

Table S15. Important genera of protozoa reported in the zooplankton of the Gulf of Mexico. Asterisks denote genera with large numbers of species or in which some species are most abundant.

Ciliophora

Tintinnoida

Codonella

Codonellopsis

Coxiella

Dictyocysta

Eutintinnus

*Parundella**

Rhabdonella

Salpingella

*Tintinnopsis**

Xystonellopsis

Aloricate ciliates

Didinium

Euplotes

*Lohmaniella**

Mesodinium

*Strombilidium**

Tiarina

Tontonia

Sarcodina

Foraminifera

Candeina

*Globigerina**

Globigerinella

Globigerinita

Globigerinoides

*Globorotalia**

Hastirigerina

Orbulina

Pulleniatina

Sphaeroidinella

Radiolaria

*Actinomma**

*Cenosphaera**

Euchitonia

Eucyrtidium

Lamprocyclas

Lithellus

Pleurocanium

Pterocorys

Spongotrochus

Stylochlamidium

Table S16. Important genera of Cnidaria and Ctenophora reported in the zooplankton of the Gulf of Mexico. Asterisks denote genera with large numbers of species or in which some species are most abundant.

Cnidaria

Siphonophores

<i>Agalma*</i>	<i>Forskalia*</i>	<i>Physophora</i>
<i>Athorybia</i>	<i>Nanomia</i>	<i>Rhizophysa</i>
<i>Cordagalma</i>	<i>Physalia</i>	<i>Sulculeolaria</i>

Anthomedusae, hydromedusae, and relations

<i>Aequorea</i>	<i>Euphysora</i>	<i>Rhopalonema</i>
<i>Aglaura</i>	<i>Eutima</i>	<i>Sarsia</i>
<i>Amphinema</i>	<i>Liriope*</i>	<i>Verella</i>
<i>Bougainvillia</i>	<i>Phialidium</i>	<i>Zanclea</i>

Scyphozoa

<i>Aurelia*</i>	<i>Cyanea*</i>	<i>Pelagia</i>
<i>Chiropsalmus</i>	<i>Linuche</i>	<i>Stomolophus</i>
<i>Chrysaora*</i>	<i>Nausithoe</i>	

Ctenophora

<i>Beroe*</i>	<i>Folia</i>	<i>Mnemiopsis*</i>
<i>Bolinopsis</i>	<i>Hormifora</i>	<i>Pleurobrachia</i>
<i>Cestum</i>	<i>Leucothea</i>	<i>Tinerfe</i>
<i>Eurhamphaea</i>		

Table S17. Important genera of gastropod mollusks and polychaete annelids in the zooplankton of the Gulf of Mexico. Asterisks denote genera with large numbers of species or in which some species are most abundant.

Gastropoda

Janthinidae

Janthina

Heteropoda

*Atlanta**
Carinaria
Cardiapoda

Firoloida
Oxygyrus

Protatlanta
*Pterotrachea**

Pteropoda

*Cavolina**
*Clio**
Corolla
*Creseis**

Cuvierina
*Diacria**
Hyalocylis

*Limacina**
Peraclis
Styliola

Polychaeta

Alciopa
Alciopina
Naiades
*Rhynchonerella**

Sagitella
Tomopteris
Torrea

Travisiopsis
Typhloscolex
Vanadis

Table S18. Important genera of crustaceans reported in the zooplankton of the Gulf of Mexico. Asterisks denote genera with large numbers of species or in which some species are most abundant.

Cladocera		
<i>Evadne</i>	<i>Penilia</i>	<i>Podon</i>
Ostracoda		
<i>Conchoecia</i>	<i>Euconchoecia</i>	
Copepoda		
<u>Calanoida</u>	<u>Cyclopoida</u>	<u>Harpacticoida</u>
<i>Acartia</i> *	<i>Conaea</i>	<i>Clytemnestra</i>
<i>Calocalanus</i> *	<i>Copilia</i>	<i>Macrosetella</i> *
<i>Candacia</i>	<i>Corycaeus</i> *	<i>Microsetella</i>
<i>Clausocalanus</i>	<i>Farranula</i>	<i>Miracia</i>
<i>Eucalanus</i>	<i>Lubbockia</i>	<i>Oculosetella</i>
<i>Euchaeta</i>	<i>Oithona</i> *	
<i>Lucicutia</i> *	<i>Oncaea</i> *	
<i>Paracalanus</i> *	<i>Pachos</i>	
<i>Paracandacia</i>	<i>Paroithona</i>	
<i>Pleuromamma</i>	<i>Sapphirina</i>	
Mysidacea		
<i>Anchialina</i>	<i>Brasiliomysis</i>	<i>Mysidopsis</i> *
<i>Bathymysis</i>	<i>Heteromysis</i>	<i>Promysis</i>
<i>Bowmaniella</i> *	<i>Metamysidopsis</i>	<i>Siriella</i>
Amphipoda		
<i>Brachyscelus</i>	<i>Hyperia</i>	<i>Phronimella</i> *
<i>Eupronoe</i>	<i>Oxycephalus</i>	<i>Phrosina</i>
<i>Gammarus</i>	<i>Phronima</i> *	
Euphausiacea		
<i>Bentheuphausia</i>	<i>Nematobranchion</i>	<i>Stylocheiron</i> *
<i>Euphausia</i> *	<i>Nematoscelis</i>	<i>Thysanopoda</i> *
Decapoda		
<u>Sergestidae</u>	<u>Penaeidae</u>	
<i>Lucifer</i>	<i>Bentheogennema</i>	
	<i>Gennadas</i> *	

Table S19. Important genera of Chaetognatha and Urochordata reported in the zooplankton of the Gulf of Mexico. Asterisks denote genera with large numbers of species or in which some species are most abundant.

Chaetognatha

Eukrohnia
Krohnitta
Pterosagitta
*Sagitta**

Urochordata

Cyclosalpa
Doliolum
Fritillaria
Jasis
Oikopleura
Pyrosoma
Salpa

Table S20. Average zooplankton biomass values for stations on the south Texas continental shelf, expressed in terms of volume, dry weight, and ash-free dry weight. Calculations are based on data from three cruises (December/January 1974–1975; April/May 1975; and August/September 1975). Results are given by transect and depth (all seasons combined). (Data from Park 1975c.)

Station	Transect number				Mean
	I	II	III	IV	
Displacement volume ($\mu\text{L}/\text{m}^3$)					
1	341.6	305.9	225.0	346.5	304.8
2	184.0	169.1	113.1	277.9	186.0
3	<u>60.4</u>	<u>89.2</u>	<u>85.5</u>	<u>100.5</u>	<u>83.9</u>
Mean	162.0	188.1	141.2	241.6	191.6
Dry weight (mg/m^3)					
1	59.1	38.9	28.3	30.1	39.1
2	18.7	21.3	14.2	27.7	20.5
3	<u>7.1</u>	<u>9.9</u>	<u>12.4</u>	<u>11.9</u>	<u>10.3</u>
Mean	28.3	23.4	18.3	23.2	23.3
Ash-free dry weight (mg/m^3)					
1	55.6	35.9	25.5	26.6	35.9
2	16.5	18.3	12.7	23.5	17.8
3	<u>6.3</u>	<u>8.8</u>	<u>11.3</u>	<u>10.4</u>	<u>9.2</u>
Mean	26.1	21.0	16.5	20.2	21.0

Table S21. Average zooplankton densities for stations on the south Texas continental shelf. Included are total zooplankton abundance, total copepod abundance, copepod abundance as percentage of zooplankton, and copepod composition. Calculations are based on winter, spring, and late summer cruises of 1974–1975. Results are presented by transect and station (all seasons combined). (Data from Park 1975c.)

Station	Transect number				Mean
	I	II	III	IV	
Total zooplankton abundance (no./m³)					
1	4,034	3,125	2,048	1,477	2,671
2	1,202	1,585	1,297	2,277	1,590
3	<u>540</u>	<u>720</u>	<u>894</u>	<u>886</u>	<u>760</u>
Mean	1,925	1,810	1,413	1,547	1,674
Total copepod abundance (no./m³)					
1	3,387	2,246	1,736	1,249	2,155
2	732	769	808	928	809
3	<u>360</u>	<u>543</u>	<u>604</u>	<u>631</u>	<u>535</u>
Mean	1,493	1,186	1,049	936	1,166
Copepods as percentage of total zooplankton					
1	84.0	71.9	84.8	84.6	81.3
2	60.9	48.5	62.3	40.8	53.1
3	<u>66.7</u>	<u>75.4</u>	<u>67.6</u>	<u>71.2</u>	<u>70.2</u>
Mean	70.5	65.3	71.6	65.5	68.2
Copepod composition (as percentage of total copepods)					
	Calanoids	Cyclopoids	Harpacticoids		
1	81.1	18.8	0.3		
2	74.9	24.7	0.6		
3	<u>68.1</u>	<u>31.3</u>	<u>0.8</u>		
Mean	74.7	24.9	0.6		

Table S22. Comparison of zooplankton densities (number/m³) for major taxonomic groups in collections made off south Texas, Mississippi, and northeast Yucatán. South Texas data are based on seasonal and transect averages. Mississippi and Yucatán data represent annual averages of monthly samples taken throughout one year. (Data from Alvarez-Cadena and Segura-Puertas 1997; Park 1975c; Perry and Christmas 1973.)

Taxonomic group	South Texas shelf			Mississippi inshore	Yucatán inshore
	Inshore	Midshelf	Outer shelf		
Medusae	14	20	14	50	1
Mollusca	214	164	26	798	1
Polychaeta	5	3	2	52	0
Cladocera	68	19	13	69	0
Ostracoda	60	393	86	2	0
Copepoda	2,147	831	531	4,871	17
Mysidacea	6	1	0	0	0
Amphipoda	26	29	8	0	0
Euphausiacea	0	0	1	0	0
Sergestidae	15	5	1	40	1
Crust. larvae	105	42	33	1,312	16
Chaetognatha	54	43	19	1,391	1
Urochordata	35	35	30	705	0
Other	18	17	11	706	233
Totals	2,671	1,590	760	9,996	270

Table S23. Examples of vertical zonation patterns in a number of zooplankton groups documented from the Gulf of Mexico. (Data from Every 1968; Park 1970; P. Phillips 1972; Schroeder 1971; Snider 1975; D. Taylor 1969.)

Epipelagic (0–100 m)	Mesopelagic (100–1,000 m)	Bathypelagic (below 1,500 m)
Medusae		
<i>Aurelia aurita</i>	--	<i>Aeginura grimaldi</i>
<i>Linuche unguiculata</i>	--	<i>Crossota rufobrunnea</i>
<i>Nausithoe punctata</i>	--	<i>Halicreas minimum</i>
<i>Pelagia noctiluca</i>	--	<i>Haliscera bigelowi</i>
<i>Stomolophus meleagris</i>	--	<i>Periphylla periphylla</i>
Heteropods		
<i>Atlanta peroni</i>	<i>Pterotrachea coronata</i>	--
<i>Proatlanta souleyeti</i>	<i>Pterotrachea hippocampus</i>	--
	<i>Pterotrachea scutata</i>	--
Pteropods		
<i>Cavolina uncinata</i>	<i>Diacria trispinosa</i>	--
<i>Creseis virgula</i>	<i>Hyalocylis striata</i>	--
<i>Limacina bulimoides</i>	<i>Limacina inflata</i>	--
	<i>Limacina lesueuri</i>	--
Copepods		
<i>Calocalanus pavoninus</i>	<i>Chiridius gracilis</i>	<i>Bathypontia minor</i>
<i>Ctenocalanus vanus</i>	<i>Chirundina streetsii</i>	<i>Chiridius poppei</i>
<i>Euaetideus acutus</i>	<i>Gaetanus minor</i>	<i>Eucalanus elongatus</i>
<i>Lucicutia paraclausi</i>	<i>Heterorhabdus vipera</i>	<i>Metridia brevicauda</i>

Paracalanus parvus

Lucicutia clausi

Monacilla tenera

Euphausiids

Euphausia americana

Stylocheiron elongatum

Bentheuphausia amblyops

Euphausia brevis

Stylocheiron longicorne

Thysanopoda cornutus

Euphausia mutica

Stylocheiron maximum

Thysanopoda egregia

Euphausia tenera

Thysanopoda cristata

Stylocheiron affine

Thysanopoda pectinata

Chaetognaths

Krohnitta pacifica

Krohnitta subtilis

Eukrohnia fowleri

Sagitta enflata

Sagitta decipiens

Eukrohnia hammata

Sagitta helenae

Sagitta lyra

Sagitta macrocephala

Sagitta hispida

Sagitta minima

Sagitta tenuis

Table S24. Distribution of average zooplankton volumes and abundances in collections made with the Gulf III sampler in the euphotic zone of the continental shelf, slope, and deep Gulf. Volumes represent mL/100 m³, and abundances are given in terms of numbers/1,000 m³. (Data from Arnold 1958.)

Volumes and abundances	Shelf 0–100 fathoms	Slope 100–1,000 fathoms	Deep Gulf > 1,000 fathoms
Plankton volumes	17.1	13.5	10.9
Fish eggs	143.6	50.9	26.8
Fish larvae	118.3	6.7	3.1

Table S25. Estimates of the abundance of some zooplankton groups in epipelagic oceanic waters of the Gulf of Mexico (except the chaetognaths, for which the data are from the Yucatán shelf). Asterisks indicate the average of day and night collections, and “cr” refers to data from cyclonic rings. Numerical ranges are given in parentheses. (Data from Berkowitz 1976; Biggs, Smith, et al. 1984; Cummings 1982; McMillen and Casey 1978; Mille-Pagaza, Reyes-Martínez, and Sánchez-Salazar 1997; Snider 1975; Suárez and Gasca-S. 1992.)

Group	Average abundance (number/1,000 m ³)	Comments
Radiolarians	ca. 20,000	upper 50 m
Medusae	0.5	upper 15 m, cr
Siphonophores	1.0	upper 15 m, cr
Ctenophores	3.8	upper 15 m, cr
Heteropods	0.5	upper 15 m, cr
Pteropods	10,933 (85–26,919)	upper 100 m
Polychaetes	98*	upper meter
Amphipods	286*	upper meter
Copepods – total	2,495*	upper meter
– calanoids	13,590	upper 200 m
Chaetognaths	12,300 (1580–80,000)	upper 100 m

Table S26. Representative examples of vertically migrating and relatively nonmigratory species of zooplankton from the Gulf of Mexico. (Data from Ferrari 1973; Schroeder 1971; Snider 1975.).

Migratory species	Nonmigratory species
Pteropods	
<i>Clio pyramidata</i>	<i>Cavolina inflexa</i>
<i>Hyalocylis striata</i>	<i>Creseis acicula</i>
<i>Limacina inflata</i>	<i>Creseis virgula</i>
<i>Limacina lesueurii</i>	<i>Diacria quadridentata</i>
<i>Styliola subula</i>	
Copepods	
<i>Lubbockia squillimana</i>	<i>Corycaeus clausi</i>
<i>Nannocalanus minor</i>	<i>Corycaeus flaccus</i>
<i>Oncaea conifera</i>	<i>Corycaeus subulatus</i>
<i>Scolecithrix danae</i>	<i>Corycaeus typicus</i>
<i>Undinula vulgaris</i>	<i>Farranula gracilis</i>
Euphausiids	
<i>Euphausia americana</i>	<i>Nematoscelis tenella</i>
<i>Euphausia brevis</i>	<i>Stylocheiron abbreviatum</i>
<i>Euphausia gibboides</i>	<i>Stylocheiron affine</i>
<i>Euphausia hemigibba</i>	<i>Stylocheiron elongatum</i>
<i>Euphausia mutica</i>	<i>Stylocheiron longicorne</i>

Table S27. Comparison of zooplankton abundances in day versus night collections in the surface layer (one meter deep) at an oceanic station in the northern Gulf of Mexico. All densities are expressed as the number of individuals/1,000 m³ of water sampled. (From Berkowitz 1976.)

Group	Day	Night	Ratio
Polychaetes	6	189	1:32
Amphipods	34	537	1:16
Copepods (total)	261	4,963	1:19
– Calanoids	34	4,339	1:128
– Cyclopoids	95	335	1:4
– Harpacticoids	133	290	1:2.2
Brachyuran larvae	11	544	1:50

Table S28. Seasonal abundance of neuston (number/m³) for a single transect across the continental shelf off Corpus Christi, Texas. All stations as well as day and night collections are combined. (Data from Wormuth, McEachran, and Pequegnat 1980.)

Taxonomic group	Bimonthly period					
	Jan/Feb	Mar/Apr	May/June	July/Aug	Sept/Oct	Nov/Dec
Mollusca	1.8	4.3	14.9	4.2	1.5	1.0
Copepoda	47.5	92.3	363.4	33.9	25.9	52.0
Decapod larvae	5.1	12.7	16.4	9.6	4.6	5.9
Urochordata	2.6	4.8	9.1	1.1	0.6	1.3
Fish eggs	8.1	5.9	4.3	3.2	0.4	0.5
Fish larvae	0.3	2.0	1.4	1.4	0.3	1.2
Other	20.1	30.9	108.5	36.3	21.4	61.7
Totals	85.6	152.9	518.1	89.8	54.7	97.3

Table S29. Phylogenetic listing of fish families identified in south Texas neuston samples. Most are larval and juvenile forms whose adults are demersal or pelagic. The number of species recognized is given after the common name, and for families with no number, the forms could not be identified to the species level. (Data from Finucane 1976, 1977; Finucane et al. 1977.)

Family and common name	Number of species	Family and common name	Number of species
Elopidae – tarpons	1	Haemulidae – grunts	1
Muraenidae – morays	1	Sciaenidae – drums	2
Nettastomatidae – duckbill eels	--	Mullidae – goatfishes	1
Congridae – conger eels	--	Pomacentridae – damselfishes	1
Ophichthidae – snake eels	1	Mugilidae – mullets	2
Clupeidae – herrings	5	Polynemidae – threadfins	1
Engraulidae – anchovies	3	Clinidae – clinids	--
Synodontidae – lizardfishes	2	Blenniidae – combtooth blennies	--
Antennariidae – frogfishes	2	Gobiidae – gobies	3
Bregmacerotidae – codlets	1	Microdesmidae – wormfishes	--
Gadidae – codfishes	1	Trichiuridae – cutlassfishes	1
Ophidiidae – cusk-eels	1	Scombridae – mackerels	2
Exocoetidae – flying fishes	12	Istiophoridae – billfishes	1
Belonidae – needlefishes	4	Stromateidae – butterfishes	4
Atherinidae – silversides	1	Scorpaenidae – scorpionfishes	--
Centriscidae – snipefishes	1	Triglidae – searobins	--
Syngnathidae – pipefishes	3	Bothidae – lefteye flounders	2
Serranidae – sea basses	--	Soleidae – soles	1
Rachycentridae – cobias	1	Balistidae – leatherjackets	3
Carangidae – jacks	6	Ostraciidae – boxfishes	--
Coryphaenidae – dolphins	2	Tetraodontidae – puffers	1

Lobotidae – tripletails	1	Diodontidae – porcupinefishes	2
Gerreidae – mojarras	--		

Table S30. Important genera of algae and fungi reported from soft bottoms of the Gulf of Mexico. Some of the algae may be more characteristic of hard rather than soft bottoms.

Cyanophyta – blue-green algae		
<i>Anacystis</i>	<i>Microcoleus</i>	<i>Porphyrosiphon</i>
<i>Calothrix</i>	<i>Oscillatoria</i>	<i>Schizothrix</i>
Chlorophyta – green algae		
<i>Acetabularia</i>	<i>Codium</i>	<i>Penicillus</i>
<i>Caulerpa</i>	<i>Halimeda</i>	<i>Ulva</i>
Phaeophyta – brown algae		
<i>Cladosiphon</i>	<i>Dictyota</i>	<i>Padina</i>
<i>Dictyopteris</i>	<i>Ectocarpus</i>	<i>Sargassum</i>
Rhodophyta – red algae		
<i>Chondria</i>	<i>Gracilaria</i>	<i>Laurencia</i>
<i>Corallina</i>	<i>Hypnea</i>	<i>Polysiphonia</i>
Mycophyta – fungi		
<i>Aspergillus</i>	<i>Cladosporium</i>	<i>Penicillium</i>
<i>Cephalosporium</i>	<i>Fusarium</i>	<i>Poecilomyces</i>

Table S31. Important genera of echinoderms, hemichordates, and lower chordates recorded from soft bottoms of the Gulf of Mexico.

Echinodermata		
<u>Asteroidea</u>		
<i>Asterias</i>	<i>Echinaster</i>	<i>Nymphaster</i>
<i>Astropecten</i>	<i>Luidia</i>	<i>Pteraster</i>
<u>Echinoidea</u>		
<i>Arbacia</i>	<i>Clypeaster</i>	<i>Lytechinus</i>
<i>Brissopsis</i>	<i>Diadema</i>	<i>Mellita</i>
<u>Ophiuroidea</u>		
<i>Amphioplus</i>	<i>Amphiura</i>	<i>Ophiophragmus</i>
<i>Amphipholis</i>	<i>Ophiolepis</i>	<i>Ophiostigma</i>
<u>Holothuroidea</u>		
<i>Astichopus</i>	<i>Mesothuria</i>	<i>Thyone</i>
<i>Benthodytes</i>	<i>Stichopus</i>	<i>Zygothuria</i>
<u>Crinoidea</u>		
<i>Caryometra</i>	<i>Crinometra</i>	<i>Neocomatella</i>
<i>Comactinia</i>	<i>Nemaster</i>	<i>Neocrinus</i>
Hemichordata		
<i>Balanoglossus</i>	<i>Ptychodera</i>	<i>Saccoglossus</i>
Chordata		
<u>Cephalochordata</u>		
<i>Branchiostoma</i>		
