

OCCURRENCE AND DISTRIBUTION CHART OF OSTRACODES FROM THE
NORTHEASTERN GULF OF ALASKA

By

Elisabeth M. Brouwers

The northeastern Gulf of Alaska, from Montague Island to Cross Sound, (long. 137°W.-148°W., fig. 1) was studied to determine the areas and processes of significant environmental concern to resource development. Samples were collected during three U.S. Geological Survey cruises: F.R.S. Townsend Cromwell cruise EGAL-75-KC and R/V Discoverer cruises DC1-79-EG and DC2-80-EG. Bottom samples were taken by means of a box corer (BC), Shipek (S), or Van Veen (VV) sampling device.

A large number of the bottom-grab samples collected in this study were examined for ostracodes. The ostracode assemblages provide information on the source and age of continental shelf sediments, as well as certain environmental parameters (such as salinity or water temperature) that existed at the time of deposition.

The initial unwashed sample sizes were not standardized and ranged from 200 g to more than 1 kg (wet weight). Sediment was washed on a 200-mesh screen (75 μ m); all of the samples were completely picked of all ostracode valves larger than 180 μ m. Ostracode specimens were identified to the species level wherever possible. All of the valves picked were counted, and the adult and juvenile specimens were differentiated (Brouwers, 1981; 1982; and in press). The numbers on the accompanying charts are derived from these counts, and refer to the total number of valves or recognizable fragments (adult and juvenile counts have been combined on the charts); a carapace is counted as two valves. Specimens with associated chitinous soft parts were noted; these individuals were presumed to be living at the time of collection. An asterisk on the chart indicates that some or all of the specimens of the species from that locality contained soft parts. The table in this pamphlet identifies the location and water depth of each sample.

Of the 150 ostracode species identified, 19 consist of previously described taxa and 131 (87 percent) are new species. New species are referred to by letter designation (for example, Cytheropteron sp. B) or by an affinity to a described species (for example, Cytheropteron aff. C. nodosalatum). Several species could not be placed into the taxonomic concept of described genera. For convenience, each of these species has been placed into the genus to which it is most similar morphologically and noted by quotation marks (for example, "Leguminocythereis" sp. B). These species probably belong to new, undescribed genera.

The charts illustrating each species' occurrence provide information about the total distribution of a species within the study area. The abundance data given for each occurrence provide an approximate indication of how successfully a species is adapting to the physical-chemical parameters at the collection site. These species-distribution patterns may then be compared with the known distributions of particular environmental parameters (for example, bottom water temperature, salinity, dissolved oxygen, nutrients, turbidity, substrate), so that those parameters which influence or control a species distribution can be identified. The establishment of this habitat baseline or datum forms a vital part of the interpretive aspects of Neogene and Quaternary stratigraphic and paleoenvironmental studies in this region. Further, knowledge of these assemblages allows for the definition and characterization of the cold-temperate Aleutian zoogeographic province based on ostracodes. Detailed analyses of the sample species composition will enable recognition of distinct biofaces associations.



Figure 1.--Index map of Alaska showing the region studied in the northeastern Gulf of Alaska.

Location and water depth of bottom-grab samples

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
Cruise EGAL-75-KC			
BC-4	59° 39.3' N	147° 40.1' W	Not Determined
BC-5	59° 36.5' N	147° 32.8' W	Not Determined
BC-6	59° 32.3' N	147° 21.1' W	143 meters
BC-11	59° 55.9' N	147° 25.4' W	49 meters
VV-16	59° 45.9' N	146° 49.4' W	91 meters
VV-17	59° 38.1' N	146° 43.5' W	97 meters
VV-18	59° 33.5' N	146° 42.4' W	113 meters
S-19	59° 31.8' N	146° 51.0' W	113 meters
VV-20	59° 28.5' N	146° 41.8' W	88 meters
S-22	59° 27.2' N	146° 41.1' W	106 meters
VV-24	60° 01.2' N	147° 15.0' W	143 meters
VV-26	59° 56.6' N	147° 06.1' W	205 meters
VV-27	59° 53.8' N	146° 59.2' W	163 meters
S-32	59° 28.7' N	146° 29.1' W	53 meters
VV-39	59° 28.0' N	145° 59.7' W	148 meters
VV-41	60° 09.1' N	147° 07.2' W	212 meters
VV-46	60° 00.0' N	146° 45.5' W	126 meters
VV-52A	59° 59.0' N	146° 27.5' W	71 meters
VV-53	60° 07.7' N	146° 52.8' W	156 meters
VV-54	60° 06.1' N	146° 49.4' W	112 meters
VV-55	60° 14.5' N	146° 50.6' W	220 meters
VV-58	60° 13.8' N	146° 44.3' W	221 meters
VV-59A	60° 12.1' N	146° 41.2' W	192 meters
VV-59B	60° 11.8' N	146° 41.5' W	183 meters
VV-63B	60° 01.8' N	146° 14.6' W	64 meters
S-65B	59° 49.4' N	146° 14.9' W	53 meters
S-66	59° 46.6' N	146° 15.9' W	75 meters
S-68A	59° 42.6' N	146° 15.0' W	81 meters
VV-69	60° 16.6' N	146° 14.6' W	49 meters
VV-70	60° 12.6' N	146° 15.3' W	108 meters

Location and water depth of bottom-grab samples--Continued

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
Cruise EGAL-75-KC			
VV-71	60° 10.1' N	146° 15.0' W	84 meters
VV-72	60° 15.3' N	146° 00.8' W	90 meters
VV-73	60° 10.5' N	146° 01.4' W	95 meters
VV-74	60° 09.2' N	146° 01.5' W	90 meters
VV-75	60° 07.4' N	146° 02.3' W	84 meters
VV-76	60° 02.0' N	146° 00.5' W	77 meters
VV-77	59° 56.0' N	146° 01.5' W	86 meters
VV-78	59° 51.6' N	146° 00.9' W	101 meters
VV-80	59° 46.7' N	145° 59.5' W	91 meters
VV-83	59° 39.0' N	145° 59.5' W	91 meters
VV-84	59° 32.2' N	145° 59.5' W	157 meters
VV-86	60° 14.0' N	145° 34.5' W	48 meters
VV-87	60° 06.9' N	145° 34.4' W	126 meters
S-88	59° 59.2' N	145° 34.0' W	88 meters
S-89	59° 58.5' N	145° 34.2' W	84 meters
VV-90	59° 52.6' N	145° 34.5' W	88 meters
VV-91	59° 50.5' N	145° 39.6' W	97 meters
VV-92	59° 45.9' N	145° 34.5' W	119 meters
VV-94	60° 07.7' N	145° 21.0' W	97 meters
VV-95	60° 03.3' N	145° 19.8' W	132 meters
VV-96	59° 59.2' N	145° 19.3' W	119 meters
VV-97	59° 55.7' N	145° 19.5' W	101 meters
VV-98	59° 52.5' N	145° 19.8' W	101 meters
VV-99	59° 50.4' N	145° 20.6' W	110 meters
S-103	60° 09.4' N	144° 58.2' W	35 meters
S-104	60° 08.1' N	144° 54.9' W	53 meters
BC-105	59° 57.1' N	144° 55.4' W	183 meters
VV-106	59° 57.0' N	144° 57.4' W	192 meters
VV-107	59° 46.5' N	145° 03.2' W	185 meters
VV-108	59° 44.2' N	144° 56.2' W	192 meters

Location and water depth of bottom-grab samples--Continued

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
Cruise EGAL-75-KC			
VV-109	59° 43.4' N	144° 52.7' W	102 meters
S-110	59° 41.5' N	144° 47.2' W	97 meters
S-111	59° 38.9' N	144° 41.0' W	148 meters
VV-112	59° 37.6' N	144° 37.0' W	145 meters
S-113	59° 34.9' N	144° 30.0' W	139 meters
S-115	59° 46.0' N	144° 47.7' W	64 meters
S-117	59° 43.0' N	144° 38.1' W	119 meters
S-118	59° 40.7' N	144° 33.3' W	137 meters
S-120	59° 48.8' N	144° 41.0' W	66 meters
S-122A	59° 55.6' N	144° 31.4' W	55 meters
S-123	59° 56.7' N	144° 40.2' W	210 meters
BC-124B	59° 57.5' N	144° 43.2' W	234 meters
BC-124A	59° 57.5' N	144° 43.2' W	234 meters
VV-125	59° 59.8' N	144° 44.0' W	232 meters
BC-127	60° 02.8' N	144° 43.5' W	210 meters
BC-128	60° 00.6' N	144° 40.0' W	227 meters
S-129	60° 04.9' N	144° 40.4' W	146 meters
S-130	60° 07.8' N	144° 39.5' W	31 meters
S-132	60° 07.1' N	144° 31.2' W	20 meters
S-133	60° 03.8' N	144° 26.2' W	17 meters
S-134	59° 59.0' N	144° 24.0' W	20 meters
S-138	59° 38.2' N	145° 50.4' W	168 meters
VV-141	60° 06.8' N	146° 14.5' W	71 meters
VV-144U	59° 57.3' N	146° 19.6' W	64 meters
S-145	59° 37.4' N	146° 09.0' W	101 meters
S-146	59° 35.6' N	145° 54.8' W	143 meters
S-147	59° 34.2' N	145° 45.7' W	165 meters
S-149	60° 03.2' N	145° 34.5' W	104 meters
VV-150	60° 10.4' N	145° 34.5' W	104 meters
VV-153	60° 12.5' N	146° 27.0' W	137 meters

Location and water depth of bottom-grab samples--Continued

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
Cruise EGAL-75-KC			
VV-154	59° 51.4' N	145° 28.5' W	95 meters
VV-155	59° 55.2' N	145° 42.0' W	82 meters
VV-157	60° 01.4' N	146° 08.5' W	73 meters
VV-158	60° 06.0' N	146° 40.5' W	117 meters
S-159	60° 10.2' N	146° 52.1' W	165 meters
VV-161	60° 17.4' N	146° 23.7' W	22 meters
VV-162	60° 19.2' N	146° 13.2' W	24 meters
VV-163	60° 19.5' N	146° 07.0' W	22 meters
VV-164B	60° 19.5' N	146° 00.0' W	22 meters
S-165	60° 18.3' N	145° 53.5' W	33 meters
S-166	60° 17.7' N	145° 45.6' W	20 meters
S-167	60° 16.4' N	145° 38.4' W	26 meters
S-170A	60° 16.9' N	145° 42.0' W	20 meters
BC-170B	60° 16.9' N	145° 42.0' W	20 meters
S-171	60° 14.3' N	145° 28.0' W	24 meters
S-173	60° 10.4' N	145° 13.6' W	24 meters
S-174	60° 09.6' N	145° 06.4' W	35 meters
S-175	60° 09.4' N	145° 00.0' W	33 meters
S-176	60° 10.0' N	144° 48.0' W	31 meters
S-179A	60° 14.8' N	145° 27.1' W	18 meters
S-180	60° 09.1' N	144° 44.7' W	26 meters
S-181	60° 01.0' N	144° 24.0' W	33 meters
S-183	59° 55.5' N	144° 34.6' W	91 meters
VV-184	59° 54.8' N	144° 54.6' W	188 meters
S-202	59° 31.4' N	144° 36.6' W	187 meters
VV-204	59° 34.8' N	144° 35.8' W	141 meters
VV-205	59° 37.0' N	144° 35.3' W	145 meters
S-208	59° 33.3' N	144° 31.3' W	156 meters
S-209	59° 35.1' N	144° 31.7' W	139 meters
S-210	59° 36.9' N	144° 30.5' W	146 meters

Location and water depth of bottom-grab samples--Continued

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
Cruise EGAL-75-KC			
S-211	59° 40.1' N	144° 28.4' W	146 meters
S-212	59° 46.1' N	144° 33.1' W	91 meters
S-213	55° 44.7' N	144° 30.2' W	113 meters
S-214	59° 43.7' N	144° 28.6' W	55 meters
S-215	59° 42.9' N	144° 27.0' W	134 meters
S-216	59° 42.1' N	144° 23.0' W	152 meters
VV-217	59° 39.8' N	144° 21.2' W	154 meters
VV-219	59° 36.3' N	144° 17.4' W	475 meters
S-221	59° 50.1' N	144° 27.4' W	29 meters
BC-223	59° 52.4' N	144° 18.7' W	51 meters
S-224	59° 50.0' N	144° 16.0' W	64 meters
S-225	59° 46.2' N	144° 11.5' W	101 meters
S-226	59° 43.0' N	144° 07.3' W	128 meters
S-227	59° 39.4' N	144° 04.9' W	161 meters
VV-229	59° 34.0' N	144° 01.2' W	1189 meters
VV-231	59° 56.9' N	144° 09.7' W	33 meters
VV-232	59° 57.3' N	144° 09.9' W	49 meters
VV-233	59° 51.6' N	143° 53.3' W	106 meters
VV-237	59° 51.7' N	143° 42.5' W	225 meters
VV-239	59° 55.6' N	143° 32.4' W	252 meters
S-246	59° 41.9' N	142° 55.8' W	198 meters
VV-247	59° 52.2' N	143° 20.5' W	214 meters
VV-249	59° 58.4' N	143° 23.0' W	152 meters
S-251	59° 44.5' N	142° 54.0' W	188 meters
S-256	59° 48.2' N	142° 46.2' W	190 meters
VV-257	59° 57.3' N	142° 46.5' W	119 meters
VV-258	59° 57.5' N	142° 41.0' W	108 meters
VV-259	59° 58.1' N	142° 38.2' W	91 meters
VV-260	60° 00.0' N	142° 43.0' W	88 meters
S-263	59° 50.8' N	142° 31.0' W	95 meters

Location and water depth of bottom-grab samples--Continued

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
Cruise EGAL-75-KC			
S-264	59° 49.5' N	142° 30.0' W	134 meters
S-265	59° 46.2' N	142° 29.9' W	181 meters
S-266	59° 42.5' N	142° 34.0' W	262 meters
S-268	59° 40.7' N	142° 21.6' W	174 meters
VV-282	59° 54.5' N	142° 20.0' W	82 meters
VV-283	59° 51.0' N	142° 14.5' W	84 meters
VV-284	59° 50.0' N	142° 14.2' W	86 meters
VV-285	59° 47.4' N	142° 14.2' W	115 meters
VV-286	59° 43.0' N	142° 13.1' W	157 meters
VV-288	59° 36.0' N	142° 13.7' W	238 meters
S-289	59° 53.1' N	142° 03.8' W	55 meters
S-290	59° 54.6' N	141° 52.3' W	31 meters
S-294	59° 48.7' N	141° 25.0' W	29 meters
S-296	59° 45.5' N	141° 43.5' W	49 meters
VV-297	59° 32.9' N	141° 46.7' W	165 meters
VV-306	59° 30.4' N	141° 30.0' W	161 meters
VV-307	59° 28.9' N	141° 27.8' W	165 meters
VV-308	59° 25.8' N	141° 21.1' W	201 meters
VV-312	59° 31.7' N	141° 14.3' W	156 meters
VV-313	59° 29.5' N	141° 11.0' W	256 meters
VV-314	59° 28.5' N	141° 06.3' W	311 meters
VV-316	59° 22.8' N	140° 51.7' W	163 meters
VV-317	59° 27.2' N	140° 49.4' W	274 meters
VV-319	59° 33.8' N	140° 50.5' W	247 meters
VV-320	59° 36.4' N	140° 50.5' W	163 meters
VV-324	59° 32.3' N	140° 14.0' W	192 meters
VV-325	50° 29.0' N	140° 14.1' W	241 meters
VV-326	59° 24.6' N	140° 14.5' W	183 meters
S-328	59° 43.2' N	144° 33.6' W	134 meters
VV-330	59° 58.2' N	144° 02.8' W	24 meters

Location and water depth of bottom-grab samples--Continued

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
----------------------	-----------------	------------------	--------------------

Cruise EGAL-75-KC

VV-331	59° 56.1' N	143° 53.4' W	66 meters
VV-332	59° 54.3' N	143° 53.2' W	73 meters
VV-333	59° 47.1' N	143° 51.5' W	128 meters
VV-336	59° 48.4' N	144° 38.0' W	274 meters
VV-338	60° 01.0' N	143° 09.3' W	101 meters
VV-339	60° 00.8' N	142° 56.6' W	102 meters
VV-341	59° 57.7' N	143° 04.7' W	137 meters
S-344	59° 39.2' N	142° 22.2' W	210 meters
S-347	59° 41.0' N	142° 39.7' W	333 meters
VV-360	59° 39.7' N	140° 31.1' W	48 meters
S-406	59° 53.0' N	141° 36.5' W	26 meters
S-420	59° 55.1' N	141° 32.9' W	64 meters
S-421	59° 55.2' N	141° 34.4' W	59 meters
S-422	59° 55.8' N	141° 35.6' W	68 meters
S-425	59° 56.7' N	141° 35.1' W	59 meters
S-426	59° 56.1' N	141° 33.5' W	71 meters
S-427	59° 55.5' N	141° 32.7' W	71 meters
S-428	59° 54.7' N	141° 30.1' W	49 meters
S-429	59° 55.5' N	141° 30.6' W	60 meters
S-430	59° 56.0' N	141° 31.6' W	59 meters
S-431	59° 56.5' N	141° 33.3' W	59 meters
S-432	59° 57.2' N	141° 31.6' W	68 meters
S-433	59° 57.5' N	141° 30.8' W	68 meters
S-434	59° 57.1' N	141° 29.6' W	68 meters

Cruise DCl-79-EG

S-1	59° 05.0' N	138° 39.9' W	77 meters
S-5	58° 52.1' N	138° 58.6' W	205 meters
S-6	58° 46.8' N	138° 59.7' W	220 meters

Location and water depth of bottom-grab samples--Continued

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
Cruise DC1-79-EG			
S-7	58° 48.2' N	139° 07.9' W	188 meters
S-9	58° 43.1' N	139° 10.3' W	240 meters
S-10	58° 44.9' N	139° 19.1' W	183 meters
S-12	58° 39.0' N	139° 22.3' W	251 meters
S-13	58° 45.2' N	138° 38.4' W	108 meters
S-17	58° 26.4' N	138° 26.4' W	123 meters
S-19	58° 33.6' N	138° 17.5' W	122 meters
S-23	58° 26.0' N	137° 48.3' W	167 meters
S-24	58° 20.7' N	137° 55.7' W	156 meters
S-25	58° 13.9' N	138° 01.9' W	138 meters
S-28	58° 11.2' N	137° 39.1' W	161 meters
S-29	58° 16.4' N	137° 32.5' W	154 meters
S-30B	58° 23.0' N	137° 27.9' W	196 meters
S-31B	58° 18.6' N	137° 08.2' W	154 meters
S-32B	58° 10.9' N	137° 19.8' W	121 meters
S-35	58° 22.7' N	136° 59.9' W	70 meters
S-36	58° 21.7' N	137° 00.7' W	111 meters
S-37	58° 21.0' N	137° 01.5' W	137 meters
S-38	58° 20.2' N	137° 02.3' W	159 meters
S-39	58° 19.2' N	137° 03.1' W	173 meters
S-40	58° 17.2' N	137° 01.8' W	186 meters
S-41	58° 15.7' N	137° 00.4' W	187 meters
S-42	58° 13.6' N	136° 58.9' W	174 meters
S-43	58° 12.1' N	136° 57.9' W	185 meters
S-44	58° 11.0' N	136° 57.3' W	111 meters
S-45	58° 14.6' N	136° 47.8' W	119 meters
S-46	58° 50.1' N	136° 50.1' W	93 meters
S-47	58° 12.6' N	136° 53.2' W	133 meters

Location and water depth of bottom-grab samples--Continued

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
Cruise DC2-80-EG			
VV-14	59° 19.1' N	139° 19.8' W	<20 meters
VV-16	59° 18.8' N	139° 18.6' W	35 meters
VV-18	59° 07.0' N	138° 48.3' W	44 meters
VV-24	59° 07.0' N	138° 44.0' W	42 meters
VV-27	59° 07.0' N	138° 44.0' W	43 meters
VV-41	59° 06.9' N	138° 43.0' W	40 meters
VV-48	59° 06.9' N	138° 42.6' W	37 meters
VV-60	59° 28.5' N	139° 48.0' W	58 meters
VV-62	59° 28.5' N	139° 48.4' W	64 meters
VV-63	59° 28.2' N	139° 48.9' W	62 meters
VV-67	59° 28.0' N	139° 49.3' W	82 meters
VV-70	59° 28.9' N	139° 49.8' W	98 meters
VV-73	59° 27.7' N	139° 50.2' W	104 meters
VV-82	59° 28.3' N	139° 48.4' W	74 meters
VV-86	59° 27.5' N	139° 50.5' W	110 meters
VV-89	59° 28.6' N	139° 48.2' W	55 meters
VV-91	59° 00.2' N	139° 54.0' W	128 meters
VV-94	59° 36.6' N	141° 23.3' W	99 meters
VV-97	59° 41.8' N	141° 20.1' W	60 meters
VV-99	59° 41.0' N	141° 20.7' W	60 meters
VV-155	59° 26.1' N	140° 47.4' W	<20 meters
VV-167	59° 40.1' N	141° 21.6' W	68 meters
VV-168	59° 40.1' N	141° 21.6' W	68 meters
VV-169	59° 39.2' N	141° 22.1' W	73 meters
VV-170	59° 38.1' N	141° 22.5' W	84 meters
VV-174	59° 37.2' N	141° 23.1' W	91 meters
VV-177	59° 36.1' N	141° 23.5' W	102 meters
VV-180	59° 35.2' N	141° 24.5' W	111 meters
VV-183	59° 34.4' N	141° 25.1' W	121 meters
VV-186	59° 33.3' N	141° 25.3' W	132 meters

Location and water depth of bottom-grab samples--Continued

<u>Sample number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Water depth</u>
----------------------	-----------------	------------------	--------------------

Cruise DC2-80-EG

VV-189	59° 32.5' N	141° 26.4' W	139 meters
VV-192	59° 31.2' N	141° 26.8' W	150 meters
VV-195	59° 36.5' N	140° 19.2' W	82 meters

REFERENCES

- Brouwers, E. M., 1981, 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: U.S. Geological Survey Open-File Report 81-1314, 134 p.
- _____, 1982, 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: U.S. Geological Survey Open-File Report 82-390, 68 p.
- _____, in press, 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: U.S. Geological Survey Open-File Report 82-949.

