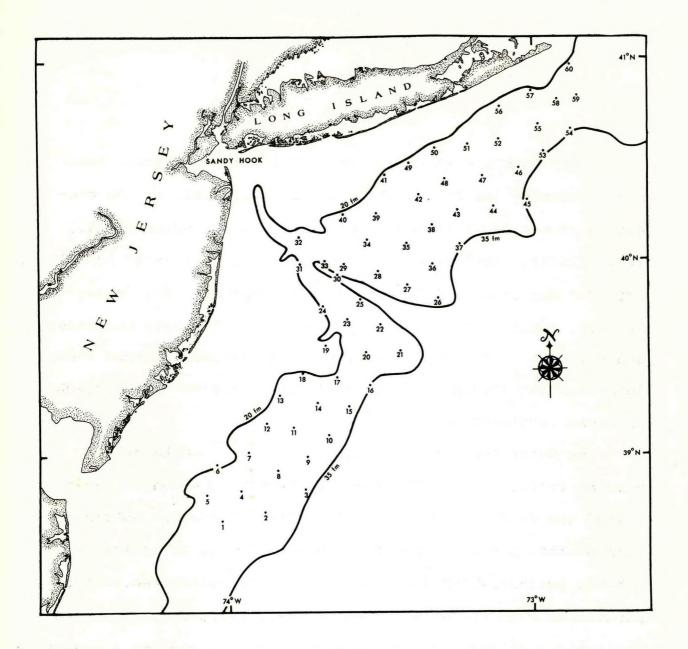


Figure 1. Outer continental shelf station positions.

cerned with the distribution and abundance of benthic organisms collected during this cruise.

## Materials and Methods

The outer continental shelf (OCS) sampling area consists of 60 stations (#1 through 60) located on the New York-New Jersey outer continental shelf, between the 20 and 35 fm contours, bounded by latitudes 30°40.3'N and 40°58.7'N.

In April 1975, five 0.1 m<sup>2</sup> Smith-McIntyre benthic grab samples were taken at each of the 60 sampling sites from on board the NOAA Ship <u>Delaware II</u>. Station positions were located and maintained by Raydist precision navigation. At each station, two 3.4 cm (inside diameter) sediment cores were removed from each grab, one for standard geological analyses (grain size distribution) and the other for heavy metals analyses. These cores were frozen in storage before they were analyzed.

Grain size distribution was determined by first wetsieving a portion of each core sample through a 62  $\mu$  screen. Retained material was dried and then sieved through a series of 12 screens, ranging from 62  $\mu$  to 4 mm mesh size, which were placed on a vibratory shaker for 5 minutes. Sediment remaining on each sieve was weighed to 0.1 mg to determine

fractions of sands, silts, and clays present. Material passing through the 62  $\mu$  screen was placed in a 1000 ml sedimentation cylinder and stirred. Twenty ml portions were then pipetted off at precisely-timed intervals and depths in the cylinder to obtain coarse and fine fractions, which were dried at 105°C and weighed to 0.1 mg (J. Parks, unpublished data). Grain size data, presented by Parks as weight percentages retained on the various mesh sizes used, were converted to percentages of gravel, sand, and mud, using the Wentworth scale as a guide (Shepard, 1963). This conversion was made in order that this data might be presented in a form consistent with our established computer program.

Methods used for sediment heavy metals analyses are explained in detail in the paper by Greig, Wenzloff, and Pearce (1976).

The remainder of each grab sample was washed through a standard geological sieve with a 1.0 mm mesh size. All macrofauna collected in grab samples was fixed in 10% buffered formalin and later transferred to and preserved in 70% ethanol containing 5% glycerol.

At the Sandy Hook Laboratory, dissecting microscopes were used as an aid in sorting out organisms from preserved macrofauna samples. All organisms were identified to the

<sup>&</sup>lt;sup>2</sup>Dr. James Parks is the Director of the Center for Marine and Environmental Studies, Lehigh University, Bethlehem, Pa.

species level, whenever possible, using standard keys and descriptions and consultations with recognized taxonomists.

Station positions and counts of organisms per species in each grab were machine listed and coded. The community found at each station was analyzed for total number of individuals per grab (N), total number of species (S), equitability (J' = H'/H' max = H'/ln S) and diversity (H'  $\stackrel{\sim}{=}$   $-\frac{n_i}{N}$   $\frac{n_i}{N}$  where  $n_i$  = number in the ith species).

### Results

Machine listed species lists and counts with diversity and equitability calculations and data obtained from sediment and heavy metals analyses, for each of the 60 stations, are presented as Table 1.

No detailed interpretations of these data will be made at this time.

# Literature Cited

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  Wiley-Interscience, New York. 286 p.
- Shannon, C. and W. Weaver. 1963. The mathematical theory of communication. Univ. of Ill. Press, Urbana. 117 p.
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  Harper and Row, Publishers, New York. 558 p.

Table 1. Machine listings of species counts, diversity and equitability calculations, sediment grain size, and heavy metals data from 60 grab samples taken in the OCS sampling area.

7.8PPM	ZINC	6. OPPH		LEAD	4.00 FN		NICKEL	4. OPPM	COPPER	4. 0pp4	CHROM IUM
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CHINADACH	OL US PUBESCE	CHIRIDOTEA ALMYRA	101	INSTYL IS S	ETALOSARSIA C	JAC TOLA TRACRATA	TRICHOPHEXUS EFISTEMUS	ILUS +CLBOLL	RAT	PECTODRILUS SYMBIOTICUS	BROCINC	BC	BES		CISPAR		PRANCH	GRACILI		AR	A	ARICIDEA JEFFREYSII	_		THARYX ANNLLCSUS	THARYX ACUTUS	RHYNCHOCHELA	SPECIES LISTING
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                         CERASTODERMA PINNULATIN
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                                                                                                                                                                      SIPHONOECE TES SMITHIANLS
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                                       AFCTICA ISLANCICA
                                                 MARGARITES UMBILICATUS
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                                                                                                                   UNC TOLA INERMIS
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                                                                                                                                                            AMPELISCA AGASSIZI
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E CHINA RACHNIUS PARMA
                                                                             MITRELLA DISSINILUS
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CRUISE SYMAP
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1C. 6PPM	ZINC	6. OPPM	LEAD 6	4.0PPM		N NICKEL	4.0PDM	COPPER	4. OPPM	HE INCOM	
	SI	KURTOSIS 0.97	SK EWNESS	SCRT 0.84	0. 63 NEDI 11	C. 64	1.82	\$ SANE	9 GRAVEL	SOLVACE	
		. 5MG/L	DXYGEN 9.	DISSOLVED	D	33. E2PP T	ALINITY 3	SAL	9.500	TENDERATURE	4
	ORT	CEPT H METERS 59.0	LONGI TUDE	LATITUDE 39C68N	LATI	CRLB 05	NUMBER	STATION N CRUISE 910	CATE 25/C4/75	77.504 25	27
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12.8PPM	ZINC	6.0PP#	LEAD 6	4. OPFN	XEL	MICKEL	4.0PP	COPPER	6. OPPM	KILL KOSAL	,
	SI	KURTOSIS 1.18	SKE WNESS	0.81	MEDIAN 0.39	G.42	9 MUD 2.87	95.53	9 GR AV EL 1.60	EDS ANT CS	
		.5MG/L	DXYGEN 9	DISSOLVED	-	33.83FFT	SALI NI TY 3	SAI	9.500	TE MOE RATURE	
	OBI	DEP TH MET ERS 59.0	CNGITUDE 73208W	LATITUDE 3906E	11V	GR1E C4	SYNAP	STATICA I	DATE 5/04/75	CRUSE 25	.7.7
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1C. 6PPM	ZINC	6. OPPM	LEAD 6	4.0PPM	X EF	NICKEL	4.0PP	CCPPER	5. 0PPM	PA INCOND	,7
	IS	KURTOSIS	SK EWNESS	N SORT 0.78	NECIAN	C. 52	1.35	95.36	7 GRAVEL 3.30	CES ANT CS	
		9.5MG/L	DXYGEN	DISSOLVED		33.82001	SALINITY 3	SAI	9.500	TENDE RAT URE	
	ORT	DEPTH METERS 59.0	LONGITUDE 73208W	LATITUDE 39068N	1 AT	GRAB C3	SYNAP	STATION I CRUISE 010	CITE 25/C4/75	CFUSE 25	0.0
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11.4PPM	ZINC	6. OPPW	LEAD. 6	4. 0P PM	K EP	NI CK EL	4.000	COPPER	4.600M	WALL MOS 40	
	SIS	KURTO SI S	SKEWNESS 0.28	N SORT 1.27	MEDIAN 0.45	MEAN C.45	8.95	L % S AND	% GRAVEL	CRS ANT CS	
		9.5MG/L	C CXYGEN 9	CISSCIVEC		33. 83 FFT	SALINITY 3	SA	9.500	TENDEPATURE	
	O RS	DEP TH METERS 59.0	LCNGITUDE 73208W	LATITUDE 35C68N	LA 7	GR AB 02	SYMAP	STATICA CRUISE 010	DAT E 5/C4/75	7534 2	10

	NC. SPECIES 19	CHRON I UM	9 ORGANICS	TEMPERATURE 8.00C	CR LI SE [7504
	CIES		SOI	TURE	25/
CCECCO SPECIAL		E. 2PPM	F GRAVEL	8.00C	DATE 25/ C4/75
SPECIES LISTIN CERIANTFEDPSIS AME PROTODRILLS SYMBIC GLYCERA DIERANCFICT GLYCERA DIERANCFICT GLYCORA SCCIALIS SPIOPHANES BCMBYX SIGALION ARENICOLA NEPHYS BUCERA CIRCLANA PCLITA CIRCLANA PCLITA A CANTHOHAUS CIRCIN ELOTEA TRILOBA DRICTOCHALSTORILS WILLIAM STORILS A CANTHOHAUS TORILS A CA	NC. INCIVIDUALS	COPPER	\$ SAND	SA	STATICN NUMBER CRUISE SYMAP
SPECIES LISTING CERIANTHEOPSIS AMERICANUS PROTODRILLS SYMBICTICLS GUCHONE RUBROCTNUTA GYCCERA DIERANCHIATA PRILIDNEREIS MAGNA POLYDORA SOCIALIS SPIOPHANES BUMBYX SIGALION ARENICOLA NEPHTYS BUCERA A GLAOPHAMUS CIRCINATA E[OTEA TRILGBA CIRCLANA POLITA A CANTHOHAUSTORILS MILLSI TRICHOPHOXUS EPISTOMUS PROTOHALSTORILS MIGLEYI UNC TOLA TRRORATA BYBLIS SEPRATA SIPHONOSECETES SMITHIANLS E[HINARACHNIUS PARMA		4.0PP	3.25 C.50	SALINITY 33.61FPT	SYNAP
ICANUS ICLS	311	4. OPPN NICKEL		3.61FPT	GRAR C1
	DIVERS		WEDIAN 0.47	DI	LAT ITUDE
CEUNT 4 4 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	DIVERSITY 2.1762	4.0PFM LEAD	SCRT 0.57	SSOLVED	O DE
	162	LEAD	SCRT SKEWNESS 0.57 -0.22	DISSULVED DXYGEN	LONGITUDE 73353W
	EQUITAR	6.0PPM	S KURTOS IS	9.4MG/L	
	EQUITABILITY 0.7351	ZINC	OS 15	٦	DEPTH METERS 51.7
	0.7351				
		1C. 6PP4			

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	NC. SPECIES 19	CHECM TUM	T CRGANICS	TE WOERAT URE	CRUISE
	SPEC	WOI N	SANI	RAT	± Sm
	SES		S	SE E	24/
	19	4. 00PM	9 GR A	7.100	DATE 24/04/75
m D A D D C C D A Z Z S H G A C O S R		MODA	\$ GRAVEL	190	73
SPECIES LISTING  RHYNCHOCCELA  RIGALION ARENICOLA  DRILONEREIS MAGNA LEIOCHONE DISPAR  AFICIDEA WASSI  GLYCEPA SP.  THARYX ANNULOSUS SFIOPHANES BUCERA NEPHTYS BUCERA AGLAGPHAMUS CIRCINATA PROTODRILUS SYMBIOTICUS LEPTOGNATHA CAECA CHIRIDCTEA TUFTSI PSEUDUNCIOLA OBLIQUUA PROTOHAUSTORIUS WIGLEYI ACANTHCHAUSTORIUS WIGLEYI ACANTHCHAUSTORIUS FARMA ECHINARACHNIUS FARMA	V.C.	CC			CRU ST
THANKS BEANDOCTED	IND	COPPER	% SAND		CRUISE 012
SPECIES LISTING NCHOCCELA ALION ARENICOLA LONGREIS MAGNA CHONE DISPAR CIDEA WASSI CERA SP. CYX ANNULOSUS DPHANES BUVERA HTYS BUCERA HTYS B	NC. INDIVIDUALS	Ø	0 2	SALI	***
IST ICON AGNAMAN A A A A A A A A A A A A A A A A A	UAL	4.	0 3	SALINITY 33.46 FPT	SYMAP
ARMA A SIGU	S	4.0PPM	00	Υ 33	שש
THA CA	52		9 MUD MEAN 0.0 0.53	.46	GR AB
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511233111002122211NT	DIVERSITY 2.4506		51	CISSOLVEC OXYGEN	_
	506	LEAD	SKE WN8	A XD	_CNGITU
4		0	SKEWNESS		LCNGITUDE 73455W
	EQU I	6.0		9.6MG/L	m
	TAB	6. OPPM	KURTOSIS 1.42	MG/I	ME 3
	LIT		0515	i	MET ERS 37.1
	٧ 0	ZINC			
	EQUITABILITY 0.8323				
	(1)	9.4PPM			
		Z			

CRUIS E NO. SPECIES 14 CHEOMIUM \* CRG ANI CS % GRAVEL % SANC % MUD MEAN 1.52 58.47 C.0 C.48 TENPERATURE 7.30C 0 AT E 24/04/75 4.00PM AGLADPHAMUS CIRCINATA
LEINCHONE DISPAR
THARYX ACUTUS
SPIOPHANES BUMBIX
S COLOPLOS ACUTUS
GLYCERA DIBRANCHIATA
CIROLANA POLITA
PROTOHAUSTERIUS WIGLEYI
COROPHIUM CRASSICERNE
TRICHOPHOXUS EPISTOMUS
BYBLIS SERRATA SPECIES LISTING ECHINARACHNIUS PARMA NEPHTYS PICTA NO. INDIVIDUALS CRUISE SYMAP COPPER SALINITY 33. 73PP 1 4.0PPM GR AB NI OK EL MEDIAN SORT SKEWNESS KURTOSIS 0.47 0.65 -0.13 1.03 DIVERSITY 2.2791 39188N DISSCLVED CXYGEN 9.2MG/L 4. 0P PM COUNT LONGI TUDE LFAD EQUITABIL ITY 0.8636 6. OPPM METERS 40.7 ZINC 7. RPPM

SALINITY 33.76 FET CISSOLVEC CXYGEN 9.3 MG/L  9 GRAVEL \$ SANC \$ MUD MEAN MEDIAN SORT SKEWNESS KURTUSIS  0.00 0.20 0.29 0.56 -0.03 0.94  24 NC. INDIVIDUALS 157 DIVERSITY 2.3118 EQUITABILITY 0.7214  SPECIES LISTING COUNT SPECIES LISTING ARICIDEA MASSI SEICPHANES ELPBYX A GLADPHAWUS CIRCINATA A PAPLARETE LACTICA FOR MASSI SEICHNANS ELPBYX A GLADPHAWUS CIRCINATA A PAPLARETE LACTICA GLYCRA SIERANGELIS LUMBRINERIS ERAGILIS LUMBRINERIS SPACILIS LUMBRINERIS SPACILIS LUMBRINERIS SPACILIS LUMBRINERIS SPACILIS LUMBRINERIS SPACILIS LIFTOGNAPHA CAECA SISPART LIFTOGNAPHA CAECA SISPART LIFTOGNAPHA CAECA SISPART SISPART SISPART SISPARTA S	STATICN NUMBER CRUISE SYMAD ERLE LAT 014 C1 35	
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CRUISE D7504 R CRG ANI CS NO. SPECIES 25 CH FOM I UM TENPERAT URE 25/14/75 DATE & GRAVEL 4.00PM 9.000 DIASTYLIS GUACRISPINOSA DIASTYLIS SCULPTA FUCORELLA EMARGINATA PIILANTHURA TRICARINA NEREIS GRAYI PHASCOLOSCMA SF.
MACROCLYMENE ZCNALIS CER IANTHEOPSIS AMERICANUS PELYDORA SP. AMPHARETE ARCTICA GLYCERA DIERANCHIATA C YC LOC ARDIA BEREALIS PANCORA GOULDIANA MARGARITES LABILICATUS ANPELISCA AGASSIZI UNCIDLA IPRORATA BYBLIS SERRATA AGL AOPHAMUS CIRCINATA SPIOPHANES BOMBIX CAULLERIELLA KILLARIENSIS FCH INARACHN IUS PARMA ASTARTE SUFFCUILATERA LYDNS IN HYALINA FASIS DIRECTLS T F I CHOPHEXUS EP ISTOMUS ERICHTHONILS PUBRICCANIS EFICHT HONIUS RUBRICORNIS THARYX ANNULCSUS PCLYCIRRUS FHESPHEREUS LUMBRINERIS TENUIS CLYMENELLA TORCUATA UNIC BIVALVE #2 LUNATIA IMMACULATA NO. INDIVIDUALS STATION NUMBER
CRUISE SYMAP
015 COFFER SPECIES LISTING \$ SAND SALINITY 33. 77PPT 0.0 0 MUD 4.0PPM 146 CR AB NI CK EL O. 27 91 VERSITY 3.0921 19151N DISSULVED DXYGEN 9.3 MG/L 4.0P PM SORT 0.41 73130W LEAD SKEWNESS KURTOSIS
0.21 0.98 FOU IT ABIL ITY 0.8697 6. OPPM METERS 62.7 ZINC

6. 8PFM

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Mr. SPECIES
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                              UNCIDLA IRRCRATA
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                  UNCIOLA INERNIS
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ERICHTHONILS RUBBICORNIS
                                                            PHOXOCEPHALUS HOLBOLL I
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LUMBRINER IS ACUTA
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0.39
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55.4
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2.8pp4

LLNATIA TRISERIATA
MITRELLA DISSIMILLS
CRENELLA GLANDULA
ENSIS DIRECTUS
LYONSIA HYALINA
CERASTCHERMA PINNULATUM
THYONE UNISEMITA
ECHINARACHNIUS PARMA
OPHIUROIDEA

-222-8-8-

				- v				7		
1504 52	DATE 25/04/75	CRUISE 017	SYMAP	GR AB	LATITUDE 39247N		LENGITUDE 73177W	E MET ERS	0 82 =	
WDEDATURE	9.000	SA	SALINITY 33.72FFT	. 72 FFT	113	SSCLVEC	CISSCLVEC CXYGEN	9.2MG/L		
CAC ANI CS	9 GRAVEL	99.83 99.83	O.O	MEAR 0.35	MEDIAN 0.34	SORT 0.48	SKEWNESS	S KURTOSIS	S	
MOI KJ3	4.9004	COPPER	4.0PPM	NI CK EL		4. OP PM	LEAD	6.0PPW	ZINC	3.6P
Salcas .	26	NG. INDIVIDUALS		117	DIVERS	DIVERSITY 2.5295		EQUITABILITY 0.7764	ITY 0. 7	764
	2 m	SPECIES	SPECIES LISTING			COUNT				
	S A C P 7	NET STOCA  P FASCOLION STROMBI  LEIGCHCNE DIS PAR  ARABELLA IRICCLCR  S CALIBREGMA INFLATUM  ACLACBUANIC CIECTINATA	STROMBI IS PAR IC CL CR INFLATUN			0 N H W H F				
	GLY	GLY CERA DIERA	DIERANCHIATA			· in H				
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	SFI	SFIGPHANES	BENAE			22				
	N E D		ROCINC TA			27				
	AME	A MPHARETE ARCTICA	RC TI CA			N سر	i	Î		
	2115	STHENELAIS LIMICOLA	A KILLARI	IN NOTICE OF THE PARTY OF THE P		2 1				
	Dad o	PECTODRILUS SYMBIOTICUS	SYMBIOLI	CUS		- 13				
	01/10	CIASTYLIS QUADRISPINOSA	UADRISPIN	OSA		2				
	₹ R 7	TRICHOPHOXUS EPISTOMUS	S EPISTON			w œ				
	11 h	WITRELLA DISSIMILUS	SS IM IL US			, pu				
	n	ECTIVABACHNII S PARMA	II S DARMA			10				

CR U SE CHRON I UM NC . SPECIES 23 9 ORGANICS TEMPERATURE 7.80C 0 ATE 24/ (4/75 4. OP PM 9 GRAVEL 13.34 CCROPHIUM CRASSICORNE EFICHT HONIUS HUNTER I STENOPLELSTES INERMIS P HO XOC EPHALLS HOLBOLLI A CANTHOHAL STORIUS SPINESUS TRICHOPHOXUS EPISTOMUS PECTODRILLS SYMPICTICLS CIROLANA POLITA PCLYCIRRUS PHESPHEREUS GLY CERA CIERANCHIATA R FYNCHOCOEL A FCH INARACHNIL'S PARMA UNC TOLA TRECRATA BYBLIS SFRRATA ECOTEA TRILCEA AFHROD IT A HESTATA SPIDPHANES BOMEYX APPHARETE ARCTICA AGLADPHAMUS CIRCINATA ARICIDEA WASSI LEIOCHONE DISPAR SCALIBREGNA INFLATUR NO. INDIVIDUALS STATICN NUMBER
CRUISE SYMAP
018 86.67 COPPER SPECIES LISTING SALINITY 33.80FPT O.O 4.0PPN ME LA CR LE 40 NI CK EL MEDIAN SORT DI VER SI TY 2. 7524 LAT ITUDE DISSULVED DXYGEN 7.6MG/L 4.3PFW CCUNT T3306W SKEWNESS KURTOS IS 0. C4 0. 96 LEAD EQUITABILITY 0.9778 6.0PPM METERS 40.7 ZINC 3. 2PPM

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	MC. SPECIES 10	CHPON TIM	9 ORGANICS	TEMPERATURE 7.500	CRUISE [7504
8000CC		4. 0994 COPPER	S 9 GRAVEL	RE 7.50C	C ATE 24/ C4/75
SPECIES LISTING TOPHELIA CENTICULATA MACROCLYMENE ZCNALIS GCNIADELLA ERACILIS PRCTODORVILLEA EIARTICULATA E XOGONE HEBES LLWERINERIS ACUTA LLWERINERIS FPAGILIS C IROLANA POLITA CHIRIDOTEA CAECA P SAWMONYX NCBILIS	NO. INDIVIDUALS	COPPER		SAL	STATION NUMBER CRUISE SYMAP
ICULATA ZCNALIS RACILIS RACILIS EA BIARTI S GUTA FPAGILIS ITA AECA AECA BILLIS		4.0PPN NICKEL	O.O	SALINITY 33.51FPT	SYNAP
CULATA	25 DI	NICKEL	\$ SAND \$ MUD MEAN MEDIAN 98.55 0.0 0.58	SIFPT	GRAB L
CCUNT 10 10 10 11 11 11 11 12	DIVERSITY 1. 8330	4.0PFM	IAN SCRT	CISSOLVE	LATITUDE 35343N
		LEAD	SKEWNESS	DISSOLVED DXYGEN 9.6MG/L	LONGITUDE 73218W
	EQUITABILITY 0.7561	6.OPPM	S KURTOS IS	9. 6MG/L	DEPTH E METERS 33.4
	TY 0.7561	ZINC	is.		S
	_	2. 0PPW			

CHECMIUM	TEMPERATURE	CRUIS E 07.504	· · · · · · · · · · · · · · · · · · ·	NC . S PEC IES	CHEDMIUM	9 ORGANICS	TE NPE RAT URE	CP (I SE 07504
4.2PPM	RE 9.00C	DATE 25/04/74	** ** * * * * * * * * * * * * * * * *	ES 21	4. OPPM	S # GRAVEL	RE 9.00C	DATE 25/ C4/75
CUPPER	SA	STATICN NUMBER CRUISE SYMAP 020	SPECIES LISTING R HYNCHOCOFL A NEW ATODA E XOGONE HERES P AR APICNCSYLL IS LONGICIRR ATA E LSYLLIS BLCWSTRANDI T HARYX ACLILS GLYCERA SP. ARICIDEA JEFFREYSII GONIADELLA GRACILIS LUMBRINERIS SP. LUMBRINERIS SP. PRCTODRILUS SYMBIOTICUS CCPEPODA OFCAPOD UNCIOLA IRRCRATA TRICHOPHCXUS EPISTCMUS PHOXOCEPHALUS HOLBOLL I CIPCLANA FICLITA NASSARIUS TRIVITTATLS ECHINAPACHNIUS FARMA ***********************************	NO. INDIVIDUALS	CCPPER	94.68 94.68	SAI	STATION NUMBER CRUISE SYMAP
4.0PP M	SALINITY 33.65PPT	SYMAP	SPECIES LISTING ICHOCOFLA TTODA TTODA TODA TODA TODA TODA TODA T		4.0PPN	7 MUD	SALINITY 33.65FPT	NUMBER
NI OK FL	. 65PP T	GRAB 1	CUS	117 01	NICKEL	NE 21 NE C	14359°	C1 C1
4.0P PM	DISSCIVE	1411 TUDE	SPECIES LISTING  CCUNT  R PYNCHOCOTELA  NEW ATODA  NEW ATODA  E SOGONE HERE S  P # #PICNCSYLLIS LONGICIRRATA  E SYLLIS BLEWSTRANDI  T HARYX ACLILS  GLYCERA SP.  ARICIDEA JEFFREYSII  ARICIDEA JEFFREYSII  GON NADELLA CRACILIS  IMAGROCLYMENE ZONALIS  LUMBRINERIS SP.  PAGTODRILUS SYMBIGTICUS  C CPEPDDA  C CPEPDDA  TRICHOPHCXUS EPISTCMUS  PHOXOCEPHALUS FOLBOLLI  C IPCLANA F CLITA  NASSAR JUS TRIVITATUS  ECHINAPACHNIUS TRIVITATUS  ECHINAPACHNIUS TRAMA  5  ECHINAPACHNIUS TRAMA  6  ECHINAPACHNIUS TRAMA  5  ECHINAPACHNIUS TRAMA  5  ECHINAPACHNIUS TRAMA  6  ECHINAPACHNIUS TRAMA  7  ECHINAPACHNIUS TRAMA  6  ECHINAPACHNIUS TRAMA  6  ECHINAPACHNIUS TRAMA  7  ECHINAPACHNIUS TRAMA  7  ECHINAPACHNIUS TRAMA  7  ECHINAPACHNIUS TRAMA  8  ECHINAPACHNIUS TR	DI VERSITY 2.3656	4.0PPM	MEDIAN SORT	DISSOLVE	1 AT ITUDE
LEAD	DISSCLVED GXYGEN	LONGI TUDE	* * * * * * * * * * * * * * * * * * *		LFAD	SKEWNESS	DISSOLVED OXYGEN	LONGITUDE 73062W
6. OPPM	9.3MG/L	DEP TH METERS 46.2		EQUITABILITY 0.7770	6.0PPM Z	KURTUS IS 1.66	9.3MG/L	DEPTH METERS 46.2
ZINC 5.		o,	*	0.7770 Y	ZINC E.			
9. 2PFM			*		E. 4PPM			

7.4PPM	ZINC	6.0PPM	LEAD 6	EL 4. OPEN	NI CKEL	4.0PP M	COPPER	4. OPP4	CHEON TUN
	S	KURTOSIS 1.34	SKE WNESS	MEDIAN SORT 0.17 0.56	0.18	3 .29	8 SAND 96.70	CS 9 G2 4V EL	* CRGANICS
		9.3MG/L		CISSOLVEC OXYGEN	3.65 FPT	SALINITY 33.65FPT	SA	JRE 9.00C	TE MPE RATURE
	S	DEP TH MET ERS 46.2	LONGITUCE 73062W	LATITUDE 39321N	C F C F C F C F C F C F C F C F C F C F	SYVAP	STATICA CRUI SE 0 20	DATE 25/04/75	CRLISE C7504
* * *	***	***	[李章本本本本本本本]	日本 计格式 食物素 计微格式 经最后股份 经存货 经存货 经存货 经存货 经存货 医格勒特 医格勒特 医格勒特氏 医格拉氏 医克勒氏 医克勒氏 医克勒氏 医克勒氏 医克勒氏 医克勒氏 医克勒氏 医克勒	*****	****	**	**	* * * * * * * * * * * * * * * * * * *
7. 8PPM	ZIVC	6. OPPM 2	LEAD 6.	EL 4.0PPM	NIONEL	4.0PPM	COPPER	4. 0PPM	CHEUMI UM
	S	KUR TO S I S 0.99	SK EWNESS	WEDIAN SORT 0.17 0.43	C. 18	2 MUD 2.53	2 SANE	S # GRAVEL	T CRSANI CS
		9. 3 MG/L		DISSOLVED OXYGEN	3. 6 CPP T	SALINITY 33.65PPT	SAI	JRE 9.00C	TENDERATURE
	S	DEPTH METERS 46.2	LONGITUDE 73062W	LATITUDE 39321N	GR AB	SYMAP	STATION NUMBER CRUISE SYMAP 020	DATE 25/14/75	CRUSE ETEN4
****	香	* * * * * * * * * * * * * * * * * * *	***	少女 法衣衣 光 光水 水水 水水 水水 安徽 安徽 法 法法 法法 法非 非常 非 教教 经的 李俊	***	**	<b>计算操作的</b>	大大 安本 安林 安林 公 安文	****
7.8PPM	ZINC	6.0PPM	LEAD 6	EL 4. OPFN	M NICKEL	4.0PPM	COPPER	4.0004	CHEOM INW
	S	KURTOSIS	SKEWNESS	MEDIAN SORT 0.17 0.53	0.18	9 MUD 3.70	96.30	O. O. O	* CRGANICS
		9.3MG/L		CISSOLVEC OXYGEN	3.65 FPT	SALINITY 33.65FPT	SA	R = 9.00C	TE MPERATURE
	Vi .	DEP TH MET ERS 46.2	LCNGITUDE 73062W	1411110E	GR LE	SYMAD	CRUISE	DATE 25/04/75	CRUSE

	NC. SPECIES 34	CHROM IUM 4	9 ORGANICS 8	TE NOE RAT URE	CRLISE DATE E7594 26/C4/
CERIANTHEOPSIS AMERICANUS PHA SCOLICA STRYBI GONIADELLA GRACILIS ELCHCNE RUEFOCINCTA PCTAMILLA NEGLECTA PCTAMILLA NEGLECTA EXOGONE HEBES ANPHARETE ARCTICA SCALIBREGNA INFLATUM THARYX ACUTUS LEIGCHONE DISPAR DRILONEREIS MAGNA LUMBRINERIS ACUTA LUMBRINERIS FRAGILIS AFHRODITA HASTATA STHENELAIS LIMICOLA STHENELAIS LIMICOLA STHENELAIS LIMICOLA STHENELLA SILIARIENSIS CAULLERIELLA KILLARIENSIS PROTODRILLS SYMBICTICLS CAULLERIELLA KILLARIENSIS PROTODRILLS SYMBICTICLS CAUCIOLA INERMIS TRICHOPHOXUS FPISTOMUS AMPELISCA ACASSIZI BYRLS SERRATA MITRELA DISSIMILUS CERASTODERMA FINNULATUM ENSIS DIRECTUS HCLOTHUROTOEA ECHINAPACHNILS PARMA DPHINROTOEA	SPECIES I STING	4. OPPM COPPER	7 GR 4 VEL % SAND %	9.00C SELIN	STATICN N CRUISE 75 021
AMERICANUS CORBI COLLIS COLLIS COLLIS GNA ACITA	163	4. OPPN NICKEL	7 MUD MEAN MED 0.0 0.29 0.	SELINITY 33.67PPT	GR FB
271111000000000000000000000000000000000	DIVERSITY 2.7237	4.0PPW LE	0.25 0.39 C	CISSULVED DXYGEN	LATITUDE LON 39325N 72
		LEAD 6.0PPM	O.CB L.16	YGEN 9. 2MG/L	LONGITUDE METERS
	EQUITABILITY 0.7724	ZINC 6.4PPM	S IS		• O

Mr. Species CHEOMI OM 17504 EN USE T CRS ANI CS TENPERATURE 9.94C 0 ST E 26/(4/75 7 GRAVEL % SAND 99.99 9 4. 00 PM SPECIES LISTING
THARYX ANNULOSUS
LEICCHCNE DISPAR
LLMBRINERIS ACLTA CIPCLANA POLITA
UNCIOLA IPRORATA
ACANTHOHAUSTOPIUS SPINCSUS
COROPHIUM CRASSICCRNE
DECAPOD AMPHARETE ARCTICA NO. INDIVIDUALS STATION NUMBER CRUISE SYMAP 022 CCPPER SALINITY 33.66PPT 0.0 4.0PPW C. 17 10 CRIB VICK EL MECIAN SORT 0.17 0.36 DI VERSITY 2.1640 3 54 CTN DISSOLVED OXYGEN 9. 2MG/L 4.0PPM CCUNT SKEWNESS KURTOSIS T3006W LEAD EQUITABILITY 0.9849 6.0PPM DEPTH METERS 55.4 ZINC 11.6PPM

RLISE DA	DATE 24/04/75	STATICN NUMBER CRUISE SYMAP 023	NUWBER	GR 18	LATITUDE 39425N		LONGITUDE	DEP TH MET ERS 38.9	0 B I	
EMPERATURE 7.30C	7.30C	SA	SALINITY 33.59FPT	.59 FPT	13	SSOLVED	CISSOLVEC OXYGEN	J. 5M67		
CRG ANI CS	9 GR AV EL 0.21	\$ SAND	O .O	0.47	MEDIAN 0.47	SORT 0.61	SKE WNESS KURTOSIS	KURTOS C. 53	SI	
HEOM IUM	4. OPPM	COPP ER	4.0PPM	NICKEL		4. 0PFN	LEAD	6.0PPM	JINC	6.6PPM
C. SPECIES 18		NC. INDIVIDUALS	IDUALS	60	DIVERS	DIVERSITY 2.3386		EQUITABILITY C.8CS1	11Y C.8	153
	MCCONTERNATION AND CONTERNATION AND CONTERNATION OF CONTERNATI	SPECIES LISTING GLYCEPA DIEPANCHIATA LEIOCHCNE DISPAR AFICIDEN JEFFREYSII E YNGONE HEBES EUCHONE RUBROCINCTA THARYX ANNULCSUS PROTODORVILLEA BIARTICLLATA MACROCLYMENE ZCNALIS ACLAOPHAMUS CIRCINATA SFIGPHANES EDWBYX GCNIADELLA GRACILIS PROTODRILUS SYMBIOTICUS PROTODRILUS SYMBIOTICUS PHOXOCEPHALUS HOLBOLLI UNCICLA IPRORATA CANCER IPRORATA ENSIS DIPECTUS	SPECIES LISTING CHCNE DISPAR CHCNE DISPAR IDEA JEFFREYSII ONE HEBES ONF RUBROCINCTA YX ANNULCSUS ODDAVILLEA BIAR IRINFRIS ACUALIS ODHAMUS CIRCINA IPHANES ED MEYX ADELLA GRACILIS ODDRILUS SYMBIOTI TA DENTATA (OCEPHALLS HOLBO) IDLA IRRORATA IS DIPFCIUS IS DIPFCIUS	ICUS LA LICCTAIA		COLNT 1 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1				

CR UI SE Mr. Species 21 CHROW IUM 9 OPGANICS TEMPERATURE 7.34C 7 ATE 24/(4/75 & GRAVEL 4. ODP 4 0.14 ECHINARACHVILS DARMA MELITA CENTATA LNCIDLA IPPCRATA PROTOSPILLS SYMBIOTICLS FECTEA TRILLEA PERACNIS LYRA SLYCERA DIERANCHIATA ACLADDIANUS CIRCINATA SEESH SNOONE A NOHARETE ARCTICA AFICIDEA JEFFREYSII LLMBRINERIS FRAGILIS LINBRINERIS ACLTA THARYX ANNULOSUS
CAULLERIELLA KILLARIENSIS THAPYX ACLIUS GCN IADELLA GRACILIS NO. INDIVIDUALS CRUISE COOPER STATICY NUMPER SDECIES FISTING \$ 51VC SELINITY 33.46FDT SYMAP ى ئى ئى 4. 30 PW 174 MEAN 0.52 GF 18 MICKEL O.52 DIVERSITY 1.6729 LATITUDE DISSOLVED DXYGEN 9. 2MG/L 4.0P PM SCRT 0.63 CCLAT 102 LEAD LONGITUDE SKEWNESS KURTOS IS 73224W EQUITABILITY 0.5455 6.0PPM METERS 40.7 ZINC 4. 2P PM

	NC. SPECIES	CHROW I UM	9 OPGANICS	TEMPERATURE 8.80C	CRUISE 07504 26
	20	4. OP +4	9 GRAVEL	8.800	DATE 26/C4/75
SPECIES LISTING NEMATOCA LEICCHCNE DISFAR SCALIBREGMA INFLATUM ELCHONE RUEDCINCTA THARYX ACUTLS THARYX ANNULOSUS AGLADPHAMLS CIRCINATA LUMBRINERIS ACUTA DRILONEREIS MAGNA GCHADELLA GRACILIS GLYCERA DIBRANCHIATA GLYCERA SP. PROTODRILUS SYMBIDTICLS CCPEPOCA SYBLIS SERRATA DHOXOCEPHALLS HCLBCLLI ENSIS DIRECTUS ECHINARACHNIUS FARMA	NO. INDIVIDUALS	COPPER	99.50 99.50	SA	STATION NUMBER CRUISE SYMAP
SPECIES LISTING TOCA CHENE DISPAR INFLATUM ONE RUEFOCINCTA YX ACUTLS YX ANNULOSUS OPHAMLS CIRCINAT RINERIS ACUTA ONEREIS MACALIIS ERA DIBRANCHIATA ERA SP. ERA SP. ERA SP. COCEPHALLS SYMBIOTI LODRILUS SYMBIOTI LODRILUS SYMBIOTI COCEPHALLS HELBCL S DIRECTUS NARACHNIUS FARMA	IDUALS	4.0PF*	C.O	SALINITY 33.63FPT	SYMAP
CC A	43	NI CK FL	MEIN I	.63FPT	GR AB
	DIVER SI 1 2.5677		MEDIAN S	0188	LAT ITUDE 35485 N
CELNT CELNT 2 2 1 1 2 2 2 1 1 2 2 1 2 2 1 2 2 1 2	Y 2.567	4.0PPM L	SORT S	DISSOLVED OXYGEN	
		LEAD	SKEWNESS		LONGITUDE 73088W
	QUITABI L	6.OPPM	KURTOS IS 1.17	8. 8MG /L	DEPTH METERS 49.9
	FQUITABILITY 0.8571	ZINC	15		SET
	571	6. 2P PM			

SPECIES LISTING LEIDCHQNE DISPAR DRILDNEREIS MAGNA THARYX ACUTUS PHYLLODOCE ARENAE LLWBRINGRIS ACUTA SPIODHANES BEMBYX. GCNIADELLA CRACILIS AFICIDEA JEFFREYSII AMDHARFTE ARCIICA HARMOTHOE EXTENUATA SCALIBREGWA INFLATUW EUCHONE RUPROCINCTA AFABELLA IPICCLCR PROTODRILUS SYMBIOTICUS CCPEDDCA DSTRACCCA SIPHONDECETES SWITHIANUS TRICHDPHCXUS EPISTOMUS DFCAPDO	NO. SPECIFS 24 NO. INDIVIDUALS	CHICMIUM 4.0PPM COPPER 4.0PPM	* CPSANICS * GRAVEL % SANE % MUC 0.0 55.55 C.0	TEMPERATURE 6.70C SALINITY 33.45PPT	CRUISE DATE CRUISE SYMAP C7504 23/04/75 926	
COUNT 1 26 27 11 11 11 11 11 11 11 11 11 11 11 11 11	\$1 DIVERSITY 2.3318	NICKEL 4.00 PM	MEAN MEDIAN SORT C.34 0.33 0.53	33.45PPT CISSOLVED OXYGEN	GRAR LATITUDE O1 39490N	
	318 EQUITABILITY 0.7337	LEAD 6. OPPM ZINC E. 4	SKEWNESS KURTOSIS	DIOXYGEN 9.6 MG/L	CEPTH LONGITUDE METERS 72375W 57.2	

	NO . SPECIES	CHROMIUM	S ERS ANI CS	TENDERAT URE	CRUISE 1
SPECIES LISTING CERINTHEOPSIS AMERICANUS SCALIBREGWA INFLATUM AWDHARETE ARCTICA AWDHARETE ARCTICA THARYX ANULOSUS THARYX ACUTUS SPIDPHANES BOMBYX EUCHCNE RUBERCCINCTA GCNIADELLA GRACILIS GLYCERA DIBRANCHIATA NEREIS GRAYI PHYLLODOCE ARENAE LICCHCNE CISPAR LUMBRINERIS FRAGILIS MACROCLYMENE ZONALIS CLYMENELLA TORQUATA DIA STYLIS CUADRISPINGSA PETALOSARSIA DECLIVIS PILLANTHURA TRICARINA UNCIDLA IRRORATA BYBLIS SERRATA PHCXOCEPHAILS HOLBCLI CERASTODERMA PINNULATUM ECHINARACHNIUS PARMA 8 ECHINARACHNIUS PARMA 8	IES 24 NO. INDIVIDUALS 184 DIVERSITY 2.4016	4.20PM CCFPER 4.0PPM NICKEL 4.0PPM	CS % GRAVEL % SAND % MUD MEAN MEDIAN SORT 1.84 96.04 2.15 (.21 0.31 0.56	7.20C SALINITY 33.52PPT	DATE CRUISE SYMAP GRAB LATITUDE 24/C4/75 027 01 39525N
UNT 10 10 11 11 11 11 11 11 11 11 11 11 11	2.4016 FQJIT ABIL ITY 0.7557	M LEAD 6.OPPM ZINC 6.6PPM	T SKEWNESS KURTOSIS	DISSOLVED OXYGEN 9.2MG/L	LONGITUDE RETERS

NO. SPECIES 29 CHECHION 07574 \* CPG AVI CS TEMPERATURE 7.20C CRLISE 74164175 DITE F GRAVEL 5.20 PM 0.0 MARGARITES UMBILICATUS ENSIS DIRECTLS ARCTICA ISLANDICA PHEXOCEPHALUS HELBELLI RYBLIS SERRATA PRCTODRILLS SYMBICTICLS
EFICHT HONIUS RUBRICORNIS AMPELISCA MACRECEPHALA WICROCLYMENE ZENALIS PECLOE MINUTA AGLACPHANUS CIRCINATA E ICHONE RUBRECINCTA L FIOCHONE DISPAR SFICPHANES ECNEYX HARMOTHOE EXTENUATA ARICIDEA JEFFREYSII EXCGCNE PERES GEN IADELLA GRACILIS LLWBRINERIS TENLIS DEILONEREIS MAGNA P AR AP IONOSYLL IS LONGICIRP ATA LUMBRINERIS FRACILIS SCALIBRECMA INFLATUM LLMBRINERIS ACLIA GLYCERA DIERANCHIATA STHENE LAIS LI MICOLA ANPHARETE ARCTICA THARYX ACLILS NO. INDIVIDUALS CRU ISE SPECIES LISTING STATION NUMBER COPPER \$ SAND SALINITY 33.55PDT SYMAP 2.05 2.05 4.0PPM 228 C. 41 GR AB NICKEL MECIAN SORT 0.41 0.54 DIVERSITY 2.4202 LATITUDE 39570N DISSCLVED CXYGEN 9.2MG/L 4. 0P PM COUNT LONGI TUDE LEAD SKEWNESS KURTOSIS 7301 7W EQUIT ABIL ITY 0.7187 6. OPPM METERS 48.C ZINC 7.4PFM

CRUISE DATE 07504 24/04/75	STATION NUMBER GRAB LATITUDE LONGITUDE METERS CRUISE SYMAP GRAB LATITUDE LONGITUDE METERS 55.4	·
TEMPERATURE 7.10C	WC SALINITY 33.57PP1 DISSCLVED CXYGEN 9.8MG/L	
T ERSANICS T GRAVEL	AVEL % SANC % MUD MEAN MEDIAN SORT SKEWNESS KURTOSIS 96.43 2.58 C.25 0.25 0.43 0.22 0.97	ν ·
CHECMIUM 5.6PPM	COPPER 4.0PPM NICKEL 4.4PPM LEAD 6.0PPM	ZINC 5.2PFM
NO. SPECIES 35	NO. INDIVIDUALS 487 DIVERSITY 2.2660 EQUITABILITY 0.6373	TY 0.6372
	PECIES LISTING WITHEOPSIS AMERICANUS DLICN STRCMBI BREGMA INFLATUM RETE ARCTICA WERE IS LCNGA NIGRIPES PHAMUS CIRCINATA INERIS TENUIS WE RUBROCINCTA E CIRRATA LE RUBROCINCTA E MINUTA A ACCITS A ANULIDSUS LLIDAE E MINUTA A CCITS A ANULIDSUS ANNULIDSUS ANNULIDSUS ANNULIDSUS ANNULIDSUS ANNULIDSUS ANNULIDSUS ANNULIDSUS A CCITS ASPIS SCUTATA BIGELOR INFUNDIBLLIFCPMIS ASPIS SCULPTA YLIS SCULPTA YLIS SCULPTA YLIS GUACRISPINOSA A TRILGBA A TRILGBA A TRILGBA ELLA EMARGINATA BIGELOM I BIGELO	
	ASTARTE CASTANEA  ASTARTE CASTANEA  LCINA SP.  PERIPLANA FRACILIS  10	

NC. S OFC IFS 65 MI HUBH CRUSE 57504 9 (PG ANT CS TENDERATURE A. BUC 26/64/72 DATE 9 GP AV EL 4. 000 W 3.04 LEDTOGRATHA CAECA PIASTYLIS SCULPTA FUCCRELLA EMARGINATA DIASTYLIS CLADRISPINGSA PROTODRILUS SYMBIDTICUS CCDEPCCA THARYX ACUTUS NEREIS GRAYI RECOINE LOVENI SCCLOPLES ACUTUS THARYX ANNULUSUS YET IDWASTLS AMB I SETA EXT GOVE HEBES NCTCWASTLS LATERICEUS DERACNIS GRACILIS HIRMOTHOE EXTENUATA HARTMANIA NCCREI PELYCIPAUS FHESPHERBUS T FREBELL IDES STROEMI TEREBELLICAE WELINNA CRISTATA A PHARETE ARCTICA LICNICE CIRRATA EXCOONE VERUGERA ARICIDEA JEFFREYSII CLYDORA CALLLERYI DEICNOSPIC STEENSTRUPI PLERUSA VEELVIS POT AMILLA NEGLECTA SCALIBREGNA INFLATUR S FI GPHANES BOMBYX GENIADA MACULATA A ED HTYS INC ISA EUCHONE RUBROCINC TA DRILDNEREIS MAGNA ECHAPOSIA SIPUNCULCIDES CHENE INFUNDIBULIFORM IS LUMBRINER T ENUIS N INDE NIGRIPES S PA NCHOCCEL & CERIANTHECESIS AMERICANUS NEWATOCA LICNOME SP. NC. INSIVIDUALS CRUISE COPPER STATICH NUMBER SPECIES LISTING 97.41 Z SAND SALINITY 33.54FPT SYNAP MUD 4. OPPM 2.56 653 ME A P GRAP NI CK EL 1 WEDIAN DIVERSITY 3. 4223 LATITUCE 35562N CISSOLVED OXYGEN 5.20F# SCRT CCUNT 39 16 SKEWNESS LONGITUDE LEAD 73177W EQUITABILITY 0.8168 9. 4MG/L 6.0PPM KURTOS IS METERS 55.4 ZINC 15.4PPM

UNCIDLA INEFMIS
UNCIDLA IRRCRATA
CASCO BIGELCWI
AMPELISCA AGASSIZI
LEPTOCHEIRUS PINGUIS
BYBLIS SERRATA
AMPELISCA VADORUM
ARGISSA HAMATIPES
ERICHTHCNILS RUBRICCRNIS
AMPELISCA MACROCEPHALA
AEGININA LCNGTCCRNIS
CANCER IRRORATUS
NITRELLA DISSIMILUS
ALVANIA HARPA
CFENELLA GLANDULA
ASTARTE UNIATA
CERASTODERMA PINNULATLM
CYCLOCARCIA BGREALIS
PERIPLCMA FRAGILIS
PITAR MORRHUANA

42

8.8PPM	PM ZINC	AD 6. OPPM	OPFN LEAD		NICKEL	4. OP OM	COPPER	0000		
	KURTOSIS 1.11	SKEWNESS KI	SORT SK	MEDIAN 0.30	0.31	0 .50 50	99.49	æ	CL STATE OF THE ST	
	#IEV	DXYGEN 5.4	ISSULVEC OX	013	3.54 FPT	INITY 33	_		COCANTOS CONT	
	DEP TH MET ERS 55.4	LCNGITUDE 73177H	m	LATITUD 35562N	61 d 3	SASS			(31185 54	
* * * *		*****	***	***************************************			111	2		
8. 6PPM	6. OPPN ZINC	LEAD 6.0	4.00PM L	(A 4	E XOIV	4****	CCPPER	NOOPM COPPE C.D. NICKEL 4.00PM LEAD 6.0PPM ZINC	***	
	1.05	SK EWNESS K	3.58 - S.581 S	0. 35	0.27 0.27	364.3	95.7	0.01	O F FOW T	
	1/9M4	OXYGEN 9.4	DI SSOL VED O	D <b>I</b>	33. 5 4PP T	ALINITY 3		4 CD . VE	CONTRACTOR	
	CEPT H METERS 55.4	LONGITUDE 73177W		LAT ITUDE 39562N	GR & E	SYVAP	_	E AT E 6/(4/75	CRLISE 07:04 2	
*********		********	*******	* * * * * * *	* * * * * * * * * * * * * * * * * * * *	****	***	李耀旗设施建设的 化化二氯甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲	*****	
77 70 70 70 70 70 70 70 70 70 70 70 70 7		LEAD 5.	4. OPEN	NI CKEL	NIO NO	4. OP 0	COPPER	4. 2PHN	CHECALIA	
	KURTOSIS	SKE WNESS	SORT 0.53	MEDI AN	0.31	2 NUO	58.00 SNVS	3.3 2.3		
	1/2M4	DXYGEN 9.	ISSOLVEC	J L	33.54FP	רו או זא	1		3	
	DEP TH MET ERS 55.4	T3177W	n.	_	60 8785	10 T	CRUISE 030	DATE / 194/15	C3 LISE 24115E	
***	一十十二年,中午年限代代达赖斯特特教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教	*****	****	***			STATICA			
11. OPPM	JAIT TAIL			*	*	*	***	从外 医拉沙特格特 经存储 经格特特 经存款 医沙沙特氏 医牙牙氏	此外班特许特殊性	
	000	LEAD		VIOK EL	*	4.060	COPPER	4. 0004	CHEOMI IM	
	4 UR TO S 1S 1.07	SK ENNESS	N SORT 0.56	0. 22 7133m	0 WELL	C.0 C.0	1 8 SAND	0.01	i d	
	- 4MG/L	OXYGEN 5.	DISSOLVED	7	33.54PP	VE IN LIV	S	ξ (L)	17	
	DEPTH METERS 55.4	T3177W	LATITUDE 39562N		GR #8	VUNED	CRU IS E	1 (4/75	CRUSE 07574	

T504 24	DATE 24/04/75	STATION NUMBER CRUISE SYMAP 031	GRAB C1	LATITUDE 39593N	LONGITUDE 73318W	DEPTH METERS 37.1	
ENPERATURE 6.90C	6.900	SALINITY 33.47PPT	33.47PP T	DISSOLVE	DISSOLVED OXYGEN 9.4MG/L	4 MG /L	
CRS ANT CS	% GR4VEL	% SANC % MUD	NE 47	MEDIAN SORT 0.43 C.59	SK ENNESS	KURTOSIS	
H ROM I UM	5. 6 PPM	COPPER 4.0PPM	OPM NICKEL	EL 4.0PPM	LEAD 6	6. OPPM ZINC	5. 2PPN
VE . SPECIES 17		NO. INDIVIDUALS	50	DI VERSITY 2.3680		EQUITABLL ITY 0.8358	.8358
÷	A	SPECIES LISTING	Ğ	CCUNT			
	355	LLWBRINERIS ACUTA LLWBRINERIS FRAGILI'S DFILONEREIS MAGNA	S.I.	24			
	AGL	ACLADPHAMLS CIRCINA TA	VA TA	- w v			
	G C P	PROTODRILUS SYMBIOTICUS	IS DTICUS	7			
	L 87	DIASTYLIS QUACRISPINOSA LEPTOGNATHA CAECA	J SONIA				
	9 YB	BYBLIS SERRATA		1			
	TRI	UNCIOLA IRRORATA TRICHOPHICXUS EFISTICMUS	SOMOS	1 2			
	T Z	ENSIS DIRECTUS	A Parameter				
		C.C. LANDACION TO O LENGTH	7.1				

15. Species 36 351763 15 WE 2410 E 7.40C Sinte 23/04/75 STAC 4. OPP4 9 GRAVEL 2.61 PHERONIS ARCHITECTA NICULA PROSIMA UNCTOLA IPPERATA HARPINIA PREPINGUA AFCTICA ISLANDICA VITRELLA DISSINILUS LEPTOCHEIRUS PINGUIS CASCO BIGELCHI AMPELISCA ACASSIZI AND EL ISCA VADOR LM TRICHOPHOXUS EFISTOMUS APPELISCA MACRECEPHALA ECCTEA TOILCEA P TILANTHURA TRICARINA DIASTYLIS CUALPIA CIRCLANA POLITA ELCORELLA EMARGINATA PCLYCIPRUS PHOSPHOREUS V JUda a) PHYLLOCCCE FRENDE AGLADPHAMUS CIRCINATA MACROCLYMENE ZCRALIS NINCE NIGRIPES THARYX ACLILS APPHARETE PRCTICA PHERUS A AFFINIS FUCHONE RUBROCINCTA SPIDPHANES BENRYX REYNCHOCCELA ECHARDSIA SIPLACULOIDES CEP IANTHEOPSIS AMERICANIS NC. INDIVIDUALS CRUISE 032 SPECIES LISTING COPPER STATICA NUMBER 57.39 SALINITY 33.50ff1 C.O C.55 4.OPPM 601 GR 1 B NICKEL 0.53 DIVERSITY 1.9382 LATITUDE 40072N CISSOLVEC DXYGEN 4. 20 FN 139 SDRT 0.67 COLNI SKE WNESS LCNGITUDE 73319W LEAD EQUITABILITY 0.54CS 9.2MG/L 6. OPPM KURTOSIS 1.16 PET ERS 38.9 ZINC 12.6PFM

	NO. SPECIES 14	CHECMIUM	T CRG ANI CS	TEMPERATURE 7.30C	CRUIS E [
SPECIES LISTING  R HYNCHOCOELA  1  R HYNCHOCOELA  S FIOPHANES CIRCINATA AGLACPHANUS CIRCINATA AGLACPHANUS CIRCINATA  A MPHARETE ARCTICA  D FILONEREIS LCNGA  E LCHONE RUB GCINCTA  GLYCERA SP. GLYCERA DIERANCHIATA ARICIDEA JEFFREYSII MICROCLYMENE ZONALIS E LD DRELLOPSIS DEFORMIS PROTOHAUSTORIUS MIGLEYI T FICHOPHCXUS EPISTOMUS ECHINARACHNILS PARMA  6	14 NO. INDIVIDUALS 33 DIVERSITY 2.3752	4.800M COPPER 4.0PPM NICKEL 4.00PM LEAD	# GRAVEL # SAND # MJD MEAN MEDIAN SORT SKEWNES 0.34 95.68 C.0 C.49 0.48 0.61 -0.10	SALINITY 33.45PPT DISSCLVED CXYGEN	DATE CRUISE SYMAD GRAB LATITUDE LONGITUDE 23/04/75 033 C1 40172N 73220W
	EQUITABIL ITY 0.9000	6. OPPM ZINC 5.4PPM	SKEWNESS KURTOSIS	8.8MG/L	DEPTH E METEKS 37.1

Nr. Species 19 CRUSE CHRUN I UM SOLING & CALLES TEMPERATURE 6.94C DATE 23/ C4/75 7 GRAVEL 1.31 4. OD + M BYRLIS SERRATA
UNCIGLA INERWIS
TRICHOPHOXUS EDISTOMUS
ECHINARACHNIUS PARMA CPEPODA PELYCIRRUS HICSPHOREUS CHILLER IFLLA KILL ARIENS IS THARYX ACUTES ARICIDEA JEFFREYSII AFICIDEA WASSI ELCHONE PUERCCINCTA CRILDNEPEIS MAGNA GENTADELLA GRACILIS GLYCERA CIERANCHIATA EXCECNE HERES AMPHARETE ARCTICA SPECIES LISTING SPIOPHANES BENBYX NO. INDIVIDUALS CRUISE C34 STATIEN NUMBER COPPER 98.69 98.69 SELINITY 33.38FPT SYNAD 0.00 4. OPPN C.48 6.5 CRLE NICKEL MEDIAN SORT DIVERSITY 2.3759 LAT ITUDE 40065N CISSOLVED DXYGEN 9. 2MG/L 4.4 PFM CCUNT LONGITUDE 73 06 OW -0.19 KURTOS IS LEAD EQUITABILITY 0.8C83 6.OPPM METERS 4.4 ZINC 9. OP PM

CRUSE 1	DATE 23/04/75	STATION N CRUISE 035	SYMAP	GR 18	40050N		TZ506W	DEP TH MET ERS 49.9	9 85	
TE MPERATURE	6.5aC	SAL	SALINITY 33.39FFT	.39FFT	113	CISSOLVEC	OXYGEN	9.2MG/L		
* CRG ANI CS	9 GRAVEL	\$ SAND	O.O	MEAN 0.64	MEDIAN 0.61	SORT 1.02	SKE WNE SS	KURTOSIS	S	
CH FOM I MM	4. OPPM	COPP ER	4.0PPM	NICKEL		4. 8PFN	LE AD	6.0PPN	ZINC	10.0PPW
NO. SPECIES	30	NC. INDIVIDUALS	DU & LS	171	DIVERS	DIVERSITY 2.4891		EQUITABILITY 0.7318	117 0.7	316
	2 R	SPECIES LISTING RHYNCHOCCELA N EMATODA	LISTING			COLNT 1 7				
	SCA	PFCTODRILUS SYMBIGTI SCALIBREGMA INFLATUM EUCHONE RUBROCINCTA	SYMBICTICUS INFLATUM ROCINCTA	CUS		276				
	SPI	SPIOPHANES BOMBYX	EFREYS II			40				
	R T	MACROCLYMENE ZCNALIS	ARENAE	01		2 1				
	ここと	LUMBRINERIS TENUIS	ACL TA			1 7				
	A GI	A CLAMPHAMUS CIRCINATA	CIRCINA	Ā		1 8				
	AME OCI	GENIADELLA GRACILIS AMPHARETE ARCTICA	CTICA			4 C				
	G Z	GLYCERA DIBRANCHIATA	ANCHI AT	Þ		د،				
	J.R.	THARYX ACUTUS	MAGNA			71				
	. LEI	C CPEPODA L EPTOGNATHA C AFCA	CAFCA			ao U				
	P C I	P SEUDUNCIDLA OBLIQUUA	OBLIOU LITA	CA		6 -				
	18	BYBLIS SERRATA	AT A			۔ بد				
	н1	HIPPOMEDON SERPATUS	SERRATUS	1						
	m 0	ENSIS DIRECTUS	ILS P PINNUL	AT U N						
	מל ח	ARCTICA ISLANCICA	ANDICA	>		2 12				
	בני	TCHINAXACHTICO TAXMA	ICU TAKE	A		2				

NO. SPECIES 28 1757 E SIRE) SO INVESAL & ENDE BY ANDE 23/04/75 PINE 9 GRAVEL 2.57 6.600 5. 8 PPM ECHINARACHNIUS PARMA A STERIAS FCRBESII CERASTODERMA PINNULATEM A PPELISCA MACRICEPHAL & SIPHONCECETES SMITHIANLS MARGARITES UMBILICATUS ENSIS DIRECTUS LINATIA HERCS SYBLIS SERRATA SUDDRELLA EMARGINATA UNCIDLA IRRERATA UNCIDLA INERMIS AMPHARETE ARCTICA
DIASTYLIS CUACRISPINGS A DRILONEREIS MAGNA S FICHANES ECHEYX GENIADELLA GRACILIS SCALIBRECMA INFLATUM ELCHONE RUBROCINC TA AGLAGPHANLS CIRCINATA LEICCHONE DISPAR ARICIDEA JEFFREYSII NEREIS GRAYI THARYX ACUTUS GLYCERA CIERANCHIATA ECHARDSIA SIPUNCULOIDES NJ. INDIVIDUALS CRUISE SYMAP SPECIES LISTING COPPER 8 SANC 82.20 036 SALINITY 33.43001 15.23 4 . OPPM C. 24 156 GRAB C1 NICKEL MEDIAN SORT DIVERSITY 2.6994 LATITUDE 39591N DISSCLVED CXYGEN 9.4MG/L 7. 49 PM COUNT 27 8 5 T2401W LEAD SKEWNESS KURTOSIS
0.37 1.79 EQUITABIL ITY 0.8101 6. OPPM METERS 57.2 ZINC 22.4FFM

LONGITUDE METERS 72293W 59.0  DOXYGEN 9.4MG/L  SKENNESS KURTOSIS -9.10 1.00  LEAD 6.0PFM ZINC 7  7743 EQUITABILITY 0.8075

m - s - c - s - s - s - s - s - s - s - s		5 · 5 m			TPSANIES & COAN	> 0	
SCALIBREGMA INFLATUM SFICCHANES ECWEYX DRILLOWEREIS MAGNA STHENELAIS LIWICOLA HARNOTHCE EXTENLATA HARLOSCOLOPLOS FRAGILIS AGLACPHANUS CIRCINATA POT AMILLA REGLECTA POT AMILLA NEGLECTA MEDIOMASTLS AMBISETA CAPITELLA CAPITATA THARYX AGLTLS CHARTOZOME SETOSA OMENIA FUSIFICAMIS CHARTOZOME SETOSA OMENIA FUSIFICAMIS PRICTORILLS SYMBIOTICLS ECOTEA TRILOGA PILLANTHURA TRICAMINA TRICHDPHOXUS EDISTOMUS AMPELISCA MACRICEDHALA BYBLIS SERRATA UNCIDLA IPRICATA LEFTOCHEIGUS PINGUIS WODIOLUS DEMISSES SACIOLUS DEMISSES WODIOLUS DEMISSES UNID BIVAINE #2	CERIANTHEOPSIS AMERICANTS ANDHARETE ARCTICA DHYLLODOGE MICCOLO	NO. INDIVIDUALS	COPPER	99. 97	1	STATICN CRUISE 038	
ELSA ELSA ICGLA CUATA FRAGILIS ICINATA CTA NCTA NCTA SA IS IS IS ELOTICLS ELOTICLS ELOTICLS ELOTICLS	AMERICANUS	238	4.0PPM NICKEL	C.0 0.43	SALINITY 33.23PPT	SYWAP GRAB	
1000 1000 1000 1000 1000 1000 1000 100	COUNT 6 34	DIVERSITY 2.0859	4.0PPM	MEDIAN SORT 0.43 0.66	CISSOLVEC DXYGEN	LATITUDE 40109N	
			LEAD 6. OPPM	SKEWNESS KU	DXYGEN 9.2 MG/L	LONGI TUDE	
		ECUITABILITY 0.6260	PM ZINC 4.4PFM	0.96	6/L	METERS 55.4	

SSINA) N.J. Speries 16 CHEC. INJAHO TEMPERATURE 7.90C CROANT CS 26/(4/75 J. P. E T GRAVEL 6.00r4 \*CCLOPLCS FAMIGER
MACPOCLYMENE ZONALIS
PECTODRILUS SYMBIOTICUS
UNCIDLA IRPCRATA ANDHARETE ARCTICA SPIOPHANES BOMBYX FUCHONE RUBROCINCTA ARICIDEA JEFFREYSII PETCHOSPIC STEENSTRUP I SLYCERA DIERANCHIATA A GL ADD HAMUS C INCINATA REYNCHOCOFLA SCALIBREGMA INFLATUM THARYX ACUTUS NO. INDIVIDUALS 114 STATICN NUMBER CRUISE SYMAP COFFER 2 SANC SPECIES LISTING SALINITY 33.22PPT 3.06 C.36 4.0PPN GR AB NICH O. 35 DIVERSITY 2.1430 LATITUDE 40144N DISSULVED DXYGEN 10.2MG/L 4. OPPM SORT 0.60 CCUNT 72231 BEN T301 8W LEAD -0.09 L.09 ECUITABILITY 0.7729 6. OPPM DEPT H METERS 44.4 ZINC 5. 8PFM

SIA

5.4PPM	ZINC	6.0FFM	LEAD 6	XEL 4.00FF	M NICKEL	4. OP P M	COPPER	4. 4PPM	CHROM IUM
		9. 5MG/L		DISSOLVED OXYGEN	3.25FPT	SALINITY 33.25FPT	SA	E 8.00C	TEMPERATURE
	o,	DEPTH METERS 38.9	LONGITUDE 73155W	LAT ITUDE 4C145N	68.4E	SYMAP	STATION NUMBER CRUISE SYMAP 040	DATE 26/ C4/75	CR LI SE E7504 20
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4. OP P.	ZINC	6 OPPM Z	IFAD	4.0PPM		4 -0 PPM	COBBER	4 4004	CHECKTON
	U,	KURTUSIS	SKEWNESS -0.13	MEDIAN SORT 0.44 0.61	ME! N	1.32	1 % SAND	% GRAVEL	T CRGANICS
		9.5 MG/L	CXYGEN	DISSCLVED	3.25PPT	SALINITY 33.25PPT	SA	E 8.00C	TEMPERATURE
	•	DEPTH WETERS 38.9	LONGI TUDE	LATITUDE 40145N	GR # B 02	SYMAP	STATICN CRUISE 040	0.IT E 26/04/75	CRLIS E 07504 20
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				216113113	s sicus	OPHAMES CIRCINATISIA CAFNEA ARETE ARCTICA OPHOS ACUTUS CHCNE DISPAR OCLYMENE ZONALI OCA IRRCRATA OLA IRRCRATA IS SERRATA IS SERRATA IS SERRATA IS SERRATA IN ARACHNIUS PARMA	AGLADPHAMUS CIRCINATA TRAVISIA CAFNEA AMPHARETE ARCTICA SCOLOPLOS ACUTUS LEICCHCNE DISPAR MACROCLYMENE ZONALIS PROTODRILUS SYMBIOTICUS UNCICLA IRRCRATA BYBLIS SERRATA BYBLIS SERRATA ENSIS DIRECTUS ECHINARACHNIUS PARMA	A GL ADP T RAV IS A MPHAS S COLO M ACCRO M ACCRO P ROTOL B Y BL IS E N S IS E CH I NA	
9078	٠ 9	FCUITABIL ITY 0.9078		DIVERSITY 2.1767	22	INDIVIDUALS	NO. INDIV	=	NO. SPECIES
4	ZINC	6. OPPM Z	LEAD 6	EL 4.0P PM	N NICK FL	4.0 PPM	COPPER	4. 8PLM	CHROMIUM
		K UR TO S I S 0.98	SK EWNES S	MEDIAN SORT	C. 44	0.0 DUM	\$ SANC	% GRAVEL	CR3 ANI CS
	_,	5. 5MG/L	DXYGEN	DISSOLVED	33.25pp1	SALINITY 33	SA	8 .00 C	TENPERATURE
	5	METERS 38.9	T3155W	LATITUDE 40145N	GRAB	SYMAD	STATION NUMBER CRUISE SYMAD 040	CATE 26/(4/75	CRUSE 01594 26

CH KUN TUN	9 CRGANICS	TE NPE RATINE 8. DUC	CR LISE	义者 具络糖 汽 生元 非宗教士 史政士士教女 古作 化大价 化次次 保护 操作 非洲 不认 有事的 华雄 李宗 李宗 李宗教 医女女女女 女妻 医女子 医牙囊	OH SOM I MA	& EBSANI CS	TENDERATURE 8.70C	CRUSE C1524
		m	251	#			D. D.	26
4. OP -4	9 GP AVEL 3 SAND 2 MUD MEAN MEDIAN SORT SKEWNESS KURTOSIS 3.71 99.19 C.77 0.41 5.40 0.59 -0.09 1.04	8. Ouc		计 林	4. 8PPW	S GRAVEL	8.000	C LT E 26/14/75
COPPER	3 SAND	SA	STATIEN NUMBER CRUISE SYNAP 040	***	COPPER	3 SAND	SA	STATION NUMBER CRUISE SYMAP 040
4.0PPM	2 MUD C.77	SALINITY 33.25FPT	SYNAP	** ***	4.0 PP	\$ SAND \$ MUD MEAN MEDIAN SORT SKEWNESS 98.27 1.65 C.42 0.4C 0.64 -0.13	SALINITY 33.25PPT	SYMAP
	0.41	.25 FFT	CREE	**	4.0PPM NICKEL 4.0PPM LEAD	C. 42	3.25PPT	GRAB C4
EL 4.	O.40	£11	LATITUDE 4C145N	***	4 B	O. 4C	DI	LATITUDE 4C145N
9340	SORT 0.59	SOLVEC		***	.0P PM	SORT 0.64	SSOLVED	
NICKEL 4.OPFW LEAD 6.OPFM	SKEWNES	CISSOLVEC DXYGEN 9.5MG/L	LCNGITUDE 73155W	***	LEAD	SK EWNES	DISSOLVED OXYGEN 9.5MG/L	LONGITUDE
6.0	-	9.		**	6	S	\$	m
	(URTOS	MG/L	DEP TH MET ERS 38.9	***	6. OPPM ZINC	K UR TO S I S 1.07	5NG/L	DEPTH METERS 38.9
ZINC	SI		Δ Z I	**	ZINC	SIS		9 RS
4.8PPM				* *	6. 4PPM			

CRLISE C7504 NC. SPECIES 15 CHROM IUM TEMPERATURE 7.50C & CRGANICS 26/04/75 9 GR 4V FL 4. OPPM GLYCERA DIBRANCHIATA
MACPOCLYMENE ZCNALIS
AGLADPHAMUS CIRCINATA
PECTODRILUS SYMBHOTICUS
CIRCLANA FOLITA APPHARETE AFCTICA LUMBRINERIS ACUTA LUMBRINERIS FRACILIS ARABELLA IRICCLOR TRICHOPHOXUS EPISTOMUS ACANTHOFAUSTORIUS SPINCSUS ECHINARACHNIUS FARMA SPECIES LISTING CAULLERIFLLA KILLARIENS IS THARYX ACLILS S FIRPHANES BOMRYX CRUISE SYMAP NO. INCIVIOUALS COPPER \$ SAND 9 MUD MEAN SALINITY 33.C6FFT 4. OPPM C1 6818 34 NICKEL MEDIAN SORT SKEWNESS KURTOSIS 0.37 0.52 -0.09 1.02 DIVERSITY 2.4987 4CZ45N CISSOLVEC OXYGEN 9.4MG/L 4.0PFN COLUT 12588W LEAD FQUITABILITY 0.9227 6. OPPM ZINC METERS 40.7

3.8PPM

SPECIES LISTING  ANDHARETE ARCTICA  THARYX ACUTLS  VEREIS GRAYI  A CLACPHAVUS CIRCINATA GENIADELLA GRACILIS MACROCLYMENE ZONALIS LUMBRINERIS ACUTA  SYLLIS GRATILIS SECUPLOS ACUTUS FACTODRILUS SYMBIOTICUS CEMPOCA CEPPOCA DET ALOSARSIA DECLIVIS LEDTOGNATHA CAECA PTILANTHADA TRICARINA ECOTLA INEFMIS UNCIDLA INEFMIS UNCIDLA INEFMIS LUNATIA TRISERIATA ECHINAPACHYIUS PARMA ITHORIE UNISENITA  INTERMIS I	AC. SPECIES 21 NO. INDIVIDUALS ICC DIVERSITY 2.2635 EQUITABILITY 0.7435	CHECMIUM 4. OPPM COPPER 4.OPPM NICKEL 4.OPFM LEAD 6.OPPM ZINC 2.2PPM	? CRGAVICS 9 GPAVEL ? SAND % MUD MEAN MEDIAN SORT SKEWNESS KURTOSIS 7.52 90.75 1.76 C.62 0.58 0.55 -0.24 1.19	TEMPERATURE 7.90C SALINITY 33.15PPT DISSULVED DXYGEN 5.6MG/L	CRUISE DATE CRUISE SYMAP GRIB LATITUDE LONGITUDE METERS E7504 26/C4/75 G42 C1 4C2O3N 72448W 48.0	
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CRUSE 07:94 NC . S PEC IES 29 CHEOMI UM R CRS ANI CS R GRAVEL R SAND 0.21 99.73 TENPERATURE 8.50C 26/(4/75 4. 0PPM POLYCIRRUS SP.
PRETODRILUS SYMBIOTICUS
CHIRIDOTEA TUFTSI COLLS PUBESCENS
ENSIS DIRECTUS
MCDIOLUS DEMISSUS NEREIS GRAYI S PICPHANES BOMBYX DRILONEREIS MAGNA SCCLOPLOS IRMIGER STHENELAIS LIMICOLA GENIADA MACULATA HYDROZOA LEFTOGNATHA CAFCA ERICHTHONIUS BRASILIENSIS UNC IDLA IRRCRATA AMPHARETE ARCTICA ECHINARACHNIUS PARMA UNCIOLA INERMIS AGLACPHANUS CIRCINATA CAULLERIELLA KILL AR IENSIS EXCCCNE HERES SCALIBREGMA INFLATUM ARICIDEA JEFFREYS II THYCNE UNISEMITA THARYX ACUTUS NO. INDIVIDUALS CRUISE SYMAP SPECIES LISTING COFPER SALINITY 33.25PPT Q.O C.43 4.0 PPN 1 07 GR AB NICE 0.42 0.62 DI VERSITY 2.6884 LATITUDE 40153N DISSOLVED OXYGEN S. IMG/L 4.00 PM CCUNT T2295W SKEWNESS KURTOSIS LEAD FCUITABIL ITY 0.7984 6. OPPM METERS 57.2 ZINC 2. 6PPM

CFUISE 67504 27	DATE 27/04/75	STATICN NUMBER CRUISE SYMAP	SYMAD	GR AB	LATITUDE 40163N		LENGITUDE 72152W	DEP TH METERS 60.9	~ % ±	
TEMPERATURE 7.500	7.500	SAL	SALINITY 33.25PPT	. 25PP T	0188	CLVED	DISSULVED CXYGEN 9	9.3MG/L		
* CRS ANI CS	F GRAVEL	\$ SANE	0 NO.0	MEAN MEDIAN		SORT 0.60	SKE WNESS	K UR TO SI S 0.94	S	
WOI MOS 40	4.0PPM	COPPER	4.0PP4	N I CK EL		4. 0PPM	LEAD 6	6.0PPW	ZINC	7.6PPM
NC. SPECIFS 21		NC. INDIVIDUALS	STAND	6.8	DIVERSITY 2.3450	Y 2.34		EQUITABILITY 0.77C3	TY 0.77	63
	A ACL THAD DEFO.	SPECIES LISTING R HYNCHOC CIELA A GL ADPHAMUS CIRCINATA L EICCHCNE DIS PAR D PHELINA ACLMINATA GLY CERA SP. C AULLERIELLA KILLARIENS IS T HARYX ACLTLS S FIOPHANES BC MBYX ARICIDEA JEFF REYSII S CALIBREGMA INFLATUM LLMBRINERIS ACUTA PARANAITIS KCSTERIENSIS DIASTYLIS SCULPIA CIRCIANA POLITA UNCIDLA INEFMIS BYBLIS SERRATA UNCIDLA IRECRATA UNCIDLA IRECRATA PHOXOCEPHALLS HOLBOLLI ECHINARACHNIUS PARMA	KILLARIIS WHYX REYSII INFLATUM CUTA CUTA CUTA CUTA CUTA CUTA CUTA CUTA	ENS IS	Q	COUNT 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				

SPECIES LISTING RHYNCHCCCELA APPHARETE ARCTICA HARMTHOF EXTENUATA NEREIS GRAVI NEREIS GRAVI ARTCIDEA JEFFREYSII ARTCIDEA JEFFREYSII PYLLDEDCE JARENAE CCHOME RUSBECLINCTA GONIADA MACULATA SFICCHAANS ECMEYX SICCHAANS ECMEYX SICCHAANS ECMEYX SICCHAANS ECMEYX SICCHAANS ECMEYX CHECK INFUNCIBULIFCRMIS CLICOCHAETA CCIECCHAETA UNCIDLA IRRCRATA UNCIDLA IRRCRATA DHCNOCFPHALUS +CLBOLLI TELLINA ASJIII S BYBLIS SERRATA PHELINA SJIII S MARGARITES UMBILICATUS ENSIS DIRECTUS ARCTICA ISLANDICA ARCTICA ISLANDICA ARCTICA ISLANDICA ARCTICA ISLANDICA	NC. SPECIES 29 NO. INDIVIDUALS 105 DIVERSITY 2.5228 EQUITABILITY 0.7452	OPPER 4.0PPM NICKEL 4.0PFM LEAD 6.0	2 CRGANICS 2 GRAVEL 2 SAND 2 MUD MEAN MEDIAN SORT SKEWNESS KURTOSIS	TEMPERATURE 7.80C SALINITY 33.38FPT CISSOLVED DXYGEN 8.7MG/L	CRUISE DATE CRUISE SYMAP GRIB LATITUDE LCNGITUDE METERS C7504 27/04/75 945 01 40182N 72020W 62.7
	0.7452	NC 2.6PPM			

	MC . S DEC IES	CHROM I UM	9 GRGANICS	TENPERAT UR F	CRUSE [7504
SPASTOT  SPASTOT  SPASTOT  ASTAST E  SCALIST  SC	%	4. 0004	S \$ 604 VEL	RF 7.00C	9ATE 27/ C4/75
SPECIES LISTING RYNCHOCOELA GCNIADA MACULATA GONIADELLA GRACILIS NEPEIS GRAYI HARMOTHOE EXTENLATA SPAETOZONE SETICSA THARYX ANNULCSUS THARYX ANNULCSUS THARYX ACULUS DHYLLODOCE ARENAE EUCHON E RUBROCINCTA SCALIBREGMA INFLATUM S COLUCTON ERMIGER AFICIDEA JEFFREYSII SYOGONE HEBES A GLADPHAMUS CIRCINATA AMPHARETE ARCTICA OFILCMEREIS MAGNA S PIOPHANES BOMPYX D FCTODRILUS SYMBIOTICUS O IA STYLIS SCULFTA D IA STYLIS D IA STYL	NC. INCIVIDUALS	COPPER	\$ SAND	SAL	STATICN NUMBER CRUISE SYMAP
ATA ACILIS TOSA SUS XILLARIE ENAE CINCTA LECTA NIFLATUM IGERIA IGERIA AND ISTOMUS VICARINA HOLBOLLI PISTOMUS S INULATU INULATU		4.0PPN	0.0	SALINITY 33.22FPT	SYNAP
N	434	NI CK EL	MEAN 0.32	.22FPT	GRAB C1
	D I VER SI		MEDIAN 0.32	01:	LATITUDE 40280N
CCUNT 15 1 15 1 15 1 15 1 15 1 15 1 15 1 15	DIVER SI 1 2. 5742	4.00FM	SCRT 0.51	DISSOLVED DXYGEN	
		LEAD	SKEWNESS	OXYGEN	LONGITUDE 72062 W
	FOUI TARI	6.0PPM	S KURTOS IS	9. OMG /L	
	1 T 1	ZINC	S IS		DEP TH METERS 59.0
	11 83	F 4D PM			
	2	2			

CRUIS E CHECMIUM NO. SPECIES 22 R CRG ANI CS TENPERATURE 7.90C 27/04/75 2 GRAVEL 4. 0PPM SPECIES LISTING HAPLOSC CLOFLCS ROBUSTLS AGL ADPHAMUS CIRCINATA M EL ITA DENTATA DIASTYLIS SCULPTA
DIASTYLIS GUACPISPINOSA
ERICHTHONILS HUNTERI PCLYCIRRUS PHCSPHCREUS SFICPHANES ECVEYX
SCALIBREGMA INFLATUM
ANDHARETE ARCTICA M ACROCLYMENE ZONALIS PHORON IS ARCHITECTA THARYX ANNULUSUS ARICIDEA WASSI E LCHONE RUBBECCINCTA UNCICLA INEFMIS THARYX ACUTUS NEREIS GRAYI MECIOMASTUS AMRISETA HARMOTHOF EXTENUATA PECTODRILUS SYMBICTICUS GLY CERA DIBRANCHIATA NO. INDIVIDUALS CRUISE SYMAP COPPER \$ SANC \$ MUD MEAN SALINITY 32.26PPT 4.0PPM 3 5 5 GR AB NICKEL MEDIAN 0.34 DIVERSITY 1.8140 40257N DISSCLVED CXYGEN 10.1MG/L 4.0PPM SORT 0.45 COUNT 125 LONGI TUDE LEAD SKEWNESS KURTUSIS EQUITABIL ITY 0.5865 6. OPPM NETERS 55.4 ZINC 8. 4PPM

	Mr. Species 20	CHETHING 4. OPPN	9 CPSANICS 9 GRA	TEADE RATURE 7.30C	12.U SE DATE 57574 26/C4/75
SPECIES LISTING SCALIBREGMA INFLATUM AFICIDEA JEFFREYSII THAPYX ACUTUS CAULLERIELLA KILLARIENSIS ELCHONE RUBRCCINCTA AMPHARETE ARCTICA LUMBRINERIS FRACILIS MACROCLYMENE ZONALIS GLYCERA DIERANCHIATA AGLADPHAMUS CIRCINATA SPIOPHANES BOMBYX SCOLOPLCS ACUTUS PROTODRILUS SYMBICTICUS UNCIGLA IRECRATA UNCIGLA IRECRATA UNCIGLA INERMIS PSEUDUNCIDLA OBLIQUUA PHEXISCA MACROCEPHALL ENS IS DIRECTUS AFCTICA ISLANCICA	NO. INDIVIDUALS	COPPER	VEL % SAND		STATION NUMBER CRUISE SYMAP 75 048
TI NG LATUM YSII YSII YSII YSII SICTA CINATA CINATA CINATA LBOLLI EPHAL	102	4.0PPN NICKEL	C.O C.45 ME	SALINITY 33.16FPT	SEP GRAE
CCUNT 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	DIVER SITY 1. 9621	4.0PFM	MEDIAN SCRT	DISSOLVED OXYGEN	LATITUDE L
		LEAD 6.0PPM	SKEWNESS KU	DXYGEN 9.6MG/L	LONGITUDE 72343W
	EQUITABILITY 0.6550	PM ZINC 9.0	KURTOS IS 0. 93	16 /L	DEPTH METERS 48.0

	NO. SPECIES	CHEOMIUM	F CRG ANI CS	TEMPERATURE	CRUISE D7504 2
m A C I A A D C C C D A A D T O C C D A A D D O D	S 25	4.6 PPM	S % GRAVEL	RE 7.20C	DATE 26/04/75
SPECIES LISTING PHA SCOLICN STRCWBI STIDPHANES BOMBYX PHYLLODOCE ARENAE ARICIDEA JEFFREYSII AGLACPHAMUS CIRCINATA A MPHARETE ARCTICA PRICNOSPIC STEENSTRUPII LUBRINGRIS TENUIS LEIDCHONE DISPAR GLYCERA DIERANCHIATA MACROCLYMENE ZONALIS CLYMENELLA TCRCUATA THARYX ANNULOSUS BUDGRELLOPSIS DEFORMIS DIASTYLIS SCULFTA CIRDLANA POLITA CIRDLANA POLITA CCROPHIUM CRASSICORNE PSEUJOHALSTCRIUS CARCLINIENSIS AMPELISCA MACROCEPHALA A MPELISCA VACRUM TRICHOPHOXUS EPISTOMUS UNCIOLA INERMIS DIAGRICA SCRUM TRICHOPHOXUS EPISTOMUS UNCIOLA INERMIS ARCTICA ISLANDICA ECHINARACHNIUS PARMA	NO. INDIVIDUALS	COPPER	EL % SANC 95.87	S	STATICN NUMBER CRUISE SYMAP 049
SPECIES LISTING COLION STRCMBI PHANCS BOMBYX LODOCE FRENSII ICPHANUS CIRCINA ARETE ARCTICA NOSPIG STENSTR CHONE DISPAR CHONE DISPAR CHONE DISPAR CHONE DISPAR CHONE DISPAR CHONE DISPAR CHONE STENLATA OCLYMENE ZONALI ENELLA TCHCUATA OCLYMENE ZONALI CHOLOSIS DEFOR SYX ANNULOSUS PRELLOPSIS DEFOR SYLIS SCULFTA LANA POLITA DOHALSICRIUS CA DOHALSICRIUS CA DOHALSICRIUS CA DOHONLS EPISTO OLA INERMIS OLA MACROCEPH HOPPHONLS EPISTO OLA INERMIS OLA ISLANDICA NARACHNIUS PARM		4.0PPM	0.0 0 M &	SALINITY 32.55PPT	SYMAP
DPI WIS	193	M NICKEL	C.44	2.55PPT	GRAB C1
	DIVERSIT		MEDIAN S	01 88	LATITUDE 40298N
COUNT 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	DIVERSITY 1.8352	4.0PPM LEAD	SORT SK	DISSCLVED CX	
	r Qu		SKEWNESS	CXYGEN 9.	LONGI TUDE 72485W
	EQUITABIL ITY 0.5702	6. OPPM Z	0.93	9.4 MG/L	DEPIH METERS 37.1
	Y 0.5702	ZINC 9			
		S. 6PFM			

-												
7. аррм		PPM ZINC	6.0PPM	LEAD	4.0PPM		NICKEL	4.0PPW	CCEFER	4. OPEN		CHEOMION
		KURTOS IS	ES S	SK EWN ES	SORT 0.56	0.47	C.47 ME	2.15	₹ SAND	9 GRA VEL	S	₹ DRG
		5. 6MG /L		OXYGEN	ISSOLVED	CIS	BOPPT	PLINITY 32.	SALI	7.300	NPE RAT URE	TE NPE
		DEPTH METERS 40.7	¥ du.	LONGITUDE 72381W		LATITUDE 4C340N	6818 (3	SYN AP	STATION NU CRUISE S 950	DATE (27/04/75	(n	CR US
*	******	******	***	****	***	***	***	在特 计文文会 化水桂香 排足 风水 化环 化格拉格格 经存储存储 经存货 经存货 医环状腺 医乳腺 医乳腺素 医乳腺素 医生物 医生物 医生物 医牙髓 计记录器 计记录器 计记录器 计记录器 计记录器 计记录器 计记录器 计记录器	**	法法 机代放 计操作 食者 特益 非非非常非常 放弃 化拉索 政府 计表示	***	*
5.8PFM	ZINC 5.	6.0PP# ZI	6.0	LEAD	4. 0P PM		NICKEL	4.0PPM	COPPER	4.0004	NO.	CHECMIUM
		KUR TOSIS	"^	SKE WNES	S0 RT	MEDIAN 0.51	0.52 M	1.22	7 SAND	9 GR AV EL	CAS ANI CS	5dJ 78
		9.6MG/L		CXYGEN	DISSCLVED	01	. 8CPP 1	SALINITY 32.	SAL	7.000	TEMPERAT URE	TENDE
		DEP TH METERS 40.7	TUDE	LCNGI TUDE	UDE	LATITUDE	GRAB	SYMAP	STATICN N CRUISE 050	ME 04/75	III	CRUIS 07504
#	*****	*******	***	****	***	* * * *	*****	******	经外外证据 计设计 计设计 化苯甲基 计计算机 计设计 计设计 计设计 医多种	*******	****	*
					2			C) FARMA	CHIVARACHALCS			
					1			SI	LINA AGIL	7 7		
					4.4		m	ASSICORN	COROPHIUM CRASSICORNE	COR		
							1 43	MIS MIGLE	UNCICLA INEFMIS	UNC		
					J.		SPINCSLS	ORIUS SE	A CANTHOHAL STORILS	ACL		
					<u>ب</u> س		IA	CELIGUUA	P SEUDUNCICLA CELICUUA	D.S.d		
					-			CAECA	TRICHIDED XI S EDIS	TR LE		
					2 -			FREYSII	AFICIDEA JEFFREYSII	, p		
					4		S	E ZCNALIS	CAULLERIEI A KIII ARTEN CIC	0 2		
					29			EO MB YX	SPIDPHANES	Sp		
					) <b>-</b> (		TA	CIRCINAT	SCALIBREGNA INFLATION	SC		
					נרנאו			ARMIGER	AMPHARETE ARCTICA	SCT		
	30.00							SP FC IF C I CTING	SP FC IF S			
	782	ITABILI	EQU	2.2157		DIVERSITY	73	IND IV IDUALS	NO. INDIV	17	S PEC IES	70.
6.8PPM	ZINC	6.0PPM		LEAD	4. OPPN		M NICKEL	4. OPPM	COPPER	4. OPP W	CHEON IUM	CHRO
	S	1.00	-0.03		0.52	0.48	0.48		99.91	0.09		
						MED TAN		** 5		9 GP AV FL	CPGANICS	, Ci
		. 6MG/L	GEN 9.	ED OXYGEN	ISSOLVED		2.80FPT	ALINITY 32.80FPT	SA	E 7.00C	TE NOT RAT UPE	18 W
	v	DEP TH MET ERS 40.7	L JN G ITUDE	L 2NG	LAT ITUDE	LAT I	GR 28	SYNAP	CRUI SE	21/04/15		CR U SE 07504
									CTAT ICA			

E. 2PPM	SINC	6. OPPM ZINC	LEAD 6.	4.0PPM		4.0 PPW NICK EL	4.0 PP	COPPER	4. OPPM	CH FOM I UM
	IS	1.19	7 GRAVEL 7 SANC \$ MUD MEAN MECTAN SORT SKEWNESS KURTOSIS 0.58 95.17 4.25 (.48 0.47 0.71 -0.05 1.19	SOPT 0.71	0. 47 0. 47	44.0	% NUD 4.25	3 SANC	T GRAVEL	# CRS ANI CS
		6 MG /L	DISSULVED DXAGEN 4.9MG/F	I SSOL VED		2. ECPP	SALINITY 32. ECPPT	SAL	7.000	TENPERATURE
	785	CEPTH METERS 40.7	LONGITUDE 72381W		L AT ITUDE 4 C340N	CR / B	SYMAD	STATION NUMBER CRUISE SYMAP	C ATE 27/ C4/75	CRLISE C7504 27
* * 9. OPFX	ZI NC	6. OPPW	LEAD 6.	4. OP PM	C* * * * * * * *	* * 210	4.0PPM NICKEL	********	4.000M	CHFCMIUM 4.000M CODDER 4.0PPM NICKEL 4.0PPM LEAD 6.0PPM ZINC 9.0
	S	L.OI	% GRAVEL % SAND % MUD MEAN MEDIAN SORT SKEWNESS KURTUSIS 0.29 99.20 0.52 0.45 0.44 0.58 -0.09 1.01	STRT 0.58	MEDIAN 0.44	0.45	0.52	99.20	% GRAVEL	T. CPG ANT CS
		6MG/L	EISSCLVEC OXYGEN 9.6MG/L	ISSCLVEC		2. EC FF	SALINITY 32. ECFFT	SAL	7.000	TEMPERATURE 7.000
	7 RS I	DEP TH METERS	LENGITUCE 72381W		LA 11 TUDE 40240N	GR AB	SYMAP	STATICN N CRUISE 050	DATE 27/04/75	CRUISE C7504 27

	NO. SPECIES 16	CHEOMIUM	% CR3 ANI CS	TEMPERATURE 7.00C	CRUISE D7504 2
SPI		4. 0PPM	% GRAVEL	E 7.00C	DATE 27/04/75
SPECIES LISTING A GLAOPHAMUS CIPCINATA S PIOPHANES ECMEYX SCOLOPLOS ARMIGER LEIDCHONE DISPAR WACROCLYMENE ZCNALIS ORBINIA SWANI AMPHARETE ARCTICA C CPEPOCA C CROLANA POLITA PROCHOMETORIUS WIGLEY TRICHOPHCXUS EFISTCMUS UNCIOLA INERMIS UNCIOLA INERMIS UNCIOLA INFCRATA B YRLIS SERRATA ARCTICA ISLANCICA ECHINARACHNIUS FARMA	NO. INDIVIDUALS	CCPPER	% SANE	SAL	STATION NUMBER CRUISE SYMAP 051
CIPCINATA CHEYX WIGER SPAR ZCNALIS ZCNALIS CTICA CTICA CTICA ITA ITA ITA ITA ITA ITA ITA ITA ITA IT	DUALS 128	4.0PPW	2 MUC WEAR C.40	SALINITY 32.EEPPT	SYMAP
8 4		N I OK EL		£ £ £ ₽ ₽ 1	GR #8
	DIVERSITY 1.2824		MEDIAN SORT 0.40 0.53	DISS	LATITUDE 40352N
CGUNT 88 82 3 3 2 6 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Y 1.282	4.0PPM LEAD		DISSULVED OXYGEN	
			SK EWNESS	XYGEN	LONGI TUDE 72250W
	EQUIT ABILITY 0.4625	6. OPPM	KURTOSIS 0.98	9.3MG/L	CEPT H METERS
	ITY 0.4	ZINC	IS		* 75 T
	625	1. 4PPM			

CRUISE DISC4 CH ROMI UM NC . SPECIES 20 TENPERATURE 7.80C CRS ANI CS 27/14/75 DATE % GRAVEL 4. 0 PPM CHENIA FUSIFORMIS
PROTODRILUS SYMBIOTICUS
AMPELISCA AGASSIZI
AMPELISCA VERBILLI
BNBLIS SERRATA
UNCIDLA IRRCRATA C CROPHIUM CRASSICORNE EUDCRELLOPS IS DEFORMIS P TIL ANTHURA TRICARINA ARCTICA ISLANDICA ECHINARACHNIUS PARMA CERIANTHEOPSIS AMERICANUS
PHASCCLICN STRUBBI
SPIOPHANES BOMBYX
AMPHARETE ARCTICA
SCALIBREGMA INFLATUM MACROCLYMENE ZCNALIS LEIDCHONE DISPAR NINDE NIGRIPES A GL AOP HAMUS CIRCINA TA NO. INDIVIDUALS STATION NUMBER CRUISE SYMAP 052 CUPPER 99.99 0.0 C.23 SPECIES LISTING SALINITY 33.1CPPT 4.0 PPN NICKEL 163 01 01 MECIAN SORT 0.23 0.54 DI VERSITY 1. ECET 4C365N DISSOLVED OXYGEN 4.0PPM COUNT T2129W LEAD SKEWNESS KURTOSIS ECUITABILITY 0 .6338 9. 0MG /L 6. OPPM ZINC METERS 49.9 7. 2PPW

NO. SPECIES 38 F CRS ANI CS NOT NOT 4 TENPERATURE 27/04/75 DATE % GRAVEL 4.0PPM 7.500 PERIPLOMA FRACILIS C YCLOC ARDIA BEREALIS ASTARTE UNEATA ENS IS DIRECTUS HIRFINIA PRCPINCJA UNCIOLA INERMIS UNC IDLA IRRORATA BYBLIS SERRATA PTILANTHURA TRICARINA DIASTYLIS SCULFTA AMPELISCA AGASSIZI CEPEPODA POLYCIRRUS PHOSPHOREUS EUCORELLA ENARGINATA PECTODRILUS SYMBIOTICUS PCLYDORA LIGNI HIRMOTHSE EXTENUATA PHERUSA AFFINIS ELCHONE RUBROCINCTA GENIADELLA GRACILIS AFICIDEA JEFFREYSII SCALIBREGNA INFLATUM A GLADPHANUS CIRCINATA PRICHOSPID STEENSTRUPI CLYMENELLA TERCLATA NEREIS PELAGICA NEREIS GRAY M ACROCLYMENE ZONALIS PARAPIENESYLLIS LENGICIFRATA EXOCONE PERES GENTADA MACLLATA PELYDORA SOCIAL IS SPICPHANES BOMBYX PHASCOL ION STROMB ECHARDSIA SIPUNCULCIDES TARYX ACUTUS ANPHARETE ARCTICA NC. INDIVIDUALS CRUISE COPPER SPECIES LISTING % SAND SALINITY 33. 15PPT NUMBER 0.00 0.00 4.OPPM 351 NEAN 0.54 GR AB C NICKEL MEDIAN SORT DIVERSITY 2.7668 LA TI TUDE DISSCLVED CXYGEN 9.4MG/L 4. 0P PM COUNT 10 LEAD LCNG I TUDE SKE WNESS 71555W FQUITABIL ITY 0.76C6 6. OPPW KURTOSIS DEP TH METERS ZINC 3.4PPM

NC. SPFC IES IN	NO S DEC TES	S	TEMPERATURE 7.100	CRUSE [
SPECIES LISTING  SPECIES LISTING  CCUNT  ACLADPHAMUS CIRCINATA  GCNIADELLA GRACILIS  EUCHONE RUBROCINCTA  APPHARETE AFCTICA  APPHARETE AFCTICA  SCALIBREGMA INFLATUM  EXOGONE FERES  DATICONEREIS MAGNA  LUMBRINER IS ACLIA  MACADOCLYMENE ZCNALIS  SPIODHANES BCMBYX  THARYX ACUTUS  PACTODRILUS SYMBIOTICUS  UNCIOLA INERMIS  BYALIS SERRATA  CIRCLANA PCLITA  CIRASTODERMA PINNULATUM  ECHINARACHNIUS FARMA  1  CUNTARIANA  COPEDDOA  C	NO THOUSAING 143 DIVERSITY 2 1142	EL % SAND % MUD MEAN MEDIAN SERT SKEWNESS KURTOSIS 78.31 0.0 0.59 0.84 1.30 -0.27 1.07	7.10C SALINITY 33.CEFPT CISSOLVED DXYGEN 9.6MG/L	DATE CRUISE SYMAP GRAB LATITUDE LONGITUDE METERS 27/C4/75 054 (1 40393N 71450N 62.7

	NC. SPECIES 24	CHEGMI OM	* CRS ANT CS	TENDERATURE	07504 21
PHAN MAC PHAC PHAC PHAC PHAC PHAC PHAC PHAC PH		4. 8PPM	S GRAVEL	7.80C	DATE 27/04/75
SPECIES LISTING ELWARDS IA SIPUNCULOIDES PHASCCLCSCHA SP. MACROCLYMENE ZONALIS NIREIS GRAYI PECTODCRVILLEA BIARTICULATA THARYX ACUTUS AGLIOPHAMUS CIRCINATA LUMBRINERIS TENUIS LUMBRINERIS FRAGILIS AFICIDEA JEFFREYSII GLYCERA CAPITATA AMPHARETE ARCTICA FXOGONE HEBES SCALIBREGMA INFLATUM GCNIADELLA GRACILIS DRILONEREIS MAGNA PECTODRILUS SYMBIOTICUS PILLANTHURA TRICARINA PHOXOCEPHALUS HOLBOLLI INCIOLA INEFWIS UNCIOLA INEFWIS UNCIOLA INEFRIS UNCIOLA INEFRIS UNCIOLA INEFRIS UNCIOLA INERGINATA EUCCRELLA EMARGINATA OIASTYLIS CUACRISPINCSA ASTERIAS TANNERI	NO. INDIVIDUALS	COPPER	% SANE	SAL	STATION NUMBER CRUISE SYMAP
PUNCULOID SF. ZONALIS ZONALIS EA BIARTI S CIRCINATA TENUS FRAGILIS		4.0 PPM	% MUD 2.23	SALINITY 33.15PPT	SYMAP
OES ICULATA	308 0	N I CK EL	C.46	. 1 SPP T	GRAB C1
CCUNT 561 61 61 33 34 48 65 67 77 11 11 11 11 11 11 11 11 11 11 11 11	DIVERSITY 2.3694	4.0PPM	MEDIAN SORT	DISSOLVE	LATITUDE 4C4O8N
		LEAD 6.	O. 04	DISSOLVED OXYGEN 9,	LONGITUDE 71576W
	ECUITABILITY 0.7456	6. OPPM ZINC	KUR TO S I S 0.92	9. 5MG/L	DEPTH METERS 51.7
	7456	10.4P			

	NC . SPECIES	CHROM IUM	* CRGANICS	TEMPERATURE	CRUSE [
	27	4. OP M	\$ GR 4V EL	7.000	DATE 27/C4/75
SPECIES LISTING PHASCOLION STROMBI STHENELAIS LIMICOLA ARICIDEA JEFFREYSII MACROCLYMENE ZONALIS SCALIBREGMA INFLATUM ELCHGNE RUEFFCCINCTA LUMBRIMFRIS TFNLIS PHYLLODOCF ARENAE THARYX ACUTLS AGLADPHANES ECMEYX AMPHARETE ARCTICA ELCORELLOPS IS DEFORMIS CHIRIDOTEA TUFTSI PTILANTHUM CRASSICORNE LEPTOCHEIRLS PINGUIS UNCICLA IRRCRATA AMPELISCA VERRILLI AMPELISCA VERRILLI AMPELISCA VERRILTIA ARCTICA ISLANCICA CFRASTODERMA PINNULATUM ECHINAPACHNIUS PARMA	NG. INDIVIDUALS	COPPER	89.51	SAL	STATICH NUMBER CRUISE SYMAP
TROMBI II MICGLA IS INFLATUM TENLIS INFLATUM TENLIS INFLATUM TENLIS INFLATUM TENLIS INFLATUM TENLIS INFLATUM TENLIS INFLATUM COPECINAT C		4.0 PPN	CON &	SALINITY 32.76FPT	SYNAP
T	717	NT CK EL	C.74	.76FPT	CREB
	DIVERS		MEDIAN 0.77	013	LAT ITUDE
4550 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	DIVERSITY 1.4709	4.00FM	1.C1	DISSULVED DXYGEN	
	709	LEAD	SKEWNESS	OXYGEN	72125k
	EQUITABILITY 0.4463	6.OPPM	S KURTOS IS	9. 1MG/L	DEPTH METERS 42.6
	LITY 0.4	ZINC	S I S		ERS
	463	4. OPP4			

SPECIES LISTING  NEPHTYS BUCERA 3 STHEWELAIS LIMICOLA 3 STHEWELAIS LIMICOLA 3 STHEWELAIS LIMICOLA 4 SCALIBREGMA INFLATUM GLYCERA DIBRANCHIATA 5 SCCLOPLOS AFWIGER 3 SCCLOPLOS AFWIGER 3 SCCLOPLOS AFWIGER 4 PHYLLODOCE ARENAE ELCHONE CISPAR PHYLLODOCE ARENAE ELCHONE RUBROCINC TA GLYCERA CAPITATA CLYMENELLA TOFCLATA 1 GLYCERA CAPITATA CLYMENELLA TOFCLATA 1 CLYMENELLA TOFCLATA 1 ACROCLYMENE ZCNALIS THARYX ACUTUS 3 CAULLERIELLA KILLARIENSIS 2 AFICIDEA JEFFREYSII 287 SFICPHANES ECMEYX 390 PRICNOSPIO STEENSTRUPI 1287 LUMBRI NFRIS ACUTA 22 LUMBRI NFRIS ACUTA 23 PROTODRILUS SYMBIOTICUS 33 CIRCLANA FCLITA 13 PROTOGNATHA CAECA LEPTOGNATHA LARIENSIS LEPTORUMENELLA TOTAL LICHOPICATORUMENELA LEPTORUMENELA LICHOPICA LICHOMENELA LICHOPICA LICH	IES 32 NO	MEAN MEDIAN SORT SKEWNESS KURTOSIS 0.17 0.16 1.88 0.07 1.46 NICKEL 10.0PPM IFAD 15.0PPM ZINC	CRUISE DATE CRUISE SYMAP GRAB LATITUDE LONGITUDE METERS C7574 27/04/75 057 G1 40507N 72005W 40.7 TEMPERATURE 6.90C SALINITY 32.65FFT CISSOLVEC OXYGEN 9.4MG/L	
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CR LI SF NC. SPECIES 27 WN I MOS 4 J TE WPE RATURE 7.00C 9 CRGANICS 21/04/15 DATE 5 -00 5 -00 4. OP - M DIENIA FUSIFCAMIS NEREIS GRAYI UNCIDLA IPRCRATA UNCTOLA INERMIS CIRDLANA POLITA OL I COC HAETA ARICIDEA JEFFREYSII GENIADELLA GRACILIS MECROCLY WENE ZONALIS SYLLIS CORNLTA PROTODORVILLE A BIAR TICLLATA PARAPICNESYLL IS LENGICIAR AT A FXO GONE HEBES SFICPHANES BOMBYX CAULLERIELLA KILL AR IENS IS SPIROPBIS BOR EALIS REYNCHOCCELA NEWATOCA LIMBRINERIS ACLTA THARYX ACLILS ANPHARETE PRCTICA S PHAERCSYLL IS ERINACEUS FECTODRILUS SYMBIOTICUS THARYX ANNULCSUS NO. INCIVIDUALS CRUISE SYMAP COPPER SPECIES LISTING 70.44 SALINITY 33.96FPT 14.55 0.23 4. OPPM NICKEL 381 GRAB 13 O. IS DIVERSITY 2.4475 4C4E3N CISSOLVED DXYGEN 9. 2MG/L 4.2PFM LEAD SCRT SKEWNESS KURTOSIS 2.11 -0.05 1.86 CLUVI 23 37 61 13 29 71500W EQUITABILITY 0.7426 6.0PPM MET ERS 42.6 ZINC 13.4PPM

D HO XOC SPHALLS HOLBOLLI

ECHINARACHNIUS PARMA

57504 NC. SPECIES 37 CHECH IIIN CRUISE TEMPERATURE 7.100 EPG ANI CS 27/64/75 DATE 4.0PPM 9 GRAVEL 0.0 PHORONIS ARCHITECTA ASTARTE SUBEQUILATERA ASTARTE UNCATA PERIPLONA FRACILIS CERASTEDERMA PINNULATUM THYCNE SP. YOL CIA LIMATULA NUCULA CELPHINCONTA PHOXIC EPHALLS HCLBCLLI THRACIA CCNRADI CRENELLA GLANCULA FRICHT HONIUS HUNTERI AND ELISCA AGA SSIZI PHOTIS SP. UNCIDLA IRRCRATA GENIADELLA GRACILIS YONSIA HYALINA LEFTCCHEIRLS FINGUIS PTILANTHURE TRICARINA S PERNA SPES SCLIATA NEPHTYS INCISA ALTINIM BOTOH & HERTMANIA MCCREI EUDORELLA EMARGINATA SCALIBREG NA INFLATUM AMPHARETE ARCTICA SCOLOPLOS ACUTLS TEREBELLICIE DRILON EREIS LCNGA NINGE NIGRIFES R HY NCHOCCEL A N EM ATOCA CERIANTHEOPSIS AMERICANUS THARYX ACUTUS NC. INDIVIDUALS CRUISE SYMAP SPECIFS LISTING COPP FR 98.11 3 SANC 059 SALINITY 33.12FFT \* MOD 1.90 4.OPPM 0.26 272 GR AB NICKEL MEDIAN 0.27 DIVERSITY 2.4583 LATITUDE 4C4924 DISSOLVED CXYGEN 4. 00 PM SORT 0.51 COUNT 16 LENGITUDE 71424W LEAD O.10 SKEWNESS EQUITABILITY C. 68C8 9.3MG/L 6. OPPM KURTOSIS 1.C9 DEP TH MET ERS 60.9 ZINC 7.4PFM

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CRUISE
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             LYDNSIA HYALIAN
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46.2
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S. Appy

Check Line 67574 17574 TEMPERATURE 7.00C DATE 27/04/75 4.000M COPPER STATICN NUMBER CRUISE SYMAP 069 SALINITY 33. CCFF1 4.0PPM NICKEL GR AB LATITUDE 40587N CISSCLVEC CXYGEN 10.0MG/L 4. OPPW LEAD CONGITUDE 71450W 6. OPPM DEP TH MET ERS 46.2 ZINC

13.8PFM

75