Final Report
Research Unit #212

Part 3 of 3

Erosion, Deposition, Faulting, and Instability of Shelf Sediments: Eastern Gulf of Alaska

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INTRODUCTION

The U.S. Geological Survey's Eastern Gulf of Alaska Environmental Hazards Project has been investigating the geological history and environmental hazards of the northeastern Gulf of Alaska since 1974. NOAA/BIM funding and ship time has supported this work, in part, since 1975. As 1981 was the last year of NOAA/BIM funding and no future investigations are anticipated, this report is being prepared to summarize the major findings related to environmental hazards in OCS lease area S5 that were determined during the life of the project. Therefore, the first objective of this final report is to delineate, describe, and illustrate the seafloor geology and geologic hazards in the eastern Gulf of Alaska from west of Yakutat Bay to Cross Sound Sea Valley that must be considered before any offshore petroleum-related development activities are undertaken.

The second object of this study is to describe in detail the geology of the Alsek Sediment Instability Study Area, an area offshore of the mouth of the Alsek River that contains gas pockmarks, craters, and other multiple examples of sediment instability. This area, originally designated as a possible pipeline corridor in BIM's EIS for lease sale 55 (1980), was the primary area of field data acquisition during the last field season of this project, May-June 1980. Lastly, a section is presented on depositional environments interpreted from Ostracod type and abundance by Elisabeth Brewers. Ms. Brewers was funded by NOAA/BIM in the last year of this study to attempt to tie together and interpret previously collected sediment data and micro-paleonotological studies.

An explanation of the oversized plates that accompany this report follows the Ostracod Section.

Reference

U.S. Department of the Interior, Bureau of Land Management, 1980, Final Environmental Impact Statement, Proposed Outer Continental Shelf Oil and Gas Lease Sale, Eastern Gulf of Alaska.

TABLE OF CONTENTS

Section 1 PAGE
Seafloor Geology and Geologic Hazards in the Eastern Gulf of Alaska 1-1

Section 2
Geology of the Alsek Sediment Instability Study Area 2-1

Section 3
The Taxonomy, Ecology and Zoogeography of the Holocene and Pleistocene Ostracode Fauna of the Gulf of Alaska 3-1

Appendix I
The tabulation of the Ostracode assemblages and associate organisms from selected bottom grab samples taken in the Northeast Gulf of Alaska, F.R.S. Townsend Cromwell Cruise EGAL-75-kc, 1975, Elisabeth M. Brouwers. USGS . Open-File Report 81-1341. 3-121

Appendix 11
Tabulation of the Ostracode assemblages and associated fauna and flora from VAN VEEN samples taken in the Northeast Gulf of Alaska, R/V Discoverer Cruise DC2-80-EG, June, 1980. Elisabeth M. Brouwers. Submitted for USGS Open-File Report. 3-247

Appendix III
Tabulation of the Ostracode assemblages and associated organisms from selected bottom grab samples taken in the Northeast Gulf of Alaska, F.R.S. Townsend Cromwell Cruise EGAL-75-KC, 1975 part II. Elisabeth M. Brouwers, Submitted for USGS Open-File Report. 3-364

Appendix IV
Report on the Ostracode assemblages and the associated organisms from SHIPEK Samplers taken in the Northeast Gulf of Alaska. R/V Discoverer Cruise DC1-79-EG, May, 1979. Elisabeth M. Brouwers, Internal U.S. Geological Survey Examination and Report. 3-513

Appendix V
Distribution of Holocene Ostracode in the Eastern Gulf of Alaska: A Zoogeographic, Ecologic and Biosediment logic analysis. Elisabeth M. Brouwers. Abstract, 1980, University ofColorado, Institute of Arctic and Alphine Research, Arctic Workshop, Ninth, Boulder, 1980. 3-583

Appendix VI
Distributional pattern of modern Ostracode species from the Continental Shelf, Gulf of Alaska. Elisabeth M. Brouwers. Abstract, 1981, University of Colorado, Institute of Arctic and Alphine Research, Arctic Workshop, Tenth, Boulder, 1981, pp 3-4. 3-542

Appendix VII
Preliminary report of Ostracode assemblages from the Northeast Gulf of Alaska Continental Shelf. Elisabeth M. Brouwers. 1980. Alaska Accomplishments Circular, USGS Circular 844. 3-546

Appendix VIII
Paleoenvironmental analysis of the Ostracode occurring in quaternary sediments from cores taken near Icy Bay. Elizabeth M. Brouwers. 1981. Alaska Accomplishments Circualr, USGS Circular . 3-552

Appendix IX
Principal coordinate analysis of selected bottom grab samples from Cruise EGAL-75-KC, Plots of first and second axes and of first and third axes. Elisabeth M. Brouwers. Submitted for publication as USGS Miscellaneous Field Studies nap. 3-562

Appendix X
Principal coordinate analysis of selected bottom grab samples from Cruise EGAL-75-KC, DC1-79-EG and DC2-80-EG. Elisabeth M. Brouwers. Submitted for publication as USGS Miscellaneous Field Studies Map. 3-565

Appendix XI
Maps showing distribution of bottom grab samples examined and the corresponding areal distribution of the five major Ostracode assemblages between Yakutat and Cross Sound. Elisabeth M. Brouwers. Submitted for publication as USGS Miscellaneous Field Studies Map. 3-568

Appendix XII
Maps showing distribution of bottom grab samples examined and the corresponding areal distribution of the five major Ostracode assemblages between Bering Glacier and Yakutat Bay. Elisabeth M. Brouwers. Submitted for publication as USGS Miscellaneous Field Studies Map. 3-571

Appendix XIII
Maps showing distribution of bottom grab samples examined and the corresponding areal distribution of the five major Ostracode assemblages between Montague Island and Yakutat Island. Elisabeth M. Brouwers. Submitted for publication as USGS Miscellaneous Field Studies Map. 3-574

Appendix XIV

Plot of the 33 most common Ostracode species; abundance versus water depth. Elisabeth M. Brouwers. Submitted to USGS Miscellaneous Field Study Map.

APPENDIX III

TABULATION OF TEE OSTRACODE ASSEMBLAGES AND ASSOCIATED ORGANISMS FROM SELECTED BOTTOM GRAB SAMPLES TAKEN IN THE NORTHEAST GULF OF ALASKA, F .R. S . TOWNSEND CROMWELL CRUISE EGAL-75-KC , 1975: PART II

ELISABETH M. BROUWERS

SUBMITTED FOR U.S. GEOLOGICAL SURVEY OPEN FILE REPORT

EGAL-75-KC Shipek-68A

Latitude: 59° 42.6′ N

Longitude; 146° 15.0' W

Water Depth: 81 meters

Lithology: Gray mud with gravel and shells.

Organisms: Calcareous Benthic Foraminifers

Sponge Spicules

Cheilostome Bryozoans

Brachiopods

Pelecypods

Ostracodes

Ostracode Species:	Adult	Juv.	Z
"Australicythere" sp. A	39	136	51.17
Pectocythere aff. P. quadrangulata Hanai, 1957	30	11	11.99
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	22	11	9.65
Pectocythere aff. P. parkerae Swain and Gilby, 1974	19	4	6.73
"Acanthocythereis" dunelmensis (Norman, 1865)	3	13	4.68
Robertsonites tuberculata (Sars, 1865)		9	2.63

Ostracode Species:	Adults	Juv.	%
Cytheromorpha sp. B	4	1	1.46
Ambos tracon sp. A	1	3	1.17
Cytheropteron sp. G	4		1.17
Cytheropteron sp. L	2	2	1.17
Cytheropteron sp. H	3	1	1.17
Cytheropteron sp. E	2	2	1.17
Eucytherura sp. A	3		0.88
Argilloecia sp. A	3		0.88
Hemicytherura sp. B	2		0.59
Cytheropteron sp. N	2		0.59
Finmarchinella (Barentosovia) sp. A	2		0.59
Cytheropteron sp. F	1	1	0.59
Finmarchinella (Finmarchinella) finmarchica (Sars, 1866)	1		0.29
Palmanella limicola (Norman, 1865)	1		0.29
Acuminocythere sp. A	1		0.29
Cytheropteron sp. D	1		0.29
Sclerochilus sp. C		1	0.29
Sclerochilus sp. F	1		0.29

Total Ostracodes 342

EGAL-75-KC Van Veen-69

Latitude: 60° 16.6′ N

Longitude: 146° 14.6′ W

Water Depth: 49 meters

Lithology: Olive-gray, sandy, clayey silt.

Organisms: Ostracodes

Ostracode Species:	Adults	Juv.	%
* "Leguminocythereis" sp. A	20	198	20.20
Pectocythere aff. P. quadrangulata Hanai, 1957	150	48	18.35
Pectocythere sp. D	159	38	18.26
Loxoconcha sp. A	59	88	13.62
Robertsonites tuberculata (Sars, 1865)	15	54	6.39
"Acanthocythereis" dunelmensis (Norman, 1865)	7	49	5.19
Palmanella limicola (Norman, 1865)	19	29	4.45
Cytheropteron sp. A	18	23	3.40
* Hemicythere aff. H. quadrinodosa Schornikov, 1974	4	27	2.87
Cytheromorpha sp. B	15	2	1.58

Ostracode Species:	Adults	Juv.	%
Cytheromorpha sp. E	16		1.48
Cyt heromorpha 8p. A	14		1.30
Cythere af f. C. alveolivalva Smith, 1952	2		0.83
Candona sp.	1		0.56
Elofsonia sp. A	4		0*37
Cytherois sp. B	2		0.19
Cytheropteron aff. C. nodosoalatum Neale and Howe (1975)	1		0.09
Cythere sp. A		1	0.09
Cyclocypris sp.	1		0*09
Acuminocythere sp. A		1	0.09
Cytherura sp. J	1		0.09
Cytheropteron sp. I		1	0.09
total-Ostracodes	1079		

EGAL-75-KC Van Veen-72

Latitude: 60° 15.3′ N

Longitude: 146° 00.8′ W

Water Depth: 90 meters

Lithology: Gray-brown mud.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Gastropod

Ostracodes

Ostracode Species:	Adults	Juv.	%
Robertsonites tuberculata (Sars, 1865)	5	61	33.67
"Acanthocythereis" dunelmensis (Norman, 1865)	1	52	27.04
Cytheropteron sp. B	8	14	11.23
Bythocythere sp. B	8	12	10.20
Cytheropteron sp. A	3	11	7.14
~~Palmanella limicola (Norman, 1865)~~	~~1~~	6	3.57
Pectocythere aff. P. quadrangulata Hanai, 1957	4	3	3.57
Cytheromorpha sp. B		2	1.02
Cytherois sp. A	1	1	1.02
Cyclocypris sp.		1	0*51
Pseudocythere sp. A		1	0.51
Loxoconcha sp. B	1		0*51

Total Ostracodes 196

EGAL-75-KC Van Veen-73

Latitude: 60° 10.45′ N

Longitude: 146° 01.35′ W

Water Depth: 95 meters

Lithology: Gray-brown, clayey silt.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Pelecypods

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	24	155	72.47
Palmanella limicola (Norman, 1865)	14	5	7.69
Loxoconcha sp. A	8	6	5.67
Eucytherura sp. A	7	1	3.24
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		7	2.83

Ostracode Species:	Adults	Juv.	%
Munseyella sp. a	5		2.02
Cluthia cluthae (Brady, Crosskey, and Robertson, 1874)	4		1.62
Cytheropteron sp. D	3	1	1.62
Cytheropteron sp. Q		3	1.22
Loxoconcha sp. B	2		0.81
Robertsonites tuberculata (Sars, 1865)		1	0.41
"*Australicythere*" sp. A		1	0.41
Total Ostracodes 247			

EGAL-75-KC Van Veen-74

Latitude" 60° 09.2′ N

Longitude: 146° 01.5' W

Water Depth: 90 meters

Lithology: Gray-brown silt.

Organisms: Calcareous Benthic Foraminifers

Proteinaceous Worm Tubes

Gastropod

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	2	23	32.47
Loxoconcha sp. A	5	14	24.68
Palmanella limicola (Norman, 1865)	9	9	23.38
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975	5	3	10.39
Eucytherura sp. A	3		3*90
Cytheropteron sp. L		1	1.30
Robertsonites tuberculata (Sars, 1865)	1		1.30
Cytheropteron sp. D	1		1.30
Munseyella sp. B	1		1.30
Total Ostracodes 77			

EGAL-75-KC Van Veen-75

Latitude: 60° 07.4′ N

Longitude: 146° 02.3′ w

Water Depth: 84 meters

Lithology : Rounded cobbles at the surface, underlain by gray mud with pea-sized gravel.

Organisms: Calcareous Benthic Foraminifers

Planktic Foraminifers

Sponge Spicules

Pelecypods

Ostracodes

Echinoderm Spines

Diatoms

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	1	2	42.86
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	1	2	42.86
Palmanella limicola (Norman, 1865)		1	14.29

Total Ostracodes 7

EGAL-75-KC Van Veen-76

Latitude: 60° 02.0′ N

Longitude: 146° 00.5′ W

Water Depth: 77 meters

Lithology: 10 cm of gravel and shell fragments overlying gray silty mud .

Organisms: **Calcareous Benthic Foraminifers**

Sponge **Spicules**

Proteinaceous and Agglutinated Worm Tubes

Brachiopods

Pelecypods

Gastropod

Pteropod

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv .	%
"Australicythere" sp. A	25	111	51.52
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	12	20	12.12

Ostracode Species:	Adults	Juv.	%
Pectocythere aff. P. quadrangulata Hanai, 1857	8	15	5.68
Pectocythere aff. P. parkerae Swain and Gilby, 1974	11	4	5.68
Cytheropteron sp. G	11	4	5.68
"Acanthocythereis" dunelmensis (Norman, 1865)	2	3	1.89
Robertsonites tuberculata (Sara, 1865)	2	3	1.89
Cytheromorpha sp. B	4	1	1.89
Cytheropteron sp. H	1	4	1.89
Eucytherura sp. A		3	1.14
Cytheropteron sp. N	1	2	1.14
Hemicytherura sp. B	2		0.76
Munseyella sp. A	2		0.76
Ambostracon sp. A		2	0.76
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		1	0.38
Hemicytherura sp. A	1		0.38
Cytheropteron sp. F		1	0.38
"Leguminocythereis" sp. D		1	0.38

Total Ostracodes 264

EGAL-75-KC Van Veen-77

Latitude: 59° 56′ N

Longitude: 146° 1.5' W

Water Depth: 86 meters

Lithology: Gray, pebbly mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Sponge Spicules

Pelecypods

Gastropod

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	5	4	25.71
Cytheropteron aff. C. latissimum of Neale and Eowe (1975)	3	6	25.71
Cytheropteron sp. H	1	2	8.57
Cytheropteron sp. E	1	2	8.57
Munseyella sp. A	2		5.71

Ostracode Species:	Adults	Juv.	z
Eucytherura sp. A		2	5.71
Cytheropteron sp. G		2	5.71
Palmanella limicola (Norman, 1865)	1		2.86
"*Australicythere*" sp. A		1	2.86
Cytheropteron sp. O	1		2.86
Cytheromorpha sp. A	1		2.86
Cytheropteron sp. F		1	2.86
Total Ostracodes 35			

EGAL-75-KC Van Veen-78

Latitude: 59° 51.6′ N

Longitude: 146° 00.9′ W

Water Depth: 101 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Proteinaceous Worm Tubes

Ostracodes

Echinoderm Fragments

Diatoms

Ostracode Species:	Adults	Juv.	z
"Acanthocythereis" dunelmensis (Norman, 1.865)		38	67.86
Palmanella limicola (Norman, 1865)	5	5	17.86
Cytherois sp. A	2		3.57
Eucytherura sp. A	1	1	3.57
Cytheropteron sp. Q	1		1.79
Cytheropteron sp. D	1		1.79
Munseyella sp. B	1		1.79
Cytheropteron sp. A		1	1.79

Total Ostracodes 56

EGAL-75-KC Van Veen-80

Latitude: 59° 46.7′ N

Longitude: 145″ 59.5′ W

Water Depth: 91 meters

Lithology: Tan-gray mud.

Organisms; Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Sponge Spicules

Proteinaceous Worm Tubes

Pelecypods

Gastropod

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	z
Palmanella limicola (Norman, 1865)	12	2	18.18
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	3	10	16.88
"Acanthocythereis" dunelmensis (Norman, 186S)	1	11	15.58
"Australicythere" sp. A		6	7.79

Ostracode Species:	Adult s	Juv .	%
Pectocythere aff. P. parkerae Swain and Gilby, 1974	2	3	6.49
Cluthia 8p. A	3	1	5.20
Cytheropteron sp. H		3	3.90
Cytheropteron sp. F		2	2.60
Robertsonites tuberculata (Sars, 1865)		2	2.60
Hemicytherura sp. A		2	2.60
Paradoxostoma sp. G	2		2.60
Cytheromorpha sp. A	2		2.60
Eucytherura sp. A		1	1.30
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		1	1.30
Cytheropteron sp. O		1	
Cytheropteron sp. E		1	
Cytheropteron sp. D	1		1.30
Paradoxostoma sp.		1	1.30
Pectocythere aff. P. quadrangulata Hanai, 1957	1		1.30
Aurila sp. A		1	1.30
Sclerochilus sp. C		1	1.30
Cytheropteron sp. G	1		1.30

Total Ostracodes 77

EGAL-75-KC Van **Veen-87**

Latitude: 60° 06.9′ N

Longitude: 145″ 34.4′ w

Water Depth: 126 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Planktic Foraminifers

Radiolarians

Proteinaceous Worm Tubes

Pelecypod Fragments

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	z
"Acanthocythereis" dunelmensis (Norman, 1365)		25	52.08
Robertsonites tuberculata (Sara, 1865)		11	22.92
Krithe sp. A	1	1	4.17
Munseyella sp. A	2		4.17
Cytheropteron sp. Q		2	4*17
Loxoconcha sp. B		2	4.17

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. R	1		2.08
Palmanella limicola (Norman, 1865)		1	2.08
Bythocythere sp. B		1	2.08
Cluthia sp. A	1		2.08

Total Ostracodes 48

EGAL-75-KC **Shipek-88**

Latitude: 59° 59.2′ N

Longitude: 145° 34.0′ w

Water Depth: 88 meters

Lithology: Gray mud with pebbles and cobbles.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Sponge Spicules

Proteinaceous Worm Tubes

Pelecypods

Pteropod

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv.	%
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	4	5	50.0
Munseyella sp. A	2		11.11
"Australicythere" sp. A		1	5.56
Robertsonites tuberculata (Sars, 1865)		1	5.56
Cytheropteron sp. E	1		5.56
Eucytherura sp. A	1		5.56
Pectocythere aff. P. parkerae Swain and Gilby, 1974	1		5.56
Cytheropteron sp. N			5.56
Cytheropteron sp. F			5.56

'fetal Ostracodes 18

EGAL-75-KC **Shipek-89**

Latitude: 59′ 58.5′ N

Longitude: 145° 34.2′ W

Water Depth: 84 meters

Lithology: Gray mud with cobbles and gravel.

Organisms: **Calcareous Benthic Foraminifers**

Sponge Spicules

Proteinaceous Worm Tubes

Cheilostome Bryozoans

Pelecypods

Gastropod

Pteropod

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv.	%
Cluthia cluthae (Brady, Crosskey, and Robertson, 1874)	2		100
Total Ostracodes	2		

EGAL-75-KC Van Veen-91

Latitude: 59° 50.5′ N

Longitude: 145° 39.6′ W

Water Depth: 97 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Proteinaceous Worm Tubes

Ostracodes

Echinoderm Fragments

Diatoms

Ostracode Species:	Adults	Juv.	%
Palmanella limicola (Norman, 1865)	5	1	50.00
"Acanthocythereis" dunelmensis (Norman, 1865)		3	25.00
Munseyella sp. A	1		8.33
Eucytherura sp. A		1	8.33
Munseyella sp. B		1	8.33

Total Ostracodes 22

EGAL-75-KC Van Veen-94

Latitude: 60° 07.7′ N

Longitude: 145° 21*O′ W

Water Depth: 97 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Proteinaceous Worm Tubes

Pelecypods

Gastropod

Ostracodes

Organic Debris

Ostracode Species:	Adults	Juv.	%
* **Robertsonites tuberculata** (Sars, 1865)		24	42.11
"**Acanthocythereis" dunelmensis** (Norman, 1865)	2	18	35.09
Loxoconcha sp. A	1	3	7.02
Cluthia sp. A	3		5.26
Palmanella limicola (Norman, 1865)	1		1.75
Loxoconcha sp. B	1		1.75

Ostracode Species:	Adults	Juv.	%
Bythocythere sp. B	1		1*75
Cytheropteron sp. B	1		1.75
Cytheropteron sp. Q		1	1.75
Pseudocythere sp. A		1	1.75

Total Ostracodes 57

EGAL-75-KC Van Veen-95

Latitude: 60° 03.3′ N

Longitude: 145° 19.8′ W

Water Depth: 132 meters

Lithology: Greenish-gray mud.

Organisms: Calcareous Benthic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Pteropod

Ostracodes

Ostracode Species:	Adults	Juv.	Z
"Acanthocythereis" dunelmensis (Norman, 1865)	3	21	80.00
Palmanella limicola (Norman, 1865)	1	1	6.67
* Krithe sp. A	1		3*33
Cytheropteron sp. B	-1		3*33
Robertsonites tuberculata (Sars, 1865)		1	3.33
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		1	3.33
Total Ostracodes 30			

EGAL-75-KC Van Veen-96

Latitude: 59° 59.2′ N

Longitude: 145* 19.3′ w

Water Depth: 119 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Echinoderm Fragments

Diatoms

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	1	8	56.25
Palmanella limicola (Norman, 1865)	1	1	12.50
Krithe sp. A	2		12.50
Robertsonites tuberculata (Sars, 1865)		1	6.26
Eucytherura sp. A		1	6.25
Loxoconcha sp. B		1	6.25

Total Ostracodes 16

EGAL-75-KC Van Veen-97

Lithology: 59° 55.7' N

Longitude: 145° 19.5′ w

Water Depth: 101 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Gastropod

Ostracodes

Ostracode Species:	Adults	Juv.	z
Loxoconcha sp. A	4	2	28.57
"Acanthocythereis" dunelmensis (Norman, 1865)	2	3	23.81
Palmanella limicola (Norman, 1865)	5		23.81
Eucytherura sp. A	1	1	9.52
Cytheropteron sp. L		1	4.76
Munseyella sp. A	1		4.76
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		1	4.76

Total Ostracodes 21

EGAL-75-KC Van Veen-98

Latitude: 59° 52.5′ N

Longitude: 145° 19.8′ W

Water Depth: 101 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Echinoderm Fragments

Diatoms

Ostracode Species:	Adults	Juv.	%
Palmanella limicola (Norman, 1865)	7	2	30.00
"Acanthocythereis" dunelmensis (Norman, 1865)	1	6	23.33
Eucytherura sp. A	4		13.33
Robertsonites tuberculata (Sars, 1865)	1	2	10.0
Loxoconcha sp. A	1	1	6.67
Cytheropteron sp. D	2	6.67	

Ostracode Species:	Adults	Juv.	%
Munseyella sp. A	2		6.67
Cluthia cluthae (Brady, Cros skey, and Robertson, 1874)	1		3*33
Total Ostracodes	30		

EGAL-75-KC Van Veen-99

Latitude: 59″ 50.4′ N

Longitude: 145° 20.6′ w

Water Depth: 110 meters

Lithology: Gray mud.

Organisms:

Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Pteropods

Ostracodes

Echinoderm Fragments

Diatoms

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	5	18	57.50
Palmanella limicola (Norman, 1865)	5	6	27.50
* Munseyella sp. A	4		10.00
* Cluthia sp. A	1		2.50
Xestoleberis sp. B		1	2.50
Total Ostracodes 40			

EGAL-75-KC Shipek-103

Latitude: 60″ 09.4′ N

Longitude: 144° 58.2′ w

Rater Depth: 35 meters

Lithology: Thin layer of gray mud overlying dark, fine-grained sand.

Organisms: Calcareous Benthic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Gastropod

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Leguminocythereis" sp. A	3	2	41.67
* Loxoconcha sp. A	4		33.33
Robertsonites tuberculata (Sars, 1865)	2		16.67
Pectocythere sp. D	1		8.33

Total Ostracodes 12

EGAL-75-KC Shipek-104

Latitude: 60° 08.1' N

Longitude: 144° 54.9' W

Water Depth: 53 meters

Lithology: Gray mud with some sand lenses.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Gastropod

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	49	98	34.83
* Robertsonites tuberculata (Sars, 1865)	31	107	32.70
Pectocythere aff. P. quadrangulata Hanai, 1957	81	22	24.41
Palmanella limicola (Norman, 1865)	13	6	4.50
Loxoconcha sp. A	11	3	3.32
Cytheropteron sp. A		1	0.24

Total Ostracodes 422

EGAL-75-KC Box Core-105

Latitude: 59° 57.1′ N

Longitude: 144″ 55.4′ W

Water Depth: 183 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	6	63	38.33
Loxoconcha sp. B	52	2	30.00
* Cytheropteron sp. A	6	12	10.00
* Cluthia sp. A	13		7.22
* Krithe sp. A	8	4	6.67
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	2	1	1.67
Cytheropteron sp. M	3		1.67
Cytheropteron sp. Q	1	1	1.11
Bythocythere sp. B	2		1.11

Ostracode Species:	Adults	Juv	%
Cytherura sp. I	1		0.56
"*Leguminocythereis*: sp. A		1	0.56
Cluthia cluthae (Brady, Crosskey, and Robertson, 1874)	1		0.56
Robertsonites tuberculata (Sars, 1865)			0.56
Total Ostracodes 180			

EGAL-75-KC Van Veen-106

Latitude: 59° 57.0′ N

Longitude: 144° 57.4′ W

Water Depth: 192 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	3	47	31.25
* Loxoconcha sp. B	44	2	28.75
* Cytheropteron sp. A	12	13	15.63
Bythocythere sp. B	4	9	8.13
* Krithe sp. A	11	2	8.13
Cytheropteron sp. Q	2	5	4.38
Cluthia sp. A	5		3.13
Cytheropteron sp. AA	1		0.63
Total Ostracodes 160			

EGAL-75-KC Van Veen-109

Latitude: 59° 43.4′ N

Longitude: 144° 52.7′ W

Water Depth: 102 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Proteinaceous Worm Tubes

Bryozoans

Pelecypods

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
Palmanella limicola (Norman, 1865)	1	20	17.65
Pectocythere aff. P. parkerae Swain and Gilby, 1974	1	13	11.77
Loxoconcha sp. A	3	7	8.40
Cythere aff. C. alveolivalva Smith, 1952		10	8.40
Acuminocythere sp. A		8	6.72
"Leguminocythereis" sp. A		7	5.88
Cytheromorpha sp. B	3	4	5*88
"Acanthocythereis" dunelmensis (Norman, 1865)	1	5	5.04
Robertsonites tuberculata (Sars, 1865)		6	5.04
Cytheromorpha sp. A	4	2	5.04
Hemicythere aff. H. quadrinodosa Schornikov, 1974		4	3.36
Buntonia sp. A	2		2.52

Ostracode Species:	Adults	Juv.	%
Pectocythere aff. *P. quadrangulata* Hanai, 1957	1	2	2.52
Loxoconcha sp. D		2	1.68
Cytheropteron sp. E		2	1.68
Cytheromorpha sp. E	2		1.68
Cytheropteron sp. A		2	1.68
Cythere sp. A		1	0.84
* *Sclerochilus* sp. F	1		0.84
"*Australicythere*" sp. A		1	0.84
Cytheropteron aff. *C. nodosoalatum* Neale and Howe, 1975	1		0.84
Ambostracon sp. A			0.84
Cytherois sp. A			0.84
Total Ostracodes 119			

EGAL-75-KC Shipek-110

Latitude: 59° 41.5' N

Longitude: 144° 47.2' W

Water Depth: 97 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Ostracodes

Diatoms

Ostracode Species:	Adult s	Juv .	%
Robertsonites tuberculata (Sars, 1865)	1	5	22.22
Cytheropteron sp. G	4		14.82
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	3	1	14.82
"Acanthocythereis" dunelmensis (Norman, 1865)	2	1	11.11
Loxoconcha sp. A		2	7.41
Munseyella sp. A	2		7.41
Cytheropteron sp. F	1		3*70
Palmanella limicola (Norman, 1865)		1	3*70
Cytheromorpha sp. A	1		3.70
Cytheropteron sp. N	1		3.70
Sclerochilus sp. C		1	3.70
Paradoxostoma sp.		1	3.70

Total Ostracodes 27

EGAL-75-KC Shipek-111

Latitude: 59° 38.9' N

Longitude: 144° 41.0' W

Water Depth: 148 meters

Lithology : Olive mud overlying gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Proteinaceous Worm Tubes

Brachiopods

Pelecypods

Gastropod

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv.	%
Palmanella limicola (Norman, 1865)	5	6	24.44
"Acanthocythereis" dunelmensis (Norman, 1865)	2	7	20.00
Robertsonites tuberculata (Sars, 1865)		8	17.78
Eucytherura sp. A	2	2	8.89

Ostracode Species:	Adult s	Juv .	z
Cytheropteron sp. L	2	2	8.89
Munseyella sp. A	3		6.67
Cytheropteron sp. D	1		2*22
Cluthia sp. A	1		2*22
Buntonia sp. A		1	2.22
"*Leguminocythereis*" sp. A		1	2.22
Munseyella sp. B	1		2.22
Loxoconcha sp. B	1		2.22
Total Ostracodes	45		

EGAL-75-KC Van Veen-112

Latitude: 59° 37.6′ N

Longitude: 144° 37.0′ w

Water Depth: 145 meters

Lithology: Olive-green mud overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
Munseyella sp. A	3		23.08
* *Palmanella limicola* (Norman, 1865)	2	1	23.08
* *Macrocypris* sp.	2		15.39
"*Acanthocythereis*" *dunelmensis*		2	15.39
Robertsonites tuberculata (Sars, 1865)		1	7.69
Cytheropteron sp. L	1		7.69
Eucytherura sp. A	1		7.69
Total Ostracodes 13			

EGAL-75-KC **Shipek-113**

Latitude: 59″ 34.9′ N

Longitude: 144° 30.0′ w

Water Depth: 139 meters

Lithology: Olive mud with occasional small pebbles and coarse sand overlying gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Radiolarians

Sponge Spicules

Calcareous and Proteinaceous Worm Tubes

Pelecypods

Gastropod

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv.	z
Sclerochilus sp. D	5		55.56
Krithe sp. A	3		33*33
Eucytherura sp. A	1		11*11
Total Ostracodes	9		

EGAL-75-KC **Shipek-115**

Latitude: 59° 46.0′ N

Longitude: 144° 47.7′ W

Water Depth: 64 meters

Lithology: Dark gray, muddy, fine-grained sand.

Organisms: **Calcareous Benthic Foraminifers**

Worm Tubes

Bryozoans

Pelecypods

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv.	%
Loxoconcha sp. A	40	93	15.13
* "Leguminocythereis" sp. A	9	104	12.86
Pectocythere aff. P. quadrangulata Hanai, 1957	67	39	12.06
Hemicythere aff. H. quadrinodosa Schornikov, 1974	3	89	10.47
Cythere aff. C. alveolivalva Smith, 1952	7	48	6.26
* Cytheromorpha sp. B	39	6	5.12
* Palmanella limicola (Norman, 1865)	15	23	4.32

Os tracode Species:	Adult s	Juv.	%
Aurila sp. A	3	34	4.21
Pectocythere sp. D	9	25	3.87
Robert sonites tuberculata (Sars, 1865)	3	28	3.53
Pectocythere af f. P. parkerae Swain and Gilby, 1974	3	22	2.84
"Radimella" jollaensis (LeRoy, 1943)		18	2.05
Acuminocythere sp. A	3	14	1.93
Cytheromorpha sp. E	15		1.71
Cythere sp. A	2	11	1.48
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975	1	11	1.37
Paradoxostoma sp. G	8	4	1.37
Cytheropteron sp. A	7	5	1.37
* Buntonia sp. A	7	4	1.25
Hemicytherura sp. A	10	1	1.25
Loxoconcha sp. D	7	2	1.02
Coquimba sp. A	2	6	0.91
"Acanthocythereis" dunelmensis (Norman, 1865)	1	5	0.68
Cytherois sp. A	5		0.57
* Paradoxostoma sp. I	4	1	0.57
Hemicytherura sp. B	5		0.57
Ambostracon sp. A		4	0.46
Cytheropteron sp. Z	1	2	0.34
* Argilloecia sp. A	2		0.23

Ostracode Species:	Adults	Juv.	%
Cytheropteron aff. C. latissimum of Neale and Howe (1975)		1	0*11
myodocopid	1		0.11

Total Ostracodes 879

EGAL-75-KC Shipek-117

Latitude: 59° 43.0′ N

Longitude: 144° 38.1′ W

Water Depth: 119 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Pelecypods

Ostracodes

Os t racode Species:	Adults	Juv .	z
Palmanella limicola (Norman, 1865)	2	7	33.33
* "Acanthocythereis" dunelmens is (Norman, 1865)	4	4	29.63
Pectocythere sp. D	1	2	11.11
Robertsonites tuberculata (Sars, 1865)		2	7.41
"Leguminocythereis" sp. A		2	7*41
Pectocythere aff. P. quadrangulata Hanai, 1957	1		3.70
Loxoconcha sp. A		1	3.70
Cytheropteron sp. S	1		3.70
Total Ostracodes 27			

EGAL-75-KC Shipek-118

Latitude: 59″ 40.7' N

Longitude″ 144° 33.3′ W

Water Depth: 137 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Radiolarians

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Occasional Diatoms

Ostracode Species:	Adults	Juv	%
Eucytherura sp. A	5	2	36.84
Palmanella limicola (Norman, 1865)	3	2	26.32
Robertsonites tuberculata (Sars, 1865)		2	10.53
Cytheropteron sp. L		1	5.26
Cytheropteron sp. 'D	1		5.26
Munseyella sp. B	1		5.26
"*Acanthocythereis*" *dunelmensis* (Norman, 1865)			5.26
"*Leguminocythereis*" sp. A		1	5.26

Total Ostracodes 19

EGAL-75-KC **Shipek-120**

Latitude: 59° 48.8' N

Longitude: 144" 41.0' w

Water Depth: 66 meters

Lithology: Dark, fine-grained sand.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated and Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Leguminocythereis" sp. A	159	109	78.82
Pectocythere sp. D	30		8.82
* Pectocythere aff. P. quadrangulata Hanai, 1957	14	1	4.41
Robertsonites tuberculata (Sars, 1865)	5	4	2.65
"Leguminocythereis" sp. B	2	3	1.87
Loxoconcha sp. A	3		0.88
Eucythere sp. A	2		0.59
Cytheromorpha sp. B	2		0.59
Buntonia sp. A		2	0.59

Ostracode Species:	Adults	Juv.	%
Cythere aff. *C. alveolivalva* Smith, 1952		1	0.29
Cytheropteron aff. *C. latissimum* of Neale and Howe (1975)	1		0.29
"*Acanthocythereis*" *dunelmensis* (Norman, 1865)		1	0.29
Aurila sp. A		1	0.29

Total Ostracodes 340

EGAL-75-KC Shipek-122A

Latitude: 59° 55.6

Longitude: 144° 31.4' W

Water Depth: 55 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Echinoderm Fragments

Plant Material

Diatoms

Ostracode Species:	Adults	Juv.	%
* Palmanella limicola (Norman, 1865)	52	21	51.41
"Acanthocythereis" dunelmensis (Norman, 1865)	2	18	14.09
* Buntonia sp. A	11	6	11.97
Pontocythere sp. A		5	3.52
Cluthia sp. A	4		2.82
Cytheropteron sp. D	4		2*82
Hemicythere aff.. quadrinodosa Schornikov, 1974		4	2.82
Cythere sp. A		4	2.82
Cythere aff. C. alveolivalva Smith, 1952		3	2.11
Cytheromorpha sp. B		2	1.41
Cluthia cluthae (Brady, Crosskey, and Robertson, 1874)	1		0.70
"Leguminocythereis" sp. A		1	0.70

Ostracode Species:	Adults	Juv.	%
Cytherois sp. A		1	0.70
Loxoconcha sp. A	1		0.70
Cytheropteron sp. Y		1	0.70
Loxoconcha sp. D	1		0.70

Total Ostracodes 142

EGAL-75-KC Shipek-123

Latitude: 59″ 56.7′ N

Longitude: 144° 40.2′ W

Hater Depth: 210 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Radiolarians

Gastropod

Ostracodes

Ostracode Species:	Adults	Juv.	%
* Loxoconcha sp. B	11	2	30.23
"Acanthocythereis" dunelmens is (Norman, 1865)		9	20.93
Cytheropteron sp. A	4	3	16.28
Cluthia sp. A	4		9.30
Cytheropteron Sp. Q	2	2	9.30
Bythocythere sp. B	2	1	6.98
Cytheropteron sp. c	2		4.65
"Leguminocythereis" sp. A		1	2.33

Total Ostracodes 43

EGAL-75-KC Box Core-124B

Latitude: 59° 57.5′ N

Longitude: 144* 43.2′ W

Water Depth: 234 meters

Lithology: Sticky, firm, gray mud with some fragments of more firm mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. Q		1	100
Total Ostracodes	1		

EGAL-75-KC Box Core-124A

Latitude: 59° 57.5′ N

Longitude: 144° 43.2′ W

Water Depth: 234 meters

Lithology: Very soft, soupy, gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Planktic Foraminifers

Ostracodes

Ostracode Species:	Adults	Juv.	%
Bythocythere sp. B	5		41.67
Cytheropteron sp. Q	2		41.67
Palmanella limicola (Norman, 1865)	2		16.67

Total Ostracodes 12

HAIL-75-KC Van Veen-125

Latitude: 59° 59.8′ N

Longitude: 144° 44.0′ W

Water Depth: 232 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Planktic Foraminifers

Worm Tubes

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
Loxoconcha sp. B	2		33.33
"*Leguminocythereis*" sp. A	1		16.67
Loxoconcha sp. A		1	16.67
Cytheropteron sp. D	1		16.67
Cytheropteron aff. *C. nodosoalatum* Neale and Howe, 1975		1	16.67

Total Ostracodes 6

EGAL-75-KC Box Core-127

Latitude: 60° 02.8' N

Longitude: 144° 43.5' W

Water Depth: 210 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Gastropod

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
Bythocythere sp. B	9	4	35.14
* "Acanthocythereis" dunelmensis (Norman, 1865)	2	6	21.62
Cytheropteron sp. A	7		18.92
Loxoconcha sp. B	3		8.11
Cytheropteron sp. Q			5.41
* Krithe sp. A	2		5*41
Cytheropteron sp. C	2		5.41
Total Ostracodes	37		

EGAL-75-KC 30X Core-128

Latitude: 60° 00.6′ N

Longitude: 144° 40.0′ w

Water Depth: 227 meters

Lithology: Stiff gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Cheilostome Bryozoans

Cyclostome Bryozoans

Ostracodes

Echinoderm Fragments

Diatoms

Ostracode Species:	Adults	Juv.	%
Hemicythere aff. H. quadrinodosa Schornikov, 1974		14	17.72
Cythere sp. A		8	10.13
Cytheropteron sp. 3	2	5	8.86
Cytheropteron sp. A	3	3	7.60
Bythocythere sp. B	5	1	7.60
Loxoconcha sp. A	1	5	7.60
Aurila sp. A		4	5.06
Cythere aff. C. alveolivalva Smith, 1952	1	3	5.06
Loxoconcha sp. D	1	2	3.80
Cythweromorpha sp. B	2	1	3.80
Paradoxostoma sp. G		3	3.80
Coquimba sp. A		2	2.53
Hemicytherura sp. B	" 1	1	2.53
Hemicytherura sp. A	2		2.53

Ostracode Species:	Adults	Juv.	%
Krithe sp. A	1		1.27
Pontocythere sp. A	1		1.27
Cytherura sp. G	1		1.27
Paradoxos toma sp. D		1	1.27
"Australicythere" sp. A		1	1.27
Cluthia sp. A	1		1.27
"Leguminocythereis" sp. A		1	1.27
Cytheropteron sp. X	1		1.27
"Leguminocythereis" sp. D		1	1.27

Total Ostracodes 79

EGAL-75-KC Shipek-129

Latitude: 60″ 04.9′ N

Longitude: 144° 40.4′ W

Water Depth: 146 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Fish Vertebrae

Plant Material

Ostracode Species:	Adults	Juv	%
"Leguminocythereis" sp. A	9	85	47.96
* Pectocythere sp. D	73	6	**40.31**
Loxoconcha sp. A	6	6	7.14
Cytheromorpha sp. A	6		3.06
Pectocythere aff. P. quadrangulata Hanai, 1957	2		1.02
Aurila sp. A		**1**	**0.51**
Total Ostracodes 196			

EGAL-75-KC **Shipek-130**

Latitude: 60° 07.8′ N

Longitude: 144° 39.5′ w

Water Depth: 31 meters

Lithology: Fine sand with muddy matrix.

Organisms: **Ostracodes**

Ostracode Species:	Adults	Juv.	%
Cytheropt eron sp. z	1	2	33.33
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		2	22.22
Loxoconcha sp. B	2		22.22
"Acanthocythereis" dunelmensis (Norman, 1865)		1	11.11
Cytherella sp. A		1	11.11

Total **Ostracodes** 9

EGAL-75-KC **Shipek-132**

Latitude: 60° 07.1′ N

Longitude: 144° 31.2' W

Water Depth: 20 meters

Lithology: Gray sand.

Organisms: **Ostracodes**

Ostracode Species:	Adults	Juv.	%
"Leguminocythereis: sp. 3	2	2	44.44
Pectocythere sp. D	1		11.11
Cythere aff. C. alveolivalva Smith, 1952		1	11.11
Loxoconcha sp. A	1		11.11
Candona sp.		1	11.11
Hemicythere aff. E. quadrinodosa Schornikov, 1974		1	11.11

Total Ostracodes 9

EGAL-75-KC **Shipek-133**

Latitude: 60° 03.8′ N

Longitude: 144° **26.2'** W

Water Depth: 17 meters

Lithology: **Fine-grained,** gray **sand.**

Organisms: **Ostracodes**

Ostracode Species:	Adults	Juv.	%
Hemicythere aff. H. **quadrinodosa** Schornikov, 1974	1		100
Total Ostracodes	1		

EGAL-75-KC **Shipek-134**

Latitude: 59″ 59.0′ **N**

Longitude: 144° 24.0′ W

Water **Depth:** 20 **meters**

Lithology: Fine-grained sand with very slight amount of mud.

Organisms: Ostracodes

Ostracode Species:	Adults	Juv.	%
• Pontocythere sp. A	27	1	22.40
* "Leguminocythereis" sp. B	14	13	21.60
* Pectocythere sp. D	26		20.80
Aurila sp. A	2	9	8.80
Hemicythere aff. H. quadrinodosa Schornikov, 1974	2	7	7.20
* Loxoconcha sp. A	5	1	4.80
* "Leguminocythereis" sp. A	6		4.80
"Radimella" jollaensis (LeRoy, 1943)	1	2	2.40
Cytheromorpha sp. A	3		2.40
Cythere aff. C. alveolivalva Smith, 1952	1	1	1.60
Loxoconcha sp. D		1	0.80
Finmarchinella (Barentsovia) angulata (Sars, 1866)			0.80
Robertsonite tuberculata (Sars, 1865)		1.	0.80
Cythere sp. A		1	0.80

Total Ostracodes 125

EGAL-75-KC **Shipek-138**

Latitude: 59° 38.2' N

Longitude: 145° 50.4' w

Water Depth: 168 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Sponge **Spicules**

Pelecypods

Pteropod

Ostracodes

Ostracode Species:	Adults	Juv.	%
Palmanella limicola (Norman, 1865)		2	22.22
Munseyella sp. A	2		22.22
"Acanthocythereis" dunelmensis (Norman, 1865)	1	1	22.22
Argilloecia sp. A		1	11.11
Eucytherura sp. A	1		11.11
Cytheropteron sp. L		1	11.11
Total Ostracodes 9			

EGAL-7 5-KC Van Veen-141

Latitude: 60″ 06.8′ N

Longitude: 146° 14.5' W

Water Depth: 71 meters

Lithology: Gray mud with muddy sand; coarse-grained, poorly-sorted, rounded sand layer of variable thickness; pebbles in mud.

Organisms: Calcareous Benthic Foraminifers

Planktic Foraminifers

Sponge Spicules

Bryozoans

Mollusk Fragments

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv.	%
"Australicythere" sp. A	26	96	38.49
Pectocythere aff. P. parkerae Swain and Gilby, 1974	32	8	12.62
Pectocythere aff. P. quadrangulata Hanai, 1957	22	11	10.41

Ostracode Species:	Adults	Juv.	%
Cytheropteron af f. C. latissimum of Neale and Howe (1975)	15	7	6.94
Cytheropteron sp. G	10	4	4.42
Finmarchinella (Barentosvia) sp. A	8	3	3.47
Ambostracon sp. A	5	5	3.16
"Leguminocythereis" sp. D	4	4	2.52
Cytheropteron sp. H	4	4	2.52
Hemicytherura sp. B	6		1.89
Cytheropteron sp. E	4	2	1.89
Finmarchinella (Finmarchinella) finmarchica (Sars, 1866)	1	4	1.58
Acuminocythere sp. A	3	2	1.58
Robertsonites tuberculata (Sars, 1865)		4	1.26
Cytheromorpha sp. B	4		1.26
Eucytherura sp. A	3		0.95
* Argilloecia sp. B	2		0.63
Cytheropteron sp. I	1	1	0.63
"Acanthocythereis" dunelmensis (Norman, 1965)	1	1	0.63
Cytheromorpha sp. A	2		0.63
Coquimba sp. A	1		0.32
Hemicytherura sp. A	1		0.32
Cytheropteron sp. N	1		0.32
Palmanella limicola (Norman, 1865)	1		0.32
Pectocythere sp. F	1		0.32

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. X	1		0.32
Cytheropteron sp. F	1		0.32
Cytheropteron sp.	1		0.32

Total Ostracodes 317

EGAL-75-KC Van Veen-144Upper

Latitude: 59° 57.3' N

Longitude: 146° 19.6' W

Water Depth: 64 meters

Lithology: Sandy mud with shells and gravel.

Organisms: Calcareous Benthic Foraminifers

Planktic Foraminifers

Sponge Spicules

Agglutinated Worm Tubes

Cheilostome Bryozoans

Brachiopods

Pelecypods

Cirriped Plates

Ostracodes

Echinoderm Fragments

Diatoms

Ostracode Species:	Adults	Juv.	%
* "Australicythere" sp. A	66	284	41.32
* Pectocythere aff. P. parkerae Swain and Gilby, 1974	93	9	12.04
Ambostracon sp. A	50	28	9.21
Pectocythere aff. P. quadrangulata Hanai, 1957	59	16	8.86
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	26	13	4.61
Finmarchinella (Barentsovia) sp. A	32	6	4.49
Patagonacythere sp. A	13	9	2.60
Cytheropteron sp. G	14	8	2.60
"Leguminocythereis" sp. D	8	6	1.65
Finmarchinella (Finmarchinella) finmarchica (Sars, 1866)	6	8	1.65
Aurila sp. A	3	9	1.42
Hemicytherura sp. B	10	1	1.30
Cytheropteron sp. N	7	4	1*30
Cytheropteron sp. E	3	6	1.06
Acuminocythere sp. A	3	4	0*83

Ostracode Species:	Adults	Juv.	%
Cytheromorpha sp. B	6	1	0.83
Cytherura sp. F	5		0*59
Pectocythere sp. E	5		0.59
Cytheropteron sp. H	3	1	0.47
Cytheromorpha sp. A	4		0.47
Pectocythere sp. F	3		0.35
Cytheropteron sp. F	3		0.35
Cytheropteron sp. I	2		0.24
Sclerochilus sp. F	1	1	0.24
Loxoconcha sp. E	2		0.24
Hemicythere aff. H. quadrinodosa Schornikov, 1974	1		0.12
"Acanthocythereis" dunelnensis (Norman, 1865)		1	0.12
Cythere aff. C. alveolivalva Smith, 1952	1		0*12
Argilloecia sp. B	1		0.12
Sclerochilus sp. G	1		0.12
Sclerochilus sp. C		1	0.12

Total Ostracodes 847

EGAL-75-KC **Shipek-145**

Latitude: 59° 37.4′ N

Longitude: 146° 09.0' w

Water Depth: 101 meters

Lithology: Thin layer of soupy, olive-gray mud overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)		4	23.53
Palmanella limicola (Norman, 1865)		4	23.53
Robertsonites tuberculata (Sars, 1865)		3	17.65
Cytheropteron sp. L		3	17.65
Munseyella sp. B	1		5.88

Total Ostracodes 17

EGAL-75-KC **Shipek-146**

Latitude: 59° 35.6′ N

Longitude: 145° 54.8′ W

Water Depth: 143 meters

Lithology: Thin layer of soupy, olive-green mud overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Proteinaceous Worm Tubes

Pteropods

Ostracodes

Ostracode Species:	Adults	Juv.	%
Palmanella limicola (Norman, 1865)	2	7	47*37
"Acanthocythereis" dunelmensis (Norman, 1865)		5	26.32
Loxoconcha sp. B	3		15.79
Cytheropteron sp. Q	1	1	10.53

Total Ostracodes 19

EGAL-75-KC **Shipek-147**

Latitude: 59″ 34.2′ N

Longitude: 145″ 45.7′ w

Water Depth: 165 meters

Lithology: Soupy, olive-gray mud overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

"Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Radiolarians

Proteinaceous Worm Tubes

Pelecypods

Pteropod

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. L	2	1	30.00
Loxoconcha sp. 3	2	1	30.00
Palmanella limicola (Norman, 1865)		1	10.00
Cytheropteron sp. Q		1	10.00
Munseyella sp. B	1		10.00

Ostracode Species:	Adults	Juv.	Z
"Acanthocythereis dunelmensis (Norman, 1865)	1		10.00
Total Ostracodes 10			

EGAL-75-KC **Shipek-149**

Latitude: 60" 03.2' N

Longitude: 145° 34.5' w

Water Depth: 104 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Planktic Foraminifers

Proteinaceous Worm **Tubes**

Pelecypods

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
"Acanthocythe reis dunelmensis (Norman, 1865)	11	30	53.25
Palmanella limicola (Norman, 1865)	5	4	11.69
Eucytherura sp. A	8		10.40
Loxoconcha sp. A	3	2	6.49
Munseyella sp. A	4		5.20
Cytheropteron sp. L	2	1	3*90
Robertsonites tuberculata (Sars, 1865)		3	3.90
Loxoconcha sp. B	2		2.60
Munseyella sp. B	1		1.30
Cytheropteron aff. C. latissimum of Neale and Howe (1975)			1.30
Total Ostracodes 77			

EGAL-75-KC Van Veen-150

Latitude: 60° 10.4' N

Longitude: 145" 34.5' w

Water Depth: 104 meters

Lithology : Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Radiolarians

Pelecypods

Ostracodes

Plant Material

Diatoms

Ostracode Species:	Adults	Juv.	%
Robertsonites tuberculata (Sars, 1865)	5	32	25.00
Loxoconcha sp. B	22	8	20.27
Cytheropteron sp. A	8	19	18.24
"Acanthocythereis" dunelmensis (Norman, 1865)	2	20	14.87
Cytheropteron sp. Q	5	4	6.08
Bythocythere sp. B	3	1	2.70
Cluthia sp. A	3	1	2.70
Pseudocythere sp. A	2		1*35
Munseyella sp. B	2		1.35
Palmanella limicola (Norman, 1865)	1	1	1*35
Cytheropteron sp. K	2		1.35

Ostracode Species:	Adults	Juv.	%
Cytheropteron af f. C. latissimum of Neale and Howe (1975)	1	1	1.35
Loxoconcha 8p. A		1	0.68
Cytherois sp. A	1		0.68
Pectocythere aff. P. parkerae Swain and Gilby, 1974		1	0.68
Cytherura sp. I		1	0.68
Cyclocypris sp.	1		0*68

Total Ostracodes 148

EGAL-75-KC Van Veen-153

Latitude: 60″ 12.5' N

Longitude: 146° 27.0' W

Water Depth: 137 meters

Lithology: Olive-gray, soupy mud overlying homogeneous gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Pteropod

Ostracodes

Echinoderm Fragments

Plant Material

Diatoms

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	14	135	56.87
Robert sonit es tuberculata (Sars, 1865)	8	55	24.05
Palmanella limicola (Norman, 1865)	2	11	4.96
Cytheropteron sp. A	5	5	3.82
Bythocythere sp. B	5		1.91
Loxoconcha sp. B	4	1	1.91
Cytheropteron aff. C. latissimum of Neale and Howe (1975)		4	1.53
"Australicythere" sp. A		3	1.15
Cytherura sp. I		2	0.76
Cluthia sp. A	2		0.76
Pectocythere aff. P. quadrangulata Hanai, 1957		1	0.38
Cytheromorpha sp. B	1		0.38
Hemicytherura sp. A		1	0.38

Ostracode Species:	Adults	Juv.	%
Xestoleberis sp. B		1	0.38
Cluthia cluthae (Brady, Crosskey and Robertson, 1874)	1		0.38
Finmarchinella (Finmarchinella) finmarchica (Sars, 1866)			0.38
Total Ostracodes	262		

EGAL-75-KC Van Veen-154

Latitude: 59° 51.4' N

Longitude: 145° 28.5' W

Water Depth: 95 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Pteropod

Ostracodes

Ostracode Species:	Adults	Jim?.	z
Loxoconcha sp. A	5	5	25.64
Palmanella limicola (Norman, 1865)	5	2	17.95
"Acanthocythereis" dunelmensis (Norman, 1865)	1	6	17.95
Munseyella sp. A	5		12.82
Eucytherura sp. A		2	5*13
Cytherura sp. I		2	5.13
Cytheropteron sp. L		2	5.13
Cytheropteron sp. D	2		5.13
Cytheropteron aff. C. latissimum of Neale and Howe (1975)		1	2.56
Munseyella sp. B	1		2.56
Total Ostracodes 39			

EGAL-75-KC Van Veen-155

Latitude: 59° 55.2' N

Longi tude : 145° 42.0' W

Water Depth: 82 meters

Lithology: Gray mud with pebbles, cobbles, and shells.

Organisms: **Calcareous Benthic Foraminifers**

Sponge **Spicules**

Bryozoans

Proteinaceous Worm Tubes

Pelecypods

Gastropod

Pteropod

Ostracodes

Echinoderms

Ostracode Species:	Adults	Juv.	%
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	1	1	33.33
"Australicythere" sp. A		2	33*33
Cytheromorpha sp. B	2		33.33
Total Ostracodes	6		

EGAL-75-KC Van Veen-157

Latitude: 60″ 01.4' N

Longitude: 146° 08.5′ W

Water Depth: 73 meters

Lithology: Gray mud with pebbles and cobbles.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Cheilostome Bryozoans

Cyclostome Bryozoans

Proteinaceous Worm Tubes

Pelecypods

Gastropod

Scaphopod Fragments "

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv	Z
Aurila sp. A	20	110	20.12
Ambostracon sp. A	5	33	5.88
"Acanthocythereis" dunelmensis		38	5.88
Pectocythere aff. P. parkerae Swain and Gilby, 1974	20	14	5.26

Ostracode Species:	Adults	Juv.	Z
Loxoconcha sp. A	13	16	4*49
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	10	17	4.18
Acuminocythere sp. A	3	24	4.18
Robertsonites tuberculata (Sars, 1865)	2	21	3.56
Cytheropteron sp. E	14	8	3.41
Cytheropteron sp. A	11	9	3.10
Cytheromorpha sp. B	10	8	2.79
Cytheropteron sp. N	12	4	2.48
Cytheromorpha sp. A	6	7	2.01
Sclerochilus sp. C	4	9	2.01
Loxoconcha sp. D	6	5	1.70
Pseudocythere sp. A	10	1	1.70
Argilloecia sp. A	6	4	1.55
Pectocythere aff. P. quadrangulata Hanai, 1957	2	8	1.55
Hemicytherura sp. B	5	5	1.55
Palmanella limicola (Norman, 1865)	4	6	1.55
Paradoxostoma sp. H	7	3	1.55
Xestoleberis sp. B	4	5	1.39
"Australicythere: sp. A		9	1.39
Cytheropteron sp. R	8	1	1*39
Paradoxostoma sp. I	5	4	1.39
Paradoxostoma sp. D	8		1.24
"Radimella" jollaensis (LeRoy, 1943)	1	7	1.24

Ostracode Species:	Adult s	Juv.	%
Cytheropteron sp. F	5	1	0.93
Finmarchinella (Barentsovia) sp. A	1	5	0.93
Cluthia cluthae (Brady, Crosskey, and Robertson, 1874)	5	1	0.93
Coquimba sp. A	4	2	0.93
Bythocytheromorpha sp. A	4	1	0.77
* Bairdia sp. A	2	2	0.62
Munseyella sp. A	4		0.62
Cytheropteron sp. I	3	1	0.62
Cytheropteron sp. G	2	1	0.46
Buntonia sp. A		3	0.46
Cytheromorpha sp. E	3		0.46
Sclerochilus sp. E	3		0.46
Argilloecia sp. B		2	0.31
Bythocytheromorpha sp. B	2	0	3 1
Semicytherura aff. S. undata (Sars, 1865)	2		0.31
Hemicytherura sp. A	2		0.31
Hemicythere sp.	1	1	0.31
Cytheropteron sp. Y		2	0.31
Paracypris sp.	1		0.16
Pectocythere sp. F	1		0.16
Bythocythere sp. B			0.31
Cytheropteron sp. H	1		0.16
Cytherura sp. H	1		0.16
Cythere aff. C. alveolivalva Smith, 1952			0.16

Ostracode Species:	Adults	Juv.	%
Elof sonella sp. A	1		0.16
Schizocythere sp. A	1		0.16
Bythocythere sp. A	1		01.6

Total Ostracodes 646

EGAL-75-KC Van Veen-158

Latitude: 60° 06.0′ N

Longitude: 146′ 40.5′ W

Water Depth: 117 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Planktic Foraminifers

Radiolarians

Mollusk Fragments

Ostracodes

Echinoderm Fragments

Diatoms

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	3	8	36.67
Rboertsonites tuberculata (Sars, 1865)		8	26.67
Cytheropteron aff. C. latissimum of Neale and Howe (1975) '	1	2	10.00
"Australicythere" sp. A		3	10.00
Cytheropteron sp. N	1		3.33
Loxoconcha sp. A	1		3*33
Cytheropteron sp. A	1		3.33
Munseyella sp. B	1		3.33
Cytheropteron sp. B			3.33
Total Ostracodes 30			

EGAL-75-KC Shipek-159

Latitude: 60° 10.2' N

Longitude: 146° 52.1' W

Water Depth: 165 meters

Lithology: Thin layer of olive-gray, soupy mud overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Planktic Foraminifers

Proteinaceous Worm Tubes

Bryozoans

Pelecypods

Cyprid Barnacles

Ostracodes

Echinoderm Spine

Diatoms

Ostracode Species:	Adults	Juv.	%
Aurila sp. A	18	58	16.27
* "*Acanthocythereis*" *dunelmensis* (Norman, 1865)	5	43	10.28
Pectocythere aff. *P. quadrangulata* Hanai, 1957	2	24	5*57
Cytheropteron sp. A	13	10	4.93
Loxoxoncha sp. A	5	16	4.50
Ambostracon sp. A	1	19	4.28
Cytheropteron sp. N	11	9	4.28
Paradoxostoma sp. G	9	9	3.85
Cytheromorpha sp. B	10	6	3.43
* *Robertsonites tuberculata* (Sars, 1865)	1	15	3.43
"*Australicythere*" sp. A		13	2.78
Loxoconcha sp. D	7	5	2.57

Ostracode Species:	Adults	Juv.	Z
Cytheropteron af f. C. latissimum of Neale and Howe (1975)	10	1	2.36
Palmanella limicola (Norman, 1865)	4	7	2.36
Cytheropteron sp. E	4	6	2.14
Finmarchinella (Barentsovia) sp. A	1	8	1.93
* Acuminocythere sp. A	2	7	1.93
Sclerochilus sp. C	4	4	1.71
Xestoleberis sp. B	6	1	1.50
Cytheropteron sp. F	1	6	1*50
Paradoxostoma aff. P. japonicum Schornikov, 1975	3	3	1.29
Cytherois sp. A	5	1	1.29
Hemicytherura sp. A	6		1.29
Cytheromorpha sp. E	5		1*07
Pseudocythere sp. A	4	1	1.07
* Munseyella sp. A	4		0.86
Coquimba sp. A	4	0.86	
Paradoxostoma aff. P. brunneatum Schornikov, 1975	1	2	0.64
* Bairdia sp.	2	1	0.64
Argilloecia sp. A	1	2	0.64
Cytheropteron sp. G	2	1	0.64
Hemicytherura sp. B	3		0.64
Loxoconcha sp. E	2	1	0.64
Cytheropteron sp. I		3	0.64

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. H		3	0.64
Semicytherura af f. S. undata (Sars, 1865)	2		0.43
Hemicytherura sp. C	2		0.43
Elofsonia sp. A	2		0.43
Xiphichilus Sp .	2		0.43
Pectocythere sp. E	2		0.43
Buntonia sp. A	2		0.43
Bythocytheromorpha sp. B	1		0.21
Xestoleberis sp. A		1	0.21
"Leguminocythereis: sp. D		1	0*21
Cytheropteron sp. Y	1		0.21
Paradoxostoma sp. J	1		0.21
Bythocythere sp. A	1		0.21
Normanicythere sp.		1	0*2I
Argilloecia sp. B	1		0.21
Eucytherura sp. A		1	0.21
Semicytherura sp. F		1	0.21
Hemicythere aff. H. quadrinodosa Schornikov, 1974		1	0.21

Total Ostracodes 467

EGAL-75-KC **Van Veen-160A**

Latitude: **60° 15.0' N**

Longitude: 146″ 31.8′ W

Water Depth: 37 meters

Lithology: Dark, **fine-grained** sand.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Echinoderm Spines

EGAL-75-KC Box **Core-160C**

Latitude: 60° **14.9' N**

Longitude: 146° 32.2′ W

Water **Depth:** 37 meters

Lithology: Dark, **fine-grained** sand.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated and **Proteinaceous Worm Tubes**

Pelecypods

EGAL-75-KC Van Veen-161

Latitude: 60° 17.4′ N

Longitude: 146° 23.7' W

Water Depth: 22 meters

Lithology: Dark, fine-grained, well-sorted sand.

Organisms: Calcareous Benthic Foraminifers

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	z
Hemicythere aff. H. quadrinodosa Schornikov, 1974	1		50.00
Cythere aff. C. alveolivalva Smith, 1952	1		50.00
Total Ostracodes	2		

EGAL-75-KC Van Veen-162

Latitude: 60° 19.2' N

Longitude: 146° 13.2' W

Water Depth: 24 meters

Lithology: Dark, fine-grained sand with *overlying* thin layer of soupy, gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Ostracodes

Echinoderm Fragments

Plant Material

Ostracode Species:	Adults	Juv.	z
Cytheromorpha sp. B	3	6	33.33
Hemicythere aff. H. *quadrinodosa* Schornikov, 1974	3	2	18.52
* *Elofsonia* sp. A	4		14.82
Pectocythere sp. D	2	1	11.11
Cytherura sp. D	1	2	11.11
Cytheromorpha sp. E	2		7.41
Cythere aff. C. *alveolivalva* Smith, 1952		1	3.70

Total Ostracodes 27

EGAL-75-KC Van **Veen-163**

Latitude: 60″ **19.5' N**

Longitude: **146°** 07.0' W

Water Depth: 22 meters

Lithology: **Dark, fine-grained** sand.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Ostracodes

Plant Material

Ostracode Species:	Adults	Juv.	%
* **Hemicythere** aff. H. **quadrinodosa** Schornikov, 1974	2		66.67
Elofsonia sp. A	1		33.33
Total **Ostracodes** 3			

EGAL-7 5-KC Van Veen-164A

Latitude: 60° 19.5' N

Longitude: 146° 00. 0' W

Water Depth: 22 meters

Lithology : Dark, fine-grained sand.

Organisms: Calcareous Benthic Foraminifers

Plant Debris

EGAL-75-KC Van Veen-164B

Latitude: 60° 19.5′ N

Longitude: 1460 00.0' W

Water Depth: 22 meters

Lithology: Dark, fine-grained sand.

Organisms: Occasional Calcareous Benthic Foraminifers

Pelecypod Fragments

Ostracodes

Occasional Echinoderm Fragments

Plant Fragments

Ostracode Species:	Adults	Juv.	Z
Cytheromorpha sp. B	5	1	46.15
Hemicythere aff. H. *quadrinodosa* Schornikov, 1974	2	2	30.77
Elofsonia sp. A	3		23.08
Total Ostracodes	13		

EGAL-75-KC Shipek-165

Latitude: 60° 18.3' N

Longitude: 145° 53.5′ W

Water Depth: 33 meters

Lithology: Dark, fine-grained sand with some gray mud.

Organisms: Rare Calcareous Benthic Foraminifers

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
* *Cytheromorpha* sp. B	2	3	41.67
Pectocythere sp. D	2		16.67
* *Loxoconcha* sp. A	2		16.67
Pectocythere aff. *P. quadrangulata* Hanai, 1957		1	8.33
Eucythere sp. A	1		8.33
"*Leguminocythereis*" sp. A		1	8.33

Total Ostracodes 12

EGAL-75-KC Shipek-166

Latitude: 60° 17.7' N

Longitude: 145° 45.6′ W

Water Depth: 20 meters

Lithology: Dark, fine-grained sand.

Organisms: Calcareous Benthic Foraminifers

Ostracodes

Ostracode Species:	Adults	Juv.	%
Candona sp.		1	25.00
Elofsonia sp. A	1		25.00
Aurila sp. A		1	25.00
Cytheromorpha sp. B	1		25.00
Total Ostracodes 4			

EGAL-75-KC Shipek-167

Latitude: 60″ 16.4′ N

Longitude: 145° 38.4′ W

Water Depth: 26 meters

Lithology: Dark, fine-grained sand.

Organisms: Calcareous Benthic Foraminifers

Mollusk Fragments

Ostracodes

Ostracode Species:	Adults	Juv.	%
"*Leguminocythereis*" sp. A		1	100
Total Ostracodes 1			

EGAL-7 5-KC Shipek-169

Latitude: 60″ 17.7' N

Longitude: 145″ 50.7′ w

Water Depth: 35 meters

Lithology: Dark, fine-grained sand with some clay galls at surface.

Organisms: Calcareous Benthic Foraminifers

Pelecypods

Echinoderm Fragments

EGAL-75-KC Box Core-170B

Latitude: 60° 16.9' N

Longitude: 145″ 42.0' W

Water Depth: 20 meters

Lithology: Da*, fine-grained, well-sorted sand overlying gray mud.

Organisms: Calcareous Benthic Foraminifers

Pelecypods

Ostracodes

Echinoderm Fragments

Plant Fragments

Ostracode Species:	Adults	Juv.	%
Cytheromorpha sp. B	2		50.00
Pectocythere sp. D	1		25.00
Loxoconcha sp. A		1	25.00

Total Ostracodes 4

EGAL-75-KC Shipek-172

Latitude: 60° 13.5' N

Longitude: 145° 21.2' w

Water Depth: 18 meters

Lithology: Dark, fine-grained sand.

Organisms: Barren of any faunal or floral remains.

EGAL-75-KC **Shipek-174**

Latitude: 60° 09.6′ N

Longitude: 145° 06.4′ W

Water Depth: 35 meters

Lithology: Gray mud with fine-grained sand.

Organisms: Ostracodes

Ostracode Species:	Adults	Juv.	%
"Leguminocythereis" sp. A	3	3	37.50
Pectocythere sp. D	5		31.25
Pectocythere aff. P. quadrangulata Hanai, 1957	2		12.50
"Acanthocythereis" dunelmensis (Norman, 1865)		1	6.25
Loxoconcha sp. A		1	6.25
Cytheropteron sp. R	1		6.25
Total Ostracodes 16			

EGAL-75-KC **Shipek-175**

Latitude: 60″ 09.4′ N

Longitude: 145° 00.0' W

Water Depth: 33 meters

Lithology: Gray mud with very thin, surficial layer of sand.

Organisms: Calcareous Benthic Foraminifers

Pelecypods

Ostracodes

Plant Material

Ostracode Species:	Adults	Juv.	z
Cytheromorpha sp. A	1		50.00
Cytheromorpha sp. B		1	50.00
Total Ostracodes	2		

EGAL-7 5-KC **Box Core-179B**

Latitude: 60° 14.8' N

Longitude: 145° 26.9' W

Water Depth: 18 meters

Lithology: Fine-grained sand with thin clay layer at surface.

Organisms: Pelecypod Fragments

EGAL-75-KC Shipek-181

Latitude: 60° 01.0′ N

Longitude: . 144″ 24.0' W

Water Depth: 33 meters

Lithology: Gray mud with slight amount of sand.

Organisms: Calcareous Benthic Foraminifers

Agglutinated and Proteinaceous Worm Tubes

Cheilostome Bryozoans

Pelecypods

Gastropod

Ostracodes

Ostracode Species:	Adults	Juv.	%
Pectocythere af f. P. quadrangulata Hanai, 1957	141	55	24.17
* Robertsonites tuberculata (Sars, 1865)	11	150	19.85
Loxoconcha sp. A	48	36	10.36
* Buntonia sp. A	73	8	9.99
* Cytheromorpha sp. B	48	7	6.78
Palmanella limicola (Norman, 1865)	22	11	4.07
Hemicythere aff. H. quadrinodosa Schornikov, 1975	5	27	3.95
"Leguminocythereis" sp. A		26	3.21
Cytheromorpha sp. A	24		2.96
"Acanthocythereis" dunelmensis (Norman, 1865)	2	21	2.84
Cythere aff. C. alveolivalva Smith, 1952	5	10	1.85
Aurila sp. A	1	13	1.73
Cythere sp. A	2	9	1.36
Ambostracon sp. A		11	1.36
* Pectocythere sp. D	5	3	0.99
Loxoconcha sp. D	5	1	0.74
Loxoconcha sp. E	3	2	0.62
Pontocythere sp. A	5		0.62
Cytheropteron sp. I	4		0.49
* Argilloecia sp. A	3		0.37
Hemicytherura sp. A		2	0.25
Elofsonia sp. A	2		0.25

Ostracode Species:	Adult s	Juv .	%
Cytherura sp. F	2		0.25
Argilloecia sp. B	2	0.25	
Cytheropteron sp.		1	0.12
Cytherois sp. A		1	0.12
paracyprid		1	0.12
Paradoxostoma sp. G		1	0.12
Acuminocythere sp. A		1	0.12
Paradoxostoma sp. B		1	0.12

Total Ostracodes 811

EGAL- 75-KC Van Veen-203

Latitude: 59° 32.5′ N

Longitude: 144″ 36.4′ w

Water Depth: Not Determined

Lithology: Gray, gravelly mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Sponge Spicules

Cheilostome Bryozoans

Pelecypods

Echinoderm Spines

EGAL-75-KC Van Veen-219

Latitude: 59° 36.3′ N

Longitude: 144° 17.4′ w

Water Depth: 475 meters

Lithology: Gray mud.

Organisms: Radiolarians

Sponge Spicules

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. Q	1		100
Total Ostracodes 1			

EGAL-75-KC **Shipek-221**

Latitude: ***59°*** 50.1′ **N**

Longitude: ***144° 27.4'*** **W**

Water Depth: 29 meters

Lithology: Olive- sandy mud overlying gray clay **with** some shell fragments.

Organisms: **Calcareous Benthic Foraminifers**

Planktic Foraminifers

Cheilostome Bryozoans

Pelecypods

Gastropod

Ostracodes

Echinoderm Spines

-'"-Fish **Parts**

Plant Debris

Ostracode Species:	**Adults**	Juv .	**%**
* **Pectocythere** sp. D	***224***	***38***	***34.79***
* **Loxoconcha** sp. A	***95***	***125***	***29.22***
"Leguminocythereis" sp. A	5	**63**	9.03
* **Cytheromorpha** sp. B	40	22	8.23

Ostracode Species:	Adults	Juv.	%
* Pect ocythere af f. 1?. parkerae Swain and Gilby, 1974	58	2	7*97
Cytheromorpha sp. A	39	2	5.44
* Cytheromorpha sp. E	17		2.26
* Aurila sp. A	2	3	0.66
Cytheropt eron aff. C. nodosoalatum Neale and Howe, 1975	4	1	0.66
Pectocythere aff. P. quadrangulata Hanai, 1957		3	0.40
Cytheropteron sp. A	1	2	0.40
Cythere sp. A		2	0.27
"Leguminocythereis" sp. B		2	0.27
Cythere aff. C. alveolivalva Smith, 1952		1	0.13
Palmanella limicola (Norman, 1865)		1	0.13
Finmarchinella (Barentsovia) sp. A		1	0.13
Baffinicythere emarginata (Sars, 1865)		1	0.13
Loxoconcha sp. F	1		0.13
Total Ostracodes 753			

EGAL-7 5-KC Box Core-223

Latitude: 59° 52.4′ N

Longitude: 144° 18.7′ W

Water Depth: 51 meters

Lithology: Muddy, fine-grained sand.

Organisms: Ostracodes

Ostracode Species:	Adults	Juv.	%
* "Leguminocythereis" sp. A	13	104	43.01
* Pectocythere sp. D	103	4	39.34
Loxoconcha sp. A	14	28	15.44
Cytheropteron sp. A	2	1	1.10
"Leguminocythereis" sp. B		2	0.74
Pectocythere aff. P. quadrangulata Hanai, 1957		1	0.37

Total Ostracodes 272

EGAL-75-KC **Shipek-225**

Latitude: 59° 46.2′ N

Longitude: 144° 11.5′ w

Water Depth: **101** meters

Lithology: Gray mud.

Organisms: **Pelecypods**

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)		3	42.86
Palmanella limicola (Norman, 1865)	2		28.57
Robertsonites tuberculata (Sars, 1865)		1	14.29
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		1	14.29

Total **Ostracodes** 7

EGAL-75-KC **Shipek-227**

Latitude: 59″ 39.4′ N

Longitude: 144″ 04.9' W

Water Depth: 161 meters

Lithology: Very stiff, olive-gray mud with subrounded pebbles and shells.

Organisms: **Radiolarians**

Ostracodes

Ostracode Species:	Adults	Juv.	%
Cytheropteron aff. *C. latissimum* of Neale and Howe (1975)	3	2	55.56
Cytheropteron sp. G	2	1	33.33
Cytheropteron sp. L		1	11.11
Total Ostracodes 9			

EGAL-75-KC **Van** Veen-229

Latitude: 59° 34.0′ **N**

Longitude: 144° 01.2′ w

Water Depth: 1189 meters

Lithology: Stiff, gray-green mud.

Organisms: Radio **larians**

Sponge **Spicules**

Ostracodes

Ostracode Species:	Adults	Juv .	%
"Acanthocythereis" dunelmensis		1	10CJ
(Norman, **1865)**			
unidentifiable fragment			
Total **Ostracodes** 1			

EGAL-75-KC Van **Veen-231**

Latitude: 59° 56.9′ N

Longitude: 144* 09.7′ w

Water Depth: 33 meters

Lithology: Gray sand.

Organisms: **Calcareous Benthic Foraminifers**

Bryozoans

Ostracodes

Echinoderm Fragments

Ophiuroids

Ostracode Species:	Adults	Juv.	%
"Leguminocythereis" sp. A		2	100

Total Ostracodes 2

EGA:-75-KC **Van Veen-232**

Latitude: 59° 57.25′ N

Longitude: 144° 09.9′ W

Water Depth: 49 meters

Lithology: 2-3 cm of green-gray sand overlying gray mud, with sand layers.

Organisms: **Pelecypod** Fragments

Ostracodes

Echinoderm Fragment

Plant Fragments

Carbonaceous Plant Fragments

Ostracode Species:	Adults	Juv.	%
Pectocythere sp. D	11		68.75
Loxoconcha sp. A	1	1	12.50
Cytheromorpha sp. A	2		12.50
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		1	6.25

Total Ostracodes 16

EGAL-75-KC Van Veen-233

Latitude: 59° 51.6′ N

Longitude: 143″ 53.25′ W

Water Depth: 106 meters

Lithology: Olive-green mud overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Radiolarians

Proteinaceous Worm Tubes

Pelecypods

Gastropod

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv.	z
* "Acanthocythereis" dunelmensis (Norman, 1865)	3	6	37.50
Palmanella limicola (Norman, 1865)		9	37.50
* Cytheropteron sp. Q	2		8.33
Cytheropteron sp. A	1	1	8.33
Pectocythere aff. P. quadrangulata Hanai, 1957		1	4.17

Ostracode Species:	Adults	Juv.	%
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		1	4.17
Total Ostracodes 24			

EGAL-75-KC Van Veen-237

Latitude: 59° 51.7' N

Longitude: 143° 42.5' W

Water Depth: 225 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Echinoderm Spines

Plane Debris

Diatoms

Ostracode Species:	Adult s	Juv .	%
* Cluthia cluthae (Brady, Crosskey, and Robertson, 1874)		2	66.67
Palmanella limicola (Norman, 1865)		1	33.33
Total Ostracodes 3			

EGAL-75-KC Van Veen-239

Latitude: 59° 55.6′ N

Longitude: 143″ 32.4′ W

Water Depth: 252 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Planktic Foraminifers

Radiolarians

Scaphopod Fragments

Ostracodes

Ost racode Species:	Adults	Juv .	z
Palmanella limicola (Normanm, 1865)		1	100
Total Ostracodes 1			

EGAL-75-KC Van Veen-241

Latitude: 59° 43.2′ N

Longitude: 143° 26.6′ W

Water Depth: 311 meters

Li tho logy : Olive-gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Radiolarians

Sponge Spicules

Fish Parts

Diatoms

EGAL-7 5-KC Van Veen-242

Latitude: 59″ 39.7′ N

Longitude: 143° 22.9′ W

Water Depth: 289 meters

Lithology: Olive-gray mud.

Organisms: Calcareous Benthic Foraminifers

EGAL-7 5-KC Van Veen-243

Latitude: 59° 34.9′ N

Longitude: 143° 19.9′ w

Water Depth: 238 meters

Lithology: Olive-gray mud with sand, gravel and cobbles.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Sponge Spicules

Cheilostome Bryuozoans

Pelecypods

Scaphopods

Organisms: **Ophiuroid Parts**

Echinoderm Fragments **and** Spines

EGAL-75-KC Van **Veen-249**

Latitude: 59″ 58.4′ N

Longitude: 143° **23.0' W**

Water Depth: 152 meters

Lithology: Gray mud.

Organisms: **Pelecypods**

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	1	6	41.18
Palmanella limicola (Norman, 1865)	5		29.41
* Buntonia sp. A	2		11.76
Robertsonites tuberculata (Sars, 1865)		2	11.76
Cytheropteron sp. D	1		5.88

Total **Ostracodes 17**

EGAL-75-KC Shipek-254A

Latitude: 59° 31.3′ N

Longitude: 142° 39.5′ w

Water Depth: 403 meters

Lithology: Muddy gravel.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Sponge Spicules

EGAL-75-KC Van Veen-258

Latitude: 59° 57.5′ N

Longitude: 142° 412.0' W

Water Depth: 108 meters

Lithology: About 1-2 cm of olive-green, soupy mud overlying gray, mottled mud.

Organisms: **Calcareous Benthic Foraminifers**

Planktic Foraminifers

Agglutinated Worm Tubes

Pelecypods

Ostracodes

Echinoderm Fragments

Plant Debris

Ostracode Species:	Adults	Juv.	z
Palmanella limicola (Norman, 1865)	6	16	37.93
"Acanthocythereis" dunelmensis (Norman, 1865)	2	a	17.24
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	2	3	8.62
Munseyella sp. A	5		8.62
Eucytherura sp. A	2	1	5.17
Pectocythere sp. D		2	3.45
Robertsonites tuberculata (Sars, 1865)		2	3.45
Cytheropteron sp. D	1	1	3.45
Cytheromorpha sp. B		1	1.72
Pectocythere aff. P. quadrangulata Hanai, 1957		1	1.72
Cytheropteron sp. G	1		1.72
Cytheropteron sp. A		1	1.72
Paradoxostoma sp. I		1	1.72
Loxoconcha sp. B	1		1.72

Ostracode Species:	Adults	Juv.	%
Buntonia sp. A		1	1.72
Total Ostracodes	58		

EGAL-75-KC **Shipek-264**

Latitude: 59° 49.5' N

Longitude: 142° 30.0' w

Water Depth: 134 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
"Acanthocythereis" dunelmensis (Norman, 1865)	3	16	45.24
Palmanella limicola (Norman, 1865)	2	3	11.90
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	5		11.90
Robertsonites tuberculata (Sars, 1865)	1	3	9.52
Cytheropteron sp. L	1	2	7.14
Munseyella sp. A	2		4.76
Cytheropteron sp. G	2		4.76
Loxoconcha sp. A			2.38
Paradoxostoma sp. B			2.38

Total Ostracodes 42

MU-75-KC Shipek-265

Latitude: 59° 46.2′ N

Longitude: 142° 29.9′ W

Water Depth: 181 meters

Lithology: Olive-gray mud with pebbles.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Proteinaceous *worm* **Tubes**

Pelecypods

Ostracodes

Echinoderm Fragments

Ostracode Species:	Adults	Juv.	%
Robertsonites tuberculata (Sars, 1865)		2	66.67
Palmanella limicola (Norman, 1865)			33*33
Total Ostracodes 3			

EGAL-75-KC **Shipek-266**

Latitude: 59″ 42*5′ **N**

Longitude: 142″ **34.0'** W

Water **Depth:** 262 meters

Lithology: Olive mud with cobbles and gravel.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Sponge Spicules

Agglutinated and Proteinaceous Worm Tubes

Ostracodes

Echinoderm Spines and Fragments

Diatoms

Ostracode Species:	Adults	Juv.	%
Eucytherura sp. A		1	100
Total Ostracodes 1			

EGAL-75-KC Shipek-268

Latitude: 59′ 40.7' N

Longitude: 142° 21.6' W

Water Depth: 174 meters

Lithology: Olive-gray mud layer overlying gray mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Radio larians

Sponge Spicules

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Echinoderm Debris

Plant Debris

Ostracode Species:	Adults	Juv.	%
Eucytherura sp. A	7	5	38.71
"Acanthocythereis" dunelmensis (Norman, 1865)		8	25.81
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	1	3	12.90
Krithe sp A		2	6.45
Cytheropteron sp. L	1	1	6.45
Palmanella limicola (Norman, 1865)	1		3.23
Sclerochilus sp. C	1		3.23
Munseyella sp. A	1		3.23

Total Ostracodes 31

EGAL-75-KC Van Veen-284

Latitude: 59° 50.0' N

Longitude: 142° 14.2' W

Water Depth: 86 meters

Lithology: Gray mud.

Organisms: Calcareous Benthic Foraminifers

Pelecypods

Ostracodes

plant Debris

Ostracode Species:	Adults	Juv.	%
* "Acanthocythereis" dunelmensis (Norman, 1865)	25	43	30.09
Robertsonites tuberculata (Sars, 1865)		50	22.12
* Palmanella limicola (Norman, 1865)	20	15	15.49
* Pectocythere aff. P. quadrangulata Hanai, 1957	26	4	13.27
Buntonia sp. A	8	2	4.43
Eucytherura sp. A	7		3.10
Cytheropteron sp. E	2	4	2.66
Cytheropteron aff. C. latissimum of Neale and Howe (1975)	5		2.21

Ostracode Species:	Adults	Juv.	%
Munseyella sp. A	4		1.77
Cytheropteron sp. G	2		0.89
Cytheropteron sp. H		2	0.89
Cytheromorpha sp. D	2		0.89
Cytheropteron sp. F	1		0.44
Pectocythere aff. *P. parkerae* Swain and Gilby, 1974	1		0.44
Cytheropteron sp. D	1		0.44
Cytheropteron sp. A	1		0.44

Total Ostracodes 226

EGAL-75-KC Shipek-294

Latitude: 59° 48.7′ N

Longitude: 141° 25.0′ W

Water Depth: 29 meters

Lithology: Fine-grained, gray sand.

Organisms: Calcareous Benthic Foraminifers

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
Pectocythere sp. D	1		100
Total Ostracodes	1		

EGAL-75-KC Van Veen-306

Latitude: 59° 30.4′ N

Longitude: 141° 30.0′ W

Water Depth: 161 meters

Lithology: Gray-green mud.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Radiolarians

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
Palmanella limicola (Norman, 1865)	6	3	37.50
"Acanthocythereis" dunelmensis (Norman, 1865)		6	25.00
Krithe sp. A	3	2	20.83
Munseyella sp. A	4		16.67

Total Ostracodes 24

EGAL-75-KC Van Veen-307

Latitude: 59° 28.9′ N

Longitude: 141° 27.8′ W

Water Depth: 165 meters

Lithology: Thin layer of green mud overlying gray mud.

Organisms: Calcareous Benthic Foraminifers

Ostracodes

Ostracode Species:	Adults	Juv.	%
Palmanella limicola (Norman, 1865)	7	6	38.24
"Acanthocytherei s'" dunelmensis (Norman, 1865)		9	26.47
Krithe sp. A		5	14.71
Munseyella sp. A			14.71
Cytheropteron sp. Q		1	5.88
Total Ostracodes	34		

EGAL-75-KC Van Veen-310

Latitude: 59" 22.1' N

Longitude: 141° 09.5' W

Water Depth: 298 meters

Lithology: Green, muddy, fine-grained sand.

Organisms: Calcareous Benthic Foraminifers

Agglutinated Benthic Foraminifers

Planktic Foraminifers

Radiolarians

Sponge Spicules

Worm Tubes

Gastropods

Ophiuroids

Echinoderm Fragments and Spines

Diatoms

EGAL-75-KC Van Veen-326

Latitude: 59° 24.6′ N

Longitude: 140° 14.5′ W

Water Depth: 183 meters

Lithology: Gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Radiolarians

Sponge **Spicules**

Proteinaceous Worm Tubes

Pelecypods

Ostracodes

Echinoderm Fragments

Diatoms

Ostracode Species:	Adults	Juv.	z
"Acanthocytherei s" dunelmensis (Norman, 1865)			46.15
Palmanella limicola (Norman, 1865)	3		23.08
Krithe sp. A		2	15.39
Cytheropteron sp. L	1		7.69
Cytherois sp. A	1		7.69

Total Ostracodes 13

EGAL-75-KC Van Veen-331

Latitude: 59° 56.1′ N

Longitude: 143° 53.4′ w

Water Depth: 66 meters

Lithology: Olive-green mud overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Pelecypods

Ostracodes

Plane Debris

Ostracode Species:	Adults	Juv.	z
Cytheropteron S-p. A	10	13	32.86
Loxoconcha sp. A	5	10	21.43
Palmanella limicola (Normanm, 1865)	5	5	14.29
"Leguminocythereis" sp. A		6	8.57
Pectocythere sp. D	3	1	5*71
"Acanthocythereis" dunelmensis {Norman, 1865)		2	2.86
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		2	2.86
Hemicytherura sp. B	2		2.86

Ostracode Species:	Adults	Juv.	%
Finmarchinella (Barentsovia) sp. A	1		1.43
Hemicythere aff. H. quadrinodosa Schornikov, 1974			1.43
Paradoxostoma sp. B	1		1*43
Paradoxostoma sp. G	1		1.43
Cytheromorpha sp. D	1		1.43
Cluthia sp. A		1	1.43
Total Ostracodes 70			

EGAL-75-KC Van Veen-334

Latitude: 59° 37.6′ N

Longitude: 143° 34.0' W

Water Depth: 145 meters

Lithology: Pebbly mud.

Organisms: Sponge Spicules

EGAL-75-KC **Shipek-348**

Latitude: 59" 31.8' N

Longitude: 142° 24.8′ W

Water Depth: 631 meters

Lithology: Homogeneous olive-gray mud.

Organisms: Calcareous Benthic Foraminifers

Planktic Foraminifers

Radiolarians

Sponge Spicules

Proteinaceous Worm Tubes

Ophiuroid Plates

Diatoms

EGAL-75-KC **Shipek-349**

Latitude: 59" 32.6′ N

Longitude: 142° 30.5′ W

Water Depth: 714 meters

Lithology: Homogeneous olive-green mud.

organisms: Calcareous Benthic Foraminifers

Planktic Foraminifers

Radiolarians

Sponge Spicules

Proteinaceous Worm Tubes

Pelecypods

Ophiuroid Plates

Diatoms

EGAL-75-KC Van Veen-350

Latitude: 59° 34.3′ N

Longitude: 142° 33.0' W

Water Depth: 578 meters

Lithology: Very soft, olive mud.

Organisms: Calcareous Benthic Foraminifers

Planktic Foraminifers

Sponge Spicules

Proteinaceous Worm Tubes

Pelecypods

Fish Scales

Diatoms

EGAL-75-KC **Van Veen-351**

Latitude: 59° 35.0′ N

Longitude: 142° 44.3′ W

Water Depth: 615 meters

Lithology: Green mud.

Organisms: **Calcareous Benthic Foraminifers**

Agglutinated **Benthic Foraminifers**

Planktic Foraminifers

Radiolarians

Sponge **Spicules**

Proteinaceous Worm Tubes

Echinoderm Fragments

Ophiuroid Spines

Diatoms

EGAL-75-KC **Shipek-405**

Latitude: 59° 52.4' N

Longitude: 141* 37.5′ W

Water Depth: 24 meters

Lithology: Gray mud with numerous pebbles.

Organisms: **Rare Benthic Foraminifers**

Pelecypod Fragments

EGAL-75-KC **Shipek-406**

Latitude: 59° 53.0′ N

Longitude: **141°** 36.5′ W

Water Depth: 26 meters

Lithology: Very stiff gray clay with some pebbles.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Ostracodes

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. A	1		100
Total **Ostracodes** 1			

EGAL-75-KC Shipek-407

Latitude: 59° 52.62′ N

Longitude: 141″ 35.25′ W

Water **Depth:** 35 meters

Lithology: Mud with encrusting organisms at surface, with cobbles, gravel and sand.

Organisms: **Calcareous Benthic Foraminifers**

Bryozoans

Pelecypods

Cirriped Plates

EGAL-75-KC **Shipek-409**

Latitude: 59° 51.7′ N

Longitude: **141° 32.2' W**

Water **Depth: 35** meters

Lithology: **Fine-grained,** dark sand.

Organisms: **Pelecypod** Fragments

EGAL-75-KC **Shipek-412**

Latitude: 59° 53.61′ N

Longitude: 141° 35.15′ w

Water Depth: 40 meters

Lithology: Dark gray clay with thin veneer of pebbles and shell fragments.

Organisms: **Calcareous Benthic Foraminifers**

Cheilostome Bryozoans

Pelecypods

Cirriped Plates

EGAL-75-KC **Shipek-414**

Latitude: 59° 55.99′ N

Longitude: 141° 37.6′ W

Water Depth: 26 meters

Lithology: Stiff gray clay overlain by **veneer of** pebbles.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypod Fragments

Echinoderm **Spine**

EGAL-75-KC **Shipek-415**

Latitude: 59″ 55.22′ N

Longitude: 141° 36.45′ W

Water Depth: 31 meters

Lithology: Olive-green mud with pebbles and cobbles overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Bryozoans

Pelecypods

EGAL-75-KC Shipek-422

Latitude: 59° 55.8' N

Longitude: 141° 35.6′ W

Water Depth: 68 meters

Lithology: Gray mud with some sand.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. A	23	18	58.57
Cytheropteron sp. N	7		10.00
Hemicytherura sp. A	2	5	10.00
Loxoconcha sp. D	2	2	5.71
Cytheromorpha sp. B	2		2.86
Cytherura sp. F	2		2.86
Paradoxostoma sp. H	2		2.86
Hemicytherura sp. B	1		1.43
Paradoxostoma sp. G	1		1.43
Cytheropteron sp. F	1		1043
Loxoconcha sp. A		1	1.43
Cytheropteron sp. E		1	1*43
Total Ostracodes 70			

EGAL-75-KC Shipek-423

Latitude: 59° 55.5′ N

Longitude: 141° 35.9′ W

Water Depth: 27 meters

Lithology: Stiff gray clay with coarse sand and cobbles at surface.

organisms : Rare Pelecypod Fragments

EGAL-75-KC Shipek-425

Latitude: 59° 56.7' N

Longitude: 141° 35.1′ W

Water Depth: 59 meters

Lithology: Green soupy mud overlying gray mud.

Organisms: Rare Calcareous Benthic Foraminifers

Pelecypods

Gastropod

Ostracodes

Plant Debris

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. A	3	5	72.73
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		1	9.09
Candona sp.			9.09
Bythocythere sp. B	1		9.09

Total Ostracodes 11

MU-75-KC Shipek-427

Latitude: 59″ 55.45′ N

Longitude: 141° 32.7' W

Water Depth: 71 meters

Lithology: Olive-green mud overlying gray-green mud.

Organisms: Occasional Calcareous Benthic Foraminifers

Pelecypod

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
Cytheropteron sp. A		1	100

Total Ostracodes 1

EGAL-75-KC Shipek-428

Latitude: 59" 54.7' N

Longitude: 141° 30.1' W

Water Depth: 49 meters

Lithology: Dark gray, soupy sand with much organic material.

Organisms: Rare Calcareous Benthic Foraminifers

Pelecypods

Gastropod

Ostracodes

Plant Debris

Diatoms

Ostracode Species:	Adults	Juv.	%
Loxoconcha sp. A		2	28.57
Cytheromorpha sp. B		1	14.29
Cytheropteron sp. I	1		14.29
Cytherura sp. D		1	14.29
Cythere sp. A		1	14.29
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975		1	14.29

Total Ostracodes 7

EGAL-75-KC Shipek-429

Latitude: 59″ 55.5′ N

Longitude: 141″ 30.6' W

Water Depth: 60 meters

Lithology: Green soupy mud *overlying* gray-green, clayey sand.

Organisms: **Pelecypods**

Ostracodes

Diatoms

Ostracode Species:	Adults	Juv.	%
Hemicytherura sp. C	1		100
Total Ostracodes 1			

EGAL-75-KC **Shipek-431**

Latitude: 59° 56.5′ N

Longitude: 141° 33.3′ w

Water Depth: 59 meters

Lithology: Olive-green mud overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Ostracodes

Plant Debris

Ostracode Species:	Adults	Juv.	%
Cytheropt eron sp. A		4	50.00
Cytheropteron sp. E		2	25.00
Cytheropteron aff. C. nodosoalatum Neale and Howe, 1975	1		12.50
Pseudocythere sp. A	1		12.50
Total Ostracodes	8		

EGAL-75-KC **Shipek-432**

Latitude: **59°** S7.2′ N

Longitude: 141° 31.6′ W

Water Depth: 68 **meters**

Lithology: Green mud.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Ostracodes

Diatoms

Ostracode Species:	Adult s	Juv .	%
Cytheropteron sp. A	14	18	96.97
Loxoconcha sp. A		1	3.03
Total Ostracodes	33		

EGAL-75-KC **Shipek-433**

Latitude: 59° 57.5′ N

Longitude: 141″ 30.8' w

Water Depth: 68 meters

Lithology: Olive-green mud with some sand overlying gray mud.

Organisms: **Calcareous Benthic Foraminifers**

Pelecypods

Ostracodes

Ostracode Species:	Adult s	Juv. ,	z
Cytheropteron sp. A	11	26	100

Total Ostracodes 37

APPENDIX IV

REPORT ON THE OSTRACODE ASSEMBLAGES AND THE ASSOCIATED ORGANISMS FROM SHIPEK SAMPLES TAKEN IN THE NORTHEAST GULF OF ALASKA, R/V DISCOVERER CRUISE DC1-79-EG, MAY, 1979

ELISABETH M. BROUWERS

INTERNAL U.S. GEOLOGICAL SURVEY EXAMINATION AND REPORT

REPORT ON REFERRED FOSSILS

STRATIGRAPHIC RANGE	Holocene	SHIPMENT NUMBER	PAC-79-8M
GENERAL LOCALITY	Alaska	REGION	G. of Alaska
QUADRANGLE OR AREA		DATE RECEIVED	7/11/79
KINDS OF FOSSILS	Ostracodes	STATUS OF WORK	Complete
REFERRED BY	B. F. Molnia	DATE REPORTED	10/23/79
REPORT PREPARED BY	Elisabeth M. Brouwers		

Project 9560-61648

This report concerns 33 samples from the ● astern Gulf of Alaska collected on the NOAA ship Discoverer during May, 1979. These are subsamples taken from the large grab samples obtained during the cruise. In addition, I ● m including the findings from 5 samples taken in Prince William Sound and Glacier Bay.

I have made counts of ● ll of the ostracode valves and have differentiated between juveniles and adults. This was done to try to determine which assemblages are fn place (biocoenosis) and which may have undergone partial or total transportation (thanatocoenosis). Adults are indicated by *A* and juveniles by ● J*; ● carapace is counted ● s two valves. I hope to be able to ● stablfsh some patterns of sediment transport in thfs manner In the regions sampled (see R. C. Whatley and D. R. Wall, 1969, A Preliminary Account of the Ecology and Distribution of Recent Ostracoda in the Southern Irish Sea, IN The Taxonomy, Morphology and Ecology of Recent Ostracoda, ed. J. U. Neale Oliver and Boyd).

Following is a list of tha species that occurred in each sample.. Most of the species (and several of the genera) ● re new forms and are *left* in open nomenclature for the purposes of thfs report.

Sample DC-I-79 EG 1 (MF S687) is from lat. S9 degrees 05.0 minutes, long. 138 degrees 39.9 minutes, Station 020, ● nd of line SO. Grey muddy silt, lots of organics. 77 meters depth.

PALMANELLA LIMICOLA (Norman, 1865)	26A, 16J
EUCYTHERE ?ARGUS (Sars, 1865)	1J
CYTHEROPTERON ● ff. *C.* RARUM Hanai, 195?	6A, 3J
CYTHERE LUTEA O. F. Huller, 1785	1A
SCLEROCHILUS sp. "	2J
● ACANTHOCYTHEREIS* DUNELMENSIS (Norman, 1865)	18A, 71J
LOXOCONCHA sp. A	103A, 265J
CYTHEROIS? sp. A	22A, 8J
LEPTOCYTHERE sp.	5J
CYTHEROPTERON sp. A	12A, 34J
● LEGIJMINOCyTHEREISff sp. A	1A, 21J
PECTOCYTHERE sp. A	1J

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RATIGRAPHIC ANGE

GENERAL LOCALITY

X DRANGLE OR AREA

KINDS OF FOSSILS

ERRED BY

NL. ORT REPARED BY

SHIPMENT NUMBER PAC-79-8M

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

AR GIL LOECIA sp - A	4J
LEPTOCYTHERE sp. of Swain and Gilby, 1974	1J
● SUNTONIA* sp. A	3A, 17J
CYPRIDEIS BEACONENSIS LeRoy, 1943	1A
LIMNOCYTHERE sp.	1J
	A/J equals 193/4501 1/2.33

● lso - gastropods, pelecypods, pteropod
● gglutinated and proteinaceous worm tubes
few benthic and planktic foraminifers
plant material.

Sample DC1-79 EG 5 (MF 5688) is from lat. 58 degrees S2.1 minutes, long. 138 degrees 58.6 minutes, station 024, end of line 54, 205 is. depth. Greenish brown mud, little silt.

ACANTHOCYTHEREIS DUNELMENSIS (Norman, 1865)	1A
LEGUMINOCYTHEREIS Sp. A	1J
CYTHEROPTERON sp. B	1J
PALMANELLA LIMICOLA (Norman, 1865)	1J
CYTHEROPTERON ● ff. C. ARCTICUM Neale ● nd Howe, 1975	1J
	A/J ● quals 1/4

● lso - pelecypods, gastropod
benthic and planktic foraminifers
spicules
diatoms
● chinoderm fragments
plant debris
worm tubes

Sample DC1 79 EG 6 (MF 5689) is from lat. 58 degrees 46.8 minutes, long. 138 degrees 59.7 minutes, station 025, ● nd of line 55, 220 m. depth. Greenish-brown mud, very little silt. a

3-515

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF m u

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER PAC-79-8M

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

PA LMANELLALIMICOLA (Norman, 1865) 3A
EUCYTHERURA sp. A 3J
AUSTRALICYTHERE? sp. A 1J
A/J ● quals 3/4, 1/1.33

81s0 - pelecypods
worm tubes
echinoderm fragments
benthic and planktic foraminifers
lots of spicules ● nd diatoms

Sample DC1-79 EG 7 (MF 5690) Is from lat. 58 degrees 48.2 minutes, long. 139 degrees 07.9 minutes, station 026, ● nd of line 56, 188 m. depth. Greenish brown mud, very little silt.

ACANTHOCYTHEREIS DUNELMENSIS (Norman, 1865) 1A, 4J
PALMANELLALIMICOLA (Norman, 1865) 8A, 1J
CYTHEROPTERON sp. B 1J
KRITHE ● fLL_L—&UWX ALIS Brady, Crosskey & Robertson, 1874 7J
● BUNTONIA* sp. A 1J
AUSTRALICYTHERE? sp. A 1J
A/J ● quals 9/15, 1/1.7

also - spicules, diatoms
worm tubes
benthic and planktic foraminifers
pelecypods
echinoderm fragments

Sample DC-1-79 EG 9 (UF 5691) is from lat. 58 degrees 43.1 minutes long. 139 degrees 10.3 minutes, station 028, ● nd of line 58, 240 m. depth. Homogeneous greenish brown mud, no silt.

PALMANELLA LIMICOLA (Norman, 1865) 1J
A/J equals 0/1

also - pelecypods, gastropod, pteropod
planktic and benthic foraminifers
proteinaceous worm tubes

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x"

STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

● chinoderm fragments
diatoms, spicules

Sample DC-I-79 EG 10 (MF 5692) is from lat. S8 degrees 44.9 minutes, long. 139 degrees 19.1 minutes, station 029, ● nd of line 59, 183 tn. depth. Homogeneous greenish mud, no silt.

● ACANTHOCYTHEREIS* DUNELMENSIS (Norman, 1865) 3A, 7J
KRITHE aff. K. GLACIALIS Brady, Crosskey & Robertson, 1874 3J
PALMANELLA LIMICOLA (Norman, 1865) 4J
EUCYTHERURA sp. A 1J
EUCYTHERE? ARGUS (Sars, 186S) 1A "
PONTOCYTHERE sp. A 1J
CLUTHIA CLUTHAE (Brady, Crosskey & Robertson, 1874) 2J
A
A/J equals 4/18, 1/4.5

also - large quantities of sponge spicules, diatoms
radiolarians
echinoderm spines
planktic ● nd benthic foraminifers

Sample DC-1-79 EG 12 (MF 5693) is from lat. 58 degrees 39.0 minutes, long. 139 degrees 22.3 minutes, station 031, end of line 61, 251 m. depth. Homogeneous greenish mud, little, if ● ny silt.

● ACANTHOCyTHEREIS* DUNELMENSIS (Norman, 1865) 2J
PALMANELLA LIMICOLA (Norman, 1865) 5J
EUCYTHERURA sp. A 1J
CYTHEROPTERON sp. B " 1A
A/J equals 1/8

● lso - very siliceous, lots of spicules, diatoms .
pelecypod
benthic ● nd planktic foraminifers
worm tubes
echinoderm fragments -
some plant material a

3-517

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REPORT ON REFERRED FOSSILS

X.

STRATIGRAPHIC RANGE

GENERAL LOCALITY

Y DRANGLE OR AREA

cm OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER PAC-79-8M

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

Sample DC-I-79 EG 13 (MF 5694) is from lat. 58 degrees 4S.2 minutes, long. 138 degrees 38.4 minutes, station 043, end of line 73, 108 m. depth. Greenish sandy, silty mud with lots of pebbles (rounded, up to 1.S-2 inch diameter).

PECTOCYTHERE sp. A	1A
AUSTRALICYTHERE? sp. A	2A, 6J
CYTHEROPTERON sp. H	1A, 1J
CYTHEROPTERON aff. C. ARCTICUM Neale ● nd Howe, 1975	1J
MUNSEYELLA sp. A	2A
PSEUDOCYTHERE sp. A	1J

A/J ● quals 6/9, 1/1.5

also - brachiopod
echinoderm spine
benthic and planktic foraminifers
pelecypod fragments
rare spicules

Sample DC-I-79 EG 16 (MF 5695) is from lat. 58 degrees 22.4 minutes, long. 138 degrees 15.1 minutes, station 0S8, end of line 88, 127 is. depth. Green, muddy, sandy silt with rounded pebbles Cup to 1 inch iiameter).

No ostracodes were found in this sample

also - spicules
benthic and planktic foraminifers
echinoderm fragments
worm tubes
brachiopod
pelecypod fragments

Sample DC-I-79 EG 17 (MF 5696) is from lat. 58 degrees 26.4 minutes, long. 138 degrees 26.4 minutes, station 059, end of line 89, 123 m. depth. Green silty mud with pebbles. a

3-518

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TRATIGRAPHIC ANGE		SHIPMENT NUMBER	PAC-79-8Ma
INERAL CALITY		REGION	
JADRANGLE AREA		DATE RECEIVED	
NOS OF SILS		STATUS OF WORK	
IFERRED /		DATE REPORTED	
IPORT IEPARED BY			

PECTOCYTHERE sp. A 1A
CYTHERURA sp. A 1J

A/J equals 1/1

● lso - benthic ● nd planktic foraminifers
spicules
worm tubes
bryozoans

Sample DC-1-79 EG 18 (MF 5697) is from lat. 58 degrees, long. 138 degrees 08.8 minutes, station 060, end of line 90, 130 m. depth. Green black muddy silt.

No ostracodes were found In the sample.

also - agglutinated worm tubes
benthic foraminifers, rare planktic foraminifers
pelecypods
spicules
● chinoderm fragments

Sample DC1 79 EG 19 (MF 5698) is from lat. S8 degrees 33.6 minutes, long. 138 degrees 17.S minutes, station 061, ● nd of line 91, 122 m. depth. Green, silty, gravelly mud.

PARADOXOSTOMA sp. A 1A

A/J equals 1/0

● lso - ● chinodora spines
benthic ● nd planktic foraminifers
pelecypod, pteropod
bryozoan
some spicules

CONTINUED ON PAC-79-8Mb a

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REPORT ON REFERRED FOSSILS

X

STRATIGRAPHIC RANGE	Holocene	SHIPMENT NUMBER	PAC-79-8Mb
GENERAL LOCALITY	Alaska	REGION	G. of Alaska
QUADRANGLE OR AREA		DATE RECEIVED	7/11/79
KINDS OF FOSSILS	Ostracodes	STATUS OF WORK	Complete
REFERRED r	B. F. Molnia	DATE REPORTED	10/23/79
rea? PREPARED BY	Elisabeth M. Brouwers		

CONTINUED FROM PAC-79-8Ma

Sample DC179 EG 23 (MF 5699) Is from lat. 58 degrees 26.0 minutes, long. 137 degrees 48.3 minutes, station 065, ● nd of line 95, 167 m. depth. Green mud, some silt.

ARGILLOECIA sp. A		3J
ACANTHOCYTHEREIS DUNELMENSIS (Norman, 1865)		3J
PALMANELLA LIMICOLA (Norman, 1865)	1A,	1J
EUCYTHERURA sp. A	1A,	1J
Cytherideid		1J
CYTHEROIS? sp. A	5A	

A / J equals 7/9, 1/1.3

also - worm tubes
benthic foraminifers, few planktic foraminifers
diatoms, spicules
plant ❑ aterial
pelecypod
● chfnodor+f$agments

Sample DCI-79 EG 24 (MF 5700) is from lat. 58 degrees 29.7 minutes, long. 137 degrees 55.7 minutes, station 066, ● nd of line 96, 1S6 m. depth. Green-black, very muddy silt.

PALMANELLA LIMICOLA (Norman, 1865)	1J
CANDONA sp.	1J

A/J equals 0/2

● lso - diatoms, spicules
proteinaceous ● nd ● gglutinated worm tubes
benthic and planktic foraminifers
pelecypods, gastropod

Sample DC179 EG 2S (MF 5701) is from lat. 58 degrees 13.9 minutes, long. 138 degrees 01.9 minutes, station 067, ● ndof line 97, 138 m. depth. Green silty mud with pebbles (up to 3 inch diameters). a

3-520

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CYTHEROPTERON aff. C . ARCTICUM Neale and Howe, 1975 1J
CYTHEROPTERON sp. c 1J

A/J equals 0/2

also spicules, diatoms
worm tubes
benthic and planktic foraminifers
pelecypods
echinoderm fragments

Sample DC-I-79 EG 28 (MF S702) is from lat. 58 degrees 11.2 minutes, long. 137 degrees 39.1 minutes, station 075, end of line 105, 161 m . depth. Green silty mud.

● ACANTHOCYHEREIS* DUNELMENSIS (Norman, 1865) 1J
PALMANELLA LIMICOLA (Norman, 1865) 1J
EUCYTHERURA sp. A 1A

A/J equals 1/2

Sample DC1 79 EG 29 (MF 5703) is from lat. 58 degrees 16.4 minutes, long. 137 degrees 32.5 minutes, station 076, ● nd of line 106, 1S4 m. depth. Green silty mud.

PALMANELLA LIMICOLA (Norman, 1865) 1A, 1J
ACANTHOCYTHEREIS DUNELMENSIS (Norman, 1865) 1A

A/J equals 2/1 .

also - diatoms, spicules
benthic foraminifers (no planktic foraminifers)
● gglutinated and proteinaceous worm tubes
gastropod, pelecypod
● chinoderm fragments
plant material

Sample DCI-79 EG 308 (MF 5707) is from lat. 58 degrees 23.0 minutes, long. 137 degrees 27.9 minutes, station 077, ● nd of, line 107, a

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196 m. depth. Green-gray mud, slightly silty; looser, oozy green mud (surface?).

ARGILLOECIA sp. A 1A
PALMANELLA LIMICOLA (Norman, 1865) 1A
A/J ● quals 2/O

Sample DC179 EG31B (MF 570S) is from lat. 58 degrees 18.6 minutes, long. 137 degrees 08.2 minutes, station 078, ● nd of line 108, 154 m. depth. Green-gray silty mud with worm tubes.

PALMANELLA LIMICOLA (Norman, 1865) 4A
● ACANTHOCYTHEREIS* DUNELMENSIS (Norman, 1865) 1A, 3J
CYTHEROPTERON sp. O 1J
MUNSEYELLA sp. A 2A
EUCYTHERURA sp. A 1J
A/J equals 7/5, 1/0.7

Sample DC-I-79 EG 32B (MF 5706) is from lat. 58 degrees 10.9 minutes, long. 137 degrees 19.8 ● inutosc station 079, end of line 109, 121 m. depth. Green-gray, silty, foram mud with concentrated layer of pebbles that seemed to be on surface.

CYTHEROPTERON sp. E 1A
CYTHEROPTERON aff. C. ARCTICUM Neale ● n d Howe, 1975 3 J
PECTOCYTHERE cf. P. QUADRANGULATA Hanai, 1957 1A
CYTHEROPTERON sp. F 1J
A / J equals 2/4, 1/2 .

● lso - spicules
echinoderm spines
benthic and planktic foraminifers
worm tubes
gastropod
cyclostome bryozoans a

3-522

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Sample DC1 79 EG 3S (MF S707) is from lat. 58 degrees 22.7 minutes, long. 136 degrees 59.9 minutes, station 08S, end of line 115, 70 m. depth. Dark, green-black, sandy silt; sand dominated by heavy minerals.

LEGUMINOCYTHEREIS sp. A 13A, 4J
(all specimens have the chitinous appendages and body still preserved)
A/J ● quals 13/4, 1/0.3

also - pelecypod fragments
proteinaceous worm tubes

Sample DC-I-79 EG 36 (MF S708) is from lat. 58 degrees 21.7 minutes, long. 137 degrees 00.7 minutes, station 086, line 116, 111 III. depth. Green mud, slightly silty; looser, green-brown siltier ❑ ud at top layer.

ACANTHOCYTHEREIS DUNELMENSIS (Norman, 1865) 2 2A, 5J
PALMANELLA LIMICOLA (Norman, 1865) 3J
HEMICYTHERURA sp. A (aff. H. sp. A of Valentine, 1976) 1J
CYTHEROPTERON aff. C. ARCTICUM Neale ● nd Howe, 1975 1J
A/J ● quals 2/10, 1/S

● lso worm tubes
plant material
benthic foraminifers, some planktic foraminifers
pelecypods, gastropod
diatoms, spicules
fecal pellets

Sample DC-1-79 EG 37 (MF S709) is from lat. 58 degrees 21.0 minutes, tong. 137 degrees 01.5 minutes, station 087, line 116, 137 m. depth. Green mud, very little if ● ny silt; looser green-brown mud ● t top layer.

● ACANTHOCYTHEREIS* DUNELMENSIS (Norman, 1865) 2J
A/J equals 0/2 a

3-523

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Sample DC-I-79 EG 38 (MF 5710) is from lat. S8 degrees 20.2 minutes, long. 137 degrees 02.3 minutes, station 088, line 116. 1S9 m. depth. Green mud, very little silt; looser green-brown mud on top.

● ACANTHOCYTHEREIS DUNELMENSIS (Norman, 1865) 2J
● BUN7'ONIA* sp. A 1J
CYTHEROPTERON sp. G 1J

A/J ● quals 0/4

also - ● gglutinated worm tubes
● chinoderm fragments
pelecypods
benthic foraminifers, some planktic foraminifers
some spicules, diatoms
fecal pallets

Sample DC-I-79 EG 39 (MF 5711) is from lat. S8 degrees 19.2 minutes, long. 137 degrees 03.1 minutes, station 089, ● nd of line 116, 173 m. depth. Green mud, little silt, looser, green-brown organic ooze ● uion top.

ARGILLOECIA sp. A 4A
● LE6UUINOCYTHEREIS* sp. A 1J

A/J equals 4/1

● lso - pelecypod fragments
● renaceouss benthic foraminifers
proteinaceous worm tubes
● chinoderm fragments

Sample DC-I-79 EG 40 (MF 5712) is from lat. S8 degrees 17.2 minutes, long. 137 degrees 01.8 minutes, station 090, line 117, 186 m. depth. Green mud, little silt; looser, green-brown mud on-top.

ARGILLOECIA sp. A 1A
PALMANELLA LIMICOLA (Norman, 1865) 3A

A/J e quals 4/0 a

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also - benthic and planktic foraminifers
● gglutinated and proteinaceous worm tubes
gastropods, pelecypods
diatoms, some spicules
echinoderm fragments
plant material

Sample DC-I-79 EG 41 (MF 5713) is from lat. 58 degrees 15.7 minutes, long. 137 degrees 00.4 minutes, station 091, line 117, 187 m. depth. Green mud; looser green-brown organic ooze mud on surface.

● ACANTHOCYTHEREIS* DUNELMENSIS (Norman, 1865)	1A
PALMANELLA LIMICOLA (Norman, 1865)	3A, 1J
ARGILLOECIA sp. A	2A, 2J
CYTHEROPTERON ● ff. C. ARCTICUM Neale and Howe, 187S	1A
HEMICYTHERURA sp. B	1A
CYTHEROPTERON sp. I	1J
unidentified ostracode fragment	

A/J equals 8/4, 2/1

also - diatoms, spicules
pelecypods, gastropod
● gglutinated and proteinaceous worm tubes
benthic foraminifers, some planktic foraminifers
some plant material
echinoderm fragments

Sample DC-I-79 EG 42 (MF S714) is from lat. 58 degrees 13.6 minutes, long. 136 degrees 58.9 minutes, station 092, line 117, 174 □ . depth. Green mud with looser green-brown mud on surface.

CYTHEROPTERON aff. C. ARCTICUM Neale ● nd Howe, 1975	1A
EUCYTHERURA sp. A	1A
CLUTHIA CLUTHAE (Brady, Crosskey & Robertson, 1874)	1A

CONTINUED ON PAC-79-8Mc a

3-525

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IGRAPHIC E	Holocene	SHIPMENT NUMBER	PAC-79-8Mc
IAL ITY	Alaska	REGION	6. of Alaska
IANGLE EA		DATE RECEIVED	7/11/79
OF S	Ostracodes	STATUS OF WORK	Complete
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T RED BY	Elisabeth M. Brouwers		

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A/J equals 3/0

Sample DC-l-79 EG 43 (MF 5715) is from lat. 58 degrees 12.1 minutes, ong. 136 degrees 57.9 minutes, station 093, line 117, 185 m. depth. reen mud; looser green-brown organic ooze mud on top; lots of plant rowth, worms.

CYTHEROPTERON aff. C. ARCTICUM Neale and Howe, 1975	2A
PECTOCYTHERE cf. P. QUADRANGULARA Hanai, 195?	1A
CYTHEROPTERON sp. B	1A

A/J equals 4/0

Sample DC-1-79 EG 44 (MF 5716) is from lat. 58 degrees 11.0 minutes, ong. 136 degrees 57.3 minutes, station 094, end of line 117, 183 m. epth. Green mud, slightly sandy with rock fragments, organics.

CYTHEROPTERON aff. C. ARCTICUM Neale and Howe, 1975	4A

A/J equals 4/0

1s0 - echinoderm fragments ● nd spines
benthic foraminifers, some planktic foraminifers
plant material
pelecypod fragments, gastropod
proteinaceous and agglutinated worm tubes
gastropods
some spicules

Sample DC-1-79 EG 45 (MF 5717) is from lat. 58 degrees 14.6 minutes, ong. 136 degrees 47.8 minutes, station 095, end of line 118, 119 m. eth. Green mud.

ARGILLOECIA sp. A	2J
FINMARCHINELLA ANGULATA (Sars, 1865) -	4J a

3-526

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XESTOLEBERIS sp. A (aff. X. DENTATA Schornikov, 1975)	1 A
CYTHERURA sp. B	1J
AURILA sp. A (aff. A. sp. C of Valentine, 1976)	2A, 9J
PONTOCYPRIS sp. A	1J
?AMBOSTRACON sp.	4J
CYTHEROPTERON sp. F	3J
CYTHEROMORPHA sp. A	2A, 1J
CYTHERURA sp. C	4A
BUNTONIA sp. A	4J
?LOXOCONCHA sp. A	2J
PECTOCYTHERE sp. 8	1A
PSEUDOCYTHERE sp. A	1A
HEMICYTHERE Sp. A	1J
CYTHEROIS sp. A	2A, 1J
HEMICYTHERURA sp. A	5A, 1J
PARADOXOSTOMA sp. B	4A
PARADOXOSTOMA sp. C	1A, 2J
PALMANELLA LIMICOLA (Norman, 1865)	2J
?LOXOCONCHA sp. B	2A
PARADOXOSTOMA aff. p. JAPONICUM Schornikov, 1975	1A, 1J
PARADOXOSTOMA aff. P. HONSSUENSIS Schornikov, 1975	4J

A/J equals 26/43, 1/65

also - pelecypods
few echinoderm fragments
diatoms, spicules
lots of plant material
few benthic foraminifers

Sample DC-1-79 EG 46 (MF 5718) is from lat. 58 degrees 13.7 minutes, long. 136 degrees 50.1 minutes, station 096, line 119, 93 m. depth. Green mud, slightly silty..

PECTOCYTHERE sp. C	1A
?AMBOSTRACON sp.	3J
CLUTHIA CLUTHAE (Brady, Crosskey & Robertson, 1874)	1A
PALMANELLA LIMICOLA (Norman, 1865)	1J
HEMICYTHERURA sp. A	2A

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ACANTHOCYTHEREIS DUNELMEN SIS (Norman, 1865)	5A,	19J
CYTHEROIS sp. A	5A	
FINMARCHINELLA ANGULATA (Sars, 1865)		5J
HEMICYTHERURA sp. B	4A,	1J
BYTHOCYTHERE sp. A		1J
BUNTONIA sp. A		3J
PECTOCYTHERE sp. C		1J
HEMICYTHERE sp. A		1J
CYTHEROPTERON sp. A	1A	
CYTHEROPTERON sp. F	1A,	2J
CYTHEROMORPHA sp. A		17J
AURILA sp. A		6J
EUCYTHERURA sp. B		1J
LOXOCONCHA sp. B		1J
CLUTHIA sp. A	2A	
PARADOXOSTOMA sp. D		1J
CYTHEROPTERON aff. C. ARCTICUM Neale and Howe, 1975		2J
PECTOCYTHERE sp. B	1A,	3J
PARADOXOSTOMA aff. P. HONSSUENSIS Schornikov, 1975		1J
PECTOCYTHERE aff. P. QUADRANGULATA Hanai, 1957	1A	
unidentified Cytherideid		1J
ACUMINOCYTHERE sp.		2J
CYTHEROPTERON sp. 8		1J
A/J equals 24/73, 1/3		

also - worm tubes
pelecypods, gastropod
echinoderm parts
benthic foraminifers, some plantkic foraminifers
diatoms, some spicules

Sample DC-1-79 EG 47 (MF 5719) is from lat. 58 degrees 12.6 minutes, long. 136 degrees, 53.2 minutes, station 097, line 119, 133 m. depth. Green mud, slightly silty.

PSEUDOCYTHERE sp. A	1A	
EUCYTHERURA sp. A	1A	
PECTOCYTHERE sp. B		2J a

3-528

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PECTOCYTHERE ● ff. P. QUADRANGULATA Hanai, 1957	2A
PARADOXOSTOMA Sp. B	2A, 4J
PARADOXOSTOMA aff. P. HONSSUENSIS Schornikov, 1975	1J
● ACANTHOCYTHEREIS* DUNELMENSIS (Norman, 1865)	1A, 2J
ACUMINOCYTHERE sp.	2J
CYTHEROMORPHA Sp. A	1A 11J
CLUTHIA CLUTHAE (Brady, Crosskey & Robertson', 1874)	2J
PECTOCYTHERE cf. P. PARKERAE Swain and Gilby, 1974	1A
?LOXOCONCHA sp. A	2J
ROBERTSONITES TUBERCULATA (Sars, 1865)	1J
?AMBOSTRACON Sp.	4J
HEMICYTHERURA Sp. A	4J
AURILA Sp. A	3J
ARGILLOECIA Sp. A	1J
ARGILLOECIA sp. unidentified	3J
LOXOCONCHA sp. B	1J
LOXOCONCHA sp. C	2A
PARADOXOSTOMA Sp. E	1J
~~CYTHEROPTERON aff. C. RARUM Hanai, 1957~~	~~1J~~
CYTHEROPTERON sp. F	2J
CYTHEROPTERON aff. C. ARCTICUM Neale ● nd Howe, 1975	4J
PARADOXOSTOMA sp. F	1A
PONTOCYTHERE sp. B	1J
CYTHEROPTERON sp. H	1J

A/J equals 12/53, 1/4.4

Sample BFM-78-1 is from Prince William Sound, lat. 60 degrees, 17 minutes 00 seconds N., long. 148 degrees 21 minutes 00 seconds, Icy Bay, from 20 m. depth. This is an anchor sample taken from the H. M. S. Grouter

CYTHEROPTERON sp. F	19A, 23J
PALMANELLA LIMICOLA (Norman, 1865)	3A, 44J
ACANTHOCYTHEREIS DUNELMENSIS (Norman, 1865)	8J
CYTHEROPTERON aff. C. ARCTICUM Neale and Howe, 1975	7A, 34J
LOXOCONCHA sp. C	1J

A/J ● quals 29/110, 1/38 a

3529

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Sample BFM-2 is from Prince William Sound, lat. 60 degrees 48 minutes 26 seconds, long. 148 degrees 34 minutes 07 seconds, east of Emerald Isle, from 9 m. depth. This is an anchor sample taken from the Growler.

No ostracodes were found in this sample.

also - plant material
pelecypods
benthic foraminifers
echinoderm spine
diatoms

Sample BFM-3 is from Prince William Sound, lat. 60 degrees 58 minutes 20 seconds, long. 147 degrees 04 minutes 58 seconds, station Fye, Heather Island, from 8 m. depth. This is an anchor sample taken from the Growler.

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CYTHERE? aff. C. JAPONICA Hanai, 1959 1J

A/J equals 0/1

also - pelecypods
echinoderm spines
barnacle plates
benthic foraminifers

Sample G-4 is from Glacier Bay, north Sandy Cove.

CYTHEROPTERON sp. F "		1J
CYTHERURA Sp. B		1J
ACANTHOCYTHEREIS DUNELMENSIS (Norman, 1865)		2J
CYTHEROPTERON aff. C. ARCTICUM Neale and Howe, 1975		2J
SEMICYTHERURA sp. A	1A	
CYTHERURA sp. C	1A	
CYTHERE? aff. C. JAPONICA Hanai, 1959		2J
CYTHEROPTERON aff. C. RARUM Hanai, 1957		1J

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LOXOCONCHA sp. ~~B~~ A 1A, 2J

A/J equals 3/11, 1/3.67

The sample from Glacier Bay, 9/11/78, Wachusett Inlet, 25 m. depth, Susil Cove is barren of calcareous microfossils.

Systematic and zoogeography:

As I stated earlier, most of these species are new and undescribed. I will consistently maintain the *species B* or *species A* nomenclature for all of the species in the Gulf of Alaska samples until I formally name and describe them; at that time I will update the reports.

The overwhelming majority of the species and genera occurring in these samples are from Pacific stock. For example, CYTHERE LUTAE has ancestors in the Neogene sediments of Japan and Taiwan. PECTOCYTHERE was described from Japan and has been found promarily in temperate climatic regions of the Pacific Basin; many species occur along the Asian coast and several species along the California coast. *LEGUMINOCYTHEREIS* is also strictly Pacific, with a possible species in California. AUSTRALICYTHERE is a genus that was described from Antarctica? and has been found in mild to cold temperate waters off of Argentina.

Six species also occur *in* the north Atlantic Pleistocene and Holocene: CYTHERE LUTHEA, PALMANELLA LIMICOLA, *ACANTHOCYTHEREIS* DUNELMENSIS, CLUTHIA CLUTHAE, ROBERTSONITES TUBERCULATA, and FINMARCHINELLA AUGULATA. All of these species occur in the cold temperate through the frigid climatic zones in the Atlantic (see enclosed figure) except CYTHERE LUTAE, which ranges from the mild temperate to subfrigid climatic zones.

The ostracode assemblage represented in these samples is indicative of a cold temperate climatic zone, with summer air temperatures of less than 14 degrees C. and winter temperatures less than 9 degrees C.

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PALMANELLA LIMICOLA and AURILA sp. A are similar to forms occurring in the mild to warm temperate climatic zones of California- Washington and)regon. A temperature change. as seen in different climatic zones may separate these related species; if this is the case, a temperature cline may be established.

I cannot indicate yet exactly when or where the western Pacific species migrated to the eastern Pacific basin side. I would guess that :hey traveled in the temperate. climatic zone, possibly along the shallow shelf provided around the Aleutians, following parts of the main North Pacific current across the Pacific. The Pacific forms are all Neogene species ● nd genera, mainly Pliocene and Quarternary. More precise information on this topic is exactly what I am aiming for in the project.

distribution:

In the samples from DC-I-79 EG, the ostracode species diversity is highest nearshore, in shallow waters. The species diversity and number of individuals drops offshore and in deeper waters, such as the troughs and broad slopes occurring seaward of Dry Bay and Icy Point. The diversity drops faster where there are steep gradients, as off of Icy Point, and more slowly along gentle gradients, as off of Dry Bay.

In the broad gentle slope south-southwest of Dry Bay, the diversity and number of individuals progressively decreases offshore in a regular pattern. In sample 1, the species diversity is 17, with 7 species 'presented by juveniles only (depth 77 meters). By sample 12 in 251 m. depth, only 4 species are present, with 3 represented by juvenile valves rely. This probably reflects selective transport of the smaller, lighter juvenile valves" offshore, and they are beginning to accumulate as sample 12. The samples also become more siliceous offshore, with high components of sponge spicules and diatoms, indicating open water, offshore conditions.

The scattered samples around Lituya Bay and La Perouse Glacier have no distinct trend as shown above. The adult/juvenile ratios range from 2/1 *to* 0/2. Most of the samples have a moderate proportion of siliceous

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material - indicating open marine conditions.

The region to the southeast of Icy Point has steeper gradients than near Dry Bay. The sample sequence from 35-44 shows progressively fewer juveniles offshore. Samples 42-44 contain no juveniles at all. I believe that this reflects selective transport-of the juveniles. Because of the steeper gradient, I would expect to find them further offshore in the trough opposite Cross Sound. Sample 35 contains only one species, *LEGUMINOCYTHEREIS* sp. A. Every single specimen contains the chitinous appendages and body, suggesting that these are in place and were alive when collected. Samples 45-47 have the greatest diversity of any of the samples. Further, all of these samples (35-47) contain little siliceous material and moderate amounts of plant material.

Two samples contain non-marine to marginal marine species. Sample 1 has one valve each of CYPRIDEIS BEACONENSIS and LIMNOCYTHERE sp. Both specimens are yellow and slightly corroded form transport. LIMNOCYTHERE is a nun-marine genus - the valve may have come from a nearby river, such as the Alsek River. The CYPRIDEIS valve indicates a brackish water environment-possibly Dry Bay. These two valves are much the worse for wear and may have been transported from a river further away; they also might be from fossil non-marine sediments.

Sample 24 contains a fragment of ● non-marine ostracode species, CANDONA sp. This fragment is in very good shape, showing little effect of transportation. The specimen has been transported down a river into the Gulf, presumably from nearby.

Comments:

As for samples BFM-78-1, BFM-3 and G-4, I have given you species lists. These are cold temperate faunas as well. I am not struck by anything out of place. The assemblage may be a little different because of having a different environment within the bays. "

I will become more specific as I better define the environmental parameters of these species. I can see indications of sediment dispersal over. the shelf in these samples already. a "

3-533

REPORT NOT TO BE QUOTED OR PARAPHRASED IN PUBLICATION WITHOUT A FINAL RECHECK BY THE PALEONTOLOGY AND STRATIGRAPHY BRANCH.

:TRATIGRAPHIC
:ANGE

:ENERAL
.OCALITY

:UADRANGLE
:R AREA

:INDS OF
:OSSILS

:EFERRED
:Y

:EPORT
:EPARED BY

SHIPMENT NUMBER PA C-78-8Md

REGION

DATE RECEIVE

STATUS OF WORK

DATE REPORTED

Kris McDougall will supplement this report with the foraminifers from the samples.

Samples	Species represented By Adults Only	Juveniles Only	Adult & Juveniles	Total No. of species
DRY BAY				
1	2	7	8	17
5	1	4	0	5
6	1	2	0	3
7	0	4	2	6
9	0	1	0	1
10	1	5	1	7
12	1	3	0	4
ICY POINT				
35	0	0	1	1
36	0	3	1	4
37	0	1	0	1
38	0	3	0	3
39	1	1	0	2
40	2	0	0	2
41	3	1	2	6
42	3	0	0	3
43	3	0	0	3
44	1	0	0	1
45	6	11	6	23
46	7	17	4	28
47	6	18	3	27

a

REPORT NOT TO BE QUOTED OR PARAPHRASED IN PUBLICATION WITHOUT A FINAL RECHECK BY THE PALEONTOLOGY AND STRATIGRAPHY BRANCH.

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RT
ARED BY

SHIPMENT NUMBER PAC-79-8Md

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

EUROPE

CLIMATIC ZONE	BIOGEOGRAPHIC PROVINCE	BOUNDARY
Frigid	Arctic	"w. Spitsbergen Novaya Zemlya
Subfrigid	*Transitional*	N. Norway Iceland
Cold Temperate	Norwegian	Shetland 1s. Skaggerak
	Caledonian	S. U. Ireland N. England
Mild Temperate	Celtic	Channel Islands
Warm Temperate	Lusitanian	a

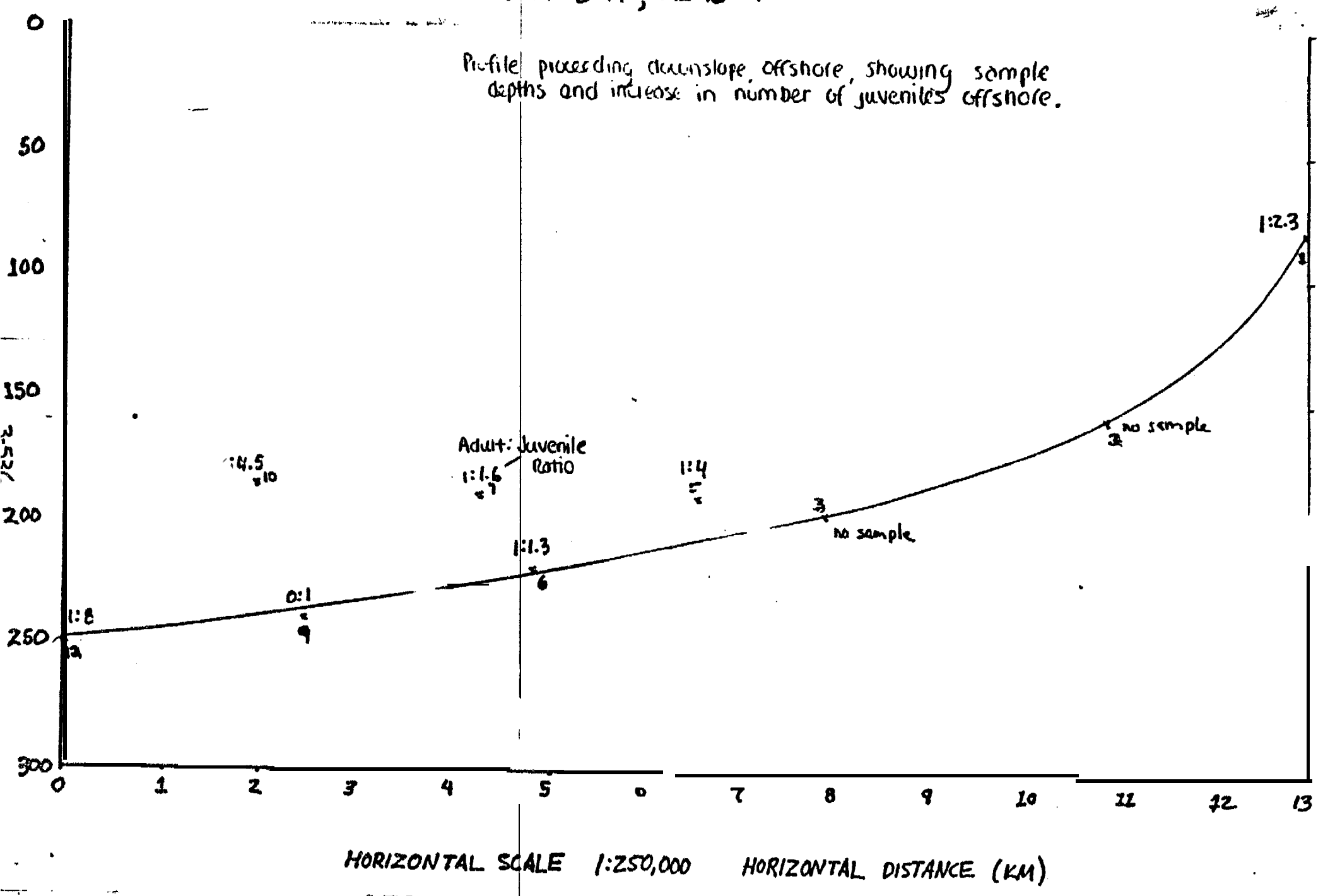
(Elisabeth Brouwers)

Elisabeth M. Brouwers

3-535

REPORT NOT TO BE QUOTED OR PARAPHRASED IN PUBLICATION WITHOUT A FINAL RECHECK BY THE PALEONTOLOGY AND STRATIGRAPHY BRANCH.

DRY BAY, ALASKA



STRATIGRAPHIC RANGE	Holocene	SHIPMENT NUMBER	PAC-79-8Md
GENERAL LOCALITY	Alaska	REGION	6. of Alaska
QUADRANGLE OR AREA		DATE RECEIVED	7/11/79
KINDS OF FOSSILS	Ostracodes	STATUS OF WORK	Complete
REFERRED BY	B. F. Molnia	DATE REPORTED	10/23/79
REPORT PREPARED BY	Elisabeth M. Brouwers		

CONTINUED FROM PAC-79-8Mc

PALMANELLA LIMICOLA and AURILA sp. A ● re similar to forms occurring in the mild to warm temperate climatic zones of California Washington and Oregon. A temperature change. ● s seen in different climatic zones may separate these related species; if this is the case, a temperature cline may be established.

I cannot indicate yet exactly when or where the western Pacific species migrated to the eastern Pacific basin side. I would guess that they traveled in the temperate. climatic zone, possibly along the shallow shelf provided ● round the Aleutians, following parts of the main North Pacific current across the Pacific. The Pacific forms ● re ● ll Neogene species and genera, mainly Pliocene ● nd Quarternary. More precise information on this topic is ● xactly what I ● m ● iming for in tha project.

Distribution:

In the samples from DC-I-79 EG, tha ostracode species diversity is highest nearshore, in shallow waters. The species diversity and number of individuals drops offshore and In deeper waters, such as the troughs and broad slopes occurring seaward of Dry Bay and Icy Point. The diversity drops faster where there are steep gradients, as off of Icy Point, and more slowly along gentle gradients, ● s off of Dry Bay.

In the broad gentle slope south-southwest-of Dry Bay, tha diversity . ● nd number of individuals progressively decreases offshore in ● regular pattern. In sample 1, the species diversity is 17, with 7 species represented by juveniles only (depth 77 meters). By sample 12 in 251 ● . depth, only 4 species ● ra present, with 3 represented by juvenile valves only. This probably reflects selective transport of the smaller, lighter juvenile valves. offshore, ● nd thay ● re beginning to accumulate as sample 12. The samples also become more siliceous offshore, with high components of sponge spicules ● nd diatoms, indicating open water, offshore conditions.

The scattered samples ● round Lituya Bay and La" Perouse Glacier have no distinct trend as shown ● bove. The adult/juvenile ratios range from 2/1 to 0/2. Most of the samples have a moderate proportion of siliceous

REPORT NOT TO BE QUOTED OR PARAPHRASED IN PUBLICATION WITHOUT A FINAL RECHECK BY THE PALEONTOLOGY AND STRATIGRAPHY BRANCH.

APPENDIX V

DISTRIBUTION OF HOLOCENE OSTRACODES IN THE EASTERN GULF OF ALASKA: A ZOOGEOGRAPHIC, ECOLOGIC, AND BIOSEDIMENTOLOGIC ANALYSIS

ELISABETH M. BROUWERS

ABSTRACT, 1980, UNIVERSITY OF COLORADO, INSTITUTE OF ARCTIC AND ALPINE RESEARCH, ARCTIC WORKSHOP, NINTH, BOULDER, 1980, P. 5-6.

NINTH ANNUAL ARCTIC WORKSHOP

APRIL 4 and 5, 1980

INSTITUTE OF ARCTIC AND ALPINE RESEARCH
UNIVERSITY OF COLORADO
BOULDER, COLORADO 80309

3-539

DISTRIBUTION OF HOLOCENE OSTRACODES IN THE EASTERN GULF OF ALASKA: A ZOOGEOGRAPHIC, ECOLOGIC, AND BIOSEDIMENTOLOGIC ANALYSIS

Elisabeth M. Brouwers, U.S. Geological Survey, Denver, Colorado

This study is part of a larger project that seeks to establish a modern data base of environmental factors that significantly control or contribute to the distributional patterns of modern ostracodes and foraminifers on the Alaska continental shelf. Existing knowledge of living ostracodes and foraminifers from this region is essentially non-existent, but studies in other areas suggest that such information would form a vital part of the interpretive aspects of Neogene and Quarternary stratigraphic and paleoenvironmental studies in this region. The samples used in this study were collected on a cruise in the eastern Gulf of Alaska during May, 1979, on the NOAA vessel Discoverer, as part of the Outer Continental Shelf project. This project deals with areas of environmental concern to resource development (e.g. , accumulation rates of sediments, erosional regions, submarine slides, faults, etc.)

The eastern Gulf of Alaska falls within the cold temperate climatic zone (Aleutian molluscan province of Valentine), and is characterized by mean summer air temperature of less than 14°C. and mean winter air temperatures of less than 80C. So far, sixty-seven ostracode species have been differentiated, most of them being new species. The vast majority of these species clearly have their origins in the Pacific, but a few (six species) are also known from the North Atlantic Pleistocene and Holocene. This geographic distribution closely parallels the mollusks and emphasizes the paleoclimatic potential of ostracodes.

Within the study area of the eastern Gulf of Alaska, the ostracode species diversity is highest nearshore in shallow water and progressively becomes lower offshore in deeper water or in onshore regions of deeper water (troughs). The species diversity drops faster where there are steep gradients, as off of Dry Bay. In areas containing broad gentle slopes, such as southwest of Dry Bay, the species diversity and number of individuals progressively decreases seaward in a regular, linear pattern. These latter patterns suggest various degrees of ostracode valve transportation from the onshore areas where ostracodes are diverse and common to deeper water where living ostracodes are less common and apparently less diverse. The deeper water facies are therefore a sum of transported shallow water species and deeper water species. This bioclastic distribution of ostracodes is readily seen when the ostracode adult:juvenile ratios are examined. Ostracodes are bivalved crustaceans having incremental growth," with several distinct juvenile stages and one adult stage, with each stage contributing either one carapace or two valves to the sediment. The juvenile stages are more easily transported than the adults, and when the adult:juvenile ratios are plotted for selected troughs or other areas, a consistent pattern of decreasing adult:juvenile ratios emerges. These ostracode sedimentation patterns also correspond to an increase in siliceous organisms (sponges and diatoms) in offshore samples. The fact that the distributional patterns of ostracodes have a sedimentological component as well as an ecologic component, is one of the more interesting results of this study.

APPENDIX VI

DISTRIBUTIONAL *PATTERNS* OF MODERN OSTRACODE SPECIES FROM THE CONTINENTAL SHELF, GULF OF ALASKA

ELISABETH M. BROUWERS

ABSTRACT, 1981, UNIVERSITY OF COLORADO, INSTITUTE OF ARCTIC AND ALPINE RESEARCH, ARCTIC WORKSHOP, TENTH, BOULDER, 1981, P. 3-4.

TENTH ANNUAL ARCTIC WORKSHOP

MARCH 12th, 13th and 14th, 1981

INSTITUTE OF ARCTIC AND ALPINE RESEARCH

UNIVERSITY OF COLORADO

BOULDER, COLORADO 80309

DISTRIBUTIONAL PATTERNS OF MODERN OSTRACODE SPECIES FROM THE CONTINENTAL SHELF, GULF OF ALASKA

Elisabeth M. Brouwers, U.S. Geological Survey, Denver, Colorado 80225

Several hundred Van Veen, Shipek, and box-core samples of surface sediments from the continental shelf of the Gulf of Alaska were examined for ostracodes. The study area ranges from Montague Island (148° W. latitude) to Lituya Bay (138° U. latitude), encompassing 59°-600 N. Longitude. To date, at lease 100 species of ostracodes have been recognized in these samples.

The Gulf of Alaska at present is subdivided into a variety of environments, each defined by particular physical-chemical variables such as water temperature, depth and depth-related factors, salinity, sediment influx, substrate, bathymetric features, currents, and wave action. Each environment contains a characteristic ostracode assemblage or biofacies that has a distinct geographic distribution corresponding to the distribution of major physical-chemical parameters. Five biofacies are recognized on the basis of preliminary results: a) shallow nearshore sand, b) middle neritic, c) outer neritic, d) Icy Bay, and e) Pleistocene lag.

Ambient water temperature is the fundamental physical-chemical parameter that controls ostracode distribution. Temperature affects species distribution in two ways- by limiting survival and by controlling reproduction and larval development. Species extend north and south to regions where survival or repopulation minimum or maximum temperatures are reached. These maximum and minimum temperatures form the end limits that define the Latitudinal range of a species. Within the latitudinal range of an ostracode species, a second zonation can be defined based on depth-related changes. Ostracodes do not respond to depth directly, but rather to environmental factors that change with depth (ie., salinity, bottom temperature, turbulence, turbidity, substrate, light intensity? dissolved gases, and nutrient supply).

Recognition of these biofacies and their primary limiting physical-chemical parameters forms a vital part of the interpretive aspects of Neogene and Quarternary stratigraphic and paleoenvironmental studies of the Gulf of Alaska Province.

APPENDIX VII

PRELIMINARY REPORT ON OSTRACODE ASSEMBLAGES FROM THE NORTHEAST GULF OF ALASKA CONTINENTAL SHELF

ELISABETH M. BROUWERS

IN PRESS, 1980 ALASKA ACCOMPLISHMENTS CIRCULAR,
U.S. GEOLOGICAL SURVEY CIRCULAR 844

3-546

Preliminary report on ostracode assemblages from the northeast Gulf of Alaska continental shelf

By Elisabeth M. Brouwers

This study is part of a U.S. Geological Survey program to determine regions and processes of possible environmental concern to resource development in the Gulf of Alaska. A baseline datum is being established of the environmental factors that significantly control or contribute to the distributional patterns of modern ostracode species occurring on the continental shelf of the eastern gulf, from Montague Island (148° U.) to Yakutat Bay (140°W.).

The Gulf of Alaska today consists of a variety of habitats, defined by chemical and physical parameters such as water temperatures, depth and depth-related factors, salinity, sediment influxes, bathymetric features, and current and wave patterns. Biofacies are characterized by distinct assemblages of ostracode species which respond to a particular set of physical-chemical conditions. Preliminary results delineate four biofacies in the eastern Gulf of Alaska: a) middle to outer neritic, b) Icy Bay, c) Pleistocene lag, and d) shallow nearshore sand (see fig. 88)

Typical of the middle to outer neritic biofacies are the assemblages found east of Pamplona Ridge, where water depths are 86-300 m. The lithology typifying this biofacies consists of olive-green mud overlying gray mud, corresponding to the glacial marine clayey silt and silty-clay facies of Molnia and Carlson (1980). The ostracodes that define this biofacies include: "Acanthocythereis," Cytheropteron spp., Palmanella, Krithe, "Buntonia", Eucytherura, Munseyella, Cytheromorpha, and Robertsonites. Associated organisms include benthic and planktic foraminifers (dominated by Cassidulina and planktic forms), pelecypods, agglutinated and proteinaceous

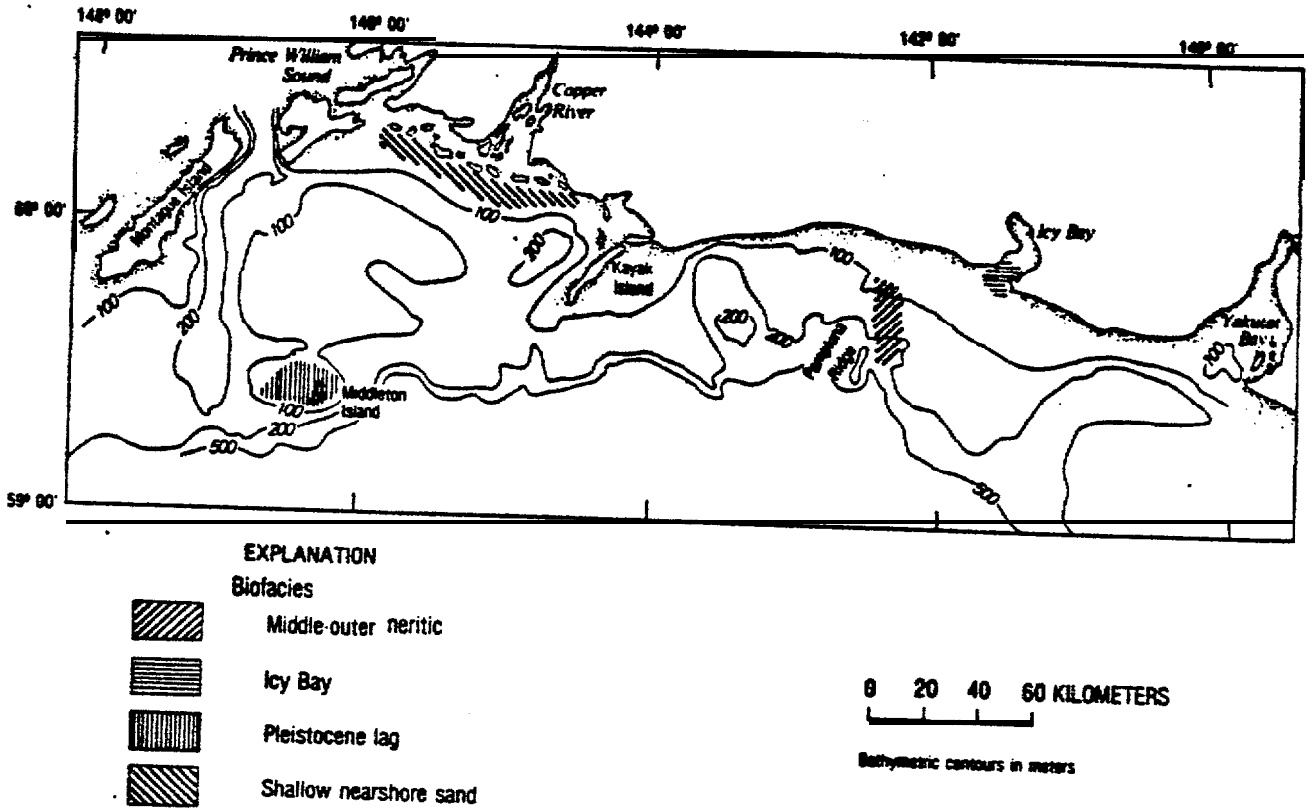


Figure 88
R Lundquist

Figure 88.--Map of northeast Gulf of Alaska illustrating ostracode biofacies (modified from Carlson and others, 1977).

worm tubes, echinoderm fragments, and some siliceous material (sponge spicules, diatoms, and radiolarians). At progressively greater depths, the amount of siliceous material increases and the amount of material larger than 75 um decreases.

Three lithologies characterize Icy Bay: a) Holocene morainal material with coarse gravel, sand, and stiff clay, b) fine sand, and c) Holocene glacial marine greenish-gray mud. The morainal material is found in water depths of 23-34 m at the mouth of and outside of Icy Bay. Fine sand occurs in water depths of 31-34 m, just west of Point Riou. The greenish-gray mud occurs inside of the bay mouth in water depths of 41-67 m, and includes abundant diatoms and worm tubes; this mud represents the sediment type that is presently being deposited in Icy Bay. A distinct assemblage of species occurs in Icy Bay. The ostracode biofacies, defined by the following forms, is nearly the same in all three lithologies: Cytheropteron spp., Loxoconcha, Semicytherura, and Hemicytherura. Associated organisms include rare benthic foraminifers (Elphidium, Quinqueloculina, Florilus, and Epistominella), pelecypods, cheilostome bryozoans, and diatoms. Cirriped plates, and echinoderm spines, are also present.

Pleistocene lag deposits occur on bathymetric highs, where currents and wave action winnow out the fine-grained glacial sediments leaving rounded cobbles, gravel, and shell debris, with some sandy silt. The ostracode assemblage occurring in these lag deposits, reflecting a mixture of mild temperate to subfrigid climates and faunas, includes: Sclerochilus, "Australicythere," Finmarchinella spp., Pectocythere spp., Bythoceratina, Cytheropteron spp., Hemicytherura, Aurila, Acuminocythere, Hemicythere, Munseyella, Cythere spp., Loxoconcha spp., Semicytherura, Xestoleberis, Krithe, Argilloecia, Bairdia, Eucythere, Robertsonites, "Acanthocythereis",

Palmanella, Baffinicythere, Pseudocythere, Eucytherura, and Cytheromorpha. Associated organisms include abundant encrusting and erect cheilostome bryozoans, brachiopods, pelecypods, gastropod, cyclostome bryozoans, benthic foraminifers, some planktic foraminifers. Sponge spicules, and echinoderm fragments are also present. The area around Middleton Island, which lies in shallow water (43-63 m depth) is typical of the lag deposit facies.

Samples of shallow nearshore sand occurring offshore of the Copper River barrier islands yield a characteristic ostracode fauna. This is a region of active longshore drift where the sediments consist of well-sorted, dark, fine sand (the littoral and nearshore sand facies of Molnia and Carlson, 1980). Water depths above these sediments range from 18-34 m. Ostracodes characteristic of this biofacies include: Hemicythere, Cythere, Pectocythere, Cytheromorpha, Eucythere, Loxoconcha, Aurila, Cytheropteron, and "Cytheretta." Associated organisms include pelecypods, and occasional benthic foraminifers. Agglutinated worm tubes, plant debris, and echinoderm fragments are also present. The benthic foraminifer fauna, which is typical of shallow-water regions, includes Elphidium, Quinqueloculina, Florilus, Cassidulina, and Biloculina.

Recognition of biofacies and their primary limiting physical-chemical conditions is important because the appearances and local extinctions that record changes in environment (at the biofacies level) in Neogene and Quaternary sediments in the gulf of Alaska must be distinguished from phylogenetic changes (that is, first appearance, evolution, and final extinction).

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APPENDIX VIII

PALEOENVIRONMENTAL ANALYSIS OF TEE OSTRACODES OCCURRING IN QUATERNARY SEDIMENTS FROM CORES TAKEN NEAR ICY BAY

ELISABETH M. BROUWERS

IN PRESS, 1981 ALASKA ACCOMPLISHMENTS CIRCULAR,
U.S. GEOLOGICAL SURVEY CIRCULAR

PALEOENVIRONMENTAL ANALYSIS OF THE OSTRACODES OCCURRING IN QUATERNARY SEDIMENTS FROM CORES TAKEN NEAR ICY BAY

by Elisabeth M. Brouwers

The continental shelf south of Icy Bay is a region of contrasting offshore sedimentation rates, ranging from areas of non-deposition near Cape Yakataga to areas with sedimentation rates of up to 18 mm per year (Molnia et. al., 1980). This study examined the ostracode faunas occurring in four cores from this region (fig. 1) with several goals in mind: (a) to establish whether the cores in the area of high sedimentation rates could be correlated; (b) to determine if any climatic cycles are present that are comparable to the high resolution onshore dendrochronology records; (c) to determine the Holocene/Pleistocene boundary in the core taken off Cape Yakataga; and (d) to establish whether any major geotechnical trends are paralleled by faunal trends.

Initial sample sizes and vertical spacing of samples were limited by availability of material from the cores; consequently, all of the ostracode assemblages contain small numbers of individuals. The ostracode fauna from each sample was tabulated and compared to the distinct depth assemblages I have determined for the modern ostracode faunas in this region.

The cores were taken in water depths of 82-156 meters, which incorporates the middle neritic (50-100 m) and outer neritic

(100-200 m) depth zones. The present environmental conditions for the middle neritic depths is one of moderate annual bottom temperature variation (2°-8° C.) and slight bottom salinity variation (31-32 0/00) (Royer, 1975). In contrast, the outer neritic zone is slightly more stable, with maximum annual temperature variations of 2°-60 C., though primarily from 2°-40 C., and salinity maintaining about 32 0/00. Winter downwelling and storms further cause an overturn of low temperature surface waters to the bottom.

The ostracode faunas from cores 709C, 711, and 715 have been interpreted to represent two components. The first component (termed Component A) consists of a fauna that presently lives in this region in an environment of deeper middle neritic to shallow outer neritic conditions. In addition, a large number of inner neritic ostracode species occur in this component. Some of these species are probably living at the edge of their habitat, while other specimens are being transported in by downslope sediment movement. The transportation aspects are well Illustrated by the selective movement of the lighter, smaller juvenile specimens (Brouwers, 1980). Component A comprises the upper part of cores 709C, 715 and 704, and all of core 711 (fig. 2).

The second aspect (Component B) consists of an ostracode fauna that lives today primarily in outer neritic depths, where the annual temperature range is reduced and summer maximum temperatures are lower. Aspects of the shallower neritic depths are greatly reduced and may be largely accounted for by offshore transport and by species living at the edge of their habitats.

Component B ocurs at the bottom of cores 709C and 715. This - subtle change in fauna can be interpreted to represent a different thermal regime than that which exists today. The difference could be due to either colder temperatures or less variable annual temperature ranges.

High resolution climatic cycles (on the order of the 50 year cycles determined by dendrochronology) were not observed in the cores. This is interpreted to be due to two factors; first, the sample sizes were too small to make the desired larger, and more representative, counts of the ostracode populations. Secondly, and more important, the offshore environment is more ameliorated compared to the onshore cycles. The mixing by current systems and winds and the large water masses involved do not respond as quickly to smaller scale changes in seasonal climates, especially in depths of greater than 100 meters. A better area to look for these changes in the marine record is in shallow bays. Unfortunately, nearly all of the bays in the Gulf of Alaska have short (less than 100 years) records because of the presence of more advanced glaciers and consequent bottom scouring in the past century.

Core 704 was subsampled because it was taken in an area of non-deposition, and the liklihood of the Holocene/Pleistocene boundary occurring in the core was very good. The upper part of the core can be correlated In terms of similar environment with Component A of the other three cores. Below this are a number of ostracode species that have not been documented to date as living today in the Gulf of Alaska, and are interpreted as being fossil

(i.e., extinct in this region) (Component C). These fossil species have been found in colder environments such as the south Bering Sea. In addition, a lower sedimentation rate is indicated by the greater number of adult versus juvenile specimens, especially when compared to the other three cores. Based primarily on the presence of the fossil species, and to a lesser extent the appearance of a change of preservation of the specimens, this lower interval of the core suggests that older, probably Pleistocene, sediments are present, dating from an environment with colder water conditions.

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Map MF-1170, Scale 1:500,000.

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Figure 1.--Location of Gravity Cores Examined. (modified from Carlson et. al., 1978).

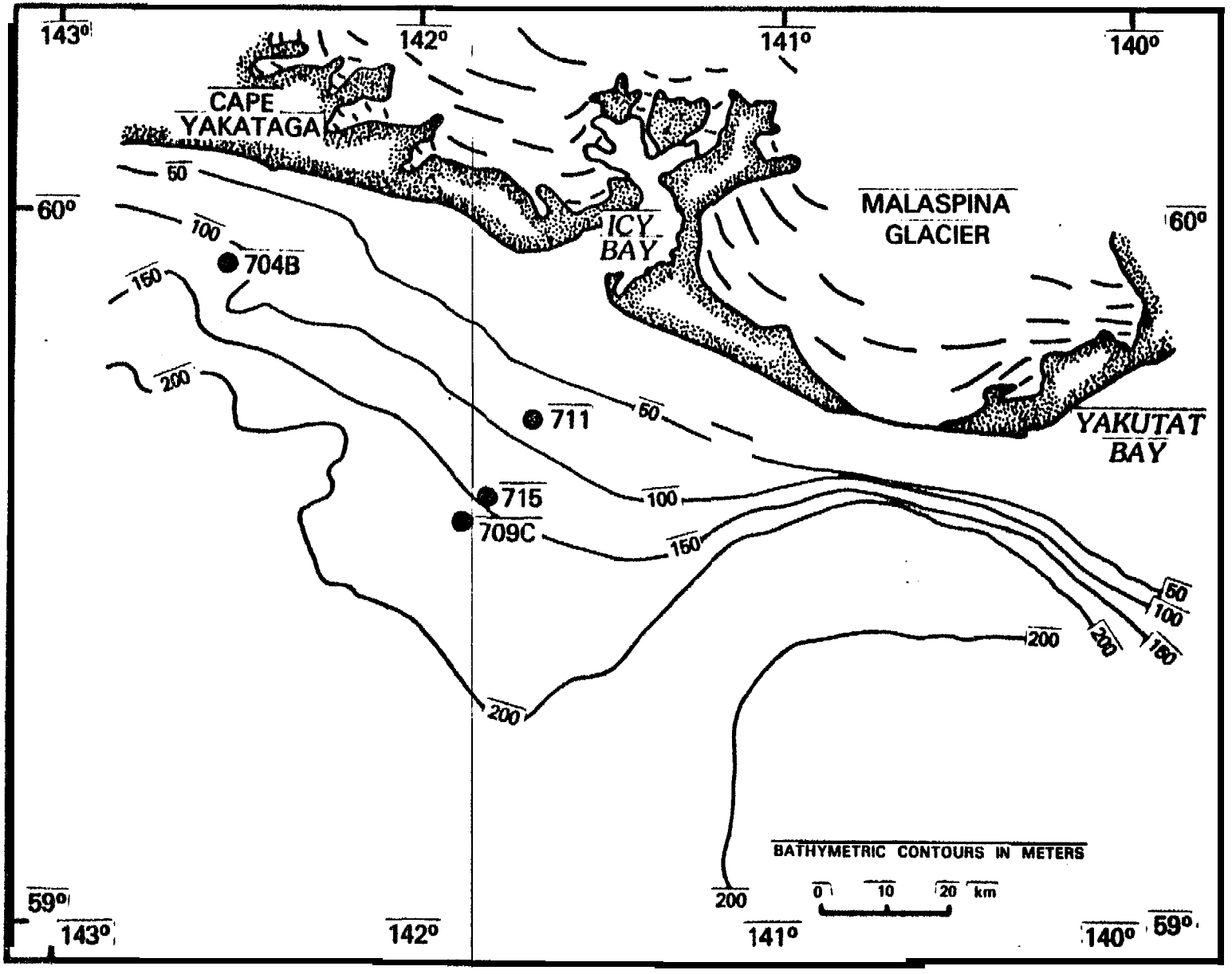
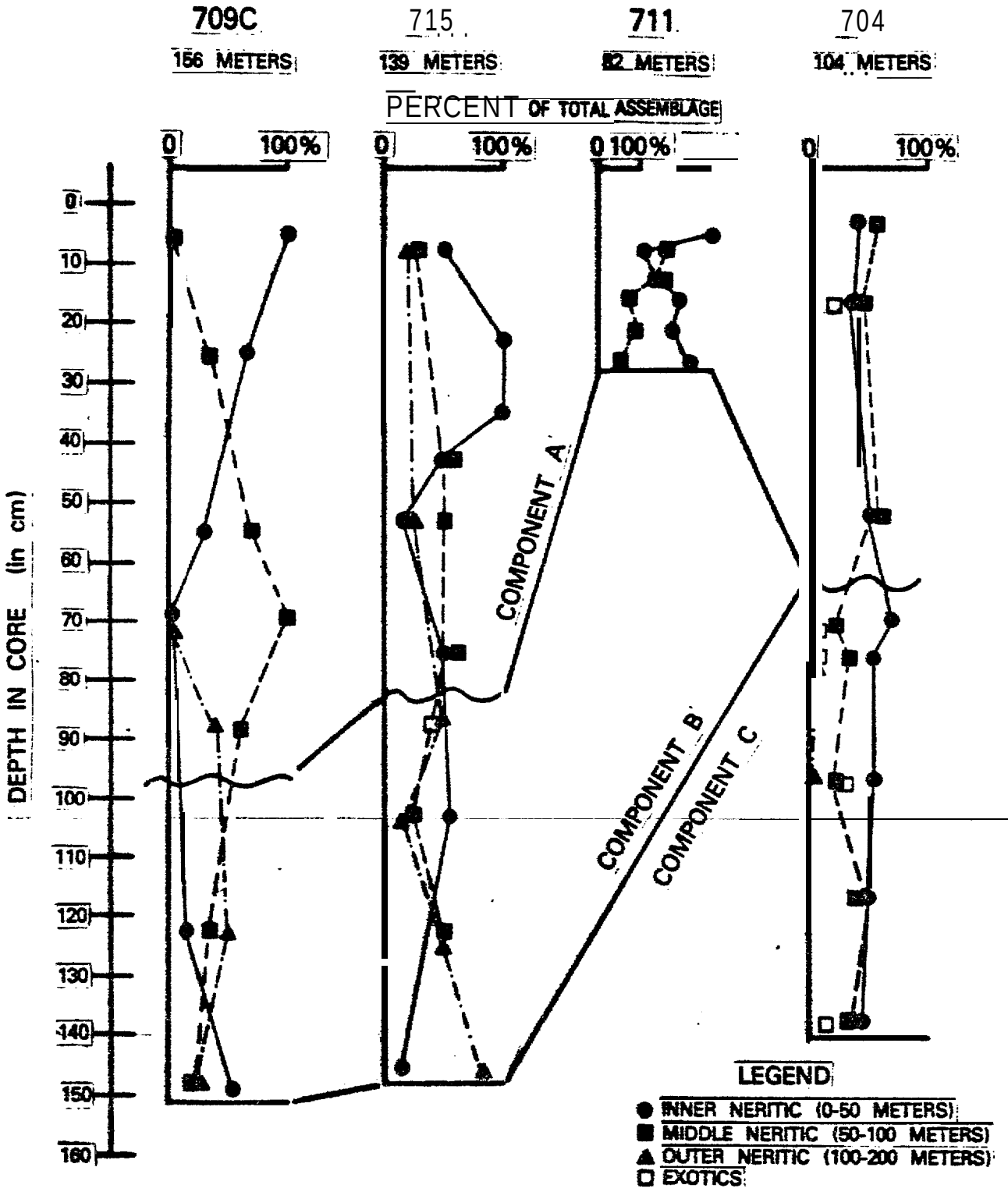

143°
142°
141°
140°
CAPE YAKATAGA
ICY BAY
MALASPINA GLACIER
YAKUTAT BAY
60°
59°
704B
711
715
709C
50
100
150
200
BATHYMETRIC CONTOURS IN METERS
0 10 20 km

Figure 2.--Stratigraphic Distribution of the Ostracode Faunas plotted as a percentage of the total sample. The wavy lines indicate the approximate boundary between the different assemblages. The solid lines connecting the cores marks correlation of similar faunas. Water depths of the cores is given below the core number.


709C
156 METERS
715
139 METERS
711
82 METERS
704
104 METERS
PERCENT OF TOTAL ASSEMBLAGE
0
100%
DEPTH IN CORE (in cm)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
COMPONENT A
COMPONENT B
COMPONENT C
LEGEND
INNER NERITIC (0-50 METERS)
MIDDLE NERITIC (50-100 METERS)
OUTER NERITIC (100-200 METERS)
EXOTICS

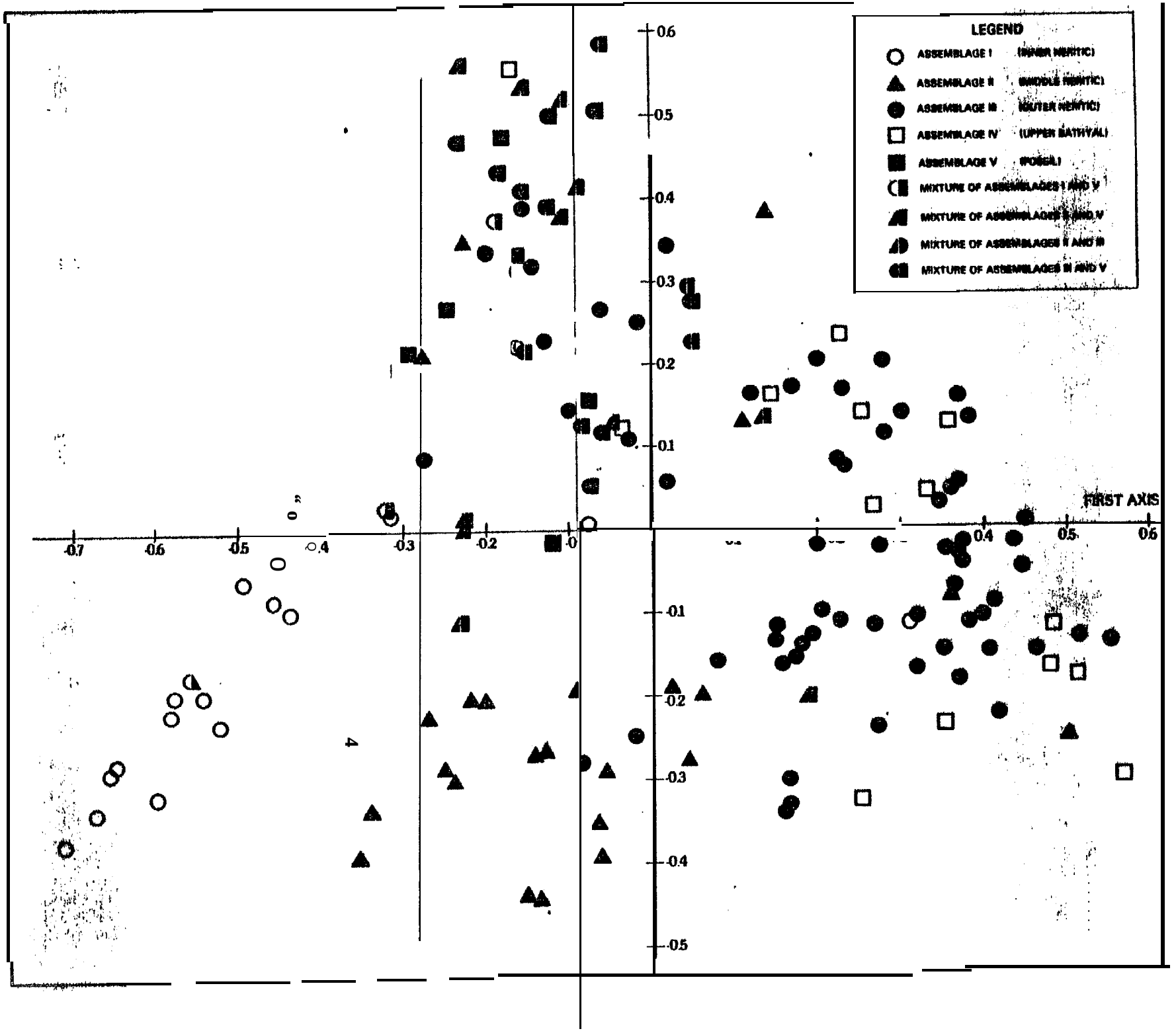
APPENDIX IX

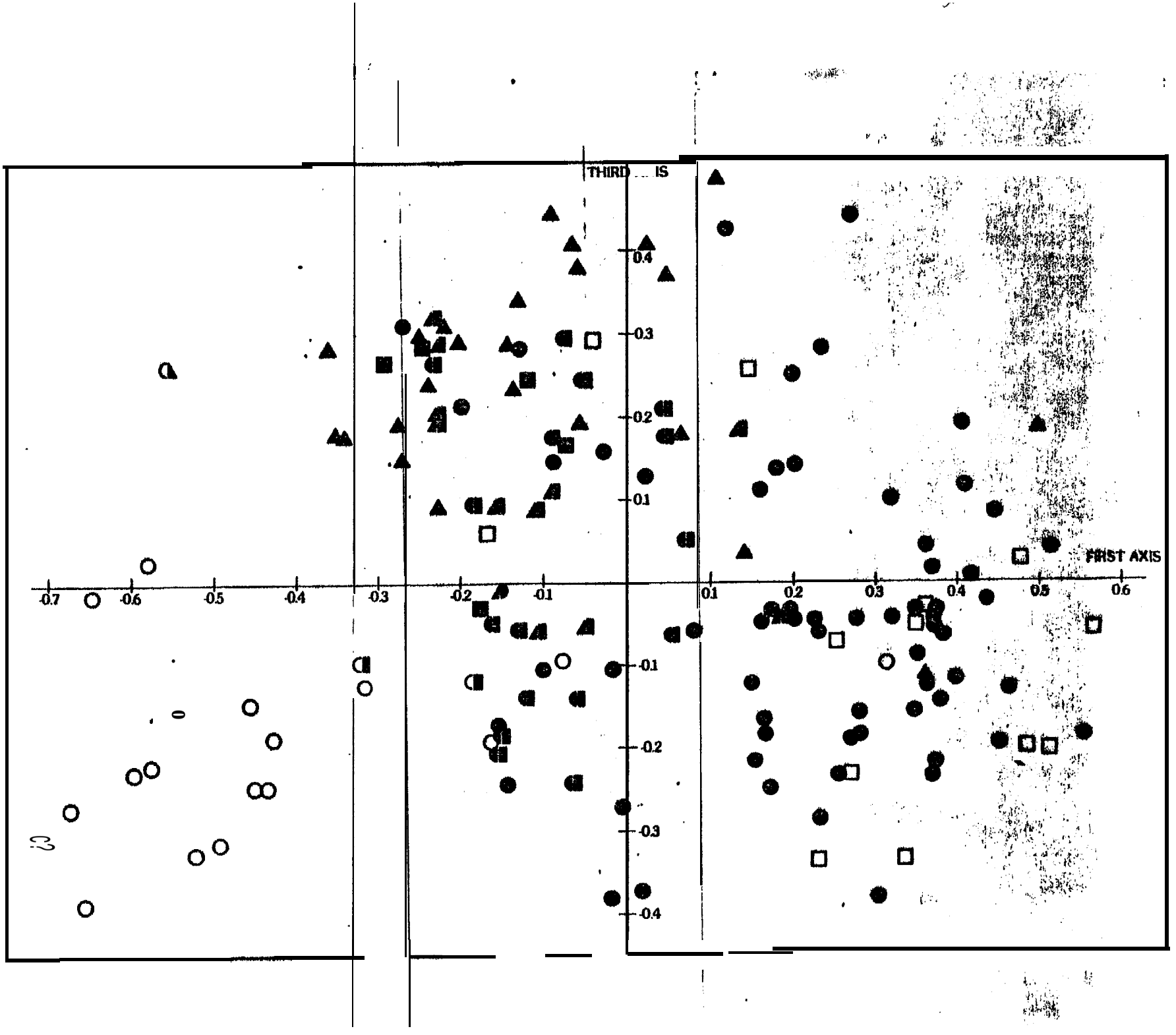
PRINCIPAL COORDINATE ANALYSIS OF SELECTED SOTTOM GRAB SAMPLES FROM CRUISE EGAL-75-KC

PLOTS OF FIRST AND SECOND AXES AND OF FIRST AND THIRD AXES

ELISABETH M. BROUWERS

SUBMITTED FOR PUBLICATION AS U.S. GEOLOGICAL SURVEY
MISCELLANEOUS FIELD STUDIES MAP


LEGEND
ASSEMBLAGE I (INNER NERITIC)
ASSEMBLAGE II (MIDDLE NERITIC)
ASSEMBLAGE III (OUTER NERITIC)
ASSEMBLAGE IV (UPPER BATHYAL)
ASSEMBLAGE V (FOSSIL)
MIXTURE OF ASSEMBLAGES I AND V
MIXTURE OF ASSEMBLAGES II AND V
MIXTURE OF ASSEMBLAGES II AND III
MIXTURE OF ASSEMBLAGES III AND V
FIRST AXIS
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.7
-0.6
-0.5
-0.4
-0.3
-0.2
0.4
0.5
0.6


THIRD AXIS
FIRST AXIS
0.4
0.3
0.2
0.1
-0.1
-0.2
-0.3
-0.4
-0.7
-0.6
-0.5
-0.4
-0.3
-0.2
-0.1
0.1
0.2
0.3
0.4
0.5
0.6

3-564

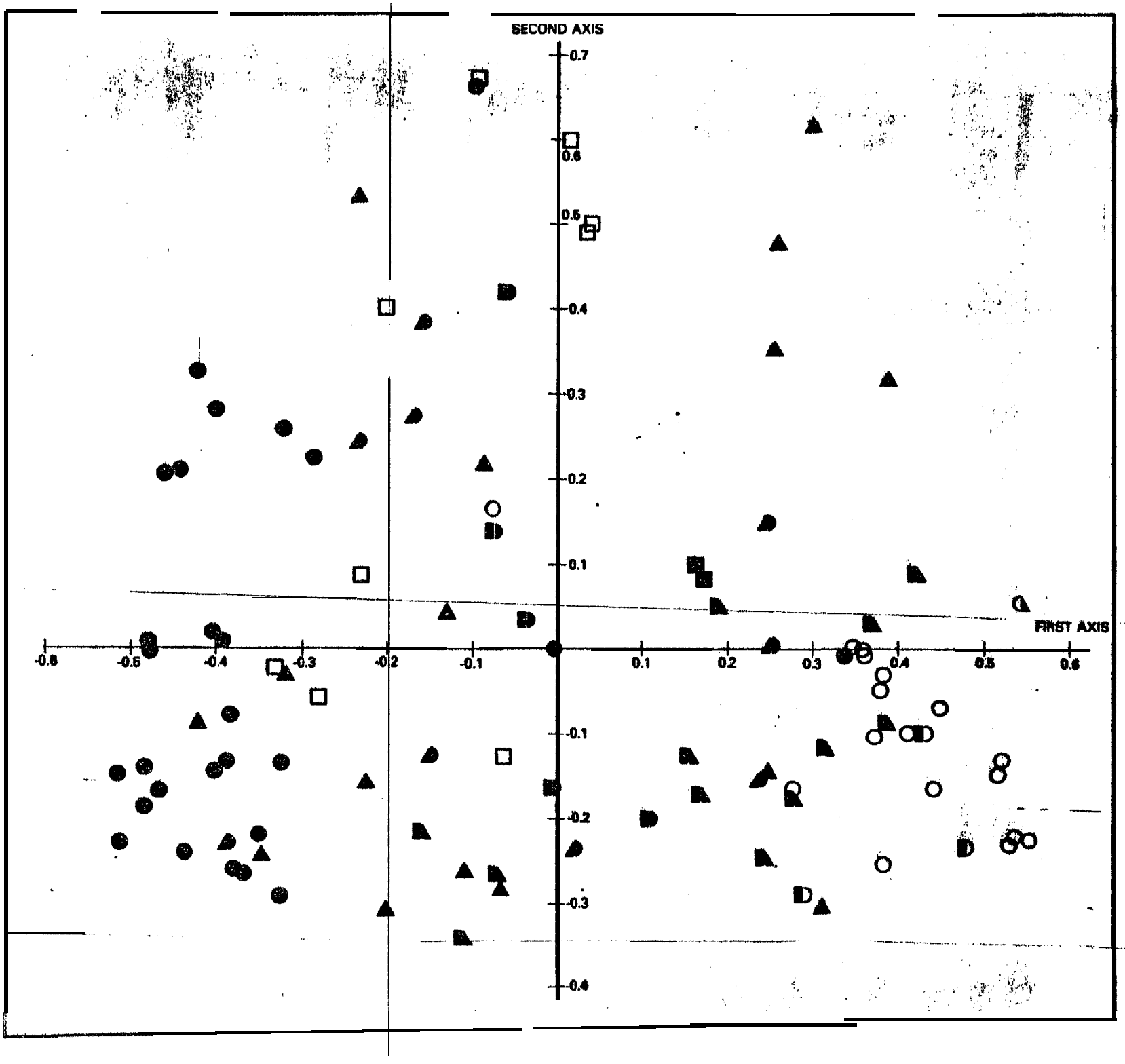
APPENDIX X

PRINCIPAL COORDINATE ANALYSIS OF SELECTED BOTTOM GRAB SAMPLES FROM CRUISES EGAL-75-KC , DC1-79-EG AND DC2-80-EG

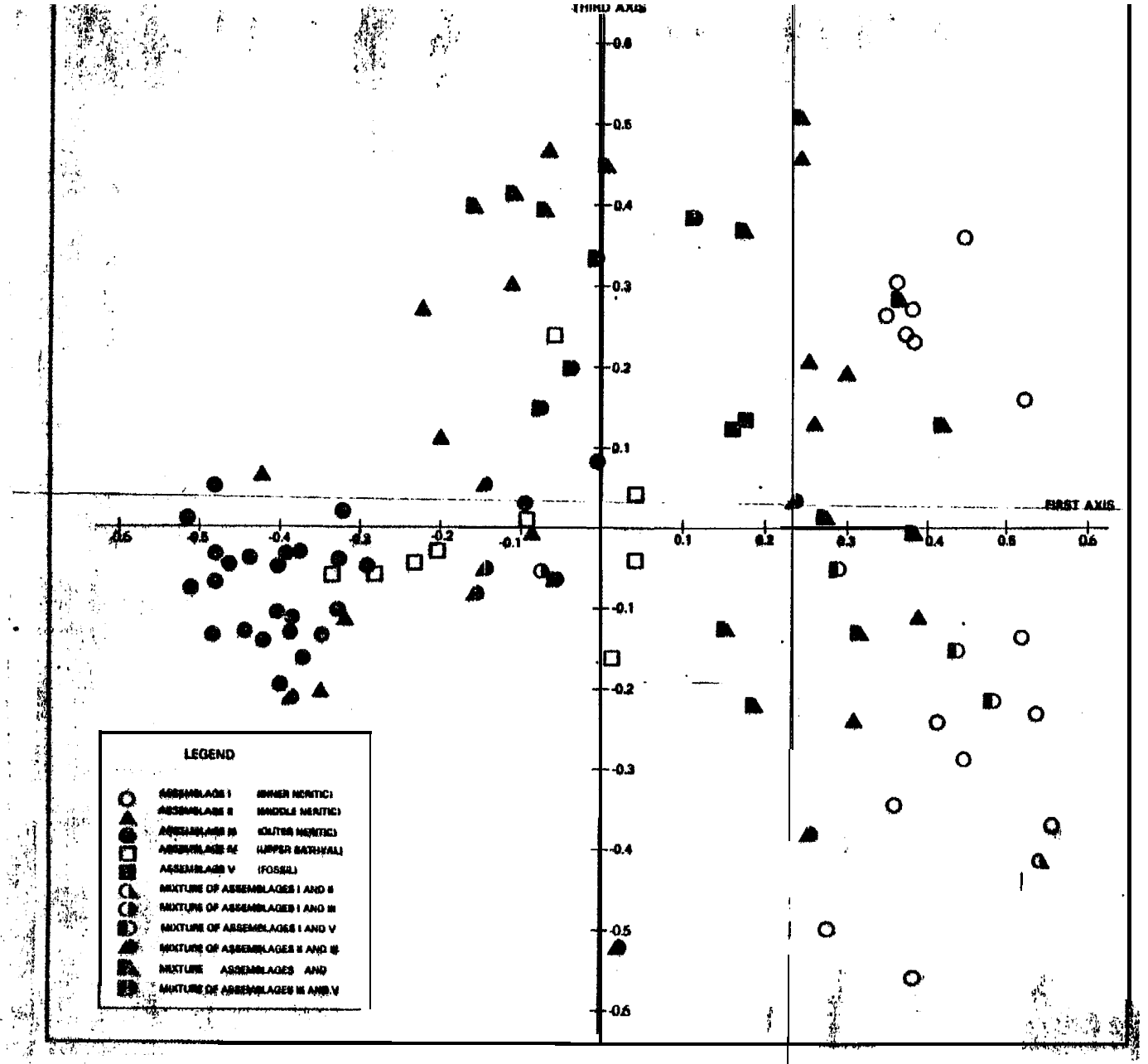
ELISABETH M. BROUWERS

SUBMITTED FOR PUBLICATION AS U.S. GEOLOGICAL SURVEY
MISCELLANEOUS FIELD STUDIES MAP

3-565


SECOND AXIS
FIRST AXIS
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-0.1
-0.2
-0.3
-0.4
-0.6
-0.5
-0.4
-0.3
-0.2
-0.1
0.1
0.2
0.3
0.4
0.5
0.6

3-596

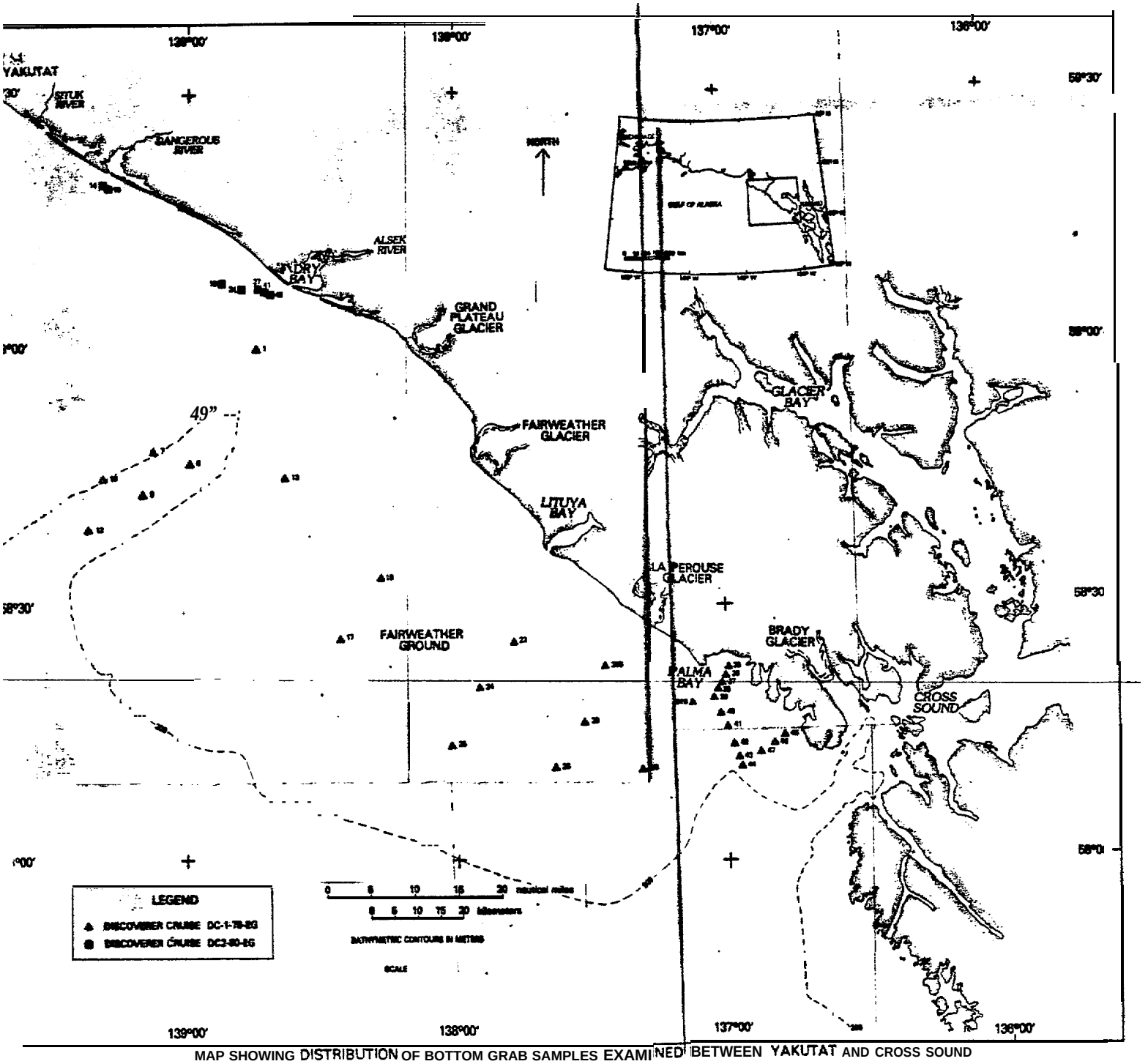

THIRD AXIS
FIRST AXIS
0.6
0.5
0.4
0.3
0.2
0.1
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
LEGEND
ASSEMBLAGE I (INNER NERITIC)
ASSEMBLAGE II (MIDDLE NERITIC)
ASSEMBLAGE III (OUTER NERITIC)
ASSEMBLAGE IV (UPPER BATHYAL)
ASSEMBLAGE V (FOSSIL)
MIXTURE OF ASSEMBLAGES I AND II
MIXTURE OF ASSEMBLAGES I AND III
MIXTURE OF ASSEMBLAGES I AND V
MIXTURE OF ASSEMBLAGES II AND III
MIXTURE ASSEMBLAGES AND
MIXTURE OF ASSEMBLAGES III AND V

APPENDIX XI

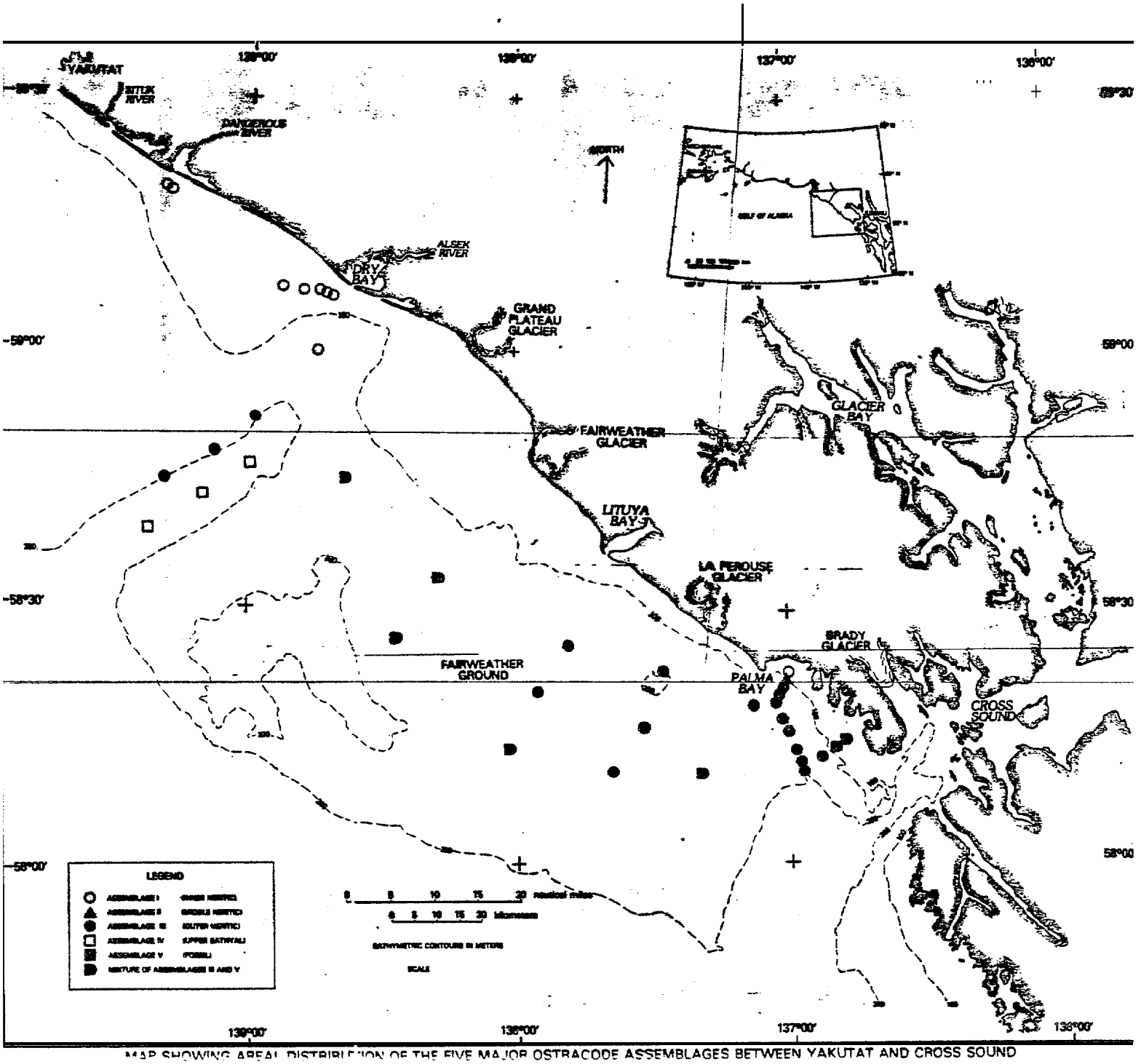
MAPS SHOWING DISTRIBUTION OF BOTTOM GRAB SAMPLES EXAMINED AND THE COBRESPONDING AREAL DISTRIBUTION OF THE FIVE MAJOR OSTRACODE ASSEMBLAGES BETWEEN YAKUTAT AND CROSS SOUND

ELISABETH M. BROUWERS

SUBMITTED FOR PUBLICATION AS U.S. GEOLOGICAL SURVEY
MISCELLANEOUS FIELD STUDIES MAP



MAP SHOWING DISTRIBUTION OF BOTTOM GRAB SAMPLES EXAMINED BETWEEN YAKUTAT AND CROSS SOUND



MAP SHOWING AREAL DISTRIBUTION OF THE FIVE MAJOR OSTRACODE ASSEMBLAGES BETWEEN YAKUTAT AND CROSS SOUND

APPENDIX XII

MAPS SHOWING DISTRIBUTION OF BOTTOM GRAB SAMPLES EXAMINED AND THE CORRESPONDING AREAL DISTRIBUTION OF THE FIVE MAJOR OSTRACODE ASSEMBLAGES BETWEEN BERING GLACIER AND YAKUTAT BAY

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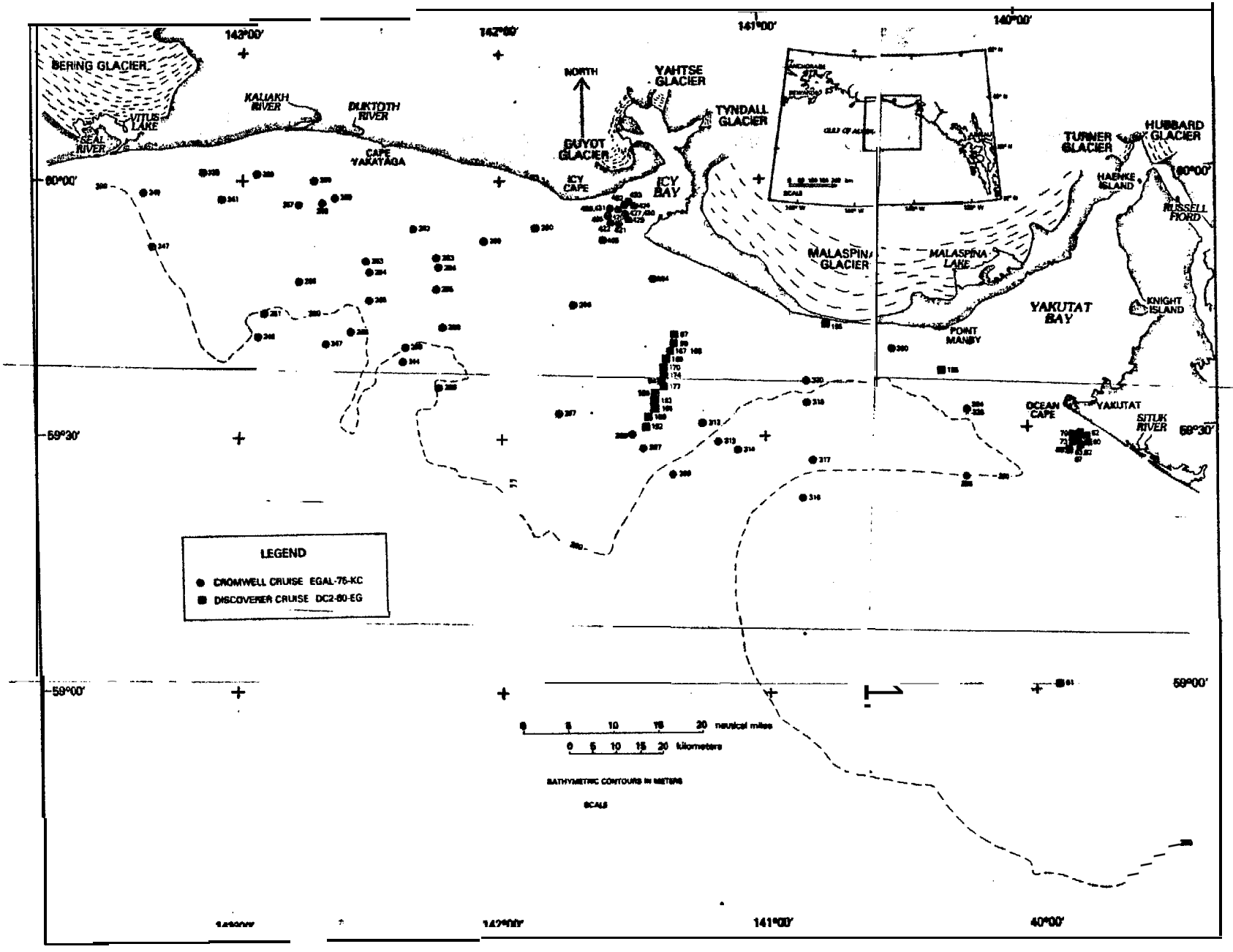
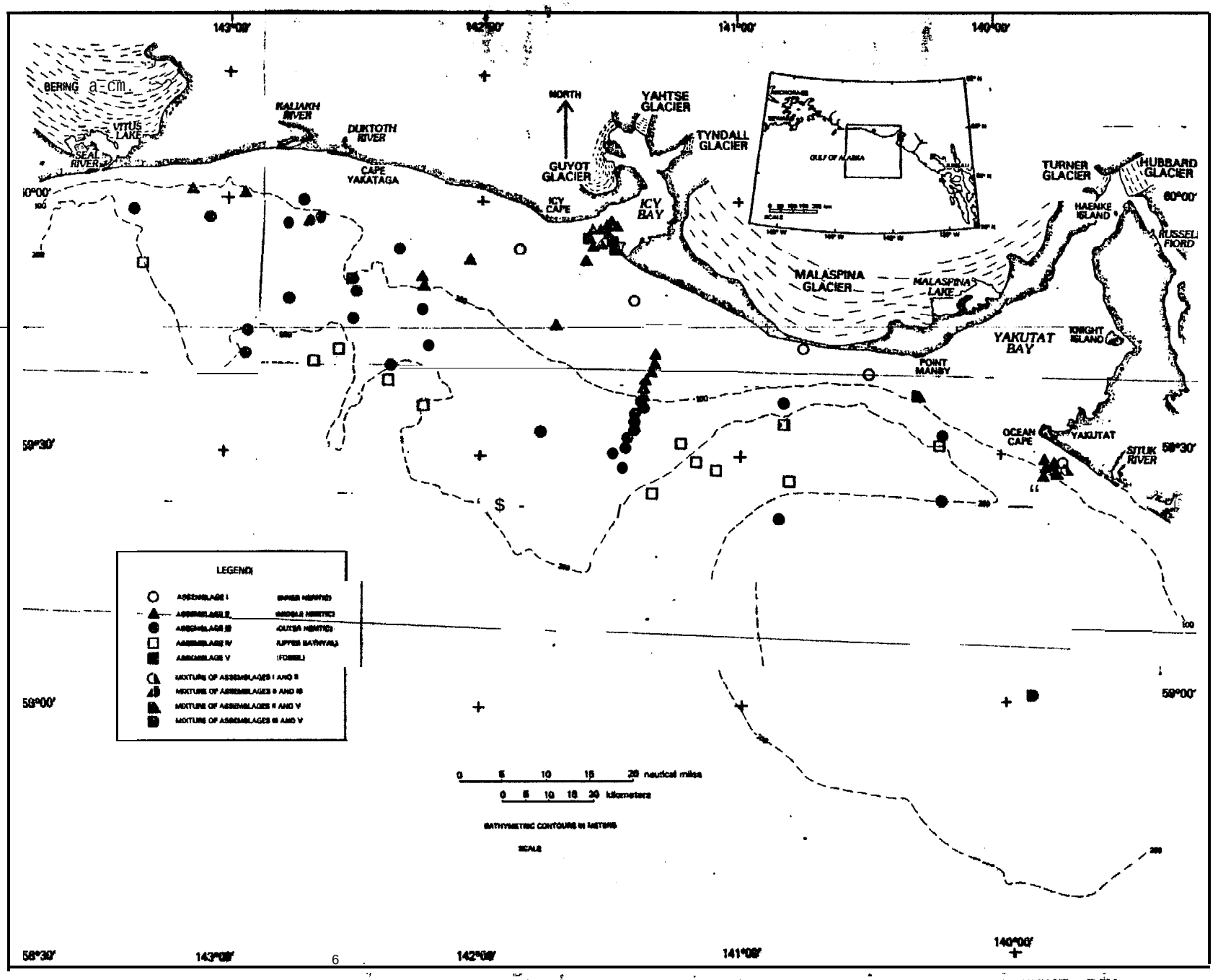
MISCELLANEOUS FIELD STUDIES MAP



MAP SHOWING DISTRIBUTION OF BOTTOM GRAB SAMPLES EXAMINED BETWEEN BERING GLACIER AND YAKUTAT BAY



MAP SHOWING AREAL DISTRIBUTION Of THE FIVE MAJOR OSTRACODE ASSEMBLAGES BETWEEN BERING GLACIER AND YAKUTAT BAY

3-573

APPENDIX XIII

MAPS SHOWING DISTRIBUTION OF BOTTOM GRAB SAMPLES EXAMINED AND TEE CORRESPONDING AREAL DISTRIBUTION OF TEE FIVE MAJOR OSTRACODE ASSEMBLAGES BETWEEN MONTAGUE ISLAND AND KAYAK ISLAND

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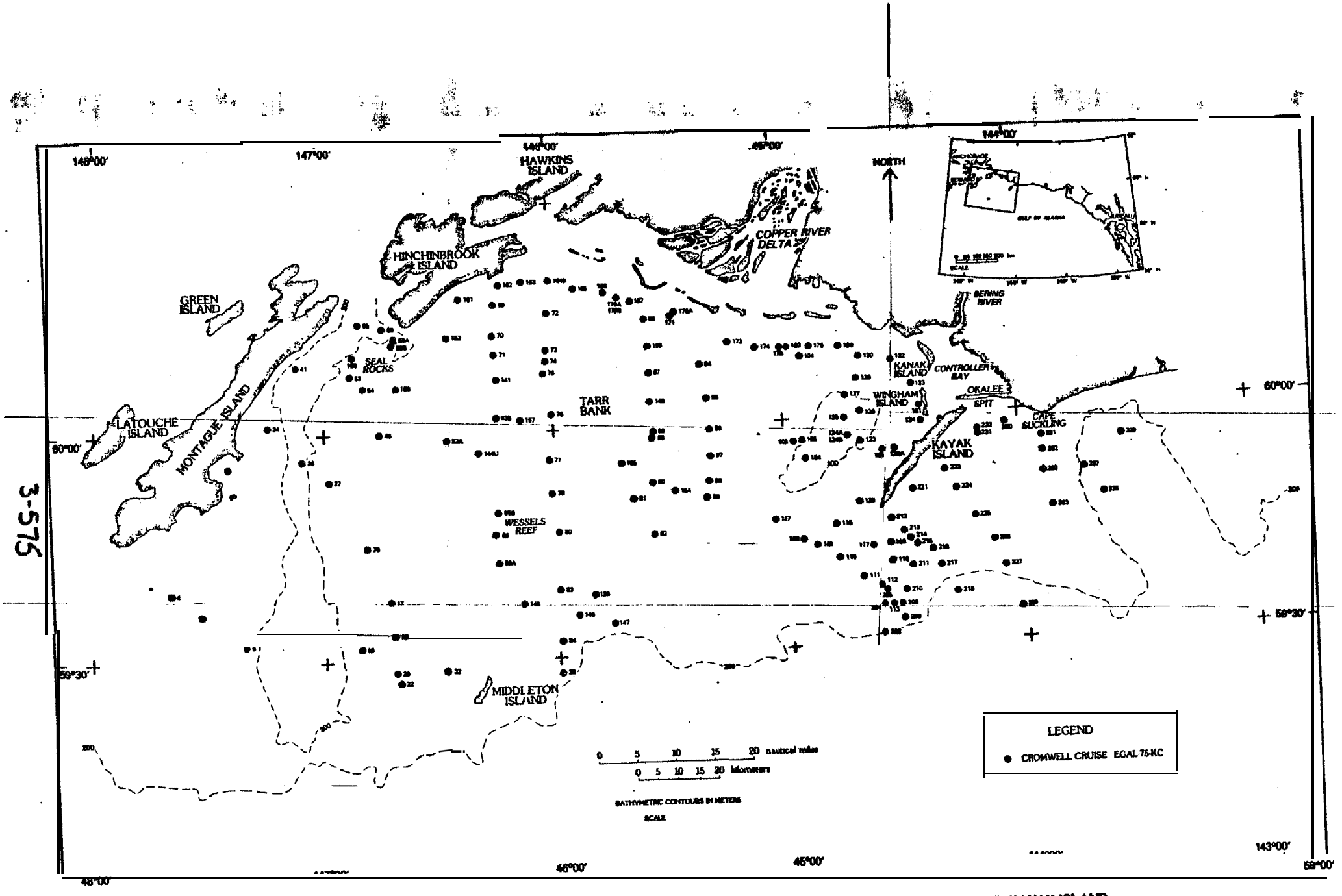
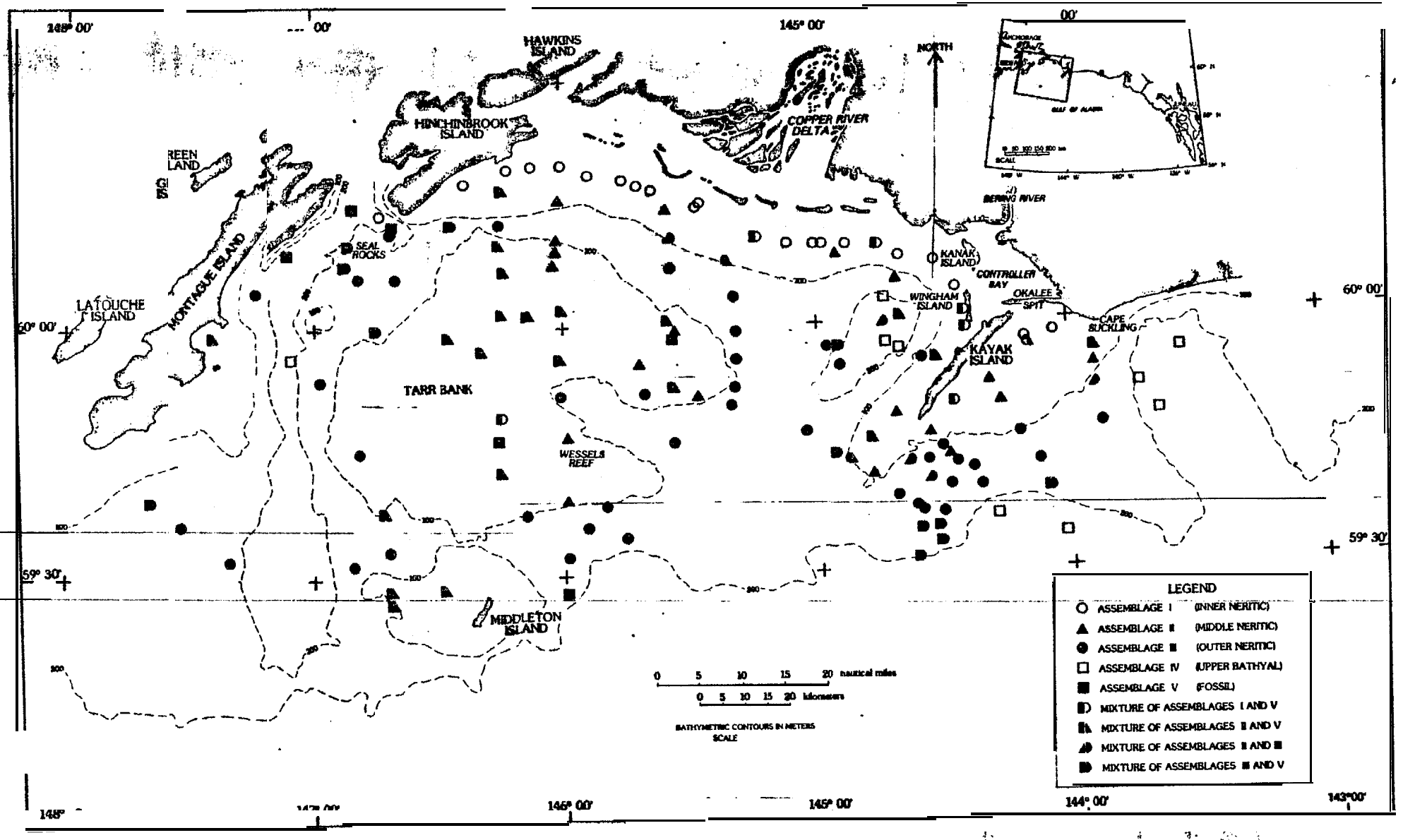
MISCELLANEOUS FIELD STUDIES MAP



MAP SHOWING DISTRIBUTION OF BOTTOM GRAB SAMPLES EXAMINED BETWEEN MONTAGUE ISLAND AND KAYAK ISLAND



MAP SHOWING AREAL DISTRIBUTION OF THE FIVE MAJOR OSTRACODE ASSEMBLAGES BETWEEN MONTAGUE ISLAND AND KAYAK ISLAND

APPENDIX XIV

PLOT OF THE 33 MOST COMMON OSTRACODE SPECIES -
ABUNDANCE VERSUS WATER DEPTH

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MISCELLANEOUS FIELD STUDIES MAP