
MARYLAND CHESAPEAKE BAY PROGRAM MICROZOOPLANKTON MONITORING SURVEY DATA DICTIONARY

Maryland Chesapeake Bay Water Quality Monitoring Program: Microzooplankton Component

- Taxonomic Data Dictionary
- Event Data Dictionary

NOTES:

- 1) THIS PROGRAM WAS TERMINATED AS OF 31 DECEMBER 2002
- 2) THIS DICTIONARY WAS REVISED ON March 11, 2009 AND SUPERSEDES ALL OTHER DICTIONARIES FOR THE MARYLAND MICROZOOPLANKTON TAXON DATA
- 3) THIS PROGRAM WAS CONDUCTED BY THE ACADEMY OF NATURAL SCIENCES (ANS) FROM AUGUST, 1984 THROUGH DECEMBER 2002. MORGAN STATE UNIVERSITY (MSU) TOOK OVER THE ANS LABORATORY IN SEPTEMBER, 2004, AND ALL REFERENCES TO THE DATA GENERATOR WERE UPDATED TO MSU IN MAY 2005.

The state of Maryland, in cooperation with the US EPA Chesapeake Bay Program, has monitored microzooplankton species abundance and composition in the Maryland Chesapeake Bay mainstem and tributaries since August 1984. The program is designed to give comprehensive spatial and temporal information on microzooplankton. Microzooplanktons in this survey refer to copepod nauplii, rotifers, and protozoans. Sampling is performed in conjunction with the Maryland phytoplankton, C14 primary production, fluorometry, mesozooplankton, and jellyfish and water quality monitoring programs.

NAMES AND DESCRIPTIONS OF ASSOCIATED DATA DICTIONARY FILES

The 2000 Users Guide Chesapeake Bay Program Biological and Living Resources Monitoring Data

PROJECT TITLE

Maryland Chesapeake Bay Water Quality Monitoring Program: Microzooplankton Component

CURRENT PRINCIPAL INVESTIGATORS

THIS PROGRAM WAS TERMINATED AS OF 31 DECEMBER 2002; THE FOLLOWING WERE THE INVESTIGATOR AND PROJECT MANAGERS AT TIME OF PROJECT TERMINATION.

>PROGRAM MANAGER: Bruce Michaels, Renee Karrh-Maryland Department of Natural Resources

>PRINCIPAL INVESTIGATORS: R. V. Lacouture and S.G. Sellner- Morgan State University Estuarine Research Center.

>TECHNICAL STAFF: Field collection, sample analysis and data file verification by Morgan State University Estuarine Research Center staff. Sample analysis (since 1984) by R. E. Jacobsen, S. G. Sellner, S. S. Hedrick, B. B. Wagoner, James H. Sniezek, Kimberly M. Burke, Ralph Matos, Jr. Data files verified by S. G. Sellner.

>PROGRAMMER/ANALYST: M. C. Marsh, A. L. Imirie - Morgan State University Estuarine Research Center.

>DATA COORDINATOR: S. G. Sellner - Morgan State University Estuarine Research Center.

>PREVIOUS PRINCIPAL INVESTIGATORS: Kevin Sellner, Chesapeake Research Consortium.

CURRENT FUNDING AGENCIES

Not Applicable

PROJECT COST

Not Applicable

CURRENT QA/QC OFFICER

Not Applicable

POINT OF CONTACT FOR INQUIRIES

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LOCATION OF STUDY

Chesapeake Bay and Tidal Tributaries in state of Maryland

DATE INTERVALS:

07/02/1984 - 09/18/2002

ABSTRACT

The overall microzooplankton monitoring program is designed to detect and monitor changes in microzooplankton abundances and species composition in relation to changing water quality conditions in the Chesapeake Bay. Microzooplankton are animal plankton between 20 and 200 micrometers in size and, in this study, include copepod nauplii, rotifers and protozoans. They are an important trophic link between phytoplankton and the higher trophic forms such as mesozooplankton and larval fish. In the present program, microzooplankton are collected with a 44-micrometer mesh net. Samples are collected in conjunction with the Maryland Chesapeake Bay phytoplankton, mesozooplankton, and jellyfish, C14 primary production, fluorometry and water quality monitoring programs. Beginning in August 1984, composite samples were collected monthly (usually excluding February) from waters above and below the pycnocline at 16 stations in conjunction with 3 other plankton elements of MSU portion of the Maryland Chesapeake Bay Water Quality Monitoring Program. Five 10-liter volumes were pumped from above-pycnocline depths; composited (50 liters total volume), and filtered through a 44 micrometer mesh net. This effort was then repeated to obtain a field replicate. Two samples were similarly collected from below-pycnocline depths. After June 1986, stations ET4.2 and EE3.1 were no longer sampled. After March 1985, the two replicate above-pycnocline samples were combined at each station yielding one above-pycnocline composite sample, which had 20 liters of water from each of five depths, for a total volume of 100 liters. Bottom replicates were also combined. Beginning July 1989, entire water column samples of 100 liters (10 liters from each of 10 depths) were collected for the tidal fresh and oligohaline stations RET2.2, TF1.7, TF1.5, ET5.1, CB1.1 and CB2.2. Between August 1984 and September 1985, 1 milliliters of 1% neosynephrine was added to each concentrated sample. The sample was allowed to set for about 30 minutes before formaldehyde was added. Following a study that showed no significant difference in contraction between microzooplankton treated or not treated with neosynephrine, the neosynephrine step was eliminated. Instead buffered formaldehyde (final concentration approximately 2.5%) was added to each sample jar prior to the addition of the sample. Numbers and species identifications were subsequently made using repeated counts on 1 milliliter aliquot in Sedgewick-Rafter cells and a compound microscope (total magnification =100X). Beginning with samples collected in April 1986, a small drop of concentrated Rose Bengal in formaldehyde was added to the Sedgewick-Rafter cell before adding the sample. The counting cell was allowed to set for 10 minutes before counting. The NODC species code was employed. Microzooplankton smaller than 44 micrometers were noted but not enumerated in counts after March 1985 since estimates would be non-quantitative. In May 1992, 1993 & 1994 microzooplankton samples for stations CB1.1, CB2.2, TF1.7, TF1.5, RET2.2, TF2.3, ET5.1 and ET5.2 were sampled twice to coincide with white perch and striped bass spawning periods. From April 1993 through June 1993 and again from April 1994 and June, 1994 and again

in 1995 additional station CB2.1, in the upper Chesapeake Bay was also sampled to coincide with the spawning periods. In April 1996, 3 more tidal fresh stations TF2.4 in the Potomac River, TF1.6 in the Patuxent River, and ET5.0 in the Choptank River were added for microzooplankton sampling in April, May, and June. Stations CB2.2, CB2.1, TF2.3, TF2.4, RET2.2, TF1.5, TF1.6, TF1.7, ET5.1, and ET5.0 were sampled twice in April and May, again to coincide with white perch and striped bass spawning periods. Main Bay stations CB1.1 and CB5.2 were no longer sampled as of March 1996. Sampling in November was discontinued in 1996. The ciliates are an important component of the microzooplankton assemblage in Chesapeake Bay. The net sampling is inappropriate for the identification and quantification this taxonomic group because of their size (often < 44µm) and their fragile nature. Therefore, from 1998 through 2000, whole water microzooplankton samples were taken at the mesohaline stations between March - September, in order to quantify the ciliates. The mesohaline stations were designated as CB3.3C, CB4.3C, CB5.2, LE1.1, LE2.2, AND ET5.2. Whole water samples were decanted from the replicate carboys that were collected from five discrete depths above the pycnocline. The whole water microzooplankton samples were preserved with acid Lugol's solution to a final concentration of 2 % and returned to the lab for enumeration. Sampling for microzooplankton at all stations ended in September 2002 due to the termination of the zooplankton portion of the monitoring program in October 2002.

STATION NAMES AND DESCRIPTIONS

CB1.1 Mouth of Susquehanna River, main Bay
 CB2.1 Southwest of Turkey Point, main Bay
 CB2.2 West of Still Pond near buoy R34, main Bay
 CB3.3C North of Chesapeake Bay Bridge, main Bay
 CB4.3C East of Dares Beach near buoy R64, main Bay
 CB5.2 East of Point No Point, main Bay
 LE1.1 Mid-channel south-southwest of Jack Bay sandpits and northeast of Sand gates, Patuxent River
 TF1.7 Mid-channel on a transect heading of approximately 115 degrees from Jacks Creek, Patuxent River
 TF1.6 Mid-channel off the wharf at Lower Marlboro, Patuxent River
 TF1.5 Mid-channel at Nottingham, Patuxent River
 TF2.3 Mid-channel off Indian Head at buoy N54, Potomac River
 TF2.4 Buoy 44 between Possum Point and Moss Point Potomac River
 RET2.2 Mid-channel off Maryland Point at buoy 19, Potomac River
 LE2.2 Off Ragged Point at buoy BW51B, Potomac River (prior to October 1988 data tape, this station was designated XBE9541)
 ET4.2 South of Eastern Neck Island at Buoy 9, Chester River
 ET5.0 Mid-channel off the mouth of Kings Creek, Choptank River
 ET5.1 At Ganey's Wharf, downstream of confluence with Tuckahoe Creek, Choptank River
 ET5.2 Near Route 50 bridge at Cambridge, Choptank River
 EE3.1 1000 yards north of buoy R16, Tangier Sound northwest of Haines Point, main Bay
 WT5.1 East of Hawkins Point at buoy 5M, Patapsco River (Baltimore Harbor)

STATION NAMES, LATITUDE (decimal degrees), LONGITUDE (decimal degrees), TOTAL DEPTH (meters), LATITUDES (degrees, minutes and decimal seconds), AND LONGITUDES (degrees, minutes and decimal seconds). These station latitudes and longitudes represent target values and not actual values. They are the values used by the Chesapeake Bay Program as a whole to coordinate data for the stations. The MSU investigators have measured more precise latitudes and longitudes, which are available on request. All station positions are provided as NAD83 coordinates.

STATION	LATITUDE	LONGITUDE	T_DEPTH	LATITUDE (DMS)	LONGITUDE (DMS)
CB1.1	39.54	-76.08	6.1	39 32' 41.407"	-77 55' 7.18"
CB2.1	39.44	-76.02	6.2	39 26' 24.412"	-77 58' 31.19"
CB2.2	39.35	-76.17	12.1	39 20' 48.395"	-77 49' 31.172"
CB3.3C	39.00	-76.36	23.7	38 59' 45.403"	-77 38' 25.154"
CB4.3C	38.56	-76.43	26.1	38 33' 23.437"	-77 33' 55.176"

STATION	LATITUDE	LONGITUDE	T_DEPTH	LATITUDE (DMS)	LONGITUDE (DMS)
CB5.2	38.14	-76.23	30.5	38 8' 12.448"	-77 46' 19.206"
EE3.1	38.20	-75.97	13.7	38 12' 0.443"	-76 1' 31.237"
ET4.2	38.99	-76.22	14.6	38 59' 30.404"	-77 47' 1.172"
ET5.0A	38.47	-75.58	11	38 27' 54.778"	-76 25' 8.59"
ET5.1	38.81	-75.91	5.3	38 48' 25.411"	-76 5' 17.229"
ET5.2	38.58	-76.06	12.3	38 34' 48.426"	-77 56' 31.217"
LE1.1	38.43	-76.60	12.0	38 25' 30.447"	-77 23' 54.15"
LE2.2	38.17	-76.58	11.0	38 10' 0.461"	-77 25' 1.153"
RET2.2	38.35	-77.20	9.5	38 21' 7.452"	-78 47' 44.077"
TF1.5	38.71	-76.70	10.3	38 42' 36.421"	-77 17' 55.125"
TF1.6	38.66	-76.68	6.2	38 39' 28.427"	-77 18' 56.13"
TF1.7	38.58	-76.68	2.3	38 34' 54.434"	-77 19' 11.134"
TF2.3	38.61	-77.17	12.7	38 36' 29.426"	-78 49' 34.073"
TF2.4	38.53	-77.27	9.0	38 31' 47.435"	-78 44' 5.068"
WT5.1	39.21	-76.52	15.7	39 12' 30.39"	-77 28' 31.134"

Station depths are based on a Fifteen-year average of Maryland Department of the Environment water quality hydrographic data collected concurrently with the plankton samples.

METHODOLOGY DESCRIBING CHAIN OF CUSTODY FOR LAB SAMPLES

Microzooplankton samples were collected by a staff member of the Academy of Natural Sciences, Benedict Estuarine Research Center biomonitoring section and are transferred to the MSU BERC microzooplankton taxonomist on return to the laboratory. Sample concentrates are archived after counts and identifications are made.

BIOLOGICAL ENUMERATION TECHNIQUES

-Chesapeake Bay Program Laboratory Method Code MI101

Samples are gently mixed and a 1-milliliter aliquot is removed with a Stempel pipette and put into a Sedgewick-Rafter cell for enumeration with a compound microscope at 100X magnification. Beginning with samples collected in April 1986, a small drop of concentrated Rose Bengal stain was added to the cell prior to addition of the sub sample. The sub sample is allowed to set for 10 minutes before counting. At least one chamber (1 milliliter) is counted for each sample and if the total count does not reach 250 organisms, subsequent 1 milliliter aliquots are enumerated until a count of 250 or more organisms is obtained or 3 milliliter are examined. If a certain organism is abundant (more than 60 per chamber), it is not counted in the subsequent 1 milliliter aliquot for a given sample. For extremely abundant taxa, less than one milliliter can be counted. Species identification is made using the NODC species code. Microzooplankton smaller than 44 micrometers are noted on the original data sheet but not enumerated since estimates would not be quantitative.

-Chesapeake Bay Program Laboratory Method Code MI103

In the lab, 5-25 ml are subsampled from the sample jar for settling. This amount depends on how much detritus and plankton are in the sample. If 25 ml are used, the bottle is shaken gently (slowly inverted 5 times) and 25 ml poured into a graduated cylinder. This is put into a 50 ml settling chamber and the graduated cylinder rinsed 3X. The sample is allowed to settle 48 h before being counted. If less than 25 ml aliquots are used, these are poured into 25 ml settling chambers which settle for 24 hr before counting.

To count, the entire chamber is examined at 200X with an inverted microscope to obtain a minimum count of 100 organisms. If 100 organisms are not counted, another subsample is settled. Any organism that is abundant in the first aliquot (more than 60) is not counted. The count program used for the net samples

(see above) is currently being adapted for use with whole water counts. The ITIS taxonomic codes will be used for the taxa that are enumerated. Biomass estimates for each taxon will be applied to the normalized densities in order to fit into various ecosystem models and the zooplankton index of biotic integrity.

#FORMULAS, CALCULATIONS, AND CONVERSIONS

The following equation is used to convert raw counts to density for both enumeration methods (# Per liter) for each taxon identified:

$$\text{DENSITY} = ((\text{RAWCNT}/\text{MLSCNT}) * \text{CONCENT}) / \text{TOTVCOMP}$$

Where

DENSITY = density of a given taxonomic group (# individuals/liter)

RAWCNT = raw count of taxonomic group per sub sample

MLSCNT = milliliters of sub sample counted

CONCENT = volume of concentrated sample

TOTVCOMP = # of liters filtered through net or total volume of Composite sample

If the sample was counted by rows, MLSCNT is determined by dividing the number of rows by 28.4.

MONITORING VARIABLE QA/QC PLAN FOR PROJECT

Random sample recounts of previously counted microzooplankton samples are undertaken in order to determine counting error. One sample /20 samples is blindly selected and recounted. The recount total cell density must fall within 10 % of the total for the original count or the sample is counted again until 2 samples' total densities are within 10 % of one another. The recount and original sample data sheets are stored in a binder in the microscope laboratory at MSU.

VARIABLE NAMES, MEASUREMENT UNITS AND DESCRIPTIONS

>PARAMETER: COUNT (Density of a Taxon as # Individuals per Liter)

-COLLECTION METHODS: Composited water samples pumped from 5 depths above the pycnocline and 5 depths below the pycnocline were filtered through a 44-micrometer mesh net and rinsed into a jar. After February 1985, the two above-pycnocline replicates were combined, as were the two below-pycnocline replicates. Beginning July 1985, waters from the above-pycnocline depths and below-pycnocline depths were pumped directly through the net and rinsed into their respective jars two times rather than first being composited. Beginning July 1989, entire water column samples from 10 depths were collected from stations RET2.2, TF1.7, TF1.5, ET5.1, CB1.1, CB2.2 and CB2.1 (when sampled).

-SAMPLE PRESERVATIVES: Between August 1984 and September 1985, 1 milliliter of neosynephrine was added to each concentrated sample. The sample was allowed to set for 30 minutes and then buffered formaldehyde was added. The neosynephrine step was eliminated after this time and buffered formaldehyde was added to each sample jar prior to the addition of the sample (final concentration of fixative was approximately 2.5%).

-SAMPLE STORAGE ENVIRONMENT: Laboratory

-TIME IN STORAGE: Indefinite

-LAB TECHNIQUES WITH REFERENCES: Standard Methods

>PARAMETER: LATITUDE (in decimal degrees), LONGITUDE (in decimal degrees)

-COLLECTION METHODS: Loran-C, NAD27 from July 1984 to June 1997; GPS NAD83 from June 1997 to October 2002.

-SAMPLE PRESERVATIVES: None

-SAMPLE STORAGE ENVIRONMENT: None

-TIME IN STORAGE: None

-LAB TECHNIQUES WITH REFERENCES: Station positions in data set are approximations of actual positions in the field. Station latitudes and longitudes are input into a Loran-C or GPS receiver and

sampling begins when boat reaches pre-programmed coordinates. Loran-C is accurate to plus or minus 1500 feet. The actual Loran or GPS coordinates for each sampling event are not currently recorded in data set.

>PARAMETER: LAYER (Layer of Water Column in which Sample was taken)

-COLLECTION METHODS: Hydrolab CTD

-SAMPLE PRESERVATIVES: None

-SAMPLE STORAGE ENVIRONMENT: None

-TIME IN STORAGE: None

-LAB TECHNIQUES WITH REFERENCES: Water column conductivity is recorded immediately before plankton sampling. P_DEPTH is set at 0.5 meters above the pycnocline and is used as the cutoff depth between upper (AP) and lower (BP) water column layers. The pycnocline is determined to be the depth at which the greatest conductivity change is observed. The minimum threshold change is 1000 umhos/cm. WC indicates the composite sample was derived from sub samples taken across the entire water column from surface to bottom without regards to P_DEPTH.

>PARAMETER: P_DEPTH (Depth 0.5 Meters Above the Pycnocline)

-COLLECTION METHODS: Hydrolab CTD

-SAMPLE PRESERVATIVES: None

-SAMPLE STORAGE ENVIRONMENT: None

-TIME IN STORAGE: None

-LAB TECHNIQUES WITH REFERENCES: Water column conductivity is recorded immediately before plankton sampling. P_DEPTH is set at 0.5 meters above the pycnocline and is used as the cutoff depth between upper (AP) and lower (BP) water column layers. The pycnocline is determined to be the depth at which the greatest conductivity change is observed. The minimum threshold change is 1000 umhos/cm. WC is the entire water column from surface to bottom without regards to P_DEPTH.

>PARAMETER: SALZONE (Salinity Zone)

-COLLECTION METHODS: Hydrolab CTD

-SAMPLE PRESERVATIVES: None

-SAMPLE STORAGE ENVIRONMENT: None

-TIME IN STORAGE: None

-LAB TECHNIQUES WITH REFERENCES: Water column salinity, temperature and depth are recorded prior to zooplankton tows. P_DEPTH is set at 0.5 meters above the pycnocline. Salinity values are averaged for above P_DEPTH and below P_DEPTH and salinity classification is determined. Salinity classes are as follows: Fresh 0 - 0.5 ppt (F), Oligohaline >0.5 - 5.0 ppt (O), Mesohaline >5.0 - 18.0 ppt (M) and Polyhaline >18.0 ppt (P).

>PARAMETER: TOTAL_DEPTH (Total Station Depth in Meters)

-COLLECTION METHODS: Hydrolab CTD

-SAMPLE PRESERVATIVES: None

-SAMPLE STORAGE ENVIRONMENT: None

-TIME IN STORAGE: None

-LAB TECHNIQUES WITH REFERENCES: Water column TOTAL_DEPTH is based on data collected concurrently with the plankton samples.

>DATA ENTRY METHOD: Computer keyboard to disk from data sheets for sampling trips prior to April 1985, and keyboard to disk for trips from April 1985 through December 1994. Starting in January 1995, computer keyboard to in-house computer network.

>DATA VERIFICATION: Visual inspection and computer verification program.

SPECIES INHOUSE CODES AND SCIENTIFIC NAMES

The in-house species codes used by the Academy of Natural Science Benedict Estuarine Research Center are modified NODC codes. Conversion of in-house species code to NODC Code and spelling are in file MDMIKYyy.TXT.

NODC CODE

DIGIT REPRESENTS

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1-2	Phylum
3-4	Class and/or Order
5-6	Family
7-8	Genus
9-10	Species
11-12	Subspecies
13	Special in-house modifier

In-house codes are same as the NODC codes with the addition of an in-house modifier in column 13. The modifier in the 13th column has different meanings depending on the taxa being considered. For larger metazoans, "1" in this column indicates that the organism is in its larval or nauplii stage. For smaller metazoans such as rotifers and for non-tintinnine ciliate protozoa, this modifier may indicate a size category within taxa. The NODC code does not distinguish between life history stages. For tintinnine ciliates (3540...), a 0, 1, 2 (or 3, 4, 5) in the 13th column indicates that it was not or could not be determined if the lorica contained a cell, that the lorica did contain a cell (full), or that the lorica did not contain a cell (empty), respectively. For an undescribed species, the code is given for as much of the higher taxa as possible, the unknown levels are given zeros and a number is assigned in the subspecies columns (11-12) (e.g. *Brachionusa* = 4506010400010; rotifer a = 45000000010). These numbers will be completed when more detailed taxonomic information is obtained.

Only the organisms greater than 44 and less than 200 micrometers in smallest dimension are included in the species list. The microzooplankton less than 44 micrometers are noted and recorded as rare, common, abundant, or dominant. The mesozooplankton are enumerated and recorded separately. Hard copies and copies on diskettes of these data as well as the species lists for these groups are available from S. G. Sellner at the Benedict Center.

SPEC_CODE	TSN	SOURCE_LBL
343800000000	0043848	SARCODINA-UNIDED SARCODINID
344201000000	0043947	DIFFLUGIIDAE
344201000000A	0043947	DIFFLUGIIDAE 20:49UM LENGTH
344201010000	0043948	DIFFLUGIA SPP.
344202010000	0043959	ARCELLA SP.
344203000000	0043965	CENTROPYXIDAE
344203010000	0043966	CENTROPYXIS SP.
344203010100	0043967	CENTROPYXIS ACULEATA
344204000000	0043968	PARAQUADRULIDAE
344204020000	0043970	QUADRULELLA SP.
344205000000	0043974	HYALOSPHEIIDAE-TESTATED AMOEBIA
344502000000	0044007	EUGLYPHA SP.
344504000000	0044023	CYPHODERIIDAE
344504010000	0044024	CYPHODERIA SP.
344800000000	0044030	FORAMINIFERIDA
351200000000	0046211	CILIOPHORA-UNIDED CILIATE
351200000000AB	0046211	UNIDED CILIATE 50:99UM L 20:49UM W
351200000000AC	0046211	UNIDED CILIATE 100:199UM L 20:49UM W
351200000000BA	0046211	UNIDED CILIATE 20:49UM L 50:99UM W
351200000000CC	0046211	UNIDED CILIATE 100:199UM L 100:199UM W
3516020000001	0046267	TRACHELOCERCIDAE-LARGE
351601010000	0046278	DIDINIUM SP.
351601010000B	0046278	DIDINIUM SP. 50:99UM LENGTH
351601020000E	0046287	MESODINIUM SP.

SPEC_CODE	TSN	SOURCE_LBL
351601020100E	0046287	MESODINIUM LIKE CILIATES
3516010202000	0046289	MESODINIUM RUBRUM
351601020200E	0046289	MESODINIUM RUBRUM
3517000000001	0046331	CYRTOPHORIDA-LARGE
3530000000001	0046459	PERITRICHIDA-LARGE
353000000000A	0046459	PERITRICH 20-49UM LENGTH
353000000000B	0046459	UNIDED PERITRICH 50:99UM LENGTH
3531000000000	0046460	SESSILINA-UNIDED SESSILINE PERITRICH
3532000000000	0046523	MOBILINA-UNIDED MOBILINE PERITRICH
3533000000000	0046524	SUCTORIA-UNIDED SUCTORIAN
3534010100000	0046527	ACINETA SP.
3534030700000	0046551	STAUROPHRYA SP.
3534040100000	0046554	EPHELOTA SP.
3537000000000	0046563	HETEROTRICHINA-UNIDED HETEROTRICH
3539000000000	0046594	OLIGOTRICHIA-UNIDED OLIGOTRICH
353900000001AA	0046594	OLIGOTRICH 20-49UM LENGTH 20-49UM WIDTH
353900000001AB	0046594	OLIGOTRICH 50-99UM LENGTH 20-49UM WIDTH
353900000001BB	0046594	OLIGOTRICH 50:99UM L 50:99UM W CUP
353900000001GA	0046594	OLIGOTRICH 20:49UM L
353900000001GG	0046594	OLIGOTRICH
3539000000020G	0046594	OLIGOTRICH
353900000002AA	0046594	OLIGOTRICH 20:49UM L 20:49UM W CONE
353900000002AB	0046594	OLIGOTRICH 50:99UM L 20:49UM W CONE

SPEC_CODE	TSN	SOURCE_LBL
3539000002BB	0046594	OLIGOTRICH 50:99UM L 50:99UM W CONE
3539000002GA	0046594	OLIGOTRICH 20:49UM L
3539000002GG	0046594	OLIGOTRICH
3539020100000	0046596	STENTOR SP.
3539030000000	0046607	STROMBIDIDAE
3539030100000	0046608	STROMBIDIUM SP.
3539030200000	0046611	TONTONIA SP.
3540000000000	0046620	TINTINNINA-UNIDED TINTINNID
354000000000B	0046620	TINTINNID 50-99UM LENGTH
354000000000G	0046620	TINTINNID < 20UM LENGTH
354000000000EB	0046620	UNIDED TINTINNID 50:99UM LENGTH EMPTY
354000000000FA	0046620	UNIDED TINTINNID 20:49UM LENGTH FULL
354000000000GB	0046620	UNIDED TINTINNID 50:99UM L
354000000000HA	0046620	UNIDED TINTINNID 20:49UM L >20UM W
354000000000HB	0046620	UNIDED TINTINNID 50:99UM L >20UM W
3540010100050	0046622	TINTINNIDIUM SP.-LARGE
3540010100051	0046622	TINTINNIDIUM SP.-LARGE-FULL
3540010100052	0046622	TINTINNIDIUM SP.-LARGE-EMPTY
354001020000B	0046625	LEPROTINTINNUS SP.
354001020000HB	0046625	LEPROTINTINNUS SP. >20UM W
3540020100000	0046627	TINTINNOPSIS SP.
3540020100001	0046627	TINTINNOPSIS SP.-FULL
3540020100002	0046627	TINTINNOPSIS SP.-EMPTY
354002010000A	0046627	UNIDED TINTINNOPSIS 20:49UM LENGTH
354002010000B	0046627	TINTINNOPSIS 50-99UM LENGTH
354002010000D	0046627	UNIDED TINTINNOPSIS 200UM+ LENGTH
354002010000G	0046627	UNIDED TINTINNOPSIS
354002010000HA	0046627	UNIDED TINTINNOPSIS 20:49UM L >20UM W
354002010000HC	0046627	UNIDED TINTINNOPSIS 100:199UM L >20UM W
3540020100050	0046627	TINTINNOPSIS SP. A
3540020100051	0046627	TINTINNOPSIS SP. A-FULL
3540020100052	0046627	TINTINNOPSIS SP. A-EMPTY
35400201000GA	0046627	UNIDED TINTINNOPSIS 20:49UM L
354002010100B	0046628	TINTINNOPSIS ACUMINATA-BEROIDEA GRP
3540020105000	0046632	TINTINNOPSIS DADAYI
3540020105001	0046632	TINTINNOPSIS DADAYI-FULL
3540020105002	0046632	TINTINNOPSIS DADAYI-EMPTY
354002010600B	0046633	TINTINNOPSIS KOFOIDI SMALL
35400201000GB	0046633	TINTINNOPSIS KOFOIDI-SMALL
354002011000E	0046637	TINTINNOPSIS RAPA-PARVA-PARVULA GRP
35400201100FE	0046637	TINTINNOPSIS RAPA-PARVA-PARVULA GRP FULL
354002011700E	0046644	TINTINNOPSIS MINUTA
35400201170GG	0046644	TINTINNOPSIS MINUTA
3540020123000	0046650	TINTINNOPSIS FIMBRIATA
3540020123001	0046650	TINTINNOPSIS FIMBRIATA-FULL
3540020123002	0046650	TINTINNOPSIS FIMBRIATA-EMPTY
3540020129000	0046656	TINTINNOPSIS RADIX

SPEC_CODE	TSN	SOURCE_LBL
3540020129001	0046656	TINTINNOPSIS RADIX-FULL
3540020129002	0046656	TINTINNOPSIS RADIX-EMPTY
354002013200E	0046659	TINTINNOPSIS TOCANTINENSIS
3540020133000	0046660	TINTINNOPSIS SUBACUTA
3540020133001	0046660	TINTINNOPSIS SUBACUTA-FULL
3540020133002	0046660	TINTINNOPSIS SUBACUTA-EMPTY
354002013300E	0046660	TINTINNOPSIS SUBACUTA-SMALL
3540020100030	0046660	TINTINNOPSIS SUBACUTA-HUGE
3540020100031	0046660	TINTINNOPSIS SUBACUTA-HUGE-FULL
3540020100032	0046660	TINTINNOPSIS SUBACUTA-HUGE-EMPTY
354002013400B	0046661	TINTINNOPSIS TURBO
3540020136000	0046663	TINTINNOPSIS MEUNIERI
3540020136001	0046663	TINTINNOPSIS MEUNIERI-FULL
3540020136002	0046663	TINTINNOPSIS MEUNIERI-EMPTY
3540020137000	0046664	TINTINNOPSIS KARAJACENSIS
3540020137001	0046664	TINTINNOPSIS KARAJACENSIS-FULL
3540020137002	0046664	TINTINNOPSIS KARAJACENSIS-EMPTY
3540020138000	0046665	TINTINNOPSIS NITIDA
3540020138001	0046665	TINTINNOPSIS NITIDA-FULL
3540020138002	0046665	TINTINNOPSIS NITIDA-EMPTY
354002020100B	0046679	CODONELLA CRATERA
3540030100010	0046682	STENOSEMELLA SP.A
3540030100011	0046682	STENOSEMELLA SP.A-FULL
3540030100012	0046682	STENOSEMELLA SP.A-EMPTY
3540050100020	0046695	METACYLIS SP. B
3540050100021	0046695	METACYLIS SP. B-FULL
3540050100022	0046695	METACYLIS SP. B-EMPTY
3540050100030	0046695	METACYLIS SP. C
3540050100031	0046695	METACYLIS SP. C-FULL
3540050100032	0046695	METACYLIS SP. C-EMPTY
3540050400000	0046703	CLIMACOCYLIS SP.
3540050400001	0046703	CLIMACOCYLIS SP.-FULL
3540050400002	0046703	CLIMACOCYLIS SP.-EMPTY
3540070100000	0046707	FAVELLA SP.
3540070100001	0046707	FAVELLA SP.-FULL
3540070100002	0046707	FAVELLA SP.-EMPTY
3540130100010	0046744	EUTINTINNUS SP.A
3540130100011	0046744	EUTINTINNUS SP.A-FULL
3540130100012	0046744	EUTINTINNUS SP.A-EMPTY
354013010100C	0046749	EUTINTINNUS PECTINIS
354013010100EC	0046749	EUTINTINNUS PECTINIS EMPTY
354013010100FC	0046749	EUTINTINNUS PECTINIS FULL
3543000000000	0046784	HYPOTRICHIDA
3545010000000	0046837	EUPLOTIDAE
3545010100001	0046838	EUPLOTES SPP.-LARGE
3545010100020	0046838	EUPLOTES SP. A
3545010100030	0046838	EUPLOTES SP. B
4400000000000	0057597	GASTROTRICHA
4500000000000	0058239	ROTIFERA-UNIDED ROTIFER
4500000000010	0058239	ROTIFERA A
4500000000020	0058239	ROTIFERA B
4500000000030	0058239	ROTIFERA C

SPEC_CODE	TSN	SOURCE_LBL
450000000040	0058239	ROTIFERA D
450000000050	0058239	ROTIFERA E
450000000060	0058239	ROTIFERA F
450400000000	0058247	BDELLOIDA-UNIDED BDELLOID ROTIFER
450402010000	0058267	ROTARIA SP.
450402010300	0058269	ROTARIA CITRINA
450402010400	0058270	ROTARIA NEPTUNIA
450402030000	0058298	MACROTRACHELA SP.
450601010000	0058348	KERATELLA SP.
4506010100010	0058348	KERATELLA SP. A
450601010200	0058352	KERATELLA QUADRATA
450601010300	0058360	KERATELLA COCHLEARIS
4506010103020	0058362	KERATELLA COCHLEARIS COCHLEARIS
4506010103030	0058363	KERATELLA COCHLEARIS HISPIDA
4506010103040	0058364	KERATELLA COCHLEARIS MICRACANTHA
4506010103050	0058365	KERATELLA COCHLEARIS ROBUSTA
4506010103060	0058366	KERATELLA COCHLEARIS TECTA
450601010400	0058370	KERATELLA CRASSA
450601010500	0058371	KERATELLA EARLINA
450601010600	0058374	KERATELLA VALGA
450601020000	0058396	NOTHOLCA SP.
450601020300	0058399	NOTHOLCA ACUMINATA
450601030000	0058419	COLURELLA SP.
450601040000	0058434	BRACHIONUS SP.
4506010400010	0058434	BRACHIONUS SP. A
4506010400020	0058434	BRACHIONUS SP. B
450601040100	0058435	BRACHIONUS PLICATILIS
450601040200	0058438	BRACHIONUS CALYCIFLORUS
450601040300	0058440	BRACHIONUS HAVANAENSIS
450601040400	0058443	BRACHIONUS PTERODINOIDES
450601040500	0058444	BRACHIONUS URCEOLARIS
450601040600	0058445	BRACHIONUS ANGULARIS
450601040700	0058452	BRACHIONUS BIDENTATA
450601040800	0058453	BRACHIONUS BUDAPESTINENSIS
450601040900	0058454	BRACHIONUS CAUDATUS
450601041000	0058457	BRACHIONUS DIVERSICORNIS
450601041100	0058458	BRACHIONUS QUADRIDENTATUS
450601041200	0058464	BRACHIONUS RUBENS
450601041300	0058466	BRACHIONUS VARIABILIS
450601050000	0058485	KELLCOTTIA SP.
450601050100	0058486	KELLCOTTIA LONGISPINA
450601050200	0058487	KELLCOTTIA BOSTONIENSIS
450601070000	0058488	LEPADELLA SP.
450601070400	0058492	LEPADELLA PATELLA
450601080000	0058525	ANURAEOPSIS SP.
450601080100	0058526	ANURAEOPSIS FISSA
450601090000	0058529	EPIPHANES SP.
450601100000	0058535	LOPHOCHARIS SP.
450601101000	0058536	LOPHOCHARIS SALPINA
450601120000	0058538	MACROCHAETUS SP.
450601130000	0058546	MYTILINA SP.
450601140000	0058559	PLATYIAS SP.

SPEC_CODE	TSN	SOURCE_LBL
4506011401000	0058560	PLATYIAS PATULUS
4506011402000	0058563	PLATYIAS QUADRICORNIS
4506011500000	0058564	TRICHOTRIA SP.
4506011501000	0058565	TRICHOTRIA TETRACTIS
4506011000000	0058578	EUCHLANIS SP.
4506011001000	0058582	EUCHLANIS DILATATA
4506020100000	0058634	LECANE SP.
4506020200000	0058747	MONOSTYLA SP.
4506020201000	0058748	MONOSTYLA BULLA
4506020202000	0058751	MONOSTYLA CLOSTEROCERCA
4506020203000	0058752	MONOSTYLA QUADRIDENTATA
4506040100000	0058784	ENCENTRUM SP.
4506040200000	0058796	PROALES SP.
4506040300000	0058819	CEPHALODELLA SP.
4506040302000	0058821	CEPHALODELLA GIBBA
4506040400000	0058885	NOTOMMATA SP.
4506040500000	0058937	MONOMMATA SP.
4506040600000	0058952	EOSPHORA SP.
4506070100000	0059074	TRICHOCERCA SP.
4506070102000	0059076	TRICHOCERCA CYLINDRICA
4506070103000	0059077	TRICHOCERCA LONGISETA
4506070104000	0059078	TRICHOCERCA MULTICRINIS
4506070105000	0059079	TRICHOCERCA SIMILIS
4506080100000	0059167	ASCOMORPHA SP.
4506080102000	0059168	ASCOMORPHA SALTANS
4506080200000	0059175	GASTROPUS SP.
4506080201000	0059176	GASTROPUS MINOR
4506080101000	0059181	ASCOMORPHA OVALIS
4506120100000	0059235	ASPLANCHNA SP.
4506120101000	0059236	ASPLANCHNA BRIGHTWELLII
4506120102000	0059238	ASPLANCHNA HERRICKII
4506120103000	0059240	ASPLANCHNA PRIODONTA
4506130200000	0059255	SYNCHAETA SP.
4506130200001	0059255	SYNCHAETA SPP. L-LARGE
4506130200002	0059255	SYNCHAETA SPP. M-MEDIUM
4506130200003	0059255	SYNCHAETA SPP. S-SMALL
45061302000020	0059256	SYNCHAETA BALTICA
4506130204000	0059259	SYNCHAETA PECTINATA
4506130206000	0059261	SYNCHAETA OBLONGA
4506130207000	0059262	SYNCHAETA STYLATA
45061302000010	0059264	SYNCHAETA BICORNIS
4506130300000	0059270	POLYARTHRA SP.
4506130302000	0059272	POLYARTHRA DISSIMULANS
4506130303000	0059273	POLYARTHRA DOLICHOPTERA
4506130304000	0059274	POLYARTHRA EURYPTERA
4506130305000	0059275	POLYARTHRA MAJOR
4506130306000	0059276	POLYARTHRA REMATA
4506130307000	0059277	POLYARTHRA VULGARIS
4506130400000	0059282	PLOESOMA SP.
4506130402000	0059283	PLOESOMA TRUNCATUM
4506130401000	0059291	PLOESOMA HUDSONI
4507010100000	0059297	TESTUDINELLA SP.

SPEC_CODE	TSN	SOURCE_LBL
4507010101000	0059298	TESTUDINELLA PATINA
4507020100000	0059350	HEXARTHRA SP.
4507020101000	0059352	HEXARTHRA MIRA
4507040100000	0059412	CONOCHILOIDES SP.
4507040102000	0059413	CONOCHILOIDES DOSSUARIUS
4507040103000	0059414	CONOCHILOIDES NATANS
4507040200000	0059417	CONOCHILUS SP.
4507040201000	0059418	CONOCHILUS HIPPOCREPIS
4507040202000	0059419	CONOCHILUS UNICORNIS
4507050100000	0059425	FILINIA SP.
4507050101000	0059426	FILINIA LONGISETA
4507050102000	0059427	FILINIA BRACHIATA
4507050103000	0059428	FILINIA TERMINALIS
4508010100000	0059434	COLLOTHECA SP.
4508010101000	0059435	COLLOTHECA MUTABILIS
4508010102000	0059436	COLLOTHECA PELAGICA
4700000000000	0059490	NEMATODA
0000000000002	0064357	UNIDED TROCHOPHORE LARVAE
5100000000001	0069459	GASTROPODA-LARVAE
5500000000001	0079119	PELECYPODA-LARVAE
5515370301000	0081339	DREISSENA POLYMORPHA
5922000000000	0082754	ACARINA-MITE
6117000000001	0085257	COPEPOD NAUPLII
6117000000005	0085257	COPEPOD NAUPLII+PERITRICHS
6118180100001	0085780	DIAPTOMUS -NAUPLII
6118190200001	0085848	PSEUDODIAPTOMUS SP.-NAUPLII

SPEC_CODE	TSN	SOURCE_LBL
6118200200001	0085862	EURYTEMORA SP.-NAUPLII
6118290100001	0086084	ACARTIA SP.-NAUPLII
6119050200001	0086131	SCOTTOLANA SP.-NAUPLII
6120080200001	0088640	CYCLOPS SP.-NAUPLII
6120080300001	0088691	MESOCYCLOPS SP.-NAUPLII
6120090100001	0088802	OITHONA SP.-NAUPLII
6120260100001	0088960	HEMICYCLOPS SP.-NAUPLII
7500000000000	0155166	TARTIGRADA
3516000000000	BAY0126	HAPTORIDA
3442010201000	BAY0139	LESQUEREUSIA GIBBOSA
3540020123003	BAY0275	TINTINNOPSIS FIMBRIATA-MEUNIERI GRP
3540020123004	BAY0275	TINTINNOPSIS FIMBRIATA-MEUNIERI GRP-FULL
3540020123005	BAY0275	TINTINNOPSIS FIMBRIATA-MEUNIERI GRP-EMPTY
3540050501000	BAY0289	STYLICAUDA PLATENSIS
3540050501001	BAY0289	STYLICAUDA PLATENSIS-FULL
3540050501002	BAY0289	STYLICAUDA PLATENSIS-EMPTY
35120000000GA	BAY0297	NON-LORICATE CILIATE 20-49UM LENGTH
35120000000GG	BAY0297	NON-LORICATE CILIATE
35120000000BB	BAY0297	NON-LORICATE CILIATE 50-99UM LENGTH 50-99UM W
35120000000AA	BAY0297	NON-LORICATE CILIATE 20-49UM LENGTH 20-49UM W
0000000000001	BAY0321	UNIDED LARVAE
35400N000010B	BAY0324	NOLACLUSILIS BICORNIS

VARIABLE NAMES AND DESCRIPTIONS FOR DATA FILES

Structure for data files on <http://www.chesapeakebay.net/>

>MICROZOOPLANKTON SPECIES ABUNDANCE AND COMPOSITON FILES

Name	Type	Width	Variable Definitions:
SOURCE	Text	10	Data Collection Agency
STATION	Text	15	Sampling Station
SAMPLE_DATE	Date/Time	8	Sampling date (YYYYMMDD)
LAYER	Text	3	Layer in Water Column Which Composite Sample was Taken
SAMPLE_NUMBER	Number	4	Sample Replicate Number
GMETHOD	Text	3	Chesapeake Bay Program Sampling Gear Code
TSN	Text	7	ITIS Taxon Serial Number
LATIN_NAME	Text	45	Species Latin Name
LIFE_STAGE	Text	50	Life stage of individual- Chesapeake Bay Program Life Stage Code
METHOD	Text	8	Parameter Method Analysis Code
PARAMETER	Text	10	Parameter
VALUE	Number	8	Parameter Value
UNITS	Text	15	Parameter Reporting Units.
NODCCODE	Text	12	NODC Species Code
SPEC_CODE	Text	14	Source Species Taxon Code
R_DATE	Date/Time	8	Version Date of Data (YYYYMMDD)

> MICROZOOPLANKTON SURVEY SAMPLING EVENT FILES

Name	Type	Width	Variable Description
DATA_TYPE	Text	2	CBP Data Type Code
SOURCE	Text	10	Data Collection agency
SAMPLE_TYPE	Text	2	Collection type
LAYER	Text	3	Layer in water column from which sample was Taken
SAMPLE_DATE	Date/Time	8	Sample date (YYYYMMDD)
LATITUDE	Number	8	Latitude in Decimal Degrees (NAD83)
LONGITUDE	Number	8	Longitude in Decimal Degrees (NAD83)
P_DEPTH	Number	4	Composite Sample Cut Off Depth (meters)
R_DATE	Date/Time	8	Data version date (YYYYMMDD)
SALZONE	Text	2	Salinity Zone
SAMPLE_VOLUME	Number	8	Total Volume of Sample
UNITS	Text	15	Units for Sample Volume
STATION	Text	15	Sampling Station
TOTAL_DEPTH	Number	4	Total Station Depth (meters)
SAMPLE_TIME	Date/Time	8	Sampling Time (HHMM)

>The following field may also appear in a downloaded data set:

Name	Type	Width	Variable Definitions
BASIN	Text	20	Chesapeake Bay Basin Designation
HUC8	Text	8	USGS Eight Digit Hydrologic Unit Code
CATALOGING_UNIT_DESCRIPTION	Text	50	USGS Cataloging Unit Code Description
FIPS	Text	5	Federal Information Processing Code
STATE	Text	3	Federal Information Processing Code State Designation
COUNTY_CITY	Text	30	Federal Information Processing Code City or County Designation
LL_DATUM	Text	5	Latitude and Longitude Geographic Datum
CBSEG_1998	Text	6	1998 Chesapeake Bay Segment Designation
CBSEG_1998_DESCRIPTION	Text	50	1998 Chesapeake Bay Segment Designation Description

#VARIABLE NAMES AND DESCRIPTIONS FOR SPECIES KEY

These tables cross references Academy of Natural Sciences species codes and spellings with current National Oceanographic Data Center taxonomic codes and ITIS TSN codes. Structure for data files on <http://www.chesapeakebay.net/>

Name	Type	Width	Variable Descriptions
SPEC_CODE	Text	14	Source In-House Species Codes
SOURCE	Text	6	Data Source Identifier
DATA_TYPE	Text	2	Data Type Identifier Code
SOURCE_LBL	Text	45	Source Species Latin Name
LBL	Text	45	National Oceanographic Data Center Species Latin Name
TSN	Text	7	ITIS Taxon Serial Number
R_DATE	Date/Time	8	Version Date of Data (YYYYMMDD)
VOLUME	Number	8	Cell Biomass Estimator
SIZE	Text	30	Taxa Size-Fraction Identifier
LIFE_STG	Text	3	Chesapeake Bay Program Life Stage Code

REFERENCE CODES IN DATA FILES AND TAXONOMIC KEY

See the 2000 User's Guide to Chesapeake Bay Program Biological and Living Resources Data for full listing.

>MISSING VALUES: Missing SAMPLING_TIME values have been replaced with 00:00.

>STATION: See section STATION NAMES AND DESCRIPTIONS

>SAMPLE_TYPE: Sample Collection Type
 C - Composite

>SOURCE: Data Collection Agency
 MSU - Morgan State University Estuarine Research Center, formerly the Academy of Natural Sciences,
 Benedict Estuarine Research Laboratory

>SPEC_CODE: In house Species codes or MSUCODE,
 See In House species names and codes listed above

>GMETHOD: Sampling Gear Code
 08 - unspecified plankton Net

> DATA_TYPE: Data Type
 BE Benthic
 FL Fluorescence
 MI Microzooplankton
 MZ Mesozooplankton
 PD Primary Production
 PH Phytoplankton
 PP Picoplankton

>LAYER: Layer of Water Column in which Sample was taken
 AP- Above Pycnocline
 BP- Below Pycnocline
 WC- Whole Water Column

>LIFE_STAGE DESCRIPTION - Chesapeake Bay Program Life Stage Code

11	NAUPLII
12	COPEPODITE
52	SPECIES A
53	SPECIES B
54	SPECIES C
58	SPECIES A-FULL
59	SPECIES A-EMPTY
60	SPECIES B-FULL
61	SPECIES B-EMPTY
62	SPECIES C-FULL
63	SPECIES C-EMPTY
82	LARGE
83	LARGE-FULL
84	LARGE-EMPTY
85	FULL
86	EMPTY
87	MEDIUM
88	SMALL
97	LARVAE
98	ADULT

99	NOT APPLICABLE
100	20:49UM LENGTH <20UM WIDTH
101	20:49UM LENGTH
102	20:49UM LENGHT 50:99UM WIDTH
103	20:49UM LENGHT 20:49UM WIDTH CUP
104	20:49UM LENGHT 20:49UM WIDTH CONE
105	20:49UM LENGHT 20:49UM WIDTH
106	20:49UM LENGTH >20UM WIDTH
107	>200UM LENGTH
108	20:49UM LENGHT <20UM WIDTH CONE
109	50:99UM LENGTH <20UM WIDTH
110	100:199UM LENGTH >20UM WIDTH
111	>20UM WIDTH
112	<20UM LENGTH
113	<20UM LENGTH <20UM WIDTH CUP
114	<20UM LENGTH <20UM WIDTH CONE
115	<20UM LENGHT <20UM WIDTH
116	<20UM LENGHT CONE
117	20:49UM LENGHT <20UM WIDTH CUP
118	50:99UM LENGTH EMPTY

119	SPECIES C 100:199UM LENGHT 100:199UM WIDTH
120	SPECIES B 50:99UM LENGHT 50:99UM WIDTH
121	SPECIES B 50:99UM LENGHT 20:49UM WIDTH
122	PARVULA GRP FULL
123	PARVULA GRP
124	20:49UM LENGTH FULL
125	BEROIDEA GRP

126	SPECIES C 100:199UM LENGHT 20:49UM WIDTH
127	50:99UM LENGTH
128	50:99UM LENGHT 50:99UM WIDTH CUP
129	50:99UM LENGHT 50:99UM WIDTH CONE
130	50:99UM LENGHT 20:49UM WIDTH CUP
131	50:99UM LENGHT 20:49UM WIDTH CONE
132	50:99UM LENGHT >20UM WIDTH

See On-Line Living Resources Data Documentation for full listing

>SALZONE: Salinity Zone

- F Fresh (0 TO 0.5 PPT)
- O Oligohaline (>0.5 TO 5.0 PPT)
- M Mesohaline (>5.0 TO 18.0 PPT)
- P Polyhaline (> 18.0 PPT)
- N No salinity data available to establish salinity zone at time of sampling.
- E Any valid salinity code followed by an E indicates an estimated salinity range based on salinity data collected within 7 days of the biological sampling event. Used only when no simultaneously collected salinity data available.

>NODCCODE and LATIN NAME: National Oceanographic Data Center Species Codes Version 8.

Note for current listing of Chesapeake Bay Program Species and their codes, see <https://archive.chesapeakebay.net/species/>. Organisms with out current NODC Codes have been assigned partial NODC codes containing alphabetic where no code has been assigned.

>BASIN: Chesapeake Bay Tributary Designation

BAY - Chesapeake Bay
 CHS - Chester River
 PAX - Patuxent River
 BAL - Baltimore Harbor
 CHP - Choptank River
 POT - Potomac River
 TAN - Tangier River

>TSN: Interagency Taxonomic Identification System, Taxon Serial Numbers Note for current listing of Chesapeake Bay Program Species and their codes, see <https://archive.chesapeakebay.net/species/>. Organisms without current serial numbers have ALL been assigned TSN of BAYXXXX.

>CBSEG_2003: Chesapeake Bay Program Monitoring Segment

CB1TF	CHESAPEAKE BAY-TIDAL FRESH REGION	PATMH	PATAPSCO RIVER-MESOHALINE REGION
CB2OH	CHESAPEAKE BAY-OLIGOHALINE REGION	PAXMH	PATUXENT RIVER-MESOHALINE REGION
CB3MH	CHESAPEAKE BAY-MESOHALINE REGION	PAXOH	PATUXENT RIVER-OLIGOHALINE REGION
CB4MH	CHESAPEAKE BAY-MESOHALINE REGION	PAXTF	PATUXENT RIVER-TIDAL FRESH REGION
CB5MH	CHESAPEAKE BAY-MESOHALINE REGION	POTMH	POTOMAC RIVER-MESOHALINE REGION
CHOMH2	CHOPTANK RIVER-MESOHALINE REGION 2	POTOH	POTOMAC RIVER-OLIGOHALINE REGION
CHOOH	CHOPTANK RIVER-OLIGOHALINE REGION	POTTF	POTOMAC RIVER-TIDAL FRESH REGION
CHSMH	CHESTER RIVER-MESOHALINE REGION	TANMH	TANGIER SOUND-MESOHALINE REGION

>FIPS: Federal Information Processing Codes

FIPS	STATE	COUNTY
24003	MD	ANNE ARUNDEL
24005	MD	BALTIMORE
24015	MD	CECIL
24017	MD	CHARLES
24019	MD	DORCHESTER
24025	MD	HARFORD
24029	MD	KENT
24033	MD	PRINCE GEORGES
24037	MD	SAINT MARYS
24039	MD	SOMERSET

>HUC8: USGS Hydrologic Unit Codes

HUC8	CATALOGING_UNIT_DESCRIPTION
02050306	LOWER SUSQUEHANNA
02060001	UPPER CHESAPEAKE BAY
02060002	CHESTER-SASSAFRAS
02060003	GUNPOWDER-PATAPSCO
02060005	CHOPTANK
02060006	PATUXENT
02060007	BLACKWATER-WICOMICO
02070011	LOWER POTOMAC

>METHOD: Chesapeake Bay Program Lab Method Code Designation

MI101
MI103

>PARAMETER and UNIT: Measured Parameter and reporting units.

PARAMETER	UNITS
COUNT	NUMBER/LITER

NUMERIC VARIABLE NAMES - WARNING AND ERROR BOUNDS

Variable	Valid Ranges
SAMPLING_DATE	19840801- 20021001
VALUE	0.05-10000.00
MAXDEPTH	0.5 - 32.0
R_DATE	19950301 - 20041231
REP_NUM	1,2,3,4,5,6,7
SAMVOL_L	12 - 200
LATITUDE	See section STATION NAMES AND DESCRIPTIONS
LONGITUDE	See section STATION NAMES AND DESCRIPTIONS
P_DEPTH	>0.5 - <TDEPTH NOTE: Composite sample cut off depth is not pycnocline depth!
R_DATE	19950301-20021230
T_DEPTH	0.5 - 32.0
SAMPLE_TIME	06:00-21:00 missing times denoted by 00:00

IMPORTANT DATA REVISIONS

THE LIVING RESOURCES DATA MANAGER RECOMMENDS THAT ALL DATA ANALYSIS BE PERFORMED WITH THE MOST RECENT DATA SETS AVAILABLE. HOWEVER IF YOU HAVE BEEN WORKING WITH OLDER DATA SETS THE FOLLOWING ARE IMPORTANT CHANGES TO BE AWARE OF.

The following stations had their names changed to the standard Chesapeake Bay Program Station Names. Previous station names were as follows:

LRNAME	CBP NAME
XDE5339	LE1.1
XED4892	TF1.7
PXT0402	TF1.5
XEA6596	TF2.3
XDA1177	RET2.2
MLE2.2	LE2.2
MET4.2	ET4.2
MET5.1	ET5.1
MET5.2	ET5.2
MEE3.1	EE3.1
MWT5.1	WT5.1

5/31/95 - CRUISE NUMBERS BAY004 - BAY211 were supplied by the Chesapeake Bay Program Office and modified by Amy Imirie and Elgin Perry to reflect true start and end dates with corresponding MSU trip numbers. This prevents the occurrence of two sampling events for one station during a Bay Cruise period.

5/31/95 - GMETHOD was changed to 8. Code 8 refers to unspecified plankton net. For an extensive gear code please consult The 2000 Users Guide Chesapeake Bay Program Biological and Living Resources Monitoring Data. This is a change from the GMETHOD code in previous versions of the data set. This does not represent a change in actual sampling gear.

5/31/95 - REP_NUM 5,6,7 WERE PREVIOUSLY REPORTED AS T, B, and W. The change in REP_NUM designation was necessary because REP_NUM is a numeric field.

5 - combined 1 & 3 (above pycnocline)

6 - combined 2 & 4 (below pycnocline)

7 - whole water column

5/31/93 - Spelling of species Latin Names in LBL have been corrected to the National Oceanographic Data Center or IT IS accepted spelling. In a few cases MSU Species Latin Names were changed to the currently accepted NODC Species Latin name.

4/15/92 - The name of species MSUCODE = 4506130200010 has been changed from "Synchaeta sp. A - long horns" to "Synchaeta bicornis" and the name of species MSUCODE = 4506130200020 has been changed from "Synchaeta sp. B - porker" to "Synchaeta baltica."

7/13/1998- The net sample for station LE1.1 was lost, only whole water counts are available for this station and date.

SUMMER 1997 - ICPRB Staff calculated Salinity zones from water quality data provided by the Maryland Department of the Environment. Values were derived from Water Quality Hydrographic data collected concurrently with the plankton when ever possible. If data was not available for the of sampling but was collected within a one week window of sampling date, the water quality data was used to determine a salinity zone. However the salinity zone is marked with an E to denote being estimated

WINTER 2002- This monitoring program was terminated. The data record ends in October of 2002.

Winter 2002- For extensive details in regards to quality assurance issues and data comparability issues between Maryland and Virginia Programs please see the CBP Phytoplankton Split sample portion of the Chesapeake Bay Quality Assurance Program at:

<http://www.chesapeakebay.net/qualityassurance.htm>

09/01/2004- This program was conducted by the Academy of Natural Sciences (ANS) from August 1984 through August 2004. Morgan State University (MSU) took over the MSU laboratory in September, 2004, but the program and personnel remained the same. All data previously codes with the data source as ANS was updated to MSU.

KEY WORDS (EXCLUDING VARIABLE NAMES)

Microzooplankton taxonomic
Microzooplankton monitoring
Microzooplankton species
Microzooplankton densities

**THIS IS THE END OF THE MARYLAND CHESAPEAKE BAY PROGRAM
MICROZOOPLANKTON
MONITORING DATA DICTIONARY**
