

**ENVIRONMENTAL MONITORING AND ASSESSMENT PROGRAM-
SURFACE WATERS:**

**FIELD OPERATIONS AND METHODS FOR MEASURING THE
ECOLOGICAL CONDITION OF WADEABLE STREAMS**

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APPENDIX D

SPECIES CODES FOR AQUATIC VERTEBRATES: MID-ATLANTIC REGION

The following table contains the unique 6-character species code, the scientific name, and the common name assigned to each aquatic vertebrate species expected to be collected by EMAP sampling protocols in the Mid-Atlantic region. Generally, the species code is composed of the first four letters of the genus plus the first two letters of the species name. Modifications to this coding scheme were made in cases where two species could be assigned the same code. Species entries are arranged first by family (alphabetically), then by the assigned species code.

Similar lists have been compiled for EMAP-related studies occurring in regions other than the Mid-Atlantic. Information regarding the availability of species codes and associated information may be obtained through the EMAP-Surface Waters Technical Director, c/o U.S. EPA, 200 SW 35th St., Corvallis, OR 97333.

SPECIES LIST AND STATUS FOR MID-ATLANTIC REGION

CODE	Latin Name	Common Name
ICHTBD	<i>Ichthyomyzon bdellium</i>	Ohio Lamprey
ICHTFO	<i>Ichthyomyzon fossor</i>	Northern Brook Lamprey
ICHTGR	<i>Ichthyomyzon greeleyi</i>	Mountain Brook Lamprey
ICHTUN	<i>Ichthyomyzon unicuspis</i>	Silver Lamprey
LAMPAE	<i>Lampetra aepyptera</i>	Least brook lamprey
LAMPAP	<i>Lampetra appendix</i>	American brook lamprey
PETRMA	<i>Petromyzon marinus</i>	Sea lamprey
LAMPZZ		Unknown lamprey
ACIPBR	<i>Acipenser brevirostrum</i>	Atlantic sturgeon
ACIPFU	<i>Acipenser fulvescens</i>	Lake sturgeon
SCAPPL	<i>Scaphirhynchus platyrhynchus</i>	Shovelnose sturgeon
POLYSP	<i>Polyodon spatula</i>	Paddlefish
LEPIOC	<i>Lepisosteus oculatus</i>	Spotted gar
LEPIOS	<i>Lepisosteus osseus</i>	Longnose gar
LEPIPL	<i>Lepisosteus platostomus</i>	Shortnose gar
AMIACA	<i>Amia calva</i>	Bowfin
ANGURO	<i>Anguilla rostrata</i>	American eel
APHRSA	<i>Aphredoderus sayanus</i>	Pirate perch
LABISI	<i>Labidesthes sicculus</i>	Brook silversides
MENIBE	<i>Menidia beryllina</i>	Inland silverside
CARPCA	<i>Carpionodes carpio</i>	River carpsucker
CARPCY	<i>Carpionodes cyprinus</i>	Quillback
CARPVE	<i>Carpionodes velifer</i>	Highfin carpsucker
CATOCA	<i>Catostomus catostomus</i>	Longnose sucker
CATOCO	<i>Catostomus commersoni</i>	White sucker
CYCLEL	<i>Cycleptus elongatus</i>	Blue sucker
ERIMOB	<i>Erimyzon oblongus</i>	Creek chubsucker
ERIMSU	<i>Erimyzon sucetia</i>	Lake chubsucker
HYPENI	<i>Hypentelium nigricans</i>	Northern hogsucker
HYPERO	<i>Hypentelium roanokense</i>	Roanoke hogsucker

CODE	Latin Name	Common Name
ICTIBU	<i>Ictiobus bubalus</i>	Smallmouth buffalo
ICTICY	<i>Ictiobus cyprinellus</i>	Bigmouth buffalo
MINYME	<i>Minytrema melanops</i>	Spotted sucker
MOXOAN	<i>Moxostoma anisurum</i>	Silver redhorse
MOXOAR	<i>Moxostoma ariommum</i>	Bigeye jumprock
MOXOCA	<i>Moxostoma carinatum</i>	River redhorse
MOXOCE	<i>Moxostoma cervinum</i>	Black jumprock
MOXODU	<i>Moxostoma duquesnei</i>	Black redhorse
MOXOER	<i>Moxostoma erythrurum</i>	Golden redhorse
MOXOHA	<i>Moxostoma hamiltoni</i>	Rustyside sucker
MOXOMA	<i>Moxostoma macrolepidotum</i>	Shorthead redhorse
MOXOPA	<i>Moxostoma pappillosum</i>	V-lip redhorse
MOXORH	<i>Moxostoma rhothoecum</i>	Torrent sucker
MOXORO	<i>Moxostoma robustum</i>	Smallfin Sucker
MOXOVA	<i>Moxostoma valenciennesi</i>	Greater Redhorse
CATZZZ		Unknown catostomid
ACANPO	<i>Ancartharcus pomotis</i>	Mud sunfish
AMBLCA	<i>Ambloplites cavifrons</i>	Roanoke rockbass
AMBLRU	<i>Ambloplites rupestris</i>	Rockbass
ARCHIN	<i>Archoplites interruptus</i>	Sacramento perch
CENTMA	<i>Centrarchus macropterus</i>	Flier
ENNECH	<i>Enneacanthus chaetodon</i>	Blackbanded sunfish
ENNEGL	<i>Enneacanthus gloriosus</i>	Bluespotted sunfish
ENNEOB	<i>Enneacanthus obesus</i>	Banded sunfish
LEPOAU	<i>Lepomis auritus</i>	Redbreast sunfish
LEPOCY	<i>Lepomis cyanellus</i>	Green sunfish
LEPOGI	<i>Lepomis gibbosus</i>	Pumpkinseed
LEPOGU	<i>Lepomis gulosus</i>	Warmouth
LEPOMA	<i>Lepomis macrochirus</i>	Bluegill
LEPOME	<i>Lepomis megalotis</i>	Longear sunfish
LEPOMI	<i>Lepomis microlophus</i>	Redear sunfish

CODE	Latin Name	Common Name
MICRDO	<i>Micropterus dolomieu</i>	Smallmouth bass
MICRPU	<i>Micropterus punctulatus</i>	Spotted bass
MICRSA	<i>Micropterus salmoides</i>	Largemouth bass
POMOAN	<i>Pomoxis annularis</i>	White crappie
POMONI	<i>Pomoxis nigromaculatus</i>	Black crappie
CENTZZ		Unknown centrarcid
ALOSCH	<i>Alosa chrysochloris</i>	Skipjack herring
ALOSPS	<i>Alosa pseudoharengus</i>	Alewife (landlocked)
ALOSSA	<i>Alosa sapidissima</i>	American shad
DOROCE	<i>Dorosoma cepedianum</i>	Gizzard shad
COTTBA	<i>Cottus bairdi</i>	Mottled sculpin
COTTBL	<i>Cottus baileyi</i>	Black sculpin
COTTCA	<i>Cottus carolinae</i>	Banded sculpin
COTTCT	<i>Cottus confusus</i>	Shorthead sculpin
COTTCO	<i>Cottus cognatus</i>	Slimy sculpin
COTTGI	<i>Cottus girardi</i>	Potomac sculpin
COTTGU	<i>Cottus gulosus</i>	Riffle sculpin
COTTMA	<i>Cottus marginatus</i>	Margined sculpin
COTTRI	<i>Cottus ricei</i>	Spoonhead sculpin
COTTTE	<i>Cottus tenuis</i>	Slender Sculpin
COTTZZ		Unknown cottid
CAMPAN	<i>Camptostoma anomalum</i>	Stoneroller
CLINEL	<i>Clinostomus elongatus</i>	Redside dace
CLINFU	<i>Clinostomus funduloides</i>	Rosyside dace
COUEPL	<i>Couesius plumbeus</i>	Lake chub
CYPRAN	<i>Cyprinella analostana</i>	Satinfish shiner
CYPRGA	<i>Cyprinella galactura</i>	Whitetail shiner
CYPRMO	<i>Cyprinella monacha</i>	Spotfin chub
CYPRSP	<i>Cyprinella spiloptera</i>	Spotfin shiner
CYPRWH	<i>Cyprinella whipplei</i>	Steelcolor shiner
ERIMCA	<i>Erimystax cahni</i>	Slender chub

CODE	Latin Name	Common Name
ERIMDI	<i>Erimystax dissimilis</i>	Streamline chub
ERIMIN	<i>Erimystax insignis</i>	Blotched chub
ERIMXP	<i>Erimystax x-punctatus</i>	Gravel chub
EXOGLA	<i>Exoglossum laurae</i>	Tonguetied minnow
EXOGMA	<i>Exoglossum maxillingua</i>	Cutlips minnow
HYBOHA	<i>Hybognathus hankinsoni</i>	Brassy minnow
HYBORE	<i>Hybognathus regius</i>	Eastern silvery minnow
LUXIAL	<i>Luxilus albeolus</i>	White shiner
LUXICC	<i>Luxilus coccogenis</i>	Warpaint shiner
LUXICE	<i>Luxilus cerasinus</i>	Crescent shiner
LUXICH	<i>Luxilus chrysocephalus</i>	Striped shiner
LUXICR	<i>Luxilus cornutus</i>	Common shiner
LYTHAR	<i>Lythurus ardens</i>	Rosefin shiner
LYTHLI	<i>Lythurus lirus</i>	Mountain shiner
LYTHUM	<i>Lythurus umbratilis</i>	Redfin shiner
MACRAE	<i>Macrhybopsis aestivalis</i>	Speckled chub
MACRST	<i>Macrhybopsis storeriana</i>	Silver chub
MARGMA	<i>Margariscus margarita</i>	Pearl dace
NOCOB	<i>Nocomis biguttatus</i>	Horneyhead chub
NOCOLE	<i>Nocomis leptocephalus</i>	Bluehead chub
NOCOMI	<i>Nocomis micropogon</i>	River chub
NOCORA	<i>Nocomis raneyi</i>	Bull chub
NOTECR	<i>Notemigonus crysoleucas</i>	Golden shiner
NOTRAB	<i>Notropis amblops</i>	Bigeye chub
NOTRAL	<i>Notropis alborus</i>	Whitemouth shiner
NOTRAN	<i>Notropis anogenus</i>	Pugnose shiner
NOTRAO	<i>Notropis amoenis</i>	Comely shiner
NOTRAR	<i>Notropis ariommus</i>	Popeye shiner
NOTRAT	<i>Notropis atherinoides</i>	Emerald shiner
NOTRBC	<i>Notropis buccatus</i>	Silverjaw minnow
NOTRBH	<i>Notropis buchanani</i>	Ghost shiner

CODE	Latin Name	Common Name
NOTRBI	<i>Notropis bifrenatus</i>	Bridled shiner
NOTRBL	<i>Notropis blennius</i>	River shiner
NOTRCH	<i>Notropis chalybaeus</i>	Ironcolor shiner
NOTRDO	<i>Notropis dorsalis</i>	Bigmouth shiner
NOTRHD	<i>Notropis heterodon</i>	Blackchin shiner
NOTRHL	<i>Notropis heterolepis</i>	Blacknose shiner
NOTRHU	<i>Notropis hudsonius</i>	Spottail shiner
NOTRLE	<i>Notropis leuciodus</i>	Tennessee shiner
NOTRPH	<i>Notropis photogenis</i>	Silver shiner
NOTRPR	<i>Notropis procne</i>	Swallowtail shiner
NOTRRR	<i>Notropis rubricroceus</i>	Saffron shiner
NOTRRU	<i>Notropis rubellus</i>	Rosyface Shiner
NOTRSC	<i>Notropis scabriceps</i>	New River Shiner
NOTRSE	<i>Notropis semperasper</i>	Roughhead Shiner
NOTRSP	<i>Notropis spectrunculus</i>	Mirror Shiner
NOTRST	<i>Notropis stramineus</i>	Sand Shiner
NOTRTE	<i>Notropis telescopus</i>	Telescope Shiner
NOTRVO	<i>Notropis volucellus</i>	Mimic Shiner
OPSOEM	<i>Opsopoeodus emiliae</i>	Pugnose minnow
PHENCR	<i>Phenacobius crassilabrum</i>	Fatlips minnow
PHENMI	<i>Phenacobius mirabilis</i>	Suckermouth minnow
PHENTE	<i>Phenacobius teretulus</i>	Kanawha minnow
PHENUR	<i>Phenacobius uranops</i>	Stargazing minnow
PHOXCUCU	<i>Phoxinus cumberlandensis</i>	Blackside dace
PHOXEO	<i>Phoxinus eos</i>	Northern redbelly dace
PHOXER	<i>Phoxinus erythrogaster</i>	Southern redbelly dace
PHOXNE	<i>Phoxinus neogaeus</i>	Finescale dace
PHOXOR	<i>Phoxinus oreas</i>	Mountain redbelly dace
PHOXTE	<i>Phoxinus tennesseensis</i>	Tennessee dace
PIMENO	<i>Pimephales notatus</i>	Bluntnose minnow
PIMEPR	<i>Pimephales promelas</i>	Fathead minnow

CODE	Latin Name	Common Name
PIMEVI	<i>Pimephales vigilax</i>	Bullhead minnow
RHINAT	<i>Rhinichthys atratulus</i>	Blacknose dace
RHINBO	<i>Rhinichthys bowersi</i>	Cheat minnow
RHINCA	<i>Rhinichthys cataractae</i>	Longnose dace
RHINOS	<i>Rhinichthys osculus</i>	Speckled dace
SCARER	<i>Scardinius erythrophthal.</i>	Rudd
SEMOAT	<i>Semotilus atromaculatus</i>	Creek chub
SEMOCO	<i>Semotilus corporalis</i>	Fallfish
CARAAU	<i>Carassius auratus</i>	Goldfish
CYPRCA	<i>Cyprinus carpio</i>	Common carp
CTENID	<i>Ctenopharyngodon idella</i>	Grass carp
LEUCID	<i>Leuciscus idus</i>	Ide
TINCTI	<i>Tinca tinca</i>	Tench
CYPRZZ		Unknown cyprinid
FUNDCA	<i>Fundulus catenatus</i>	Northern studfish
FUNDDI	<i>Fundulus diaphanus</i>	Banded killifish
FUNDRA	<i>Fundulus rathbuni</i>	Speckled killifish
LUCAPA	<i>Lucania parva</i>	Rainwater killifish
ESOXAM	<i>Esox americanus</i>	Redfin/grass pickerel
ESOXLM	<i>Esox lucius x masq.</i>	Tiger muskellunge
ESOXLU	<i>Esox lucius</i>	Northern pike
ESOXMA	<i>Esox masquinongy</i>	Muskellunge
ESOXNI	<i>Esox niger</i>	Chain pickerel
LOTALO	<i>Lota lota</i>	Burbot
APELQU	<i>Apeltes quadracus</i>	Fourspine stickleback
CULEIN	<i>Culea inconstans</i>	Brook stickleback
GASTAC	<i>Gasterosteus aculeatus</i>	Threespine stickleback
PUNGPU	<i>Pungitius pungitius</i>	Ninespine stickleback
HIODAL	<i>Hiodon alosoides</i>	Goldeye
HIODTE	<i>Hiodon tergisus</i>	Mooneye
AMEIBR	<i>Ameiurus brunneus</i>	Snail bullhead

CODE	Latin Name	Common Name
AMEICA	<i>Ameiurus catus</i>	White catfish
AMEIME	<i>Ameiurus melas</i>	Black bullhead
AMEINA	<i>Ameiurus natalis</i>	Yellow bullhead
AMEINE	<i>Ameiurus nebulosus</i>	Brown bullhead
AMEIPL	<i>Ameiurus platycephalus</i>	Flat bullhead
ICTAPU	<i>Ictalurus punctatus</i>	Channel catfish
NOTUEL	<i>Noturus eleutherus</i>	Mountain madtom
NOTUEX	<i>Noturus exilis</i>	Slender madtom
NOTUFI	<i>Noturus flavipinnis</i>	Yellowfin madtom
NOTUFU	<i>Noturus flavus</i>	Stonecat
NOTUGI	<i>Noturus gilberti</i>	Orangefin madtom
NOTUGY	<i>Noturus gyrinus</i>	Tadpole madtom
NOTUIN	<i>Noturus insignis</i>	Margined madtom
NOTUMI	<i>Noturus miurus</i>	Brindled madtom
NOTUST	<i>Noturus stigmosus</i>	Northern madtom
PYLOOL	<i>Pylodictis olivaris</i>	Flathead catfish
MOROAM	<i>Morone americana</i>	White perch
MOROCH	<i>Morone chrysops</i>	White bass
MOROSA	<i>Morone saxatilis</i>	Striped bass
AMMOAS	<i>Ammocrypta asprella</i>	Crystal darter
AMMOPE	<i>Ammocrypta pellucida</i>	Eastern sand darter
ETHEAC	<i>Etheostoma acuticeps</i>	Sharphead darter
ETHEBL	<i>Etheostoma blennioides</i>	Greenside darter
ETHECE	<i>Etheostoma caeruleum</i>	Rainbow darter
ETHECI	<i>Etheostoma cinereum</i>	Ashy darter
ETHECM	<i>Etheostoma camurum</i>	Bluebreast darter
ETHEEX	<i>Etheostoma exile</i>	Iowa darter
ETHEFL	<i>Etheostoma flabellare</i>	Fantail darter
ETHEFU	<i>Etheostoma fusiforme</i>	Swamp darter
ETHEJE	<i>Etheostoma jessiae</i>	Blueside darter
ETHEKA	<i>Etheostoma kanawhae</i>	Kanawha darter

CODE	Latin Name	Common Name
ETHEKE	<i>Etheostoma kennecotti</i>	Stripetail darter
ETHELO	<i>Etheostoma longimanum</i>	Longfin darter
ETHEMA	<i>Etheostoma maculatum</i>	Spotted darter
ETHENI	<i>Etheostoma nigrum</i>	Johnny darter
ETHEOL	<i>Etheostoma olmstedii</i>	Tesselated darter
ETHEOS	<i>Etheostoma osburni</i>	Candy darter
ETHEPO	<i>Etheostoma podostemone</i>	Riverweed darter
ETHERU	<i>Etheostoma rufilineatum</i>	Redline darter
ETHESI	<i>Etheostoma simoterum</i>	Snubnose darter
ETHEST	<i>Etheostoma stigmaeum</i>	Speckled darter
ETHESW	<i>Etheostoma swannanoa</i>	Swannanoa darter
ETHETI	<i>Etheostoma tippecanoe</i>	Tippecanoe darter
ETHEUN	<i>Etheostoma unknown01</i>	Duskytail darter
ETHEVA	<i>Etheostoma variatum</i>	Variegate darter
ETHEVU	<i>Etheostoma vulneratum</i>	Wounded darter
ETHEZO	<i>Etheostoma zonale</i>	Banded darter
PERCAU	<i>Percina aurantiaca</i>	Tangerine darter
PERCBU	<i>Percina burtoni</i>	Blotchside logperch
PERCCA	<i>Percina caprodes</i>	Logperch
PERCCO	<i>Percina copelandi</i>	Channel darter
PERCEV	<i>Percina evides</i>	Gilt darter
PERCFL	<i>Perca flavescens</i>	Yellow perch
PERCGY	<i>Percina gymnocephala</i>	Appalachia darter
PERCMR	<i>Percina macrocephala</i>	Longhead darter
PERCMU	<i>Percina maculata</i>	Blackside darter
PERCNO	<i>Percina notogramma</i>	Stripeback darter
PERCOX	<i>Percina oxyrhynchus</i>	Sharpnose darter
PERCPE	<i>Percina peltata</i>	Shield darter
PERCRE	<i>Percina rex</i>	Roanoke logperch
PERCRO	<i>Percina roanoka</i>	Roanoke darter
PERCSC	<i>Percina sciera</i>	Dusky darter

CODE	Latin Name	Common Name
PERCSH	<i>Percina shumardi</i>	River darter
STIZCA	<i>Stizostedion canadense</i>	Sauger
STIZVI	<i>Stizostedion vitreum</i>	Walleye
PERCOM	<i>Percopsis omiscomaycus</i>	Troutperch
GAMBAF	<i>Gambusia affinis</i>	Western mosquitofish
GAMBHO	<i>Gambusia holbrooki</i>	Eastern mosquitofish
ONCOMY	<i>Oncorhynchus mykiss</i>	Rainbow trout
SALMTR	<i>Salmo trutta</i>	Brown trout
SALVFO	<i>Salvelinus fontinalis</i>	Brook trout
SALVNA	<i>Salvelinus namaycush</i>	Lake trout
SALMZZ		Unknown salmonid
APLOGR	<i>Aplodinotus grunniens</i>	Freshwater drum
UMBRLI	<i>Umbra limi</i>	Central mudminnow
UMBRPY	<i>Umbra pygmaea</i>	Eastern mudminnow