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CHARACTERISTICS OF  
BIOLOGICAL DATA SETS FROM THE  
POTOMAC RIVER ESTUARY

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Report 91-5

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## INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

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## CHARACTERISTICS OF BIOLOGICAL DATA SETS FROM THE POTOMAC RIVER ESTUARY

### Background

The Potomac River Living Resources Plan was drafted in 1988 - 1989 in order to coordinate existing programs of county, state, federal, and other agencies into an integrated living resources monitoring program for the tidal Potomac River, and to propose additional programs where needed. Fifteen recommendations were made in the plan. Some were initiated at once in 1989; others required action on the part of the Chesapeake Bay Program or state and federal agencies before they could be implemented. The plan identified several tasks for the Interstate Commission on the Potomac River Basin (ICPRB). Furthermore, ICPRB agreed to track progress towards implementation of the fifteen recommendations by other agencies. ICPRB has been primarily involved in implementing recommendations 12 through 15.

This document, "Characteristics of Biological Data Sets from the Potomac River Estuary", represents part of ICPRB's efforts to implement Recommendation 14 of the plan. Recommendation 14 reads as follows:

"Plans should be made now for analyzing and interpreting the Potomac River living resources monitoring data in order that thoughtful, effective management policies can be formulated soon and predictive models of the system can be updated. ICPRB should continue the task of designing and performing basic, or first-step, status and trend analyses for merged data sets of Potomac living resources. Increasing the availability of these analyses will hopefully stimulate analyses of "relationships between water quality, habitat quality and the abundance, distribution and integrity of living resources populations" (objective III of the Chesapeake Bay Living Resources Monitoring Plan)."

The recommendation pointed to the need for constructing comprehensive databases that integrate data from multiple data sets, both historical and contemporary, in order to perform meaningful status and trend analyses on various living resources of interest ("targeted" species). A critical prerequisite to developing these biological databases was assembling a complete bibliography and hard copy collection of past and present biological data from the tidal Potomac River. Many of the data sets are poorly circulated, not readily available, or still in the form of raw data. This past year, ICPRB compiled a bibliography of data sheets, reports, summaries and discussion of biological data for the Potomac River (ICPRB report 91-4), and acquired as many hard copies of the data as was possible. Missing are some difficult-to-obtain data sets and reports.

## Characterizing the Biological Data Sets

As a second step in setting up comprehensive, integrated databases on living resources of interest, ICPRB assembled a list of historical and contemporary biological data sets. Details of the sampling methods, location, dates, data analyses, and data storage were derived from data reports and summaries identified in the bibliography and obtained/viewed by ICPRB. This characterization of the data sets represents a first attempt by ICPRB to summarize information about historical and ongoing studies of Potomac River biota in order to determine 1) their compatibility for purposes of merging them into an integrated database, and 2) their value as a complementary or contrasting study if they cannot be included in the integrated database. The objective of developing an integrated database is to create the best possible databases for evaluating trends and correlations with water quality.

The characteristics of each data set were entered into a DBASE relational database which was then printed (Appendix) and downloaded to an ASCII file (attached diskette). The following information is included in the hardcopy and diskette copy of the database:

CAT	category codes
AGENCY_SPN	codes for name(s) of data collector and sponsor
START	year in which data collecting started
END	year in which data collecting ended
FREQ	codes for frequency of data collecting
METH	codes for method of sample collection
SEGMENTS	Chesapeake Bay Program basin segment codes
VARIABLES	codes for types of data analyses done
DETAILS	more complete information on the sampling methods and analytical techniques employed
TITLE	project title
REFERENCES	references (data reports, summaries and interpretive analyses)

The following information is on the diskette copy only:

C	data is computerized? (T/F)
DATA_FORM	information about where and how the data is stored

There are gaps in the matrix due to the difficulty we have experienced in obtaining or viewing many of the data sets. This was not unexpected and we intend to update the matrix as missing information becomes available. We have the least information on if, where and how data sets are computerized. Several sources have been helpful in identifying computerized historical (e.g. Mason, W. T., C. T. Cushwa, and L. J. Slaski, 1979 [A review of selected computerized biological files for inventory and assessment of aquatic life communities in the Potomac Region]) and recent

(Jacobs, D. et al., 1987 [Chesapeake Bay Environmental Data Directory]) data sets. However, much of this information will need to be obtained and confirmed independently.

#### Comparability of the Data Sets

Despite its incompleteness, this matrix can be used to begin evaluating 1) the feasibility of merging different data sets into an integrated database for a particular target species, and 2) the value of data sets as complementary or contrasting studies if they cannot be included in the integrated database. For example, scanning the method column (METH) in a particular category (CAT) will quickly identify studies using the same sampling methods. Further examination of the DETAILS column then yields more information about sampling depths, equipment, procedure, etc. Data for a particular target species are frequently not comparable if they are collected with different methods. Scanning the variables column (VARIABLES) will identify what information was derived from the samples. Scanning the START and END columns will indicate if the data were collected in same or separate years.

Once data sets with comparable data have been identified, ICPRB will determine which of those that have been computerized can be uploaded into DBASE IV databases. This typically will involve converting the data to ASCII format and then entering that into DBASE IV. Uncomputerized data sets that are critically important and directly comparable will be manually entered into the DBASE IV databases using the Data Entry Program for Biological Data developed for Potomac River biota by ICPRB (see below). Data sets that are not directly comparable (due to nonstandard methods, etc.) other data sets will be given low priority for addition to the computer database. The merged data will be used to determine status and trends of several species of interest identified in the Potomac River Living Resources Monitoring Plan (Living Resources Subcommittee, May 1989), and to identify possible relationships of these species' populations with water and habitat quality in the Potomac estuary.

#### Development of Computer Programs Needed to Upload Data Sets to the Bay Program Database

The Interstate Commission on the Potomac River Basin recently completed development of a Data Entry Program for Biological Data designed for the biota of the Potomac River Estuary. The Program is capable of outputting data in file formats compatible with the SAS format used by the Chesapeake Bay Computer Center. ICPRB will be uploading to the Computer Center the historical biological data sets it enters into databases with the Data Entry Program. The program is available to area agencies, organizations, and researchers to use in computerizing data and converting to formats acceptable by the Computer Center.

## APPENDIX

## EXPLANATION OF CODES

### CAT (category code):

B	benthos
C	crabs
F	finfish
I	ichthyoplankton
O	oysters
P	phytoplankton
S	submerged aquatic vegetation
Z	zooplankton

### AGENCY\_SPN (data collector, sponsor):

AÑSP	Academy of Natural Sciences of Philadelphia
ACOE	Army Corps of Engineers
CBL	Chesapeake Bay Laboratory
CES	Coastal Environmental Services, Inc.
CONS.DEPT.MD.	Conservation Department of Maryland
DCECD	District of Columbia Environmental Control Division
DNR	Maryland Department of Natural Resources
DNR,PPSP	Maryland DNR Power Plant Siting Program
EA	Ecological Analysts, Inc.
EPA	Environmental Protection Agency
FWPCA,CFS	Federal Water Pollution Control Agency, Chesapeake Field Station
FAIRFAX	Fairfax County
GMU	George Mason University
ICPRB	Interstate Commission on the Potomac River Basin
INDEPENDENT	(university researcher, etc.)
JHU	Johns Hopkins University
MDE	Maryland Department of the Environment
MD RES. & ED.	Maryland Department of Research and Education
MM	Martin Marietta Corp.
MWCOG	Metropolitan Washington Council of Governments
NUS	NUS, Corp.
PRFC	Potomac River Fisheries Commission
PEPCO	Potomac Electric and Power Company
RES.RES.	Resources Research, Inc.
STEUART	Steuart Petroleum Company
US F&WS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VDCHR	Virginia Department of Conservation and Historical Resources
VEPCO	Virginia Electric and Power Company
VERSAR	Versar, Inc.
VIMS	Virginia Institute of Marine Science
VPI&SU	Virginia Polytechnic Institute and State University
VWCB	Virginia Water Control Board
WSSC	Washington Suburban Sanitary Commission

FREQ (frequency of data collection):

R regularly  
I intermittently  
O occasionally or once

METH (methods used to collect samples):

11 vertical tow with plankton net  
12 composite of discrete samples from the vertical  
13 grab  
14 pump, integrated from the vertical  
15 pump, composite of discrete samples from the  
vertical  
16 pump, grab  
17 pump, integrated from the horizontal  
21 horizontal tow with plankton net  
22 oblique tow with plankton net  
23 drift net  
31 bottom grab sample  
32 artificial plate, substrate, shell  
33 dredge  
34 kick net  
35 tongs  
41 aerial survey  
42 ground survey grid, visual identification  
43 visual identification with no grid  
51 shore seine  
52 bottom trawls (several varieties)  
53 midwater trawls (several varieties)  
54 gill net  
55 pop net  
56 crab pot  
57 hoop net  
61 hook and line  
62 electrofishing  
63 capture and recapture  
MM multiple methods  
L literature search

SEGMENTS (Chesapeake Bay Program basin segment codes):

TRIB tributary  
TF-2 tidal fresh, Potomac River  
RET-2 transition zone, Potomac River  
LE-2 lower estuary, Potomac River

VARIABLES (types of data analyses done):

1 species identification  
2 density, abundance  
3 biomass  
4 indices  
5 map locations (SAV only)  
6 length  
7 wet weight  
8 counts (relative)  
9 condition  
10 CPUE



POTOMAC RIVER LIVING RESOURCES DATA SETS

March 1991

CAT	AGENCY_SEN	START	END	FREQ	METH	DETAILS	SEGMENTS	VARIABLES	TITLE	REFERENCES
B	INDEPENDENT	61	61	I	31	189 SAMPLES COLLECTED IN JAN., AUG., AND SEPT. 1981; HYDRAULIC DREDGE	LE-2	1,2	BENTHIC SURVEY FOR POPULATIONS OF SOFT-SHELLED CLAMS, MYA ARENARIA, IN THE LOWER POTOMAC RIVER, MARYLAND.	PFTZEMMEYER, H.T. AND K.G. DROBECK, 1963. CHES. SCI 4(2):67-74.
B	ANSP/PEPCO	66	73	I	PM	5 STATIONS ABOVE AND BELOW MORGANTOWN SES; VARIOUS METHODS	RET-2,LE-2		POTOMAC RIVER SURVEYS (MORGANTOWN)	ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA (ANSP) REPORTS TO PEPCO 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973
B	MM,CBL/DNR,PPSP	72	73	R		NEARFIELD STUDIES OF BENTHIC MACROINVERTEBRATES	LE-2,RET-2		MORGANTOWN STEAM ELECTRIC STATION STUDIES - NEARFIELD STUDIES AND ENTRAINMENT STUDIES	(MARTIN MARIETTA, INC. AND CHESAPEAKE BIOLOGICAL LABORATORY REPORTS TO DNR,PEPSP)
B	NUS/PEPCO	72	74	R			RET-2,LE-2	1,2	AN ECOLOGICAL SURVEY OF THE POTOMAC RIVER AT DOUGLAS POINT	NUS CORP. 1973.
B	EA,JHU/DNR,PPSP	73	74	R		MORTHELY, 11-15 TRANSECTS FROM MARYLAND PT. TO INDIAN HEAD	RET-2,LE-2	1,2	DOUGLAS POINT SITE EVALUATION STUDIES	ECOLOGICAL ANALYSTS. 1974. JOHNS HOPKINS UNIVERSITY. 1974.
B	MDE	74	86	R		MONTHLY		1,6,7,8,9	BIOMONITORING DATA FROM THE MARYLAND PORTION OF THE CHESAPEAKE BAY AND ITS TRIBUTARIES	(LARRY CLAFLIN, MDE)
B	MDE	74	80	R		ANNUALLY		1,4,6,7,8,	TISSUE AND COMMUNITY STRUCTURE DATA ON CHESAPEAKE BAY BIOTA	(DEIDRE MURPHY, MDE)
B	VEPCO	75	83	I	31	ECKMAN DREDGE, 4/STATION; #30 SIEVE	TRIB	1	THE BENTHOS OF QUANTICO CREEK AND AQUIA CREEK, VIRGINIA	VEPCO. UNPUBLISHED DATA
B	VIMS/STEUART	75	75	0	31	TRIPPLICATE BOTTOM SAMPLES AT 15 STATIONS, FEB, 75	LE-2	1,2	LOWER POTOMAC RIVER (PINEY POINT, MD) STUDY	VIRNSTEIN, R. W. AND D. R. BOESCH. 1975. (REPORT TO STEUART PETROLEUM CO.)
B	EA/MSSC	76	78	I		APRIL, AUGUST; ANNUALLY	TRIB,TF-2		BASELINE INVENTORY OF WETLANDS IN PISCATAWAY CREEK AND THE ADJACENT POTOMAC RIVER; VOL. I, FINAL REPORT; VOL. II, SUMMARY; VOL. III, APPENDICES.	ECOLOGICAL ANALYSTS. 1978.
B	DOECD	77	PR	I	31	YEARLY OR EVERY OTHER YEAR AT APPROX. 30 STATIONS; INVERTEBRATE BOX SAMPLER OR ECKMAN DREDGE; 2 SAMPLES PER SITE SERVED IN FIELD	TRIB,TF-2	1,2,4	DISTRICT OF COLUMBIA AQUATIC MACROINVERTEBRATE MONITORING STATION	EDMONDSON, S. 1988.
B	EA/VEPCO	77	78	R	31	PONAR, TRIPPLICATES; DEC. 77, FEB, APRIL, JULY 78; 0.5MM SIEVE	TRIB, RET-2	1,2,9	POSSUM POINT STEAM ELECTRIC STATION STUDIES	ECOLOGICAL ANALYSTS. 1979.
B	USGS	77	79	R	31	3-10 SAMPLES FROM EACH OF 7 TRANSECTS; SOFT/SANDY BOTTOM SITES ONLY; 1/2 MM MESH; 3X/YR	TF-2,RET-2,LE-2	1,2,4,7	U.S.G.S. POTOMAC ESTUARY STUDIES: BENTHIC COMPONENT	DRESSLER, P. V. AND R. L. CORY. 1980. ESTUARIES 3(2):150-151. CALLENDER, E. ET AL. 1984
B	VHCB	78	PR	R	31	SAMPLING IS DONE TWICE YEARLY, 30 - 60 MINUTE (?) QUALITATIVE KICK NET METHOD; 8 POTOMAC BASIN SITES;	TRIB	1,2,5	VIRGINIA FIXED STATION BIOMONITORING NETWORK (indicator organism survey to monitor water quality and permit limit accuracy)	
B	MDE	80	PR	R	31	SAMPLES COLLECTED JUNE TO AUGUST AT LEAST EVERY OTHER YEAR AT 100 STATIONS (CORE SAMPLES COLLECTED YEARLY); SURBER SAMPLER	TRIB,TF-2	1,2,4	MARYLAND NON-TIDAL BENTHIC MACROINVERTEBRATE MONITORING PROGRAM	(WALTER BUTLER, JIM ALLISON; MDE)
B	MDE	80	PR	R	32	SAMPLES COLLECTED AT LEAST EVERY OTHER YEAR AT 100 STATIONS IN MARYLAND (YEARLY AT CORE STATIONS); MULIPLATE SAMPLING	TRIB,TF-2	1,4	MARYLAND NON-TIDAL BENTHIC MACROINVERTEBRATE MONITORING PROGRAM	(WALTER BUTLER, JIM ALLISON; MDE)

CAT	AGENCY_SPN	START	END	FREQ	METH	DETAILS	SEGMENTS	VARIABLES	TITLE	REFERENCES
B	MM,VERSAR/DNR	80	85	R	31	DEVICES PLACED IN FIELD 6 WEEKS BEFORE ANCHOR DREDGE WITH 1 MM SCREEN; 12-21 STATIONS; FEB., MAY, AUG., NOV.	RET-2, LB-2	1, 2, 3, 5	LONG-TERM BENTHIC MONITORING PROGRAMS NEAR THE MORGANTOWN AND CALVERT CLIFFS POWER PLANTS MARYLAND CHESAPEAKE BAY WATER QUALITY MONITORING PROGRAM: BENTHIC ORGANISM COMPONENT	HOLLAND, A. F. ET AL. 1981, 1983, 1985. (FIRST, SECOND, THIRD AND FOURTH ANNUAL REPORTS) HOLLAND, A. F. ET AL. 1987. ESTUARIES HOLLAND, A. F. ET AL. 1981. (INTERIM REPORT FOR DNR) HOLLAND, A. F. ET AL. 1985. (FINAL REPORT FOR DNR) HOLLAND, A. F. ET AL. 1988. (INTERIM REPORT FOR DNR) MARTIN MARIETTA, INC. 1984. (DATA REPORT)
B	VERSAR/DNR, MDE	80	PR	R	31	FIVE SAMPLES WITH PONAR, HAND BOX CORER OR HYDRAULICALLY CLOSING VAN VEEN TYPE GRAB (DEPENDING ON SEDIMENT TYPE); FILTERED THROUGH .5 MM MESH SIEVE; 3 SAMPLES = ID AND COUNTED, 2 = ARCHIVED; BIOMASS OF THE 20 NUMERICALLY DOMINANT SPP. DETERMINED. LENGTH FREQUENCIES OF DOMINANT CLAMS DETERMINED	TRIB, TP-2, RET-2, LB-2	1, 2, 3		
B	EA, VERSAR/DNR	83	PR	R	31	13 SAMPLES SAMPLED MONTHLY FROM MAY THROUGH DECEMBER; DOME SAMPLER ON COBBLE SUBSTRATE; TRIPPLICATES, TWO ARE ANALYZED, ONE IS ARCHIVED; DOUBLE SIEVED (1MM AND .25MM)	TRIB	1, 2	FRESHWATER POTOMAC RIVER LONG-TERM BENTHIC MONITORING STATIONS	
B	IND/DNR, PEPSP	83	83	0	31	ARTIFICIAL SUBSTRATES, 4 STATIONS. ZEKIAH SWAMP	TRIB	4, 8	BIOLOGICAL IMPACT OF METALS FROM FAULKNER ASH SITE IN THE VICINITY OF MORGANTOWN, MD	KLOSE, P. N. AND G. T. POTERA. 1984.
B	GMU/FAIRFAX	84	PE	R	31	23 X 23 CM PONAR SAMPLER, .5 MM MESH SCREEN	TRIB, TP-2	1, 2	GUNSTON COVE ECOSYSTEM MONITORING PROGRAM	JONES, R. C. ET AL. 1986, 1987, 1988, 1989
B	INDEPENDENT	84	84		31		TRIB, TP-2		1984 SUMMER SURVEY OF HOLLUSS POPULATIONS OF THE ANACOSTIA AND POTOMAC RIVER NEAR WASHINGTON, D. C.	KELSO, D. P. ET AL. 1985 PHELPS, H. L. 1985. PREPARED FOR DC DEPT. ENVIRONMENTAL SERVICES.
B	USGS	84	87	R	31		LE-2	1, 2, 4, 7	POTOMAC ESTUARY DISSOLVED OXYGEN STUDY	(PAUL DRESLER, USGS)
B	INDEPENDENT	85	85		31		TP-2, TRIB		DISTRIBUTION AND ABUNDANCE OF HOLLUSS POPULATIONS OF THE POTOMAC AND ANACOSTIA RIVERS NEAR WASHINGTON, D.C.	PHELPS, H. L. 1985. FINAL TECHNICAL REPORT TO THE DCECD.
B	VPI&SU/WDCHR	85	PR	R	32	NO DETAILS AVAILABLE, STANDARDIZED SUBSTRATES WERE USED	TRIB	1, 2	OWL RUN WATERSHED MONITORING PROGRAM	PHELPS, H. L. 1986. PREPARED BY UNIV. D.C. FOR MWCOG. (SAIED MOSTAGHIMI, VPI&SU)
B	INDEPENDENT	86	86	I	31	SITES 100YARDS APART ALONG FOUR TRANSECTS; 4 SAMPLES PER SITE WITH A 6" ECKMAN DREDGE; GRABS FILTERED THROUGH A 4MM MESH AND COMBINED FOR EACH SITE. FROZEN. TOTAL WET WEIGHT CALCULATED FROM LENGTH/WEIGHT RELATIONSHIPS.	TP-2	1, 2, 3, 6	_CORBICULA FLUMINEA_ OF THE TIDAL FRESHWATER POTOMAC RIVER IN MARYLAND AND THE DISTRICT OF COLUMBIA.	PHELPS, H. L. 1990. HYDROBIOLOGIA (IN REVIEW) PHELPS, H. L. 1987. FINAL TECHNICAL REPORT TO THE MWCOG.
C	VIMS	56	88	R	52	BOTTOM TRAWLS	TRIB, TP-2, RET-2, LB-2	6, 8, 9	JUVENILE BLUE CRAB SURVEY DATABASE FOR MARYLAND AND VIRGINIA	(J. COLVOCORESSES, VIMS)
C	ANSP/PEPCO	66	74	R	56	MONTHLY SURVEY OF CRABS; 3 STATIONS	RET-2, LB-2	6, 8, 9	BLUE CRAB STUDIES ON THE POTOMAC RIVER AT MORGANTOWN, MD	ABBE, G. R. 1968, 1969, 1970, 1971, 1972, 1973
C	INDEPENDENT	69	71	R	53	15 TRANSECTS WITH 3 SAMPLING STATIONS EACH FROM HAINS POINT TO POINT LOOKOUT, MONTHLY TRAWLS	TP-2, RET-2, LB-2	1, 5, 6, 8, 9	U. MARYLAND BLUE CRAB STUDY (R. L. LIPPSON)	
C	EA, JHU/DNR, PEPSP	73	74	R	52	COLLECTED WITH FIVEFISH WITH COBB AND OTTER TRAWLS	RET-2	6, 8, 9	DOUGLAS POINT SITE EVALUATION STUDIES	ECOLOGICAL ANALYSTS. 1974. PPSF4-2
C	MDE	74	85	R		ANNUALLY AT SEVERAL LOCATIONS IN THE POTOMAC RIVER		1, 4, 6, 7, 8,	TISSUE AND COMMUNITY STRUCTURE DATA ON CHESAPEAKE BAY BIOTA	(DEIDRE MURPHY, MDE)
C	DNR	75	86	R	52	16 FT. HEADROPE BOTTOM TRAWLS ARE DRAGGED AT FOUR KNOTS FOR SIX MIN.; 21 SAMPLING SITES IN THE POTOMAC RIVER, MAY	RET-2, LB-2	6, 8, 10	MARYLAND BLUE CRAB MONITORING PROGRAM	(JAMES CASEY, DNR; BRIAN ROTCHLILD, U. MARYLAND)

<u>CAI</u>	<u>AGENCY</u>	<u>SPN</u>	<u>START</u>	<u>END</u>	<u>FREQ</u>	<u>METH</u>	<u>DETAILS</u>	<u>SEGMENTS</u>	<u>VARIABLES</u>	<u>TITLE</u>	<u>REFERENCES</u>
							- OCTOBER; ALL SPECIES RECORDED; CRABS MEASURED.				
C	DNR		88	PR	I	52	BOTTOM TRAWLS AT AT LEAST 3 STATIONS	TRIB	6, 8, 9	MARYLAND SMALL TRIBUTARY MONITORING PROJECT - MATTAWOMAN CREEK (AKA ACID RAIN/LIMING DOSER PROJECT)	(M. BOWMAN, JAMES UPHOFF, JR.: DNR)
C	DNR, UM		89	91	R	33	WINTER DREDGING FOR MALES AND JUVENILES	LP-2	8, ?	MARYLAND BLUE CRAB MONITORING PROGRAM (NOW IS A COOPERATIVE STUDY WITH U. MARYLAND)	(J. CASEY: DNR; BRIAN ROTHCHILD: U. MARYLAND)
C	DNR		90	PR	I	56	CRABS/POT/DAY; CITIZEN'S MONITORING GROUP	TRIB	6, 8, 9	MARYLAND SMALL TRIBUTARY MONITORING PROJECT - MATTAWOMAN CREEK (AKA ACID RAIN/LIMING DOSER PROJECT)	(M. BOWMAN, J. UPHOFF, JR.: DNR)
F	INDEPENDENT		0	?	I	MM	ELECTROFISHING AND POPNETS WERE USED IN MAY, AUGUST AND NOVEMBER.	TF-2	1, 2	DISTRIBUTION AND ABUNDANCE OF FISHES IN AQUATIC VEGETATION.	K. J. KILLGORE, R. P. MORGAN AND L. M. HURLEY. 1989. K. J. KILLGORE, R. P. MORGAN AND N. B. RYBICKI. 1989.
F	INDEPENDENT		12	12	I	MM	NETTING AND HOOK-AND-LINE WERE APPARENTLY USED. THERE IS NO METHODS AND MATERIALS SECTION.	TF-2	1	SEASONAL AND TEMPORAL DISTRIBUTION AND ABUNDANCE OF FISHES ASSOCIATED WITH SUBMERSED AQUATIC PLANTS.	W. L. MCATEE AND A. C. WOOD. 1915.
F	INDEPENDENT		48	49	I	51	25 X 15 (?) FT., 1/4" MESH SEINES; 25 STATIONS VISITED AT LEAST 3 TIMES.	TRIB	1	FISHES OF THE TRIBUTARIES OF THE ANACOSTIA RIVER, MARYLAND.	HOWDEN, H. F. AND R. MANSUETTI. 1951. HOWDEN, H. F. 1948. MASTERS THESIS. U. MARYLAND. R. MANSUETTI. 1955.
F	MD RES & ED		55	55	O	L	LITERATURE SEARCH; BIBLIOGRAPHY AND SPECIES LIST	TF-2, RET-2, LE-2	1	IMPORTANT POTOMAC RIVER FISHES...	
F	VIMS/ACOE, EPA		55	?	R	53	LINED, OR UNLINED (BEFORE 1973) 30' SEMIBALLOON TRAWL	LE-2?	1, 7, 8,	SMALL FISH SURVEY OF THE CHESAPEAKE BAY AND TRIBUTARY RIVERS WITH SPECIAL EMPHASIS ON THE SCIAENID FISHES	SEVERAL REPORTS TO THE ARMY CORP OF ENGINEERS, EPA (F. J. WOJCIK, VIMS)
F	DNR		57	PR	R	51	EACH SITE IS VISITED ONCE DURING THE MONTHS OF JULY, AUGUST, AND SEPTEMBER; TWO SAMPLES ARE TAKEN EACH VISIT USING A 100 X 4 FT. SEINE WITH 1/4 INCH MESH	TRIB, TF-2, RET-2, LE-2	1, 4, 6, 8, 9	MARYLAND ESTUARINE JUVENILE FINFISH SURVEY	BOONE, J. G. 1964. BOONE, J. G. AND J. H. UPHOFF, JR. 1978, 1979, 1980. SCOTT, R. F. AND J. G. BOONE. 1973. ANNUAL REPORTS, MARYLAND DEPARTMENT OF NATURAL RESOURCES
F	INDEPENDENT		57	58	O	63	TAGGED FISH WERE RECAPTURED BY GILLNETS, HOOK AND LINE, OTTER TRAWLS, SEINES, ETC.	TF-2, RET-2, LE-2, TRIB	6, 6, 9	AGE, GROWTH AND MOVEMENTS OF STRIPED BASS, ROCCUS SAXATILIS, TAKEN IN SIZE SELECTIVE FISHING GEAR IN MARYLAND.	MANSUETTI, R. J. 1961,
F	PRFC		60	PR	R	MM	MONTHLY HARVEST REPORTS	TRIB, TF-2, RET-2, LE-2	1, 8, 9, 10	COMMERCIAL FISHERIES LANDING STATISTICS, POTOMAC RIVER	ANNUAL AND MONTHLY REPORTS BY NOAA NATIONAL MARINE FISHERIES SERVICE (LOESCH & KRIETS, VIMS)
F	INDEPENDENT		67	85	R	MM	POUND NETS, FYKE NETS, GILL NETS, SEINES; 10 STATIONS SAMPLED MONTHLY FROM FEB. - JUNE	LE-2, ?	1, 6, 7, 8, 9	AGE COMPOSITION, SPawning HISTORY, MORTALITY RATES OF ANADROMOUS ALOSIDS IN VIRGINIA, ANADROMOUS ALOSIDS PROJECT	WARINNER, J. E., J. P. MILLER AND J. DAVIS. 1970. STUDY IS REFERENCED IN CHAMBERS ET AL. 1970.
F	VIMS		67	68	R	MM		TF-2, RET-2	1	VIMS ALOSA PROJECT: BIOLOGY AND UTILIZATION OF ANADROMOUS ALOSIDS - ANADROMOUS FISH ACT, P. L. 89-304.	
F	ASNE/PEPCO		68	73	R	52	MONTHLY DEEPWATER TRAWLS; 25 FT.	RET-2, LE-2	1, 6, 8	POTOMAC RIVER FISH SURVEY.	MOORE, C. J. 1972, 1974,

CAT	AGENCY	SPN	START	END	FREQ	METH	DETAILS	SEGMENTS	VARIABLES	TITLE	REFERENCES
F	DNR		68	?	I	MM	SURVEYS FOR FISH SPECIES AND FISH BLOCKAGES	TRIB	1, 8	STREAM SURVEYS OF MARYLAND DNR	(O'DELL: DNR)
F	INDEPENDENT		68	68	0	53	SEMI-BALLOON TRAWL MODIFIED AS AN OTTER TRAWL; 1.25" STRETCH MESH BODY AND COD END PLUID COD END INNERLINER 1/2' MESH; 15 MIN. TOWS AT APPROX. 4 KNOTS	TP-2, RET-2, LE-2	1, 6, 8	POTOMAC RIVER TRAWL SURVEY (ANADROMOUS ALOSIDS)	(LOESCH & KRIETE, VIMS)
F	INDEPENDENT		68	68	0	52	7 MONTHS, 2X/MO.; 30' SEMI-BALLOON OTTER TRAWL WITH 1/4" MESH LINER	TP-2, RET-2, LE-2	1, 6, 8	POTOMAC RIVER TRAWL SURVEY (ANADROMOUS ALOSIDS)	(LOESCH & KRIETE, VIMS)
F	INDEPENDENT		68	68	0	51	12 STATIONS SAMPLED MONTHLY; 50X6' 3/16" MESH SEINE	TP-2, RET-2, LE-2	1, 8	POTOMAC RIVER BEACH SEINE SURVEY (ANADROMOUS ALOSIDS)	(LOESCH & KRIETE, VIMS)
F	INDEPENDENT		68	68	0	54	100 STATIONS; 6X75', 3" GILL NET; 16X300', 5" GILL NET	LE-2, ?	1, 6, 8, 9	POTOMAC RIVER GILL NET SURVEY, ANADROMOUS ALOSIDS PROJECT	(LOESCH & KRIETE, VIMS)
F	DNR		70	71	0	MM	TRAP SAMPLING FOR ADULTS; POTOMAC MAINSTEM AND 110 TRIBUTARIES	TRIB, TP-2, RET-2, LE-2	1, 8	MARYLAND ANADROMOUS FISH STREAM SURVEY PROGRAM, POTOMAC RIVER BASIN	O'DELL, J., H. J. KING, J. P. GABOR. 1973, 1975.
F	DNR		70	71	0	51	HAUL SEINING FOR JUVENILES; POTOMAC MAINSTEM AND 110 TRIBUTARIES	TRIB, TP-2, RET-2, LE-2	1, 8	MARYLAND ANADROMOUS FISH STREAM SURVEY PROGRAM, POTOMAC RIVER BASIN	O'DELL, J., H. J. KING, J. P. GABOR. 1973, 1975.
F	INDEPENDENT		70	70	0	L	LITERATURE SEARCH; SPECIES LIST	TP-2, RET-2, LE-2	1	FISHES OF THE LOWER POTOMAC RIVER	M.L. WILEY, 1970.
F	INDEPENDENT		71	71	0	MM	15 STATIONS SAMPLED MONTHLY FOR 6 MOS.; SURFACE, MID AND BOTTOM; 5X5' COBB NET; 30' OTTER TRAWL WITH 1/2" LINER; 1 M PLANKTON NET 376U (202U, 35U) SLEEVE NETS	LE-2, ?	1, 6, 8, 9	LOWER CHESAPEAKE BAY ALOSID STUDIES, 1971.	(LOESCH & KRIETE, VIMS)
F	VEPCO		71	83	R	54	MULTIPANEL GILL NETS AT 2 STATIONS, 1/2", 1", 2" MESH; 100M LENGTH; 4 HOURS; PERPENDICULAR TO SHORE	TRIB, RET-2	1, 6, 8, 9	THE FISHES OF QUANTICO CREEK, VA	VEPCO, UNPUBLISHED DATA.
F	VEPCO		71	83	R	51	QUANTICO, NEABSCO, AQUIA CREEKS 100M HAULS WITH SEINE, 6.35 MM MESH, 15.24 X 1.83M - AT ALL SHORE STATIONS QUANTICO, NEABSCO, AQUIA CREEKS	TRIB, RET-2	1, 6, 8, 9	BIOLOGICAL SURVEY NEAR POSSUM POINT POWER STATIONS, VA.	VEPCO, UNPUBLISHED DATA
F	INDEPENDENT		72	73	0	63	1762 WILD STRIPED BASS TAGGED AND RELEASED NEAR CALVERT CLIFFS; REWARD PAID TO FISHERMEN RETURNING TAGS.	RET-2, LE-2	8	MOVEMENTS OF STRIPED BASS...	C. J. MOORE AND D. T. BURTON, 1975.
F	MM, CBL/DNR, PFSP		72	73			NEARFIELD STUDIES OF FINFISH	RET-2, LE-2		MORGANTOWN STEAM ELECTRIC STATION STUDIES; NEARFIELD AND ENTRAINMENT	MARTIN MARIETTA AND CBL REPORTS TO DNR, PFSP
F	NUS/VEPCO		72	?	R	MM		RET-2		DOUGLAS POINT SITE EVALUATION STUDIES	NUS, CORP. 1973.
F	EA, JHU/DNR, PFSP		73	74	R	MM	15 TRANSECTS FROM MARYLAND POINT TO INDIAN HEAD, MONTHLY	RET-2		DOUGLAS POINT SITE EVALUATION STUDIES	ECOLOGICAL ANALYSES, INC. 1974.
F	INDEPENDENT		73	?	R	MM	30' BALLOON OTTER TRAWL; 16' BALLOON OTTER TRAWL; 5X5' COBB TRAWL; 5X5' PUSH NET; VARIABLE NUMBER OF SITES FOR "COMMERCIAL SAMPLING", JUVENILES SAMPLED ANNUALLY FROM MARCH - JULY	LE-2, ?	1, 6, 7, 8, 9	JUVENILE ABUNDANCE SURVEY OF ALOSA SPECIES, ANADROMOUS ALOSIDS PROJECT	(LOESCH & KRIETE, VIMS)
F	ANSP		74	74	0	53	11 DEEPWATER STATIONS (TOTAL 37 STATIONS); 6' TRAWL; 2X/MO OR 2X/MO.	TRIB, TP-2, RET-2, LE-2	1, 6, 8	GEOGRAPHIC AND TEMPORAL DISTRIBUTION OF EGGS, LARVAL, JUVENILE AND YOUNG OF THE YEAR DENSITIES OF STRIPED BASS AND WHITE	ANSP, 1975.

<u>CAI</u>	<u>AGENCY</u>	<u>SPN</u>	<u>START</u>	<u>END</u>	<u>FREQ</u>	<u>METH</u>	<u>DETAILS</u>	<u>SEGMENTS</u>	<u>VARIABLES</u>	<u>TITLE</u>	<u>REFERENCES</u>
F	ANSP		74	74	0	51	21 STATIONS IN SHALLOWS (37 STATIONS TOTAL); EITHER 2X/WK OR 2X/MO.; 15-50' SEINE	TRIB.TF-2.RET-2.LE-2	1,6,6	GEOGRAPHIC AND TEMPORAL DISTRIBUTION OF EGGS, LARVAE, JUVENILE AND YOUNG OF THE YEAR DENSITIES OF STRIPED BASS AND WHITE PERCH...	ANSP. 1975.
F	UM/DNR,PPSP		74	78	R	54	3 STATIONS, 2X/WK FOR 16 WKS; 4 PANEL EA. 270' LONG; 24HRS.	TF-2.RET-2	1,6,7,8,9	POTOMAC RIVER SPANNING STOCK ASSESSMENT, 1974 - 1978.	(MORGAN III, R. P., CEES) REPORTS TO DNR, PPSP POTOMAC RIVER FISH. INVEST.
F	ANSP/PERCO		75	78	I	52	BOTTOM TRAWLS	RET-2.LE-2	1,8	POTOMAC RIVER FISHERIES STUDY, STRIPED BASS SPANNING STOCK ASSESSMENT. FINAL REPORT 1975, 1976 - 1978 BIOLOGICAL STUDIES ON THE POTOMAC RIVER NEAR MORGANTOWN STEAM ELECTRIC STATION	WILSON, J. S. ET AL. 1976 ANSP. 1978, 1979, 1979. HIXSON III, J. H. AND M. F. HIRSHFIELD. 1981.
F	DNR		75	86	R	52	BOTTOM TRAWLS WITH 16' HEADROPE ARE DRAGGED AT FOUR KNOTS FOR 6 MINUTES; 21 SAMPLING SITES IN THE POTOMAC, MAY - OCTOBER; ALL FINFISH SPECIES RECORDED	TRIB.LE-2	1,6,8,10	MARYLAND BLUE CRAB MONITORING PROGRAM	(JAMES CASEY: DNR; BRIAN ROTHCHILD: U MARYLAND)
F	EA/WSSC		76	78	I		ANNUALLY, IN APRIL, MAY, JUNE AND JULY	TRIB.TF-2		PISCATAWAY CREEK AND POTOMAC RIVER WETLAND STUDIES	ECOLOGICAL ANALYSTS, INC. REPORT TO WASHINGTON SUBURBAN SANITARY COMMISSION
F	INDEPENDENT		76	76	R	MM	MARCH - SEPTEMBER: 5 STATIONS SAMPLED BIWEEKLY; GILL NETS, FYKE NETS, TRAPS; DAY AND NIGHT	TRIB.TF-2	1,8	DIEL DISTRIBUTION AND RELATIVE ABUNDANCE OF ADULT AND LARVAL FISH IN KANE'S CREEK, VA	POWELL, J. C. 1977. MASTER'S THESIS. GEORGE MASON UNIVERSITY.
F	EA/VEPCO		77	78	I	57	TWO CHAMBERED HOOP NETS	TRIB.RET-2	1,6,8,9	POSSUM POINT STEAM ELECTRIC STATION STUDIES	ECOLOGICAL ANALYSTS. 1979.
F	EA/VEPCO		77	78	I	54	TWO FLOATING GILLNETS, 38MM AND 45MM	TRIB.RET-2	1,6,8,9	POSSUM POINT STEAM ELECTRIC STATION STUDIES	ECOLOGICAL ANALYSTS. 1979.
F	EA/VEPCO		77	78	I	52	OTTER TRAWL	TRIB.NET-2	1,6,8,9	POSSUM POINT STEAM ELECTRIC STATION STUDIES	ECOLOGICAL ANALYSTS. 1979.
F	EA/VEPCO		77	78	I	51	TWO 100' SEINE HAULS; SAMPLES COLLECTED BETWEEN DECEMBER 1977 AND OCTOBER 1978	TRIB.NET-2	1,6,8,9	POSSUM POINT STEAM ELECTRIC STATION STUDIES	ECOLOGICAL ANALYSTS. 1979.
F	DNR		81	PR	R	61	HOOK AND LINE FROM CHARTER BOATS: 5X/WK FOR ONE WEEK IN JULY, AUGUST AND OCTOBER/NOVEMBER AT RANDOMLY CHOSEN STATIONS	RET-2	6,8,9,1	MARYLAND ADULT STRIPED BASS SURVEY	(STEVE EARLY: DNR)
F	DNR		81	PR	R	54	MULTIPANEL GILL NETS (3, 4, 5, 6") DRIFTED AT RANDOMLY CHOSEN STATIONS EACH DAY FROM EARLY APRIL TO LATE MAY	RET-2	1,6,8,9	MARYLAND ADULT STRIPED BASS SURVEY	(STEVE EARLY: DNR)
F	DCECD		84	PR	R	51	SEINING WITH "STANDARD BEACH SEINE" IS DONE ONCE A MONTH FROM MAY TO NOVEMBER; JUVENILE INDICES CALCULATED	TRIB.TF-2	1,4,6,7,8	DISTRICT OF COLUMBIA RESIDENT FISH SURVEY	(J. SWEENEY, I. PALMER: DCECD) CUMMINS, J. C. 1987. DCECD. 1988.
F	GMU/FAIRFAX		84	PR	R	52	.75" (BODY) AND .25" (COD END) TRY-NET BOTTOM TRAWL WITH A 15 FT. HORIZONTAL	TRIB.TF-2	1,6,7,10	GUNSTON COVE ECOSYSTEM MONITORING PROGRAM	JONES, R. C. ET AL. 1986, 1987, 1988, 1989

<u>CAT</u>	<u>AGENCY</u>	<u>SPN</u>	<u>START</u>	<u>END</u>	<u>FREQ</u>	<u>METH</u>	<u>DETAILS</u>	<u>SEGMENTS</u>	<u>VARIABLES</u>	<u>TITLE</u>	<u>REFERENCES</u>
F	GMU/FAIRFAX	84	PR	R	51		OPENING; 2-3 MPH FOR 10 MINUTES AT EACH OF 5 STATIONS. 4 X 50 FT. SEINE 1/4" MESH; AT 4 STATIONS	TRIB, TP-2	1, 6, 7, 10	GUNSTON COVE ECOSYSTEM MONITORING PROGRAM	KELSO, D. ET AL. 1985 JONES, R. C. ET AL. 1986, 1987, 1988, 1989. KELSO, D. ET AL. 1985. CUMMINS, J. 1985.
F	INDEPENDENT	84	84	R	52		OTTER TRAWL CONDUCTED FROM A 8.25M CABIN CRUISER; 6.7M HEADROPE, 1.5M WIND LINE, 8.5M GROUND ROPE, GRADUATED STRETCHED MESH SIZES RANGING FROM 7.7CM AT THE MOUTH TO 0.9CM AT THE COD END; 5 MIN. TRAWLS FOR ABOUT 500M.	TRIB	1, 6	MASTERS THESIS	CUMMINS, J. 1985.
F	INDEPENDENT	84	84	R	54		DRIFTING OR ANCHORED GILL NET AT SEVERAL SITES	TRIB	1, 8	MASTERS THESIS	CUMMINS, J. 1985.
F	INDEPENDENT	84	84	O	52		TRINET BOTTOM TRAWL WITH 3/4" MESH, 5 MIN./TRAWL	TRIB, TP-2	1, 8	DIEL STUDIES OF GUNSTON COVE, VA	UNPUBLISHED DATA (R. C. JONES, D. KELSO, P. L. DEFUR; GEORGE MASON UNIVERSITY)
F	INDEPENDENT	84	84	R	51		SHORE HAUL SEINE OF 30X1.5M 1/4" MESH SEINE; 9+ SITES; MARCH THROUGH DECEMBER 1984	TRIB	1, 8	MASTERS THESIS	CUMMINS, J. 1985.
F	DCECD	85	PR	R	54		SAMPLES TAKEN WITH FOUR MESH SIZE ANCHORED GILLNETS (3, 4, 5, 6 INCHES) SET WITHIN TWO HOURS OF HIGH TIDE AND FISHED SIMULTANEOUSLY; EVERY OTHER WEEK FROM LATE FEBRUARY TO END MAY	TRIB, TP-2	6, 7, 8, 9, 1	DISTRICT OF COLUMBIA ANADROMOUS FISH SURVEY	KAYZUK, P. F. ET. AL. 1990
F	DCECD	86	86	R	54		SINKING GILLNETS WITH SIX MESH SIZES WERE USED FOR 40 MINS. AT 14 STATIONS FROM MARCH TO OCTOBER; ELECTROSHOCKING USED TO SUPPLEMENT GILLNETTING	TRIB, TP-2	1, 6, 7, 8, 9	SURVEY OF D. C. PORTIONS OF THE POTOMAC AND ANACOSTIA . . .	J. BUCKLEY AND M. NAMMACK. 1987.
F	DNR	87	PR	I	51		6 STATIONS, 2-3X/MO. FOR 3 MO., SEINING (SOME DONE BY ISAT)	TRIB	1, 4, 8, 9, 7?	MARYLAND SMALL TRIBUTARY MONITORING PROJECT - MATTANOMAN CREEK (AKA ACID RAIN/LIMING DOSER PROJECT, DNR)	DNR REPORTS (M. BOWMAN, J. UPHOFF JR.)
F	DNR	87	PR	R	HH		2-6 RADIO TAGGED ADULTS; TAGGING; ELECTROFISHING, SEINING; BASS TOURNAMENT CATCH AND RELEASE RECORDS	TRIB, TP-2	1, 5, 8, 9	MARYLAND DNR LARGEMOUTH BASS STUDY	(L. FEWLISS: DNR) DNR REPORT F-27-R
F	DCECD	88	PR	R	53		FIVE TRANSECTS ON THE POTOMAC AND ANACOSTIA ARE SAMPLED AT TWO RANDOMLY SELECTED TIMES IN EACH SEASON (I.E. 8X/TR). STANDARDIZED TRAWLS ARE URN IN BOTH UPSTREAM AND DOWNSTREAM DIRECTIONS IN DEEP REGIONS OF THE RIVERS.	TRIB, TP-2	1, 6, 7, 8, 9	DISTRICT OF COLUMBIA RESIDENT FISH SURVEY	(J. SWEENEY, I. PALMER: DCECD)
F	DNR/ICPRB	88	90	R	51		BLOCK NETS AND 20'X4'X1/4" SEINE (10 HAULS BETWEEN BLOCKING NETS); FOLLOWED BY ELECTROSHOCKING	TRIB	1, 6, 7, 8, 9	ANACOSTIA RIVER BASIN FISH SURVEY AND INVENTORY	CUMMINS, J. C. 1989.
F	DNR/ICPRB	88	90	R	62		ELECTROFISHING IS DONE AT NEARSHORE STATIONS FOR SET TIME PERIODS AND STANDARDIZED VOLTAGES	TRIB, TP-2	1, 6, 7, 8, 9	ANACOSTIA RIVER BASIN FISH SURVEY AND INVENTORY	CUMMINS, J. C. 1989.

<u>CALL</u>	<u>AGENCY_SPN</u>	<u>START</u>	<u>END</u>	<u>FREQ</u>	<u>METH</u>	<u>DETAILS</u>	<u>SEGMENTS</u>	<u>VARIABLES</u>	<u>TITLE</u>	<u>REFERENCES</u>
F	DNR	90	PR	I	53	STATIONS IN DEEPER DOWNSTREAM PORTIONS OF MATTAWOMAN CREEK; 363U NET ("TRAML")	TRIB	1, 4, 6, 9, 7?	MARYLAND SMALL TRIBUTARY MONITORING PROJECT - MATTAWOMAN CREEK (AKA ACID RAIN/LIMING DOSER PROJECT, DNR)	(M. BOWMAN, J. UPHOFF JR.) DNR REPORTS
F	INDEPENDENT	98	98	0	L	LITERATURE SEARCH; SPECIES LIST AND COMMENTS ON ABUNDANCE	TF-2	I	LIST OF FISHES KNOWN TO INHABIT THE POTOMAC RIVER METER NET TRAWL SURVEY, 1968 (ALOSIDS PROJECT)	H. M. SMITH AND B. A. BEAN. 1988.
I	VIMS	68	68	R	3	1/2 M, 376U PLANKTON NET, 14 SITES, 3 MONTHS	TF-2, RET-2, LE-2	1, 8, 9	POTOMAC RIVER METER NET TRAWL SURVEY, 1968 (ALOSIDS PROJECT)	(LOESCH & KEIETE, VIMS)
I	DNR	70	71	0		POTOMAC MAINSTEM AND 110 TRIBUTARIES, PLANKTON SAMPLING FOR EGGS AND LARVAE	TRIB, TF-2, RET-2, LE-2		MARYLAND ANADROMOUS FISH STREAM SURVEY PROGRAM, POTOMAC RIVER BASIN	DNR (O'DELL, R. J. KING, J. P. GABOR)
I	VEPCO	71	83	R		SURFACE SAMPLES; QUANTICO, NEARSCO AND AQUA CREEKS (FISH EGGS AND LARVAE)	TRIB, RET-2	1, 2, 4, 9	BIOLOGICAL SURVEY NEAR POSSUM POINT POWER STATION, VA	VEPCO DATA SHEETS (J. C. WHITE)
I	NUS/VEPCO	72	?	R			RET-2		DOUGLAS POINT SITE EVALUATION STUDIES	NUS, CORP. 1973
I	EA, JHU/DNR, PPSP	73	74	R		15 TRANSECTS FROM MARYLAND POINT TO INDIAN HEAD, MONTHLY	RET-2	1, 2	DOUGLAS POINT SITE EVALUATION STUDIES	ECOLOGICAL ANALYSTS. 1974.
I	IND/DNR	74	76	R	22	WEEKLY SAMPLES FROM 2-6 STATIONS ON EACH OF 12 CROSS-STREAM TRANSECTS SEPARATED BY 6-12 KM, BETWEEN RM 69 (COLONIAL BEACH) AND RM 176 (WASHINGTON, D.C.); 1M DIAMETER, 505UM MESH PLANKTON NET; APRIL THROUGH LATE JUNE; ALSO TAKEN = ZOOPLANKTON AND CHL A IN 1976-1977.	TF-2, RET-2	1, 2, 6, 7, 9	ICHTHYOPLANKTON POPULATIONS IN THE POTOMAC RIVER	SETZLER, E. M. ET AL. 1981. SETZLER-HAMILTON, E. M. ET AL. 1981. SETZLER-HAMILTON, E. M. ET AL. 1980. BOYNTON, W. R. ET AL. 1977.
I	INDEPENDENT	76	76	R		MARCH - SEPTEMBER; 5 STATIONS SAMPLED BIWEEKLY, DAY AND NIGHT; PLANKTON NETS USED	TRIB, TP-2	1, 2	DIEL DISTRIBUTION AND RELATIVE ABUNDANCE OF ADULT AND LARVAL FISH IN KANE'S CREEK, VA	POWELL, J. C. 1977. MASTERS THESIS; GEORGE MASON UNIVERSITY (D. KELSO)
I	EA/VEPCO	77	77	R	21	TWO 0.5M 500U MESH PLANKTON NETS ON DOUBLE HOOP SLED; BOTTOM, MID, SURFACE; 2 MIN TOW/LEVEL	TRIB, RET-2	1, 2, 6, 9	POSSUM POINT STEAM ELECTRIC STATION STUDIES (VEPCO)	ECOLOGICAL ANALYSTS. 1979.
I	MD/DNR, PPSP	79	79	R	21	TROIKA NET (NEW TECHNIQUE); NEARFIELD COLLECTIONS OF FISH LARVAE	RET-2, LE-2	1, 2, 9	FISH LARVAE, AMPHIPODS AND OPOSSUM SHRIMP POPULATIONS NEAR MORGANTOWN, MD	MARTIN MARIETTA, CORP. 1975. MT-75-3.
I	CHU/FAIREAX	84	PR	R	21	333U NET TOWED AT THREE DEPTHS FOR 2 MINS. EACH	TRIB, TF-2	1, 2	GUNSTON COVER ECOSYSTEM MONITORING PROGRAM	
I	DNR	87	PR	I	23	1 APRIL - 1 JUNE, 1-2x/WK; 1/2M DIAM., 363U DRIFT NETS AT TWO FIXED STATIONS	TRIB	1, 2, 6, 7?, 9	MARYLAND SMALL TRIBUTARY MONITORING PROJECT - MATTAWOMAN CREEK (AKA ACID RAIN/LIMING DOSER PROJECT)	DNR REPORTS (M. BOWMAN, J. UPHOFF)
I	DNR	90	PR	I	21	363UM PLANKTON NET TOWED AT MIDDPTHS IN DEEPER SECTIONS OF MATTAWOMAN CREEK, DOWNSTREAM OF ORIGINAL STATIONS	TRIB	1, 2, 9	MARYLAND SMALL TRIBUTARY MONITORING PROJECT - MATTAWOMAN CREEK (AKA ACID RAIN/LIMING DOSER PROJECT)	DNR REPORTS (M. BOWMAN, J. UPHOFF)
0	CONS. DEPT. MD	0	0	?	?		LE-2		SURVEY OF THE OYSTER BARS OF THE LOWER POTOMAC RIVER.	LUCE, R.H. 1929. CONS. DEPT. STATE OF MARYLAND 6TH ANNUAL REPORT 1928:127-149.
0	US ERWS	0	0				LE-2		OYSTER BARS OF THE POTOMAC RIVER.	FREY, D.G. 1946. U.S. F&WS SPEC. SCI. REPORT 32:1-93.
0	DNR	39	PR	R	31	2 1/2 BUSHEL OYSTERS ARE DREDGED	TRIB, LE-2	8, 9	MARYLAND OYSTER SPAT AND CONDITION INDEX PROGRAM	(GEORGE KRANTZ, BILL OUTTEN, DON WEBSTER; DNR, HORN POINT ENVIRONMENTAL LABORATORIES)
0	VIMS	46	PR	R	32	WEEKLY SURVEYS FROM JUNE THROUGH OCTOBER; SPAT COUNTS ARE MADE ON OYSTER SHELLS STRUNG ON WIRE AND SUSPENDED FROM STAKES ON PUBLIC AND PRIVATE BEDS.	LE-2	8	VIRGINIA OYSTER SPAT SURVEY	WHITCOMB, J. 1987.
0	PRFC, DNR, VIMS,	63	?	R	33	SEMIANNUAL SAMPLING AT KNOWN OYSTER BARS BY DREDGING AND PATENT TONG	LE-2	2, 6, 7, 8, 9	OYSTER BAR SURVEYS AND OYSTER SPAT SET SURVEYS	WHITCOMB, J. UNDATED. VIMS ANNUAL PUBLICATIONS? ROGER MANN?
0	PRFC, DNR, VIMS,	63	?	R	35	SEMIANNUAL SAMPLING AT KNOWN OYSTER BARS	LE-2	2, 6, 7, 8, 9	OYSTER BAR SURVEYS AND OYSTER SPAT	DATA FROM PRFC, DNR, CBL, AND VIMS DATA FROM PRFC, DNR, CBL AND VIMS

CAT	AGENCY_SFN	START	END	FREQ	METH	DETAILS	SEGMENTS	VARIABLES	TITLE	REFERENCES
P	INDEPENDENT	41	41	0		BY DREDGING AND PATENT TONG MAY 1941 DESCRIPTIVE STUDY; NO METHOD DESCRIBED; FT. LOOKOUT	LE-2	1,2	SET SURVEYS CENTRIFUGED PLANKTON COUNTS FROM LOWER CHESAPEAKE BAY	(C. F. D'ELIA, CBL)
P	RES.RES./DC	59	59	0	13		TF-2	1	PHYTOPLANKTON COMPOSITION. IDENTIFICATION AND ENUMERATION OF MAJOR ALGAL GROUPS.	RESOURCES RESEARCH, INC. 1959. SPECIAL SAMPLING ANALYSES OF THE POTOMAC RIVER, VOL. II. PREPARED FOR D.C. DEPT. SAN. ENG.
P	ANSP/PEPCO	66	73	R	16	MONTHLY, 3 STATIONS ('69); SURFACE AND BOTTOM SAMPLES	LE-2,RET-2	1,2	POTOMAC RIVER SURVEY (MORGANTOWN)	ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA (ANSP) REPORTS TO PEPCO 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973
P	IND/VEPCO	71	71	R		APRIL - DECEMBER 1971; BIWEEKLY, 15 STATIONS FROM OCCOQUAN BAY DOWNSTREAM TO AQUIA CREEK	TRIB-2,TF-2,RET-2	1,2	POSSUM POINT STEAM ELECTRIC STATION STUDIES (VEPCO)	SIMMONS, G. M. AND B. J. ARHITAGR. 1974.
P	VEPCO	71	63	I	13	SURFACE	TRIB,RET-2			
P	CBL,MM/DNR,PFSP	72	73	R	7	NEARFIELD STUDIES	LE-2,RET-2		NEARFIELD AND ENTRINMENT STUDIES AT THE MORGANTOWN STEAM ELECTRIC STATION	MARTIN MARIETTA AND U. MARYLAND CBL REPORTS TO MARYLAND DNR, PFSP
P	EA,JHU/DNR,PFSP	73	74	R	17	MANUAL PUMP SAMPLER SUSPENDED AT APPROX. 20% INCIDENT LIGHT AND SLOWLY TOWED UNTIL 5 GALLONS WAS COLLECTED; SUBSAMPLE CONCENTRATED WITH CENTRIFUGE AND PRESERVED WITH LUGOL'S; ONLY COMMON SPECIES WERE COUNTED; 11 SAMPLES FROM 5 TRANSECTS BETWEEN QUANTICO AND POTOMAC CREEK, MONTHLY	RET-2	1,2	DOUGLAS POINT SITE EVALUATION STUDIES	ECOLOGICAL ANALYSTS. 1974. JOHNS HOPKINS UNIVERSITY. 1974.
P	EA/MSSC	76	78	I		APRIL, JUNE AND AUGUST, ANNUALLY	TRIB-2,TF-2		PISCATAWAY CREEK AND POTOMAC RIVER WETLAND STUDIES	ECOLOGICAL ANALYSTS. 1978.
P	INDEPENDENT	78	80	R	13	SURFACE SAMPLE (VAN DORN) NEAR MIDSTREAM AT KEY BRIDGE, ALSO CHAIN BRIDGE AND GREAT FALLS; BIWEEKLY BETWEEN MAY TO OCTOBER, LESS FREQUENTLY IN WINTER.	TF-2	1,2	A CULTURE METHOD FOR PHYTOPLANKTON ***	SIZE, P. 1981.
P	ANSP/VEPCO	79	80	R	13	15 STATIONS; SURFACE SAMPLES GRABBED WITH BUCKET; SUBSURFACE COLLECTED WITH NON-METALLIC DIAPHRAM PUMP; MONTHLY	RET-2,LE-2	1,2	PHYTOPLANKTON AND PRIMARY PRODUCTIVITY IN THE POTOMAC RIVER NEAR THE MORGANTOWN STEAM ELECTRIC STATION IN 1979	(J. SANDERS: ANSP)
P	USGS	79	63	R	15	1979 - 1981: WEEKLY IN SPRING, SUMMER, FALL; MONTHLY IN WINTER; 16 SITES 1983: AUGUST - NOVEMBER, MONTHLY	TRIB,TF-2,RET-2,LE-2	1,2	PHYTOPLANKTON SAMPLING IN THE POTOMAC RIVER AS PART OF THE USGS POTOMAC ESTUARINE STUDY	COHEN, R. R. H. ET AL. 1985. COHEN, R. R. H. AND S. O. POLLOCK. 1983. COHEN, R. R. H. ET AL. 1984. CALLENDER, E. ET AL. 1984. COHEN, R. R. H. 1988. WOODWARD, J. C. ET AL. 1984.
P	MDE	80	PR	R	13	GRAB SAMPLES FROM THE SURFACE EXCEPT AT MORGANTOWN WHERE ADDITIONAL SAMPLE IS COLLECTED WITH A PUMP FROM THE BOTTOM, SAMPLES NOT PRESERVED	TRIB,TF-2,RET-2,LE-2	1,2	MARYLAND PHYTOPLANKTON MONITORING PROGRAM	{JIM ALLISON, MDE}
P	USGS	80	81	I	11	DEPTH INTEGRATED SAMPLES WERE COLLECTED ON 24 LONGITUDINAL TRANSECTS IN JULY AND AUGUST 1980, AND 13 TRANSECTS IN JULY AND AUGUST 1981; PRESERVED IN LUGOL'S;	TF-2	3	USGS POTOMAC ESTUARY PROJECT	R. COHEN ET AL. 1986



CAT	AGENCY_SPN	START	END	FREQ	METH	DETAILS	SERMENTS	VARIABLES	TITLE	REFERENCES
P	DCECD	83	PR	R	13	SURFACE GRAB SAMPLE	TRIB,TF-2	1,2	DISTRICT OF COLUMBIA PHYTOPLANKTON MONITORING PROGRAM	UNPUBLISHED DATA SHEETS (HAMID KARIMI)
P	GMU/FAIRFAX	84	84	O		FOUR 24HR. PERIODS BETWEEN 5/22/84 AND 10/24/84; SEVERAL DEPTHS SAMPLED EVERY EIGHT HOURS.	TRIB,TF-2	1,2	DIEL STUDIES OF GUNSTON COVE, VA (UNPUBLISHED DATA)	R. C. JONES, D. KELSO, AND P. L. deFUR
P	GMU/FAIRFAX	84	PR	R	15	DISCRETE SAMPLES COLLECTED WITH A PUMP AT .3M, MID, .5M ABOVE BOTTOM, COMPOSITED, SUBSAMPLED	TRIB,TF-2	1,2,3,6	GUNSTON COVE ECOSYSTEM MONITORING PROGRAM	KELSO, D. P. ET AL. 1985 JONES, R. C. ET AL. 1986 JONES, R. C. ET AL. 1987 JONES, R. C. ET AL. 1988 JONES, R. C. ET AL. 1989
P	MDE	84	PR	R	15	TWO SETS OF FIVE DISCRETE SAMPLES COLLECTED ABOVE AND THROUGH THE PICNOCLINE, COMPOSITED, SUBSAMPLED	TF-2,RET-2,LE-2	1,2	MARYLAND CHESAPEAKE BY WATER QUALITY MONITORING PROGRAM: PHYTOPLANKTON COMPONENT	SELLNER, K. G., D. C. BROWNLEE AND S. G. BROWNLEE. 1986.
P	VPI&SU/VA DCHR	85	PR	R	13	SURFACE GRAB SAMPLES	TRIB	?	OWL RUN WATERSHED MONITORING PROGRAM	SELLNER, K. G., D. C. BROWNLEE AND S. G. BROWNLEE. 1989.
S	ANSP/PEPCO	66	?	R		SEMIANNUAL NEARSHORE SURVEYS OF LITTORAL PLANTS	RET-S,LE-2		MORGANTOWN STEAM ELECTRIC STATION STUDIES	ANSP REPORTS TO PEPCO
S	VIMS/FWS,EPA	74	PR	I	41	AERIAL SURVEY 1:24000; DESIGNED TO COVER ALL SHORELINE AND SHOAL AREAS AT LOWEST POSSIBLE TIDAL STAGE; GROUND TRUTHING DATA IS COLLECTED BY USGS PERSONNEL AND CITIZEN VOLUNTEERS IN THE POTOMAC RIVER	TRIB,TF-2,RET-2,LE-2	2,5	CHESAPEAKE BAY SUBMERGED AQUATIC VEGETATION AERIAL SURVEY	ORTH, R. J. AND K. A. MOORE. 1981. TRANS. NORTH AMER. WILDL. NAT. RES. CONF. 46:271-283. ORTH, R. J. AND K. A. MOORE. 1983. SCI 222:51-53. ORTH, R. J. AND K. A. MOORE. 1984. ESTUARIES 7:531-540. ORTH, R. J. ET AL. 1985. EPA, CHES. BAY PROGRAM FINAL REPORT ORTH, R. J. ET AL. 1986. EPA, CHES. BAY PROGRAM FINAL REPORT ORTH, R. J. ET AL. 1987. EPA, CHES. BAY PROGRAM FINAL REPORT ORTH, R. J. ET AL. 1988. EPA, CHES. BAY PROGRAM FINAL REPORT ORTH, R. J. ET AL. 1989. EPA, CHES. BAY PROGRAM FINAL REPORT (V. CARTER AND N. B. RYBICKI; USGS) V. CARTER ET AL. 1983. V. CARTER, J. E. PASCHAL JR. AND N. BARTOW. 1985. V. CARTER, N. B. RYBICKI, R. T. ANDERSON, T. J. FRONBLEY AND G. L. ZYNUK. 1985. V. CARTER AND N. RYBICKI. 1986. HARAMIS, G. M., V. CARTER. 1983. AQUATIC BOTANY 15:65-79. N. RYBICKI ET AL. 1985. N. RYBICKI ET AL. 1986. N. RYBICKI ET AL. 1987. N. RYBICKI ET AL. 1988. R. J. ORTH ET AL. 1985, 1986, 1987, 1988, 1989, 1990
S	USGS	78	89	I	42	GROUND SURVEY OF ESTABLISHED TRANSECTS; GRABS WITH MODIFIED OYSTER TONGS, 3 GRABS/STATION	TRIB,TF-2,RET-2	1,2,3,5,7	US GEOLOGICAL SURVEY POTOMAC ESTUARY STUDY: 1978-1983 CONTRACT WITH US ARMY CORPS OF ENGINEERS: 1983-1986 CONTRACT WITH MWCOC: 1987-1989	
S	DNR	85	PR	R	43	BOAT CAPTAINS VISIT SAV BEDS IDENTIFIED IN PREVIOUS YEARS' AERIAL SURVEYS; SAV ARE IDENTIFIED ONSITE		I	MARYLAND CHARTER BOAT CAPTAIN'S SUBMERGED AQUATIC VEGETATION GROUND SURVEY PROGRAM	PROGRAM COORDINATOR: DAVID BLEJL, DNR

<u>CAT</u>	<u>AGENCY</u>	<u>SPN</u>	<u>START</u>	<u>END</u>	<u>FREQ</u>	<u>METH</u>	<u>DETAILS</u>	<u>SEGMENTS</u>	<u>VARIABLES</u>	<u>TITLE</u>	<u>REFERENCES</u>
S	FWS		85	PR	R	13	CITIZEN VOLUNTEERS VISIT SAV BEDS IDENTIFIED IN THE PREVIOUS YEARS' AERIAL SURVEYS; SPECIES ARE IDENTIFIED FROM CANOE, ROWBOAT, ZODIAC, ETC.		1	CITIZENS SUBMERGED AQUATIC VEGETATION HUNT PROGRAM	
S	HWCOG		86	PR	R	41	AERIAL SURVEY 1:12000; TAKEN AT LOW TIDE	TRIB.TF-2.RET-2	2,5	POTOMAC AQUATIC PLANT CONTROL PROGRAM	HWCOG ANNUAL NEWSLETTER (DRIZEL BERNSTEIN, NANCY JELLIICK; HWCOG)
Z	NUS/VEPCO		0					RET-2		AN ECOLOGICAL SURVEY OF THE POTOMAC RIVER AT DOUGLAS POINT	NUS, CORP. 1973.
Z	INDEPENDENT		65	65	I		POLYPS AND RESULTING EPHYRAE WERE COLLECTED WITH A VARIETY OF METHODS	LE-2	1,8,9	NOTES ON THE BIOLOGY OF THE SEA NETTLE, CHRYSAORA QUINQUECIRRA, IN CHESAPEAKE BAY.	CARGO, D. G. AND L. P. SCHULTZ. 1966.
Z	INDEPENDENT		68	68	R	21	1/2 AND 1 M PLANKTON NETS (.5MM MESH) TOWED FOR 5 MIN. AT SURFACE AND BOTTOM; STATIONS LOCATED AT 5 MILE INTERVALS.	TP-2.RET-2	1,2,6	"THE OCCURRENCE OF LEPTODORA KINDTII..."	CHAMBERS, J. R. ET AL. 1970. CHES. SCI. 11(4):255-261. CONTRIBUTION 360 FROM VIMS.
Z	VEPCO		71	63	I		SURFACE SAMPLES?	TRIB. RET-2	1,2	BIOLOGICAL SURVEY NEAR POSSUM POINT POWER STATION, VA	(J. C. WHITE, VEPCO) UNPUBLISHED DATA SHEETS.
Z	MM,CBL/DNR,PPSP		72		R		NEARFIELD STUDIES OF ZOOPLANKTON	RET-2.LE-2		MORGANTOWN STEAM ELECTRIC STATION STUDIES - NEARFIELD AND ENTRAINMENT STUDIES	MARTIN MARIETTA/CBL REPORTS TO DNR,PPSP
Z	EA,JHU/DNR,PPSP		73	74	R		20 STATIONS ON 7 TRANSECTS BETWEEN MATTAWOMAW CREEK AND MARYLAND POINT. MONTHLY; COLLECTED SIDE BY SIDE WITH ICHTHYOPLANKTON SAMPLES WITH 0.5M (5.1 L:W RATIO) PLANKTON NET 153U MESH; STEPPED OBLIQUE TOWS TAKEN AT 3 DEPTH FOR FIVE MINUTES EACH, BOTTOM, MIDWATER AND SURFACE; ALL SAMPLED PRESERVED IN FORMALIN	RET-2	1,2	DOUGLAS POINT SITE EVALUATION STUDIES	ECOLOGICAL ANALYSTS. 1974. JOHNS HOPKINS UNIVERSITY. 1974.
Z	ANSP/PEPCO		74	79	I	MM	THREE DISCRETE DEPTHS: 1974-1977. NO SAMPLING: 1978. BOTTOM-TO-SURFACE OBLIQUE TOWS: 1979.	RET-2.LE-2	1,2	1976, 1977, 1978 BIOLOGICAL STUDIES ON THE POTOMAC RIVER NEAR MORGANTOWN SES; 1979 NEARFIELD ZOOPLANKTON STUDIES ON THE POTOMAC RIVER NEAR MORGANTOWN SES	ANSP. 1977, 1978, 1979, 1979, 1982.
Z	ANSP/PEPCO		76	78	I	21	BOTTOM TRAWLS, 5 MIN.; FOULING ORGANISMS	TRIB.RET-2	1,2	1976-1978 BIOLOGICAL STUDIES ON THE POTOMAC RIVER NEAR THE MORGANTOWN STEAM ELECTRIC STATION	ANSP REPORTS TO PEPCO
Z	EA/WSWC		76	78	I		APRIL, AUGUST; ANNUALLY	TRIB.TP-2		FISCATAWAY CREEK AND POTOMAC RIVER WETLAND STUDIES	ECOLOGICAL ANALYSTS, INC. REPORTS TO WASHINGTON SUBURBAN SANITARY COMMISSION
Z	CBL/DNR,PPSP		77	77	R	21	DEEP-WELL, WEIGHTED SUBMERSIBLE PUMP TOWED HORIZONTALLY AT 1-3 M/SEC; 70-74U MESH; TO COLLECT SMALL ZOOPLANKTON. 1M DIA. 153U MESH PLANKTON NET TOWED VERTICALLY OR OBLIQUELY TO COLLECT ADULT COPEPODS.	TP-2	1,2,3,6,7,	POPULATION DYNAMICS OF ZOOPLANKTON IN THE UPPER POTOMAC ESTUARY. MARCH THROUGH MAY, 1977.	HEINLE, D.R. ET AL. 1979. UMCEES 79-82-CBL
Z	EA/VEPCO		77	78	R	12	DEC. 77 - OCT. 78, 8 LOCATIONS, TOWNSLED WITH TWO NETS 0.5M, 5-1 RATIO (BOTTOM, MID, SURFACE), 153U	TRIB.RET-2	1,2	POSSUM POINT STEAM ELECTRIC STATION STUDIES	ECOLOGICAL ANALYSTS. 1979.
Z	MM/DNR,PPSP		79	79	R	21	TROIKA NET (NEW TECHNIQUE), NEARFIELD COLLECTIONS. MACROZOOPLANKTON	RET-2.LE-2	1,2,9	FISH LARVAE, AMPHIPODS AND OPOSSUM SHRIMP POPULATIONS NEAR MORGANTOWN, MD	MARTIN MARIETTA CORP. 1975. MORGANTOWN MONITORING REPORT SERIES. MT-75-3. PREPARED FOR DNR, PPSP.

<u>CAT</u>	<u>AGENCY_SPN</u>	<u>START</u>	<u>END</u>	<u>FREQ</u>	<u>METH</u>	<u>DETAILS</u>	<u>SEGMENTS</u>	<u>VARIABLES</u>	<u>TITLE</u>	<u>REFERENCES</u>
Z	IND/USGS	81	81	I	11	10 - 20 L SAMPLES PUMPED FROM CONTINUOUSLY RAISED AND LOWERED HOSE, COLLECTED IN 80U MESH RING NET AND PRESERVED.	TF-2,TRIB	1,2,6,9	SPATIAL DISTRIBUTIONS AND HYPOTHETICAL GRAZING PRESSURES OF ZOOPLANKTON IN THE TIDAL, FRESHWATER POTOMAC RIVER.	BUCHANAN, C. AND J.A.SCHLOSS. 1982. FINAL REPORT TO PEDOS AND PDS STUDIES OF THE U.S.G.S. BUCHANAN, C. AND J.A.SCHLOSS. 1983. J. FRESHWATER ECOL. 2(2): 117-128.
Z	DCECD	82	83	R	21	5" DIAMETER CLARKE-BUMPUS AUTOMATIC PLANKTON SAMPLER WITH INTERNAL FLOW METER AND 75U MESH NET. DAYLIGHT HOURS, SURFACE HORIZONTAL TOW OF 2 MINS., NO CONSIDERATION OF TIDAL STAGE, NO DUPLICATES. TWO ANACOSTIA STATIONS, ONE POTOMAC STATION. SAMPLES WERE COLLECTED BY DCECD PERSONNEL.	TRIB, TF-2	1,2	ZOOPLANKTON IN THE UPPER POTOMAC ESTUARY.	AURAND, D. 1984.
Z	DCECD	83	90	I	21	SUBSURFACE TOW FOR 5 MIN., 80U NET	TRIB,TF-2	1,2	DISTRICT OF COLUMBIA ZOOPLANKTON MONITORING PROGRAM	(HAMID KARIMI, DCECD)
Z	ANSP/MDE	84	90	R	15	TWO SETS OF FIVE SAMPLES COLLECTED WITH A PUMP ABOVE AND THROUGH THE PNEUCLINE, COMPOSITED, FILTERED THROUGH 44U FOR MESOZOOPLANKTON	TF-2,RET-2,LE-2	1,2	MARYLAND CHESAPEAKE BAY WATER QUALITY MONITORING PROGRAM: ZOOPLANKTON COMPONENT	SELLNER, K. G., D. C. BROWNLEE, AND S. G. BROWNLEE. 1989. SELLNER, K. G., D. C. BROWNLEE, AND S. G. BROWNLEE. 1986.
Z	CES/MDE	84	90	R	22	OBLIQUE TOW FROM BOTTOM, 202U NET FOR MACROZOOPLANKTON	TF-2,RET-2,LE-2	1,2,6,9	MARYLAND CHESAPEAKE BAY WATER QUALITY MONITORING PROGRAM: ZOOPLANKTON COMPONENT	JACOBS, F. ET AL. KELSO, D. P. ET AL. 1985 JONES, R. C. ET AL. 1986, 1987, 1988, 1989
Z	GMU/FAIRFAX	84	89	R	15	PUMPED DISCRETE SAMPLES FROM .3M, MID AND .5 ABOVE BOTTOM, FILTERED THROUGH 73U NET, COMPOSITED	TRIB,TF-2	1,2	GUNSTON COVE ECOSYSTEM MONITORING PROGRAM	JONES, R. C., D. KELSO, AND P. L. defUR. (UNPUBLISHED DATA)
Z	INDEPENDENT	84	84	I	12	FOUR 24HR PERIODS BETWEEN 5/22/84 AND 10/24/84; SEVERAL DEPTHS COMPOSITED; 8 HR. INTERVALS	TRIB,TF-2	1,2	DIEL STUDIES OF GUNSTON COVE, VA (UNPUBLISHED DATA)	JONES, R. C., D. KELSO, AND P. L. defUR. (UNPUBLISHED DATA)
Z	IND/USGS	85	87	R	11	MONTHLY SAMPLES COLLECTED, THREE NET TOMS BOTTOM TO TOP WITH 80U MESH NET, CONCENTRATED ON 80U MESH RING NET, PRESERVED.	LE-2	1,2,6,9	U.S.G.S. POTOMAC ESTUARY STUDY (PES): ZOOPLANKTON COMPONENT	UNPUBLISHED DATA (CLAIRE BUCHANAN)
Z	DCECD	90	PR	R	12	3-5 VERTICAL TOMS COMBINED, 80U MESH NET	TRIB,TF-2	1,2	DISTRICT OF COLUMBIA ZOOPLANKTON MONITORING PROGRAM	(HAMID KARIMI, DCECD)
Z	GMU/FAIRFAX	90	PR	R	15	DISCRETE SAMPLES COLLECTED FROM .3M, MID AND .5M ABOVE BOTTOM WITH PUMP, COMPOSITED, FILTERED THROUGH 202U AND 44U NETS	TRIB,TF-2	1,2	GUNSTON COVE ECOSYSTEM MONITORING PROGRAM	