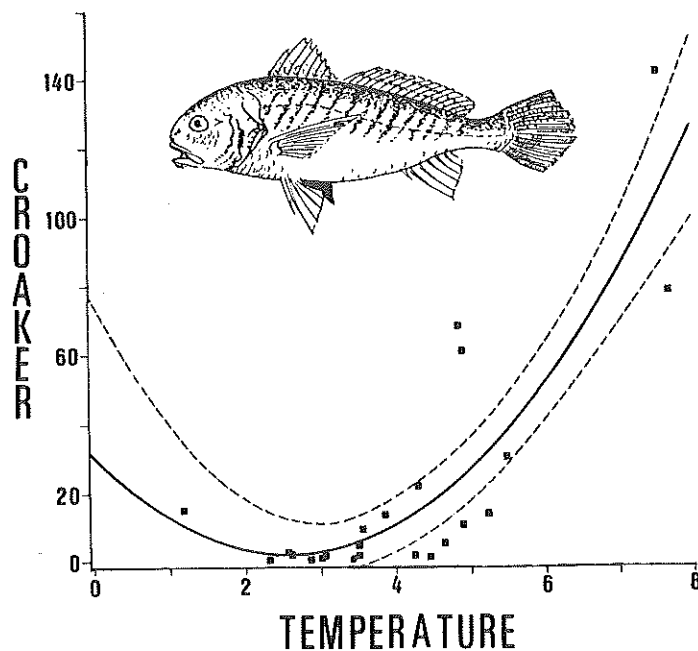


CLIMATE SCALE ENVIRONMENTAL FACTORS  
AFFECTING YEAR CLASS FLUCTUATIONS OF  
CHESAPEAKE BAY CROAKER  
Micropogonias undulatus



by

B. L. Norcross and H. M. Austin

APPENDICES

SPECIAL SCIENTIFIC REPORT NO. 110

Virginia Institute of Marine Science  
School of Marine Science  
College of William and Mary  
Gloucester Point, Virginia 23062

MAY 1981

Climate Scale Environmental Factors Affecting Year Class  
Fluctuations of Chesapeake Bay Croaker Micropogonias undulatus

APPENDICES

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Gloucester Point, Virginia 23062

VIMS Special Scientific Report No. 110

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Appendix A. Part 2.

VIMS JUVENILE TRAWL SURVEY -CONTENTS OF SAS DATA SET TAPE1.ALLRIV2

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APPENDIX A. PART 3

STANDARD ICHTHYOLOGICAL FORMAT CODES

<u>Common Name</u>	<u>VIMS Ichthyo-logical Code</u>	<u>Scientific Name</u>	<u>VIMS Taxo-nomic Code</u>
PRINTED BY COMMON NAMES	Last update	December 1980	
AFRICAN POMPANO	344	ALECTIS CRINITUS	7938 901 1
AGUJON	195	TYLOSURUS ACUS	7926 303 1
ALEWIFE	26	ALOSA PSEUDOHARENGUS	7904 101 3
ALMACO JACK	348	SERIOLA RIVOLIANA	7938 907 3
AMBERJACK -LESSER	347	SERIOLA FASCIATA	7938 907 2
AMBERJACK -GREATER	208	SERIOLA DUMERILI	7938 907 1
AMERICAN SHAD	30	ALOSA SAPIDISSIMA	7904 101 4
AMERICAN SAND LANCE	255	AMMODYTES AMERICANUS	7948 101 2
AMERICAN EEL	60	ANGUILLA ROSTRATA	7902 101 1
AMERICAN PLAICE (SEA DAB)	67	HIPPOGLOSSOIDES PLATESSOIDES	7958 206 1
AMERICAN BROOK LAMPREY	288	LAMPETRA LAMOTTEI	7402 101 2
AMERICAN STRAPTAIL GRENADEIER	271	VENTRIFOSSA OCCIDENTALIS	7925 412 1
AMERICAN JOHN DORY	244	ZENOPSIS OCELLATA	7930 201 1
ANCHOVIES	399	ANCHOA SP.	7904 201 0
ANCHOVY -BAY	103	ANCHOA MITCHILLI	7904 201 2
ANCHOVY -STRIPED	102	ANCHOA HEPSETUS	7904 201 1
ARMORED SEAROBIN	221	PERISTEDION MINIATUM	7935 102 2
ATLANTIC STURGEON	199	ACIPENSER OXYRHYNCS	7701 101 2
ATLANTIC WOLFFISH	88	ANARHICHAS LUPUS	7945 401 1
ATLANTIC POMFRET	80	BRAMA BRAMA	7938 2102 1
ATLANTIC MENHADEN	37	BREVOORTIA TYRANNUS	7904 102 1
ATLANTIC SPADEFISH	64	CHAETODIPTERUS FABER	7938 1801 1
ATLANTIC BUMPER	346	CHLOROSCOMBRUS CHRYSURUS	7938 903 1
ATLANTIC HERRING	29	CLUPEA HARENGUS HARENGUS	7904 103 1
ATLANTIC FLYING FISH	321	CYPSELURUS HETERURUS	7926 101 1
ATLANTIC STRINGRAY	176	DASYATIS SABINA	7613 101 3
ATLANTIC COD	8	GADUS MORHUA	7925 101 1
ATLANTIC HALIBUT	379	HIPPOGLOSSUS HIPPOGLOSSUS	7958 201 1
ATLANTIC SAILFISH	96	ISTROPHORUS ALBICAS	0 0 0
ATLANTIC MANTA	294	MANTA BIROSTRIS	7613 501 1
ATLANTIC SILVERSIDE	150	MENIDIA MENIDIA	7928 102 2
ATLANTIC TOMCOD	191	MICROGADUS TOMCOD	7925 102 1
ATLANTIC CROAKER	5	MICROPOGONIAS UNDULATUS	7938 1606 1
ATLANTIC HAGFISH	99	MYXINE GLUTINOSA	7401 101 1
ATLANTIC THREAD HERRING	38	OPISTHONEMA OGLINUM	7904 106 1
ATLANTIC THREADFIN	366	POLYDACTYLUS OCTONEMUS	7941 101 1
ATLANTIC MIDSHIPMEN	392	PORICHTHYS POROSISSIMUS	7922 102 1
ATLANTIC GUITARFISH	169	KHINOBATOS LENTIGINOSUS	7609 101 1
ATLANTIC SHARPNOSE SHARK	164	KHIZOPRIONODON TERRAENOVAE	7605 103 1
ATLANTIC BONITO	65	SARDA SARDA	7953 202 1
ATLANTIC MACKEREL	43	SCOMBER SCOMBRUS	7953 203 2
ATLANTIC SAURY	193	SCOMBERESOX SAURUS	7926 401 1
ATLANTIC ANGEL SHARK	168	SQUATINA DUMERILI	7608 101 1
ATLANTIC NEEDLEFISH	196	STRONGYLURA MARINA	7926 302 1
ATLANTIC TORPEDO	182	TORPEDO NOBILIANA	7611 101 1
ATLANTIC CUTLASSFISH	219	TRICHIURUS LEPTURUS	7953 101 1
ATLANTIC MOONFISH	211	VOMER SETAPINNIS	7938 910 1
BAIT (SCRAP)	16		0 0 0
BALAO	323	HEMIRAMPHUS BALAO	7926 201 2

APPENDIX A. PART 3

<u>Common Name</u>	<u>VIMS Ichthyo-logical Code</u>	<u>Scientific Name</u>	<u>VIMS Taxo-nomic Code</u>
BALLYHOD	322	HEMIRAMPUS BRASILIENSIS	7926 201 1
BANDED DRUM	214	LARIMUS FASCIATUS	79381604 1
BANDED KILLIFISH	121	FUNDULUS DIAPHANUS	7927 102 2
BANDED RUDDERFISH	209	SERIOLOA ZONATA	7938 907 4
BANDED SUNFISH	158	ENNEACANTHUS OBESUS	7938 304 3
BARBU	367	POLYDACTYLUS VIRGINICUS	7941 101 2
BARNDOR SKATE	187	RAJA LAEVIS	7612 101 3
BARREL FISH	376	HYPERDGLYPHE PERCIFORMIS	7954 101 1
BASKING SHARK	290	CETORHINUS MAXIMUS	7604 301 1
BASS -CRIMSON	198	ANTHIAS ASPERILINGUIS	7938 204 2
BASS -LARGEMOUTH	137	MICROPTERUS SALMOIDES	7938 306 2
BASS -ROCK	327	AMBLOPLITES RUPESTRIS	7938 302 1
BASS -SMALLMOUTH	268	MICROPTERUS DOLOMIEUI	7938 306 1
BASS -STRIPED	31	MORONE SAXATILIS	7938 101 2
BATFISH -LONGLNOSE	320	OGCOEPHALUS VESPERTILIO	7924 301 1
BAY ANCHOVY	103	ANCHOA MITCHILLI	7904 201 2
BEARDFISH	264	POLYMIXIA LOWEI	7920 101 1
BERMUDA CHUB	363	KYPHOSUS SECTATRIX	79381701 2
BIGEYE	339	PRIACANTHUS ARENATUS	7938 501 1
BIGEYE SCAD	206	SELAR CRUMENOPHTHALMUS	7938 905 1
BIGEYE -SHORT	340	PRISTIGENYS ALTA	7938 502 1
BIGHEAD SEAROBIN	78	PRIONOTUS TRIBULUS	7935 101 4
BLACK BULLHEAD	115	ICTALURUS MELAS	7918 101 6
BLACK CRAPPIE	138	PUMOXIS NIGROMACULATUS	7938 307 2
BLACK DRUM	34	POGGNIAS CROMIS	79381607 1
BLACK SEABASS	2	CENTROPRISTIS STRIATA	7938 201 1
BLACKBANDED SUNFISH	328	ENNEACANTHUS CHAETODON	7938 304 1
BLACKBELLY ROSEFISH	220	HELICOLENUS DACTYLOPTERUS	7935 401 1
BLACKCHEEK TONGUEFISH	152	SYMPHURUS PLAGIUSA	7958 401 1
BLACKMOUTH CARDINALFISH	389	SYNAGROPS BELLA	79382002 1
BLENNY -FEATHER	147	HYPSSOBLENNIUS HENTZI	7945 102 1
BLENNY -SEAWEED	368	BLENNIUS MARMOREUS	7945 101 1
BLENNY -STRIPED	146	CHASMODES BOSQUIANUS	7945 103 1
BLUE CATFISH	314	ICTALURUS FURCATUS	7918 101 2
BLUE CRAB	614	CALLINECTES SAPIDUS	53195803 1
BLUE MARLIN	95	MAKAIK AUDAX	0 0 0
BLUE PARROTFISH	364	SCARUS COERULEUS	7942 201 1
BLUE RUNNER	203	CARANX FUSUS	7938 902 2
BLUE SPOTTED SUNFISH	274	ENNEACANTHUS GLORIOSUS	7938 304 2
BLUFBACK HERRING (GLUT)	27	ALOSA AESTIVALIS	7904 101 1
BLUEFIN TUNA	375	THUNNUS THYNNUS	7953 205 1
BLUEFISH	9	POMATOMUS SALTATRIX	7938 601 1
BLUEGILL	130	LEPOMIS MACROCHIRUS	7938 305 4
BLUEHEAD CHUB	307	NOCOMIS LEPTOCEPHALUS	7917 110 2
BLUESPOTTED CORNETFISH	83	FISTULARIA TABACARIA	7932 201 1
BLUNTNOSE STINGRAY	177	DASYATIS SAYI	7613 101 4
BLUNTNOSE MINNOW	276	PIMEPHALES NOTATUS	7917 113 1
BONEFISH	295	ALBULA VULPES	7901 301 1
BONITO -ATLANTIC	65	SARDA SAPDA	7953 202 1
BONNETHEAD	165	SPHYRNA TIBURO	7605 201 1

APPENCIX A. PART 3

<u>Common Name</u>	<u>VIMS Ichthyological Code</u>	<u>Scientific Name</u>	<u>VIMS Taxonomic Code</u>
COMMON SHINER	310	NOTROPIS CORNUTUS	7917 111 2
CONCHS	48	BUSYCON SP.	44047511 0
CONGER EEL	190	CONGER OCEANICUS	7902 211 1
CONNETFISH -BLUE SPOTTED	83	FISTULARIA TABACARIA	7932 201 1
CONGFISH -SCRAWLED	380	ACANTHOSTRACION QUADRICORNIS	7959 212 1
COMNOSE RAY	185	RHINOPTERA BONASUS	7609 111 2
CRAB -BLUE	614	CALLINECTES SAPIDUS	53191802 1
CRAB -HERMIT	617	PAGURUS ACADIANUS	53194602 1
CRAB -HERMIT	618	PAGURUS ANNULIPES	53194602 2
CRAB -HORSESHOE	603	LIMULUS POLYPHEMUS	5001 101 1
CRAB -JONAH	600	CANCER BOREALIS	53195901 1
CRAB -JONAH	93	CANCER BOREALIS	53195901 2
CRAB -LADY	612	OVALIPES OCELLATUS	53195802 1
CRAB -ROCK	75	CANCER IRROCRATUS	53195901 1
CRAB -RED	92	GERYON QUINQUEDENS	53196701 1
CRAB -SPIDER	605	LIBINIA EMARGINATA	53196601 2
CRAPPIE -BLACK	138	POMOXIS NIGROMACULATUS	7938 307 2
CRAPPIE -WHITE	330	POMOXIS ANNULARIS	7938 307 1
CREEK FLEBSUCKER	273	ERIMYZEN OBLONGUS OBLONGUS	7917 203 1
CREEK JACK	204	CARANX HIPPOS	7938 902 1
CROOKED BASS	198	ANTHIAS ASPERILINGUIS	7953 204 1
CROOKED -ATLANTIC	5	MICROPOGONIAS UNDOULATUS	79381606 1
CUTTLE SNAPPER	350	LUTJANUS CYANOPTERUS	79531101 1
CUTTLE	218	TAUTOGLABRUS ADSPERSUS	7942 102 1
COD -GULL -STRIPED	229	RISSOLA MARGINATA	7925 301 1
COD -GULL -POLSKA-DOT	243	OTOPHIDIUM ONCOTYTONUM	7925 317 1
COD -EEL -PAIN	228	LEPOPHIDIUM SEMIRUR	7925 305 1
CYCLASSIDFISHS	391	TRICHI RI AE	7953 100 0
CYCLASSIDFISH -ATLANTIC	219	TRICHIURUS LEPTURUS	7953 101 1
CYCLID MUDWORM	300	EXOGLOSSUM MAXILLINGUA	7917 104 1
DACE -WATER BLACKNOSE	305	PHINICHTHYS ATRATULUS ATRATULUS	7917 119 1
DACE -HEMNOSE	306	PHINICHTHYS CATARACTAE	7917 109 2
DACE -MISSISSIPPI	302	CLIMISTORUS FUNDULOIDES FUNDULOIDES	7917 101 1
DARTER GO	369	GUBIUNELLUS SOLEDSOMA	7953 102 1
DARTER	397	ETHEOSTOMA SP.	7938 401 0
DARTER -GLASSY	334	ETHEOSTOMA VITREUM	7953 401 1
DARTER -JIMINY	141	ETHEOSTOMA NIGRUM	7958 401 0
DARTER -MARYLAND	333	ETHEOSTOMA SELLARE	7958 401 0
DARTER -SAWCREEK	332	ETHEOSTOMA SERRIFERUM	7958 401 0
DARTER -SHELFD	357	PERCINA PELTATA	7953 401 1
DARTER -STRYPE BACK	336	PERCINA NOTOGRAMMA	7953 401 1
DARTER -SHARP	331	ETHEOSTOMA FUSIFORME FUSIFORME	7938 401 1
DARTER -TELEDELAYED	89	ETHEOSTOMA OLMSTEDI	7938 401 1
DEAD * SPP	992	DEAD ALSO INCLUDE SPP IN C 62-64	0 0 0
DEEPSHA HAKE	262	MERLUCCIOUS ALBIDUS	7953 201 1
DUGFISH -CHAIN	159	SCYLIORHINUS RETIFER	7609 401 1
DUGFISH -SMOOTH	163	MUSTELUS CANTIS	7609 101 1
DUGFISH -SPINEY	167	SOULUS ACANTHIAS	7609 101 1
DOLPHIN	73	CORYPHAENA HIPPURUS	79381001 1
DRUM -BANDED	216	LEPOMUS TANGIATUS	79381601 1

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DRUM -BLACK	34	POGONIAS CROMIS	79381607 1
DRUM -RED	35	SCIAENOPS OCELLATA	79381608 1
DRUM -SAND	361	UMBRINA COROIDES	79381610 1
DRUM -STAR	215	STELLIFER LANCEOLATUS	79381609 1
DUSKY FLOUNDER	393	SYACIUM PAPILLOSUM	7958 105 1
DUSKY PIPEFISH	130	SYNGNATHUS FLORIDAE	7932 302 1
DUSKY SHARK	183	CARCHARHINUS OBSCURUS	7605 101 1
DWARF GOATFISH	387	UPENEUS PARVUS	79382303 1
EAGLE RAY -SPOTTED	293	AETOBATUS NARINARI	7613 301 1
EASTERN BLACKNOSE DACE	305	RHINICHTHYS ATRATULUS	ATRATULUS 7917 109 1
EASTERN MUDMINNOW	192	UMBRA PYGMAEA	7910 101 1
EASTERN SILVERY MINNOW	107	HYBOGNATHUS REGIUS	7917 105 1
EDIBLE MUSSEL	802	MYTILUS EDULIS	49082504 1
EEL -AMERICAN	60	ANGUILLA ROSTRATA	7902 101 1
EEL -CONGER	190	CONGER OCEANICUS	7902 201 1
EEL -SNAKE	249	PISODONOPHIS CRUENTIFER	7902 301 1
EELPOUT -WOLF	226	LYCENCHELYS VERRILLII	7925 702 1
EYED FLOUNDER	233	BOTHUS OCELLATUS	7958 108 1
FALLFISH	303	SEMOTILUS CORPORALIS	7917 108 1
FATHEAD MINNOW	301	PIMEPHALES PROMELAS	7917 103 2
FAWN CUSK-EEL	228	LEPOPHIDIUM CERVINUM	7925 305 1
FEATHER BLENNY	147	HYPSOBLENNIUS HENTZI	7945 102 1
FILEFISH -ORANGE	238	ALUTERUS SCHOEPLI	7959 101 1
FILEFISH -PLANEHEAD	240	STEPHANLEPIS HISPIDUS	7959 103 1
FLAT NEEDLEFISH	194	ABLENNES HIANS	7926 301 1
FLIER	133	CENTRARCHUS MACROPTERUS	7938 303 1
FLORIDA POMPAD	61	TRACHINOTUS CAROLINUS	7938 908 1
FLOUNDER -DUSKY	393	SYACIUM PAPILLOSUM	7958 105 1
FLOUNDER -EYED	233	BOTHUS OCELLATUS	7958 108 1
FLOUNDER -FOURSPOT	237	HIPPOGLOSSINA OBLONGA	7958 109 1
FLOUNDER -FRINGED	235	ETROPUS CROSSOTUS	7958 101 1
FLOUNDER -GULF STREAM	247	CITHARICHTHYS ARCTIFRONS	7958 106 1
FLOUNDER -SMALLMOUTH	236	ETROPUS MICROSTOMUS	7958 101 2
FLOUNDER -SOUTHERN	396	PARALICHTHYS LETHOSTIGMA	7958 102 4
FLOUNDER -SUMMER (FLUKE)	3	PARALICHTHYS DENTATUS	7958 102 1
FLOUNDER -WINDOWPANE	63	SCOPHTHALMUS AQUOSUS	7958 103 1
FLOUNDER -WINTER (BLACKBACK)	44	PSEUDOPLEURONECTES AMERICANUS	7958 202 1
FLOUNDER -WITCH (GRAY SOLE)	24	GLYPTOCEPHALUS CYNOGLOSSUS	7958 204 1
FLOUNDER -YELLOWTAIL (DAB)	49	LIMANDA FERRUGINEA	7958 203 1
FLYING GURNARD	223	DACTYLOPTERUS VOLITANS	7936 101 1
FINFISH -SPOTTAIL	358	DIPLODUS HOLBROOKI	79381504 1
FORBES SEA STAR	700	ASTERIAS FORBESI	68015001 1
FOURBEARD ROCKLING	197	ENCHELYOPUS CIMBRIUS	7925 105 1
FOURSPINE STICKLEBACK	127	APELTES QUADRACUS	7932 101 1
FOURSPCT FLOUNDER	237	HIPPOGLOSSINA OBLONGA	7958 109 1
FRINGED FLOUNDER	235	ETROPUS CROSSOTUS	7958 101 1
FLYING FISH -ATLANTIC	321	CYPSELURUS HETERURUS	7926 101 1
GAFFTOPSAIL CATFISH	315	BAGRE MARINUS	7918 201 1
GAG	200	MYCTEROPERCA MICROLEPIS	7938 203 1
GAR -LONGNOSE	101	LEPISOSTEUS OSSEUS	7802 101 1

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GIZZARD SHAD	51	DOROSOMA CEPEDIANUM	7904 104 1
GLASS SHRIMP	620	PALEOMONETES SP.	53191303 0
GLASSEYE SNAPPER	202	PRIACANTHUS CRUENTATUS	7938 501 2
GLASSY DARTER	334	ETHEOSTOMA VITREUM	7938 401 5
GOBIES	281	GOBII DADE	7950 100 0
GOBY -CLOWN	371	MICROGOBIUS GULOSUS	7950 104 1
GOBY -CODE	370	GOBIOSOMA ROBUSTUM	7950 103 3
GOBY -DARTER	369	GOBIONELLUS BOLEOSOMA	7950 102 1
GOBY -GREEN	139	MICROGOBIUS THALASSINUS	7950 104 2
GOBY -LYRE	140	EVORTHODUS LYRICUS	7950 101 1
GOBY -NAKED	144	GOBIOSOMA BOSCI	7950 103 1
GOBY -SEABOARD	145	GOBIOSOMA GINSBURGI	7950 102 2
GOBY -SHARPTAIL	143	GOBIONELLUS HASTATUS	7950 103 2
GOATFISH -DWARF	387	UPENEUS PARVUS	79382303 1
GOATFISH -RED	252	MULLUS AURATUS	79382301 1
GOLDEN SHINER	108	NOTEMIGONUS CRYSOLEUCAS CRYSOLEU	7917 104 1
GOLDFISH	279	CARASSIUS AURATUS	7917 102 1
GOOSEFISH	242	LOPHIUS AMERICANUS	7924 101 1
GRAY SNAPPER	351	LUTJANUS GRISEUS	79381101 2
GRAY TRIGGERFISH	239	BALISTES CAPRISCUS	7959 102 1
GREATER AMBERJACK	208	SERIOLA DUMERILI	7938 907 1
GREEN GOBY	139	MICROGOBIUS THALASSINUS	7950 104 2
GREEN SUNFISH	329	LEPOMIS CYANELLUS	7938 305 2
GREENEYE -SHORTNOSE	250	CHLOROPHTHALMUS AGASSIZII	7919 201 1
GRENADE -AMERICAN SHARPTAIL	271	VENTRIFOSSA OCCIDENTALIS	7925 412 1
GROUPERS, SEA BASSES	87	SERRANIDAE	7938 200 0
GUAGUANCHE	365	SPHYRAENA GUACHANCHO	7940 101 2
GRUNT -WHITE	357	HAEMULON PLUMIERI	79381401 2
GULF KINGFISH	360	MENTICIRRHUS LITTORALIS	79381605 2
GULF STREAM FLOUNDER	247	CITHARICHTHYS ARCTIFRONS	7958 106 1
GUITARFISH -ATLANTIC	169	RHINOBATOS LENTIGINOSUS	7609 101 1
GURNARD -FLYING	223	DACTYLOPTERUS VOLITANS	7936 101 1
HADDOCK	62	MELANOGRAMMUS AEGLEFINUS	7925 108 1
HAGFISH -ATLANTIC	99	MYXINE GLUTINOSA	7401 101 1
HAKE	53	UROPHYCIS SP.	7925 104 0
HAKE -RED	15	UROPHYCIS CHUSS	7925 104 1
HAKE -SILVER (WHITING)	6	MERLUCCIOUS BILINEARIS	7925 201 1
HAKE -DEEPSEA	262	MERLUCCIOUS ALBIDUS	7925 201 2
HAKE -SPOTTED	70	UROPHYCIS REGIUS	7925 104 2
HAKE -WHITE	12	UROPHYCIS TENUIS	7925 104 3
HALF BEAK	266	HYPORHAMPHUS UNIFASCIATUS	7926 202 1
HALIBUT -ATLANTIC	379	HIPPOGLOSSUS HIPPOGLOSSUS	7958 201 1
HARVESTFISH	11	PEPRILUS PARU	7954 201 1
HERMIT CRAB	617	PAGURUS ACADIANUS	53194402 1
HERMIT CRAB	618	PAGURUS ANNULIPES	53194402 2
HERRING	256	CLUPEIDAE	7904 100 0
HERRING -ATLANTIC	29	CLUPEA HARENGUS HARENGUS	7904 103 1
HERRING -BLUEBACK (GLUT)	27	ALOSA AESTIVALIS	7904 101 1
HERRING -RIVER	90	ALOSA SP.	7904 101 0
HERRING -ROUND	76	ETRUMEUS TERES	7904 105 1



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HICKORY SHAD	28	ALOSA MEDIOCRIS	7904 101 2
HOGCHOKER	151	TRINECTES MACULATUS	7958 301 1
HOGSUCKER -NORTHERN	313	HYPENTELIUM NIGRICANS	7917 205 1
HORNED LANTERNFISH	272	CERATOSCOPELUS MADERENSIS	7919 505 1
HORSE-EYE JACK	254	CARANX LATUS	7938 902 4
HORSESHOE CRAB	603	LIMULUS POLYPHEMUS	5001 101 1
INQUILINE SNAILFISH	385	LIPARIS INQUILINUS	7935 303 3
INSHORE LIZARDFISH	189	SYNODUS FOETENS	7919 101 1
INSHORE SAND LANCE	372	AMMODYTES HEXAPTERUS	7948 101 1
INVERTEBRATES	598	INVERTEBRATA	0 0 0
IRISH POMPANA	354	DIAPTERUS GLISTHOSTOMUS	79381302 1
IRON COLOR SHINER	309	NOTROPIS CHALYBAEUS	7917 111 4
JACK -ALMAGO	348	SERIOLA RIVOLIANA	7938 907 5
JACK -CREVALLE	204	CARANX HIPPOS	7938 902 3
JACK -HORSE-EYE	254	CARANX LATUS	7938 902 4
JACK -YELLOW	345	CARANX BARTHOLOMAEI	7938 902 1
JAMBEAU	394	PARAHOLLARDIA LINEATA	7959 303 1
JENNY -SILVER	353	EUCINOSTOMUS GULA	79381301 2
JEW FISH	69	EPINEPHELUS ITAJARA	7938 202 1
JOHN DORY -AMERICAN	244	ZENOPSIS OCELLATA	7930 201 1
JOHNNY DARTER	141	ETHEOSTOMA NIGRUM	7938 401 6
JONAH CRAB	93	CANCER BOREALIS	53195901 1
JONAH CRAB	600	CANCER BOREALIS	53195901 1
KILLIFISH -DANDED	121	FUNDULUS DIAPHANUS	7927 102 2
KILLIFISH -MARSH	324	FUNDULUS CONFLUENTUS	7927 102 1
KILLIFISH -RAINWATER	125	LUCANIA PARVA	7927 103 1
KILLIFISH -SPOTFIN	123	FUNDULUS LUCIAE	7927 102 4
KILLIFISH -STRIPED	124	FUNDULUS MAJALIS	7927 102 5
KING MACKEREL	41	SCOMBEROMORUS CAVALLA	7953 204 1
KINGFISH (KING WHITING)	13	MENTICIRRHUS SP.	79381605 0
KINGFISH -GULF	360	MENTICIRRHUS LITTORALIS	79381605 2
KINGFISH -NORTHERN	56	MENTICIRRHUS SAXATILIS	79381605 3
KINGFISH -SOUTHERN	57	MENTICIRRHUS AMERICANUS	79381605 1
LADY CRAB	612	OVALIPES OCELLATUS	53195805 2
LADY FISH	265	ELOPS SAURUS	7901 101 1
LAKE CHUB SUCKER	312	ERIMYZON SUCETTA SUCETTA	7917 203 1
LAMPREY -AMERICAN BROOK	288		0 0 0
LAMPREY -LEAST BROOK	287	LAMPETRA AEPYPTERA	7402 101 1
LAMPREY -SEA	100	PETROMYZON MARINUS	7402 102 1
LANTERN FISHES	77	MYCTOPHIDAE	7919 500 0
LANTERNFISH -HORNED	272	CERATOSCOPELUS MADERENSIS	7919 506 1
LARGEMOUTH BASS	137	MICROPTERUS SALMUIDES	7938 306 2
LEAST BROOK LAMPREY	287	LAMPETRA AEPYPTERA	7402 101 1
LEATHER JACKET	212	OLIGOPLITES SAURUS	7938 904 1
LEOPARD SEAROBIN	377	PRIONOTUS SCITULUS	7935 101 3
LESSER AMBERJACK	347	SERIOLA FASCIATA	7938 907 2
LINED SEAHORSE	129	HIPPOCAMPUS ERECTUS	7932 301 1
LINED TOPMINNOW	384	FUNDULUS LINEOLATUS	7927 102 6
LITTLE SKATE	171	RAJA ERINACEA	7612 101 2
LITTLE TUNNY	373	EUTHYNNUS ALLETTERATUS	7953 201 1

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LIZARD FISH - INSHORE	189	SYNOCHUS FOETENS	7919 101 1
LOBSTER	20	HOMARUS AMERICANUS	53193301 1
LOGGERHEAD TURTLE	599	CARETTA CARETTA CARETTA	8401 401 1
LOGPERCH	335	PERCINA CAPRODES	7938 403 1
LONGEAR SUNFISH	282	LEPOMIS MEGALOTIS	7938 305 6
LONGHORN SCULPIN	222	MYOXOCEPHALUS OCTODECEMSPINOSUS	7935 202 1
LONGNOSE GAR	101	LEPISOSTEUS OSSEUS	7802 101 1
LONGNOSE BATFISH	320	OGCOCEPHALUS VESPERTILIO	7924 301 1
LONGNOSE DACE	306	RHINICHTHYS CATARACTAE	7917 109 2
LONGSPINE SNIPEFISH	82	MACRORHAMPHOSUS SCOLOPAX	7932 401 1
LOOKDOWN	207	SELENE VOMER	7938 906 1
LOST CATCH	997	LOST CATCH	0 0 0
LUMPFISH	378	CYCLOPTERUS LUMPUS	7935 301 1
LYRE GOBY	140	EVORTHODUS LYRICUS	7950 101 1
MACKEREL -ATLANTIC	43	SCOMBER SCOMBRUS	7953 203 2
MACKEREL -CHUB	251	SCOMBER JAPONICUS	7953 203 1
MACKEREL -KING	41	SCOMBEROMORUS CAVALLA	7953 204 1
MACKEREL -SPANISH	42	SCOMBEROMORUS MACULATUS	7953 204 2
MANTA -ATLANTIC	294	MANTA BIROSTRIS	7613 501 1
MADTOMS	398	NOTURUS SP.	7918 102 0
MADTOM -MARGINED	118	NOTURUS INSIGNIS	7918 102 2
MADTOM -TADPOLE	117	NOTURUS GYRINUS	7918 102 1
MANTIS SHRIMP	621	SQUILLA SP.	5310 101 0
MARGINED MADTOM	118	NOTURUS INSIGNIS	7918 102 2
MARLIN -BLUE	95	MAKAIRA AUDAX	0 0 0
MARLIN -WHITE	74	TETRAPTURUS ALBIDUS	7953 401 1
MARLINSUCKER	341	REMORA OSTEOCHIR	7938 802 2
MARSH KILLIFISH	324	FUNDULUS CONFLUENTUS	7927 102 1
MARYLAND DARTER	333	ETHEOSTOMA SELLARE	7938 401 3
MENHADEN -ATLANTIC	37	BREVOORTIA TYRANNUS	7904 102 1
MEXICAN SEAROBIN	263	PRIONOTUS PARALATUS	7935 101 6
MIDSHIPMEN -ATLANTIC	392	PORICHTHYS PORCISISSIMUS	7922 102 1
MIMIC SHINER	98	NOTROPIS VOLUCELLUS	7917 11110
MINNOW	106	CYPRINIDAE	7917 100 0
MINNOW -BLUNTNOSE	276	PIMEPHALES NOTATUS	7917 113 1
MINNOW -CUTLIPS	300	EXOGLOSSUM MAXILLINGUA	7917 104 1
MINNOW -EASTERN SILVERY	107	HYBOGNATHUS REGIUS	7917 105 1
MINNOW -FATHEAD	301	PIMEPHALES PROMELAS	7917 103 2
MINNOW -SHEEPSHEAD	120	CYPRINODON VARIEGATUS	7927 101 1
MIXED FISH	21		0 0 0
MIXED SHAD	388	DORUSOMA SP.	7904 104 0
MOON SNAIL	800	POLINICES SP.	49046601 0
MOSQUITOFISH	126	GAMBUSIA AFFINIS	7927 201 1
MOJARRA -SPOTFIN	285	EUCINOSTOMUS ARGENTEUS	79381301 1
MOJARRA -MOTTLED	355	EUCINOSTOMUS LEFROYI	79381301 3
MOONFISH -ATLANTIC	211	VOMER SETAPINNIS	7938 910 1
MOTTLED MOJARRA	355	EUCINOSTOMUS LEFROYI	79381301 3
MUD SUNFISH	132	ACANTHARCHUS POMOTIS	7938 301 1
MUDMINNOW -EASTERN	192	UMBRA PYGMAEA	7910 101 1
MULLET	46	MUGIL SP.	7939 101 0

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MULLET -STRIPED	231	MUGIL CEPHALUS	7939 101 1
MULLET -WHITE	232	MUGIL CUREMA	7939 101 2
MUMMICHOG	122	FUNDULUS HETEROCLITUS	7927 102 3
MUSSEL -EDIBLE	802	MYTILUS EDULIS	49082504 1
NAKED GOBY	144	GOBIUSOMA BOSCI	7950 103 1
NEEDLEFISH -ATLANTIC	196	STRONGYLURA MARINA	7926 302 1
NEEDLEFISH -FLAT	194	ABLENNES HIANIS	7926 301 1
NO CATCH	998	NO CATCH	0 0 0
NO SAMPLE TAKEN	994	NO SAMPLE TAKEN	0 0 0
NORTHERN SAND LANCE	224	AMMODYTES DUBIUS	7948 101 3
NORTHERN STARGAZER	225	ASTROSCOPUS GUTTATUS	7943 101 1
NORTHERN HOGSUCKER	313	HYPENTELIUM NIGRICANS	7917 205 1
NORTHERN KINGFISH	56	MENTICIRRHUS SAXATILIS	79381605 3
NORTHERN SEAROBIN	71	PRIONOTUS CAROLINUS	7935 101 1
NORTHERN CREEK CHUB	304	SEMOTILUS ATROMACULATUS	7917 103 2
NORTHERN PUFFER (SWELLFISH)	50	SPHOEROIDES MACULATUS	7959 302 1
NORTHERN SENNET	230	SPHYRAENA BOREALIS	7940 101 1
NORTHERN PIPEFISH	131	SYNGNATHUS FUSCUS	7932 302 2
NURSE SHARK	289	GINGLYMOSTOMA CIRRATUM	7604 101 1
OCEAN POUT	227	MACROZOARCES AMERICANUS	7925 705 1
ORANGE FILEFISH	238	ALUTERUS SCHOEFFI	7959 101 1
ORANGE SPOTTED SUNFISH	277	LEPOMIS HUMILIS	7938 305 7
OYSTER TOADFISH	154	OPSANUS TAU	7922 101 1
PALOMETA	349	TRACHINOTUS GOODEI	7938 908 3
PARROTFISH -BLUE	364	SCARUS COERULEUS	7942 201 1
PERCH -PIRATE	317	APHREDDODERUS SAYANUS	7921 201 1
PERCH -SILVER	213	BAIRDIELLA CHRYSURA	79381601 1
PERCH -WHITE	32	MORONE AMERICANA	7938 101 1
PERCH -YELLOW	142	PERCA FLAVESCENS	7938 402 1
PERMIT	267	TRACHINOTUS FALCATUS	7938 908 2
PICKEREL -CHAIN	105	ESOX NIGER	7910 201 2
PIGFISH	59	ORTHOPRISTIS CHRYSOPTERA	79381402 1
PINFISH	216	LAGODON RHOMBOIDES	79381502 1
PIPEFISH	156	SYNGNATHUS SP.	7932 302 0
PIPEFISH -CHAIN	326	SYNGNATHUS LOUISIANAE	7932 302 3
PIPEFISH -DUSKY	130	SYNGNATHUS FLORIDAE	7932 302 1
PIPEFISH -NORTHERN	131	SYNGNATHUS FUSCUS	7932 302 2
PICKEREL -REDFIN (GRASS)	104	ESOX AMERICANUS AMERICANUS	7910 201 1
PIRATE PERCH	317	APHREDDODERUS SAYANUS	7921 201 1
PLAICE -AMERICAN (SAND DAB)	67	HIPPUGLOSSOIDES PLATESSOIDES	7958 206 1
PLANEHEAD FILEFISH	240	STEPHANOLEPIS HISPIDUS	7959 103 1
POLKA-DOT CUSK-EEL	243	OTOPHIDIUM OMOSTIGMUM	7925 317 1
POLLOCK	47	POLLACHIUS VIRENS	7925 103 1
POMBRET -ATLANTIC	80	BRAMA BRAMA	79382102 1
POMPANA -IRISH	354	DIAPTERUS OLISTHOSTOMUS	79381302 1
POMPANO -AFRICAN	344	ALECTIS CRINITUS	7938 901 1
POMPANO -FLORIDA	61	TRACHINOTUS CAROLINUS	7938 908 1
POUT -OCEAN	227	MACROZOARCES AMERICANUS	7925 705 1
PORCUPINEFISH	383	DIODON HYSTRIX	7959 402 1
PUFFER -CHECKERED	382	SPHOEROIDES TESTUDINEUS	7959 302 2

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PUFFER -NORTHERN (SWELLFISH)	50	SPHOEROIDES MACULATUS	7959 302 1
PUFFER -SMOOTH	79	LAGOCEPHALUS LAEVIGATUS	7959 301 1
PUMPKINSEED	135	LEPOMIS GIBBOSUS	7938 305 5
QUILLBACK	84	CARPIODES CYPRINUS CYPRINUS	7917 201 1
RAINBOW TROUT	297	SALMO GAIARDNERI	7907 101 2
RAINWATER KILLIFISH	125	LUCANIA PARVA	7927 103 1
RAY -BULLNOSE	186	MYLIOBATIS FREMINVILLEI	7613 302 1
RAY -COWNOSE	185	RHINOPTERA BONASUS	7609 101 2
RAY -SMOOTH BUTTERFLY	180	GYMNURA MICRURA	7613 201 2
RAY -SPINEY BUTTERFLY	179	GYMNURA ALTAVELA	7613 201 1
RED CRAB	92	GERYON QUINQUEDENS	53196701 1
RED DRUM	35	SCIAENOPS OCELLATA	79381608 1
RED GOATFISH	252	MULLUS AURATUS	79382301 1
RED HAKE	15	UROPHYCIS CHUSS	7925 104 1
REDBREAST SUNFISH	188	LEPOMIS AURITUS	7938 305 1
REDEAR SUNFISH	286	LEPOMIS MICROLOPHUS	7938 305 8
REDFIN, GRASS PICKEREL	104	ESOX AMERICANUS AMERICANUS	7910 201 1
REDFISH, OCEAN PERCH	68	SEBASTES MARINUS	7935 405 1
REDHORSE -SHORTHEAD	114	MOXOSTOMA MACROLEPIDOTUM	7917 204 1
RIVER CHUB	81	NOCOMIS MICROPUGON	7917 110 1
RIVER HERRING	90	ALOSA SP.	7904 101 0
ROCK BASS	327	AMBLOPLITES RUPESTRIS	7938 302 1
ROCK CRAB	75	CANCER IRRORATUS	53195901 2
ROCK SEA BASS	260	CENTROPRISTIS PHILADELPHICUS	7938 201 2
ROCKGUNNEL	157	PHOLIS GUNNELUS	7945 301 1
ROCKLING -FOU-BEARD	197	ENCHELYOPUS CIMBRIUS	7925 105 1
ROSETTE SKATE	172	RAJA GARMANI	7612 101 5
ROSEFISH -BLACKBELLIED	220	HELICOLENUS DACTYLOPTERUS	7935 401 1
ROSYFACE SHINER	311	NOTROPIS RUBELLUS	7917 111 8
ROSY SIDE DACE	302	CLINOSTOMUS FUNDULOIDES FUNDULOI	7917 107 1
ROUGH SCAD	210	TRACHURUS LATHAMI	7938 909 1
ROUGH SILVERSIDE	148	MEMBRAS MARTINICA	7928 101 1
ROUGHTAIL STINGRAY	175	DASYATIS CENTROURA	7613 101 2
ROUND HERRING	76	ETRUMEUS TERES	7904 105 1
ROUND SCAD	205	DECAPTERUS PUNCTATUS	7938 911 1
RUNNER -BLUE	203	CARANX FUSUS	7938 902 2
RUDDERFISH -BANDED	209	SERIOLA ZONATA	7938 907 4
SAILFISH -ATLANTIC	96	ISTROPHORUS ALBICAS	0 0 0
SAND DOLLAR	702	ECHINARACHNIUS PARMA	68025601 1
SAND DRUM	361	UMBRINA COROIDES	79381610 1
SAND LANCE -AMERICAN	255	AMMODYTES AMERICANUS	7948 101 2
SAND LANCE -INSHORE	372	AMMODYTES HEXAPTERUS	7948 101 1
SAND LANCE -NORTHERN	224	AMMODYTES DUBIUS	7948 101 3
SAND SHRIMP	604	CRANGON SEPTEMSPINOSA	53192001 1
SAND TIGER	160	ODONTASPIS TAURUS	7604 201 1
SANDBAR SHARK	162	CARCHARHINUS MILBERTI	7605 101 3
SARGASSUMFISH	319	HISTRIO HISTRIO	7924 201 1
SATINFIN SHINER	109	NOTROPIS ANALOSTANUS	7917 111 2
SAURY -ATLANTIC	193	SCOMBERESOX SAURUS	7926 401 1
SAWCHEEK DARTER	332	ETHEOSTOMA SERRIFERUM	7938 401 4

## APPENDIX A. PART 3

<u>Common Name</u>	<u>VIMS Ichthyological Code</u>	<u>Scientific Name</u>	<u>VIMS Taxonomic Code</u>
SAWFISH -SMALLTOOTH	292	PRISTIS PECTINATA	7610 101 1
SCAD -BIGEYE	206	SELAR CRUMENOPHTHALMUS	7938 905 1
SCAD -ROUGH	210	TRACHURUS LATHAMI	7938 909 1
SCAD -ROUND	205	DECAPTERUS PUNCTATUS	7938 911 1
SCALLOP -SEA	22	PLACOPECTIN MAGELLANICUS	49083003 1
SCRAWLED COWFISH	380	ACANTHOSTRACION QUADRICORNIS	7959 202 1
SCULPIN -LONGHORN	222	MYOXOCEPHALUS OCTODECEMSPINOSUS	7935 202 1
SCUP	1	STENOTOMUS CHRYSOPS	79381501 1
SEA BASS -BLACK	2	CENTROPRISTIS STRIATA	7938 201 1
SEA BASS -ROCK	260	CENTROPRISTIS PHILADELPHICUS	7938 201 2
SEA LAMPREY	100	PETROMYZON MARINUS	7402 102 1
SEA RAVEN	248	HEMITRIPTERUS AMERICANUS	7935 201 1
SEA STAR -BOREAL	701	ASTERIAS VULGARIS	58015001 2
SEA STAR -FORBES	700	ASTERIAS FORBESI	68015001 1
SEA SCALLOPS	22	PLACOPECTIN MAGELLANICUS	49083003 1
SEABOARD GOBY	145	GOBIOSOMA GINSBURGI	7950 103 2
SEAROBINS	23	PRIONOTUS SP.	7935 101 0
SEAROBIN -ARMORED	221	PERISTEDION MINIATUM	7935 102 2
SEAROBIN -BIGHEAD	78	PRIONOTUS TRIBULUS	7935 101 4
SEAROBIN -LEOPARD	377	PRIONOTUS SCITULUS	7935 101 3
SEAROBIN -MEXICAN	263	PRIONOTUS PARALATUS	7935 101 6
SEAROBIN -NORTHERN	71	PRIONOTUS CAROLINUS	7935 101 1
SEAROBIN -SPINEY	259	PRIONOTUS ALATUS	7935 101 5
SEAROBIN -STRIPED	72	PRIONOTUS EVOLANS	7935 101 2
SEAHORSE -LINED	129	HIPPOCAMPUS ERECTUS	7932 301 1
SEASNAIL	245	LIPARIS ATLANTICUS	7935 304 1
SEASNAIL -STRIPED	246	LIPARIS LIPARIS	7935 304 2
SEATROUT -SILVER	359	CYNOSCION NOTHUS	79381602 2
SEATROUT -SPOTTED	58	CYNOSCION NEBULOSUS	79381602 1
SEAWEEF BLENNY	368	BLENNIUS MARMOREUS	7945 101 1
SENNET -NORTHERN	230	SPHYRAENA BOREALIS	7940 101 1
SHAD -AMERICAN	30	ALOSA SAPIDISSIMA	7904 101 4
SHAD -GIZZARD	51	DOROSOMA CEPEDIANUM	7904 104 1
SHAD -HICKORY	28	ALOSA MEDIOCRIS	7904 101 2
SHAD -MIXED	388	DOROSOMA SP.	7904 104 0
SHAD -THREADFIN	275	DOROSOMA PETENENSE	7904 104 2
SHARKS	10	ELASMOBRANCHII	7600 0 0
SHARK -ATLANTIC ANGEL	168	SQUATINA DUMERILI	7608 101 1
SHARK -ATLANTIC SHARPNOSE	164	RHIZOPRIONODON TERRAENOVAE	7605 103 1
SHARK -BASKING	290	CETURHINUS MAXIMUS	7604 301 1
SHARK -BRAMBLE	270	ECHINORHINUS BRUCUS	7606 201 1
SHARK -BULL	161	CARCHARHINUS LEUCAS	7605 101 2
SHARK -DUSKY	183	CARCHARHINUS OBSCURUS	7605 101 1
SHARK -NURSE	289	GINGLYMOSTOMA CIRRATUM	7604 101 1
SHARK -SAND TIGER	160	ODONTASPIS TAURUS	7604 201 1
SHARK -SANDBAR	162	CARCHARHINUS MILBERTI	7605 101 3
SHARK -SMOOTH HAMMERHEAD	166	SPHYRNA ZYGAEANA	7605 201 2
SHARK -TIGER	291	GALEOCERDO CUVIERI	7605 102 1
SHARKSUCKER	343	ECHENEIS NAUCRATES	7938 801 1
SHARPTAIL GOBY	143	GOBIONELLUS HASTATUS	7950 102 2

APPENDIX A. PART 3

Common Name	VIMS Ichthyological Code	Scientific Name	VIMS Taxonomic Code
SHEEPSHEAD	54	ARCHOSARGUS PROBATOCEPHALUS	79381503 1
SHEEPSHEAD MINNOW	120	CYPRINODON VARIEGATUS	7927 101 1
SHIELD DARTER	337	PERCINA PELTATA	7938 403 3
SHINER -BRIDLE	111	NOTROPIS BIFRENATUS	7917 111 3
SHINER -COMELY	308	NOTROPIS AMOENUS	7917 111 1
SHINER -COMMON	310	NOTROPIS CORNUTUS	7917 111 5
SHINER -GOLDEN	108	NOTEMIGONUS CRYSOLEUCAS CRYSOLEU	7917 106 1
SHINER -IRON COLOR	309	NOTROPIS CHALYBAEUS	7917 111 4
SHINER -MIMIC	98	NOTROPIS VOLUCELLUS	7917 11110
SHINER -ROSYFACE	311	NOTROPIS RUBELLUS	7917 111 8
SHINER -SATINFIN	109	NOTROPIS ANALOSTANUS	7917 111 2
SHINER -SPOTFIN	284	NOTROPIS SPILOPTERUS SPILOPTERUS	7917 111 9
SHINER -SPOTTAIL	110	NOTROPIS HUDSONIUS AMARUS	7917 111 6
SHINER -SWALLOWTAIL	112	NOTROPIS PROCNE PROCNE	7917 111 7
SHORT BIGEYE	340	PRISTIGENYS ALTA	7938 502 1
SHORT NOSE STURGEON	257	ACIPENSER BREVIROSTRUM	7701 101 1
SHORTHEAD REDHORSE	114	MOXOSTOMA MACROLEPIDOTUM	7917 204 1
SHORTNOSE GREENEYE	250	CHLOKUPHTHALMUS AGASSIZII	7919 201 1
SHRIMP -BROWN	622	PENAEUS AZTECUS	5319 101 1
SHRIMP -GLASS	620	PALEOMONETES SP.	53191303 0
SHRIMP -MANTIS	621	SQUILLA SP.	5310 101 0
SHRIMP -SAND	604	CRANGON SEPTEMPINOSA	53192001 1
SILVER HAKE (WHITING)	6	MIPLUCCIUS BILINEARIS	7925 201 1
SILVER JENNY	353	EUCINOSTOMUS GULA	79381301 2
SILVER PERCH	213	BAIRDIELLA CHRYSURA	79381601 1
SILVER SEATROUT	359	CYNOSCIION NOTHUS	79381602 2
SILVER SIDES	155	ATHERINIDAE	7928 100 0
SILVER SIDES -ATLANTIC	150	MENIDIA MENIDIA	7928 102 2
SILVER SIDE -ROUGH	148	MEMBRAS MARTINICA	7928 101 1
SILVER SIDE -TIDEWATER	149	MENIDIA BERYLLINA	7928 102 1
SKATES	181	RAJA SP.	7612 101 0
SKATE -BARNDOOR	187	RAJA LAEVIS	7612 101 3
SKATE -CLEARNOSE	170	RAJA EGLANTERIA	7612 101 1
SKATE -THORNY	184	RAJA RADIATA	7612 101 7
SKATE -LITTLE	171	RAJA ERINACEA	7612 101 2
SKATE -ROSETTE	172	RAJA GARMANI	7612 101 5
SKATE -WINTER	173	RAJA OCELLATA	7612 101 4
SKILLET FISH (CLINGFISH)	153	GOBIESOX STRUMOSUS	7923 101 1
SMALLMOUTH FLOUNDER	236	ETROPUS MICROSTOMUS	7958 101 2
SMALLMOUTH BASS	268	MICROPTERUS DOLOMIEUI	7938 306 1
SMALLTOOTH SAWFISH	292	PRISTIS PECTINATA	7610 101 1
SMOOTH BUTTERFLY RAY	180	GYMNURA MICKURA	7613 201 2
SMOOTH DOGFISH	163	MUSTELUS CANIS	7605 104 1
SMOOTH HAMMERHEAD	166	SPHYRNA ZYGAENA	7605 201 2
SMOOTH PUFFER	79	LAGOCEPHALUS LAEVIGATUS	7959 301 1
SNAKE EEL	249	PISODONOPHIS CRUENTIFER	7902 301 1
SNAIL -MOON	800	POLINICES SP.	49046601 0
SNAILFISH -INQUILINE	385	LIPARIS INQUILINUS	7935 304 3
SNAPPERS	94	LUTJANUS SP.	79381101 0

## APPENDIX A. PART 3

<u>Common Name</u>	<u>VIMS Ichthyo-logical Code</u>	<u>Scientific Name</u>	<u>VIMS Taxo-nomic Code</u>
SNAPPER -CUBERS	350	LUTJANUS CYANOPTERUS	79381101 1
SNAPPER -GLASSEYE	202	PRIACANTHUS CRUENTATUS	7938 501 2
SNAPPER -GRAY	351	LUTJANUS GRISEUS	79381101 2
SNIFEFISH -LONGSPINE	82	MACRORHAMPHOSUS SCOLOPAX	7932 401 1
SOUTHERN STINGRAY	174	DASYATIS AMERICANA	7613 101 1
SOUTHERN KINGFISH	57	MENTICIRRHUS AMERICANUS	79381605 1
SOUTHERN FLOUNDER	396	PARALICHTHYS LETHOSTIGMA	7958 102 4
SPADEFISH -ATLANTIC	64	CHAETODIPTERUS FABER	79381801 1
SPANISH MACKEREL	42	SCOMBEROMORUS MACULATUS	7953 204 2
SPECIMEN MANGLED BEYOND IDENT	996	SPECIMEN MANGLED	0 0 0
SPECIMEN UNIDENTIFIED	995	UNIDENTIFIED	0 0 0
SPIDER CRAB	605	LIBINIA EMARGINATA	53196601 2
SPINEY CARDINALFISH	390	SYNAGROPS SPINOSA	79382002 2
SPINY BUTTERFLY RAY	179	GYMNURA ALTAVELA	7613 201 1
SPINY DOGFISH	167	SQUALUS ACANTHIAS	7606 101 1
SPINY SEAROBIN	259	PRIONOTUS ALATUS	7935 101 5
SPOT	33	LEIOSTOMUS XANTHURUS	79381603 1
SPOTFIN BUTTERFLYFISH	217	CHAETODON OCELLATUS	79381901 1
SPOTFIN KILLIFISH	123	FUNDULUS LUCIAE	7927 102 4
SPOTFIN MOJARRA	285	EUCINOSTOMUS ARGENTEUS	79381301 1
SPOTFIN SHINER	284	NOTROPIS SPILOPTERUS SPILOPTERUS	7917 111 9
SPOTTAIL FINFISH	358	DIPLODUS HOLBROOKI	79381504 1
SPOTTAIL SHINER	110	NOTROPIS HUDSONIUS AMARUS	7917 111 6
SPOTTED EAGLE RAY	293	AETOBATUS NARINARI	7613 301 1
SPOTTED HAKE	70	UROPHYCIS REGIUS	7925 104 2
SPOTTED SEATROUT	58	CYNOSCION NEBULOSUS	79381602 1
SPOTTED SUNFISH	283	LEPOMIS PUNCTATUS	7938 305 4
SPOTTED WHIFF	234	CITHARICHTHYS MACROPS	7958 106 3
SQUID	17		0 0 0
SQUIRRELFISH	325	HOLOCENTRUS ASCENSIONIS	7929 101 1
STAR DRUM	215	STELLIFER LANCEOLATUS	79381609 1
STARGAZER -NORTHERN	225	ASTROSCOPUS GUTTATUS	7943 101 1
STATION MADE NULL	993	STATION CARD (NULL)	0 0 0
STICKLEBACK -FOURSPINE	127	APELTES QUADRACUS	7932 101 1
STICKLEBACK -THREESPINE	128	GASTEROSTEUS ACULEATUS	7932 102 1
STINGRAYS	178	DASYATIS SP.	7613 101 0
STINGRAY -ATLANTIC	176	DASYATIS SABINA	7613 101 3
STINGRAY -BLUNTNOSE	177	DASYATIS SAYI	7613 101 4
STINGRAY -SOUTHERN	174	DASYATIS AMERICANA	7613 101 1
STINGRAY -ROUGHTAIL	175	DASYATIS CENTROURA	7613 101 2
STRIPE BACK DARTER	336	PEKCINA NOTOGRAMMA	7938 403 2
STRIPED ANCHOVY	102	ANCHOA HEPSETUS	7904 201 1
STRIPED BLENNY	146	CHASMODES BOSQUIANUS	7945 103 1
STRIPED BURRFISH	241	CHILOMYCTERUS SCHOEPI	7959 401 1
STRIPED BASS	31	MURONE SAXATILIS	7938 101 2
STRIPED CUSK-EEL	229	RISSOLA MARGINATA	7925 301 1
STRIPED KILLIFISH	124	FUNDULUS MAJALIS	7927 102 5
STRIPED MULLET	231	MUGIL CEPHALUS	7939 101 1
STRIPED SEASNAIL	246	LIPARIS LIPARIS	7935 304 2
STRIPED SEAROBIN	72	PRIONOTUS EVOLANS	7935 101 2

APPENDIX A. PART 3

<u>Common Name</u>	<u>VIMS Ichthyo-logical Code</u>	<u>Scientific Name</u>	<u>VIMS Taxo-nomic Code</u>
STURGEON	25	ACIPENSER SP.	7701 101 0
STURGEON -ATLANTIC	199	ACIPENSER CXYRHYNCUS	7701 101 2
STURGEON -SHORT NOSE	257	ACIPENSER BREVIROSTRUM	7701 101 1
SUCKER -WHITE	113	CATOSTOMUS COMMERSONI	7917 202 1
SUMMER FLOUNDER (FLUKE)	3	PARALICHTHYS DENTATUS	7958 102 1
SUNFISHES	278	CENTRARCHIDAE	7938 300 0
SUNFISHES	400	LEPOMIS SP.	7938 305 0
SUNFISH -BANDED	158	ENNEACANTHUS OBESUS	7938 304 3
SUNFISH -BLACKBANDED	328	ENNEACANTHUS CHAETODON	7938 304 1
SUNFISH -BLUE SPOTTED	274	ENNEACANTHUS GLORIOSUS	7938 304 2
SUNFISH -GREEN	329	LEPOMIS CYANELLUS	7938 305 2
SUNFISH -LONGEAR	282	LEPOMIS MEGALOTIS	7938 305 6
SUNFISH -MUD	132	ACANTHARCHUS POMOTIS	7938 301 1
SUNFISH -ORANGE SPOTTED	277	LEPOMIS HUMILIS	7938 305 7
SUNFISH -REDBREAST	188	LEPOMIS AURITUS	7938 305 1
SUNFISH -READEAR	286	LEPOMIS MICROLOPHUS	7938 305 8
SUNFISH -SPOTTED	283	LEPOMIS PUNCTATUS	7938 305 9
SURF CLAM	91	SPISULA SOLIDISSIMA	49087201 1
SWALLOWTAIL SHINER	112	NOTROPIS PROCNE PROCNE	7917 111 7
SWAMP DARTER	331	ETHEOSTOMA FUSIFORME FUSIFORME	7938 401 1
SWAMPFISH	316	CHOLOGASTER CORNUTA	7921 101 1
SWORDFISH	19	XIPHIAS GLADIUS	7953 301 1
TADPOLE MADTOM	117	NOTURUS GYRINUS	7918 102 1
TARPON	66	MEGALOPS ATLANTICA	7901 201 1
TAUTOG	55	TAUTOGA ONITIS	7942 101 1
TENCH	299	TINCA TINCA	7917 101 1
TESSELLATED DARTER	89	ETHEOSTOMA OLMSTEDI	7938 401 2
THORNY SKATE	184	RAJA RADIATA	7612 101 7
THREADFIN SHAD	275	DOROSOMA PETENENSE	7904 104 2
THREAD HERRING -ATLANTIC	38	OPISTHONEMA OGLINUM	7904 106 1
THREADFIN -ATLANTIC	366	POLYDACTYLUS OCTONEMUS	7941 101 1
THREESPINE STICKLEBACK	128	GASTEROSTEUS ACULEATUS	7932 102 1
TIDEWATER SILVERSIDE	149	MENIDIA BERYLLINA	7928 102 1
TIGER SHARK	291	GALEOCERDO CUVIERI	7605 102 1
TILEFISH	14	LOPHOLATILUS CHAMAELEONTICEPS	79382201 1
TOADFISH -OYSTER	154	OPSANUS TAU	7922 101 1
TOMCOD -ATLANTIC	191	MICROGADUS TOMCOD	7925 102 1
TOMTATE	356	HAEMULON AUROLINEATUM	79381401 1
TONGUEFISH -BLACKCHEEKED	152	SYMPHURUS PLAGIUSA	7958 401 1
TOPMINNOW -LINED	384	FUNDULUS LINEOLATUS	7927 102 6
TORPEDO -ATLANTIC	182	TORPEDO NOBILIANA	7611 101 1
TRIGGERFISHES	85	BALISTES SP.	7959 102 0
TRIGGERFISH -GRAY	239	BALISTES CAPRISCUS	7959 102 1
TRIPLETAIL	352	LOLOTES SURINAMENSIS	79381201 1
TROUT-PERCH	318	PERCOPSIS OMISCOMAYCUS	7921 301 1
TROUT -BROOK	296	SALVELINUS FONTINALIS	7907 102 1
TROUT -BROWN	298	SALMO TRUTTA	7907 101 3
TROUT -RAINBOW	297	SALMO GAIRDNERI	7907 101 2
TRUNKFISH	381	LACTOPHRYS TRIGONUS	7959 201 1
TUNA	18	THUNNUS SP.	7953 205 0



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<u>Common Name</u>	<u>VIMS Ichthyological Code</u>	<u>Scientific Name</u>	<u>VIMS Taxonomic Code</u>
TUNA -BLUEFIN	375	THUNNUS THYNNUS	7953 205 1
TUNNY -LITTLE	373	EUTHYNNUS ALLETTERATUS	7953 201 1
TURTLE -LOGGERHEAD	599	CARETTA CARETTA CARETTA	8401 401 1
WALLEYE	338	STIZOSTEDION VITREUM	7938 404 1
WARMOUTH	134	LEPOMIS GULOSUS	7938 305 3
WEAKFISH	7	CYNOSCION REGALIS	79381602 3
WENCHMAN	258	PRISTIPOMOIDES AQUILONARIS	79381102 1
WHALESUCKER	342	REMORA AUSTRALIS	7938 802 1
WHIFF -SPOTTED (BAY)	234	CITHARICHTHYS MACROPS	7958 106 3
WHITE CATFISH	39	ICTALURUS CATUS	7918 101 1
WHITE CRAPPIE	330	POMOXIS ANNULARIS	7938 307 1
WHITE GRUNT	357	HAEMULON PLUMIERI	79381401 2
WHITE HAKE	12	UROPHYCIS TENUIS	7925 104 3
WHITE MARLIN	74	TETRAPTURUS ALBIDUS	7953 401 1
WHITE MULLET	232	MUGIL CUREMA	7939 101 2
WHITE PERCH	32	MORONE AMERICANA	7938 101 1
WHITE SUCKER	113	CATOSTOMUS COMMERSONI	7917 202 1
WINDOWPANE FLOUNDER	63	SCOPHTHALMUS AQUOSUS	7958 103 1
WINTER FLOUNDER (BLACKBACK)	44	PSEUDOPLEURONECTES AMERICANUS	7958 202 1
WINTER SKATE	173	RAJA UCELLATA	7612 101 4
WITCH FLOUNDER (GRAY SOLE)	24	GLYPTOCEPHALUS CYNOGLOSSUS	7958 204 1
WOLFFISH -ATLANTIC	88	ANARHICHAS LUPUS	7945 401 1
WOLF EELPOUT	226	LYCENCHELYS VERRILLII	7925 702 1
YELLOW BULLHEAD	119	ICTALURUS NATALIS	7918 101 3
YELLOW CHUB	362	KYPHOSUS INCISOR	79381701 1
YELLOW JACK	345	CARANX BARTHOLOMAEI	7938 902 1
YELLOW PERCH	142	PERCA FLAVESCENS	7938 402 1
YELLOWTAIL FLOUNDER (DAB)	49	LIMANDA FERRUGINEA	7958 203 1
	623	ACETES SP.	0 0 0
	630	AEGININA LONGICORNIS	53178101 1
	631	AGLAOPHAMUS CIRCINATA	48021301 2
	632	AMMOTRYPANE AULOGASTER	4803 204 1
	633	AMMOTRYPANE CYLINDRICAUDATUS	4803 204 2
	634	AMPELISCA ABDITA	5317 201 1
	635	AMPELISCA AGASSIZI	5317 201 5
	636	AMPELISCA SP.	5317 201 0
	637	AMPELISCA VADORUM	5317 201 2
	638	AMPHARETE ARCTICA	4812 204 2
	639	AMPHIOPLUS MACILENTUS	68032101 2
	640	AMPHITRITE ORNATA	4812 301 1
	775	ANNELIDA-(POLYCHAETA)	4800 0 0
	641	ANONYX LILJEBORGI	53173406 2
	642	ANONYX SARSI	53173406 1
	643	ANTHOZOA	3303 0 0
	644	ADRIDAE	5317 600 0
	645	APHRODITA HASTATA	4802 101 1
	646	ARGISSA HAMATIPES	5317 701 1
	395	ARGYROPELECUS ACULEATUS	7911 201 1
	647	ARICIDEA NEOSUECICA	4805 101 6

Appendix A. Part 4.

VESSEL CODE DESIGNATIONS

<u>Code</u>	<u>Vessel</u>	<u>LOA</u>	<u>Draft</u>	<u>Beam</u>	<u>Hull</u>	<u>Type</u>
AN	Annandale	90'	10.5'	23'	steel	gen. purpc
BN	Bernoulli	26'	2'	10'	glass	launch
BR	W.K. Brooks	30'	2'	8'	wood	launch
DR	DWR-2	38'	1'	10'	steel	houseboat
HO	Captain Hoxton	40'	1.5'	8'	wood	launch
IN	Investigator	28'	2.5'	8'	wood	launch
IV	Irma Virginia	65'	8'	12'	wood	trawler
JM	W. T. James Jr.	186'	10'	30'	steel	converted
LA	Langley	80'	5.5'	32'	steel	ferry boat
MB	Marbel	34'	3'	11.5'	wood	launch
MA	USS Marmer	99'	12'	20'	steel	
ML	Marmer Launch	18'	.5'	6'	wood	launch
OB	Observer	27'	1.5'	8'	wood	launch
PA	Pathfinder	55'	5.5'	17'	wood	trawler
RR	Range Recoverer	186'	10'	30'	steel	converted
RE	Restless	36'	2'	8'	wood	launch
RY	Reynolds	23'	1.5'	9'	glass	launch
SB	Sea Breeze	94'	9'	21'	wood	trawler
SQ	Sea Queen					
VA	Virginia (Second Heaven)	52'	10'	12.5'	wood	yawl
VL	Virginia Lee	35'	2'	7'		launch
WS	White Stone				glass & wood	workboat
JS	Capt. John Smith	42'	4.5'	14'		
RT	Retriever	115'	5'	34'	steel	LCU
JB	Claiborne	46'	4'	12'	steel	J-Boat

OTHER

FP	Fixed Position					
CH	Chartered Vessel					
PL	Airplane					
CG	Coast Guard Vessel					
SK	Institute Outboard Skiff					
TH	Thunderbird-Outboard					
				CF		Commission of Fisheries
				MR		Marine Resources Commission
				HC		Helicopter
				SC		Scow or barge
				TB		U.S. Army "T-Boat"
				JB		U.S. Army "J-Boat"

OPERATION KITE

LC	LCU ("Army Down")
CU	LCU ("Army Up")
LF	"Langley Forward"
BW	Boston Whaler (no longer used)

Appendix A, Part 5

Gear Code Designations

<u>Code</u>	<u>Gear</u>
9	Unlined 16 foot otter trawl
10	Unlined 30 foot otter trawl
32	5 foot midwater cobb trawl
33	Lined 30 foot otter trawl
35	Lined 16 foot otter trawl
43	Unlined 30 foot semi-balloon trawl with tickler chain

Appendix A. Part 6

Tidal Current Stage

<u>Stage</u>	<u>Code</u>	<u>Alternate Code</u>
Early flood	1	
Maximum flood	2	F
Late flood	3	
Slack before ebb	4	H
Early ebb	5	
Maximum ebb	6	E
Late ebb	7	
Slack before flood	8	L

Tow Direction Relative to Tide

<u>Direction</u>	<u>Code</u>
With the tide	1
Against the tide	2

Appendix A. Part 7.

River Codes

AS - Assawoman Bay	LH - Little Hunting Creek
AT - Atlantic	OC - Occoquan
BA - Big Annemessex	
BH - Harris River	
BK - Back River	
BN - North branch of Back River	
BW - West branch of Back River	
CH - Chincoteague Bay	
CL - Chesapeake (Lower)	
CP - Pocomoke Sound	
CS - Chester	
CT - Choptank	
CU - Chesapeake (Upper)	
GC - Gunston Cove	
GW - Great Wicomico	
HN - Hunting Creek	
JA - James River	
JC - Chickahominy	
JE - Elizabeth	
JN - Nansemond	
JP - Pagan	
JW - Warwick	
JX - Appomattox	
JXN - Appomattox Navigation Channel	
LC - Little Creek	
LN - Lynnhaven Bay	
MB - Mobjack	
ME - East	
MK - Manokin	
MN - North	
MP - Mattiponi	
MS - Severn	
MT - Metomkin Bay	
MW - Ware	
NC - Nanticoke	
PA - Anacostia	
PB - Bennett Creek	
PC - Chisman Creek	
PK - Piankatank	
PM - Pamunkey	
PO - Potomac	
PQ - Poquoson	
PS - St. Mary's	
PW - Wicomico	
PX - Patuxent	
RA - Rappahannock	
RC - Corrotoman	
SB - Small Boat Harbor (James)	
SH - Shelf	
TS - Tangier Sound	
WC - Wachapreague	
YK - York	
YP - Poropotank	

APPENDIX B

YORK RIVER TRAWL SURVEY (CROAKER ONLY) -CONTENTS

CONTENTS PROCEDURE

PHYSICAL CHARACTERISTICS OF OS DATA SET

DSNAME=MV82BNM.YORKCRK UNIT=SYSDA VOL=SER=USER02 SPACE=(TRK,(20,6))

DISP=OLD DEVICE= 3330MOD11 TRACKSIZE= 13030 BYTES

CREATED MONDAY, JULY 14, 1980

117 TRACKS ALLOCATED IN 12 EXTENTS

SAS DATA SET DIRECTORY

NAME # OBS TRACKS SUBEXTENTS

YORKCRK 3581 57 1  
 TOTAL TRACKS USED: 58  
 HIGH TRACK USED: 114

CONTENTS OF SAS DATA SET A.YORKCRK

TRACKS USED=57 SUBEXTENTS=1 OBSERVATIONS=3581

CREATED BY JOB #MV82DAT AT 10:37 MONDAY, JULY 14, 1980

BY SAS RELEASE 79.3A DSNAME=MV82BNM.YORKCRK BLKSIZE=2048 LRECL=172

OBSERVATIONS PER TRACK=66 GENERATED BY PROC SORT

ALPHABETIC LIST OF VARIABLES

#	VARIABLE LABEL	TYPE	LENGTH	POSITION	#	VARIABLE LABEL	TYPE	LENGTH	POSITION
2	COLLN	CHAR	4	12	21	LONGCT	NUM	8	144
18	CROAKER	NUM	4	128	6	MON.	NUM	8	40
19	CROAKVT	NUM	4	132	4	SAL	NUM	8	24
22	CRIMIN	NUM	8	152	24	SECTION	CHAR	4	168
23	CRIMIN	NUM	8	160	17	STATION	CHAR	6	122
5	DAY	NUM	8	32	3	TEMP	NUM	8	16
13	DEPTH	NUM	8	90	15	TIDE	NUM	8	106
16	FISHDEP	NUM	8	114	11	TIME	NUM	8	80
7	GEAR	NUM	8	48	14	TOWDIR	NUM	8	98
8	LAT	NUM	8	56	10	TOWTIM	NUM	8	72
20	LATCT	NUM	8	136	12	VESSEL	CHAR	2	88
9	LONG	NUM	8	64	1	YEAR	NUM	8	4

*/\* THERE WERE CASES WHEN TOWLENGTH, NOT TOWTIME WAS GIVEN. WHEN TOWLEN=25, THE APPROXIMATE CONVERSION WAS TOWTIM=5. THEREFORE, FOR THE PURPOSES OF MY CALCULATIONS, THE CONVERSION WAS MADE. TOWLEN WAS DROPPED BECAUSE IT WAS NO LONGER USEFUL. TOWLEN STILL APPEARS ON THE ORIGINAL DATA. HERE IS A LIST OF THE COLLECTION NUMBERS IN WHICH THE CHANGES WERE MADE.\*/*

*/\* THERE WAS ONE INSTANCE OF TOWTIME=73. THIS WAS ASSUMED TO BE A KEY PUNCH ERROR. BASED ON SURROUNDING DATA IT WAS CHANGED TO TOWTIM=5. THAT WAS COLLN F674. 16 NOV 73.\*/*

*/\* WHEN TOWTIM=0 OR BLANK, THE DATA WERE DROPPED.\*/*

APPENDIX C  
MONTHLY CROAKER/YORK RIVER TRAWL DATA

OBS	YEAR	MONTH	CR10MIN	OBS	YEAR	MONTH	CR10MIN
1	51	10	0.500	63	58	8	0.1111
2	51	11	1.500	64	58	9	4.9470
3	51	12	4.900	65	58	10	17.0000
4	52	1	5.400	66	58	11	10.1591
5	52	2	13.200	67	58	12	3.3889
6	52	3	5.400	68	59	4	0.0000
7	52	4	15.800	69	59	5	2.0000
8	52	5	12.800	70	59	6	2.1083
9	52	6	16.800	71	59	7	2.4643
10	52	7	19.300	72	59	8	0.4167
11	52	8	1.700	73	59	9	0.1136
12	52	9	0.500	74	59	10	24.9318
13	52	10	10.800	75	59	11	1.1970
14	52	11	16.600	76	60	5	19.7197
15	52	12	22.900	77	60	6	0.4815
16	53	1	2.400	78	60	7	17.2407
17	53	2	22.700	79	60	8	3.0833
18	53	3	53.400	80	61	1	14.5556
19	53	4	21.200	81	61	4	0.0000
20	53	5	60.800	82	61	5	0.1111
21	53	6	29.300	83	61	6	0.2083
22	53	7	6.800	84	61	7	0.3333
23	53	8	0.700	85	61	8	2.8889
24	53	9	2.300	86	61	9	0.2222
25	53	10	53.100	87	61	10	1.3194
26	53	11	91.200	88	61	11	0.4167
27	53	12	30.500	89	61	12	2.8333
28	54	2	30.400	90	62	1	1.0000
29	54	3	11.500	91	62	2	0.7639
30	54	4	23.800	92	62	3	0.1111
31	54	5	6.200	93	62	4	0.0000
32	55	2	0.000	94	62	5	11.7222
33	55	3	1.000	95	62	6	13.2222
34	55	4	0.222	96	62	7	32.0139
35	55	5	0.000	97	62	8	9.2222
36	55	6	28.667	98	62	9	13.0000
37	55	7	14.091	99	62	10	0.0000
38	55	9	1.778	100	62	11	2.8000
39	56	4	0.061	101	62	12	0.0000
40	56	5	17.167	102	63	1	0.1667
41	56	7	1.833	103	63	2	0.0000
42	56	8	1.389	104	63	3	0.0000
43	56	9	1.056	105	63	4	0.0000
44	56	10	3.933	106	63	5	0.0000
45	56	11	7.576	107	63	6	0.0000
46	56	12	23.455	108	63	7	0.3810
47	57	1	15.714	109	63	8	0.1905
48	57	2	3.129	110	63	9	0.0952
49	57	3	9.818	111	63	10	0.0000
50	57	5	131.265	112	63	11	6.3571
51	57	8	39.015	113	63	12	4.6111
52	57	9	33.773	114	64	1	0.9545
53	57	10	10.242	115	64	2	0.0000
54	57	11	14.159	116	64	3	0.0000
55	57	12	19.818	117	64	4	0.0000
56	58	1	1.515	118	64	5	0.0000
57	58	2	0.364	119	64	6	0.9524
58	58	3	0.000	120	64	7	0.8571
59	58	4	0.909	121	64	8	1.5238
60	58	5	0.333	122	64	9	3.4881
61	58	6	3.879	123	64	10	1.0833
62	58	7	3.833	124	64	11	14.6786

APPENDIX C (CONT'D)

DBS	YEAR	MONTH	CR10MIN
125	64	12	38.2917
126	65	1	26.4649
127	65	2	3.4048
128	65	3	11.9325
129	65	4	1.7292
130	65	5	38.1548
131	65	6	29.2500
132	65	7	36.2857
133	65	8	4.7619
134	65	9	0.3333
135	65	10	8.4722
136	65	11	64.5667
137	65	12	26.1875
138	66	1	4.4405
139	66	2	0.0000
140	66	3	0.0000
141	66	4	0.0000
142	66	5	0.0833
143	66	6	0.0000
144	66	7	0.1481
145	66	8	0.1026
146	66	9	0.8750
147	66	10	4.1917
148	66	11	12.6250
149	66	12	8.5667
150	67	1	4.0729
151	67	2	0.7407
152	67	3	0.2222
153	67	4	0.3611
154	67	5	1.6750
155	67	6	13.5278
156	67	7	8.0833
157	67	8	4.5926
158	67	9	0.2963
159	67	10	0.0000
160	67	11	0.0000
161	67	12	0.0000
162	68	1	0.2667
163	68	2	0.0000
164	68	3	0.0000
165	68	4	0.0000
166	68	5	0.0000
167	68	6	0.0000
168	68	7	0.0000
169	68	8	0.1389
170	68	9	0.3704
171	68	10	0.0000
172	68	11	19.0093
173	68	12	36.9907
174	69	1	0.5926
175	69	2	0.0000
176	69	3	0.0000
177	69	4	0.0000
178	69	5	0.0000
179	69	6	0.0741
180	69	7	1.0185
181	69	8	4.0278
182	69	9	2.5000
183	69	10	80.7593
184	69	11	82.8380
185	69	12	29.1296
186	70	1	2.1333
187	70	2	0.0000
188	70	3	0.0000
189	70	4	0.074
190	70	5	0.426
191	70	6	0.074
192	70	7	0.0000
193	70	8	0.0000
194	70	9	9.602
195	70	10	18.954
196	70	11	24.065
197	70	12	111.241

DBS	YEAR	MONTH	CR10MIN
198	71	1	3.611
199	71	2	0.250
200	71	3	0.000
201	71	4	0.066
202	71	5	0.787
203	71	6	0.250
204	71	7	0.404
205	71	8	2.500
206	71	9	0.536
207	71	10	3.471
208	71	11	23.377
209	71	12	70.946
210	72	1	90.878
211	72	2	142.314
212	72	3	24.387
213	72	4	31.694
214	72	5	18.620
215	72	6	82.753
216	72	7	31.478
217	72	8	12.114
218	72	9	4.333
219	72	10	10.000
220	72	11	25.022
221	72	12	22.311
222	73	1	9.111
223	73	2	8.636
224	73	3	21.333
225	73	4	9.277
226	73	5	5.283
227	73	6	7.509
228	73	7	20.500
229	73	8	10.492
230	73	9	27.896
231	73	10	122.952
232	73	11	5.479
233	74	1	5.316
234	74	2	7.899
235	74	3	151.000
236	74	5	140.750
237	74	6	274.250
238	74	7	177.250
239	74	8	63.250
240	74	9	57.500
241	74	10	31.750
242	74	11	19.000
243	75	1	406.868
244	75	5	66.500
245	75	6	77.750
246	75	7	104.633
247	75	8	114.250
248	75	9	29.500
249	75	10	35.750
250	75	11	105.500
251	76	1	55.491
252	76	4	30.000
253	76	5	18.000
254	76	6	141.250
255	76	7	53.250
256	76	8	93.333
257	76	9	28.333
258	76	10	121.167
259	76	11	182.667
260	77	3	0.816
261	77	4	10.750
262	77	6	21.385
263	77	7	38.067
264	77	8	1.167
265	77	9	3.500
266	77	10	38.250
267	77	11	105.500
268	78	2	26.131
269	78	3	0.000



APPENDIX D

VIMS PIER MONTHLY WATER TEMPERATURES

OBS YEAR MONTH VIMSTEMP

1	54	1	4.3
2	54	2	5.4
3	54	3	8.2
4	54	4	14.6
5	54	5	18.6
6	54	6	23.5
7	54	7	25.6
8	54	8	25.7
9	54	9	24.7
10	54	10	20.0
11	54	11	11.6
12	54	12	5.3
13	55	1	4.0
14	55	2	3.2
15	55	3	8.8
16	55	4	13.5
17	55	5	19.3
18	55	6	22.6
19	55	7	27.1
20	55	8	27.4
21	55	9	23.8
22	55	10	19.3
23	55	11	11.8
24	55	12	5.0
25	56	1	1.9
26	56	2	5.2
27	56	3	7.6
28	56	4	11.0
29	56	5	17.5
30	56	6	23.5
31	56	7	25.9
32	56	8	25.5
33	56	9	23.2
34	56	10	18.1
35	56	11	13.2
36	56	12	9.1
37	57	1	4.3
38	57	2	5.5
39	57	3	8.3
40	57	4	13.9
41	57	5	20.1
42	57	6	20.2
43	57	7	26.3
44	57	8	25.5
45	57	9	24.8
46	57	10	16.8
47	57	11	12.1
48	57	12	7.1
49	58	1	3.4
50	58	2	1.8
51	58	3	5.3
52	58	4	11.5
53	58	5	18.4
54	58	6	22.3
55	58	7	25.7
56	58	8	26.3
57	58	9	23.5
58	58	10	17.7
59	58	11	13.6
60	58	12	5.7
61	59	1	3.3
62	59	2	5.3

OBS YEAR MONTH VIMSTEMP

63	59	3	8.4
64	59	4	14.1
65	59	5	20.5
66	59	6	24.8
67	59	7	27.3
68	59	8	27.9
69	59	9	25.9
70	59	10	21.4
71	59	11	12.9
72	59	12	7.0
73	60	1	5.3
74	60	2	4.6
75	60	3	3.6
76	60	4	13.1
77	60	5	19.3
78	60	6	24.3
79	60	7	26.1
80	60	8	26.4
81	60	9	24.5
82	60	10	19.2
83	60	11	12.4
84	60	12	5.5
85	61	1	2.8
86	61	2	3.3
87	61	3	8.9
88	61	4	11.4
89	61	5	18.2
90	61	6	22.8
91	61	7	25.8
92	61	8	26.7
93	61	9	25.6
94	61	10	19.3
95	61	11	14.0
96	61	12	7.1
97	62	1	3.9
98	62	2	3.9
99	62	3	6.5
100	62	4	12.5
101	62	5	20.3
102	62	6	23.4
103	62	7	25.3
104	62	8	25.8
105	62	9	23.1
106	62	10	19.5
107	62	11	.
108	62	12	5.2
109	63	1	2.5
110	63	2	2.2
111	63	3	7.1
112	63	4	13.5
113	63	5	18.1
114	63	6	23.1
115	63	7	26.3
116	63	8	26.4
117	63	9	22.6
118	63	10	18.9
119	63	11	13.3
120	63	12	5.9
121	64	1	3.1
122	64	2	4.0
123	64	3	7.8
124	64	4	.

## APPENDIX D (CONT'D)

OBS.	YEAR	MONTH	VIMSTEMP
125	64	5	.
126	64	6	.
127	64	7	.
128	64	8	25.2
129	64	9	23.7
130	64	10	.
131	64	11	14.0
132	64	12	8.4
133	65	1	4.9
134	65	2	3.8
135	65	3	6.4
136	65	4	11.2
137	65	5	19.2
138	65	6	21.9
139	65	7	25.3
140	65	8	25.9
141	65	9	24.3
142	65	10	18.0
143	65	11	12.2
144	65	12	7.7
145	66	1	4.3
146	66	2	2.6
147	66	3	7.7
148	66	4	11.8
149	66	5	17.6
150	66	6	21.7
151	66	7	26.3
152	66	8	25.2
153	66	9	22.7
154	66	10	17.5
155	66	11	12.3
156	66	12	6.6
157	67	1	4.8
158	67	2	4.6
159	67	3	6.9
160	67	4	12.3
161	67	5	15.9
162	67	6	22.6
163	67	7	25.0
164	67	8	25.3
165	67	9	22.0
166	67	10	18.1
167	67	11	11.1
168	67	12	7.3
169	68	1	2.7
170	68	2	3.1
171	68	3	6.9
172	68	4	.
173	68	5	.
174	68	6	23.6
175	68	7	26.0
176	68	8	26.8
177	68	9	23.4
178	68	10	19.7
179	68	11	12.1
180	68	12	5.6
181	69	1	2.9
182	69	2	3.3
183	69	3	5.3
184	69	4	13.3
185	69	5	18.7
186	69	6	24.1

OBS	YEAR	MONTH	VIMSTEMP
187	69	7	26.7
188	69	8	25.8
189	69	9	23.1
190	69	10	18.4
191	69	11	12.3
192	69	12	5.2
193	70	1	1.9
194	70	2	3.4
195	70	3	6.6
196	70	4	12.0
197	70	5	18.7
198	70	6	23.8
199	70	7	25.5
200	70	8	26.5
201	70	9	25.4
202	70	10	19.7
203	70	11	13.2
204	70	12	8.2
205	71	1	4.4
206	71	2	4.6
207	71	3	8.5
208	71	4	13.1
209	71	5	18.9
210	71	6	24.1
211	71	7	26.7
212	71	8	27.1
213	71	9	25.9
214	71	10	21.1
215	71	11	15.1
216	71	12	8.1
217	72	1	6.7
218	72	2	4.4
219	72	3	8.0
220	72	4	12.2
221	72	5	17.9
222	72	6	21.3
223	72	7	.
224	72	8	.
225	72	9	.
226	72	10	18.4
227	72	11	12.8
228	72	12	8.4
229	73	1	5.5
230	73	2	5.1
231	73	3	8.7
232	73	4	12.8
233	73	5	18.3
234	73	6	24.1
235	73	7	26.7
236	73	8	27.4
237	73	9	26.2
238	73	10	20.7
239	73	11	13.3
240	73	12	8.9
241	74	1	7.8
242	74	2	7.4
243	74	3	9.8
244	74	4	14.1
245	74	5	19.5
246	74	6	23.8
247	74	7	25.9
248	74	8	26.6

## APPENDIX D (CONT'D)

DBS	YEAR	MONTH	VIMSTEMP
249	74	9	24.5
250	74	10	17.3
251	74	11	13.9
252	74	12	8.5
253	75	1	8.0
254	75	2	7.5
255	75	3	8.1
256	75	4	11.6
257	75	5	19.9
258	75	6	24.8
259	75	7	26.4
260	75	8	28.2
261	75	9	24.0
262	75	10	20.3
263	75	11	15.0
264	75	12	7.4
265	76	1	3.5
266	76	2	6.4
267	76	3	11.2
268	76	4	14.5
269	76	5	18.4
270	76	6	22.9
271	76	7	26.1
272	76	8	25.7
273	76	9	23.3
274	76	10	16.8
275	76	11	8.9
276	76	12	4.9
277	77	1	0.4
278	77	2	2.0
279	77	3	9.9
280	77	4	15.9
281	77	5	20.9
282	77	6	23.9
283	77	7	28.4

APPENDIX E

KIPTOPEAKE BEACH WATER TEMPERATURE DATA

BLUE CRAB AND ENVIRONMENTAL DATA  
 CALENDAR YEARS 1958 THROUGH 1975  
 MONTHLY MEAN WATER TEMPERATURE, IN DEGREES C, KIPTOPEAKE BEACH, VA  
 SOURCES: MARMAP, NMFS, VIA DIRECTOR, ATLANTIC ENVIRONMENTAL GROUP, NARRAGANSETT, RI  
 AND U.S. COAST AND GEODETIC SURVEY AND NATIONAL OCEAN SURVEY, ROCKVILLE, MD  
 DATA ON FILE IN CRUSTACEOLOGY DEPARTMENT, VIMS, VARIABLE CODE AKBWT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
1958	3.40	2.10	6.00	10.70	17.30	22.40	25.70	24.20	23.30	17.60	13.30	6.10	14.34
1959	4.30	-	8.00	12.60	20.00	22.90	25.80	25.60	24.10	19.60	12.30	7.30	.
1960	5.40	4.80	3.30	11.60	17.60	23.00	24.50	24.80	23.60	19.10	-	4.90	.
1961	2.80	3.00	7.90	11.00	14.20	18.10	23.70	25.10	23.80	18.00	12.80	6.80	13.93
1962	3.70	3.40	5.30	11.50	18.00	22.60	24.20	24.50	22.40	17.60	10.60	4.10	13.99
1963	1.30	1.40	5.60	12.10	16.10	21.60	24.10	24.10	20.70	17.40	12.20	4.80	13.45
1964	3.20	3.60	6.80	11.20	17.60	22.10	23.40	24.30	22.70	16.40	13.10	7.30	14.31
1965	4.60	3.20	5.90	10.40	17.90	20.40	24.40	24.40	23.80	17.40	11.90	7.60	14.32
1966	3.80	2.30	6.80	10.90	15.70	20.40	26.90	24.00	22.60	17.20	11.80	6.20	13.88
1967	5.10	3.80	6.20	10.90	15.00	20.80	24.30	24.20	21.00	17.60	10.90	6.80	13.89
1968	2.10	1.90	5.30	11.90	17.10	22.60	25.00	25.20	22.90	19.10	11.90	5.50	16.21
1969	3.00	2.50	4.70	11.80	16.80	22.90	25.80	24.90	23.00	18.00	11.20	5.30	14.16
1970	0.80	2.90	5.60	10.80	17.30	21.80	23.30	25.60	24.10	18.70	12.70	7.40	14.25
1971	2.80	2.50	6.50	10.70	16.10	21.60	25.10	24.40	23.70	19.80	13.50	7.80	14.54
1972	6.80	4.60	7.20	10.60	16.00	19.60	24.20	24.90	22.60	16.60	11.80	8.10	14.42
1973	4.50	3.60	7.20	11.40	16.80	22.00	24.30	25.10	24.40	19.70	12.50	4.70	14.68
1974	6.70	5.60	8.40	12.20	17.60	21.70	24.80	25.00	22.90	16.20	12.20	6.80	15.01
1975	5.90	5.70	6.70	9.80	17.10	22.50	24.70	26.60	23.10	19.50	14.00	7.60	15.27
MEAN	3.90	3.35	6.30	11.23	16.90	21.61	24.57	24.83	23.04	18.08	12.28	6.39	14.37

Harris, R. E. Jr. and W. A. Van Engel. 1981. Relationship between the Chesapeake Bay Blue Crabs and its Climatological Environment: Oceanographic and Atmospheric Data. VIMS, Data Rept. No. 15. 41 pp.



APPENDIX F. PART 2. VIMS York River  
Hydrographic File - Contents

CONTENTS OF SAS DATA SET

WORK.DATA1  
TRACKS USED=473 SUBEXTENTS=2 OBSERVATIONS=27356 CREATED BY JOB DHYDR  
01 AT 19:20 TUESDAY, FEBRUARY 3, 1981  
BY SAS RELEASE 79.3B DSNAME=SYS81034.T185240.RV001.DHYDR01.R0006007 B  
LKSIZ=13030 LRECL=221 OBSERVATIONS PER TRACK=58  
GENERATED BY DATA

WORK.DATA2  
TRACKS USED=331 SUBEXTENTS=1 OBSERVATIONS=19754 CREATED BY JOB DHYDR  
01 AT 19:20 TUESDAY, FEBRUARY 3, 1981  
BY SAS RELEASE 79.3B DSNAME=SYS81034.T185240.RV001.DHYDR01.R0006007 B  
LKSIZ=13030 LRECL=215 OBSERVATIONS PER TRACK=60  
GENERATED BY DATA

ALPHABETIC LIST OF VA

RIABLES

#	VARIABLE	TYPE	LENGTH	POSITION	FORMAT
17	AIRTEMP	CHAR	4	95	
12	BOTTOM	NUM	8	74	
7	CRUISE	CHAR	5	52	
36	CURR	CHAR	3	195	
35	CURDIR	CHAR	2	193	
1	DAY	NUM	8	4	
38	DD	CHAR	3	200	
25	EQUA1	NUM	8	148	
26	EQUA2	NUM	8	156	
18	FREE	CHAR	1	99	
5	LAT	NUM	8	36	
21	LATCT	NUM	8	116	
19	LATDEG	NUM	8	100	
20	LATMIN	NUM	8	108	
6	LONG	NUM	8	44	
24	LONGCT	NUM	8	140	
22	LONGDEG	NUM	8	124	
23	LONGMIN	NUM	8	132	
2	MONTH	NUM	8	12	
27	N	NUM	8	164	
8	NCARDS	NUM	8	57	
34	PCCURR	CHAR	2	191	
37	PCDD	CHAR	2	198	
32	PCSAL	CHAR	2	185	
30	PCTEMP	CHAR	2	179	
39	PCVAR1	CHAR	2	203	
41	PCVAR2	CHAR	2	209	
43	PCVAR3	CHAR	2	215	
9	RIVER	CHAR	2	65	
33	SAL	CHAR	4	187	
28	SAMPDEP	CHAR	4	172	
29	SAMPTIME	CHAR	3	176	
14	SECCHI	CHAR	2	83	
4	STATIME	NUM	8	28	
10	STATION	CHAR	5	67	
31	TEMP	CHAR	4	181	
13	TIDE	CHAR	1	82	
40	VAR1	CHAR	4	205	
42	VAR2	CHAR	4	211	
44	VAR3	CHAR	4	217	
11	VESSEL	CHAR	2	72	
15	WINDDIR	NUM	8	85	
16	WINDSP	CHAR	2	93	
3	YEAR	NUM	8	20	

APPENDIX G

NMFS ATLANTIC COMMERCIAL CROAKER CATCH DATA - CONTENTS

CONTENTS OF SAS DATA SET NMFSANN.NMFS3  
 TRACKS USED=13 SUBEXTENTS=1 OBSERVATIONS=1789 CREATED BY JOB WMVDBNM  
 AT 15:37 FRIDAY, OCTOBER 31, 1980 BY SAS RELEASE 79.4B  
 DSNAME=WMVDBNM.NMFSANN1 BLKSIZE=2048 LRECL=84  
 OBSERVATIONS PER TRACK=144 GENERATED BY PROC COPY  
 ALPHABETIC LIST OF VARIABLES

#	VARIABLE LABEL	TYPE	LENGTH	POSITION	FORMAT	INFORMAT
8	AVGPRICE	NUM	8	60		
2	COUNTY	NUM	8	12		
9	DIST_SHD	NUM	8	68		
5	GEAR	NUM	8	36		
4	H20BODY	NUM	8	28		
6	POUNDS	NUM	8	44		
3	STATE	NUM	8	20		
10	STATEDOFF	NUM	8	76		
7	VALUE	NUM	8	52		
1	YEAR	NUM	8	4		

## APPENDIX H

## VIRGINIA COMMERCIAL CROAKER CATCH (NMFS AND VMRC)

DBS	YEAR	POUNDS
1	29	14413997
2	30	19908201
3	31	12398000
4	32	14692706
5	33	14235182
6	34	19942800
7	35	23038000
8	36	28442000
9	37	33112000
10	38	43284000
11	39	41056000
12	40	38292000
13	41	28434000
14	42	26695000
15	43	.
16	44	33229000
17	45	55194000
18	46	37321000
19	47	39061000
20	48	23152000
21	49	12381000
22	50	6674000
23	51	4223000
24	52	3641000
25	53	4061000
26	54	5124000
27	55	9752000
28	56	9668000
29	57	14198000
30	58	11856000
31	59	7655000
32	60	3933000
33	61	3082000
34	62	1293700
35	63	122400
36	64	394200
37	65	1531700
38	66	1463200
39	67	323500
40	68	6200
41	69	63200
42	70	127900
* 43	71	264900
44	72	484100
45	73	1358300
46	74	1501700
47	75	4721300
48	76	5897600
49	77	8600191
50	78	8098662
51	79	2388462

No statistics were collected in 1943.