

Date: 3 February 2022.

Mr. Steven Archer

MDOT-SHA Cultural Resources Team Leader

Dear Mt. Archer,

Please see consider the included Washington Biologists' Field Club (WBFC) comments on MLS-106_Att-7_Jan-2022_495_270_MLS_PROGRAMMATIC AGREEMENT Draft 2. And include this report in the Administrative Record.

Table of contents

General WBFC comments on the importance of Plummers Island and the PA letter and Draft Agreement

APPENDIX A: Agreement with National Park Service, 1959

APPENDIX B: Avoidance, Minimization and Partial Mitigations

APPENDIX C: Maps of Plummers Island and Alternative 9 ALB emplacement

APPENDIX D: Administrative Record letter sent to US Army Corps of Engineers

APPENDIX E: WBFC replies to MLS-106 Comments Table 1 Responses

APPENDIX F: Rare Flora and Natural Communities of Plummers Island, Montgomery County, Maryland

General WBFC comments on PA letter and Draft Agreement.

The Washington Biologists' Field Club (WBFC) declines to concur with this Programmatic Agreement.*

(*with the one exception of the nomination of WBFC on Plummers Island to the National Register of Historic Places).

The Washington Biologists' Field Club (WBFC) guiding mission is the study of long-term trends in biodiversity and community ecology on Plummers Island. We began this research in 1901 and continue it to this day. MDOT's plan for expanding the American Legion Bridge onto Plummers Island and channel waters **seriously compromises our research goals of studying the Island as a whole system.**

Long-term studies such as those of WBFC are very important in this era of rapid change in climate, introduction of increasing numbers of invasive species and diseases, etc. We can only conserve our natural resources if we understand "normal" ecosystem responses, and these require long-term monitoring of target sites. The scientific community has responded to this need by creating new sites for long-term research, but it takes decades to build up a record long enough to understand many of the processes, and there are few sites that have been established long enough to give meaningful information. Plummer's Island is one such site, and its preservation deserves high priority.

It must be emphasized that environmental damage cannot be "fixed" by any form of mitigation. Plummer's Island is a research site conducting a multigenerational study of long-term ecological processes. Destruction of the habitat, or serious damage to it, stops the ecological processes whose progress WBFC has been studying for over a century, and ends the long-term study. Replanting will not continue these processes, it just makes a new beginning, returning the Island to where the WBFC study began in 1901.

Plummers Island is unjustly being treated as a sacrifice area. The biodiversity on the Island is richly documented by 120 years of inventory by WBFC research. This is a unique natural research area within close proximity to a heavily populated urban area. There are many rare species known here, including plants from within the LOD (**Appendix F**; Smithsonian National Museum of Natural History collections; and T & E survey done for NPS in 2020) (See also WBFC's DEIS, SDEIS and Section 106 comments of 2021 -- available at <https://WBFC.science>). Plants can't move out of the way, and natural habitat is being lost throughout the region. The rocky headland of the Island preserves a bit of the Potomac Gorge Riverside Outcrop Barren plant community (globally and state rare: G2, S1) -- possibly the eastern most extent of this vegetation unit in the Gorge (USNVC: CEGLO06491) (Appendix C, map B). Not only is this area partly under the expanded ALB, *but the extended shadow will shade it out*. This spit of land should be included as part of the Island, but Section 106 has incorrectly ruled it out of the historic property. Ruling this piece of land out allows MDOT to say they are taking less of the Island than they actually are (see WBFC's virtual and written SDEIS comments, 2021). Additional rare communities within the APE and bordering on the LOD include; the Potomac River Bedrock Terrace Hardpan Forest (GEGLO06209; G1G2/S1); Floodplain Terrace Forest (with wetland bedrock pools; and the Central Appalachian / Piedmont Basic Mesic Forest (USNVC: CEGLO084; G4G5/S4) with many sensitive species that are restricted to this habitat on the Island, several that are rare there.

The extent of the shadow cast by the nearly 100-yard-wide ALB will further shade out rare and sensitive plant and animal species and starve out native vegetation for some uncertain distance beyond the ALB but within the APE (this area is still unquantified by MDOT and its consultants - testament to the shoddy work and treatment given the Island by proponents of the project). Documenting the impacts of this shadow within the APE on plants and animals needs to be done for future transportation projects, but also for understanding perturbations to the long-term trends that are WBFC's guiding mission to document on the Island. WBFC calls for funding and conducting this research in Appendix B as partial mitigation for Alternative 9 (**Appendix B**).

The enlarged canopy of the nearly 100-yard-wide Alternative 9 ALB will predictably attract more homeless people. The proximity of a homeless encampment presents significant additional problems for protecting Plummers Island and its historic cabin from vandalism. There is abundant evidence of camping under the current ALB; leveled spots, campfire remains, trash, tree-cutting, and graffiti. Since the ALB was first constructed, the cabin, which up to then was in original condition, has deteriorated substantially due to vandalism, and sometimes has squatters living in it for months. Cutting down of trees for firewood has further disturbed the cabin grounds. Section 106 documentation has utterly failed to take all of this into consideration.

Importantly, taking any part of Plummers Island violates the formal legally binding 1959 Agreement between WBFC and the National Park Service (**Appendix A**). Under this agreement WBFC gave the Island to the Federal Government in exchange for our continued maintenance and research of the Island as a wild natural area, so long as WBFC existed and complied with certain obligations. WBFC has honored its part of the agreement for the ensuing 72 years. WBFC has studied the Island for 121 years, making it a rare and precious part of the cultural and scientific natural heritage of the National Park system. The Section 106 process determined the *WBFC and Plummers Island* to be eligible for the Maryland Historical Trust and National Register of Historical Places, and this requires protecting the entire Island as a whole property.

With these points in mind, WBFC does not accept the MDOT's Alternative 9 plan. We consider it contrary to the above agreement, and the intent of NHPA laws protecting eligible Historical properties as whole units. We support the No Build Option (as stated in our DEIS, SDEIS, and Section 106 comments). WBFC has fought to protect Plummers Island before, and here we are again. In addition to 7 years of legal battles to settle the patent dispute and purchase the Island in 1908, Club members held a 6-year vigil up to 1959 over the condemnation of the Island for the GW Parkway (resulting in the Appendix A agreement), and then spent 6 months more of wrangling in 1960 before the construction contract was let. (see [Washington Star](#) articles in **Appendix A**)

Moreover, MDOT has failed to adequately and objectively justify the Least Environmentally Damaging Practicable Alternative (LEDPA) in the selection of Alternative 9.

WBFC commented on the DEIS, and was recognized as a consulting party in early 2021. The SDEIS is unacceptable, full of problems, and must be rewritten (WBFC separate, and co-signed Sierra Club comments submitted November 30, 2021). WBFC Section 106 comments were submitted in October 2021, and again with SDEIS comments. Comments on the final Section 106 programmatic agreement are here by submitted by February 3, 2022.

One avoidance or minimization would be to redeck the ALB and not expand it. Alternative 5, adding only two lanes to the ALB, would be much less damaging to Plummers Island and adjacent waterways. Double decker or suspension bridges could significantly reduce damages to Plummers Island and adjacent waterways. However, the highway expansion plans do nothing to reduce the CO2 emissions driving global Climate Change. As MDOT Secretary Greg Slater stated in 2021, the ALB is structurally sound and only needed redecking within 10-20 years. WBFC supports this No Build Option.

If Alternative 9 goes forward as MDOT & P3 companies propose, WBFC proposes the following avoidance, minimization and **partial mitigations** be adopted and coordinated through NPS, in consultation with WBFC in-so-far as they affect Plummers Island and its waterways:

With these points in mind, WBFC attaches **Appendix B: Avoidance, Minimization and Partial Mitigations under Sections 106, NHPA, NEPA, and 4(f), 10, and 404**: There we outline specific avoidances, minimizations, and partial-mitigations in a framework of proposed research to evaluate the impacts of the ALB expansion on the biota of Plummers Island. (see also <https://wbfc.science/plummers-island-threatened/>)

Appendix C includes maps of Plummers Island: Map A shows the ALB footprint and position of the LOD as best as can be determined from the MDOT images, in which the LOD is positioned on images that obscure the boundaries and features of Plummers Island (pink lines outline current ALB features, blue lines are Alternative 9 ALB outlines). Map B shows the LOD cutting through four vegetation zones, two research plots, and the rock buttresses along the channel, and the original head of the channel. Map B shows the positions of long-term vegetation plots. Map C is an image from MD iMAP, a Lidar map of ground level prominences, including the rock buttresses along the channel, and the current head of the channel. Map D is from a 1950s topographic survey with 1.5 ft contours, showing the rock buttresses, and the original head of the channel. Image E gives the source of Map D.

Appendix D. U.S. Army Corps of Engineers, Baltimore District MDOT's proposed Alternative 9 - Phase 1 South (Administrative Record letter sent January 19, 2022). This letter requests careful attention to potential threats to Plummers Island, its channel and riparian wetlands, from hydrological impacts of the ALB Alternative 9 footprint and construction activities. Changes to the flooding regime affect the land and thus affect the historical biological research and cultural aspects of the terrestrial property addressed in Section 106.

Appendix E. WBFC replies to responses on Comments on MLS 106 PA Comments Table 1 (MLS-106_Att-8_Jan-2022_PA_Draft_1_Comment Table.pdf). These are presented in table form with WBFC replies following each MLS-106 response.

Appendix F. Rare Flora and Natural Communities of Plummers Island, Montgomery County, Maryland, documents rare plants and plant communities on the Island.

Some WBFC specific comments on MLS-106_Att-7_Jan-2022_495_270_MLS_PROGRAMMATIC AGREEMENT Draft 2.*

For more specific comments on the MLS Comments Table, see **Appendix E.*

“WHEREAS, the U.S. Department of Transportation, Federal Highway Administration (FHWA) plans to approve the I-495 and I-270 Managed Lanes Study (MLS), a proposed Public-Private Partnership (P3) administered by the Maryland Department of Transportation State Highway Administration (MDOT SHA); and”

WBFC comment 1: *This assumes FHWA will approve the MLS. We don't think they should.*

“WHEREAS, the MLS Preferred Alternative, “Alternative 9 Phase I South” (Project) consists of construction of Priced Managed Lanes along Interstates 495 and 270, beginning in Fairfax County, Virginia, and extending north to approximately Interstate 370, and east along the separated portions of I-495 (“spurs”) to approximately Maryland Route 187, as described in detail via documentation linked in Attachment 4; and”

WBFC comment 2: *The P3 toll lane revenue objectives are the driving force in selection of Alternative 9. There is reasonable expectation that a simple tolling for all vehicles crossing the bridge would generate revenues to the States and pay for the project directly with State and Federal funds. This would avoid P3 partners controlling (to maximize profits) the beltway by blocking mass-transportation incorporation into the beltway. Projections of future traffic were made without consideration of shifts to telecommuting, and potential reductions in traffic from adding effective mass-transit options. Moreover, the beltway expansion comes at the expense of accepting increased CO2 emissions into the future faced by climate change driven by CO2 emissions. The LEDPA for Alternative 9 is not justifiable nor even objectively evaluated for the alternatives proposed in the DEIS. As for WBFC on Plummers Island, the PA simply accepts the damages to the Island, and states that damages are minimized. WBFC believes that Plummers Island is being treated as a sacrifice area. This PA draft goes documents at great lengths avoiding and minimizing impacts to cemeteries and the ACHP site, but mentions Plummers Island only 4 times (briefly) in the cover document. By placement of most of the ALB expansion over Plummers Island, rather than on the upstream side of the bridge, the Section 106 PA shows a callous disregard for the historical nature of our 120 years of scientific studies, and the impacts to the continuity of the long-term research. Significantly, the PA does not address the Legal Agreement between the NPS and WBFC set forth in 1959, which protects the Island as a Natural Wild Area (**Appendix A**).*

“WHEREAS, the MDOT SHA, with the approval of FHWA, intends to deliver the Project as a P3 using the services of a private sector developer or multiple developers who will advance the Project and be responsible for design, construction, operation and maintenance, subject to approvals by MDOT SHA and/or FHWA; and”

“WHEREAS, FHWA has determined that the Project will have an adverse effect on National Register of Historic Places (NRHP)-listed or eligible properties (“historic properties”) including the George Washington Memorial Parkway (Clara Barton Parkway), the Chesapeake and Ohio Canal National Historical Park, the Washington Biologists’ Field Club on Plummers Island, Gibson Grove African Methodist Episcopal Zion Church, archaeological sites 44FX3922 (Dead Run Ridges Archaeological District), 44FX0374, 44FX0379, 44FX0389, 18MO749 and 18MO751; that additional effects may not be completely known; and that FHWA intends to use this PA to comply with 36 C.F.R. Part 800, 54 U.S.C. § 100902, 36 C.F.R. Part 14 and to govern the implementation of the Project and the resolution of adverse effects; and”

“V. . Property-Specific Commitments

F. Washington Biologists’ Field Club on Plummers Island

1. MDOT SHA will prepare a NRHP Nomination for the Washington Biologists’ Field Club on Plummers Island. MDOT SHA will provide a copy of the nomination to NPS staff for review prior to submittal and address any comments prior to formal submission of the nomination. Should the nomination be unsuccessful, MDOT SHA will not be required to resubmit the nomination or otherwise complete additional studies or research after addressing comments by NPS staff.”

WBFC comment 3: *We agree that WBFC on Plummers Island should be included in NRHP, and that Plummers Island should be protected as a whole. MDOT is requested to fully fund and fulfill the nomination process for NPS. **NPS and WBFC should be involved and consulted in the preparation of the nomination of Plummers Island.***

Again, The Washington Biologists’ Field Club (WBFC) **declines to concur with this Programmatic Agreement.***

(*with the one exception of the nomination of WBFC on Plummers Island to the NRHP).

Respectfully submitted, 3 February 2022,

Robert J. Soreng PhD., WBFC President

Carla Dove PhD, WBFC Vice President

Lowell W. Adams, WBFC Secretary

cc: Matt Manning (Consultant) <MManning.consultant@mdot.maryland.gov>, Alan T Whittemore <atwhittemore@gmail.com>, Lowell Adams <lwadams4@gmail.com>, Carla <DOVEC@si.edu>, Landsman, Andrew P <Andrew_Landsman@nps.gov>, Pamela Goddard <pgoddard@npca.org>, Kyle Hart <khart@npca.org>, Stidham, Tammy <Tammy_Stidham@nps.gov>; Elizabeth Hughes, Maryland Historical Trust <elizabeth.hughes@maryland.gov>.

Supporting information about WBFC

<https://wbfc.science/>

<https://wbfc.science/about/>

<https://wbfc.science/plummers-island-threatened/>

<https://wbfc.science/research/>

Appendices A through F follow.

APPENDIX A: Agreement with National Park Service, 1959

1) AGREEMENT WITH NATIONAL PARK SERVICE

AGREEMENT AND STIPULATIONS BETWEEN THE WASHINGTON BIOLOGISTS' FIELD CLUB, INC. AND THE UNITED STATES OF AMERICA

This agreement made this 5th day of March, 1959, by and between the Washington Biologists' Field Club, Inc. and the United States of America.

WITNESSETH:

WHEREAS, The United States Government has by condemnation proceedings, in the United States District Court for the District of Maryland in Civil No. 10676 and by order of Court made the 24th day of June, taken possession of the defendant's Washington Biologists' Field Club, property designated in said proceedings as parcels "A" and "B" in tract no. 7, and

WHEREAS, This property was acquired by the Washington Biologists' Field Club, Inc. and has been used by the said Club as a natural wild area for scientific research for over 50 years and a great many scientific papers have been written in reference to biological and natural history discoveries made on said land and, more particularly, on that part of said land known as parcel "B" and more familiarly known as Plummers Island containing some 12.238 acres more or less, and

WHEREAS, The said Plummers Island has become among systematic biologists one of the world's most famous collecting spots and type localities, and

WHEREAS, The discoveries have indicated the probability of new knowledge in the field of biology and natural history, and

WHEREAS, The fame of this island is world-wide and many scientific organizations are interested in its preservation as a source of discovery, and

WHEREAS, The Washington Biologists' Field Club, Inc. and the United States Government desire to preserve this natural wild area as a sanctuary and scientific research preserve.

Therefore, The United States Government's petitioner in the United States District Court for the District of Maryland in Civil No. 10676 and the Washington Biologists' Field Club, Inc., defendant, and the owner of said parcel of land known as parcel "B" containing some 12.238 acres more or less which said land is an island in the Potomac River and is more familiarly known as Plummers Island, do hereby stipulate and agree that the said parcel "B" be withdrawn from these proceedings and that the said Washington Biologists' Field Club, Inc. does hereby agree to deed the said island to the United States Government without monetary consideration reserving in said deed to the Washington Biologists' Field Club, Inc., the right to continue to maintain the island as a natural wild area and use it for scientific research and for meetings of the Club and to pursue its studies in the field of biology and natural history on the said island so long as the Washington Biologists' Field Club, Inc. exists and desires to continue to use the island for scientific research and so long as the further provisions and stipulations contained herein are complied with which are as follows:

1. The Washington Biologists' Field Club, Inc. agrees to supply the National Park Service with copies of scientific papers resulting from research conducted on said island when available.
2. The Washington Biologists' Field Club, Inc. will supply the National Park Service with an annual report and will include the names and addresses of the officers, list of the members, and a summarization of the scientific investigations carried on.
3. The Washington Biologists' Field Club, Inc. will indemnify the United States against any loss or damage or injury due to the Club's negligence or any of its members or guests in the use and occupancy permitted under this agreement.
4. The Washington Biologists' Field Club, Inc. shall maintain its building and facilities on the island or replace the same in orderly and safe condition without expense to the United States.
5. No additional buildings, structures, or other physical facilities shall be constructed on the island by the Washington Biologists' Field Club, Inc. without first obtaining written approval of the National Park Service.
6. It is further stipulated and agreed between the United States Government and the Washington Biologists' Field Club, Inc. that the membership of the Club as constituted on 1 August 1958,

Honorary Members:

Bartsch, Paul	Fuller, Henry S	Morrison, J. P. E.
Mann, William M.	Gabrielson, Ira N.	Nelson, A. L.
Ricker, P. L.	Gardner, Marshall C.	Oehser, Paul H.
Active Members:	Graham, Edward H.	Parker, Kenneth W.
Aldrich, John W.	Griffith, Richard E.	Presnall, Clifford C.
Appel, William D.	Handley, C. O., Jr.	Reed, Theodore H.
Benedict, J. E.	Hotchkiss, Neil	Russell, Paul G.
Blake, S. F.	Jackson, Hartley H. T.	Setzer, Henry W.
Brown, Edgar	Johnson, David H.	Smith, Albert C.
Clarke, J. F. G.	Kelson, Keith R.	Smith, Lyman B.
Compton, Lawrence V.	Killip, E. P.	Sohns, Ernest R.
Davis, Malcolm	Krombein, Karl V.	Stevenson, James O.
Duvall, Allen J.	Leonard, Emery C.	Stewart, Robert E.
Erickson, Ray C.	Lincoln, Frederick C.	Stickel, William H.
Erlanson, C. O.	Linduska, Joseph P.	Swift, Ernest F.
Fredine, C. Gordon	Meehean, O. Lloyd	

Uhler, F. M. B.	Vogt, George	Archino, Samuel	Fowler, James A.
		Bartlett, H. H.	Hamlet, John
Walker, Ernest P.		Bryant, Harold C.	Holt, Ernest O.
Wetmore, Alexander		Cahalane, Victor H.	McAtee, W. L.
Zahniser, Howard Nonresident Members:		Cottam, Clarence	Myers, G. S.
		Couch, Leo K.	Peterson, Roger T.
Allan, Philip F.		Dargan, Lucas M.	Wallis, William W.
Allen, Durward L.		Eklund, Carl R.	Wherry, Edgar T.

shall have the privilege of having their ashes placed on said island and a small bronze plaque in their memory placed on the stones of said island and that this privilege shall apply only to the membership as named above as it shall exist as of 1 August 1958.

7. It is further stipulated and agreed that the United States Government will allow the membership of the Washington Biologists' Field Club, Inc. to have access by foot over the land owned by the United States Government to the island at all times and whenever desired.

8. The Washington Biologists' Field Club, Inc. will be permitted to maintain and operate passenger-carrying ferry boats from and to the island which is to be for the exclusive use of the Club and its members and guests for access to the island.

9. The Washington Biologists' Field Club, Inc. will be permitted to erect and maintain a fence and gate at a suitable location to exclude the general public from the island, but the National Park Service is to be furnished keys to the lock or the National Park Service may provide its own lock if keys are delivered to the Washington Biologists' Field Club, Inc., and will also be permitted to clear the channel between the island and the Maryland shore to maintain a free flow of water therein.

10. It is further stipulated and agreed that authorized agents and personnel of the National Park Service shall have access to the island and the right to take scientists to the island, but, in that event, the Washington Biologists' Field Club, Inc. shall not be responsible for any injuries or damages resulting to said persons due to conditions upon said island provided said injuries or damages are not caused by negligence of the Club or by a failure on the part of said Washington Biologists' Field Club, Inc. to comply with the requirements of this stipulation.

11. It is further stipulated and agreed that all rights accruing to the Washington Biologists' Field Club, Inc, or to any member thereof by reason of the provisions of this stipulation or any amendment thereto may be terminated if said Washington Biologists' Field Club, Inc. no longer exists or in the event after due written notice that the provisions of this stipulation and/or deed which will be executed following signing of this stipulation have been violated and continue to be violated by said Washington Biologists' Field Club, Inc. or its members, guests, employees, or servants for a period of time in excess of six months after receipt of said notice, and further in the event the island shall be no longer used for scientific research by the Washington Biologists' Field Club, Inc. for more than two years then this

stipulation and any like provisions of the deed to be executed conveying the property to the United States shall terminate.

12. It is further stipulated and agreed that the United States may construct or permit the construction of needed nonrecreational public improvements upon the island or a portion thereof, which said improvements shall not be inconsistent with the uses to which the island has been dedicated by the Washington Biologists' Field Club, Inc.

13. It is further stipulated and agreed that this stipulation shall become effective after the filing and acceptance by the United States of a deed of conveyance containing the provisions outlined herein.

The United States of America

By: WILLIAM E. FINLEY

Director of the National

Capital Planning Commission

Condemning Authority

The Washington Biologists' Field Club, Inc.

By: LLOYD W. SWIFT

President

1, Albert C. Smith, certify that I am the Secretary of the corporation named as party herein; that Lloyd W. Swift, who signed this contract on behalf of the party, was then President of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

ALBERT C. SMITH, Secretary

Two Washington Star articles from 1960 follow:

Beltway Span Contract Let

Work Starts Soon At Cabin John

The Maryland State Roads Commission has formally awarded a \$2.8 million contract for construction of the long-awaited Cabin John Bridge, which will carry the Capitol beltway across the Potomac River.

Work on the bridge will get under way soon, according to John B. Funk, director-chairman of the State commission. The total cost of the bridge is estimated at nearly \$5 million.

The contract was awarded to two Indiana contractors who submitted a joint bid. The firms are Ruckman and Hansen, Inc., of Fort Wayne, and Roy Ryan Sons Co., Inc., of Evansville.

The bridge, to cross the river near Glen Scho in Montgomery County, will connect the Maryland stretch of the Washington circumferential freeway with the Virginia counterpart. Maryland has agreed to pay 79 per cent of the cost and Virginia 21 per cent, using Federal interstate and matching State funds.

The bridge, of steel construction, is expected to be completed by the fall of 1962. It will actually be two spans, each carrying traffic in one direction.

Last October an agreement was reached between the Maryland Roads Commission and the National Park Service that broke a six-month stalemate over design of the span. Maryland agreed to move its approach roads to the bridge 100 feet upstream to avoid encroachment of a bird sanctuary at Plummer's Island.

The new bridge was given high priority because of the need to service the new Central Intelligence Agency headquarters at Langley, Va., now under construction. As a link in the circumferential highway it will help in siphoning traffic off congested arterial roads.

2) Washington Star 23 July 1960

7-5-60 STAR

New Span to Unmask Island Jungle

By ANNE H. CHRISTMAS
Star Staff Writer

Fifty scientists are manag- ing to hold on to an island sanctuary in the Potomac River despite encroachment on all sides.

The scientists have kept a six-year vigil to guard the privacy and natural beauty of the retreat.

The wooded isle is a 12-acre plot not far from the Maryland shore of Montgomery County, only nine miles from the White House. It has been known to generations of biologists as Plummers Island.

The scientific paradise—soon to be flanked by impressive highways—has been operated since 1901 by the Washington Biologists Field Club. Although the land was given to the Federal Government several years ago and is under the direction of the Interior Department, one of the terms of its transfer was that its use should be limited to club members and their guests.

Trespassers Warned

Today the membership is "un- happy but resigned" over the imminent construction of the Cabin John Bridge, which will cross but not touch one of the tips of Plummers Island. The scientists were so dedicated to the cause of maintaining their bailiwick in its primitive state, for further biological studies, that they were able to convince the Maryland State Roads Com- mission to move the site for the bridge upstream 200 yards.

Few outsiders know how to arrive at the sanctuary from the main road and this is pre- cisely what the scientists had in mind when they built there long ago. The pathway is un- marked and Park police are quick to warn away trespassers. Even the small rowboat that ferries passengers to the island is tightly locked and only a few keys exist outside the club membership.

If he is made of stern stuff, the invited guest can hike across club-owned woodland on the mainland, then take the pulley-operated boat across a short stretch of the river to the island itself. The approaches to the boat landing are ankle deep in mud even in dry weather.

Once landed on the island, the visitor instantly is im- pressed with its untouched quality.

"The club intends that na- ture shall take her course un- molested," the by-laws declare firmly.

Jungle to Penetrate

And unmolested it grows—a small jungle of undergrowth, a thick forest, great rocks and only a few narrow paths. Its only building is a 56-year-old cabin built by the earliest members on a rocky crest about 60 feet above the water.

With typical restraint, an early history says, "It will not be necessary to describe in detail the erection of the cabin, the difficulties experienced in conveying the material to the bank of the river, and the seemingly interminable labor of transporting it from there by wire trolley to the building site—it was completed Novem- ber 28, 1901."

The club at that time was leasing Plummers for \$30 a year and eager to buy the land, but its title was cloudy because ownership never had been established since the original grant of territory adjacent to the island was made in 1684. Seven years of legal battles finally resulted in issuance of a patent on the island by the Maryland State Land Com- missioner to the club.

One Large Room

The club house itself is vir- tually unchanged from its ap- pearance when the house- warming was held in 1901. It is covered on the outside with unpainted shingles laid upon solid lumber sheathing and lined with heavy building paper. It has only one large room, 14 by 28 feet, with a small kitchen in a lean-to at the rear, a broad porch facing the Virginia side, and a tre- mendous fireplace built to ac- commodate 4-foot logs.

In subsequent years the club bought 38 acres on the main- land, to insure its privacy and protect the right of way. It still is owned by the club.

One of the scientific objec- tives has been a thorough bi- ological survey of the island. Members have logged in these species — 26 mammals, 186 birds, 22 reptiles, 20 amphib- ians, 55 fishes, 776 flowering plants, 70 mosses, 80 lichens and 118 fungi.

Today the quiet of Plummers Island is disturbed only by the distant roar of bulldozers on the Virginia shore where the George Washington parkway is being built.

Col. Theodore Jerome Van Geste], 57, a retired Air Force
Theodore V
Ex-AF Colo
Theodore V
LATTERNER, wife of the late Peter
Mrs. Blanche Robert, Mrs. Pauline
of Mrs. Blanche Robert, sister
Kane and Mrs. Anna Miller; sister
and ten great-grandchildren.
also is survived by six grandchildren
and all at the funeral home.
4th st. and West Ave. n.e., where
services will be held on Thursday
at 2 p.m. Interment
Rock Creek Cemetery.
on Thursday, June
at 2:30 p.m.

3) Washington Star July 5, 1960

APPENDIX B. Avoidance, Minimization and Partial Mitigations

For the Administrative Record

Washington Biologists' Field Club's MDOT Avoidance, Minimization and Partial Mitigations Proposal

Date: February 3, 2022

Mr. Jeff Folden, I-495 & I-270
P3 Program Deputy Director I-495 & I-270 P3 Office
707 North Calvert Street,
Mail Stop P-60 Baltimore, Maryland, 21202
MLS-NEPA-P3@mdot.maryland.gov

Mr. Jitesh Parikh
Federal Highway Administration
George H. Fallon Building
31 Hopkins Plaza,
Suite 1520 Baltimore, Maryland 21201
jitesh.parikh@dot.gov

Elizabeth Hughes
Director/State Historic Preservation Officer
Maryland Historical Trust
100 Community Place, 3rd Floor
Crownsville, MD 21032-2023

The Washington Biologists' Field Club (WBFC) guiding mission is the study of long-term trends in biodiversity and community ecology on Plummers Island. We began this research in 1901 and continue it to this day. MDOT's plan for expanding the American Legion Bridge onto Plummers Island and channel waters **seriously compromises our research goals of studying the Island as a whole system.**

Long-term studies such as those of WBFC are very important in this era of rapid change in climate, introduction of increasing numbers of invasive species and diseases, etc. We can only conserve our natural resources if we understand "normal" ecosystem responses, and these require long-term monitoring of target sites. The scientific community has responded to this need by creating new sites for long-term research, but it takes decades to build up a record long enough to understand many of the processes, and there are few sites that have been established long enough to give meaningful information. Plummer's Island is one such site, and its preservation deserves high priority.

It must be emphasized that environmental damage cannot be "fixed" by any form of mitigation. Plummer's Island is a research site conducting a multigenerational study of long-term ecological processes. Destruction of the habitat, or serious damage to it, stops the ecological processes whose progress WBFC has been studying for over a century, and ends the long-term study. Replanting will not

continue these processes, it just makes a new beginning, returning the Island to where the WBFC study began in 1901.

Importantly, taking any part of Plummers Island violates the formal legally binding 1959 Agreement between WBFC and the National Park Service. Under this agreement WBFC gave the Island to the Federal Government in exchange for our continued maintenance and research of the Island as a wild natural area, so long as WBFC existed and complied with certain obligations. WBFC has honored its part of the agreement for the ensuing 72 years. WBFC has studied the Island for 121 years, making it a rare and precious part of the cultural and scientific natural heritage of the National Park system. The Section 106 process determined the *WBFC and Plummers Island* to be eligible for the Maryland Historical Trust and National Register of Historical Places, and this requires protecting the entire Island as a whole property.

With these points in mind, WBFC does not accept the MDOT's Alternative 9 plan. We consider it contrary to the above agreement, and the intent of NHPA laws protecting eligible Historical properties as whole units. We support the No Build Option (as stated in our DEIS, SDEIS, and Section 106 comments).

Moreover, MDOT has failed to adequately and objectively justify the Least Environmentally Damaging Practicable Alternative (LEDPA) in the selection of Alternative 9.

WBFC commented on the DEIS, and was recognized as a consulting party in early 2021. The SDEIS is unacceptable, full of problems, and must be rewritten (WBFC separate, and co-signed Sierra Club comments submitted November 30, 2021). WBFC Section 106 comments were submitted in October 2021, and again with SDEIS comments. Comments on the final Section 106 programmatic agreement will be or will have been submitted by February 3, 2022.

One avoidance or minimization would be to redeck the ALB and not expand it. Alternative 5, adding only two lanes to the ALB, would be much less damaging to Plummers Island and adjacent waterways. Double decker or suspension bridges could significantly reduce damages to Plummers Island and adjacent waterways. However, the highway expansion plans do nothing to reduce the CO2 emissions driving global Climate Change. As MDOT Secretary Greg Slater stated in 2021, the ALB is structurally sound and only needed redecking within 10-20 years. We support this No Build Option.

If Alternative 9 goes forward as MDOT & P3 companies propose, WBFC proposes the following avoidance, minimization and **partial mitigations** be adopted and coordinated through NPS, in consultation with WBFC in-so-far as they affect Plummers Island and its waterways:

Avoidance, Minimization and Partial Mitigations under Sections 106, NHPA, NEPA, and 4(f), 10, and 404 etc.:

01 -- Nomination of WBFC on Plummers Island to the National Register of Historical Places: **A)** MDOT fully funds and fulfills the nomination process for NPS. WBFC and NPS should be involved and consulted in the preparation of the nomination of Plummers Island.

02 -- Bike & Pedestrian lane emplacement: This lane could be placed under the bridge or on the upstream side (avoidance and minimization), rather on the Island side of the bridge (as currently proposed in the SDEIS and Section 106 documents). **A)** Please revise the MDOT plan accordingly. This

minimization would reduce shading of the Island, and possibly the need for caissons on the Island, and potentially reduce the LOD. **B)** Furthermore, we note that archaeological sites are not particularly endangered by shadows or cave effects, and the archaeological site on the west side of the ALB may even be further protected by ALB overhanging lanes. We see no justification or advantage to placing overhanging lanes over the long-term ecological study site of Plummers Island rather than overhanging the already buried archaeological site.

03 -- Flooding potential: Flood frequency has now increased enough that 500-year events are now 100-year events, and former 100-year floods are now 10 to 20-year events. Moreover, flood stages are 7 ft higher at the head of Plummers Island than at NOAA's Little Falls Gauging Station 3 miles downstream in a wide section of the Potomac River. MDOT's planned destruction of the top of the rock ridge at the head of the island lining the west end of the channel, within the LOD, will further increase flooding impacts to the Island. **A)** We request that MDOT and US-ACE take extreme precautions in evaluation and preparation for potential 500-year flooding events occurring within the construction and immediately following periods. **B)** Protect the rock ridge from any damage. **C)** If there is flooding damage to the Island resulting from MDOT's project we expect major financial penalty to MDOT as compensation to WBFC for damages to the Island and its waters, and full cleanup efforts from MDOT.

04 -- Pier and Caisson emplacements: Where are the engineers planning to put the east bound ALB lane Piers? It was suggested by MDOT in meeting with WBFC in early 2021, that they could avoid placing piers on the Island. However, the SDEIS indicated support structures will be on the Island and in the channel. Newer MDOT plans (diagram shown to WBFC, November 29, 2021, in a joint MDOT Section 106 meeting), show three caissons on the island, and three more opposite those in and on the west side of the channel, this set of caissons placed about 75 ft north from the head of the channel. (In the same meeting WBFC was told that these would be reduced to two caissons on either side of the channel.) These caissons will trap logs and jam up the waters within the channel causing flood waters to cross the low gap between the rock ridge along the west end of the channel and headwall of the Island. Furthermore, MDOT's diagram shows an elongated pier would be placed under the bridge at the dogleg in the channel where it bends eastward. The diagram shows that pier to be footed in the channel, a placement that will deflect flood waters onto the island. **A)** MDOT needs a new plan to avoid increased flooding of the Island. We reject the whole idea of placing ALB supports on the Island and its channel.

05 -- ALB construction platforms: Trestles are proposed for construction platforms covering the western portion of channel separating Plummers Island from the mainland and bridge foundation, and presumably the west end of the Island up to the LOD. What is the plan for installing those trestles? And how will the trestles be decked (timbers?). What is to prevent those timbers and trestles from blowing out in a massive flood? **A)** Ensure that platform decking is secure in the events of minor to major flooding. **B)** keep them off the Island.

06 -- Channel impacts from construction and vegetation removal: Embankments within the LOD on both sides of Plummers Island's channel are expected to collapse after the soil is disturbed by construction activities, and vegetation is removed and the remaining vegetation is shaded out. The destabilized embankment soil will naturally be deposited further downstream in the channel. **A)** We expect MDOT to make every effort to avoid and minimize embankment collapse and further sedimentation of the channel.

07 -- Historical Hydrology: The channel head has shifted downstream and lost flow due to past ALB pier emplacements, and also caused avulsion of the head of the Island. The loss of land and adverse hydrological effects are sections 4(f), 10, 404, NEPA, and NHPA, issues to address. **A)** MDOT is requested to restore the channel to original position and flow, pre-ALB, or at least improve the channel to flow regularly even at low waters at their expense.

08 -- Channel impacts in the event of restoration of channel flow: WBFC members and other researchers need routine access to the Island. We send out a member each week with duty to check the cabin and surrounds for damage and debris from public visitors. Researchers need access to their study sites on the island. **A)** In the event that channel flow is increased such as limits our access, we request some enhanced access, which could be a locked bridge or caged boat dock (as permitted under the 1959 WBFC agreement with the National Park Service). **B)** We request that MDOT fund the access construction that best suits WBFC needs and NPS guidelines. (Estimated cost to MDOT for NPS design and installation: \$200,000).

09 -- Researching disturbance: **A)** We request MDOT funding of a “record in time” photographic survey before, during and after ALB construction, along with long-term follow-up, up to the APE boundary. **B)** MDOT Funding for development of ArcGIS maps to catalogue current and historical study locations and key resources to visualized changes over time. **C)** MDOT funds are requested to purchase for WBFC a highly accurate GPS unit for recording plot points, plant locations (including mapping of tree species), and collection sites. (Estimated cost to MDOT for WBFC equipment purchases: \$20,000). **D)** MDOT funding and coordination with NPS and WBFC of research on the effects of the expanded ALB shadow on vegetation, arthropods, and amphibians. Baseline vegetation plots are to be established before construction, followed by resampling at 5-year intervals for 20 years, using NPS circular plots from the LOD out to the APE. This will also serve to track invasive species spread. NPS, in coordination with WBFC, will analyze the data and publish this research using MDOT funding. (Estimated cost to MDOT for Research, see Item 17).

10 -- Invasive species: WBFC has been studying invasive species with our vegetation plots and 120 years of collection records. The most invasive are: Amur-honeysuckle, Japanese-honeysuckle, oriental-bittersweet, tree-of-heaven, gill-over-the-ground, Japanese-stiltgrass, garlic-mustard, and various knotweeds. In 2017 WBFC asked Invasive Plant Control (IPC) Inc. for a bid to remove the invasive trees and shrubs. Their bid was \$75,000 (unaffordable to us). Now fig-buttercup has come onto the island (3 plants first noted in 2017 at the head of the Island) and is expanding exponentially (250 plants seen in the spring of 2021, all across the Island): This weed is projected to extensively cover the lower flood plains of the Island in the near future. Japanese-stiltgrass is expanding exponentially also. The spread of these invasive species will be exacerbated by clearing of vegetation and soil disturbance associated with the ALB construction. Cost is a major impediment to control. C&O Canal NHPS has minimal funds for invasive plant control, and their efforts were curtailed by the Park’s Head Ranger in about 2016. This is a long-term problem and requires long-term mitigation and research on effectiveness of methods of control. **A)** MDOT funding to NPS for invasive plant control and research is requested for the long term. (Estimated cost to MDOT for NPS expenses \$5 million for invasive species control. For the Research budget see Item 17).

11 – Abatement of Toxic Runoff: The lowest point on the ALB drains through scuppers and culverts onto NPS land, cutting an erosional gully and then draining into our channel. The high point (75 m elevation)

along Maryland's I-495, ca. 1 mile NE from the ALB, drains down to the ALB the low point (36 m), just opposite the NW corner of Plummers Island. Road salts, antifreeze, and oils release toxic metals into the soil and water. Any accidental spill on the bridge or highway draining to the bridge currently dumps on to NPS land and then into our channel. **A)** MDOT must send this runoff elsewhere for treatment. **B)** MDOT Funding is requested for long-term research on toxic runoff from the ALB. **C)** Dust and debris from demolition and construction must be minimized to the maximal practicable extent. **D)** Effects of dust and sedimentation on the Island and in the channel must be studied as a long-term research project. (Estimated cost to MDOT for Research, see Item 17).

12 – Abatement of Noise Pollution: ALB traffic noise on the island disrupts animal communications and affects the quality of experience of the island for visitors. Having more lanes and traffic closer will amplify the noise. Cutting of trees will also increase penetration of sound onto the island. **A)** Sound barriers, and special sound deadening tarmac surfacing must be added to MDOT plans for the ALB to minimize this impact. **B)** MDOT funding is requested for researching impacts of noise from the ALB and study of impacts on animal communications. **C)** Outdoor camera and microphone and monitoring equipment are requested for WBFC future research. (Estimated cost to MDOT for WBFC equipment purchases: \$20,000). (Estimated cost to MDOT for Research, see Item 17).

13 -- Vistas: Clearing trees on the island and mainland adjacent to the Island adjacent to and under the newly expanded ALB will impact the quality of experience of the Island, and impact the remaining vegetation under the removed tree canopy and into the adjacent forest. The bridge itself will overhang the island up to the LOD, creating a cave, and an extended shadow that will limit afternoon sunlight to vegetation further inland. **A)** MDOT must limit tree cutting as much as possible. **B)** MDOT funding is requested to replant and reseed disturbed off-Island areas with hardy local strains of native trees, shrubs and herbaceous species as soon as possible, health of these plantings to be monitored by NPS.

14 -- Expanded Online content: **A)** MDOT Funding is requested for further digitization and cataloging of Smithsonian collections within the C&O NHP and Plummers Island. This would include funding for contractors and IT support. **B)** MDOT Funding is requested for digitization of WBFC archives of letters, photos and other documents at the Smithsonian. This would include contractors and IT support. NPS is also interested in this archive of materials for their historical records involving the 120-yearold WBFC cabin. **C)** MDOT Funding for WBFC website development to further share our mission and knowledge. This would include hiring of a professional website developer for WBFC. **D)** MDOT Funding is requested for diversity and inclusion of underrepresented peoples in our outreach and education initiatives. (Estimated cost to MDOT for the above items: \$200,000).

15 – Financial support for inventories of understudied groups on the island: WBFC maintains documented inventories of organisms on the Island, but not able to ensure that inventories for all groups of organisms are up to date at any one time; provide funding to hire experts to update and document inventories for groups that need it.

16 -- Access During Construction: We also request that access to Plummers Island not be curtailed during construction. If the Clara Barton parkway is closed during construction of the ALB and ramps, we request a temporary parkway crossing from the westbound lane to Lock 10 parking on the eastbound lane be established. Researchers will need access to research plots up to the LOD.

17 --Long-term research: Including items listed above, long-term research on the impact of bridge expansion on Plummers Island is needed. This will inform future construction projects by expanding our knowledge base of the impacts on biodiversity and community ecology. This will also assist WBFC in understanding perturbations to long-term trends of the Island's ecosystem caused by the MDOT project. Neither WBFC nor NPS have the funds or staff to carry out the required new research projects. Baseline plot data gathering must be completed prior to beginning ALB construction. We request external contracting and funding by MDOT-SHA for research, to be conducted by consulting companies, research universities and institutions, in coordination with WBFC and NPS. (Estimated cost to MDOT over a 20-year time period is \$20 million.)

Respectfully,

Robert Soreng PhD, WBFC President

Carla Dove PhD, WBFC Vice President

Lowell Adams PhD, WBFC Secretary

Warren Wagner PhD, WBFC Treasurer

On behalf of the hundreds of past and present WBFC members.

Cc:

APPENDIX C: Maps of Plummers Island and Alternative 9 ALB emplacement



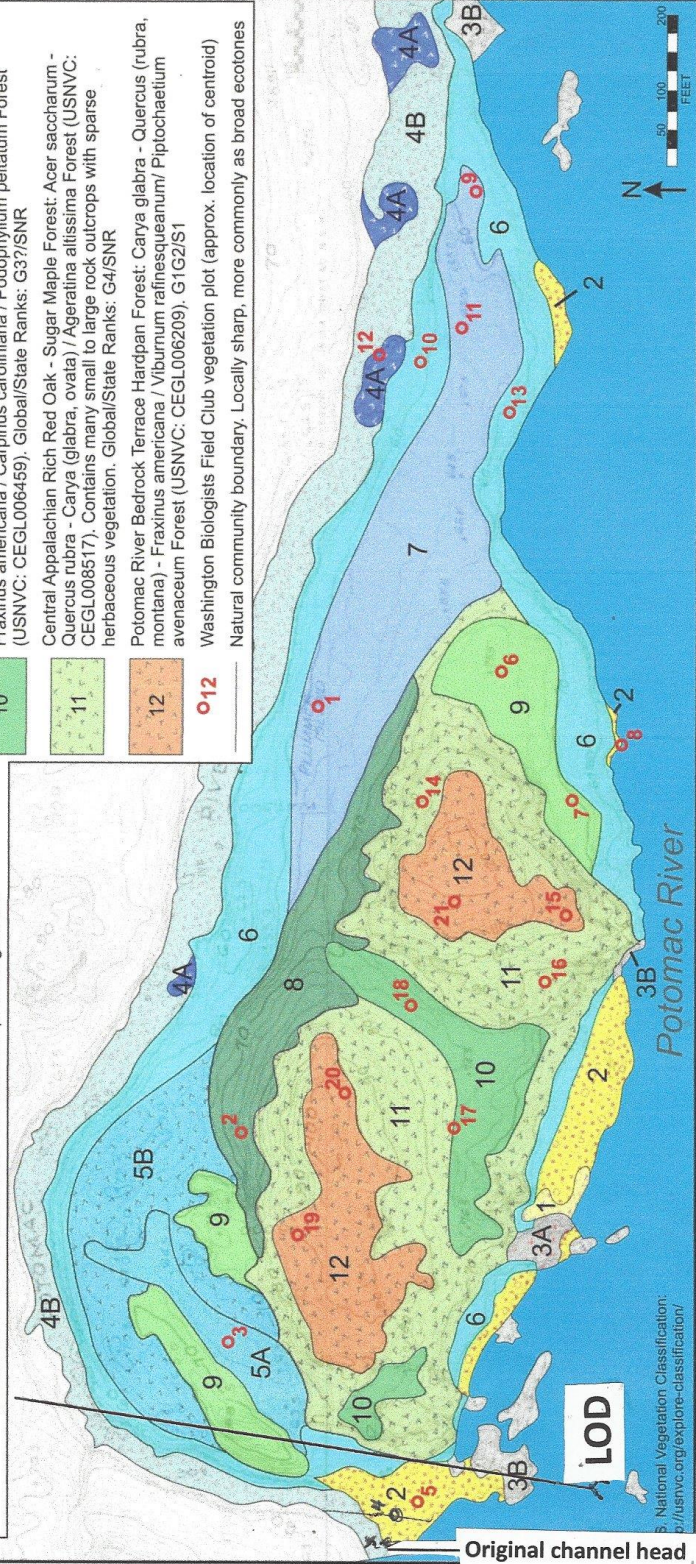
B

**Natural Communities of Plummers Island
Montgomery County, Maryland**

by R.H. Simmons, A.H. Fleming, and R.J. Soreng, June, 2016

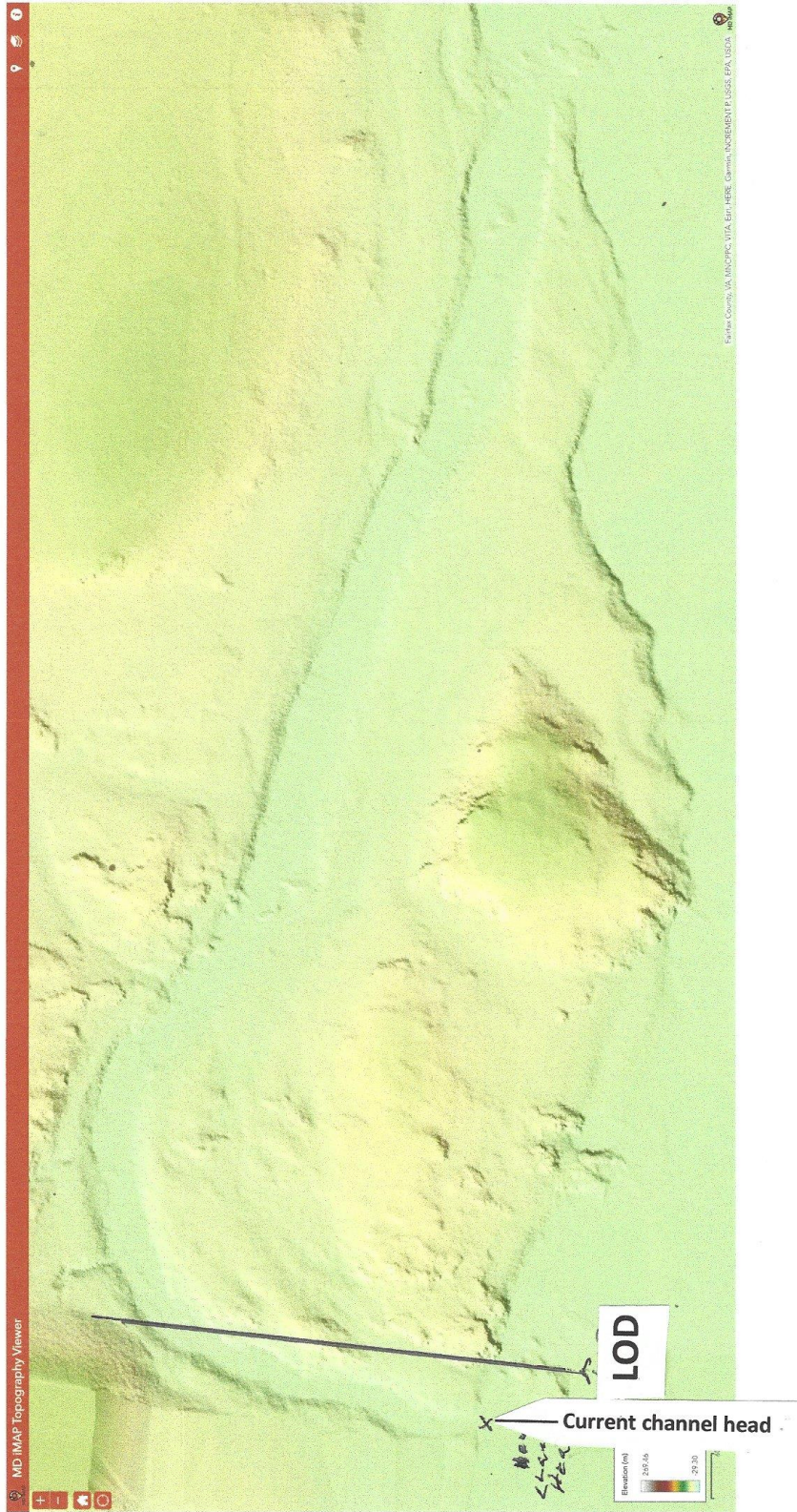
- 1** Piedmont / Central Appalachian Sand Bar / River Shore (Low Herbs Type): *Eragrostis hypnoides* - *Lindernia dubia* - *Ludwigia palustris* - *Cyperus squarrosus* Herbaceous Vegetation (USNVC: CEGLO06483). Non-tidal mudflats. Global/State Ranks: G3/SNR
- 2** Piedmont / Central Appalachian Sand Bar / River Shore (Tall Herbs Type): *Eupatorium serotinum* - *Persicaria (leptophylla, punctata, pennsylvanica)* Herbaceous Vegetation (USNVC: CEGLO06481). Global/State Ranks: GNR/SNR
- 3A 3B** Potomac Gorge Riverside Outcrop Barren (Potomac Gorge Type): (*Hypericum prolificum*, *Eubotrys racemosa*) / *Schizachyrium scoparium* - *Solidago racemosa* - *Ionactis linatifolia* Herbaceous Vegetation (USNVC: CEGLO06491). Global/State Ranks: G2/S1. 3B: Other large rock outcrops in a similar setting
- 4A 4B** Piedmont / Central Appalachian Sycamore - River Birch Scour Woodland: *Platanus occidentalis* - *Betula nigra* - *Salix (caroliniana, nigra)* / *Apocynum sibiricum* Woodland (USNVC: CEGLO03896). Global/State Ranks: G4G5/S4. Occurs within 4B: intermittent river channel with sparse vegetation

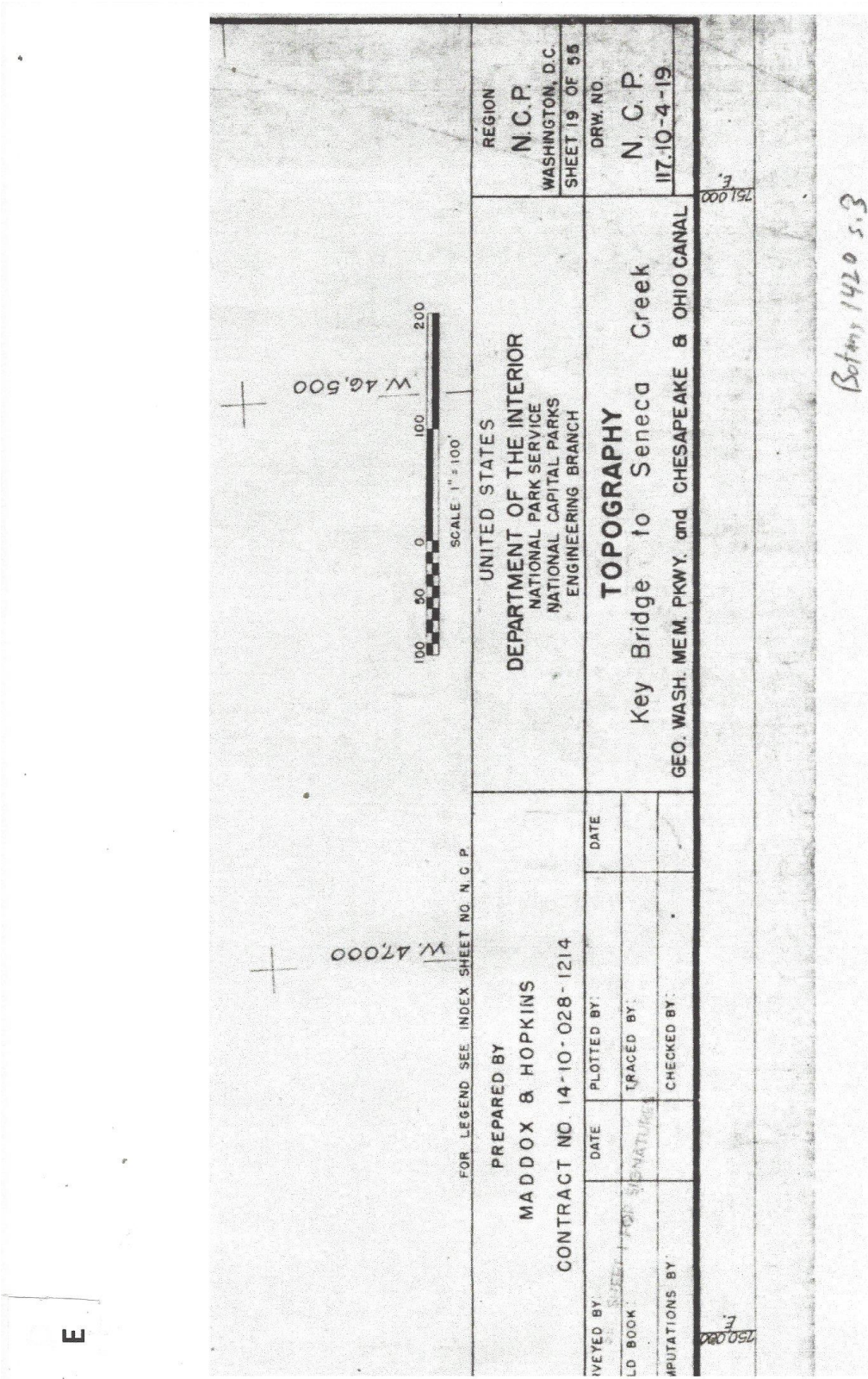
- 5A 5B** 5A: Floodplain Terrace Forest: *Fraxinus pennsylvanica* - *Ulmus spp.* - *Cellis occidentalis* Forest in a moist, glade-like swale underlain by dark loamy alluvium. Similar to USNVC: CEGLO02014. 5B: Same, with many inclusions of basic mesic forest (#9) on low, streamlined ridges of bedrock and sandy alluvium
- 6** Piedmont / Central Appalachian Silver Maple Forest: *Acer saccharinum* - *Acer negundo* / *Ageratina altissima* - *Laportea canadensis* - (*Elymus virginicus*, *Elymus macgregorii*) Forest (USNVC: CEGLO06217). Global/State Ranks: G4/S4
- 7** Piedmont / Central Appalachian Rich Floodplain Forest: *Platanus occidentalis* - *Acer negundo* - *Juglans nigra* / *Asimina triloba* / *Mertensia virginica* Forest (USNVC: CEGLO04073). Global/State Ranks: G4/S3
- 8** Central Appalachian / Piedmont Basic Mesic Forest (Twinleaf - Blue Cohosh Type): *Acer (nigrum, saccharum)* - *Tilia americana* / *Asimina triloba* / *Jeffersonia diphylla* - *Caulophyllum thalictroides* Forest (USNVC: CEGLO08412). Global/State Ranks: G4G5/S4
- 9** Coastal Plain / Outer Piedmont Basic Mesic Forest: *Fagus grandifolia* - *Liriodendron tulipifera* - *Carya cordiformis* / *Lindera benzoin* / *Podophyllum peltatum* Forest (USNVC: CEGLO06055). Global/State Ranks: G4?/S4
- 10** Mid-Atlantic High Terrace Hardwood Floodplain Forest: *Acer saccharum* - *Fraxinus americana* / *Carpinus caroliniana* / *Podophyllum peltatum* Forest (USNVC: CEGLO06459). Global/State Ranks: G3?/SNR
- 11** Central Appalachian Rich Red Oak - Sugar Maple Forest: *Acer saccharum* - *Quercus rubra* - *Carya (glabra, ovata)* / *Ageratina altissima* Forest (USNVC: CEGLO08517). Contains many small to large rock outcrops with sparse herbaceous vegetation. Global/State Ranks: G4/SNR
- 12** Potomac River Bedrock Terrace Hardpan Forest: *Carya glabra* - *Quercus (rubra, montana)* - *Fraxinus americana* / *Viburnum rafinesquianum* / *Piptochaetium avenaceum* Forest (USNVC: CEGLO06209). G1G2/S1
- 012** Washington Biologists Field Club vegetation plot (approx. location of centroid)



5. National Vegetation Classification: <http://usnvc.org/explore-classification/>

C





* For map images cited in **APPENDIX D**, see **APPENDIX C.**, maps A (ALB Alternative 9 with ALB),

APPENDIX D: Administrative Record letter sent to U.S. Army Corps of Engineers

January 19, 2022

NAB-Regulatory@usace.army.mil

U.S. Army Corps of Engineers, Baltimore District
Regulatory Branch (CENAB-OPR)
2 Hopkins Plaza
Baltimore, MD 21201

[Re: The protection of Waters of the U.S., C&O Canal National Historical Park, and Plummers Island from adverse impacts of MDOT's proposed Alternative 9 - Phase 1 South]

Dear USACE Baltimore District Regulatory Branch,

We have serious concerns regarding the adverse impacts to Waters of the U.S., C&O Canal National Historical Park, and Plummers Island if MDOT's proposed Alternative 9 - Phase 1 South for widening the American Legion Bridge is constructed as planned. We are also very much concerned that environmental impacts are not adequately addressed in the DEIS/SEIS, that viable, less destructive alternatives were not properly analyzed and considered, and that Alternative 9 - Phase 1 South is not the Least Environmentally Damaging Practicable Alternative (LEDPA). In fact, it is perhaps the most environmentally destructive of alternatives to federally owned lands and waterways east of the bridge.



Fig. 1. Globally rare Potomac River Bedrock Terrace Hardpan Forest (CEGL006209) at Plummers Island, C&O Canal National Historical Park, Montgomery County, Maryland. The American Legion Bridge looms in the background at the head of the island. Photo by R.H. Simmons.

Plummers Island is a unique 12.2-acre natural area within the Potomac River Gorge, C&O Canal National Historical Park, Montgomery County, Maryland. It is widely known as “The Most Thoroughly Studied Island in North America” (NPS sign on Plummers Island). Its natural history has been a subject of more than 400 scientific papers. More than 4,000 species have been documented there, by over 40,000 collections housed in the National Museum of Natural History, Smithsonian Institution. Numerous rare plant and animal species, and four globally rare plant communities are documented there. Alluvial habitats with overland, non-tidal flooding regimes and diverse, specialized vegetation comprise much of the island (Figs. 2 and 3).



Fig. 2. Rock ridge straight across the channel from the shadow of the American Legion Bridge at the 9 ft. flood stage (NOAA Little Falls Gauging Station). Photo by R.J. Soreng, March 2, 2021.

In the DEIS and SEIS, alternatives were mainly considered for which best suited the transportation goals of the project, with required analyses of environmental impacts not presented or poorly discussed. (https://oplane.md.com/wp-content/uploads/2021/11/14951270MLS_SDEISUpdatedSection4f.pdf). For example, Alternative 9 as the presumed LEDPA is not justified and the number and type of environmental impacts are not discussed. In fact, no specific discussion of the LEDPA relative to any of the alternatives could be found in the document.

Alternative 9 - Phase 1 South is preferred by MDOT as purportedly the most cost effective of alternatives, but it is the most destructive to Plummers Island and adjacent lands and waterways - largely owing to the physical expansion of the bridge eastward onto the island and the construction of enormous caissons and footers in the existing channel that follows the interior edge of island.

Significant adverse impacts to Plummers Island and adjacent lands and waterways resulting from Alternative 9 include (but are not limited to):

- The taking of several acres of the head of the island (western and northwestern end) by the installation of enormous concrete footers and caissons, resulting in a permanent loss of land, wildlife habitat, wetlands, and functional floodplain.
- The destruction of the north-south section of the bedrock channel (WOTUS) adjacent to the bridge through the installation of enormous concrete footers and caissons directly in the channel, as well as the total and permanent eclipse of sunlight resulting from the bridge deck extending entirely across the channel.
- Adverse impacts to aquatic wildlife as a result of permanent alterations to the channel.
- The destruction of an imprecisely quantified area (by MDOT) of bedrock vernal wetlands (WOTUS) under the proposed new deck and caissons of the bridge.
- The destruction of a high-quality, low forested ridge of bedrock outcrops and rare flora, such as one of two extant stations on the island for the state-rare Leatherwood (*Dirca palustris*); G4/S2 T. (Simmons et al. 2020)
- The installation of caissons and footers in the channel and on the island will intensify the strength of flood flows eastward, resulting in accelerated stream bank and floodplain erosion on the southwest part of the island, as well as the destruction of several natural communities and habitats in this area. Sediment loads from this disturbance will also impact the channel and island.
- Caissons in the channel will trap logs and other debris, resulting in semi-permanent log jams in the channel and a seriously degraded waterway.
- Placing such an embankment or structure across an active floodplain and channel will effectively interrupt flood flows and force more water to the east against the cut bank, hastening the undermining of the floodplain and forested slope there.
- An embankment in the form of caissons at this location will likely also create an eddy during high water that intensifies erosion upstream of the bridge.
- Sedimentation is a vital part of the energy cycle in these ecologically important riparian areas. Caissons or other continuous impediments constructed across this section of the floodplain and channel will disrupt this process, likely causing: 1) the structures to be regularly inundated by alluvium during even minor floods; 2) frequent flood risk to upland areas of the island owing to the removal of the rock ridge that currently protects such areas; and 3) the riparian areas downstream to be robbed of their natural sediment supply, which adversely disrupts the nutrient/energy cycle of these areas and eventually cause deflation of the riparian landscape.
- Six flood-dependent natural communities, some globally rare, will be negatively impacted, including Piedmont / Central Appalachian Sand Bar / River Shore (Tall Herbs Type): (USNVC: C EGL006481); global and state rare Potomac Gorge Riverside Outcrop Barren (Potomac Gorge Type): (USNVC: C EGL006491); Piedmont / Central Appalachian Sycamore - River Birch Scour Woodland: (USNVC: C EGL003896); Floodplain Terrace Forest: (USNVC: C EGL002014); Piedmont / Central Appalachian Silver Maple Forest: (USNVC: C EGL006217); and globally rare Mid-Atlantic High Terrace Hardwood Floodplain Forest: (USNVC: C EGL006459). (Simmons et al. 2016)

- Three upland natural communities near the channel will also be adversely impacted, including the permanent deflection of solar exposure to light-demanding flora and habitats, because of hardscape encroachment across the channel onto the island: Coastal Plain / Outer Piedmont Basic Mesic Forest: (USNVC: CEGLO06055); Central Appalachian Rich Red Oak - Sugar Maple Forest: (USNVC: CEGLO08517); and the globally rare Potomac River Bedrock Terrace Hardpan Forest: (USNVC: CEGLO06209). (Simmons et al. 2016)
- The physical extent of the bridge decking will overtop the head of Plummers Island by 100 ft. or more, robbing vegetation and wildlife under the bridge of sunlight.
- Because of the proposed placement of the caissons in the channel and island, resulting in severely restricting water flow into the channel, the extensive, flood-dependent, state-rare Piedmont / Central Appalachian Rich Floodplain Forest: (USNVC: CEGLO04073) along the channel on the mainland and island will be starved of their natural sediment supply, disrupting the nutrient/energy cycle and causing deflation of the riparian landscape.
- Bridge footings and caissons will likely create a pressure shadow in their lee that accelerate the deposition of sediment on the point bar and floodplain immediately downstream or change the form or composition. In this case, highly detrimental deposition and flood scouring is expected, especially in the form of smothering logs and debris deposits overtop vegetation, wildlife, and habitats on the island.



Fig. 3. Old-age Piedmont / Central Appalachian Silver Maple Forest: (USNVC: CEGLO06217) along the rocky bedrock channel at Plummers Island, Montgomery County, Maryland. Photo by R.H. Simmons.

Under CWA Section 404(b)(1) Guidelines Alternatives Requirements, a permit cannot be issued in circumstances where a less environmentally damaging practicable alternative for the project exists. The

environmental impacts that would result from Alternative 9 - Phase 1 South are significant, not minor. The project will severely impact national parklands, wetlands, and waterways.

WBFC (as a Consulting Party) formally submitted comments on the DEIS, SDEIS, and Section 106 on November 30, 2021, when comments on the SEIS were due. We also met with MDOT on several occasions to discuss our many issues, including those specifically involving hydrology and flooding.

Until recently, engineering designs were not well enough along for anyone to comment on, specifically to evaluate effects of the bridge caissons and pier emplacements, including the reduction of the channel and leveling of the rock ridge at the head of the island. The bridge design plan and placements were only made apparent in screen shares at the November 29, 2021, MDOT meeting. We did include some comments to that effect, but we needed more than 1 day to adequately evaluate the consequences.

We respectfully request that USACE not grant any permits for the Preferred Alternative, Alternative 9 - Phase 1 South, thereby requiring the Applicant to redesign its plans and submit a pre-construction request that provides a proper analyses and rationale of the LEDPA and alternatives, a thorough assessment of the myriad of irreplaceable natural resources affected by the proposed alternative, and required protections for all of the WOTUS currently threatened by the project. The NEPA evaluation needs to be thorough and uncompromising in protecting this special place.

We also request that the above information be placed in the administrative record, courtesy copied to the Project Manager who received the PJD, and furthermore to request that the 15-day resource agency review be re-coordinated to include this new information.

Thank you for your consideration of this important matter.

Sincerely,

Robert J. Soreng, President, Washington Biologists' Field Club (WBFC) and Smithsonian Institution
scientist

<https://wbfc.science/>

Roderick H. Simmons, environmental scientist, WBFC

CC:

National Park Service, C&O Canal National Historical Park
Environmental Protection Agency
U.S. Fish and Wildlife Service
Federal Highway Administration
Maryland Dept. of the Environment
Maryland Dept. of Natural Resources
National Parks Conservation Association

APPENDIX E: WBFC replies to MLS-106 Table 1 Responses

Page 23 of 57 Programmatic Agreement Draft #1 Comment Table			
Comment	Author	Section	Whereas
Topic: Sp Priority Comment			
146	Washi nhton Biologi sts Field Club (WBFC	General	Plummers Island and C&O Canal
<p>1 We request WBFC be added as a consulting party to Section 106 immediately due to our special relationship with Plummers Island. [note: see WBFC comment for full discussion of WBFC's relationship to Plummers Island]. Any mitigation measures for the C&O Canal National Historical Park as a whole would not be sufficient to protect Plummers Island. The WBFC, as a discrete entity that has engaged in biological research on the island since 1901, is best able to determine which impacts would or could result from American Legion Bridge construction and operation activities and which measures are needed to avoid, minimize, and mitigate these impacts.</p>			
Response			
WBFC has been added as a consulting party.			
WBFC Reply 3 Feb 2022			
<p>NPS has not commented on PI for MLS-106. WBFC was added as a consulting party. WBFC has been in joint meetings with MLS-106 crew on 3 or 4 occasions, and had several email correspondences with Mr. Archer and company. The PA does not further document mitigations. WBFC lodged a partial mitigations letter with NPS Nov. 29 2021 (noted verbally by WBFC in the MLS-106 meeting Nov. 29). An expanded letter of partial mitigations is included here in a separate document.</p>			
Response			
WBFC Reply 3 Feb 2022			
<p>NPS has not commented on PI for MLS-106. Plummers Island must be protected as a whole under the eligibility criterion.</p>			
Response			
WBFC Reply 3 Feb 2022			
Page 24 of 57 Programmatic Agreement Draft #1 Comment Table			
Comment	Author	Section	Whereas
Topic: Sp Priority Comment			
147	WBFC	General	Plummers Island and C&O Canal
<p>1 We are dismayed that the cultural resource evaluations circulated as part of the DEIS fail to specifically identify or discuss the historic significance of Plummers Island. The Section 106 identification process should include an evaluation of the significance of Plummers Island as an individually significant historic site independent of the C&O Canal National Historical Park, or at minimum, should include additional descriptions of its contributing significance to that site. The cultural resource evaluations undertaken to date have largely ignored Plummers Island and its unique historic characteristics.</p>			
Response			
<p>DOE is completed; property is eligible, and effect is adverse with SHPO concurrence October 2021.</p>			
Response			
<p>WBFC Reply 3 Feb 2022</p>			
Page 25 of 57 Programmatic Agreement Draft #1 Comment Table			
Comment	Author	Section	Whereas
Topic: Sp Priority Comment			

148 WBFC	General	Plummers Island and C&O Canal	<p>1 We are troubled by the approach taken by the draft Section 106 Programmatic Agreement, which does not contemplate identifying the adverse impacts on Plummers Island or looking at ways to resolve those impacts until after key decisions about the project are made and mitigation measures foreclosed. It is not appropriate to defer the assessment of these impacts or any analysis of measures to mitigate adverse effects until after key decisions have been made about alternatives and the preferred alignment for the project, as avoiding or minimizing impacts to Plummers Island will require electing appropriate bridge alignment and construction alternatives. There is sufficient information available now to undertake these evaluations, and this should be done now, before the widest range of options for mitigating and minimizing adverse effects to Plummers Island have been foreclosed. The measures to protect the island and its biota (the subject of long-term ongoing research) need to be considered now and in detail. A memorandum of agreement, which would be executed before the Record of Decision, is a more appropriate vehicle for resolving adverse effects on Plummers Island than a programmatic agreement. Due to the extraordinary sensitivity of the resources and the research that will be impacted by the Project, it is imperative that measures to avoid, reduce, and minimize impacts to Plummers Island be considered now, not deferred until after key project decisions have been made. We therefore request those protections be evaluated as part of the Section 106 process now, and specific commitments to resolve adverse effects be included in a memorandum of agreement and ultimately, in the Record of Decision for the project.</p>
149 WBFC	General	Plummers Island and C&O Canal	<p>1 The unique history and significance of Plummers Island must be assessed independently of its status as part of the Chesapeake & Ohio Canal National Historical Park. [for full description of unique history see WBFC comment document] However, the significance of Plummers Island goes beyond that. The significance of the island as a long-term research site should give it protection as a wildlife management area, and it is also a unique and significant historical site in its own right. The Island's unique historic attributes include its value and history as an important research site (historic attributes are further reviewed in Appendix B).</p>
<p>Page 26 of 57 Programmatic Agreement Draft #1 Comment Table Comment Author: N Section Whereas Topic: Sp/Pront Comment</p>			<p>DOE complete; property eligible with SHPO concurrence October 2021.</p>
			<p>Response</p>
			<p>WBFC Reply 3 Feb 2022</p>
			<p>NPS has not commented on PI for MLS-106. Sierra Club comment 149 is on target. WBFC wholly agrees.</p>
			<p>NPS has not commented on PI for MLS-106. WBFC met 2 more times in 2021. No memorandum of agreement has been proposed. The PA does not further document mitigations. WBFC lodged a partial mitigations letter with NPS Nov. 29 2021. (noted verbally by WBFC in the MLS-106 meeting Nov. 29). An expanded letter of partial mitigations is included here in a separate document. WBFC comments; APPENDIX B.</p>

150/WBFC	General	Plummers Island and C&O Canal	1	<p>There are significant, irreversible adverse effects that would accrue to Plummers Island and WBFC research projects under the MDOT American Legion Bridge expansion plan. The ongoing and active research spaces on this island are contributing historic features of the island. In addition to the architectural resources (the cabin built in 1901), there are distinct adverse effects that impact a property of such high research value, these include destruction of areas of the island, noise pollutants that impair the quality of studies, and many more things listed below and described in greater detail in Appendix C. The adverse effects to the island's historic features and significance as a research site posed by the I-495/I-270 project are extensive and further detailed in Appendix C of this letter. They include: 1-Damage to waterways 2-Destruction of rare plants (Simmons et al. 2020) and rare plant communities (Simmons et al. 2016) from the far west end of the island within the Zone of Destruction 3-Destruction of WBFC research plots 4-Destruction of past collection sites 5-Habitat destruction and disturbance lead to more invasive organisms 6-Potential for catastrophic destruction from major floods if water barriers and/or construction platforms emplaced for construction blow out 7-Sound from bridge construction and closer proximity of traffic in 2 new bridge lanes after they open on the bridge 8-Violation of long term continuity of 120 years of research.</p>	Adverse effect; DOE complete. However, most concerns here are NEPA-related.	<p>NPS has not commented on P1 for MLS-106. The PA has not addressed land and property issues related to MLS-106; 2-Destruction of rare plants (Simmons et al. 2020) and rare plant communities (Simmons et al. 2016) from the far west end of the island within the Zone of Destruction 3-Destruction of WBFC research plots 4-Destruction of past collection sites 5-Habitat destruction and disturbance lead to more invasive organisms 8-Violation of long-term continuity of 120 years of research.</p>
Page 27 of 57 Programmatic Agreement Draft #1 Comment Table					Response	WBFC Reply 3 Feb 2022
Comment	Comment	Author	N	Section	Whereas	Topic

151	WBFC	General	Plummers Island and C&O Canal	<p>1- To protect Plummers Island, the minimum mitigations follow: 1-Plan for major (not minor) flooding during the construction period. 2-Avoid obstructing natural water flow into the Plummers Island channel. 3-Build all the new lanes on the upriver side of the bridge. 4-Build the access to and under the construction platforms themselves only on the upriver side of the bridge and under the bridge. In any case, add sound barriers to the downstream side of the bridge. 5-Use lane surfacing that is as quiet as possible. 6-Place the outflow from bridge scrapers somewhere the runoff will not enter into Plummers Island waters. 7-Avoid fugitive dust blowing onto the island by use of dust minimization measures including spraying. 8-A waste and hazardous material disposal plan must ensure offsite disposal so as not to flow to or near Plummers Island. 9- Provide prior notification informing WBFC of work schedules so notice can be given to researchers. 10-Piping of road runoff (that contains oil and salt) is a major issue; currently the main scupper drainage flows into the channel separating the island from the mainland; future drainage should avoid the wetlands including the channel. 11-For the duration of construction, any construction infrastructure should be designed to withstand major floods (over 14 feet) not minor (10-12 feet) floods; there have been 3 moderate (12-14 feet) and 2 major floods (17-19 feet) in the past 25 years. However, even minor floods recorded at Little Falls produce major flooding in the Plummers Island channel adjacent to the bridge (see Appendix D, point 6). 12-Monitor during construction to ensure that construction work is not impacting the island and no construction workers or project personnel visit the island unless oriented and approved by the Washington Biologists' Field Club. These requirements should be included in bidding document and contractor's work plan as part of the environmental specifications that will be followed. 13-Chance find or inadvertent discovery procedures should be followed and incorporated into bidding documents and contracts. Please provide a copy for our review to ensure they meet the requirements for protection of Plummers Island.</p>	Some of these best management practices will be captured in NEPA/permit conditions but may not be appropriate for 106 PA. MDOT SHA will continue to consult with the WBFC and NPS on appropriate historic mitigation.	NPS has not commented on PI for MLS-106. WBFC has had 2 additional meetings with MLS-106 leaders and consultants in 2021. MDOT has not allowed for piping of SWM runoff, or toxic spills away from the site. MDOT has not provided WBFC with any work plans or assurances of monitoring the site is not damaged. Over a 1 mile stretch in Maryland, 1-495 drops down from 75 m to 36 m at a low point on the ALB adjacent to Plummers Island. This is where much of the runoff drains out into the channel. This is totally unacceptable and must be corrected with any new construction.
152	WBFC	General	Plummers Island and C&O Canal	<p>1- Plummers Island is federally protected under legal agreements with the National Park Service and should become additionally protected with a determination of individual National Register of Historic Places eligibility or, at a minimum, assessment of contributing significance to the C&O Canal National Historic Park as soon as possible, with the biodiversity, endangered species, and research value of the island specifically identified as historical features of contributing importance.</p>	DOE done, property eligible.	NPS has not commented on PI for MLS-106. Plummers Island must be protected as a whole under the designated eligibility criterion.
Other commenting agencies comments from Comment Table 1						
461	NPS	KSmith	III C	<p>1- These are not historic preservation mitigations thus they don't belong in this Section 106 agreement document. Reforestation could be considered a mitigation for changes to historically forested areas, but that needs to be itemized. Related: is Section 106 consultation happening on the proposed locations of these mitigations?</p>	Response Not accepted. This section relates to how cultural resources effects are assessed at proposed reforestation sites, not reforesting as a mitigation for adverse effects to historic properties.	WBFC Reply 3 Feb 2022 WBFC notes that Plummers Island is a long-term research site. Once this site is disturbed the continuity of the long-term research is broken.

54/NPS	KSmith	general	General	1 It seems like there should be a broader mandate in this PA for ongoing consultation based on how little design has happened for the post phase 1 phases. The consulting parties haven't had the chance to see any detail and therefore can't offer input on adverse effects and possible design minimizations.	Comment noted.	WBFC fully agrees with NPS comment. We still have seen only limited design plans. Thus, finalizing the PA is premature.
55/NPS	A. Young	whereas		2 WHEREAS, FHVA will ensure additional identification, evaluation, assessment, is completed in a timely manner prior to construction, to allow practical opportunities to avoid, minimize or mitigate for any potential adverse effects to historic properties, as stipulated under this PA." Please clarify what constitutes a timely manner and what opportunities signatories will have for review.	This is a general statement and timeliness and consultation points are specified elsewhere.	WBFC agrees with the NPS comment
322 Sierra Club (SC)	General	PA Process		1 The purely Programmatic Agreement approach for this project is inappropriate and inadequate as it impermissibly forecloses large measures to avoid impacts to historic properties (such as project scope, number of new lanes, and road alignment). The Programmatic Agreement approach to the I-495 & I-270 MLS Section 106 process is not adequate to meet the requirements of federal law. The Section 106 regulations provide that a Programmatic Agreement approach is appropriate in certain limited situations, including "[w]hen effects on historic properties cannot be fully determined prior to approval of an undertaking." 36 C.F.R. §800.4(b)(1)(iii). Here, however, there is no reason to defer all identification of historic properties within the area of potential effects or the assessment of adverse effects and any measures to avoid and mitigate until later. While there may be alignment refinements that will occur during the design-build process, there are no other circumstances that warrant a departure from the normal section 106 process. [lengthy comment continued in Comment letter] (continued in 323)	The implementing regulations at 36 CFR 800.4(b)(1) for Section 106 of the National Historic Preservation Act (NHPA) require a reasonable and good faith identification effort for historic properties. 36 CFR 800.4(b)(2) also permits a phased identification and evaluation of historic properties where alternatives under consideration consists of corridors, large land areas, or where access to properties is restricted. Survey and National Register of Historic Places evaluation of hundreds of properties and archaeological survey areas was completed prior to the DEIS. Very little survey work remains and generally only in areas where property access has been denied. The Programmatic Agreement currently under development, which will be signed and executed prior to the Record of Decision, will provide a framework for ongoing identification, avoidance, minimization, and mitigation of historic properties.	WBFC fully agrees with SC comment. We still have seen limited design plans for the ALB.

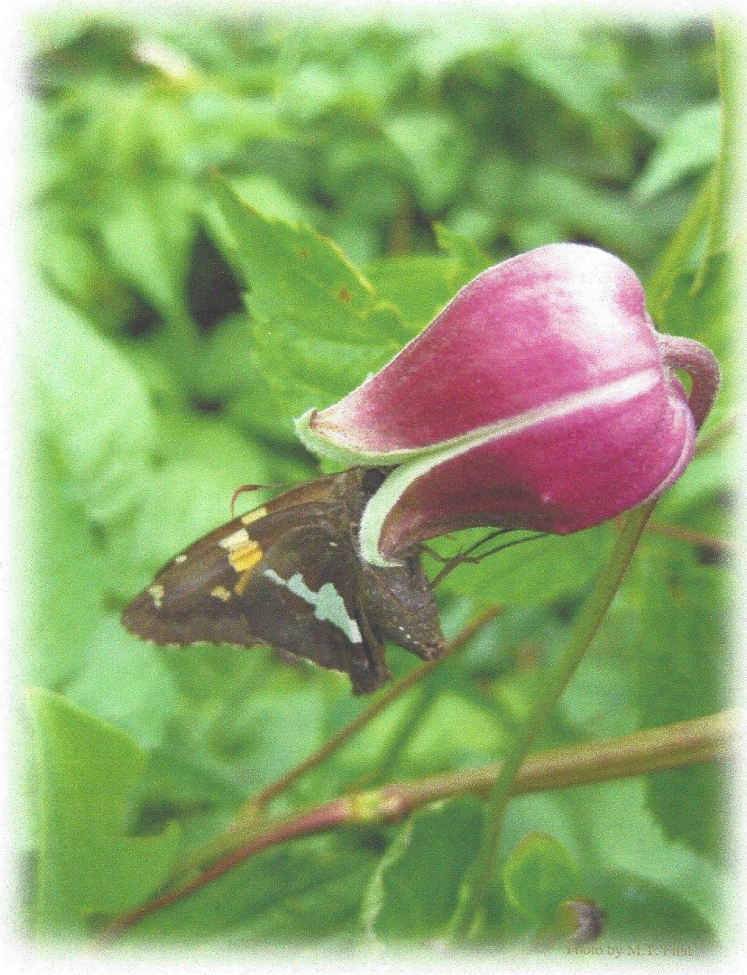
323	SC	General	PA Process		<p>1. The approach to Section 106 taken here impermissibly defers full consideration of historic properties listed in or eligible for listing in the National Register of Historic Places by relying on a boilerplate Programmatic Agreement that the Agencies will not execute until after selecting a Preferred Alternative. Among other things, delaying full assessment of historic properties until a Programmatic Agreement is executed ignores the Agencies' present duty to comply with NEPA, which requires a "hard look" at all of the environmental consequences that will flow from the Project if the Agencies grant the permits needed for the Project to proceed. Selection of an Alternative in the ROD, including impacts on historic properties, for these reasons, relying on an unexecuted Programmatic Agreement to carry out the Section 106 review process precludes, rather than assists, the Agencies and the public from understanding how these effects might harm historic and cultural resources as required by NEPA. Without a complete understanding of the Project's full range of environmental effects, including harm to historic properties, there is no way that the Agencies can reasonably select a preferred alternative as required by NEPA or identify an alternative that avoids use of historic properties, parks, and recreation areas unless no other feasible and prudent alternative is available as required by Section 4(f). Deferring the full identification of historic properties may be acceptable where the nature and scope of the resources would allow them to be easily avoided, as in the case of archaeological sites that are significant under National Register Criterion D. However, resources such as historic properties require an entirely different approach, because preservation in place is the preferred treatment, and options to avoid harm to these resources may be foreclosed once an alternative is selected. The identification of those historic properties and the Project's potential effects on them must be completed at a time when they can actually inform the selection of alternatives, rather than being deferred to a later date after alternatives have been foreclosed. For the reasons discussed above, it is impossible to comment meaningfully on the Agencies' plans concerning historic and cultural resources because important baseline questions have not been decided. Outstanding issues that need to be resolved include the complete identification of</p>	see reply under 322	see WBFC comment under 322
-----	----	---------	------------	--	--	---------------------	----------------------------

324 SC	M/C	C&O Canal / Plummers Island	1 Plummers Island: One of the first sites at risk from Phase 1 of the 1495/270 Managed Lanes Project (MLP) is Plummers Island, an NPS historic site of ongoing long-term research. Plummers Island has historic status as part of the Chesapeake and Ohio (C&O) Canal National Historical Park. In addition to being part of C&O Canal NHP, Plummers Island also has historic significance distinct from the C&O Canal NHP designation. Yet Plummers Island is not even mentioned in the March 10, 2021 draft of the Section 106 Programmatic Agreement. The importance of Plummers Island has not yet been adequately recognized in the NEPA DEIS and Section 106 process. See Washington Biologist Field Section 106 letter to Steve Archer dated April 9, 2021. There is a need to build in more specific avoidance, minimization, and mitigation measures for Plummers Island. Context sensitive design option for Plummers Island need to be pursued for an area of unique concern that will experience serious adverse effects. The WBFC has proposed specific mitigation measures that should be considered in the Section 106 process. Avoidance measures should be identified now and not deferred to the design review consultations during the design-build process. Delaying identification of the location and boundaries of this site until after implementation of a Programmatic Agreement prevents consideration of the impacts to the site during alternative selection under NEPA and undermines discussion of potential mitigation measures for any adverse effects under Section 106.	Washington Biologists' Field Club on Plummers Island has been determined eligible for NHP with SHPO concurrence; mitigation measures for 106 must be specific to the historic aspects of the property; other measures (construction impacts) are more appropriate to be included in NEPA. Stipulations regarding mitigation for WBFC on Plummers Island have been included, and consultation will continue.	WBFC has asked for minimizations and avoidances. In Section 106 meetings MDOT leaders suggested some, and then renigged on them. WBFC has no assurances that MDOT will stay within the LOD, or maximally avoid damage to Plummers Island. Moreover, WBFC was provided no map or model showing the extent of overhanging of PI. When WBFC requested lanes be placed on the opposite side of the ALB, and were told this would be considered by MDOT. MDOT's newest model instead added most extra lanes to the PI side of the bridge along with pedestrian-like lane, the landscape of that model was not made clear before section 106 comments were due in October 2021. It was only on 29 Nov 2021 WBFC was shown a draft model with the ALB extending to the LOD, the day before SDEIS comments were due. In January 2022, WBFC requested a detailed map of the LOD on a details contour map of PI. Section 106 leaders informed WBFC two weeks later that they have no such map. Really? SHA had a detailed topographic survey of Plummers Island done in 2020, and a year and a half later, well into the process of pushing their project to the FEIS, MDOT says it can't provide a detailed map with the LOD on it?
332 SC	N/A	Predevelopment contract document review	2 The project's predevelopment contract documents should be immediately scrutinized for language that could be harmful to historic sites, and any such wording discovered should be flagged by those involved in the Section 106 process to MDOT to have it amended or removed. The heavy involvement of the profit-driven private developer in the remainder of the NEPA process is concerning in its own right. The predevelopment contract expected to be signed within a month directs the developer team to: "Eliminate the potential for Unknown Archaeological Remains and Unknown Endangered Species", "Eliminate" is a very odd use of language to use when considering what that could mean in our historical areas and sites of concern, including Womingslar Tabernacle No. 88 Cemetery and Plummers Island. Contract language like that does not impart confidence about what future contracts may look like. Less extreme language such as "re-assess" and "document any" seems more appropriate.	Decline.	WBFC fully agrees with SC comment. We have no assurance that the boundaries proposed, and impact limits suggested will be upheld.
334 SC	N/A	Bridge Permit	2 Although the DEIS mentioned a U.S. Coast Guard (USCG) letter stating that a bridge permit for the American Legion Bridge would not be required, a bridge permit should be required. The bridge permit process is a standard requirement that should be followed, and can further build awareness of and protection for sensitive historic and ecological sites that fall in the vicinity of the American Legion Bridge, including Plummers Island and the C&O Canal NHP.	Permitting question not applicable to Section 106.	WBFC fully agrees with SC comment.

335 SC	N/A	Dust and Crystalline Silica		2 Dust minimization and specifically OSHA crystalline silica construction dust standards must be upheld and the users and visitors of historic parkland and sites adjacent to the widening must be protected. Requirements for this should be included in the Programmatic Agreement. The roads and bridges reconstruction processes required for the Project will create massive amounts of toxic crystalline silica construction dust. This will occur on the American Legion Bridge and the toxic dust will drift downriver and impact Plummers Island and the C&O Canal National Historic Park (the eighth most visited national park during 2020), including its popular towpath. Plummers Island animal and plant life and the biologists studying it would be at risk from this dust. Visitors to the C&O Canal NHP and its towpath will be as well. Such toxic air pollution causes respiratory diseases including asthma, silicosis, chronic obstructive pulmonary disease (COPD), and lung cancer. This is an urgent public health issue. It is not addressed in the DEIS 4 nor in the Programmatic Agreement to date and it needs to be.	Not applicable to Section 106.	WBFC fully agrees with SC comment. Sending toxic dust over a historical property where active research is ongoing must be relevant to Section 106.
338 SC	N/A	ALB Alternatives		2 With reference to historic properties, there remain issues with the lack of appropriate alternatives analysis for the American Legion Bridge.	Current LOD reflects minimization efforts at ALB	WBFC fully agrees with SC comment. The LEDPA has not been adequately or objectively justified in the selection of Alternative 9. Alternative 9 is clearly the most destructive to Plummers Island of all the Alternatives presented.
339 SC	N/A	PA Process		2 A hybrid approach to the Section 106 process which involves Programmatic Agreement for some sites and Memoranda of Agreement for sites that will experience known adverse impacts is appropriate for a project of this nature, magnitude, and complexity.	Decline. The PA will govern resolution of all adverse effects.	WBFC has asked for minimizations and avoidances. In Section 106 meetings MDOT leaders suggested some, and then reneged on them. WBFC has no assurances that MDOT will stay within the LOD, or maximally avoid damage to Plummers Island. Moreover, WBFC was provided no map or model showing the extent of overhang of Pl until Nov 29, 2021. WBFC requested lanes be placed on the opposite side of the ALB, and were told this would be considered by MDOT. MDOT's newest model instead added most extra lanes to the Pl side of the bridge along with pedestrian-bike lane, the landscape view of that model was not made clear before Section 106 comments were due in October 2021. It was only on 29 Nov 2021 WBFC was shown a draft model with the ALB extending to the LOD, the day before SDEIS comments were due. On January 4, 2022, WBFC requested a detailed map of the LOD on a details contour map of Pl. Section 106 leaders informed WBFC two weeks later that they have no such map. Really? SHA had a detailed topographic survey of Plummers Island done in 2020, and a year and a half later, well into the process of pushing their project to the FEIS, MDOT says it can't provide a detailed map with the LOD on it?

APPENDIX F: Rare Flora and Natural Communities of Plummers Island, Montgomery County, Maryland

Rare Flora and Natural Communities
of Plummers Island,
Montgomery County, Maryland



July 2020

Introduction

Plummers Island - an ancient “knickpoint” or rocky falls in the Potomac River Gorge east of Great Falls - is a forested, 12-acre island about nine miles upriver from Washington, D.C. in Montgomery County, Maryland. It holds the distinction of being “the most thoroughly studied island in North America.” Plummers Island has been the home of the Washington Biologists’ Field Club (WBFC) since 1901, shortly after botanist Charles Louis Pollard formed the club and began the search for a field station near Washington, D.C.

In 1959, the club gave the island to the United States (U.S. National Park Service) and has since continued a program of scientific research. For further information on WBFC’s research activities and scientific publications, see <https://WBFC.science>.

A total of 4 globally rare natural communities, two of which are state rare; 21 state-rare extant flora, including one globally rare extant species; and 36 state-rare historic flora, including 4 globally rare historic taxa are known from the island.

Rare Flora and Natural Communities

Rare Natural Communities (in order of lowest to highest in elevation)

Piedmont / Central Appalachian Sand Bar / River Shore (Low Herbs Type): *Eragrostis hypnoides* - *Lindernia dubia* - *Ludwigia palustris* - *Cyperus squarrosus* Herbaceous Vegetation (USNVC: C EGL006483). Non-tidal mudflats. Global/State Ranks: G3/SNR

Potomac Gorge Riverside Outcrop Barren (Potomac Gorge Type): (*Hypericum prolificum*, *Eubotrys racemosa*) / *Schizachyrium scoparium* - *Solidago racemosa* - *Ionactis linariifolia* Herbaceous Vegetation (USNVC: C EGL006491). Global/State Ranks: G2/S1.

Mid-Atlantic High Terrace Hardwood Floodplain Forest: *Acer saccharum* - *Fraxinus americana* / *Carpinus caroliniana* / *Podophyllum peltatum* Forest (USNVC: C EGL006459). Global/State Ranks: G3?/SNR.

Potomac River Bedrock Terrace Hardpan Forest: *Carya glabra* - *Quercus (rubra, montana)* - *Fraxinus americana* / *Viburnum rafinesqueanum* / *Piptochaetium avenaceum* Forest (USNVC: C EGL006209). Global/State Ranks: G1G2/S1.

Rare Flora

Extant Flora

White Bear Sedge (*Carex albursina*) G5/S3 (last vouchered in 2004; observed by Soreng in 2020)

Pubescent Sedge (*Carex hirtifolia*) G5/S3 (last vouchered in 1934)

Flat-spiked Sedge (*Carex planispicata*) G4Q/S1S2 (*R.H. Simmons 3525*, 4 May 2013)

Northern Leatherflower (*Clematis viorna*) G5/S3 (last vouchered in 1982)
 Needle-leaf Panic Grass (*Dichantherium aciculare*) G5/S2? (R.J. Soreng, 8289a, 25 May 2013)
 Open-flower Panic Grass (*Dichantherium laxiflorum*) G5/S1? (last vouchered in 1960; photographed by Simmons in 2015)
 Leatherwood (*Dirca palustris*) G4/S2 T (R.H. Simmons 4067, 6 Nov 2015)
 Harbinger of Spring (*Eriogenia bulbosa*) G5/S3 (last vouchered in 1983; observed by Soreng in 2020)
 Halberd-leaf Rose-mallow (*Hibiscus laevis*) G5/S3 (last vouchered in 1982; photographed by Soreng in 2020)
 Green Violet (*Hybanthus concolor*) G5/S3 (last vouchered in 1960)
 Ostrich Fern (*Matteuccia struthiopteris*) G5/S2S3 (One of the largest known stands in the state. R.H. Simmons 3532, 5 May 2013)
 Two-flower Melic (*Melica mutica*) G5/S3 (last vouchered in 2015, R.J. Soreng 8340)
 Horse-tail Paspalum (*Paspalum fluitans*) G5/S2 E (E.F. Wells 4507, 20 Sep 1997)
 Coville's Phacelia (*Phacelia covillei*) G3/S2 E (R.H. Simmons 3920, 14 May 2015)
 Miami-mist (*Phacelia purshii*) G5/S3 (last vouchered in 1983; observed by Soreng on mossy rocks by plot 21 between 2013 and 2015)
 Hairy Hop-tree (*Ptelea trifoliata* var. *mollis*) G5/S3 (R.H. Simmons 3585, 2 Jun 2013)
 Smooth Wild-petunia (*Ruellia strepens*) G4G5/S2S3 (R.H. Simmons 4221, 9 Oct 2016)
 Pale Dock (*Rumex altissimus*) G5/S1 E (last vouchered in 1997)
 Sticky Goldenrod (*Solidago racemosa*) G5T3?/S1 T (photographed by Soreng in 2020)
 Pink Valerian (*Valeriana pauciflora*) G4/S1 E (last vouchered in 1982)
 Golden-alexanders (*Zizia aurea*) G5/S3 (R.J. Soreng 9336, 29 Apr 2017)

Historic Flora

Earleaf False Foxglove (*Agalinis auriculata*) G3/S1 E (last vouchered in 1936)
 Canada Milkvetch (*Astragalus canadensis* var. *canadensis*) G5/S1 E (last vouchered in 1940)
 Blue Wild Indigo (*Baptisia australis* var. *australis*) G5/S2 T (last seen in 1935 by Killip & Blake)
 Short's Rock Cress (*Boechera dentata*) G5/S3 (last vouchered in 1916)
 Nottoway Valley Brome Grass (*Bromus nottowayanus*) G3G5/S3S4 (last vouchered in 1947)
 Hitchcock's Sedge (*Carex hitchcockiana*) G5/S1 E (last vouchered in 1933)
 Short's Sedge (*Carex shortiana*) G5/S3S4 E (last vouchered in 1928)
 Bur-reed Sedge (*Carex sparganioides*) G5/S3 (last vouchered in 1933)
 Slender Dayflower (*Commelina erecta*) G5/S3 (last vouchered in 1960)
 Spring Coralroot (*Corallorhiza wisteriana*) G5/S1 E (last vouchered in 1915)
 Smartweed Dodder (*Cuscuta polygonorum*) G5/S1 E (last vouchered in 1961)
 Many-flowered Flatsedge (*Cyperus lancastriensis*) G5/S2S3 (last vouchered in 1997)
 Reflexed Flatsedge (*Cyperus refractus*) G5/S2? (last vouchered in 1960)
 Dwarf Larkspur (*Delphinium tricorne*) G5/S3 (last seen in 1935 by Killip & Blake)
 Toothed Tick-trefoil (*Desmodium cuspidatum*) G5/S1 (last vouchered in 1960)
 White Trout Lily (*Erythronium albidum*) G5/S2 T (last vouchered in 1983)
 Downy Milkpea (*Galactia volubilis*) G5/S3 (last vouchered in 1961)
 Striped Gentian (*Gentiana villosa*) G4/S1 E (last vouchered in 1903)
 Western Sunflower (*Helianthus occidentalis*) G5/S1 T (last vouchered in 1940)

Eastern Bloodleaf (*Iresine rhizomatosa*) G5/S1 E (last vouchered in 1915)
¹Violet Bush-clover (*Lespedeza frutescens*) G5/S3 (last vouchered in 1960)
 Bog Twayblade (*Liparis loeselii*) G5/S1S2 (last vouchered in 1917)
 Climbing Milkvine (*Matelea obliqua*) G4?/S1S2 E (last vouchered in 1937)
 Purple Mecardonia (*Mecardonia acuminata* var. *acuminata*) G5/S2 E (last vouchered in 1939)
 Basal Beebalm (*Monarda clinopodia*) G5/S3S4 (last vouchered in 1982)
 Early Forget-me-not (*Myosotis verna*) G5/S3 (last vouchered in 1962)
 Racemed Milkwort (*Polygala polygama*) G5/S1 T (last vouchered in 1950)
 Small Pondweed (*Potamogeton pusillus* ssp. *pusillus*) G5/S2S4 (last vouchered in 1930)
 Whorled Mountain-mint (*Pycnanthemum verticillatum*) G5/S1 E (last vouchered in 1951)
 Virginia Sida (*Ripariosida hermaphrodita*) G3/S1 E (last vouchered in 1938)
 Brown-eyed Susan (*Rudbeckia triloba*) G5/S3 (last vouchered in 1940)
 Sessile-fruited Arrowhead (*Sagittaria rigida*) G5/S1 E (last vouchered in 1930)
 Carolina Willow (*Salix caroliniana*) G5/S3 (last vouchered in 1982)
 Snowy Campion (*Silene nivea*) G4?/S1 E (last vouchered in 1917)
 Riverbank Goldenrod (*Solidago rupestris*) G4?/S1 X (last vouchered in 1903)
 Sand Grape (*Vitis rupestris*) G3/S1 (last vouchered in 1906)

¹[= *Lespedeza violacea* (L.) Pers. (misapplied); “Due to a problem with the type specimen of *Lespedeza intermedia*, the name *Lespedeza violacea*, by which this species has long been known, applies to *L. intermedia*, and the name *L. frutescens* now applies to [*Lespedeza violacea*]” (VBA 2020)]

Key to Global Rank

- G1: At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- G2: At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- G3: At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
- G4: Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5: Common, widespread, and abundant.
- GH: Known only from historical occurrences but still some hope of rediscovery.
- GNR: Not ranked.
- GX: Not located despite intensive searches and virtually no likelihood of rediscovery.

Key to State Rank

- S1: At very high risk of extirpation from the state due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- S2: At high risk of extirpation from the state due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- S3: At moderate risk of extirpation from the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

S4: Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5: Common, widespread, and abundant.
SH: Known only from historical occurrences but still some hope of rediscovery.
SNR: Not ranked.
SX: Not located despite intensive searches and virtually no likelihood of rediscovery.

Federal and State Status

Legal status denotes a simple hierarchy of endangerment in three categories: Endangered (E), Threatened (T), and Endangered Extirpated (X). Federal Status is determined by the U.S. Fish and Wildlife Service.

Federal Status

LE = Listed Endangered - A taxon is threatened with extinction throughout all or a significant portion of its range.

LT = Listed Threatened - A taxon is likely to become endangered in the foreseeable future.

State Status

E = Endangered - A taxon is threatened with extinction throughout all or a significant portion of its range.

T = Threatened - A taxon is likely to become endangered in the foreseeable future.

References

- Fleming, A.H. 2015. Geologic-Geomorphologic Map of Plummers Island. Unpublished report.
- Harrison, J.W. 2016. The Natural Communities of Maryland: 2016 Natural Community Classification Framework. Maryland Department of Natural Resources, Wildlife and Heritage Service, Natural Heritage Program, Annapolis, Maryland. Unpublished report. 35 pages.
- Maryland Natural Heritage Program. 2019. List of Rare, Threatened, and Endangered Plants of Maryland. Maryland Department of Natural Resources, 580 Taylor Avenue, Annapolis, MD 21401. DNR 03-031319-135
- Shetler, S.G., S.S. Orli, E.F. Wells, and M. Beyersdorfer. 2006. Checklist of the Vascular Plants of Plummers Island, Montgomery County, Maryland. Bulletin of the Biological Society of Washington 14:1-57.
- Simmons, R.H. 2015. Native Vascular Flora of the City of Alexandria, Virginia. City of Alexandria Department Recreation, Parks, and Cultural Activities, Alexandria, Virginia.
- Simmons, R.H., A.H. Fleming, and R.J. Soreng. 2016. Natural Communities of Plummers Island, Montgomery County, Maryland. Unpublished report.
- Virginia Botanical Associates. 2020. Digital Atlas of the Virginia Flora (<http://www.vaplantatlas.org>, 23 July 2020). Virginia Botanical Associates, Blacksburg, Virginia.

Prepared by:

Roderick H. Simmons, Robert J. Soreng, Edward M. Barrows, and Louise H. Emmons for the National Parks Conservation Association, July 2020.

Citation:

Simmons, R.H., R.J. Soreng, E.M. Barrows, and L.H. Emmons. 2020. Rare Flora and Natural Communities of Plummers Island, Montgomery County, Maryland. Unpublished technical report.

Cover photo:

A female Silver-spotted Skipper (*Epargyreus clarus*) possibly obtaining nectar from a Northern Leatherflower (*Clematis viorna*). Photo by Meghan T. First.