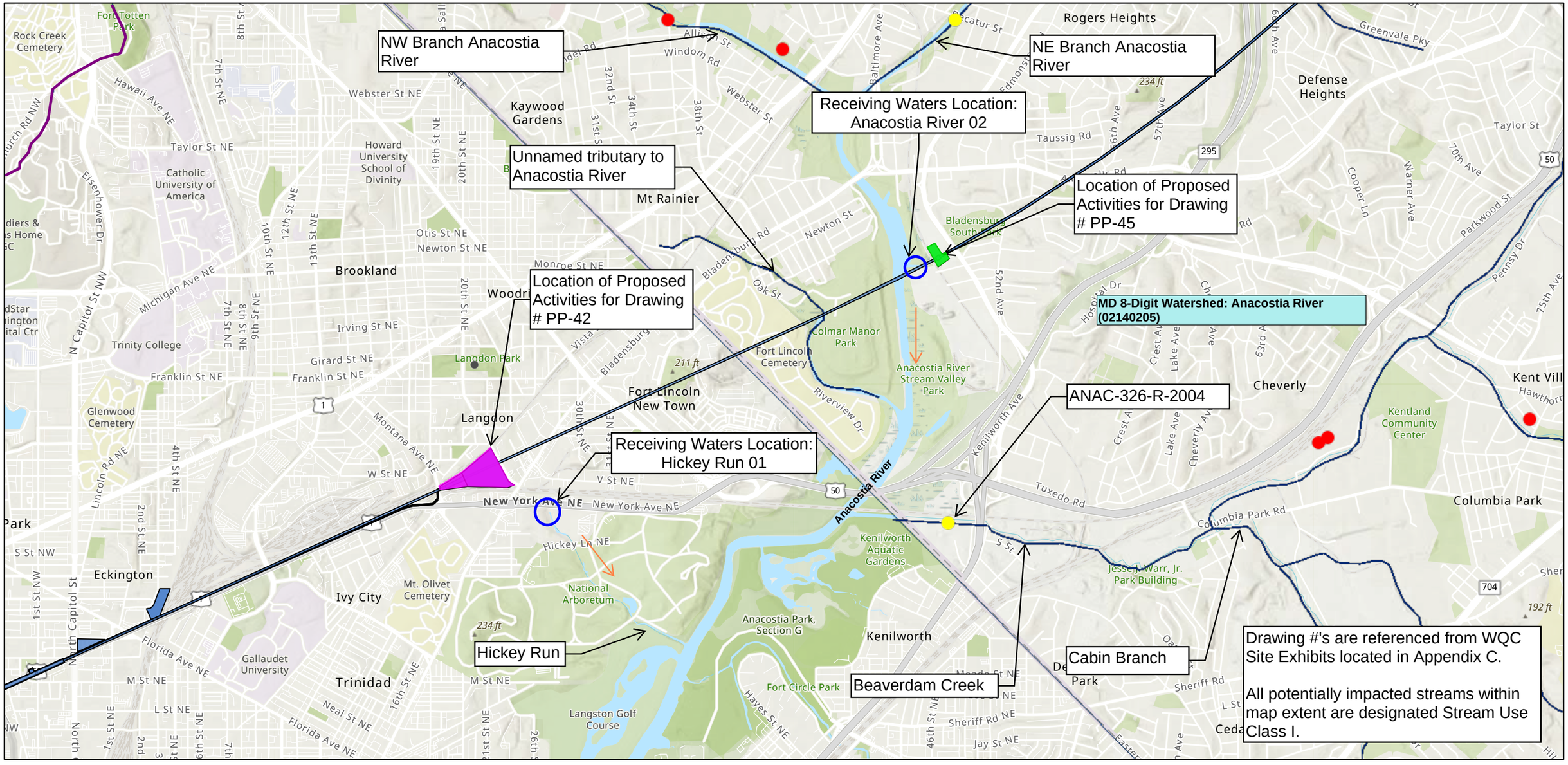
BWRR
BALTIMORE-WASHINGTON RAPID RAIL

Exhibit E
Aquatic Life Data

Maryland Stream Health



11/1/2022, 9:47:58 AM

Maryland DNR

MBSS Navigation:

Back to StreamHealth Map
About the MBSS
Stream Waders Volunteers
Data Search
Fish Distributions
Your Feedback

Color Code Legend:

Indicates **Good/Optimal** conditions

Indicates **Fair/Marginal** conditions

Indicates **Poor** conditions

MBSS Site Summary for: ANAC-326-R-2004


Located on **BEAVERDAM CR** in the Anacostia River watershed, 8-digit code: (02140205).
This stream was visited in the spring on 3/4/2004 and again in the summer on 7/7/2004.

An **Index of Biotic Integrity (IBI)** is a scientific tool used to identify and classify stream health. An IBI associates anthropogenic influences on a stream or with biological condition in the stream, and is formulated using data developed from biosurveys. Details on the development and application of MBSS IBIs are in this document.	
Fish IBI	Good - 4.0 / 5.0
Benthic IBI	Poor - 2.1 / 5.0

Land Use:
Landuse can provide important information for determining streamhealth.
(Hint: hovering over the text will display definitions of land use variables.)

Catchment area	9,571 acres
Urban Land Use	79 %
Agricultural Land Use	4 %
Forested Land Use	16 %


An example of a highly channelized urban stream.

	Physical Stream Habitat:	
	Instream Habitat	9/20 (Marginal)

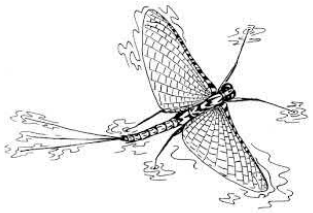

An example of woody debris in a stream.

Epifaunal Substrate	5/20 (Poor)
Velocity/Depth Diversity	11/20 (Suboptimal)
Pool Quality Pool Extent = 50 meters	11/20 (Suboptimal)
Riffle Quality Riffle Extent = 25 meters	9/20 (Marginal)
Shading	85 %
Embeddedness	65 %

The embeddedness, a measure of silt on the stream bottom, was 65%. This is relatively high, and may exclude some biota.

Stream Water Quality:	
Water temperature	23.5 º C
Dissolved oxygen (DO)	6.1 mg/L
pH (lab)	7.41
Conductivity	419 µmho/cm
Alkalinity (acid neutralizing capacity)	1611 µeq/L
Dissolved organic carbon (DOC)	4.6 mg/L

Biological Stream Condition:
Surveys of the organisms living within a stream can give indications of stream health. Species richness, or the number of different species present, as well as indicator species (species whose presence, absence or abundance can serve as a measure of environmental conditions) are informative for stream health.



Fish Survey Results:
The following **22** fish species were collected at **ANAC-326-R-2004.**
Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Benthic Macroinvertebrates:
These are organisms like insects, snails, and bivalves, which inhabit the bottom substrates of streams for at least part of their life cycles. Good water quality is indicated by high taxonomic diversity, an abundance of taxa that are sensitive to disturbance, and a lack of taxa

Common name	Count
TOTAL	474
Spottail Shiner	167
Mummichog	107
Tessellated Darter	66
Banded Killifish	27
Green Sunfish	20
Bluegill	17
Redbreast Sunfish	13
Bluntnose Minnow	11
White Sucker	11
Brown Bullhead	7
American Eel	7
Satinfin Shiner	6
Pumpkinseed	4
Largemouth Bass	3
Eastern Mudminnow	2
Golden Shiner	1
American Shad	1
Channel Catfish	1
Creek Chubsucker	1
Yellow Bullhead	1
Smallmouth Bass	1

Electrofishing to sample fish communities.

Amphibians and Reptiles:
The following were noted at this site:

that are tolerant of disturbance. Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Genus/Family	Common Name	Count
Tubificidae	Aquatic Worm	20
Thienemannimyia group	Non-Biting Midges	16
Enallagma	Narrow-Winged Damselfly	14
Limnodrilus	Worm	13
Argia	Narrow-Winged Damselfly	11
Gammarus	Amphipod	8
Gammarus	Amphipod	8
Lumbriculidae	Worm	6
Enchytraeidae	Aquatic Worm	5
Orthocladius	Non-Biting Midges	5
Cricotopus	Non-Biting Midges	4
Zavrelimyia	Non-Biting Midges	4
Calopteryx	Damselfly	3
Girardia	Freshwater Flatworm	1
Gordiidae	Horsehair Worm	1
Tipulidae	Cranefly	1
Hydropsyche	Net-Spinning Caddisfly	1
Physa	Air-Breathing Freshwater Snail	1
Polypedilum	Non-Biting Midges	1
Tipula	Crane Fly	1
Stenochironomus	European Non-Biting Midge	1
Dineutus	Whirlygig Beetle	1

Northern Green Frog
Northern Two-Lined Salamander
Northern Watersnake

Crayfish:
No crayfish were noted at this site.

Exotic Plants:
The following exotic plants were noted at this site:

Japanese Honeysuckle
Japanese Stiltgrass
Multiflora Rose

Chironomini	Non-Biting Midge	1
Ischnura		1

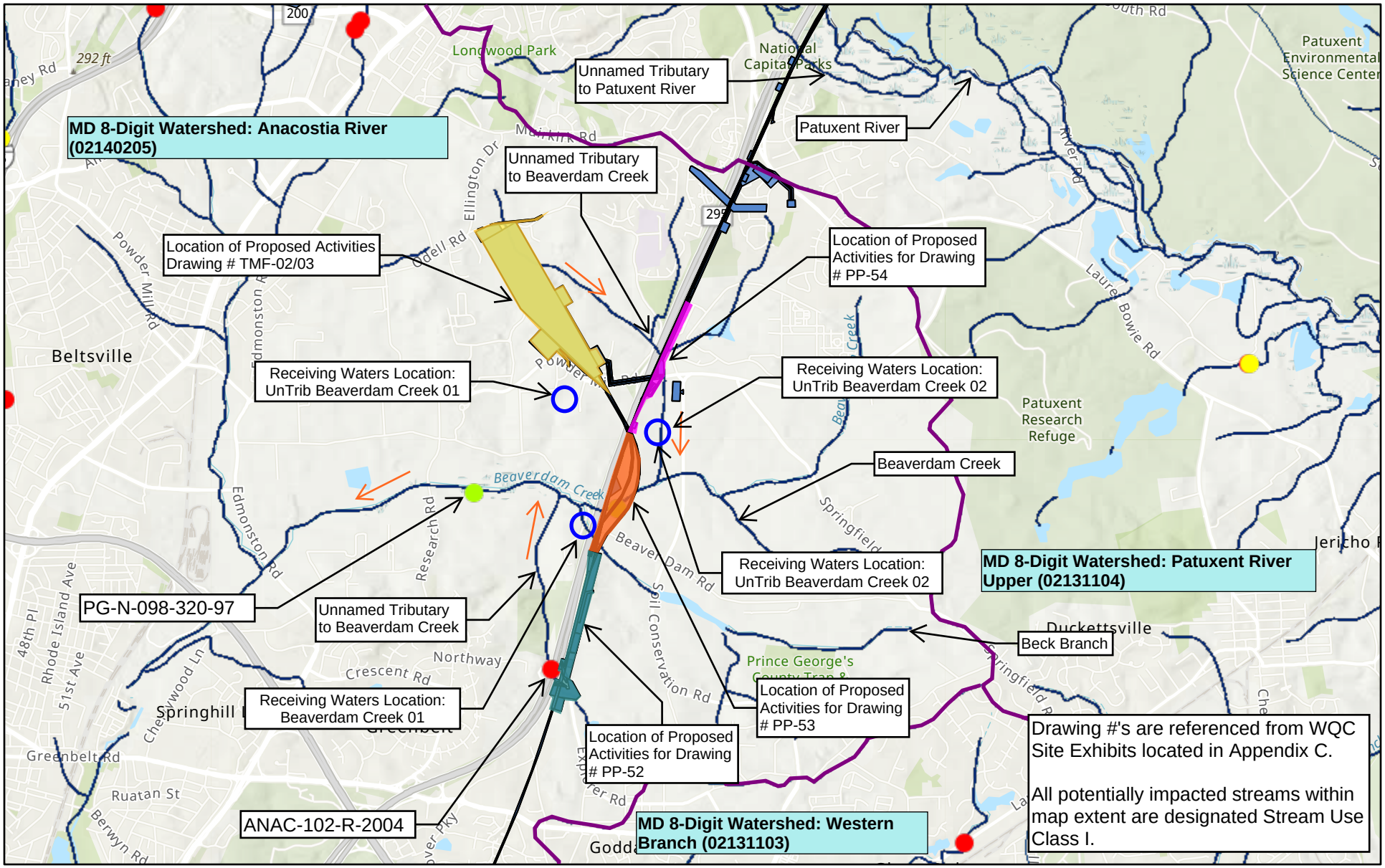
Sampling with a kick net for benthic macroinvertebrates.

Information disclaimer: The information and data on this page is for guidance and general planning purposes only. It should not be used to make decisions on specific matters.

Maryland Department of Natural Resources, 580 Taylor Avenue, Annapolis, MD 21401

(877) 620-8DNR (8367)

Maryland Stream Health



Project Locations

- 14 JTRACK PP-52
- 15 JTRACK PP-53
- 16 JTRACK PP-54
- J-TMF-02/03

Stream Survey Sites

- Poor
- Fair
- Good

Flow Lines

Biological Stream Reaches

MD 8-Digit Watersheds

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

MD iMAP, DNR, Esri, NASA, NGA, USGS, FEMA, M-NCPPC, VGIN, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,

Maryland DNR

11/1/2022, 11:30:31 AM

Esri, NASA, NGA, USGS, FEMA | M-NCPPC, VGIN, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA | MD iMAP, DNR | MD iMAP, MHEC, PSCP, MSDE, MDP, DoIT |

Search MD DNR

MARYLAND DEPARTMENT OF NATURAL RESOURCES

MBSS Navigation:

Back to StreamHealth Map
About the MBSS
Stream Waders Volunteers
Data Search
Fish Distributions
Your Feedback

Color Code Legend:

Indicates **Good/Optimal** conditions

Indicates **Fair/Marginal** conditions

Indicates **Poor** conditions

MBSS Site Summary for: PG-N-098-320-97

Located on **BEAVERDAM CR** in the Anacostia River watershed, 8-digit code: (02140205).
This stream was visited in the spring on 3/25/1997 and again in the summer on 6/16/1997.

An **Index of Biotic Integrity (IBI)** is a scientific tool used to identify and classify stream health. An IBI associates anthropogenic influences on a stream or with biological condition in the stream, and is formulated using data developed from biosurveys.
Details on the development and application of MBSS IBIs are in this document.

Fish IBI	Good - 4.3 / 5.0

Benthic IBI	Good - 4.7 / 5.0

Land Use:
Landuse can provide important information for determining streamhealth.
(Hint: hovering over the text will display definitions of land use variables.)

Catchment area	7,729 acres
Urban Land Use	15.7 %
Agricultural Land Use	15.7 %
Forested Land Use	65.7 %


An example of a forested stream.


An example of woody debris in a stream.

Physical Stream Habitat:

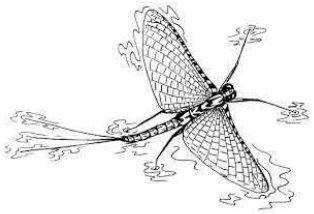
Instream Habitat	16/20 (Optimal)
Epifaunal Substrate	7/20 (Marginal)
Velocity/Depth Diversity	11/20 (Suboptimal)
Pool Quality Pool Extent = meters	16/20 (Optimal)
Riffle Quality	6/20 (Marginal)
Shading	80 %
Embeddedness	75 %

The embeddedness, a measure of silt on the stream bottom, was 75%. This is relatively high, and may exclude some biota.

Stream Water Quality:	
Water temperature	21 ° C
Dissolved oxygen (DO)	8.5 mg/L
pH (lab)	6.71
Conductivity	170 µmho/cm
Alkalinity (acid neutralizing capacity)	210.5 µeq/L
Dissolved organic carbon (DOC)	4.1 mg/L

Biological Stream Condition:

Surveys of the organisms living within a stream can give indications of stream health. Species richness, or the number of different species present, as well as indicator species (species whose presence, absence or abundance can serve as a measure of environmental conditions) are informative for stream health.



Fish Survey Results:

The following **16** fish species were collected at **PG-N-098-320-97.**

Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Common name	Count
TOTAL	207
American Eel	49
Tessellated Darter	47
Eastern Mudminnow	41
Creek Chub	16
Pumpkinseed	12
White Sucker	10
Creek Chubsucker	9
Fallfish	6
Blacknose Dace	6
Sea Lamprey	6
Bluegill	2
Brown Bullhead	1
Least Brook Lamprey	1

Benthic Macroinvertebrates:

These are organisms like insects, snails, and bivalves, which inhabit the bottom substrates of streams for at least part of their life cycles. Good water quality is indicated by high taxonomic diversity, an abundance of taxa that are sensitive to disturbance, and a lack of taxa that are tolerant of disturbance. Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Genus/Family	Common Name	Count
Tubificidae	Aquatic Worm	16
Amphinemura	Spring Stonefly	9
Prosimulium	Black Fly	6
Acerpenna	Tiny Blue-Winged Olive Mayflies	5
Cheumatopsyche	Net-Spinning Caddisfly	5
Stegopterna	Black Fly	5
Tanytarsus	Non-Biting Midges	5
Rheocricotopus	Non-Biting Midges	4
Simulium	Black Fly	4
Polypedilum	Non-Biting Midges	3

Redbreast Sunfish	1

Electrofishing to sample fish communities.

Amphibians and Reptiles:
The following were noted at this site:

- American Bullfrog
- Northern Green Frog
- Northern Watersnake

Crayfish:
The following crayfish species were noted at this site:

- Orconectes limosus

Exotic Plants:
No exotic plants were noted at this site.

Parametriocnemus	Non-Biting Midges	3
Hydropsyche	Net-Spinning Caddisfly	3
Eukiefferiella	Non-Biting Midges	2
Paratanytarsus	Non-Biting Midges	2
Prostoia	Spring Stonefly	2
Caecidotea	Isopod	2
Thienemanniella	Non-Biting Midges	2
Nanocladius	Non-Biting Midges	1
Girardia	Freshwater Flatworm	1
Rhyacophila	Free-Living Caddisfly	1
Stenelmis	Beetle	1
Stenonema	Flatheaded Mayfly	1
Paratendipes	European Non-Biting Midge	1
Stenochironomus	European Non-Biting Midge	1
Chelifera	Aquatic Dance Fly	1
Prostoma	Freshwater Nemertean (Ribbon Worm)	1
Ancyronyx	Spider Riffle Beetle	1
Conchapelopia	Non-Biting Midges	1
Cricotopus	Non-Biting Midges	1
Dubiraphia	Riffle Beetle	1
Pisidiidae	Pill Clam	1
Eurylophella	Mayfly	1
Orthocladiinae A	Non-Biting Midges	1

Sampling with a kick net for benthic macroinvertebrates.

Information disclaimer: The information and data on this page is for guidance and general planning purposes only. It should not be used to make decisions on specific matters.

Contact Us

Privacy

Accessibility

Maryland Department of Natural Resources, 580 Taylor Avenue, Annapolis, MD 21401

(877) 620-8DNR (8367)

Search MD DNR

MARYLAND DEPARTMENT OF NATURAL RESOURCES

MBSS Navigation:

- Back to StreamHealth Map
- About the MBSS
- Stream Waders Volunteers
- Data Search
- Fish Distributions
- Your Feedback

Color Code Legend:

Indicates **Good/Optimal** conditions

Indicates **Fair/Marginal** conditions

Indicates **Poor** conditions

MBSS Site Summary for: ANAC-102-R-2004

Located on **BEAVERDAM CR UT** in the Anacostia River watershed, 8-digit code: (02140205).
This stream was visited in the spring on 3/4/2004 and again in the summer on 6/7/2004.

An **Index of Biotic Integrity (IBI)** is a scientific tool used to identify and classify stream health. An IBI associates anthropogenic influences on a stream or with biological condition in the stream, and is formulated using data developed from biosurveys.
Details on the development and application of MBSS IBIs are in this document.

Fish IBI	Poor - 2.7 / 5.0
Benthic IBI	Poor - 1.9 / 5.0

Land Use:
Landuse can provide important information for determining streamhealth.
(Hint: hovering over the text will display definitions of land use variables.)

Catchment area	679 acres
Urban Land Use	54 %
Agricultural Land Use	6 %
Forested Land Use	39 %

An example of a highly channelized urban stream.

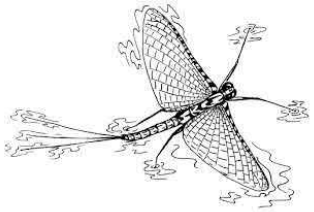
Physical Stream Habitat:	
Instream Habitat	6/20 (Marginal)
Epifaunal Substrate	6/20 (Marginal)
Velocity/Depth Diversity	10/20 (Marginal)
Pool Quality Pool Extent = 50 meters	10/20 (Marginal)
Riffle Quality Riffle Extent = 25 meters	6/20 (Marginal)


An example of woody debris in a stream.

Shading	70 %
Embeddedness	50 %

Stream Water Quality:	
Water temperature	17 º C
Dissolved oxygen (DO)	7 mg/L
pH (lab)	7.16
Conductivity	585 µmho/cm
Alkalinity (acid neutralizing capacity)	624 µeq/L
Dissolved organic carbon (DOC)	4.3 mg/L

Biological Stream Condition:
Surveys of the organisms living within a stream can give indications of stream health. Species richness, or the number of different species present, as well as indicator species (species whose presence, absence or abundance can serve as a measure of environmental conditions) are informative for stream health.



Fish Survey Results:
The following **12** fish species were collected at **ANAC-102-R-2004.**
Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Common name	Count

Benthic Macroinvertebrates:
These are organisms like insects, snails, and bivalves, which inhabit the bottom substrates of streams for at least part of their life cycles. Good water quality is indicated by high taxonomic diversity, an abundance of taxa that are sensitive to disturbance, and a lack of taxa that are tolerant of disturbance. Sensitive taxa are indicated by green text, tolerant taxa are indicated by

TOTAL	83
Blacknose Dace	58
Eastern Mudminnow	9
Tessellated Darter	2
White Sucker	2
Golden Shiner	2
Green Sunfish	2
Bluegill	2
Creek Chub	2
American Eel	2
Largemouth Bass	1
Yellow Bullhead	1

Electrofishing to sample fish communities.

Amphibians and Reptiles:
The following were noted at this site:

- Northern Green Frog
- Pickerel Frog

Crayfish:
No crayfish were noted at this site.

Exotic Plants:
The following exotic plants were noted at this site:

- Japanese Honeysuckle
- Japanese Stiltgrass
- Mile-A-Minute
- Multiflora Rose

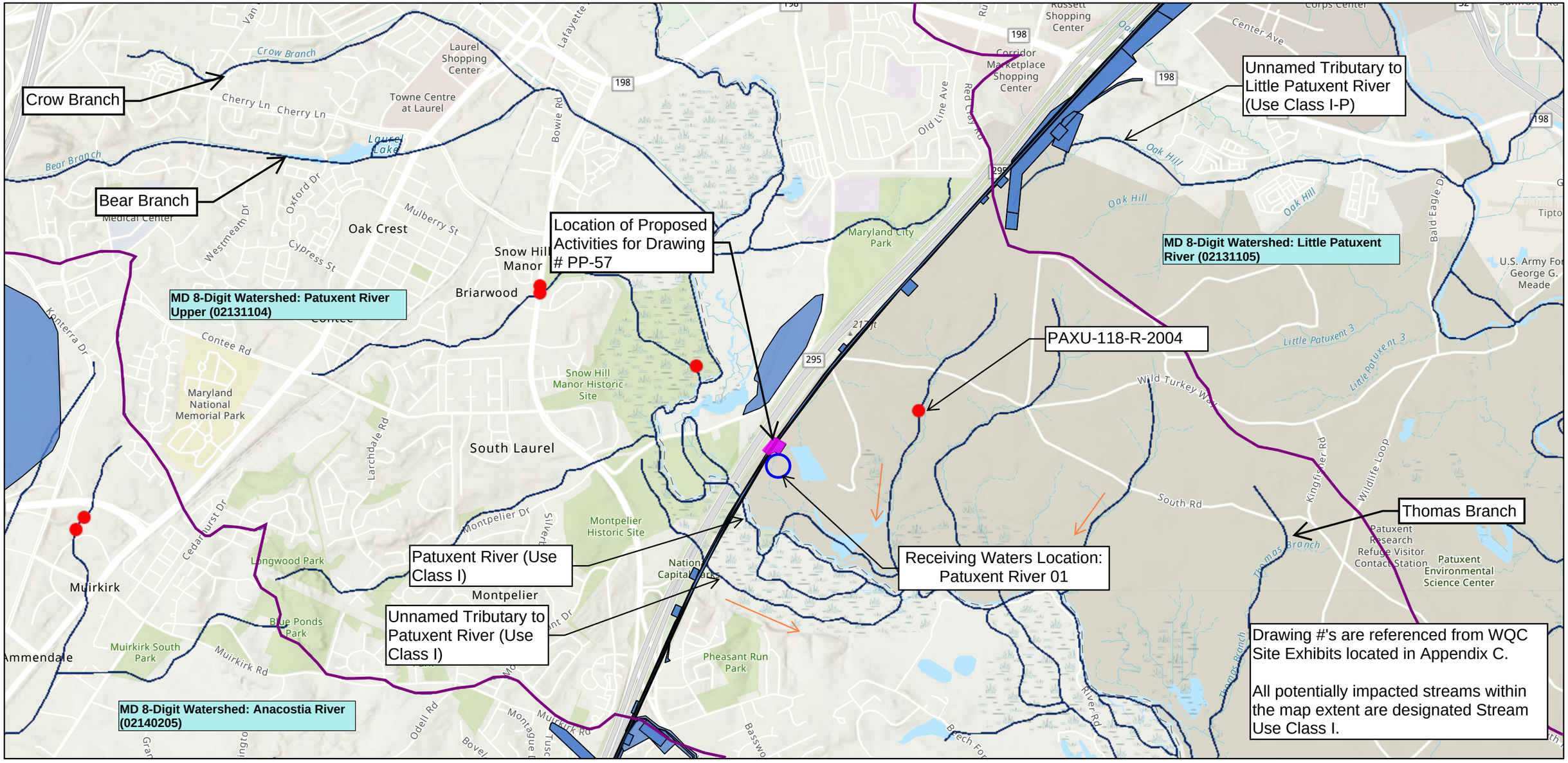
red text, and those with intermediate sensitivity are indicated by gold text.

Genus/Family	Common Name	Count
Eukiefferiella	Non-Biting Midges	63
Orthocladius	Non-Biting Midges	53
Tanytarsini	Non-Biting Midges	4
Thienemannimyia group	Non-Biting Midges	3
Zavrelimyia	Non-Biting Midges	3
Calopteryx	Damselfly	3
Hydropsyche	Net-Spinning Caddisfly	3
Orthocladiinae	Midge	3
Ironoquia	Northern Caddisfly	3
Caecidotea	Isopod	2
Parametriocnemus	Non-Biting Midges	2
Nemouridae	Nemourid Stonefly	2
Coenagrionidae	Narrowwinged Damselfly	1
Lumbriculidae	Worm	1
Tubificidae	Aquatic Worm	1
Parakiefferiella	European Non-Biting Midge	1
Stegopterna	Black Fly	1
Hyalella	Amphipod	1
Limnodrilus	Worm	1
Libellulidae	Skimmer Dragonfly	1

Sampling with a kick net for benthic macroinvertebrates.

Information disclaimer: The information and data on this page is for guidance and general planning purposes only. It should not be used to make decisions on specific matters.

Maryland Stream Health



Project Locations
- 22 JTRACK PP-57

Stream Survey Sites
- Poor
- Fair
- Good

Flow Lines

Biological Stream Reaches

MD 8-Digit Watersheds

1:36,112

0 0.33 0.65 1.3 mi

0 0.5 1 2 km

MBSS Navigation:

Back to StreamHealth Map
About the MBSS
Stream Waders Volunteers
Data Search
Fish Distributions
Your Feedback

Color Code Legend:

Indicates **Good/Optimal** conditions

Indicates **Fair/Marginal** conditions

Indicates **Poor** conditions

MBSS Site Summary for: PAXU-118-R-2004

Located on **PATUXENT R UT 9** in the Patuxent River upper watershed, 8-digit code: (02131104).
This stream was visited in the spring on 3/8/2004 and again in the summer on 6/10/2004.

An **Index of Biotic Integrity (IBI)** is a scientific tool used to identify and classify stream health. An IBI associates anthropogenic influences on a stream or with biological condition in the stream, and is formulated using data developed from biosurveys. Details on the development and application of MBSS IBIs are in this document.	
Fish IBI	Poor - 1.0 / 5.0
Benthic IBI	Poor - 2.7 / 5.0

Land Use:
Landuse can provide important information for determining streamhealth.
(Hint: hovering over the text will display definitions of land use variables.)

Catchment area	304 acres
Urban Land Use	4 %
Agricultural Land Use	34 %
Forested Land Use	59 %


An example of a forested stream.

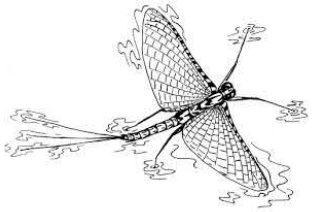
	Physical Stream Habitat:	
	Instream Habitat	16/20 (Optimal)


An example of woody debris in a stream.

Epifaunal Substrate	15/20 (Suboptimal)
Velocity/Depth Diversity	12/20 (Suboptimal)
Pool Quality Pool Extent = 45 meters	12/20 (Suboptimal)
Riffle Quality Riffle Extent = 30 meters	9/20 (Marginal)
Shading	94 %
Embeddedness	20 %

Stream Water Quality:	
Water temperature	19.4 º C
Dissolved oxygen (DO)	7.2 mg/L
pH (lab)	4.89
Conductivity	51 µmho/cm
Alkalinity (acid neutralizing capacity)	-23 µeq/L
Dissolved organic carbon (DOC)	3 mg/L

Biological Stream Condition:
Surveys of the organisms living within a stream can give indications of stream health. Species richness, or the number of different species present, as well as indicator species (species whose presence, absence or abundance can serve as a measure of environmental conditions) are informative for stream health.



Fish Survey Results:
The following **1** fish species were collected at **PAXU-118-R-2004.**
Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Common name	Count

Benthic Macroinvertebrates:
These are organisms like insects, snails, and bivalves, which inhabit the bottom substrates of streams for at least part of their life cycles. Good water quality is indicated by high taxonomic diversity, an abundance of taxa that are sensitive to disturbance, and a lack of taxa that are tolerant of disturbance. Sensitive taxa are indicated by green text, tolerant taxa are indicated by

TOTAL	28
Eastern Mudminnow	28

Electrofishing to sample fish communities.

Amphibians and Reptiles:
The following were noted at this site:

- American Bullfrog
- Northern Green Frog
- Northern Spring Peeper
- Pickerel Frog
- Southern Leopard Frog
- Wood Frog

Crayfish:
No crayfish were noted at this site.

Exotic Plants:
The following exotic plants were noted at this site:

- Japanese Stiltgrass

red text, and those with intermediate sensitivity are indicated by gold text.

Genus/Family	Common Name	Count
Stenochironomus	European Non-Biting Midge	69
Leuctridae	Rolledwinged Stonefly	22
Zavrelimyia	Non-Biting Midges	5
Thienemannimyia group	Non-Biting Midges	4
Prosimulium	Black Fly	3
Limnephilidae	Northern Casemaker Caddisfly	3
Pseudorthocladius	Non-Biting Midges	2
Leuctra	Rolled-Winged Stonefly	2
Capniidae	Small Winter Stonefly	2
Parametriocnemus	Non-Biting Midges	1
Caecidotea	Isopod	1
Diplectrona	Net-Spinning Caddisfly	1
Stegopterna	Black Fly	1
Synurella	Amphipod	1
Tvetenia	Non-Biting Midges	1
Dicranota	Hairy-Eyed Cranefly	1
Heterotrissocladius	European Non-Biting Midge	1
Sialis	Alderfly	1
Nemouridae	Nemourid Stonefly	1
Enchytraeidae	Aquatic Worm	1
Lumbriculidae	Worm	1

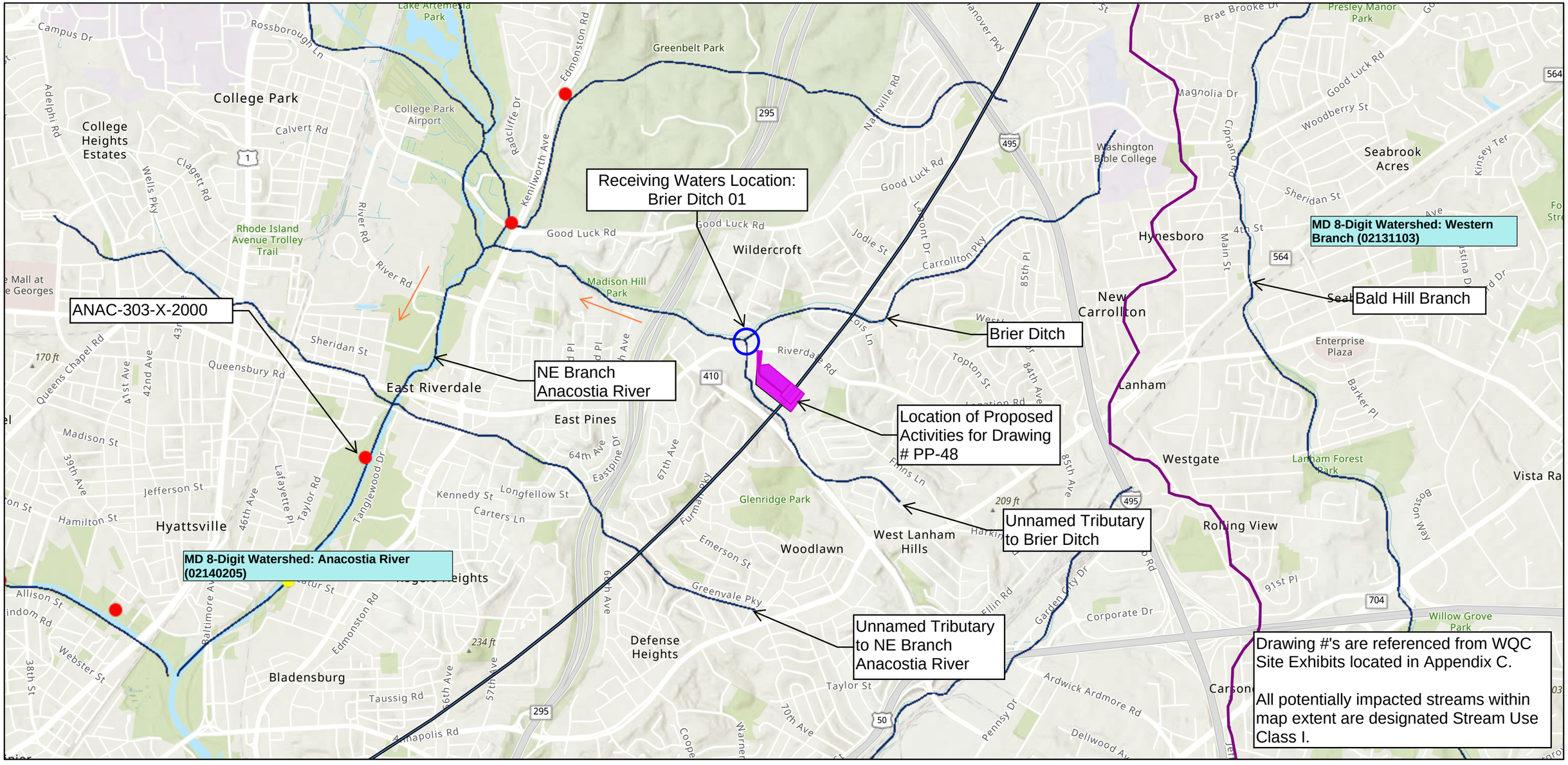
Sampling with a kick net for benthic macroinvertebrates.

Information disclaimer: The information and data on this page is for guidance and general planning purposes only. It should not be used to make decisions on specific matters.

Maryland Department of Natural Resources, 580 Taylor Avenue, Annapolis, MD 21401

(877) 620-8DNR (8367)

Maryland Stream Health



M-NCPPC, MNCPPC, VGIN, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, MD iMAP, DNR, Esri, NASA, NGA, USGS, FEMA

11/1/2022, 2:01:43 PM

Maryland DNR

Esri, NASA, NGA, USGS, FEMA | Esri Community Maps Contributors, M-NCPPC, MNCPPC, VGIN, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA | MD iMAP, DNR | MD iMAP, MHEC, PSCP, MSDE, MDP, DoIT |

Search MD DNR

MARYLAND DEPARTMENT OF NATURAL RESOURCES

MBSS Navigation:

- Back to StreamHealth Map
- About the MBSS
- Stream Waders Volunteers
- Data Search
- Fish Distributions
- Your Feedback

Color Code Legend:

Indicates **Good/Optimal** conditions

Indicates **Fair/Marginal** conditions

Indicates **Poor** conditions

MBSS Site Summary for: ANAC-303-X-2000

Located on **NORTHEAST BR ANACOSTIA** in the Anacostia River watershed, 8-digit code: (02140205).
This stream was visited in the spring on 4/24/2000 and again in the summer on 6/5/2000.

An **Index of Biotic Integrity (IBI)** is a scientific tool used to identify and classify stream health. An IBI associates anthropogenic influences on a stream or with biological condition in the stream, and is formulated using data developed from biosurveys. Details on the development and application of MBSS IBIs are in this document.	
Fish IBI	Good - 4.3 / 5.0
Benthic IBI	Poor - 1.0 / 5.0

Land Use:
Landuse can provide important information for determining streamhealth.
(Hint: hovering over the text will display definitions of land use variables.)

Catchment area	46,669 acres
Urban Land Use	37.2 %
Agricultural Land Use	19.4 %
Forested Land Use	40 %


An example of a highly channelized urban stream.

	Physical Stream Habitat:	
	Instream Habitat	8/20 (Marginal)
	Epifaunal Substrate	11/20 (Suboptimal)
	Velocity/Depth Diversity	11/20 (Suboptimal)
	Pool Quality Pool Extent = 50 meters	11/20 (Suboptimal)
	Riffle Quality	14/20 (Suboptimal)

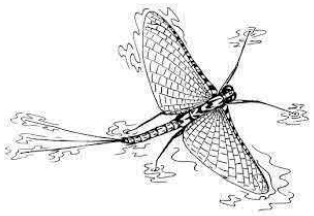

An example of woody debris in a stream.

Riffle Extent = 35 meters	
Shading	6 %
Embeddedness	60 %

The embeddedness, a measure of silt on the stream bottom, was 60%. This is relatively high, and may exclude some biota.

Stream Water Quality:	
Water temperature	20.9 º C
Dissolved oxygen (DO)	11.5 mg/L
pH (lab)	7.53
Conductivity	270 µmho/cm
Alkalinity (acid neutralizing capacity)	723.6 µeq/L
Dissolved organic carbon (DOC)	3.9 mg/L

Biological Stream Condition:
Surveys of the organisms living within a stream can give indications of stream health. Species richness, or the number of different species present, as well as indicator species (species whose presence, absence or abundance can serve as a measure of environmental conditions) are informative for stream health.



Fish Survey Results:
The following **18** fish species were collected at **ANAC-303-X-2000.**
Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Benthic Macroinvertebrates:
These are organisms like insects, snails, and bivalves, which inhabit the bottom substrates of streams for at least part of their life cycles. Good water quality is indicated by high taxonomic diversity, an abundance of taxa that are sensitive to disturbance, and a lack of taxa

Common name	Count
TOTAL	1093
Banded Killifish	276
Redbreast Sunfish	202
Mummichog	175
Satinfin Shiner	140
American Eel	95
Spottail Shiner	78
Pumpkinseed	24
Yellow Bullhead	24
Bluntnose Minnow	24
Tessellated Darter	18
Sea Lamprey	15
White Sucker	8
Brown Bullhead	4
Bluegill	4
Blacknose Dace	3
Creek Chubsucker	2
Northern Hogsucker	1

Electrofishing to sample fish communities.

Amphibians and Reptiles:
The following were noted at this site:

Fowler'S Toad
Northern Watersnake

Crayfish:
No crayfish were noted at this site.

that are tolerant of disturbance. Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

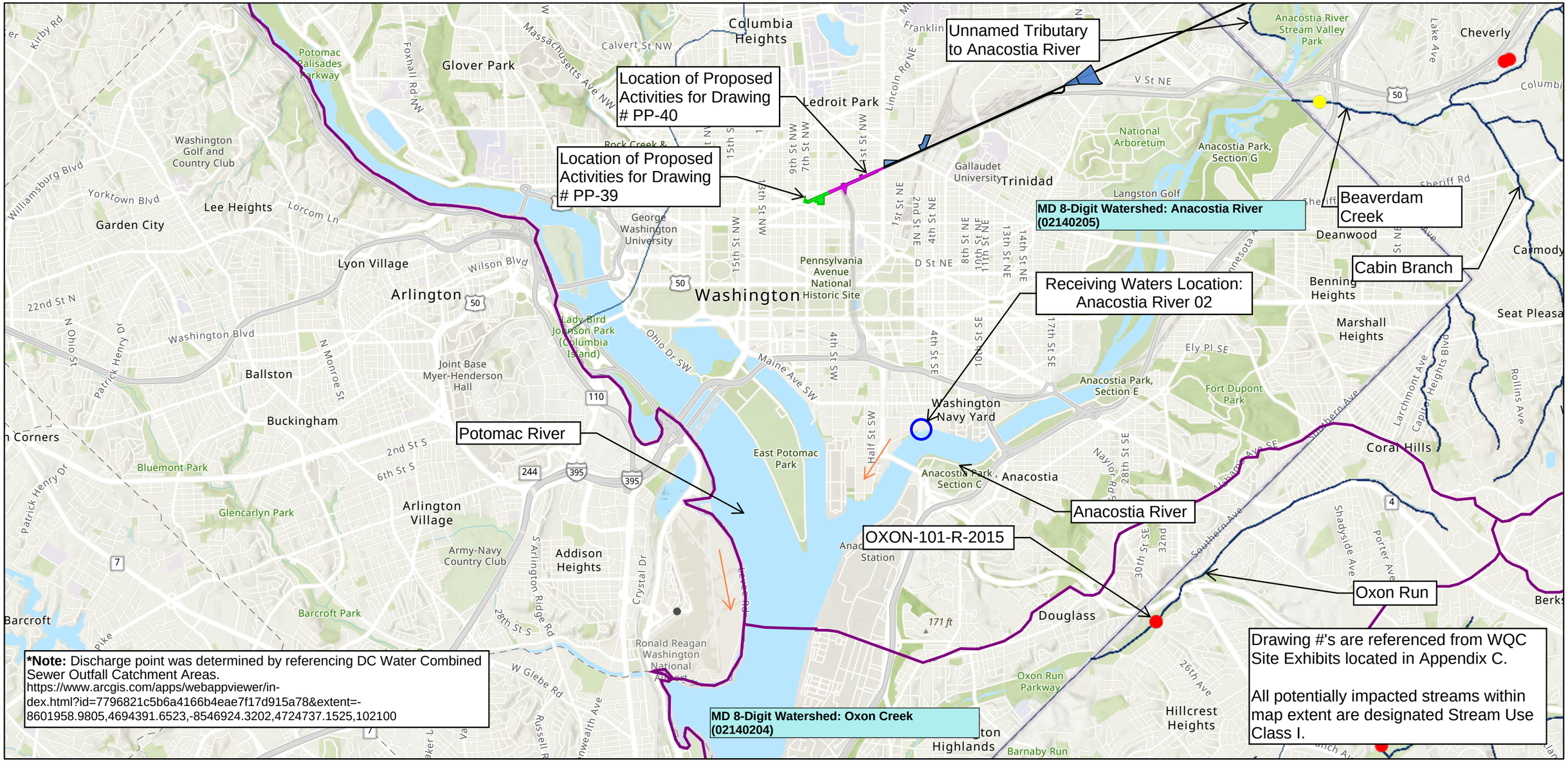
Genus/Family	Common Name	Count
Cricotopus/Orthocladius	Midge	85
Orthocladiinae	Midge	31
Gordiidae	Horsehair Worm	2
Simuliidae	Black Fly	1
Lumbriculidae	Worm	1
Hydropsyche	Net-Spinning Caddisfly	1

Sampling with a kick net for benthic macroinvertebrates.

Exotic Plants: The following exotic plants were noted at this site:
Mile-A-Minute
Multiflora Rose

Information disclaimer: The information and data on this page is for guidance and general planning purposes only. It should not be used to make decisions on specific matters.

Maryland Stream Health



11/1/2022, 2:34:46 PM

Maryland DNR

Esri, NASA, NGA, USGS, FEMA | DCGIS, M-NCPPC, VGIN, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA | MD iMAP, DNR | MD iMAP, MHEC, PSCP, MSDE, MDP, DoIT |

MBSS Navigation:

Back to StreamHealth Map
About the MBSS
Stream Waders Volunteers
Data Search
Fish Distributions
Your Feedback

Color Code Legend:

Indicates **Good/Optimal** conditions

Indicates **Fair/Marginal** conditions

Indicates **Poor** conditions

MBSS Site Summary for: OXON-101-R-2015

Located on **OXON RUN** in the Oxon Creek watershed, 8-digit code: (02140204).
This stream was visited in the spring on 4/6/2015 and again in the summer on 6/16/2015.

An **Index of Biotic Integrity (IBI)** is a scientific tool used to identify and classify stream health. An IBI associates anthropogenic influences on a stream or with biological condition in the stream, and is formulated using data developed from biosurveys. Details on the development and application of MBSS IBIs are in this document.	
Fish IBI	Poor - 1.7 / 5.0
Benthic IBI	Fair - 3.0 / 5.0

Land Use:
Landuse can provide important information for determining streamhealth.
(Hint: hovering over the text will display definitions of land use variables.)

Catchment area	3,090 acres
Urban Land Use	91.6 %
Agricultural Land Use	0 %
Forested Land Use	8.2 %


An example of a highly channelized urban stream.

	Physical Stream Habitat:	
	Instream Habitat	4/20 (Poor)
	Epifaunal Substrate	5/20 (Poor)
	Velocity/Depth Diversity	11/20 (Suboptimal)
	Pool Quality Pool Extent = 14 meters	11/20 (Suboptimal)
	Riffle Quality	6/20 (Marginal)

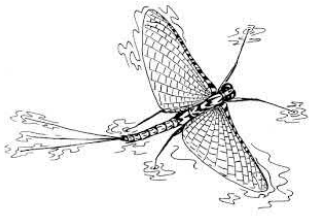

An example of woody debris in a stream.

Riffle Extent = 61 meters	
Shading	85 %
Embeddedness	60 %

The embeddedness, a measure of silt on the stream bottom, was 60%. This is relatively high, and may exclude some biota.

Stream Water Quality:	
pH (lab)	7.85
Alkalinity (acid neutralizing capacity)	961.9 µeq/L
Dissolved organic carbon (DOC)	2.3778 mg/L
No water quality measurements taken in the field.	

Biological Stream Condition:
Surveys of the organisms living within a stream can give indications of stream health. Species richness, or the number of different species present, as well as indicator species (species whose presence, absence or abundance can serve as a measure of environmental conditions) are informative for stream health.



Fish Survey Results:
The following **4** fish species were collected at **OXON-101-R-2015.**
Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Common name	Count
TOTAL	872

Benthic Macroinvertebrates:
These are organisms like insects, snails, and bivalves, which inhabit the bottom substrates of streams for at least part of their life cycles. Good water quality is indicated by high taxonomic diversity, an abundance of taxa that are sensitive to disturbance, and a lack of taxa that are tolerant of disturbance. Sensitive taxa are indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Blacknose Dace	867
Fathead Minnow	2
Goldfish	2
Pumpkinseed	1

Electrofishing to sample fish communities.

Amphibians and Reptiles:
The following were noted at this site:

- Northern Green Frog
- Northern Two-Lined Salamander
- Pickerel Frog

Crayfish:
No crayfish were noted at this site.

Exotic Plants:
The following exotic plants were noted at this site:

- Japanese Honeysuckle
- Japanese Knotweed
- Mimosa
- Multiflora Rose

Genus/Family	Common Name	Count
Thienemannimyia Group	Non-Biting Midges	20
Argia	Narrow-Winged Damselfly	17
Cricotopus	Non-Biting Midges	13
Lumbriculidae	Worm	11
Ablabesmyia	Non-Biting Midge	9
Orthocladius	Non-Biting Midges	5
Physa	Air-Breathing Freshwater Snail	4
Rheocricotopus	Non-Biting Midges	4
Antocha	Crane Fly	3
Orthocladiinae	Midge	3
Synorthocladius		3
Naididae	Aquatic Worm	3
Menetus	Air Breathing Freshwater Snail	2
Hydropsyche	Net-Spinning Caddisfly	2
Cheumatopsyche	Net-Spinning Caddisfly	2
Rheotanytarsus	Non-Biting Midges	2
Stenelmis	Beetle	1
Tanypodinae	Non-Biting Midges	1
Tipula	Crane Fly	1
Calopteryx	Damselfly	1
Stagnicola	Air Breathing Freshwater Snail	1
Dicrotendipes	Non-Biting Midges	1
Diplectrona	Net-Spinning Caddisfly	1
Paratanytarsus	Non-Biting Midges	1
Enchytraeidae	Aquatic Worm	1

Tubificidae	Aquatic Worm	1
Prostoma	Freshwater Nemertean (Ribbon Worm)	1

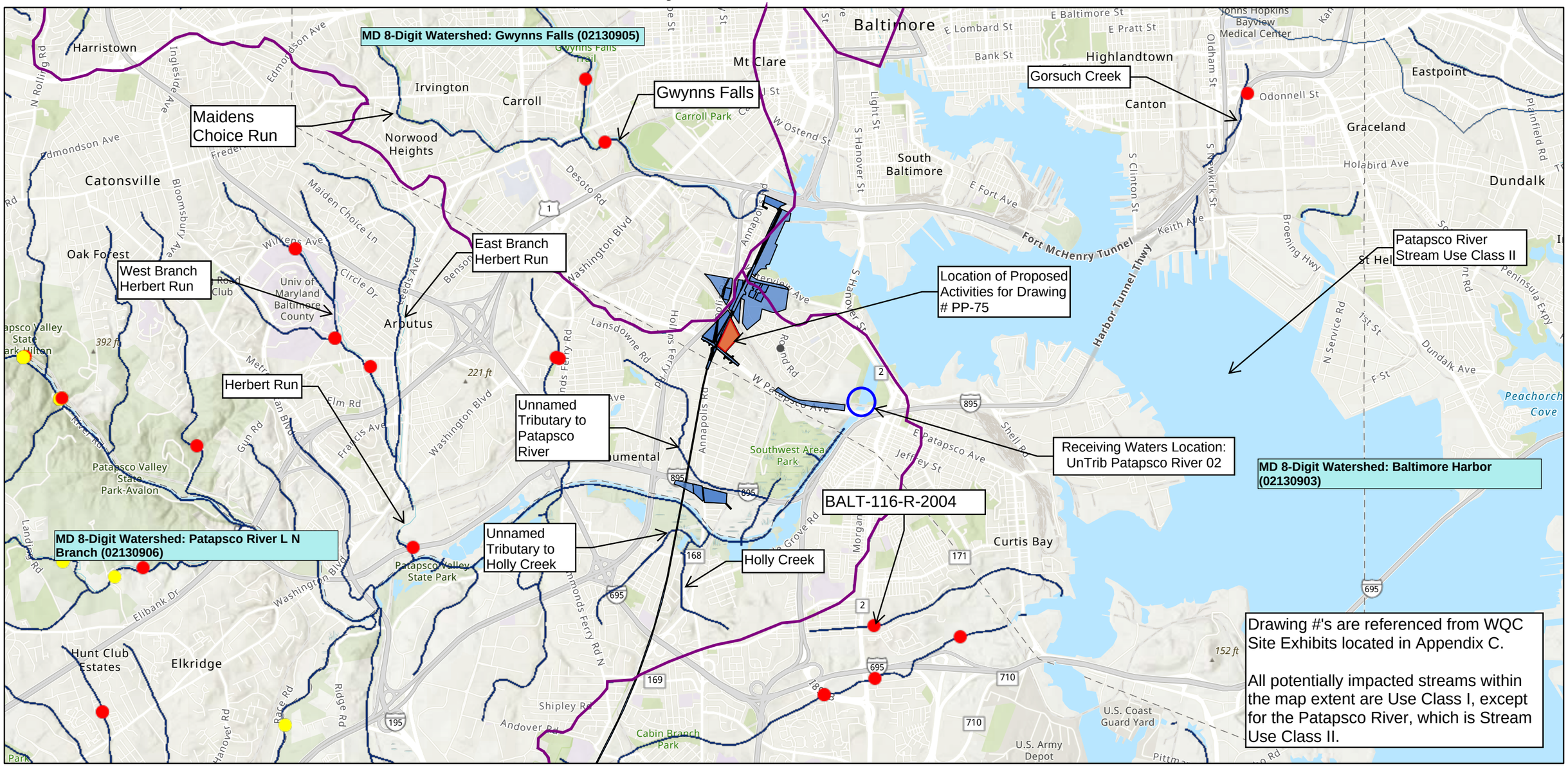
Sampling with a kick net for benthic macroinvertebrates.

Information disclaimer: The information and data on this page is for guidance and general planning purposes only. It should not be used to make decisions on specific matters.

Maryland Department of Natural Resources, 580 Taylor Avenue, Annapolis, MD 21401

(877) 620-8DNR (8367)

Maryland Stream Health



Project Location

44 J-TRACK PP-75

Stream Survey Sites

Fair

Good

Poor

Flow Lines

Biological Stream Reaches

MD 8-Digit Watersheds

1:72,224

0 0.5 1 2 mi

0 1 2 4 km

MD iMAP, DNR, City of Baltimore, Baltimore County Government, VGIN, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, Esri, NASA, NGA, USGS, FEMA

11/2/2022, 7:31:55 AM

Maryland DNR

Esri, NASA, NGA, USGS, FEMA | City of Baltimore, Baltimore County Government, VGIN, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA | MD iMAP, DNR | MD iMAP, MHEC, PSCP, MSDE, MDP, DoIT |

MBSS Navigation:

Back to StreamHealth Map
About the MBSS
Stream Waders Volunteers
Data Search
Fish Distributions
Your Feedback

Color Code Legend:

Indicates **Good/Optimal** conditions

Indicates **Fair/Marginal** conditions

Indicates **Poor** conditions

MBSS Site Summary for: BALT-116-R-2004

Located on **CURTIS CR UT** in the Baltimore Harbor watershed, 8-digit code: (02130903).
This stream was visited in the spring on 3/15/2004 and again in the summer on 6/15/2004.

An **Index of Biotic Integrity (IBI)** is a scientific tool used to identify and classify stream health. An IBI associates anthropogenic influences on a stream or with biological condition in the stream, and is formulated using data developed from biosurveys. Details on the development and application of MBSS IBIs are in this document.	
Fish IBI	Poor - 1.0 / 5.0
Benthic IBI	Poor - 1.6 / 5.0

Land Use:
Landuse can provide important information for determining streamhealth.
(Hint: hovering over the text will display definitions of land use variables.)

Catchment area	153 acres
Urban Land Use	95 %
Agricultural Land Use	3 %
Forested Land Use	1 %

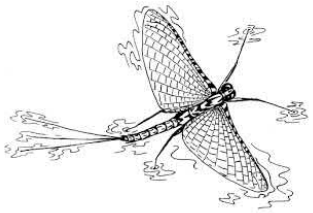

An example of a highly channelized urban stream.

	Physical Stream Habitat:	
	Instream Habitat	5/20 (Poor)
	Epifaunal Substrate	6/20 (Marginal)
	Velocity/Depth Diversity	11/20 (Suboptimal)
	Pool Quality Pool Extent = 54 meters	11/20 (Suboptimal)
	Riffle Quality Riffle Extent = 21 meters	6/20 (Marginal)

 An example of woody debris in a stream.	Shading	20 %
	Embeddedness	35 %

Stream Water Quality:	
Water temperature	21.7 º C
Dissolved oxygen (DO)	2.3 mg/L
pH (lab)	7.06
Conductivity	648 µmho/cm
Alkalinity (acid neutralizing capacity)	2296 µeq/L
Dissolved organic carbon (DOC)	2.1 mg/L
Dissolved oxygen levels measured in the stream were very low (2.3 mg/L). Many fishes and other aquatic animals cannot tolerate low levels of oxygen in the water.	

Biological Stream Condition:
Surveys of the organisms living within a stream can give indications of stream health. Species richness, or the number of different species present, as well as indicator species (species whose presence, absence or abundance can serve as a measure of environmental conditions) are informative for stream health.



Fish Survey Results:
Fish data is either unavailable for this site or there were no fish observed.

Amphibians and Reptiles:
The following were noted at this site:

Benthic Macroinvertebrates:
These are organisms like insects, snails, and bivalves, which inhabit the bottom substrates of streams for at least part of their life cycles. Good water quality is indicated by high taxonomic diversity, an abundance of taxa that are sensitive to disturbance, and a lack of taxa that are tolerant of disturbance. Sensitive taxa are

Northern Green Frog

Crayfish:
No crayfish were noted at this site.

Exotic Plants:
The following exotic plants were noted at this site:

English Ivy

indicated by green text, tolerant taxa are indicated by red text, and those with intermediate sensitivity are indicated by gold text.

Genus/Family	Common Name	Count
Tubificidae	Aquatic Worm	45
Lumbriculidae	Worm	41
Physa	Air-Breathing Freshwater Snail	5
Orthocladius	Non-Biting Midges	4
Collembola	Springtail	3
Tipula	Crane Fly	2
Stygobromus	Amphipod	2
Limonia		1
Orthocladiinae	Midge	1
Tanypodinae	Non-Biting Midges	1

Sampling with a kick net for benthic macroinvertebrates.

Information disclaimer: The information and data on this page is for guidance and general planning purposes only. It should not be used to make decisions on specific matters.