



Sugarloaf Mountain

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1-REFERENCES AND CITATIONS

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AMPHIBIANS OCCURRING WITHIN MONOCACY WATERSHED

- Jefferson salamander** (*Ambystoma jeffersonianum*)
Rare in forested areas, usually at higher elevations. Moves into temporary ponds to breed in early spring.
- Spotted salamander** (*Ambystoma maculatum*)
Common in forested areas along floodplain. Moves into temporary ponds to breed in early spring.
- Marbled salamander** (*Ambystoma opacum*)
Common in forested areas along floodplain. Moves to sites of temporary ponds to breed in fall.
- Northern dusky salamander** (*Desmognathus fuscus*)
Common in springs and small streams throughout watershed.
- Two-lined salamander** (*Eurycea bislineata*)
Common in springs and small streams throughout watershed.
- Long-tailed salamander** (*Eurycea longicauda*)
Uncommon in springs and small streams, and along banks of river.
- Spring salamander** (*Gyrinophilus porphyriticus*)
Uncommon in springs and small streams, mostly in western half of watershed.
- Red-spotted newt** (*Notophthalmus viridescens*)
Common in farm ponds, pools along floodplain, and backwater areas of river.
- Red-backed salamander** (*Plethodon cinereus*)
Common in forested and undeveloped areas throughout watershed. Terrestrial.
- Slimy salamander** (*Plethodon glutinosus*)
Uncommon in forested areas throughout watershed. Terrestrial.
- Red salamander** (*Pseudotriton ruber*)
Uncommon in springs and small streams throughout watershed.
- Cricket frog** (*Acris crepitans*)
Uncommon in ponds, swamps and backwaters along river.
- American toad** (*Bufo americanus*)
Common throughout watershed.
- Fowler's toad** (*Bufo w. fowleri*)
Uncommon throughout watershed.
- Gray treefrog** (*Hyla versicolor*)
Uncommon in forested areas of watershed. Breeds in ponds and swamps during summer.
- Spring peeper** (*Pseudacris crucifer*)
Common throughout watershed. Breeds in ponds and swamps during spring and summer.
- Upland chorus frog** (*Pseudacris feriarum*)
Uncommon in forested areas of watershed. Breeds in swamps during spring.
- Bullfrog** (*Rana catesbeiana*)
Common in ponds, swamps, and along river throughout watershed.
- Green frog** (*Rana clamitans*)
Common in ponds, swamps, and along river throughout watershed.
- Northern leopard frog** (*Rana pipiens*)
Uncommon in ponds, along streams and floodplains.
- Pickereel frog** (*Rana palustris*)
Uncommon in ponds and along streams.
- Wood frog** (*Rana sylvatica*)
Common in forested areas of watershed. Comes to ponds and swamps to breed in spring.
- Spadefoot toad** (*Scaphiopus holbrookii*)
Rare and possibly extirpated within watershed. Burrowing species that breeds in temporary pools in summer.



Marbled salamander -

Reptiles Occurring Within Monocacy Watershed

- Copperhead** (*Agkistrodon contortrix*)
Uncommon throughout watershed. Congregates in rocky areas during spring and fall.
- Worm snake** (*Carphophis amoenus*)
Uncommon, under rocks and logs throughout watershed.
- Black racer** (*Coluber constrictor*)
Common throughout watershed.
- Timber rattlesnake** (*Crotalus horridus*)
Uncommon and local, primarily in rocky areas at higher elevations.
- Ringneck snake** (*Diadophis punctatus*)
Common throughout watershed.
- Black rat snake** (*Elaphe obsoleta*)
Common throughout watershed.
- Hognose snake** (*Heterodon platirhinos*)
Uncommon throughout watershed.
- Milk snake** (*Lampropeltis triangulum*)
Common throughout watershed.
- Water snake** (*Nerodia sipedon*)
Common around water bodies throughout watershed.
- Smooth green snake** (*Ophedrys vernalis*)
Uncommon in western half of watershed.
- Queen snake** (*Regina septemvittata*)
Uncommon along streams throughout watershed.
- Brown snake** (*Storeria dekayi*)
Uncommon throughout watershed.
- Red-bellied snake** (*Storeria occipitomaculata*)
Uncommon throughout watershed.
- Ribbon snake** (*Thamnophis sauritus*)
Uncommon along streams and floodplains throughout watershed.
- Garter snake** (*Thamnophis sirtalis*)
Common throughout watershed.
- Smooth earth snake** (*Virginia valeriae*)
Uncommon, lower elevations throughout watershed.
- Snapping turtle** (*Chelydra serpentina*)
Common in ponds, swamps, and in river throughout watershed.
- Spotted turtle** (*Clemmys guttata*)
Uncommon along streams and in swamps throughout watershed.
- Wood turtle** (*Clemmys insculpta*)
Common in forested areas throughout watershed.
- Painted turtle** (*Chrysemys picta*)
Common in ponds, swamps, and in river throughout watershed.
- Mud turtle** (*Kinosternon subrubrum*)
Uncommon in lower portion of river.
- Red-bellied turtle** (*Pseudemys rubriventris*)
Uncommon in the river and its larger tributaries.
- Stinkpot turtle** (*Stemotherus odoratus*)
Common in river and occasionally in ponds and swamps throughout watershed.
- Box turtle** (*Terrapene carolina*)
Common throughout watershed.
- Red-eared turtle** (*Trachemys scripta*)
Uncommon in ponds, swamps, and lower portion of river.
- Five-lined skink** (*Eumeces fasciatus*)
Rare and local.
- Fence lizard** (*Sceloporus undulatus*)
Uncommon in undeveloped areas throughout watershed.

3-FISH SPECIES COLLECTED IN THE MONOCACY RIVER 2006-2013

Upper = PA line downstream to Monocacy Blvd. Lower = downstream of Monocacy Blvd to junction with Potomac River. Fish species general occurrence (A = abundant: > 100 individuals, C = common: 5-100 individuals; S = scarce: < 5 individuals). MD DNR

Common Name	Scientific Name	Upper	Lower
American eel	<i>Anguilla rostrata</i>	C	C
Gizzard Shad	<i>Dorosoma cepedianum</i>		S
Central Stoneroller	<i>Campostoma anomalum</i>	A	C
Spotfin Shiner	<i>Cyprinella spiloptera</i>	A	A
Common Carp	<i>Cyprinus carpio</i>	C	C
Cutlip Minnow	<i>Exoglossum maxillingua</i>	S	
Silvery Minnow	<i>Hybognathus nuchalis</i>		S
Common Shiner	<i>Luxilus cornutus</i>	A	A
River Chub	<i>Nocomis micropogon</i>	C	C
Comely Shiner	<i>Notropis amoenus</i>	C	C
Silverjaw Minnow	<i>Notropis buccatus</i>	C	S
Spottail Shiner	<i>Notropis hudsonius</i>	A	A
Swallowtail Shiner	<i>Notropis procne</i>	A	A
Rosyface Shiner	<i>Notropis rebellus</i>	C	C
Bluntnose Minnow	<i>Pimephales notatus</i>	A	A
Blacknose Dace	<i>Rhinichthys atratus</i>	S	
Longnose Dace	<i>Rhinichthys cataractae</i>	S	
Fallfish	<i>Semotilus corporalis</i>	A	A
White sucker	<i>Catostomus commersonii</i>	A	C
Northern Hog Sucker	<i>Hypentelium nigricans</i>	C	C
Golden Redhorse Sucker	<i>Moxostoma erythrurum</i>	C	C
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>	S	C
Yellow Bullhead	<i>Amereius natalis</i>	C	C
Channel Catfish	<i>Ictalurus punctatus</i>	A	A
Margined Madtom	<i>Noturus insignis</i>	C	C
Brown Trout	<i>Salmo trutta</i>		S
Banded Killifish	<i>Fundulus diaphanus</i>	C	C
Mosquitofish	<i>Gambusia holbrooki</i>		S
Rockbass	<i>Ambloplites rupestris</i>	A	A
Redbreast Sunfish	<i>Lepomis auritus</i>	A	A
Green Sunfish	<i>Lepomis cyanellus</i>	C	C
Pumpkinseed	<i>Lepomis gibbosus</i>	S	S
Bluegill	<i>Lepomis macrochirus</i>	C	C
Longear Sunfish	<i>Lepomis megalotis</i>	A	A
Smallmouth Bass	<i>Micropterus dolomieu</i>	A	A
Largemouth Bass	<i>Micropterus salmoides</i>	C	C
White Crappie	<i>Pomoxis annularis</i>		S
Black Crappie	<i>Pomoxis nigromaculatus</i>	S	
Greenside Darter	<i>Etheostoma blennioides</i>	A	A
Rainbow Darter	<i>Etheostoma caeruleum</i>	S	C
Tessellated Darter	<i>Etheostoma olmstedii</i>	A	A
Walleye	<i>Sander vitreus</i>		S
Total Species		37	39

4-USGS FLOW DATA

Information on the Monocacy River's gauges and their applications to preparing for a safe and enjoyable floating trip on the Monocacy River.

Monocacy River at Bridgeport (BDGM2) USGS / 01639000 Monocacy River at Bridgeport, MD

Flood Descriptions:

25 feet: Significant flooding is occurring on both sides of the river with homes and roads flooded.

23.5 feet: Water covers the Taneytown Pike bridge over the Monocacy. The road on each side will already be underwater.

21 feet: Water approaches homes on the Frederick County side near Bridgeport.

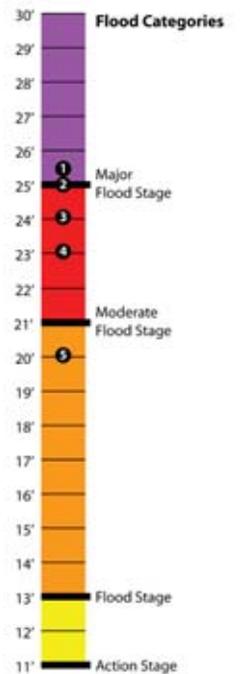
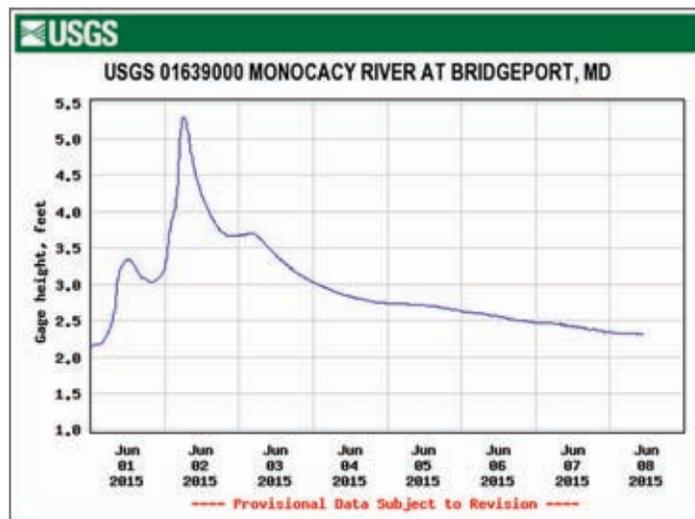
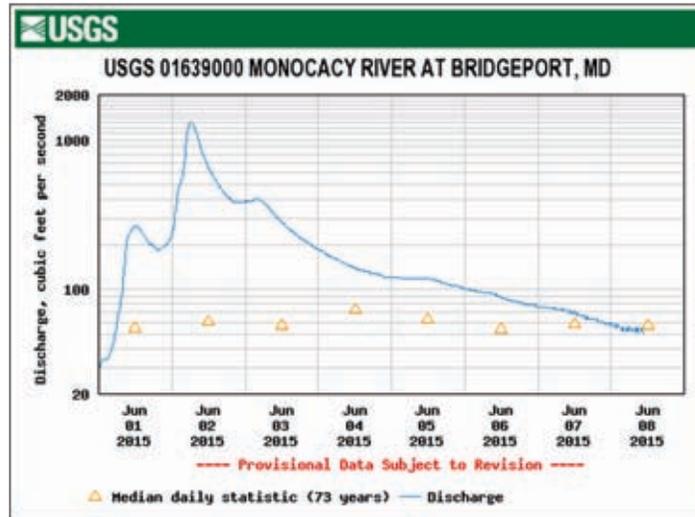
20 feet: Taneytown Pike begins to flood on both sides of the river.

16 feet: Flooding of fields and yards begins near Bridgeport.

13 feet: Baptist Road near Bridgeport begins to flood.

Historic Monocacy River Crests at Bridgeport

- (1) 25.42 ft on 06/19/1996
- (2) 25.00 ft on 08/24/1933
- (3) 24.05 ft on 06/22/1972
- (4) 23.18 ft on 10/09/1976
- (5) 20.53 ft on 05/21/1943



Monocacy River near Frederick at Interstate 70 (FDKM2)

USGS 01643000 MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD

Historic Monocacy River Crests at I-70

- (1) 35.90 ft on 06/23/1972 (91,600 cfs discharge, ICPRB Report 90-8)
- (2) 30.80 ft on 09/26/1975
- (3) 28.10 ft on 08/24/1933
- (4) 25.38 ft on 10/10/1976
- (5) 23.67 ft on 01/20/1996

Low River Water Records, I-70

0.50 ft on 09/11/1966 (19 cfs discharge, ICPRB Report 90-8)

Flood Descriptions

30: Water reaches the second floor of Gambrill Mill on the Monocacy National Battlefield.

24: Water approaches Urbana Pike near Monocacy National Battlefield.

21: Maryland Route 26 is flooded near the Monocacy River bridge.

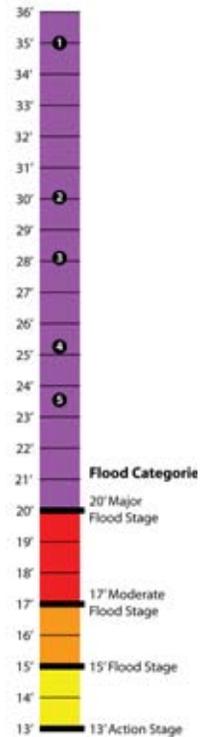
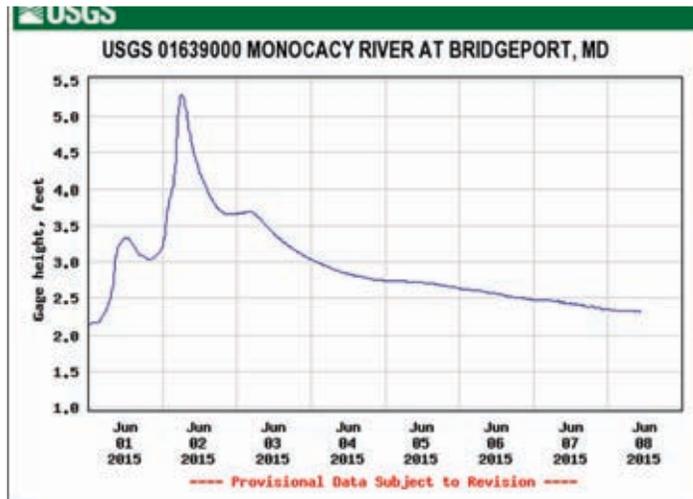
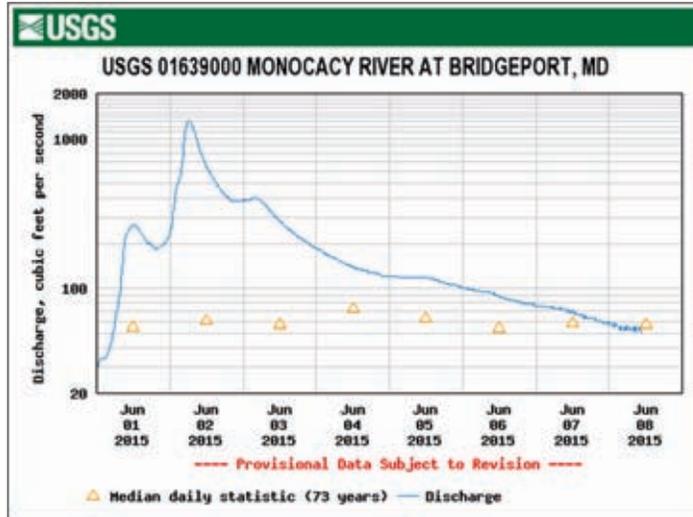
20: Water reach es Gambrill Mill on the Monocacy National Battlefield.

17: Significant lowland flooding is occurring along the river, with backwater flooding also occurring. Numerous roads are closed. Water is approaching the parking lot at Gambrill Mill on the Monocacy National Battlefield. Backwater flooding from Carroll Creek is likely approaching the underside of the bridge leading to the Frederick city wastewater treatment plant.

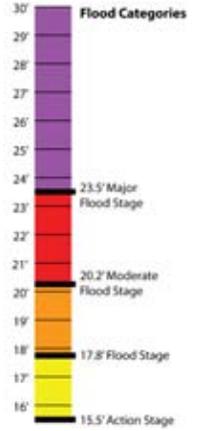
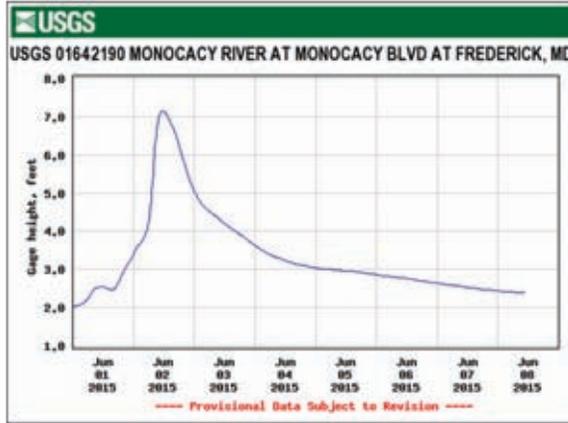
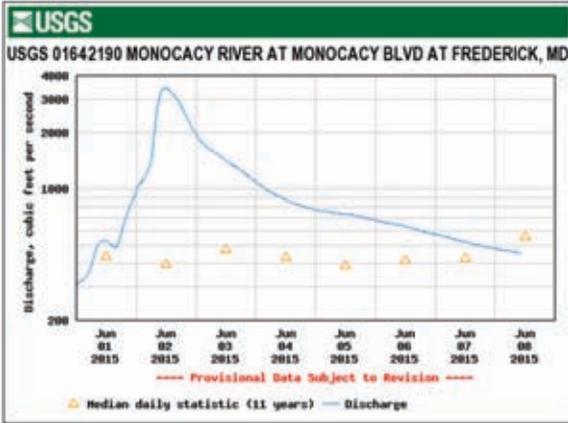
16: Much of Pinecliff Park and Rivermist Park in Frederick are flooded. Buckeystown Community Park is also flooded with water approaching the parking lot. Waters are also approaching the Frederick city wastewater treatment plant and the Ballenger Creek wastewater treatment plant. Significant backwater flooding is occurring. Several roads will be closed along the river and adjoining creeks.

15: Both banks of the river are flooded. Water begins to flood low-lying fields at Monocacy National Battlefield. Water reaches the access road of the Frederick city wastewater treatment plant. Backwater flooding is occurring on several area creeks, particularly Carroll Creek in Frederick.

13: Water covers portions of Pinecliff Park in southeast Frederick. Water also approaches Rivermist Park in northeast Frederick.



Monocacy River At Monocacy Blvd. in Frederick (FRMM2)
 USGS 01642190 MONOCACY RIVER AT MONOCACY BLVD AT FREDERICK, MD



5-ICPRB RIVER STUDIES

The following is a list of Monocacy River watershed studies from the Interstate Commission on the Potomac River Basin (ICPRB):

1951

Soils and Soil Erosion in the Monocacy River Basin

1987

A Conceptual Model of Sediment Transport and Delivery for the Monocacy River Sub-Basin of the Potomac River Basin / Stuart S. Schwartz

1989

Ground Water Data and Potentiometric Surface Maps of the Monocacy Watershed Model / Michael Focazio and Mark Sommerfield

1990

Monocacy River Watershed Modeling Project: Hydrometeorological Data Report / Elizabeth Casman

1993

Nutrient and Suspended Sediment Monitoring on the Upper Monocacy River 1990-1992 / Alan Blasenstein and Carlton Haywood

1997

Nutrient and Suspended Sediment Monitoring on the Upper Monocacy River 1990-1995 / Barry Gruessner and Carlton Haywood

2004

Annual and Seasonal Water Budgets for the Monocacy/Catoctin Drainage Area / Cherie Schultz, Deborah Tipton, and James Palmer

2007

Ground-water/Stream Flow Model of the Monocacy River Basin / James Palmer, Kristin Bergmann, and Cherie Schultz

2008

Seasonal Steady-State Ground Water/Stream Flow Model of the Upper Monocacy River Basin / Cherie Schultz and James Palmer

6-FREDERICK COUNTY HISTORIC SITES

MONOCACY SCENIC RIVER PRELIMINARY LIST OF STANDING STRUCTURE HISTORIC SITES

Frederick County, Maryland

Adamstown Region:

National Register sites:

F-1-92 Monocacy Aqueduct, C& O Canal
18FR100 Monocacy Prehistoric Archaeological Site

Maryland Inventory of Historic Properties:

F-1-77 Michael's Mill and House
F-1-81 Bridge #100013, MD 85 at Monocacy River
F-1-128 James Doll House (may be demolished)
F-1-132 Furnace Ford Bridge, MD 28 at Monocacy River

Adamstown Region historic sites survey field notes (identified; no documentation or evaluation)

Field No.

103 Greenfield Rd. (foundation & stone chimney stack)
104 1117 Greenfield Rd. (stone outbuilding and ruin of second building)
105 1155 Greenfield Rd. (house)

Frederick Region:

National Register sites:

F-3-42 Monocacy National Battlefield

Maryland Inventory of Historic Properties:

F-3-2 Devilbiss Bridge at Monocacy River (replaced)
F-3-54 MD 26 Bridge at Monocacy River
F-3-71 Devilbiss-Whitmore Farmstead
F-3-125 Michael Thomas Farmstead
F-3-128 Jug Bridge Tollhouse

Frederick Region historic sites field notes

(identified; no documentation or evaluation)

C-129 8230 Devilbiss Bridge Rd. (house)

City of Frederick:

18FR18 Rosenstock Village Archeological Site (NR eligible)

Thurmont Region:

National Register sites:

F-6-7 Fourpoints Bridge, Monocacy River
F-6-8 Bullfrog Rd. Bridge, Monocacy River
18FR81 Shoemaker Village Archeological Site

Maryland Inventory of Historic Properties:

F-6-9 Harney Rd. Bridge, Monocacy River
F-6-10 Mumma Ford Rd. Bridge, Monocacy River
F-6-11 Sixes Bridge, Monocacy River
F-6-23 Millers Bridge, Monocacy River
F-6-119 Bridge #10065, Monocacy River

Thurmont Region historic sites survey field notes: (identified; no documentation or evaluation)

C-50 at Rocky Ridge Rd. (farmstead)
C-55 12926 John Mehring Rd. (farmstead)
C-113 11801 Hunt Club Rd. (house)
E-3 10059 Ebby Rd. (demolition application 1997) (house)
E-19 inaccessible
E-22 14531 Sixes Bridge Rd. (farmstead)
E-23 14534 Sixes Bridge Rd. (farmstead)
E-29 at Sixes Rd. (cabin)

Urbana Region:

No National Register except C&O Canal National Historical Park

Maryland Inventory of Historic Properties:

F-7-28 St. Paul's AME Church, Della
F-7-117 Bridge, MD 355 at Monocacy River

Urbana Region historic sites survey field notes: (identified; no documentation or evaluation)

U-32 6740 Ed Sears Rd. (house)
U-37 6746 Ed Sears Rd. (house)

Walkersville Region:

National Register sites:

F-8-49 Legore Stone Arch Bridge

Maryland Inventory of Historic Properties:

F-8-41 Ceresville Stone Quarry
F-8-42 Ceresville Flour Mill
F-8-148 Railroad Bridge (Walkersville Southern Railroad) at Monocacy River

Walkersville Region historic sites survey field notes: (identified; no documentation or evaluation)

Wa-53 9400D Dublin Rd. (house)
Wa-124 10805A Haughs Church Rd. (farmstead)
Wa-126 10805C Haughs Church Rd. (agricultural outbuildings)
Wa-131 13006 Hiney Rd. (farmstead)
Wa-194 11919 Creagerstown Pike (farmstead)
Wa-220 10702 Links Rd. (house ruin and outbuilding)
Wa-225 10810 Dublin Rd. (house & barn foundation)

Frederick County Register sites in study area:

There are no listed County Register sites in the Monocacy River study area. However, in August 2013 the following site was determined by the Frederick County Historic Preservation Commission to be eligible for the County Register of Historic Places:

Determination of Eligibility – Trout Run (Richey Lodge)
12929 Catoctin Hollow Road, Thurmont, MD; Tax Map 25, P. 38
HPC Case # DOE 13-01

7-MARYLAND'S WILD AND SCENIC RIVERS ACT

SUBTITLE 4. SCENIC AND WILD RIVERS

Md. NATURAL RESOURCES Code Ann. §8-401 , §8-402, §8-403

§ 8-401. Declaration of policy

Many of the rivers of Maryland or portions of them and their related adjacent land areas possess outstanding scenic, geologic, ecologic, historic, recreational, agricultural, fish, wildlife, cultural, and other similar values. The policy of the State is to preserve and protect the natural values of these rivers, enhance their water quality, and fulfill vital conservation purposes by wise use of resources within their surrounding environment. Development of a Scenic and Wild Rivers Program is desirable to fulfill these purposes.

§ 8-402. Establishment and administration of Program; study of Deer Creek

(a) Establishment of Program; rivers included. -- There is a Scenic and Wild Rivers Program. The following rivers, including their tributaries, are included in the Program:

- (1) Anacostia;
- (2) Deer Creek;
- (3) Monocacy;
- (4) Patuxent;
- (5) Pocomoke;
- (6) Potomac (in Montgomery and Frederick counties);
- (7) Severn;
- (8) Wicomico in Charles County; and
- (9) Youghiogheny.

(b) Administration of Program. -- The Secretary shall administer the provisions of this subtitle. The Secretary shall formulate and implement a program to carry out the policy under § 8-401 of this subtitle for each designated river including any other river designated subsequently as part of the system. The Program shall provide for the preparation of a plan and for the wise management of resources according to the policy under § 8-401 of this subtitle. Activities such as fishing, hunting, hiking, horseback riding, natural and geological interpretation, scenic appreciation, and other programs by which the general public can appreciate and enjoy the value of these areas as scenic and wild rivers in a setting of natural solitude shall be featured in a management plan to the extent these activities are practicable in the scenic or wild river.

(c) Study of Deer Creek. -- The Secretary shall prepare a study and plan for the use and development of the water and related land resources of Deer Creek in Harford County. The study and plan shall evaluate Deer Creek as a water, agricultural, and scenic resource, and evaluate its shoreline and related land in terms of zoning, parks, and recreational areas, public and private use. The study and plan shall be made in consultation and cooperation with every affected unit of Harford County. Upon completion, the Secretary shall file the study and plan with appropriate recommendations with the Harford County

Planning Commission, the Harford County executive, and the Harford County Council for inclusion and implementation in the county's land use planning and zoning as the county deems appropriate. The original plan for Deer Creek in Harford County as approved under this section may be changed or restudied only if the Deer Creek local Scenic and Wild River Advisory Board and the Harford County Council approve.

(d) Definitions. --

(1) In this subtitle the following words have the meanings indicated.

(2) "Scenic river" means a free-flowing river whose shoreline and related land are predominantly forested, agricultural, grassland, marshland, or swampland with a minimum of development for at least 2 miles of the river length.

(3) "Wild river" means a free-flowing river whose shoreline and related land are:

(i) Undeveloped;

(ii) Inaccessible except by trail; or

(iii) Predominantly primitive in a natural state for at least 4 miles of the river length.

(e) Submission of plan for approval. -- Upon completion of the plan, the Secretary shall submit the plan, with any appropriate recommendations, to the governing body of every county where the affected river is located, for their approval and recommendations.

(f) Inventory and study of other rivers, shoreline and related land. -- By July 1, 1990 the Secretary shall inventory and study every other river and shoreline and related land in the State and identify the rivers and their related shorelines or portions of them that are eligible for inclusion into the Scenic and Wild Rivers Program as either a scenic or wild river. Upon completion of each inventory and study, the Secretary shall submit the inventory and study, with any recommendations for additions to the scenic and wild rivers system, to:

(1) The governing body of every county where the river is located, for their approval and recommendations; and

(2) The next regular session of the General Assembly.

§ 8-403. Scenic and Wild Rivers Review Board

(a) Established; composition; chairman; compensation. --

(1) There is a Scenic and Wild Rivers Review Board. The Board consists of the Secretaries of Natural Resources, Agriculture, and the Environment and the Director of Planning and a member of the Garrett County Commissioners, who shall be a voting member of the Board only on matters pertaining to the wild portion of the Youghiogheny River.

(2) The members of the Board shall select the chairperson.

(3) A member of the Board:

(i) May not receive any compensation for the member's services; but

(ii) Shall be reimbursed for necessary travel expenses and disbursements made in order to attend any meeting or perform any other official duty.

(b) Duties. -- In addition to the duties set forth elsewhere in this subtitle, the Scenic and Wild Rivers Review Board shall:

(1) Review:

(i) Any inventory, study, plan, and regulation that is prepared under this subtitle; and

(ii) The recommendations on the inventory, study, plan, and regulation of the Secretary, any local governing body, or any local advisory board;

(2) Meet regularly; and

(3) Appoint, with the advice and consent of the appropriate local governing body, a local scenic and wild river advisory board for each river that is included in the Scenic and Wild Rivers Program.

(c) Advisory board -- Composition; residence; selection of members. --

(1) Each local scenic and wild river advisory board consists of at least 7 members, except for the Youghiogheny local Scenic and Wild River Advisory Board that consists of at least 8 members.

(2) Each member of a local scenic and wild river advisory board shall reside in the county through which the scenic and wild river flows.

(3) The Scenic and Wild Rivers Review Board shall select the members of each local advisory board as follows:

(i) At least 2 members shall own land contiguous to the scenic or wild river, except for the Youghiogheny River where at least 3 members shall own land contiguous to that portion of the river designated by § 8-408(a) of this subtitle as a wild river;

(ii) At least 2 members who own land that is not contiguous to the scenic or wild river;

(iii) 1 member shall represent the local governing body; and

(iv) 2 members from the county soil conservation district.

(d) Advisory board -- Composition where wild river flows through more than one county. -- If a scenic or wild river flows through more than 1 county, the local advisory board shall consist of no more than the following members:

(1) 2 residents of each county through which the scenic or wild river flows who own land contiguous to the scenic or wild river;

(2) 2 residents of each county through which the scenic or wild river flows who do not own land contiguous to the scenic or wild river;

(3) 2 representatives of the local governing body of each county through which the scenic or wild river flows; and

(4) 1 representative of each soil conservation district through which the scenic or wild river flows.

(e) Advisory board -- Duties. -- Each local scenic and wild river advisory board shall:

(1) Review any inventory, study, plan, and regulation that is proposed under this subtitle and is applicable to any river in its jurisdiction;

(2) Make recommendations on the inventory, study, plan, and regulation to its local governing body and to the Scenic and Wild Rivers Review Board;

(3) Select its own chairperson; and

(4) Adopt its own administrative regulations for the operation of the local advisory board.

(f) Advisory board -- Compensation; meetings. --

(1) Each member of a local advisory board may not:

(i) Receive compensation for service; or

(ii) Be reimbursed for expenses incurred in travel or for attending meetings or performing any official duty.

(2) The Secretary shall schedule meetings for each local advisory board. However, in the event of emergencies, the chairperson of a local advisory board may schedule meetings for the local advisory board.

(g) Designation of scenic river advisory boards by local governing bodies. -- Upon completion of an approved management plan, the local governing body may establish a scenic river advisory board for each designated scenic or wild river within its jurisdiction. Each board, as constituted by the local authority, may recommend policies, laws, and regulations in furtherance of the aims of this subtitle to the appropriate local governing body. If a scenic or wild river flows through more than 1 county, the scenic river advisory board may consist of an equal number of members from each county.

Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service
September 2015

ESA Name ¹	Acres	County	BioNet Tier ²	# Elements ³	WSSC ⁴	% Public ⁵	% Private
Archbald Sanctuary Woods	31.2	Frederick	Tier 3	1			100
Baker Park	7.7	Frederick	Tier 4	1		100	
Ballenger Creek	685.1	Frederick	Tier 3	2			100
Bells Chapel Woods	185.0	Frederick	Tier 1	1		69	
Big Pipe Creek - Arter's Mill	341.0	Carroll	Tier 4	1			100
Big Pipe Creek - Hapes Mill	275.4	Carroll	Tier 3	2			100
Big Pipe Creek - Meadow Branch	342.1	Carroll	Tier 3	1			100
Big Pipe Creek - Wolf's Mill	2378.4	Carroll	Tier 1	1			100
Black Rock	127.4	Frederick	Tier 2	1			100
Boundary Rocks	202.2	Frederick	Tier 3	1		56	44
Buzzard Branch	578.7	Frederick	Tier 2	11	Yes	5	95
Cabbage Run Swamp	289.1	Frederick	Tier 3	4			100
Carroll Creek	544.2	Frederick	Tier 3	2		13	87
Cat Rock	59.9	Frederick	Tier 3	1		100	
Catoctins - Piney Mountain	182.3	Frederick	Tier 3	1			100
Chick Road Springs	311.6	Frederick	Tier 2	2		43	57
Clifford Hollow	416.6	Frederick	Tier 3	1		93	7
Coffee Hollow	234.2	Frederick	Tier 2	2		6	94
County-line Woods	127.6	Frederick, Washington	Tier 3	1			100
Cunningham Falls Hollow	645.5	Frederick	Tier 1	9	Yes	65	35
Deep Run Wetland	495.4	Carroll	Tier 2	1			100
Distillery Run	350.1	Frederick	Tier 4	1		99	1
Ehbvale	1917.0	Carroll	Tier 4	1		4	96
Eyler Valley	262.1	Frederick	Tier 2	3	Yes		100
Fishing Creek	1783.1	Frederick	Tier 1	16	Yes	94	6
Hamburg Tower Ridges	245.8	Frederick	Tier 3	1		40	60
Harp Woods	105.9	Frederick	Tier 2	1			100
Horsehead Run	460.5	Frederick	Tier 3	3			100
Hunting Creek Seepage Forest	53.5	Frederick	Tier 2	1		100	
Kelbaugh Road	7.7	Frederick	Tier 5	1			100
Le Gore Bridge Woods	136.3	Frederick	Tier 2	3	Yes		100
Lewisstown Fish Hatchery	12.0	Frederick	Tier 2	1			100

Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service

September 2015

ESA Name ¹	Acres	County	BioNet Tier ²	# Elements ³	WSSC ⁴	% Public ⁵	% Private
Lilypons	574.5	Frederick	Tier 3	5			100
Little Bennett Regional Park Site	2522.1	Montgomery	Tier 3	4	Yes	92	8
Little Fishing Creek	983.4	Frederick	Tier 2	6	Yes	100	
Lower Monocacy River	397.5	Frederick	Tier 2	3			100
Lower Toms Creek	2859.3	Carroll, Frederick	Tier 2	8			100
Masser Road Site	107.5	Frederick	Tier 3	2			100
Monocacy River - Creagerstown	2679.1	Frederick	Tier 2	5			100
Monocacy River - Double Pipe	368.2	Carroll, Frederick	Tier 3	1		1	99
Monocacy River - Harney	1794.0	Carroll, Frederick	Tier 3	5			100
Monocacy River - Michael's Mill	65.5	Frederick	Tier 3	2			100
Monocacy River - Walkersville	340.9	Frederick	Tier 3	1			100
Monocacy River - Waterside	291.0	Frederick	Tier 3	2		3	97
Monocacy Spring	189.5	Montgomery, Frederick	Tier 2	2		18	82
Monocacy Tributary 1	249.8	Frederick	Tier 3	1		25	75
Monocacy Tributary 2	290.2	Frederick	Tier 3	1		65	35
New Midway Meadow	40.5	Frederick	Tier 3	1			100
Oak Ridge Woods	19.9	Montgomery	Tier 3	1		1	99
Ohio Branch	880.6	Carroll	Tier 4	1			100
Oland Road Fields	203.2	Frederick	Tier 3	1			100
Owens Creek Swamp	517.2	Frederick	Tier 2	4	Yes	92	8
Oxys Hollow	136.5	Frederick	Tier 3	1		100	
Pinecliff Park Wetlands	20.9	Frederick	Tier 2	1		89	11
Potomac River - Monocacy	1339.1	Montgomery, Frederick	Tier 3	4		7	93
Spruce Run	214.5	Frederick	Tier 3	1	Yes		100
Sugarloaf Mountain	2838.9	Frederick	Tier 2	5	Yes		100
Turkey Creek	52.1	Frederick	Tier 4	1	Yes	94	6
Union Mills Floodplain	18.9	Carroll	Tier 3	1		33	67
Wigville Swamp	109.3	Frederick	Tier 3	2	Yes		100
Wine Road Swamp	902.3	Carroll	Tier 2	3			100

* See next page for footnotes.

Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service

September 2015

Explanation of column header footnotes:

¹Name of the Ecologically Significant Area (ESA).

²Conservation significance (i.e., Tier) within the Biodiversity Conservation Network (BioNet) map, from 1 (highest) to 5. See accompanying fact sheet for more information.

³Elements of biodiversity include rare, threatened, or endangered species, colonial waterbird colonies, and significant ecological communities.

⁴Wetlands of Special State Concern (WSSC) are designated and regulated by MD Department of the Environment.

⁵Approximate percent of the ESA owned/managed by a government agency, as of March 2015.

Resources within Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service
September 2015

ESA	Scientific Name	Common Name	Global Rank ¹	State Rank	State Status	Federal Status	Taxonomic Category	County
ARCHIBALD SANCTUARY WOODS	<i>Myosotis macrosperma</i>	Large-seeded Forget-me-not	G5	S2S3			Vascular Plant	Frederick
BAKER PARK SITE								
	Colonial Waterbird Colony	Heron Rookery	G5	S3			Other	Frederick
BALLENGER CREEK								
	<i>Cottus</i> sp. 7	Checkered Sculpin	G4Q	S1S2			Vertebrate Animal	Frederick
	<i>Margariscus margarita</i>	Pearl Dace	G5	S1S2	T		Vertebrate Animal	
BELLS CHAPEL WOODS								
	Old Growth Oak-Heath Forest						Other	Frederick
BIG PIPE CREEK - ARTER'S MILL								
	<i>Notropis amoenus</i>	Cornely Shiner	G5	S3	T		Vertebrate Animal	Carroll
BIG PIPE CREEK - HAPES MILL								
	<i>Elilptio producta</i>	Atlantic Spike	G4	S2S3	I		Invertebrate Animal	Carroll
	<i>Strophitus undulatus</i>	Creeper	G5	S2	I		Invertebrate Animal	
BIG PIPE CREEK - MEADOW BRANCH								
	<i>Elilptio producta</i>	Atlantic Spike	G4	S2S3	I		Invertebrate Animal	Carroll
BIG PIPE CREEK - WOLFS MILL								
	Vulnerable species ²				E	LE		Carroll
BLACK ROCK								
	<i>Neotoma magister</i>	Allegheny Woodrat	G3G4	S1	E		Vertebrate Animal	Frederick
BOUNDARY ROCKS								
	<i>Neotoma magister</i>	Allegheny Woodrat	G3G4	S1	E		Vertebrate Animal	Frederick
BUZZARD BRANCH								
	<i>Agastache scrophulariifolia</i>	Purple Giant Hyssop	G4	S1S2	T		Vascular Plant	Frederick
	<i>Coptis trifolia</i>	Goldthread	G5	S1	E		Vascular Plant	
	<i>Euphorbia purpurea</i>	Darlington's Spurge	G3	S1	E		Vascular Plant	

Resources within Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service
September 2015

ESA	Scientific Name	Common Name	Global Rank	State Rank	State Status	Federal Status	Taxonomic Category	County
COUNTY-LINE WOODS	Vulnerable species ²				T			Frederick, Washington
CUNNINGHAM FALLS HOLLOW	Agastache scrophularifolia	Purple Giant Hyssop	G4	S1S2	T		Vascular Plant	Frederick
	Equisetum sylvaticum	Wood Horsetail	G5	S1	E		Vascular Plant	
	Geranium robertianum	Herb-robert	G5	S1			Vascular Plant	
	Pycnanthemum torrei	Torrey's Mountain-mint	G2	S1	E		Vascular Plant	
	Pycnanthemum verticillatum	Whorled Mountain-mint	G5	S1	E		Vascular Plant	
	Stenanthium gramineum	Featherbells	G4G5	S1	T		Vascular Plant	
	Vulnerable species ²				E			
	Vulnerable species ²				E			
	Vulnerable species ²							
	Vulnerable species ²							
DEEP RUN WETLAND								Carroll
	Vulnerable species ²				T	LT		
DISTILLERY RUN								Frederick
	Montane-Piedmont Basic Seepage Swamp		G3	S3			Natural Community	
EBBVALE								Carroll
	Vulnerable species ²				T	LT		
EYELER VALLEY								Frederick
	Agastache scrophularifolia	Purple Giant Hyssop	G4	S1S2	T		Vascular Plant	
	Euphorbia purpurea	Darlington's Spurge	G3	S1	E		Vascular Plant	
	Vulnerable species ²				T			
FISHING CREEK								Frederick
	Adlumia fungosa	Climbing Furnitory	G4	S2	T		Vascular Plant	
	Amelanchier stolonifera	Running Juneberry	G5	S2			Vascular Plant	
	Erythrodiplox minuscula	Little Blue Dragonlet	G5	S1			Invertebrate Animal	
	Eurybia radula	Rough-leaved Aster	G5	S1	E		Vascular Plant	
	Glyceria acutiflora	Sharp-scaled Mannagrass	G5	S1	E		Vascular Plant	
	Lanthus vernalis	Southern Pygmy Clubtail	G4	S2			Invertebrate Animal	

Resources within Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service

September 2015

ESA	Scientific Name	Common Name	Global Rank	State Rank	State Status	Federal Status	Taxonomic Category	County
	<i>Libellula flavida</i>	Yellow-sided Skimmer	G5	S2S3			Invertebrate Animal	
	<i>Lycopodiella inundata</i>	Bog Clubmoss	G5	S2			Vascular Plant	
	<i>Nannothemis bella</i>	Elfin Skimmer	G4	S1	E		Invertebrate Animal	
	<i>Neotoma magister</i>	Allegheny Woodrat	G3G4	S1	E		Vertebrate Animal	
	<i>Nymphoides cordata</i>	Floating-heart	G5	S1	E		Vascular Plant	
	Vulnerable species ²				T			
	Vulnerable species ²				T			
	Vulnerable species ²				T			
	Vulnerable species ²				T			
	Vulnerable species ²				E			
HAMBURG TOWER RIDGES								Frederick
	<i>Neotoma magister</i>	Allegheny Woodrat	G3G4	S1	E		Vertebrate Animal	
HARP WOODS								Frederick
	<i>Scutellaria nervosa</i>	Veined Skullcap	G5	S1S2	E		Vascular Plant	
HORSEHEAD RUN								Frederick
	<i>Margariscus margarita</i>	Pearl Dace	G5	S1S2	T		Vertebrate Animal	
	<i>Ruellia strepens</i>	Rustling Wild-petunia	G4G5	S2S3	E		Vascular Plant	
	Vulnerable species ²				T			
HUNTING CREEK SEEPAGE FOREST								Frederick
	Montane-Piedmont Basic Seepage Swamp		G3	S3			Natural Community	
KELBAUGH ROAD SITE								Frederick
	Colonial Waterbird Colony	Heron Rookery	G5	S3			Other	
LE GORE BRIDGE WOODS								Frederick
	<i>Ruellia strepens</i>	Rustling Wild-petunia	G4G5	S2S3	E		Vascular Plant	
	<i>Scutellaria nervosa</i>	Veined Skullcap	G5	S1S2	E		Vascular Plant	
	<i>Scutellaria saxatilis</i>	Rock Skullcap	G3	S1	E		Vascular Plant	
LEWISTOWN FISH HATCHERY								Frederick
	<i>Lythrum alatum</i>	Winged Loosestrife	G5	S1	E		Vascular Plant	

Resources within Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service
September 2015

ESA	Scientific Name	Common Name	Global Rank	State Rank	State Status	Federal Status	Taxonomic Category	County
LILYPONS	<i>Gallinula chloropus</i>	Common Moorhen	G5	S2B	I		Vertebrate Animal	Frederick
	<i>Ixobrychus exilis</i>	Least Bittern	G5	S2S3B	I		Vertebrate Animal	
	<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4	S1B	E		Vertebrate Animal	
	<i>Podilymbus podiceps</i>	Pied-billed Grebe	G5	S2B			Vertebrate Animal	
	<i>Porzana carolina</i>	Sora	G5	S1B			Vertebrate Animal	
LITTLE BENNETT REGIONAL PARK SITE								
	<i>Juglans cinerea</i>	Butternut	G4	S2S3			Vascular Plant	Montgomery
	<i>Sorex hoyi winnemana</i>	Southern Pygmy Shrew	G5T4	S2			Vertebrate Animal	
	Vulnerable species ²				T			
	Vulnerable species ²				T			
LITTLE FISHING CREEK								
	<i>Adlumia fungosa</i>	Climbing Furnitory	G4	S2	T		Vascular Plant	Frederick
	<i>Aeshna tuberculifera</i>	Black-tipped Darner	G4	S2			Invertebrate Animal	
	<i>Glyceria acutiflora</i>	Sharp-scaled Mannagrass	G5	S1	E		Vascular Plant	
	<i>Lanthus vernalis</i>	Southern Pygmy Clubtail	G4	S2			Invertebrate Animal	
	Vulnerable species ²				T			
	Vulnerable species ²				E			
LOWER MONOCACY RIVER								
	<i>Hasteola suaveolens</i>	Sweet-scented Indian-plantain	G4	S1	E		Vascular Plant	Frederick
	<i>Notropis amoenus</i>	Comeley Shiner	G5	S3	T		Vertebrate Animal	
	<i>Ruellia strepens</i>	Rustling Wild-petunia	G4G5	S2S3	E		Vascular Plant	
LOWER TOMS CREEK								
	<i>Alasmidonta undulata</i>	Triangle Floater	G4	S1	E		Invertebrate Animal	Carroll, Frederick
	<i>Alasmidonta varicosa</i>	Brook Floater	G3	S1	E		Invertebrate Animal	
	<i>Elliptio producta</i>	Atlantic Spike	G4	S2S3	I		Invertebrate Animal	
	<i>Lasnigona subviridis</i>	Green Floater	G3	S1	E		Invertebrate Animal	
	<i>Margariscus margarita</i>	Pearl Dace	G5	S1S2	T		Vertebrate Animal	
	<i>Notropis amoenus</i>	Comeley Shiner	G5	S2	T		Vertebrate Animal	
	<i>Strophitus undulatus</i>	Creeper	G5	S2	I		Invertebrate Animal	
	<i>Triosteum angustifolium</i>	Narrow-leaved Horse-gentian	G5	S1	E		Vascular Plant	

Resources within Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service

September 2015

ESA	Scientific Name	Common Name	Global Rank	State Rank	State Status	Federal Status	Taxonomic Category	County
MASSER ROAD SITE	Carex shortiana	Short's Sedge	G5	S2	E		Vascular Plant	Frederick
	Lanius ludovicianus	Loggerhead Shrike	G4	S1B	E		Vertebrate Animal	
MONOCACY RIVER - CREAGERSTOWN	Alasmidonta varicosa	Brook Floater	G3	S1	E		Invertebrate Animal	Frederick
	Eliphtio producta	Atlantic Spike	G4	S2S3	I		Invertebrate Animal	
	Matelea obliqua	Climbing Milkweed	G4?	S1	E		Vascular Plant	
	Ruellia strepens	Rustling Wild-petunia	G4G5	S2S3	E		Vascular Plant	
	Strophitus undulatus	Creepers	G5	S2	I		Invertebrate Animal	
MONOCACY RIVER - DOUBLE PIPE	Strophitus undulatus	Creepers	G5	S2	I		Invertebrate Animal	Carroll, Frederick
MONOCACY RIVER - HARNEY	Alasmidonta undulata	Triangle Floater	G4	S1	E		Invertebrate Animal	Carroll, Frederick
	Alasmidonta varicosa	Brook Floater	G3	S1	E		Invertebrate Animal	
	Eliphtio producta	Atlantic Spike	G4	S2S3	I		Invertebrate Animal	
	Lampsilis cariosa	Yellow Lampmussel	G3G4	SU			Invertebrate Animal	
	Strophitus undulatus	Creepers	G5	S2	I		Invertebrate Animal	
MONOCACY RIVER - MICHAEL'S MILL	Ammannia coccinea	Scarlet Ammannia	G5	SU			Vascular Plant	Frederick
	Ruellia strepens	Rustling Wild-petunia	G4G5	S2S3	E		Vascular Plant	
MONOCACY RIVER - WALKERSVILLE	Strophitus undulatus	Creepers	G5	S2	I		Invertebrate Animal	Frederick
MONOCACY RIVER - WATERSIDE	Eliphtio producta	Atlantic Spike	G4	S2S3	I		Invertebrate Animal	Frederick
	Strophitus undulatus	Creepers	G5	S2	I		Invertebrate Animal	
MONOCACY SPRING	Stygbromus pizzinii	Pizzini's Cave Amphipod	G3G4	S1			Invertebrate Animal	Montgomery, Frederick

Resources within Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service
September 2015

ESA	Scientific Name	Common Name	Global Rank	State Rank	State Status	Federal Status	Taxonomic Category	County
	<i>Stygobromus</i> sp. 14	Roundtop Amphipod	GNR	S1			Invertebrate Animal	
MONOCACY TRIBUTARY 1	<i>Margariscus margarita</i>	Pearl Dace	G5	S1S2	T		Vertebrate Animal	Frederick
MONOCACY TRIBUTARY 2	<i>Margariscus margarita</i>	Pearl Dace	G5	S1S2	T		Vertebrate Animal	Frederick
NEW MIDWAY MEADOW	Vulnerable species ²				T			Frederick
OAK RIDGE WOODS	<i>Castanea dentata</i>	American Chestnut	G4	S2S3			Vascular Plant	Montgomery
OHIO BRANCH	Vulnerable species ²				T	LT		Carroll
OLAND ROAD FIELDS	<i>Batrachia longicauda</i>	Upland Sandpiper	G5	S1B	E		Vertebrate Animal	Frederick
OWENS CREEK SWAMP	Montane-Piedmont Basic Seepage Swamp		G3	S3			Natural Community	Frederick
	<i>Dirca palustris</i>	Leatherwood	G4	S2	T		Vascular Plant	
	Vulnerable species ²				E			
	Vulnerable species ²				X			
OXYS HOLLOW	<i>Neotoma magister</i>	Allegheny Woodrat	G3G4	S1	E		Vertebrate Animal	Frederick
PINECLIFF PARK WETLANDS	<i>Veronica scutellata</i>	Marsh Speedwell	G5	S1	E		Vascular Plant	Frederick
POTOMAC RIVER - MONOCACY	<i>Eliphtio producta</i>	Atlantic Spike	G4	S2S3	I		Invertebrate Animal	Montgomery, Frederick
	<i>Epitheca spinosa</i>	Robust Baskettail	G4	S1S2			Invertebrate Animal	

Resources within Ecologically Significant Areas of the Monocacy River Watershed in Maryland

Maryland Department of Natural Resources, Wildlife and Heritage Service

September 2015

ESA	Scientific Name	Common Name	Global Rank	State Rank	State Status	Federal Status	Taxonomic Category	County
	Gomphus abbreviatus	Spine-crowned Clubtail	G3G4	S1			Invertebrate Animal	
	Lampsilis cariosa	Yellow Lamprussel	G3G4	SU			Invertebrate Animal	
SPRUCE RUN								Frederick
	Vulnerable species ²							
SUGARLOAF MOUNTAIN								Frederick
	Botrychium oneidense	Blunt-lobe Grape-fern	G4Q	S1	E		Vascular Plant	
	Cyperus refractus	Reflexed Cyperus	G5	S2?			Vascular Plant	
	Rhododendron calendulaceum	Flame Azalea	G5	S1			Vascular Plant	
	Vulnerable species ²				T			
	Vulnerable species ²				T			
TURKEY CREEK								Frederick
	Vulnerable species ²				T			
UNION MILLS FLOODPLAIN								Carroll
	Carex trichocarpa	Hairy-fruited Sedge	G4	S2			Vascular Plant	
WIGVILLE SWAMP								Frederick
	Vernonia gigantea	Giant Ironweed	G5	SU			Vascular Plant	
	Vulnerable species ²							
WINE ROAD SWAMP								Carroll
	Castilleja coccinea	Indian Paintbrush	G5	S1	E		Vascular Plant	
	Sphenopholis pensylvanica	Swamp-oats	G4	S2	T		Vascular Plant	
	Vulnerable species ²				T	LT		

¹See accompanying Rank and Status Code Definitions document from MD Department of Natural Resources.

²See accompanying Vulnerable Species Guidelines document from MD Department of Natural Resources.

RANK AND STATUS CODE DEFINITIONS

Maryland Department of Natural Resources
Wildlife and Heritage Service
Natural Heritage Program

September 17, 2015

The global and state conservation ranking system is used by NatureServe and all state Natural Heritage Programs and Conservation Data Centers in the U.S. and other countries in this hemisphere. These conservation status ranks result from an assessment of the risk of elimination or extinction of species and ecological communities. Because they are assigned based upon standard criteria, the ranks can be used to assess the global or range-wide status of a species, as well as the status within portions of the species' range (i.e., states or provinces). The primary rank factors used in the assessments are related to threats, long-term and short-term trends, and rarity, including population size, area of occupancy, range extent, and number of occurrences. Additional factors considered include the current level of protection and environmental specificity. Global and state ranks are used in combination to set inventory, protection, and management priorities for species and ecological communities at the state, regional, and national levels.

Rank	Definitions (Global / State)
GX or SX	Presumed Extirpated — Species or ecological community believed to be extirpated from the jurisdiction (i.e. global, or state/province). Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
GH or SH	Historical (Possibly Extirpated) — Known only from historical records, but still some hope of rediscovery. There is evidence that the species may no longer be present in the jurisdiction (i.e. global, or state/province), but not enough to state this with certainty.
G1 or S1	Critically Imperiled/Highly State Rare — At very high risk of extinction or extirpation due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors. Typically occurring in fewer than five populations.
G2 or S2	Imperiled/State Rare — At high risk of extinction or extirpation due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors. Typically occurring in 6-20 populations.
G3 or S3	Vulnerable/Watchlist — At moderate risk of extinction or extirpation due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors. Typically occurring in 21-80 populations. [A non-standard rank of S3.1 is used infrequently to identify species that are of higher conservation concern because of the global significance of Maryland populations. Although not currently imperiled, Maryland occurrences may be critical to the long-term security of the species.]
G4 or S4	Apparently Secure — At fairly low risk of extinction or extirpation due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
G5 or S5	Demonstrably Secure — At very low risk of extinction or extirpation due to a very extensive range, abundant populations or occurrences, or little to no concern from declines or threats.
GU or SU	Status Uncertain — A numerical rank cannot be established with confidence for reasons including lack of historical records, low survey effort, cryptic nature of the species, or concerns that the species may not be native to the state. Uncertainty spans a range of more than 3 ranks, as defined above.
GNR or SNR	Not ranked — Conservation status has not yet been fully assessed.

Global Rank Qualifiers (at end of Global Rank)	
Q	Questionable — Indicates that the taxon has questionable, controversial, or uncertain taxonomic standing (e.g., treated by some taxonomic authors as a species, whereas others treat it as a subspecies or variety or not at all).
T	Taxon — Indicates the rank of a subspecies or variety (i.e., an infraspecific taxon).
State Rank Qualifiers (at end of State Rank)	
?	Questionable — Indicating uncertainty that may span 2-3 numeric S-ranks, as defined above.
B	Breeding — Conservation status refers to Maryland's breeding population of a migratory animal.
N	Nonbreeding — Conservation status refers to Maryland's non-breeding population of a migratory animal.
M	Migrant — Migrant animal that occurs regularly during migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the state.

Status	State Legal Status Definitions ¹
X	Endangered Extirpated — A species that was once a viable component of the flora or fauna of Maryland, but for which no naturally occurring populations are known to exist in the State.
E	Endangered — A species whose continued existence as a viable component of the State's flora or fauna is determined to be in jeopardy.
T	Threatened — A species of flora or fauna which appears likely, within the foreseeable future, to become endangered in the State.
I	In Need of Conservation — An animal species whose population is limited or declining in the State such that it may become threatened in the foreseeable future if current trends or conditions persist. [This category does not apply to plants.]
Qualifier (at end of State Legal Status)	
*	Range Restriction — The species is listed in a limited geographic area only.

Status	Federal Legal Status Definitions ²
LE	Listed Endangered — Species listed as endangered; in danger of extinction throughout all or a significant portion of its range.
LT	Listed Threatened — Species listed as threatened; likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
PE	Proposed Endangered — Species proposed to be listed as endangered.
PT	Proposed Threatened — Species proposed to be listed as threatened.
C	Candidate — Candidate species for listing for which the Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list it as endangered or threatened.

State Legal Status Definitions¹

This is the status of a species as determined by the Maryland Department of Natural Resources, in accordance with the Nongame and Endangered Species Conservation Act. Definitions for the categories have been taken from Code of Maryland Regulations (COMAR) 08.03.08.

Federal Legal Status Definitions²

This is the status of a species as determined by the U.S. Fish and Wildlife Service's Office of Endangered Species, in accordance with the Endangered Species Act. Definitions for the categories have been modified from 50 CRF 17.



IMPORTANT BIRD AREAS PROGRAM

CRITERIA FOR SITE SELECTION

(updated January 2011)

Copies available at: <http://mddc.audubon.org/birds-science-education/important-bird-areas>

Category MD-DC 1: Sites important to bird species at risk.

Criterion:

The site *regularly* supports significant breeding or non-breeding numbers of species at risk in Maryland and DC. These include: species listed in the Code of Maryland Regulations (COMAR 08.030.08) as Endangered, Threatened or In Need of Conservation in Maryland; “Red” and “Yellow” Audubon/American Bird Conservancy WatchList (2007) species, species listed by the IBA National Technical Committee as globally or continentally at risk, species included in the Birds of Conservation Concern 2008 list, and other species judged by the Maryland-DC IBA Technical Review Committee to be at risk in Maryland and DC.

A framework of site-level thresholds has been developed (Table 1) based on species at risk categories (see below), dispersion pattern and taxonomic group. Within this framework site-level thresholds for each species (Table 2) have been selected from the appropriate range based on published conservation listings and unpublished information on current trends in population and distribution. Site-level thresholds will be used as guidelines in the site review process at the discretion of the Maryland-DC IBA Technical Review Committee, and will be adjusted accordingly if found to be inappropriate.

Species at risk categories

The following three species at risk categories are based on abundance, distribution, and severity of threats (as measured by population trends and other factors).

Severely at risk: This category includes species with extremely limited distributions and small populations and facing severe threats in Maryland-DC. The goal for these species is to include the great majority of established populations within IBAs.

Highly at risk: This category includes species with limited distributions and small populations and facing distinct threats in Maryland-DC. The goal for these species is to include a moderate to high proportion of their populations within IBAs.

At risk: This category includes species that are more widely distributed and with larger populations in Maryland-DC than other species at risk, and species with limited distributions but facing lower levels of threat than other species at risk. The goal for these species is to include a lower proportion of their populations within IBAs.

Table 1. Ranges of IBA site-level thresholds for species at risk in Maryland and DC. In each cell numbers are: breeding pairs; individuals during winter or migration.

	Severely at Risk	Highly at Risk	At Risk*
Dispersed/Non-pass.	2 pairs; 6-15	3-5 pairs; 9-30	5-20 pairs; 15-60
Dispersed/Passerine	3-5 pairs; 9-15	5-10 pairs; 15-30	10-160 pairs; 30-480
Aggregated	5-20 pairs; 15-60	20-40 pairs; 60-120	40-80 pairs; 120-960

*For some species no longer on the WatchList or BCC list the threshold may match the Continental IBA threshold and thus exceed the range shown.

Table 2. Conservation status and IBA site-level thresholds of bird species at risk in Maryland and DC. Species

Species	At Risk Category ¹ (in MD-DC)	Threshold Breeding Pairs	Threshold Nonbreeding individuals ²	COMAR ³ (MD DNR)	Audubon/ABC WatchList (2007) ⁴	Conservation listing		
						IBA National Tech Cttee ⁵	USFWS ⁶	
<i>Severely at risk species</i>								
American Bittern	Severely at risk	2	6	I				BCC Region 5
Northern Goshawk	Severely at risk	2	B	E				
Black Rail	Severely at risk	2	6	E	Red	Global		BCC National, Region 5
Wilson's Plover	Severely at risk	2	6	E	Yellow	Continental		BCC National, Region 5
Piping Plover	Severely at risk	2	6	E	Red	Global		Threatened (ESA)
Upland Sandpiper	Severely at risk	2	30	E		Continental		BCC National, Region 5
Red Knot	Severely at risk	N/A	40	E	Yellow	Continental		BCC National, Region 5
Gull-billed Tern	Severely at risk	5	30	E	Yellow	Continental		BCC National, Region 5
Royal Tern	Severely at risk	10	B	E				
Black Skimmer	Severely at risk	5	30	E	Yellow	Continental		BCC National, Region 5
Northern Saw-whet Owl	Severely at risk	2	B					
Olive-sided Flycatcher	Severely at risk	3	9	E	Yellow	Global		BCC National, Region 5
Loggerhead Shrike	Severely at risk	3	9	E		Continental		BCC National, Region 5
Bewick's Wren (ssp. <i>altus</i>)	Severely at risk	3	9	E		Continental		BCC National, Region 5
Sedge Wren	Severely at risk	3	9	E		Continental		BCC Region 5
Swainson's Warbler	Severely at risk	3	9	E	Yellow	Continental		BCC National, Region 5
Mourning Warbler	Severely at risk	3	B	E				
Henslow's Sparrow	Severely at risk	5	9	T	Red	Global		BCC National, Region 5
<i>Highly at risk species</i>								
Northern Harrier	Highly at risk	5	15					
Peregrine Falcon	Highly at risk	3	30	I		Continental		BCC National, Region 5
Whimbrel	Highly at risk	N/A	60			Continental		BCC National, Region 5

Species	At Risk Category (in MD-DC) ¹	Threshold Breeding Pairs	Threshold Nonbreeding individuals ²	COMAR ³ (MD DNR)	Audubon/ABC WatchList (2007) ⁴	Conservation listing	
						National Tech Cttee ⁵	USFWS ⁶
Common Tern	Highly at risk	30	60				
Least Tern	Highly at risk	20	60	T	Red	Continental	BCC National, Region 5
Short-eared Owl	Highly at risk	3	15	E	Yellow	Continental	BCC National, Region 5
Alder Flycatcher	Highly at risk	5	B	I			
Golden-winged Warbler	Highly at risk	5	15		Red	Global	BCC National, Region 5
Nashville Warbler	Highly at risk	5	B	I			
Blackburnian Warbler	Highly at risk	10	B	T			
Cerulean Warbler	Highly at risk	10	15		Yellow	Global	BCC National, Region 5
Canada Warbler	Highly at risk	10	30		Yellow	Continental	BCC National, Region 5
Nelson's Sparrow	Highly at risk	N/A	15		Yellow	Continental	BCC National, Region 5
Saltmarsh Sparrow	Highly at risk	10	15		Red	Global	BCC National, Region 5
Swamp Sparrow (Coastal Plain ssp. <i>nigrescens</i>)	Highly at risk	10	30	I			
Dickcissel	Highly at risk	5	30			Continental	BCC National
Rusty Blackbird	Highly at risk	N/A	60		Yellow	Global	BCC National, Region 5
<i>At-risk species</i>							
Pied-billed Grebe	At risk	10	B				BCC Region 5
Least Bittern	At risk	5	B	I			BCC Region 5
American Black Duck	At risk	20	240				<i>Not eligible</i>
Bald Eagle	At risk	10	60	T		Continental	BCC National, Region 5
Northern Bobwhite	At risk	10	60			Global	<i>Not eligible</i>
Clapper Rail	At risk	40	120		Yellow	Continental	<i>Not eligible</i>
King Rail	At risk	5	B		Yellow		<i>Not eligible</i>
Sora	At risk	5	B				<i>Not eligible</i>
Common Moorhen	At risk	10	B	I			<i>Not eligible</i>
American Golden Plover	At risk	N/A	60		Yellow	Continental	
American Oystercatcher	At risk	5	15			Continental	BCC National, Region 5
Solitary Sandpiper	At risk	N/A	60			Continental	BCC National, Region 5
Lesser Yellowlegs	At risk	N/A	360			Continental	BCC National, Region 5
Sanderling	At risk	N/A	720		Yellow	Continental	
Semipalmated Sandpiper	At risk	N/A	720		Yellow	Continental	BCC National, Region 5
Western Sandpiper	At risk	N/A	720		Yellow	Continental	
White-rumped Sandpiper	At risk	N/A	480		Yellow	Continental	

Species	At Risk Category (in MD-DC) ¹	Threshold Breeding Pairs	Threshold Nonbreeding individuals ²	COMAR ³ (MD DNR)	Conservation listing		
					Audubon/ABC WatchList (2007) ⁴	IBA National Tech Cttee ⁵	USFWS ⁶
Purple Sandpiper	At risk	N/A	240		Continental	BCC National, Region 5	
Dunlin	At risk	N/A	960		Continental		
Stilt Sandpiper	At risk	N/A	480		Yellow		National
Buff-breasted Sandpiper	At risk	N/A	30		Red	BCC National, Region 5	
Short-billed Dowitcher	At risk	N/A	240		Continental	BCC National, Region 5	
American Woodcock	At risk	10	45				<i>Not eligible</i>
Common Nighthawk	At risk	5	B				
Whip-poor-will	At risk	10	30				BCC Region 5
Red-headed Woodpecker	At risk	10	30		Yellow	Global	BCC National, Region 5
Willow Flycatcher	At risk	20	60		Yellow	Continental	BCC National
Bank Swallow	At risk	40	B				
Brown-headed Nuthatch	At risk	30	120			Continental	BCC National
Wood Thrush	At risk	160	480		Yellow	Continental	BCC National, Region 5
Blue-winged Warbler	At risk	15	30		Yellow	Continental	BCC National, Region 5
Prairie Warbler	At risk	30	60		Yellow	Continental	BCC National, Region 5
Prothonotary Warbler	At risk	30	60		Yellow	Continental	BCC National
Worm-eating Warbler	At risk	30	60			Continental	BCC National, Region 5
Northern Waterthrush	At risk	10	B				
Kentucky Warbler	At risk	20	60		Yellow	Continental	BCC National, Region 5
Seaside Sparrow	At risk	40	120		Red		BCC National, Region 5

¹Species were allocated to at-risk categories (“severely at-risk”, highly at-risk”, “at-risk”) by the Maryland-DC IBA Technical Review Committee.

²B = At-risk status applies to breeding populations only.

³Listed in the Code of Maryland Regulations (COMAR 08.030.08) as E = Endangered, T = Threatened, I = In Need of Conservation. See website: <http://www.dnr.maryland.gov/wildlife/rteanimals.asp>

⁴See website: <http://web1.audubon.org/science/species/watchlist/>

⁵The IBA National Technical Committee (NTIC), convened by the National Audubon Society, lists bird species considered at risk at the global and continental scales (A1 and B1 species respectively). This list includes Federally listed species and subspecies, National Birds of Conservation Concern (U.S. Fish and Wildlife Service), and “Red” and “Yellow” ABC/Audubon WatchList species. In September 2009 this list was updated to reflect revisions to the WatchList (2007) and the BCC list (2008).

⁶The US Fish and Wildlife Service lists Threatened and Endangered Species (see website: <http://www.fws.gov/engangered/wildlife.html>) under the Endangered Species Act, and Birds of Conservation Concern (USFWS, 2008), which lists nongame bird species at national and regional scales; see website: <http://www.fws.gov/migratorybirds/NewsPublicationsReports.html>. Game bird species are not included on the BCC list and are thus labeled *not eligible* in this column. USFWS Region 5 includes 12 states in the northeastern US from Virginia north and east.

Category MD-DC 2: Sites important to bird species assemblages dependent upon a particular habitat type.

This category is intended to cover relatively large areas that support the most diverse assemblages of species with very particular habitat requirements (see lists below). Small remnants of an exceptional habitat type may be included. Selection of sites will be based on avian assemblages present in the habitat type, not on the habitat type alone. Therefore, whenever possible, the species of birds that are characteristic of the habitat type should be identified and quantified.

Criterion:

The site contains a highly diverse assemblage of bird species characteristic of a particular habitat type within the state or region. Avian assemblages at a site will be evaluated relative to the suite of potential species within the state or the appropriate Bird Conservation Region (BCR; NABCI 2000) in the lists below, using data from the 2002-06 Maryland-DC Breeding Bird Atlas project (Ellison 2010), and other sources. For widespread habitat types, species richness of the assemblage, per Breeding Bird Atlas (BBA) block, should typically be within that of the top 15% of BBA blocks across the state or within the region of analysis. For the forest assemblage, BCR 28 is further subdivided into Physiographic Regions because of significant differences in this assemblage between these regions.

Characteristic bird species of major habitat types in Maryland and DC

The lists below include bird species assemblages of habitat specialists (species largely dependent on the habitat in question) for the major habitat types in Maryland-DC. Species assemblages are limited to breeding species. Some species can be dependent on multiple similar habitats so will appear in more than one list.

Forest Includes all species on Maryland DNR’s list of Forest Interior Dwelling Species (FIDS).

Forest Interior Dwelling Species	Appalachian Mountains (BCR 28)		Piedmont (BCR 29)	Coastal Plain (BCR 30)
	Allegheny plateau	Ridge & valley		
Sharp-shinned Hawk	X	X	X	
Northern Goshawk	X			
Red-shouldered Hawk	X	X	X	X
Broad-winged Hawk	X	X	X	X
Black-billed Cuckoo	X	X	X	X
Barred Owl	X	X	X	X
Whip-poor-will	X	X	X	X
Hairy Woodpecker	X	X	X	X
Pileated Woodpecker	X	X	X	X
Acadian Flycatcher	X	X	X	X
Common Raven	X	X	X	
Brown Creeper	X	X	X	X
Winter Wren	X			
Veery	X	X	X	

Hermit Thrush	x			
Wood Thrush	x	x	x	x
Blue-headed Vireo	x	x		
Yellow-throated Vireo	x	x	x	x
Red-eyed Vireo	x	x	x	x
Northern Parula	x	x	x	x
Magnolia Warbler	x			
Black-throated Blue Warbler	x			
Black-throated Green Warbler (subsp <i>waynei</i>)*				x
Blackburnian Warbler	x			
Cerulean Warbler	x	x	x	
Black-and-white Warbler	x	x	x	x
American Redstart	x	x	x	x
Prothonotary Warbler	x	x	x	x
Worm-eating Warbler	x	x	x	x
Swainson's Warbler*				x
Ovenbird	x	x	x	x
Louisiana Waterthrush	x	x	x	x
Northern Waterthrush	x			
Kentucky Warbler	x	x	x	x
Hooded Warbler	x	x	x	x
Canada Warbler	x			
Summer Tanager			x	x
Scarlet Tanager	x	x	x	x
Total species in assemblage	35	27	27	25
Species richness of 85 th percentile of Breeding Bird Atlas blocks (2002-06)	25	19	17	16

* Denotes species breeding irregularly or at only one or two sites in Maryland-DC.

Mountain Peatland Occurs only in BCR 28.

Mountain Peatland species	Appalachian Mountains (BCR 28)
Northern Saw-whet Owl*	x
Alder Flycatcher	x
Nashville Warbler	x
Northern Waterthrush	x
Canada Warbler	x
Swamp Sparrow	x
Total species in assemblage	6

* Denotes species breeding irregularly or at only one or two sites in Maryland-DC.

Shrubland and Early Successional Habitats

Shrubland and Early Successional species	Appalachian Mountains (BCR 28)	Piedmont (BCR 29)	Coastal Plain (BCR 30)
Northern Bobwhite	X	X	X
American Woodcock	X	X	X
Willow Flycatcher	X	X	
Brown Thrasher	X	X	X
White-eyed Vireo	X	X	X
Blue-winged Warbler	X	X	
Golden-winged Warbler	X		
Chestnut-sided Warbler	X		
Prairie Warbler	X	X	X
Mourning Warbler*	X		
Yellow-breasted Chat	X	X	X
Eastern Towhee	X	X	X
Field Sparrow	X	X	X
Total species in assemblage	13	10	8
Species richness of 85 th percentile of Breeding Bird Atlas blocks (2002-06)	7	8	7

* Denotes species breeding irregularly or at only one or two sites in Maryland-DC.

Grassland

Grassland species	Appalachian Mountains (BCR 28)	Piedmont (BCR 29)	Coastal Plain (BCR 30)
Northern Harrier	X		X
American Kestrel	X	X	X
Upland Sandpiper*	X		
Barn Owl	X	X	X
Short-eared Owl*	X		
Sedge Wren	X		X
Loggerhead Shrike*	X	X	
Dickcissel		X	X
Vesper Sparrow	X	X	X
Savannah Sparrow	X	X	
Grasshopper Sparrow	X	X	X
Henslow's Sparrow	X		
Bobolink	X	X	
Eastern Meadowlark	X	X	X
Total species in assemblage	13	9	8
Species richness of 85 th percentile of Breeding Bird Atlas blocks (2002-06)	5	4	3

* Denotes species breeding irregularly or at only one or two sites in Maryland-DC.

Freshwater Marsh

Freshwater Marsh species	Appalachian Mountains (BCR 28)	Piedmont (BCR 29)	Coastal Plain (BCR 30)
Pied-billed Grebe		x	x
American Bittern			x
Least Bittern		x	x
American Black Duck	x	x	x
Black Rail			x
King Rail		x	x
Virginia Rail	x	x	x
Common Moorhen		x	x
Sora	x	x	x
Sedge Wren	x		x
Marsh Wren			x
Coastal Plain Swamp Sparrow			x
Total species in assemblage	4	7	12

Salt Marsh Occurs only in BCR 30.

Salt Marsh species	Coastal Plain (BCR 30)
American Bittern	x
Least Bittern	x
Northern Harrier	x
American Black Duck	x
Black Rail	x
Clapper Rail	x
King Rail	x
Virginia Rail	x
Common Moorhen	x
Willet	x
Barn Owl	x
Sedge Wren	x
Marsh Wren	x
Saltmarsh Sparrow	x
Seaside Sparrow	x
Coastal Plain Swamp Sparrow	x
Total species in assemblage	16

Coastal Beach and Dune Occurs only in BCR 30.

Coastal Beach and Dune species	Coastal Plain (BCR 30)
Piping Plover	X
Wilson’s Plover*	X
American Oystercatcher	X
Gull-billed Tern*	X
Royal Tern*	X
Sandwich Tern*	X
Least Tern	X
Black Skimmer	X
Total species in assemblage	8

* Denotes species breeding irregularly or at only one or two sites in Maryland-DC.

Category MD-DC 3: Sites where native species of birds regularly concentrate in significant numbers when breeding, in winter, or during migration.

This category is meant to cover sites of importance for dense populations of breeding birds (such as a heronry), high concentrations of waterfowl or shorebirds in any season, and migratory “bottlenecks” where geographical features (such as ridges) concentrate large numbers of migratory birds. Human-made food sources for gulls (landfills, dumpsites, sewage treatment plants or outflows, etc.) or man-made structures (dams, bridges, buildings, etc.) will not be considered as IBAs. Exceptions will be considered for sites important for species that utilize only man-made items (such as very large chimney swift roosts) and habitat restoration projects (such as dredge-spoil islands) due to their relative permanence and resemblance to natural habitats. Consideration will normally not be given to species that are considered nuisance species, i.e. harmful or economically destructive species. The numerical thresholds in 1a – 1e are guidelines only, and the Technical Review Committee may consider other factors (quality and location of habitat, distribution and importance of species, etc.).

Criteria:

(3a) The site *regularly* supports at least 7,000 waterfowl (at one time) during some part of the year. The designation “waterfowl” includes such birds as loons, grebes, cormorants, swans, geese, ducks, coots, and moorhens. Totals should not include Mute Swans, resident Canada Geese, or resident Mallards. *The threshold for migratory Canada Geese is currently under review by the Technical Review Committee.*

(3b) The site *regularly* supports at least 400 seabirds and/or terns (at one time) or 10,000 gulls (at one time) during some part of the year. The designation “seabird” includes such birds as shearwaters, storm-petrels, fulmars, gannets, jaegers, alcids, and pelicans.

(3c) The site *regularly* supports at least 300 shorebirds or rails (at one time) if an inland site, or 1000 shorebirds or rails (at one time) if coastal, during some part of the year. The designation “shorebirds” includes such birds as plovers, sandpipers, snipe, and phalaropes.

(3d) The site *regularly* supports at least 200 non-breeding wading birds or 500 breeding pairs of wading birds during some part of the year. The designation “wading birds” includes such birds as bitterns, herons, egrets, and ibises.

(3e) The site is *regularly* an important stopover site, “bottleneck,” or migratory corridor for at least 8,000 raptors (seasonal total) during spring or fall migration.

(3f) The site is *regularly* an important migratory stopover or seasonal concentration site for migratory landbirds. Sites may qualify on the basis of exceptionally high numbers of birds during migration, i.e. “migrant traps”, wintering flocks, or high densities of breeding species as shown from point counts or other surveys. No absolute thresholds have been set due to the scarcity of quantitative data. Sites should be clearly unique from other sites in the local area. Consideration may also be given to areas with consistently high overall species diversity or exceptional diversity within a particular group (e.g., warblers).

(3g) The site *regularly* supports a significant concentration of a single native species, but supports a smaller total number of birds than any of the criteria above (1a – 1f). Ideally, the site should be known or thought to hold more than 5% of the state population of a species. In practice, however, it will be difficult to estimate state population sizes for most species. This criterion might be applied to any species that congregates, including those which nest in colonies, forage in flocks, or roost communally.

Literature Cited

Ellison, W. G. 2010. Second atlas of the breeding birds of Maryland and the District of Columbia. Johns Hopkins University Press.

U. S. NABCI Committee. 2000. North American Bird Conservation Regions: Bird Conservation Region descriptions. North America Bird Conservation Initiative, U.S. Fish and Wildlife Service, Arlington, VA. [Online version available at <http://www.nabci-us.org/bcrs.html>].

Maryland's Designated Uses (COMAR 26.08.02)

- Use I: Water contact recreation and protection of nontidal water aquatic life
- Use II: Support of estuarine and marine aquatic life and shellfish harvesting (not all subcategories apply to each tidal water segment)
 - Shellfish harvesting and subcategories unique to Chesapeake Bay only
- Use III: Nontidal cold water – usually considered natural trout waters
- Use IV: Recreational trout waters – water are stocked with trout

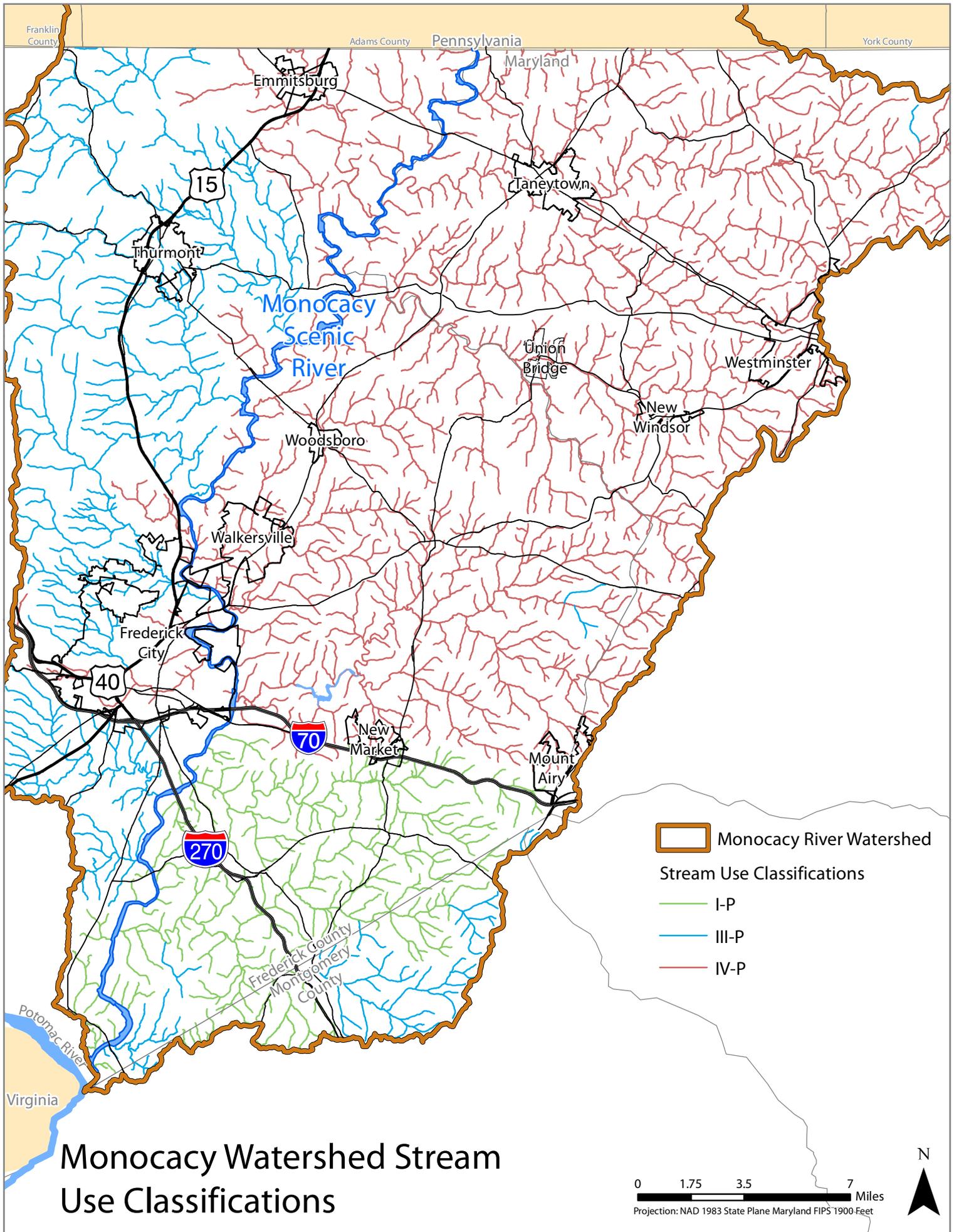
If the letter “P” follows the use class listing, that particular stream has been designated as a public water supply. The designated use and applicable use classes are found in the following table:

Designated Uses	Use Classes							
	I	I-P	II	II-P	III	III-P	IV	IV-P
Growth and Propagation of fish (not trout), other aquatic life and wildlife	✓	✓	✓	✓	✓	✓	✓	✓
Water Contact Sports	✓	✓	✓	✓	✓	✓	✓	✓
Leisure activities involving direct contact with surface water	✓	✓	✓	✓	✓	✓	✓	✓
Fishing	✓	✓	✓	✓	✓	✓	✓	✓
Agricultural Water Supply	✓	✓	✓	✓	✓	✓	✓	✓
Industrial Water Supply	✓	✓	✓	✓	✓	✓	✓	✓
Propagation and Harvesting of Shellfish			✓	✓				
Seasonal Migratory Fish Spawning and Nursery Use			✓	✓				
Seasonal Shallow-Water Submerged Aquatic Vegetation Use			✓	✓				
Open-Water Fish and Shellfish Use			✓	✓				
Seasonal Deep-Water Fish and Shellfish Use			✓	✓				
Seasonal Deep-Channel Refuge Use			✓	✓				
Growth and Propagation of Trout					✓	✓		
Capable of Supporting Adult Trout for a Put and Take Fishery							✓	✓
Public Water Supply		✓		✓		✓		✓

Sub-Basin 02-14-03: Middle Potomac River Area.

Designated Use Class and Waterbody	Latitude	Longitude	Limits
(1) Class I-P: Potomac River and all tributaries except those designated below as Class III-P or Class IV-P	39.221736	-77.456451	From Frederick/Montgomery County line to confluence with Shenandoah River
(2) Class II: None.			
(3) Class III: None.			
(4) Class III-P:			
(a) Tuscarora Creek and all tributaries	39.458359	-77.375099	
(b) Carroll Creek and all tributaries	39.423513	-77.429438	Upstream of U.S. Route 15
(c) Rocky Fountain Run and all tributaries	39.332070	-77.422527	

(d) Fishing Creek and all tributaries	39.505696	- 77.391445	
(e) Hunting Creek and all tributaries	39.550482	- 77.358179	
(f) Owens Creek and all tributaries	39.579028	- 77.332576	
(g) Friends Creek and all tributaries	39.719868	- 77.389272	
(h) Catoctin Creek and all tributaries	39.450300	- 77.562603	Upstream of Alternate U.S. Route 40
(i) Little Bennett Creek and all tributaries	39.279411	- 77.314709	Upstream of MD Rt. 355
(j) Furnace Branch and all tributaries	39.243999	- 77.439955	
(k) Ballenger Creek and all tributaries	39.362694	- 77.410124	
(l) Bear Branch and all tributaries	39.292638	- 77.405135	From confluence with Bennett Creek upstream
(m) Middle Creek and all tributaries	39.448829	- 77.603343	Upstream of the confluence with an unnamed trib south of Geaslin Drive
(n) Unnamed tributary to Talbot Branch and all tributaries to this unnamed tributary	39.455887	- 77.160651	Stream flows in southerly direction. Mouth of stream joins Talbot Branch near intersection of Black Ankle Road and Talbot Run Road
(o) Unnamed tributary to Talbot Branch and all tributaries to this unnamed tributary	39.454004	- 77.154174	Stream flows in northwesterly direction. Mouth of stream joins Talbot Branch 500 meters east of the intersection of Black Ankle Road and Talbot Run Road
(p) Unnamed tributary to Big Pipe Creek and all tributaries	39.675821	- 76.941553	Upstream from confluence with another unnamed tributary just south of Wine Road
(q) Bennett Creek and all tributaries	39.310961	- 77.231394	From a point, 700 yards to the east of the intersection of Moxley and Clarksburg Road, upstream
(r) Unnamed tributary to Bennett Creek	39.303758	- 77.286898	Near intersection of Prices Distillery Road and Haines Road
(5) Class IV: None.			
(6) Class IV-P:			
(a) Monocacy River and tributaries except those designated above as Class III-P	39.398435	- 77.366868	Upstream of U.S. Rt. 40
(b) Catoctin Creek	39.309777	- 77.567051	Mainstem only, from mouth upstream to Alternate U.S. Rt. 40
	39.450300	- 77.562603	
(c) Israel Creek and all tributaries	39.327756	- 77.682559	



13-SUMMARY OF RIVER BOARD RECOMMENDATIONS CONTAINED IN THE 2016 RIVER MANAGEMENT PLAN

History and Cultural Resources Recommendations

- 4-1) *Identify and recommend appropriate uses and protective measures for areas in the Monocacy River corridor that include significant archaeological and cultural resources*
- 4-2) *Increase public awareness and education about local cultural history and its relationship to the Monocacy River and its tributaries*
- 4-3) *Make focused efforts to preserve Frederick County's remaining mill sites and mill structures in the Monocacy River corridor*
- 4-4) *Conduct a viewshed and vistas analysis and use this information in consideration of development of a Viewshed Protection Plan for vistas of historic or cultural value*
- 4-5) *Continue to coordinate preservation planning with the Maryland Historical Trust, especially for proposed development that may impact historic and archeological sites. This includes consideration to protect sites of archeological and historic significance, and the encouragement of land uses that may protect them*
- 4-6) *Continue active engagement with the National Park Service and involvement with their plans for the Monocacy National Battlefield. Coordination should address open space and recreational opportunities, future protection of a national historic property, public access to the Monocacy River, and how proposed development may benefit from proximity to important, archeological and historic resources*
- 4-7) *When a significant historic site in the River corridor becomes available for sale, the counties should consider purchasing the site for the purposes of historic preservation and education or the promotion of adaptive reuse*
- 4-8) *Encourage future county and state sponsored studies to be conducted to locate and identify historic and cultural resources that are within in stream corridors*

The Ecological Environment Recommendations

- 5-1) *Frederick and Carroll Counties should consider identifying the Monocacy River, its floodplain and corridor as a "High Conservation Value" area and actively support the environmental enhancement of the River's floodplain and corridor by employing a wide range of economic incentives, financial aid, and technical assistance for landowners to protect, maintain, and restore the habitat and water quality functions of the forestlands and wetlands in the Monocacy River Corridor*
- 5-2) *Target resources from Frederick County's Tree Planting and Easement Program (within the Office of Sustainability and Environmental Resources) to reforest Ecologically Significant Areas (ESAs) in the Monocacy River Corridor and gaps in the River's riparian cover identified with Green Infrastructure spatial analysis*
- 5-3) *Consider establishing the Monocacy River Corridor as a priority area in Frederick County, Carroll County, and the City of Frederick, for Forest Resource Ordinance (FRO) easements. The Town of Walkersville Comprehensive Plan states that required FRO plantings will be directed to the Monocacy River, Glade Creek and Israel Creek stream valleys*
- 5-4) *Implement action item NR-A-05 from the Frederick County Comprehensive Plan which states, "Target areas along the Monocacy River as FRO priority areas (forest plantings and banking) in addition to streams in the agricultural zoning district"*
- 5-5) *Establish a mainstem Monocacy reforestation program by utilizing Frederick County's Fee-in-Lieu FRO funds to purchase easements (existing forest or new tree plantings) within the River's floodplain and corridor, with focus on ESAs in the River Corridor*

- 5-6) *Plan and conduct a public outreach and restoration project for the Waterside Community, where technical and financial assistance is provided for the reforestation of the 39-acre, unforested, floodplain Open Space that exists along the Monocacy River in the community. This River-front land is part of an area designated as a Tier III (highly significant for biodiversity conservation) Ecologically Significant Area (ESA) by the Maryland Department of Natural Resources. Also focus on the reduction in the HOA's land maintenance costs—mowing—after turf grass is replaced with natural forest cover*
- 5-7) *The City of Frederick should undertake an analysis of the River's riparian forest buffer on the Clustered Spires Golf Course with active management of the tree canopy and understory vegetation to enhance the ecology and morphology of the River's floodplain forest. As the Clustered Spires Golf Course is located within the River's floodplain, the City should critically examine the use of conventional fertilizers and pesticides and less toxic alternatives to lessen chemical inputs into the River*
- 5-8) *Frederick County and Frederick City should lead by example and employ Monocacy Scenic River Best Management Practices (MSR-BMP) to reforest, where feasible opportunities exist, their public land holdings along the Scenic Monocacy River*
- 5-9) *The River Board should request the Maryland Department of Natural Resources to evaluate the Monocacy River Corridor in its future update of the State Forest Legacy Assessment of Need, and Strategic Forestland Assessment for possible inclusion of the River Corridor in a revised Maryland Forest Legacy Area.*
- 5-10) *Continue to provide support and assistance to the efforts of the Maryland Department of Natural Resources' Forest Service in control of forest disease/pests, i.e., Gypsy Moth, Emerald Ash Borer, Hemlock Woolly Adelgid, etc.*
- 5-11) *Continue to provide support and assistance to the efforts of the Maryland Department of Natural Resources' Inland Fisheries Division in their study and analysis of the Monocacy River's fish species, as well as stocking for the recreationally and economically important sport fisheries in the Watershed*
- 5-12) *The Counties and the River Board should support the efforts of environmental organizations, civic groups, and other NGOs in tree planting projects, wetland enhancements, or environmental education/outreach initiatives*
- 5-13) *The River Board encourages Carroll and Frederick Counties to incorporate climate change related impacts and risks (to public safety, health, and welfare, and infrastructure, natural resources, structures, etc.) related to Monocacy River flooding in their respective Hazard Mitigation Plans*
- 5-14) *The River Board encourages both Counties to incorporate the following elements in their respective Hazard Mitigation Plans, in case of a spill of hazardous toxic materials into the Monocacy River:*
- *Identification of hazardous chemical sites (storage, usage, etc)*
 - *Spill event detection, including responsible party identification*
 - *Monitoring of contaminant properties, including health effects*
 - *Emergency response/clean-up operations*
 - *Follow-up tracking, including regulatory response*
- 5-15) *Encourage the Frederick and Carroll County Forestry Boards to expand their responsibilities (and offer additional county resources if needed) to include the review and field check of permit applications for timber harvesting within the Monocacy River corridor to ensure that sound forestry management practices and water quality protections are being employed (Frederick County currently requires forestry board involvement in timber harvesting only for properties zoned resource conservation)*
- 5-16) *The River Board should engage with the Maryland Wood Duck Initiative to implement a project to install nesting boxes in the River Corridor for waterfowl (e.g. Wood Ducks) and other birds, with possible assistance from the Parks Departments of Frederick County and the City of Frederick*

5-17) *The River Board, with assistance from both Counties, should explore the creation of a non-profit organization devoted to River protection and advocacy that will have the authority to seek and obtain grant funds from various governmental entities.*

Land Use Planning and Water Resources Management Recommendations

Frederick County

- 6-1) *As part of the preparation and adoption (in 2018) of "Livable Frederick," the Frederick County Comprehensive Plan, the County should critically examine the removal of the Monocacy River and all its resources and attributes, as described in this Plan, from the County's Community Growth Areas*
- 6-2) *As part of the preparation and adoption (in 2018) of "Livable Frederick," the Frederick County Comprehensive Plan, the County should uniformly apply the Natural Resource land use plan designation and the Resource Conservation zoning district to the full array of River-related resources, as described in this Plan*
- 6-3) *Consider the introduction of legislation for adoption of a Monocacy River Resource Protection Area setback line*
- 6-4) *Frederick County should fully support and continue membership in the Potomac River Basin Drinking Water Source Protection Partnership and support the work of the Interstate Commission on the Potomac River Basin*
- 6-5) *Consider the adoption of an official County policy of non-support and non-funding for any future water impoundment on the Monocacy River*
- 6-6) *The River Board should request and review maintenance and inspection reports and hazard mitigation plans from CSX Corporation and the State of Maryland and Walkersville Southern Railroad for all railroad crossings of the River to ensure the health and protection of the Monocacy River is and remains a high priority in such reports and plans*
- 6-7) *The River Board should contact and request that Potomac Edison's utility line right-of-way vegetation management plans include environmentally-sound riparian vegetation management adjacent to the Monocacy River*
- 6-8) *Consider the adoption and incorporation of the Monocacy River Resource Protection Area Boundary in current and future plans, programs, and functions*
- 6-9) *Consider additional operational or regulatory mechanisms to critically examine and limit impervious surfaces and stormwater runoff that will directly impact the Monocacy River*

Carroll County

- 6-10) *Consider the adoption and incorporation of the Monocacy River Resource Protection Area Boundary in current and future plans, programs, and regulatory structures*

City of Frederick

- 6-11) *Add the 'Recreation' land use designation to the west side of the Monocacy River from the Airport Park Subdivision south to Old National Pike to reflect the existing 'Riverwalk Reservation Easement' and the planned River corridor trail on the Landmark parcel, south of I-70, during the next City Comprehensive Plan update*
- 6-12) *Critically examine requests for alterations to the FEMA 100-year floodplain, especially in the River corridor, in order to maintain riparian function, health, and robustness, and adopt a 'no adverse impact' decision making policy for down-River properties and structures*

- 6-13) *The City of Frederick's Sustainability Plan should be reviewed by the River Board to ensure the Monocacy River receives greater focus, status and attention, above what's included in the City's 2010 Comprehensive Plan*
- 6-14) *"Areas of Interest" on the City of Frederick's 2010 Comprehensive Plan should include specific River corridor protection narratives and policies, as the "Areas" encompass all the land (not already in the City) on the east side of the River from Biggs Ford Road south to Old National Pike*
- 6-15) *Consider the creation and application of a development incentive for future platting and development of lots 9 and 10 in the Airport Park Subdivision in order to obtain a wider River setback, with Forest Conservation Act plantings, beyond the steep forested gradient that exists adjacent to the River*
- 6-16) *Engage and employ Environmental Policy No. 5 from its Comprehensive Plan to "increase the amount of dedicated recreation land outside of floodplain areas" and to create a forested buffer along the Monocacy River to protect River resources during the review and approval of subdivision and development proposals and the "Landmark" property (south of I70) and the "Thatcher/COPT" property (Biggs Ford Rd.)*
- 6-17) *Consider the adoption and incorporation of the Monocacy River Resource Protection Area boundary in its current and future Plans, programs, and functions*
- 6-18) *Consider additional operational or regulatory mechanisms to critically examine and limit impervious surfaces and stormwater runoff that will directly impact the Monocacy River*

Town of Walkersville

- 6-19) *To implement policies contained in its 2011 Comprehensive Plan, the Town of Walkersville should rezone the approximately 84-acre portion of Parcel 325 off Retreat Road that contains FEMA 100-year floodplain from Limited Industrial to Agricultural (or some other non-development zone), and consider purchasing the 84-acre floodplain portion for reforestation and habitat improvements, or as a Forest Resource Ordinance 'banking' site.*
- 6-20) *The River Board encourages the Town of Walkersville to require, in conjunction with future annexation agreements, the planting of forest buffers along the Monocacy River to enhance riparian habitats and functions when land is annexed into the Town, with special focus on reforestation of lands in its southern annexation area located within the Monocacy River-Waterside Ecologically Significant Area.*
- 6-21) *Consider the adoption and incorporation of the Monocacy River Resource Protection Area boundary in current and future plans, programs, and regulatory structures.*
- 6-22) *Establish the Monocacy River Corridor as a priority area for land acquisition for open space, parkland, habitat and resource protection*
- 6-23) *Consider additional operational or regulatory mechanisms to critically examine and limit impervious surfaces & stormwater runoff that will directly impact the Monocacy River*

Adams County, PA

- 6-24) *Foster more effective communication among Frederick and Carroll Counties with Adams County, Pennsylvania and its Watershed Alliance*

Agriculture Recommendations

- 7-1) *Frederick and Carroll Counties should continue to employ a wide range of economic incentives, financial aid, and technical assistance for landowners to protect, maintain, and restore the forestlands in the Monocacy River Corridor.*
- 7-2) *Modify the evaluation forms used in the Frederick County and Carroll County Agricultural Preservation Programs to assign higher ranking to farms along the Monocacy River applying for enrollment into the various land preservation programs.*
- 7-3) *Create a new Monocacy River Corridor Priority Preservation Area (PPA) in Frederick County*
- 7-4) *Consider the establishment of a Monocacy Scenic River Best Management Practice (MSR-BMP) set-aside program, whereby a percentage of agricultural preservation funding for River-front lands enrolling in the various preservation programs is dedicated to establishing new forest buffer plantings along the Monocacy River mainstem, OR*
- 7-5) *Consider the establishment of a Monocacy River Resource Protection BMP premium payment in the agricultural land preservation programs for landowners who establish new forest buffer plantings along the Monocacy River mainstem.*
- 7-6) *Collaborate with the USDA's Natural Resource Conservation Service (NRCS) and the local Soil Conservation Districts (SCDs) to initiate a program to design and implement Agro-forestry systems to increase environmental resilience and protection and maintain productive agricultural operations in the Monocacy River's floodplain*
- 7-7) *Both Frederick and Carroll Counties should consider partnering with the local SCDs and the USDA's NRCS to engage a farmer in the Agricultural Preservation Program in a pilot project to install the following innovative BMPs along the Monocacy River or within the watershed to reduce nitrogen, phosphorus, and sediment inputs:*

Saturated Buffers

Riparian buffers intercept surface water (and some shallow groundwater) when it runs off the land, transforming—denitrifying—nitrate to harmless nitrogen gas, and capturing phosphorus and sediment coming off fields. However, the use of below-grade drainage tiles on agricultural fields bypasses these land practices and can introduce nitrogen and phosphorus directly into streams and the Monocacy River. Water from drain tiles can be diverted to a 'saturated buffer' which stays wetter than a typical riparian buffer and operates more like natural wetlands that provides the right environment for microbes to digest (denitrify) much of the nitrate in the drain tile water. The use of saturated buffers was developed at the National Laboratory for Agriculture and the Environment in Ames, Iowa, but has potential for application in the Monocacy River Watershed to help achieve Chesapeake Bay TMDL nutrient and sediment reduction requirements.

Bioreactors

These devices have been successfully used on Maryland's Eastern Shore in the Choptank River Watershed and in New York's Upper Susquehanna and Finger Lakes Watersheds to reduce the nitrogen levels of water from agricultural lands. Field water is diverted or pumped to a pit filled with wood chips, which mimic the conditions in a waste water treatment plant, providing the medium for bacteria to convert the nitrate from fertilizers or manure into harmless nitrogen gas. The water then flows out of the pit and has significantly reduced nitrogen content. Bioreactors help to recreate the natural process that would have occurred on land that is more suited to be a fallow wetland, but has been engineered for agriculture.

- 7-8) *Request the NRCS/SCD to consider modifying management of Soil & Water Conservation Plans and Total Farm Resource Plans for River-front properties to focus on Monocacy Scenic River Best Management Practices (MSR-BMP) that actively restore floodplain function by enhancing woody riparian buffers along the Monocacy River mainstem.*

- 7-9) *Frederick and Carroll Counties should consider increasing Agricultural Land Preservation programmatic resources for involvement in future Chesapeake Bay TMDL nutrient trading scenarios that occur between the agricultural sector and other land use sectors.*
- 7-10) *Frederick and Carroll Counties should partner with the University of Maryland Cooperative Extension, the University of Maryland's Department of Agricultural and Resource Economics, the US Forest Service, and the Alliance for the Chesapeake Bay to bring the program, "Family Forest and Agriculture Legacy Planning" to Carroll and Frederick Counties. "Legacy Planning" is a process that involves family members in discussions and decisions about current and future use, management, preservation, and overall goals related to land management, estate transfer and inheritance.*
- 7-11) *Promote the CREP permanent easement program through targeted mailing outreach to Monocacy River-front landowners in Frederick County, with initial focus on lands within the MD-DNR's Ecologically Significant Areas (ESAs).*
- 7-12) *Establish a premium payment for Monocacy River-front landowners in Frederick County who establish new forest plantings in the River corridor through the CREP permanent easement program, to further incentivize enrollment in CREP.*

Recreation, Public Parkland, and Open Space Recommendations

- 8-1) *To create additional opportunities for access to the Scenic Monocacy River, Frederick County (and Carroll County) should accelerate the planning, design, and development of public access points at MD 140 (Bridgeport) and MD 77 (Rocky Ridge) and improve access at Double Pipe Creek Park to serve as a gateway to the Monocacy River*
- 8-2) *The River Board should undertake annual or bi-annual informal inspections of all public River access spots and report problems or issues to the appropriate governing body with operational and maintenance oversight (Frederick County, Frederick City, Maryland Department of Natural Resources, Maryland State Highway Administration, National Park Service)*
- 8-3) *Assist the USGS or State of Maryland, if requested, in the financial operation and maintenance of flow gauges on the mainstem of the Monocacy River*
- 8-4) *Include an ecological resiliency component for climate change adaptation in the management of all public Riverfront parkland and open space.. This could include such things as reforestation, wetland enhancements, proper siting of structures, and invasive plant species control*
- 8-5) *To increase public awareness, appreciation and engagement with the Monocacy River, Frederick County Parks and Recreation should reinstate the public canoe trips offered on the Monocacy River*
- 8-6) *Promote the Monocacy River Corridor as a priority area for land acquisition for open space, river access, passive parkland, habitat and resource protection, and seek sources of funding (federal, state, and local governments, foundations, and NGO's) for purchases of land in the River Corridor*
- 8-7) *Explore and evaluate the creation of a Monocacy River Resource Impact Fee, a fee assigned to all lots recorded in order to help fund the acquisition of River front properties for future open space, parkland, and habitat protection*
- 8-8) *Lobby the local U.S. Congressional delegation for funding from the 'Rivers of the Chesapeake Initiative,' (part of the Federal Land and Water Conservation Fund, designed to protect large-scale landscapes for wildlife habitat and protection of water quality and scenic vistas). The 'Rivers' initiative targets lands for acquisition that are adjacent to areas owned by governmental entities, or adjacent to lands already protected through conservation easements. Collaborate with appropriate local and state agencies and target lands along the River from Pinecliff Park south to the Potomac River for acquisition*

- 8-9) *Continue the River Board commitment to increasing public awareness about the Monocacy River and its ecological resources, through public relations and educational programs*
- 8-10) *The River Board should lobby both the Frederick County and Carroll County Boards of Education and offer assistance to develop educational programs for students about the Monocacy River and its rich resources*
- 8-11) *The River Board supports the creation of a community-based and supported watchdog organization for the Monocacy River - a Monocacy River Keeper - modeled after the international Waterkeeper Alliance.*
- 8-12) *The River Board should work to strengthen the Maryland Wild and Scenic Rivers Act to become more effective in providing protection for the Monocacy River.*

Water Quality Recommendations

- 9-1) *Frederick County, Carroll County, and all NPDES Phase I and Phase II municipalities should continue to implement their programs to address required nutrient and sediment reductions to meet Chesapeake Bay and local TMDLs*
- 9-2) *The River Board needs to engage more frequently with NPDES stormwater staff in Frederick County, Carroll County, Adams County, PA, and the Phase II municipalities in the Watershed to stay current about Monocacy River Watershed water quality issues*
- 9-3) *Lobby for an increase to Maryland's Used Tire Clean Up and Recycling Fund to generate additional resources for the clean-up, removal, processing, and reuse of tires dumped in our environment. Subsidize and support expansion of the Maryland Farm Bureau's and Maryland Environmental Service's 'Farm tire drop-off day' (see River Board's involvement with tire removal from the River in Chapter 2)*
- 9-4) *Promote and fund additional hazardous and toxic material 'drop-off' days at the Reich's Ford Road Landfill and the Northern and Hood Mill Landfills to encourage proper disposal of hazardous materials and reduce illegal dumping which pollute ground and surface waters, including the Monocacy River*

