COMMONWEALTH of VIRGINIA

Department of Historic Resources

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August 28, 2015

Mr. John Haynes
U.S. Army Corps of Engineers
803 Front Street
Norfolk, Virginia 23510

RE: *Phase I Archaeological Survey for James River Streambank Stabilization and Shoreline Erosion Protection, Amherst County, Virginia*
DHR File No. 2015-3417

Dear Mr. Haynes:

The Department of Historic Resources (DHR) has received for our review and comment the report referenced above prepared by the U.S. Army Corps of Engineers (Corps) in July 2014. Our comments are provided as assistance to the Corps in meeting its responsibilities under Section 106 of the National Historic Preservation Act. We are pleased to inform you that the investigations and report are consistent with the federal Secretary of the Interior's *Standards for Archeological Documentation* (48 FR 44734-44742) and our state *Guidelines for Conducting Historic Resources Survey in Virginia* (2011), and DHR accepts the report as a reasonable and good faith effort to identify historic properties.

No archaeological resources were identified in the area of potential effects. Based on the information provided, it is DHR's opinion that a finding of *no historic properties affected* is appropriate for the undertaking.

Thank you for seeking our comments on this report and your consideration of historic properties in the planning of this project. If you have any questions regarding these comments, please do not hesitate to contact me at (804) 482-6103 or gregory.labudde@dhr.virginia.gov.

Sincerely,

Greg LaBudde, Archaeologist
Review and Compliance Division

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Logalbo, Alicia NAO

From: Logalbo, Alicia NAO
Sent: Wednesday, October 28, 2015 6:18 PM
To: 'VirginiaFieldOffice@fws.gov'
Cc: Conner, Susan L. NAO; DuRant, Edward M. NAO; Perdue, Katherine S (Kathy) NAO; Ives, Lawrence H (Larry) NAO
Subject: Online Project Review Certification Letter - James River Streambank Stabilization Project
Attachments: Letter_Online Concurrence_20151028.pdf; JRSSP_BA_20151028.pdf

Attached for your review is the Biological Assessment and project review certification letter for the James River Streambank Stabilization Project. Please note that this project was formerly Consultation Tracking Number: 05E2VA00-2014-SLI-0946 (and the former project name was Amherst Co. Sec. 14 Streambank Stablization), however, I requested a new Official Species List as our point of contact email address has changed, the project name has changed, and also the project area has slightly changed as well. The updated Consultation Code for this project is: 05E2VA00-2016-SLI-0323. If you need any additional information or have any questions, please contact me at any time. Thank you.
Alicia Logalbo

Biologist, Environmental Analysis Section
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JAMES RIVER STREAMBANK STABILIZATION PROJECT

Biological Assessment, Essential Fish Habitat Assessment, and Effects to Anadromous Fish

Norfolk District
803 Front Street
Norfolk, Virginia 23510-1096

October 2015

US Army Corps of Engineers ®

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1.0 PROJECT SUMMARY

The U.S. Army Corps of Engineers (USACE) has authority under Section 14 of the Flood Control Act of 1946, as amended, to construct emergency shoreline stabilization projects in cooperation with a local sponsor. The Amherst County Service Authority (ACSA), within the City of Madison Heights, requested the assistance of the USACE to evaluate erosion issues along the bank of the James River as it is placing the existing sanitary sewer pipeline that runs approximately parallel to the river at imminent risk of rupture. The sanitary sewer pipeline collects raw sewage from approximately 15,000 customers in the Amherst County and conveys raw sewage to the ACSA's Williams Creek Pumping Station which then conveys the sewage to the downstream Lynchburg Sewage Treatment Plan. A rupture in the sanitary sewer pipeline would result in the release of up to approximately 700,000 gallons (per day) of untreated sewage directly into the James River.

Various project alternatives were evaluated to stabilize the eroding banks and the Preferred Alternative is the placement of stone revetment (riprap) at one, continuous estimated 1,250 linear feet stretch along the bank of the James River. The project is partially located within Civitan Park, south of the Blackwater Creek Trail and the Amherst County Service Authority maintenance access road (Figure 1). The construction would include the clearing and re-grading of approximately 0.944 acres of riverbank (areas above the ordinary high water mark), and placement of geotextile filter fabric or equivalent material and stone revetment (riprap). Surrounding areas temporarily impacted by the construction activities would be reseeded with a mixture of native grasses. The riprap would be placed along the slope and top of the riverbank and into the riverbed; the riprap would extend approximately less than five feet from the shoreline (from the ordinary high water mark) into the riverbed. There would be approximately 0.127 acres of permanent, subaqueous riverbed (below the ordinary high water mark) impacted by the riprap.

The anticipated construction material staging area is the gated upland area adjacent to the ACSA Williams Creek Pumping Station (Figure 1). The gated area is an unpaved area containing compacted soils and sparse grass cover. This area is currently used by the ACSA for staging materials. The existing ACSA maintenance road would be used to bring materials to the staging area and to the project areas.

The affected project area within the riverbed has potential habitat for the James spineymussel (*Pleurobema collina*). Therefore, the USACE sponsored a full mussel survey in the study area in accordance with the 2013 Draft Mussel Guidelines provided by the FWS and the Virginia Department of Game and Inland Fisheries. No state or federally listed mussels were observed during the survey.

Based on the results of a wetland assessment conducted on April 6, 2015 by the U.S. Army Corps of Engineers, no impacts to wetlands are anticipated with this project. The toe of the riprap revetment structure will be minimized to the maximum practical extent to reduce impacts to the riverbed. This project is anticipated to have temporary minor, negative impacts to water quality because of the increased total suspended solids in the James River resulting from construction activities. Turbidity impacts will be temporary and are anticipated to extend no more than 50 feet from the riprap. However, the long-term impacts to water quality will be beneficial as the riprap revetment will result in reduced shoreline erosion and likewise, reduced total suspended solids in the James River.

A storm water pollution prevention plan will be developed prior to construction that will define erosion control and best management practices inspection procedures to ensure construction impacts to stormwater and the downstream James River are minimized to the maximum practical extent. A turbidity curtain will be installed to minimize impacts to water quality (total suspended solids) within the James River and confine impacts to the maximum practical extent to the construction sites. Construction is planned for winter 2015-2016.

2.0 PREFERRED ALTERNATIVE

Various project alternatives were evaluated to stabilize the eroding banks and the Preferred Alternative is the placement of stone revetment (riprap) at one, continuous 1,250 linear feet long stretch along the bank and shoreline of the James River (Figure 1). The construction would include the clearing and re-grading of approximately 0.944 acres of riverbank (above the ordinary high water mark), and placement of geotextile filter fabric or equivalent material and stone revetment (riprap). Surrounding areas temporarily impacted by the construction activities would be reseeded with a mixture of native grasses. The riprap would be placed along the slope and top of the riverbank and into the riverbed; the riprap would extend approximately less than five feet from the shoreline (below the ordinary high water mark) into the riverbed. There would be approximately 0.127 permanent acres of subaqueous riverbed impacted by the riprap.

The anticipated construction material staging area is the gated upland area adjacent to the Amherst County Service Authority Williams Creek Pumping Station (Figure 1). The gated area is an unpaved area containing compacted soils and sparse grass cover. This area is currently used by the Amherst County Service Authority for staging materials. The existing Amherst County Service Authority maintenance road would be used to bring materials to the staging area and to the project areas.

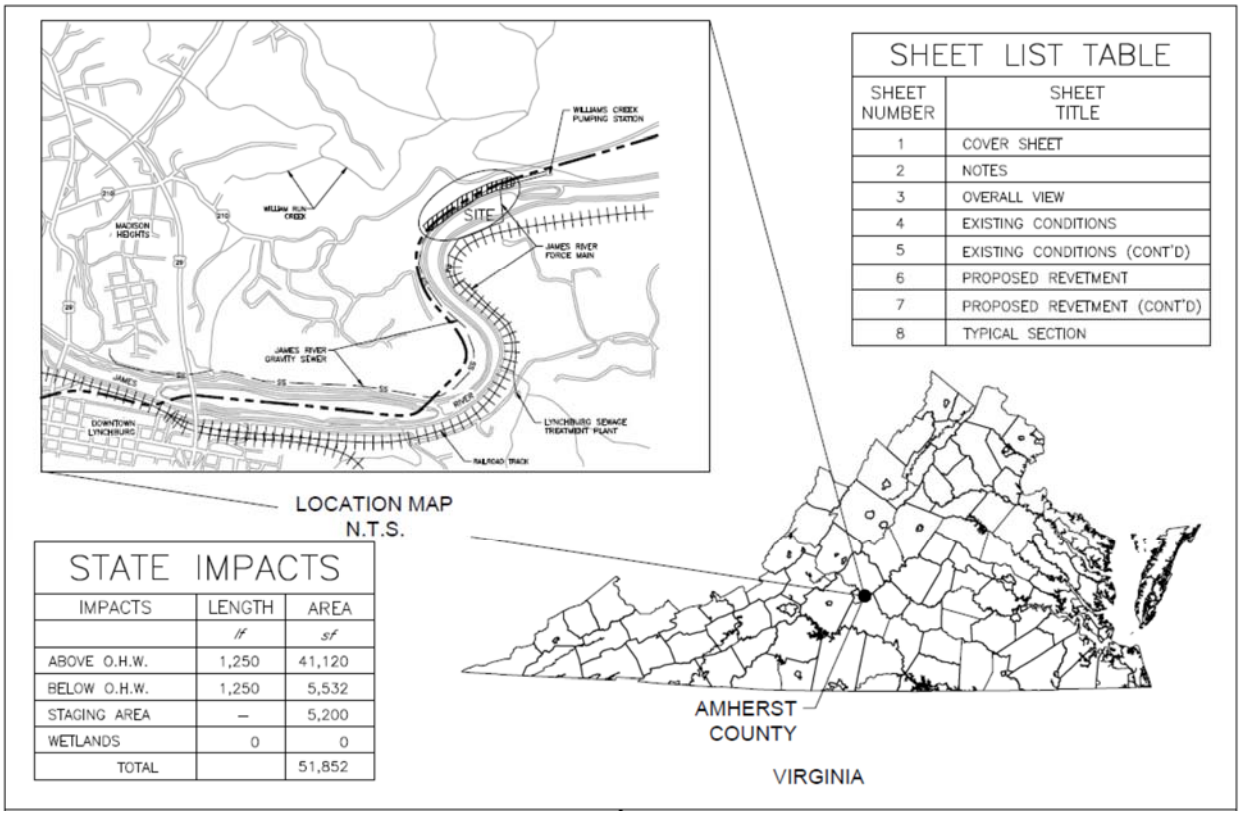

Figure 1. Location of proposed project site along the northern bank and shoreline of the James River.

3.0 AFFECTED ENVIRONMENT

3.1 GENERAL ENVIRONMENTAL SETTING

3.1.1 PHYSIOGRAPHY AND TOPOGRAPHY

The Study Area is located along the shoreline and bank of the James River which flows primarily along an east-west axis at 37°N latitude in the Northern Piedmont Physiogeographic Region. The Study Area is located within some of the lowest lying elevations within the Northern Piedmont Region. The James riverbed is the lowest lying topography within the Study Area and is located proximate to the steeply (approximately two (horizontal) to one (vertical)) sloped riverbank.

3.1.2 CLIMATE

The project area has a four-season humid subtropical climate, with cool winters and hot, humid summers. Monthly average temperatures range from 25°F in January to 87°F in July, with an annual mean of 56 °F (U.S. Climate Data 2015). Nights tend to be significantly cooler than days throughout much of the year due in part to the moderate elevation. Monthly average precipitation ranges from 2.91 inches in February to 4.37 inches in July, with an annual mean of 41.62 inches (U.S. Climate Data 2015). Average annual snowfall is 15.00 inches (U.S. Climate Data 2015). Weather data was compiled for Lynchburg, Virginia, 1981-2010 (U.S. Climate Data 2015).

3.2 GEOLOGY AND SOILS

The soils are classified as nonhydric combs loam (U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS) 2009). These floodplain soils are characterized by frequent flooding events and have alluvium parent material that was derived from granite and gneiss, schist, greenstone, phyllite, sandstone and shale, and/or limestone (NRCS 2009). The soils in this area were formed by both residual and transported materials. Soil formed from alluvial sediments (unconsolidated materials such as gravel, sand, silt, and clay and mixtures of these materials) that were transported by water and deposited onto the floodplain.

The two main types of rock that occur in Amherst County are igneous and metamorphic rocks (NRCS 2009). Granite parent material that formed soil in this area was from igneous rock. Metamorphic rock is igneous or sedimentary rock that was changed from heat and pressure inside the Earth. Granite gneiss is a type of metamorphic rock found in this county. The Northern Piedmont climate induces rapid weathering of the parent material allowing for the transport of clays and minerals.

3.3 HYDROLOGY

The James River is 410 miles long and drains 10,432 miles of watershed and is entirely located within the Commonwealth of Virginia (FWS 2015b). The James River is Virginia's largest river, flowing across the entire state from its headwaters at Iron Gate to its mouth at the Chesapeake Bay at Fort Monroe (FWS 2015b). The mainstem of the James River in the Valley and Ridge Section is characterized by well developed riffles, runs, and pools (Benke and Cushing 2005). The hydrology substantially shifts from its headwaters in its Valley Ridge Section as it flows into the Northern Piedmont. North of the City of Lynchburg, flow in the James River is controlled by three dams that regulate flow through shallow impoundments. The dams reduce the depth and velocity diversity that is characteristic of the adjacent

upstream areas. Downstream of the Study Area, annual discharge at the City of Richmond, just upstream of the tidal portions of the river, is approximately 213 meters^3/second or approximately four times greater than at the river's headwaters (Benke and Cushing 2005). The highest discharges from the James River occur during late winter and spring while the lowest discharges occur during late summer and fall (Benke and Cushing 2005).

3.4 VEGETATION

The Study Area is generally characterized as steeply sloped, eroding riverbanks located adjacent to the James River that are denuded of vegetation in many areas but also contain a mixture of hardwoods, grasses, and herbaceous species. Many of the mature hardwoods along the riverbank were falling into the riverbed and dying vegetation was observed that had previously fallen into the riverbed, presumably from the erosion occurring in this area. The top of the riverbank is a disturbed area mainly vegetated with a mixture of hardwoods, grasses, and herbaceous species. The ACSA maintenance road in the Study Area is largely devoid of vegetation but does contain some grasses and herbaceous vegetation. The locked gated area adjacent to the Williams Creek Pumping Station (Figure 1) is a disturbed area that is sparsely vegetated with grass and herbaceous species. A of list commonly observed vegetation species in the Study Area is provided in Table 1. No submerged aquatic vegetation is found in the portions of the James River located in the Study Area.

Table 1. List of commonly observed vegetation species occurring in the Study Area.

SPECIES	COMMON NAME
Acer negundo	box elder
Acer saccharinum	silver maple
Alliaria petiolata	garlic mustard
Allium sp.	onion
Equisetum sp.	horsetail
Genista tinctoria	greenweed
Lamium amplexicaule	hensbit
Lindera benzoin	spicebush
Mertensia virginica	Virginia bluebell
Platanus occidentalis	American sycamore
Prunus serotina	cherry tree
Viola spp.	violet

3.5 AQUATIC RESOURCES AND WILDLIFE

3.5.1 AQUATIC RESOURCES

***Essential Fish Habitat*.** The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act strengthened the ability of the National Marine Fisheries Service (NMFS) and Fishery Councils to protect and conserve the habitat of marine, estuarine, and anadromous finfish, mollusks, and crustaceans. This habitat is termed "essential fish habitat" and is broadly defined to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to

maturity." The Act requires the Councils to describe and identify the essential habitat for the managed species, minimize to the extent practicable adverse effects on essential fish habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of essential fish habitat. The Study Area is located west of the defined geographic limits of essential fish habitat as defined by the NMFS; therefore there would be no effect to essential fish habitat and we dismiss this topic from further consideration.

***Aquatic Community*.** The Study Area is located west of the tidal fall line and supports freshwater aquatic species and to a lesser extent, anadromous fish species. Anadromous fish species may be present in the Study Area but are not likely abundant as they typically occur further east in the Fall Line and the Coastal Plain (Benke and Cushing 2005). The portion of the Study Area located within the James River is between the upstream Percival Dam and downstream Bosher's Dam. There was a vertical slot fishway installed in the Bosher's dam in 1999 that allows for passage of anadromous fish to upstream areas (Musick 2005). The fish community is diverse in the Study Area with more than 90 fish species with the potential to occur in the Study Area (VDGIF 2015). Dominant fish species within the Study Area include the common carp (*Cyprinus carpio*), catostomids, such as the golden (*Moxostoma erythrurum*) and shorthead red-horse (*Moxostoma macrolepidotum*), and sunfish species (*Lepomis spp.*) (Benke and Cushing 2005). Mussels and snail species observed in the Study Area during a freshwater mussel survey conducted in 2014 were the eastern elliptio mussel (*Elliptio complanata*), the northern lance (*Elliptio fisheriana*), the invasive Asiatic clam (*Corbicula fluminea*), the Piedmont elimia (*Elimia virginica*), and the crested mudalia (*Leptoxis carinata*) (The Catena Group, Inc. 2014). The eastern elliptio was the most abundant mussel species observed during the survey and only two shells (no live mussels) of the northern lance were detected during the survey. Results of the mussel survey are provided in Appendix B. A listing of aquatic species with the potential to occur in and/or near the Study Area compiled from the VaFWIS (species within a 3-mile radius of the Study Area) (VDGIF 2015), Information for Planning and Conservation (IPaC) (species in Study Area) (FWS 2015c), and Virginia Natural Heritage databases (DCR 2015) is provided in Appendix C.

***Jurisdictional Wetlands*.** The lateral limits of federal jurisdiction for non-tidal wetlands as defined per Section 404 of the Clean Water Act is defined by the Ordinary High Water Mark in the absence of adjacent wetland vegetation. If adjacent wetland vegetation is present, the jurisdictional area will extend to the limits of the adjacent wetland vegetation.

The lateral extent of federal jurisdiction per Section 404 of the Clean Water Act at the Study Area is defined by the Ordinary High Water Mark as the adjacent riverbank area is not defined as a wetland due to its lack of hydric soils. Although submerged vegetation is relatively common in many of the Piedmont regions of the James River (Benke and Cushing 2005), submerged aquatic vegetation is not located in the Study Area, possibly due to the substantial water velocities that occur in this section of the James River.

3.6 THREATENED AND ENDANGERED SPECIES AND ANANDROMOUS FISH TRUST RESOURCES

Animals and plants listed as endangered or threatened are protected under the Endangered Species Act of 1973, as amended (ESA). According to the ESA, "endangered species" is defined as any plant or animal species in danger of extinction throughout all or a substantial portion of its range. A "threatened species" is any species likely to become an endangered species in the foreseeable future throughout all or a substantial part of its range. "Proposed Species" are animal or plant species proposed in the Federal Register to be listed under Section 4 of the ESA. "Candidate Species" are

species for which the FWS and NMFS have sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA.

This section provides a summary of the state and federally listed species that have the potential to occur in the Study Area. The following references were consulted for inclusion of applicable information into this section: Virginia Fish and Wildlife Information Service (VaFWIS) database search within a three mile radius of the Study Area (VDGIF 2015), IPaC database search (FWS 2015c), and the Virginia Natural Heritage Database Search (DCR 2015). A copy of the reports generated from the federal and state databases is provided in Appendix C. We also coordinated with the VDGIF and the DCR and requested lists of species known to occur in the project area but did not receive additional lists of species from these state agencies. Federal and state listed species having the potential to occur in the Study Area are described in Table 2.

Table 2. Federally and state listed species with the potential to occur in the Study Area.

TAXONOMIC GROUP/SPECIES	COMMON NAME	FEDERAL STATUS	COMMONWEALTH OF VIRGINIA STATUS	BREEDING IN STUDY AREA
Invertebrates				
Fusconaia masoni	Atlantic pigtoe		T	no
Lasmigona subviridis	green floater		T	no
Paravitrea hera	spirit supercoil		E	no
Pleurobema collina	James spinymussel	E	E	no
Mammal				
Myotis septentrionalis	northern long-eared bat	T		u

E=endangered, T=threatened, u=unknown

Northern long-eared bat. The FWS listed the northern long-eared bat (*Myotis septentrionalis*) threatened on April 2, 2015 with no designated critical habitat. The most severe threat attributed to the substantial population decline of the northern long-eared bat has been the widespread spread of the White-Nosed Syndrome that is caused by the fungal infection *Pd* (*Pseudogymnoascus destructans*). The Study Area is located within the managed White-Nose Syndrome Buffer Zone as defined by the FWS (2015e). Populations in Virginia are thought to have declined by 96% and are anticipated to decline with the continued spread of the White-Nose Syndrome (VDGIF 2014, unpublished data in FWS 2015a). The northern long-eared bat is a dark brown on its back with lighter coloration underneath with a wingspan of approximately 9-10 inches and is approximately 3 – 3.7 inches in body length (FWS 2015a). This bat is distinguished from other similar bat species in its genus by the length of its ears that extend past its nose when folded. During the winter, northern long-eared bats hibernate in caves and mines called hibernacula. During the summer, this species roosts beneath bark and in cavities of both live and dead trees (snags). They will also roost in human-made structures such as culverts, barns, and sheds. Females give birth to one young during the summer. There are no known surveys of this species in the Study Area so it unknown if they forage and/or roost in the Study Area. No reported natural hibernacula are located in the Study Area. It is unknown if northern long-eared bats migrate through the Study Area.

Federally and State Listed Mussels. The FWS listed the James spineymussel (*Pleurobema collina*) endangered on July 22, 1988 with no designated critical habitat. This species has been

extirpated from 90% of its historical range (FWS 1990). Threats to the continued existence of this species include declining water quality, disease, and competition with the invasive Asian clam (*Corbicula fluminea*). Siltation of its natural habitat is thought to be a substantial factor that led to the decline of this mussel species (FWS 1990). The James spinymussel is a small, freshwater mussel that inhabits the James River drainage and the Dan/Mayo River Systems in Virginia, North Carolina, and West Virginia (FWS 2015f). Adults are slightly less than three inches in length, brown in color, and characterized by notable growth rings and sometimes contain spines on each valve (FWS 2015f). Juvenile mussels have a yellow shell that sometimes contains short spines (FWS 2015f).

Because of the potential habitat for this species in the Study Area, a full freshwater mussel survey in accordance with the Freshwater Mussel Guidelines for Virginia (FWS and VDGIF 2008) was conducted by a certified surveyor from October 30-31 in 2014 (A copy of the survey is provided in Appendix B). James spineymussels were not detected during the survey, however two freshwater mussel species that are not state or federally protected were observed during the survey. The Asian clam was also detected during the survey.

Based on the VaFWIS (VDGIF 2015) and Virginia Natural Heritage reports (VDCR 2015), three other state listed mussels besides the James spineymussel have the potential to occur in the Study Area (Table 3). This includes the threatened green floater (*Lasmigona subviridis*) which has been documented to occur in the James River by the VDGIF. However, based on the results of the mussel survey, none of the state listed species that have the potential to occur in the Study Area were found in the Study Area.

Atlantic Sturgeon. The Study Area is located west of the reported geographic range of the Atlantic sturgeon (*Acipenser oxyrinchus*) (Musick 2005); therefore we do not anticipate that Atlantic Sturgeon occur in the Study Area and dismiss it from further analysis because there would be no effect to Atlantic Sturgeon.

Anadromous Fish Trust Resources. Anadromous fish inhabit oceanic habitats for part of their lifecycle but spawn in freshwater or estuarine habitats. Anadromous fish are a trust resource protected under the Magnuson-Stevens Fishery Conservation and Management Act, as amended, and managed by the NMFS. Although the Study Area is located between the Percival Dam and Bosher's Dam, a vertical slot fishway was installed in the Bosher Dam in 1999 that allows passage of anadramous fish from the Bosher's Dam to the Study Area. Although we did not survey the Study Area, it is possible anadromous fish occur in this reach of the James River as they are reported to occur in the James River adjacent to the James River National Wildlife Refuge downstream of the Study Area (FWS 2015d). Therefore, there is a potential that anadromous fish occur in the Study Area. Anadromous fish that have the potential to occur in the Study Area are provided in Table 3.

Table 3. Anadromous fish with the potential to occur in the Study Area.

SPECIES	COMMON NAME	POTENTIAL TO BREED IN PROJECT AREA	POTENTIAL TO FORAGE AND SHELTER IN PROJECT AREA?
Alosa pseudoharengus	alewife	yes	yes
Alosa sapidissima	American shad	yes	yes
Morone saxatilis	striped bass	yes	yes
Alosa aestivalis	blueback herring	yes	yes
Perca flavescens	yellow perch	yes	yes
Alosa mediocris	hickory shad	yes	yes

4.0 ENVIRONMENTAL IMPACTS AND AFFECT DETERMINATIONS FOR THREATENED AND ENDANGERED SPECIES AND TRUST RESOURCES

A discussion of the anticipated environmental impacts of the No action Alternative and the Riprap Revetment Alternative to threatened and endangered species and andromous fish trust resources is provided in Section 4.1.

The No Action Alternative serves as a baseline against which alternatives can be evaluated. Evaluation of the No Action Alternative involves assessing the environmental effects that would result if existing conditions were maintained.

4.1 THREATENED AND ENDANGERED SPECIES AND ANADROMOUS FISH TRUST RESOURCES

No-Action Alternative

Analysis. Fish and wildlife resource would remain unchanged; therefore, there would be no impact to fish and wildlife resources. Therefore, there would be no effect to the northern long-eared bat, the James spineymussel, or state listed mussel species. There would be no effect to anadromous fish trust resources.

Cumulative Impacts. No cumulative impacts would result from implementation of the No Action Alternative with other past, present, or reasonably foreseeable actions.

Riprap Revetment Alternative

Northern Long-eared Bat Analysis. Approximately less than one-acre of trees will be permanently removed to regrade the riverbank prior to placement of the riprap. Some of the trees that will be removed are greater than three inch diameter breast height, which is the approximate diameter of trees used by the northern long-eared bats for roosting and pupping. No reported surveys of the northern long-eared bat have been conducted in the Study Area, therefore, it is unknown if the northern long-eared bat is foraging, roosting, pupping, and/or migrating through the Study Area. Tree removal will not be conducted April 15 – September 15 to reduce any potential impacts to roosting northern long-eared bats. During survey, there may be some touching, bending back, and removal of tree branches; however, no more than an estimated five tree branches would be impacted by the survey methods. Therefore, we anticipate impacts to the northern long-eared bats and its habitat will be permanent, adverse, and negligible. Therefore, implementation of the Riprap Revetment Alternative is not likely to adversely affect the northern long-eared bat.

James Spineymussel Analysis. Based on the full mussel survey conducted in October 2014, the Study Area contains adequate habitat, however, the James Spineymussel is not found in the Study Area. The toe of the riprap has been minimized to the maximum practical extent to reduce impacts to potential James spineymussel habitat. Temporary disturbance from noise, turbidity, and/or reduced dissolved oxygen levels to potential James spineymussel habitat is anticipated during project construction. It is anticipated that turbidity and TSS in the water column will be elevated from a maximum distance of 50 feet from the riprap placement area. The construction will result in temporary, adverse, minor effects to potential James spineymussel habitat in the Study Area. Following construction, a total estimated 0.127 acre of James River benthic habitat will be permanently converted from sandy sediment to the rock revetment. This will result in a permanent loss of potential habitat for the James spineymussel. Following construction, the riprap will reduce erosion into the James River and will serve to provide a negligible improvement to water quality by reducing turbidity and TSS in the immediate vicinity of the riprap. This type of water quality improvement would have a negligible benefit to the James spineymussel.

Therefore, following construction, the effects to the James spineymussel and its habitat would range from temporary to permanent and would range from adverse – beneficial, negligible to minor impacts. Therefore, implementation of the Riprap Revetment Alternative is not likely to adversely affect the James spineymussel. (Impacts to state listed mussels are not separately described as they would be at the same level of impacts anticipated to the James spineymussel.)

The Species Conclusions Table (Table 4) summarizes the anticipated effect of the project to listed species with the potential to occur in the project area and bald eagles.

Table 4. Species Conclusion Table.

SPECIES / RESOURCE NAME	CONCLUSION	ESA SECTION 7 / EAGLE ACT DETERMINATION	NOTES / DOCUMENTATION
James spinymussel (*Myotis septentrionalis*)	Suitable habitat present, species not present	Not likely to adversely affect	October 30-31, 2014 survey by qualified, permitted surveyor (Catena Group) indicated absence.
Critical habitat	No critical habitat present	No effect	James spinymussel does not have listed critical habitat.
Bald eagle	Unlikely to disturb nesting bald eagles. Does not intersect with eagle concentration area.	Not likely to adversely affect	No documented recent nesting in the project area. Foraging may be temporarily disturbed during project construction.
Candidate species	No species present.	No effect	
Northern long-eared bat (*Myotis septentrionalis*)	Suitable habitat present and no current survey conducted	Not likely to adversely affect	Project is for hazardous tree removal – trees to be removed to protect public sanitary sewer infrastructure. Less than one acre of trees is anticipated to be removed that are greater than or equal to three inches (diameter breast height). The overall nature/function of the forested riparian habitat will not be changed by this project. No known maternity roosts or hibernacula are documented within five miles of the project area. Project is anticipated to be constructed during winter when bats (if present) would not be present in the project area.

Anadromous Trust Resources Analysis. The toe of the riprap has been minimized to the maximum practical extent to reduce impacts to anadromous fish habitat. The construction and placement of the riprap is not anticipated to impede fish migrations as the riprap will extend less than five feet into the James River. Temporary disturbance from noise, turbidity, and/or reduced dissolved oxygen levels to anadromous is anticipated during project construction. It is anticipated that turbidity and TSS in the water column will be elevated from a maximum distance of 50 feet from the riprap placement area. The construction will result in temporary, adverse, minor effects to anadromous fish in the Study Area. There is no submerged aquatic vegetation present in the Study Area. Following construction, a total estimated 0.127 acre of James River benthic habitat will be permanently converted from sandy sediment to the rock revetment. Following construction, the riprap will reduce erosion into the James River and will serve to provide a negligible improvement to water quality by

reducing turbidity and TSS in the immediate vicinity of the riprap. This type of water quality improvement would have a negligible benefit to anadromous fish. Impacts to anadromous fish would be temporary to permanent and range from negative to beneficial with a negligible – minor level of impact. Therefore, implementation of the Riprap Revetment Alternative may affect, but is not likely to adversely affect anadromous fish.

Cumulative Impacts. No cumulative Impacts would result from implementation of the Riprap Revetment Alternative with other past, present, or reasonably foreseeable actions.

5.0 REFERENCES

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Musick, J.A. 2005. Essential fish habitat of Atlantic sturgeon Acipenser oxyrinchus in the southern Chesapeake Bay. VIMS Special Scientific Report # 145. http://web.vims.edu/GreyLit/VIMS/ssr145.pdf (accessed 6 August 2015).

The Catena Group. 2014. Freshwater Mussel Survey Report. James River Streambank Protection Project: Amherst Co., VA. Prepared for the U.S. Army Corps of Engineers. Report dated December 16, 2014.

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Appendix A – Coordination and Consultation Correspondence with Regulatory Agencies

Logalbo, Alicia NAO

From: Logalbo, Alicia NAO
Sent: Wednesday, October 28, 2015 1:48 PM
To: 'Ewing, Amy (DGIF)'
Cc: DuRant, Edward M. NAO; Ives, Lawrence H (Larry) NAO; Conner, Susan L. NAO; Perdue, Katherine S (Kathy) NAO
Subject: RE: ESSLog# 35616_USACE_Amherst County Service Authority_pipeline protection
Attachments: Amherst County - James River_ JPA_20151027_FINALE.pdf

Amy,
Thank you so much for your comments to the James River Streambank Stabilization Project, Amherst County, Virginia. We greatly value the input of the Virginia Department of Game and Inland Fisheries (VDGIF) for our project reviews. I wanted to let you know that the project area has been changed slightly and the overall total estimated linear feet of the riprap project has been reduced to 1,250 linear feet due to funding constraints. The revised, estimated project location is attached for your reference. As recommended by the VDGIF, we relocated the freshwater mussels upstream of the project site. A total of 122 Elliptio complanata were relocated upstream and relocation efforts were completed on October 22, 2015. A road will not be constructed as part of this project as the existing Amherst County Service Authority Maintenance Road will be used for egress and ingress from the construction site. Construction is planned for winter only so this addresses your time of year restriction recommendations. We concur with your sediment and erosion control measures described below and we will utilize cofferdams during construction. Also, for safety reasons, construction will be limited to low flow conditions as well. We concur with your recommendations regarding streamflow. There will be no mixing or pouring of concrete at the construction site. We concur with your recommendation to use native plantings and a native see mixture is planned to revegetate areas temporarily disturbed by construction activities. Thank you again for your recommendations and if you have any questions or concerns, please contact me anytime. Thank you again for your review of our project.
Alicia Logalbo

-----Original Message-----
From: Ewing, Amy (DGIF) [mailto:Amy.Ewing@dgif.virginia.gov]
Sent: Tuesday, April 07, 2015 10:05 AM
To: Logalbo, Alicia NAO <Alicia.Logalbo@usace.army.mil>
Cc: Cason, Gladys (DGIF) <Gladys.Cason@dgif.virginia.gov>; Watson, Brian (DGIF) <Brian.Watson@dgif.virginia.gov>; Smith, Scott (DGIF) <Scott.Smith@dgif.virginia.gov>
Subject: [EXTERNAL] ESSLog# 35616_USACE_Amherst County Service Authority_pipeline protection

We have reviewed the subject project that proposes to construct pipeline and streambank stabilization in a segment of the James River in Amherst County.

The James River at this site has been designated a Threatened and Endangered Species Water due to the presence of this species. The Catena Group performed a mussel survey at this site in 2014. A number of common mussels were documented from within the survey segment, but no listed mussels were found. Based on the results of this survey, we recommend that the applicant move forward with the mussel relocation prior to project commencement in summer 2015, as stated in the JPA, and that all instream work associated with this project adhere to a time of year restriction protective of mussels known from the James River from April 15 through June 15 and August 15 through September 30 of any year. It appears the project also proposed to develop or improve in some fashion a road (temporary or otherwise) along the river. To best protect listed mussels, we recommend maintaining undisturbed naturally vegetated buffers of at least 300 ft on both sides of the James River at this site.

The James River also has been designated a Potential Anadromous Fish Use Area. Therefore, we also recommend a time of year restriction on all instream work from March 15 through June 30 of any year.

We recommend conducting any in-stream activities during low or no-flow conditions, using non-erodible cofferdams or turbidity curtains to isolate the construction area, blocking no more than 50% of the streamflow at any given time, stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, revegetating barren areas with native vegetation, and implementing strict erosion and sediment control measures. To minimize harm to the aquatic environment and its residents resulting from use of the Tremie method to install concrete, installation of grout bags, and traditional pouring of concrete, we recommend that such activities occur only in the dry, allowing all concrete to harden and cure prior to contact with open water.

We recommend use of native species for all plantings.

Thanks, Amy

Amy Ewing * Environmental Services Biologist/FWIS Manager * VA Dept. of Game and Inland Fisheries * 4010 West Broad St. Richmond, VA 23230 * 804-367-2211 * www.dgif.virginia.gov <http://www.dgif.virginia.gov/>

Logalbo, Alicia NAO

From: Logalbo, Alicia NAO
Sent: Wednesday, October 28, 2015 4:57 PM
To: (Rene.hypes@dcr.virginia.gov)
Cc: 'Ewing, Amy (DGIF)'; Conner, Susan L. NAO; Perdue, Katherine S (Kathy) NAO; Ives, Lawrence H (Larry) NAO; DuRant, Edward M. NAO
Subject: Response to ACE, Emergency Streambank Protection, Section 14 James River Comments
Attachments: Amherst County - James River_ JPA_20151027_FINALE.pdf; 68722 ACE EMERGENCY STREAMBANK PROTECTION SECTION 14 JAMES RIVER.pdf

Rene,
Thank you so much for your comments to the James River Streambank Stabilization Project, Amherst County, Virginia. We greatly value the input of the Virginia Department of Conservation and Recreation for our project reviews. I wanted to let you know that the project area has been changed slightly and the overall total estimated linear feet of the riprap project has been reduced to 1,250 linear feet due to funding constraints. The revised, estimated project location is attached for your reference. As recommended by the Virginia Department of Game and Inland Fisheries (VDGIF), we relocated the freshwater mussels upstream of the project site. A total of 122 Elliptio complanata were relocated upstream and relocation efforts were completed on October 22, 2015. During our survey and relocation efforts, no state or federally listed threatened or endangered species were observed. We concur that strict adherence to erosion and sedimentation control and protective stormwater measures are needed for this project. We will be utilizing cofferdams as recommended by the VDGIF for this project. Also, we concur with your recommendation to maintain natural stream flow and we will also be restoring any areas of riparian buffer temporarily disturbed by the project with native vegetation. If you have any questions regarding the project or would like any additional information, please feel free to contact me anytime. Thank you again for your comments.
Alicia Logalbo

Biologist, Environmental Analysis Section
Planning & Policy Branch, Water Resources Division
U.S. Army Corps of Engineers, Norfolk District
803 Front Street
Norfolk, VA 23510
(757)201-7210 office

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

Joe Elton
Deputy Director of Operations

Rochelle Altholz
Deputy Director of Administration
and Finance

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804)786-6124

April 29, 2015

Alicia Logalbo
USACOE-Norfolk District
803 Front Street
Norfolk, VA 23510

Re: ACE, Emergency Streambank Protection, Section 14 James River

Dear Ms. Logalbo:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Williams Run off Rt. 10 Stream Conservation Unit (SCU) is located within two miles of the project area. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The Williams Run off Rt. 10 SCU has been given a biodiversity ranking of B4, which represents a site of moderate significance. The natural heritage resource associated with this site is:

Aquatic Natural Community G3/S3/NL/NL

The documented Aquatic Natural Communities are based on Virginia Commonwealth University's INSTAR (*Interactive Stream Assessment Resource*) database which includes over 2,000 aquatic (stream and river) collections statewide for fish and macroinvertebrate. These data represent fish and macroinvertebrate assemblages, instream habitat, and stream health assessments. The associated Aquatic Natural Community is significant on multiple levels. First, this stream is a grade B, per the VCU-Center for Environmental Sciences (CES), indicating its relative regional significance, considering its aquatic community composition and the present-day conditions of other streams in the region. This stream reach also holds a "Healthy" stream designation per the INSTAR Virtual Stream Assessment (VSS) score. This score assesses the similarity of this stream to ideal stream conditions of biology and habitat for this region. Lastly, this stream contributes to high Biological Integrity at the watershed level (2nd order) based on the number of native/non-native, pollution-tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

Threats to the significant Aquatic Natural Communities and the surrounding watershed include water quality degradation related to point and non-point pollution, water withdrawal and introduction of non-native species. To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations, establishment/enhancement of riparian buffers with native plant species and maintaining natural stream flow.

Additionally, the Green floater (*Lasmigona subviridis*, G3/S2/NL/LT), has been historically documented in the James River. The Green floater, a rare freshwater mussel, ranges from New York to North Carolina in the Atlantic Slope drainages, as well as the New and Kanawha River systems in Virginia and West Virginia (NatureServe, 2009). In Virginia, there are records from the New, Roanoke, Chowan, James, York, Rappahannock, and Potomac River drainages. Throughout its range, the Green floater appears to prefer the pools and eddies with gravel and sand bottoms of smaller rivers and creeks, smaller channels of large rivers (Ortman, 1919) or small to medium-sized streams (Riddick, 1973). Please note that this species has been listed as state threatened by the Virginia Department of Game and Inland Fisheries (VDGIF).

Considered good indicators of the health of aquatic ecosystems, freshwater mussels are dependent on good water quality, good physical habitat conditions, and an environment that will support populations of host fish species (Williams et al., 1993). Because mussels are sedentary organisms, they are sensitive to water quality degradation related to increased sedimentation and pollution. They are also sensitive to habitat destruction through dam construction, channelization, and dredging, and the invasion of exotic mollusk species.

In addition, James River 3 is downstream of the project area and has been designated by the VDGIF as a "Threatened and Endangered Species Water." The species associated with this T & E Water is the Atlantic pigtoe.

Due to the legal status of the Green floater and Atlantic pigtoe, DCR recommends coordination with Virginia's regulatory authority for the management and protection of these species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570). DCR also request copies of additional surveys conducted for relocation efforts in 2015 as indicated in the conclusion section of the "Freshwater Mussel Survey Report –James River Streambank Protection Project-Amherst County, VA".

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

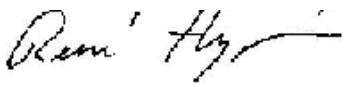
There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov).

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,



S. Rene' Hypes
Project Review Coordinator

CC: Ernie Aschenbach, VDGIF

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Appendix B – Freshwater Mussel Survey Report

Freshwater Mussel Survey Report

James River Streambank Protection Project:
Amherst Co., VA

James River within the survey area

Prepared For:

US Army Corps of Engineers®

US Army Corps of Engineers
803 Front Street
Norfolk, VA 23510-1096

Prepared By:

The Catena Group

The Catena Group, Inc.
410-B Millstone Drive
Hillsborough, NC 27278
Tel (919) 732-1300

December 16, 2014

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1.0 INTRODUCTION

The existing 24-inch interceptor gravity sewer line running along the James River below the City of Lynchburg and maintained by Amherst County Service Authority (ACSA) is in imminent danger of being damaged through river bank erosion. The sewer line is located along a narrow area between the James River and Blackwater Creek Trail and the access road that is used to service and maintain it. Restoration and protection of the streambank is required in order to proactively prevent damage to and catastrophic spillage from the sewer line. Four distinct areas consisting of a combined 2,000 linear feet of streambank and extending approximately 10 feet into the river are slated for repair as part of the James River Streambank Stabilization and Shoreline Erosion Protection Project (the Project) being undertaken under the direction of the US Army Corps of Engineers (USACE) Norfolk District.

This portion of the James River may provide habitat for the Federally Endangered/ State Endangered James Spinymussel (*Pluerobema collina*) in addition to other mussel species. As such, the Catena Group Inc. (Catena) was retained by USACE to create and implement a plan to characterize mussel presence/absence and available habitat and conduct relocations according the US Fish and Wildlife Service (USFWS) and Virginia Department of Game and Inland Fisheries (VDGIF) guidelines for the Project. This report details the results of the initial survey efforts conducted by Catena October 27 and 28, 2014. Per VDGIF guidelines, relocations will be conducted for the project within 45 days of construction, which is planned for summer 2015.

2.0 WATERS SURVEYED: James River

The James River is a large riverine system approximately 350 miles in length, originating in the Ridge and Valley physiographic province of western Virginia and draining directly into the Chesapeake Bay. The proposed project occurs in a long, relatively shallow section of the James River of primarily run habitat with areas of riffle and slack water, and characterized by substrates (in order of dominance) of sand, gravel, silt, cobble, bedrock, and boulder. The river channel is approximately 150 meters wide, with banks 2 to 4 meters high. Survey conditions (water level and clarity) were low and clear during the site visit.

3.0 TARGET SPECIES DESCRIPTION

A brief description of the characteristics, biology and distribution of the James Spinymussel is provided below. More detailed descriptions can be found in the various references cited.

3.1 James Spinymussel (*Pleurobmea collina*) *Conrad 1837*

Federal Status: Endangered
Listed: 7/22/1988
State Status: Endangered
Family: Unionidae

3.1.1 Characteristics

The James Spinymussel (JSM) was discovered in the Calfpasture River (of the James River Basin) by T. A. Conrad and originally described as *Unio collinus* (Conrad 1837). Various people (See USFWS 1990 for synonyms) have subsequently placed this species in a number of different genera. Turgeon *et al.* (1988) placed the JSM in the genus *Pleurobema*. The taxonomic history of this species is described fully in Clarke and Neves (1984).

The JSM is a small mussel that is reported to reach a maximum size of 70 mm; however, a specimen collected in the Dan River was measured at 74 mm in length (personal observations). The shells of small individuals (<40 mm) are subrhomboidal in shape with an obliquely subtruncated posterior with widely spaced concentric striations. The periostracum is shiny and straw yellow with prominent growth rings. Faint brownish rays are rarely present. One to three short, but prominent spines are occasionally present on each valve. With age, the shell becomes more ovate or even arcuate, the periostracum becomes brownish to black and any spines that were once present are lost. Their beaks are typically eroded and only slightly elevated above the hinge line, if at all. The nacre is white with occasional bluish suffusions. The foot and mantle of live specimens are light orange in color (USFWS 1990, Clarke and Neves 1984, Johnson 1970). Internal anatomy is detailed in Clarke and Neves (1984).

The JSM and the Tar spinymussel (TSM) share many morphological traits, but are clearly distinct species. The TSM has been described as having intermediate characteristics between the small, short-spined JSM and the large, long-spined Altamaha spinymussel (*Elliptio spinosa*) (USFWS, 1992; USFWS, 1990). Internal anatomical differences between the two species are described in Clarke and Neves (1984). Tar River spinymussels can have up to 12 spines (USFWS 1992a) and tend to have spines more often than JSMs. Clarke and Neves (1984) state most specimens of JSM "never develop spines".

Knowledge of the reproductive biology of the JSM is limited to thesis research at Virginia Polytechnic Institute and State University (Hove 1990; Hove and Neves 1989). Like nearly all freshwater mussel species, the reproductive strategy of the JSM involves a glochidium that becomes a temporary obligate parasite on a fish. Many mussel species have specific fish hosts that must be present to complete their life cycle. Based upon laboratory infestation experiments, Hove (1990) identified seven fish species, all in the family Cyprinidae (minnows), as potential fish hosts for the JSM. McMahon and Bogan (2001) and Pennak (1989) provide a general overview of freshwater mussel reproductive biology.

3.1.2 Distribution and Habitat Requirements

Previously, the JSM was believed to be endemic to the James River system, with a widespread distribution within the basin (USFWS, 1990, Clarke and Neves, 1984). When the Recovery Plan for this species was adopted, it was believed to have been extirpated from 90% of its historic distribution. Since its discovery in the Dan River in the fall of 2000, extensive surveys have been conducted and a "working range" of approximately 36 miles in the Dan River in Stokes County, North Carolina, and approximately 17 miles in the Mayo River, in Patrick County, Virginia, and Rockingham County, North Carolina has been established.

A description of chemical and physical conditions at sites currently and historically supporting the JSM is given in Clarke and Neves (1984) and Boss and Clench (1967). The habitat is generally described as runs with moderate current, with sand, gravel, and cobble substrata. Individuals from the Dan River population have been found in a variety of substrates that range from silt/sand, to sand, gravel, cobble, bedrock crevices, and sand surrounded by boulders, and in a variety of flow patterns that range from slack pools to runs with moderate to swift currents (Personal observations). The hardness of the water is believed to be a significant requirement for this species, with a minimum hardness value of >50 ppm $CaCO_3$ (Clarke and Neves, 1984).

3.1.3 Threats to Species

The cumulative effects of several factors, including sedimentation, point and non-point discharge, stream modification (e.g., impoundment, channelization), coupled with the apparent restricted range, are believed to have contributed to the decline of this species throughout its range (USFWS 1990). When mussel populations are reduced to a small number of individuals and are restricted to short reaches of isolated streams, they are extremely vulnerable to extirpation from a single catastrophic event or activity (Strayer et al. 1996). Catastrophic events may consist of natural events such as flooding or drought, as well as human influenced events, such as toxic spills.

Siltation resulting from improper erosion control of various land usage, including agriculture, silviculture, and development activities, has been recognized as a major contributing factor to degradation of mussel populations (USFWS 1996). Siltation has been documented to be extremely detrimental to mussel populations by degrading substrate and water quality, increasing potential exposure to other pollutants, and by directly smothering mussels (Ellis 1936, Marking and Bills 1979). Sediment accumulations of less than 1 inch have been shown to cause high mortality in most mussel species (Ellis 1936).

Sewage treatment effluent has been documented to significantly affect the diversity and abundance of mussel fauna (Goudreau et al. 1988). Goudreau et al. (1988) found that recovery of mussel populations might not occur for up to two miles below points of chlorinated sewage effluent. Clarke and Neves (1984) suggested that sewage and industrial pollution might have contributed to the extirpation of the James spinymussel

from the North River in Virginia. The impact of impoundments on freshwater mussels has been well-documented (USFWS 1992b, Neves 1993). Construction of dams transforms lotic habitats into lentic habitats, which results in changes with aquatic community composition. These changes associated with inundation adversely affect both adult and juvenile mussels as well as fish community structure, which could eliminate possible fish hosts for glochidia (Fuller 1974).

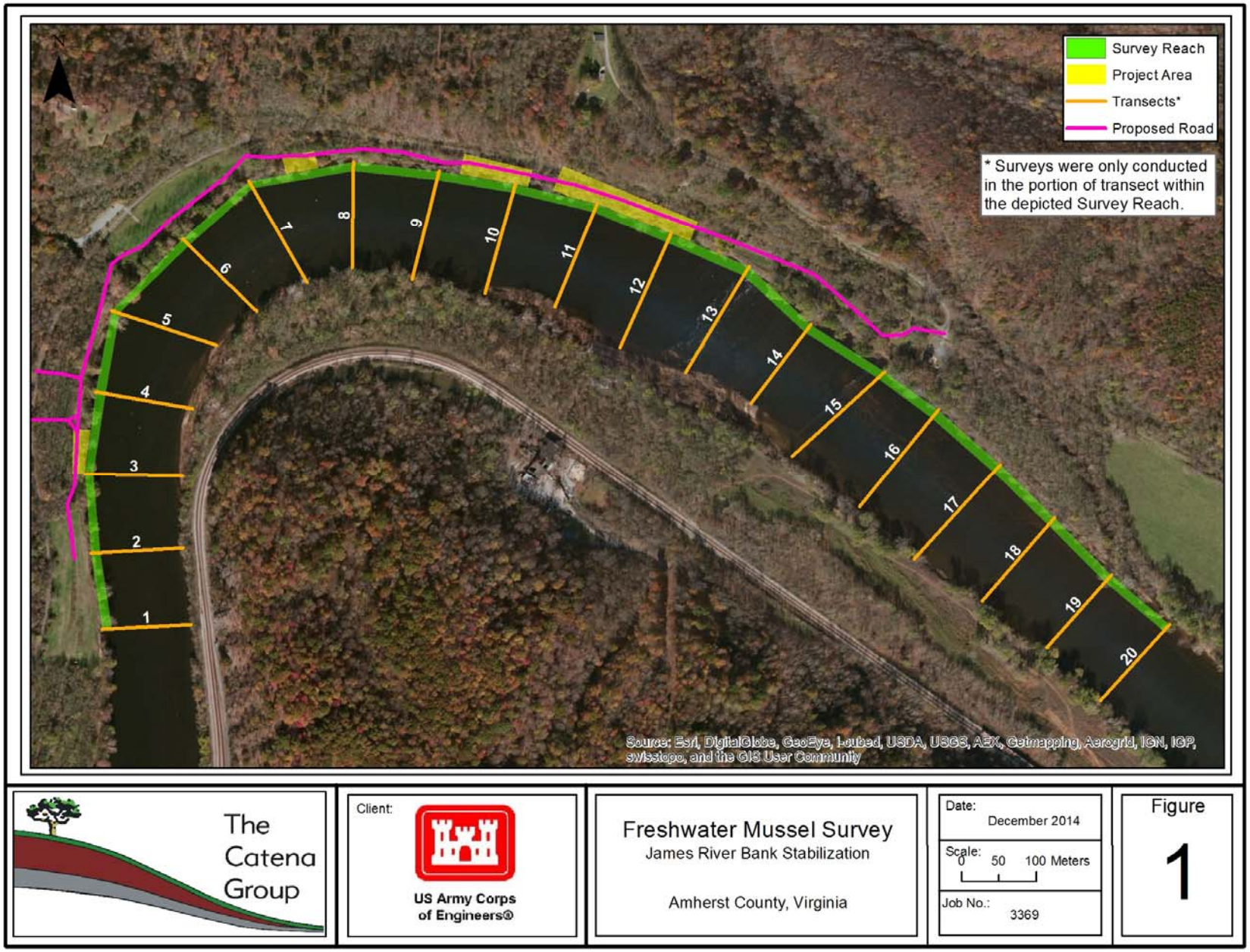
The introduction of exotic species, such as the Asian clam (*Corbicula fluminea*) and zebra mussel (*Dreissena polymorpha*), has also been shown to pose significant threats to native freshwater mussels. The Asian clam is now established in most of the major river systems in the United States (Fuller and Powell 1973) including those streams still supporting surviving populations of the James spinymussel. Concern has been raised over competitive interactions for space, food, and oxygen between this species and native mussels, possibly at the juvenile stages (Neves and Widlak 1987, Alderman 1997). The Asian clam is common to abundant within the James River. The zebra mussel, native to the drainage basins of the Black, Caspian, and Aral Seas, is an exotic freshwater mussel that was introduced into the Great Lakes in the 1980s and has rapidly expanded its range into the surrounding river basins, including those of the South Atlantic Slope (O'Neill and MacNeill 1991). This species competes for food resources and space with native mussels, and is expected to contribute to the extinction of at least 20 freshwater mussel species if it becomes established throughout most of the eastern United States (USFWS 1992b). This species has not been recorded in the James River Basin, but has been recorded in a quarry in Prince William County VA, within the Potomac River Basin.

4.0 SURVEY EFFORTS

4.1 Presence/Absence

The survey reach for the semi-quantitative presence/absence surveys was based on USFWS and VDGIF Freshwater Mussel Guidelines for Virginia (2013) for a full survey and thus extended approximately 200 meters (m) upstream to 800 m downstream of the most up and downstream extents of the project areas, for a total distance of approximately 1,900 m. The survey width extended from the channel edge along the left descending river bank to a point approximately 12.2 m into the river channel (Figure 1). The areas of the survey reach were further divided into 100 m intervals to characterize habitat conditions and mussel presence/absence with each of these 100 x 12 m areas. These divisions were also used as the locations for the transect surveys (Section *4.2*).

Survey efforts were conducted by Tom Dickinson, Tim Savidge, John Roberts and Chris Sheats on October 27-28, 2014. Surveys began at the lower (downstream) limits and progressed upstream. The speed at which the team proceeded upstream depended on the presence and abundance of mussels.


Survey Reach
Project Area
Transects*
Proposed Road
* Surveys were only conducted in the portion of transect within the depicted Survey Reach.
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Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
The Catena Group
Client:
US Army Corps of Engineers®
Freshwater Mussel Survey
James River Bank Stabilization
Amherst County, Virginia
Date:
December 2014
Scale:
0 50 100 Meters
Job No.:
3369
Figure
1

Visual surveys, which consisted of methodically viewing in stream substrates as surveyors moved upstream, were conducted using glass bottom view buckets (bathyscopes). Tactile methods, which consisted of hand grabbing appropriate substrates, were employed, particularly in streambanks under submerged rootmats. All areas of appropriate habitat were searched, concentrating on the stable habitats preferred by the target species. The survey team spread out across the survey area into survey lanes. All freshwater mussels were recorded and returned to the substrate. Searches were also conducted for relict shells. The presence of a shell was equated with presence of that species, however it was not factored into the CPUE. Representative photographs of each species were taken. Timed survey efforts provided Catch Per Unit Effort (CPUE) data for each species found. Relative abundance for freshwater snails and freshwater clam species were estimated using the criteria established by Catena:

- (VA) Very abundant > 30 per square meter
- (A) Abundant 16-30 per square meter
- (C) Common 6-15 per square meter
- (U) Uncommon 3-5 per square meter
- (R) Rare 1-2 per square meter
- (P-) Ancillary adjective "Patchy" indicates an uneven distribution of the species within the sampled site.

4.2 Transect Surveys

In addition to the timed presence/absence surveys, four m wide transects spaced 100 m apart, oriented perpendicular to flow, and extending approximately 12.2 m into the river channel were surveyed using visual methods by two surveyors within the survey reach. These transect surveys were designed to account for potential survey bias of expending disproportionate amounts of effort between microhabitats, as well as to demonstrate mussel distribution and relative abundances across the channel. These surveys were conducted with the methods described above. Substrate types and mussels found were recorded for each m interval from the river bank to the mid river extent of the survey reach.

4.3 Results

A total of 498 Eastern Elliptio (*Elliptio complanata*) and 2 shells of Northern Lance (*Elliptio fisheriana*) were found in 36.91 person-hours of survey time during the presence/absence surveys in the defined survey reach (Table 1).

The introduced Asian Clam (*Corbicula fluminea*) was common to abundant, with shells comprising a significant amount of substrate in areas. Three species of aquatic snails were also found; the Crested Mudalia (*Leptoxis carinata*), the Piedmont Elimia (*Elimia virginica*), which were both common with a patchy distribution, and the Pointed

Campeloma (*Campeloma decisum*), which was rare, only being represented by a few individuals.

Table 1. Mollusks Found in Survey Reach

Scientific Name	Common Name	#	Abundance/ CPUE
Freshwater Mussels			**CPUE**
Ellitpio complanata	Eastern Elliptio	498	13.5
Elliptio fisheriana	Northern Lance	2 shells	~
Freshwater Snails and Clams			**Relative Abundance**
Campeloma decisum	Pointed Campeloma	~	R
Corbicula fluminea	Asian Clam	~	C-A
Elimia virginica	Piedmont Elimia	~	P-C
Leptoxis carinata	Crested Mudalia	~	P-C

~ = species assigned relative abundance category rather than counted

Results of the presence/absence surveys by 100 m interval are provided below from upstream to downstream, as labeled in Figure 1. Section *4.3.20* details the results of the transect surveys.

4.3.1 1-2

This most upriver section consisted of run habitat to 1 m deep. Substrate was dominated by bedrock (approximately 75% of the section) with silt, sand, and gravel patches. Five Eastern Elliptio were found in 1.33 person hours.

4.3.2 2-3

This section consisted of riffle and run habitat to 1 meter deep. Substrate was dominated by bedrock with silt, sand, gravel, and cobble patches. Gravel and cobble were observed to be compact. 21 Eastern Elliptio were found in 1.87 person hours.

4.3.3 3-4

This section consisted of run habitat to 1 meter deep. Substrate was dominated by bedrock with silt, sand, and gravel patches. 19 Eastern Elliptio were found in 1.53 person hours.

4.3.4 4-5

This section consisted of run habitat to 1 meter deep. Substrate consisted of silt and sand near the river bank and transitioned to gravel and cobble into the channel. Boulder was common. 56 Eastern Elliptio were found in 2.2 person hours.

4.3.5 5-6

This section consisted of slow run habitat to 1 meter deep. Substrate was dominated by boulder and bedrock (approximately 50% of section) with patches of silt, sand, and gravel present. 22 Eastern Elliptio were found in 1.87 person hours.

4.3.6 6-7

This section consisted of slow run and some slack water habitat to 1.2 meters deep. Substrate was dominated by boulder and bedrock with patches of silt, sand, and gravel present. Silt and leaf pack accumulations were present along the river bank. 36 Eastern Elliptio were found in 2.27 person hours.

4.3.7 7-8

This section consisted of slow run and some slack water habitat to 1.2 meters deep. Substrate consisted of silt, sand, and gravel near the river bank and transitioned to cobble, boulder and bedrock into the channel. 50 Eastern Elliptio and one Northern Lance shell were found in 2.67 person hours.

4.3.8 8-9

This section consisted of run habitat to 1 meter deep. Substrate was a mix of silt, sand, gravel, and cobble throughout. Additionally, mollusk (mostly Asian Clam and snail) shell made up a large component of substrate. A large muskrat (*Ondatra zibethicus*) midden of Eastern Elliptio shell was also present. 23 Eastern Elliptio were found in 2.4 person hours.

4.3.9 9-10

This section consisted of run habitat to 1 meter deep. Substrate consisted of silt and sand near the river bank and transitioned to gravel, cobble, boulder and bedrock into the channel. 25 Eastern Elliptio were found in 2.27 person hours.

4.3.10 10-11

This section consisted of run habitat to 1 meter deep. Substrate consisted of silt and sand near the river bank and transitioned to gravel, cobble, boulder and bedrock into the channel. 21 Eastern Elliptio were found in 2 person hours.

4.3.11 11-12

This section consisted of run habitat to 0.6 meter deep. Substrate consisted of silt and sand near the river bank and transitioned to gravel, cobble, boulder and bedrock into the channel. A heavy coating of algae on the substrate was noted. 30 Eastern Elliptio were found in 1.75 person hours.

4.3.12 12-13

This section consisted of riffle and run habitat to 0.6 meter deep. Substrate consisted of silt, sand, and gravel near the river bank and transitioned to cobble, boulder and bedrock into the channel. A heavy coating of algae on the substrate was noted. 15 Eastern Elliptio were found in 1.5 person hours.

4.3.13 13-14

This section consisted of a high energy riffle to 0.6 meter deep. Substrate consisted of silt, sand, and gravel near the river bank and transitioned to cobble, boulder and bedrock into the channel. A heavy coating of algae on the substrate was noted. The river bank was lined with rip-rap and concrete. 22 Eastern Elliptio were found in 1.5 person hours.

4.3.14 14-15

This section consisted of riffle habitat to 0.5 meter deep. Substrate was dominated by sand and gravel, with areas of cobble and silt present. 29 Eastern Elliptio were found in 1.75 person hours.

4.3.15 15-16

This section consisted of riffle habitat to 0.5 meter deep. Substrate was dominated by sand and gravel, with areas of cobble and silt present. 27 Eastern Elliptio and one Northern Lance shell were found in 1.5 person hours.

4.3.16 16-17

This section consisted of run and riffle habitat to 0.5 meter deep. Substrate consisted of clay and silt near the river bank and transitioned to coarse sand, gravel, and cobble into the channel. 35 Eastern Elliptio were found in 2 person hours.

4.3.17 17-18

This section consisted of run habitat to 1 meter deep. Substrate consisted of a mix of silt, sand, gravel, cobble, and boulder. 35 Eastern Elliptio were found in 2 person hours.

4.3.18 18-19

This section consisted of slow run and slack water habitat to 1.2 meters deep. Bedrock was dominant with silt, sand, and gravel patches present. 13 Eastern Elliptio were found in 1.5 person hours.

4.3.19 19-20

This section consisted of slow run habitat to 1 meter deep. Substrate was dominated by silt near the river bank and transitioned to sand, gravel, and cobble into the channel. 14 Eastern Elliptio were found in 3 person hours.

4.3.20 Transect Results

During the defined transect surveys, a total of 20 mussels were found. 12 of the 20 transects contained mussels. 18 of the 240 1 x 4 meter divided segments of the transects contained at least one mussel, with two of these containing two individuals. Only two individuals were found greater than 6 meters from the river bank. A detailed table of substrate types and the location of the mussel finds within each transect is provided in Appendix A.

5.0 DISCUSSION

A total of two mussel species were found during the survey efforts, with only the Eastern Elliptio being consistently found. The two shells of the Northern Lance were relatively fresh and based on these finds and the habitat in the survey area, live individuals are very likely present.

Mussels were found in relatively low densities throughout the reach in substrates of cobble, gravel, sand, silt, and clay. Periphyton and macrophytes consisting primarily of filamentous algae were observed adhering to rocky substrates in varying abundance throughout the reach. Substrate types were heterogeneously distributed throughout and were difficult to delineate on a reach or even 100 meter section scale. While concentrations of Eastern Elliptio were found in all of these substrate types, mussels were generally found in greater numbers closer to the river bank and these substrates were often dominated by finer substrates, an observation confirmed by the transect surveys.

While the project goals included defining and delineating mussel beds of densities greater than 1 per square meter and higher categories, the survey results indicate that mussels are present in low density and are relatively evenly distributed in appropriate habitats throughout the survey reach. Thus, defining areas by density observed is not particularly useful. For example, the highest density observed in the reach was in section 4-5, with a total density of 0.047 per square meter.

5.1 Descriptions of species found during the surveys

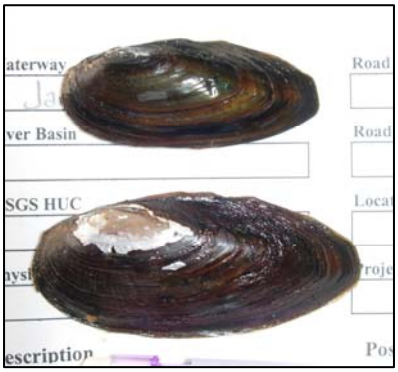
Brief descriptions of the freshwater mussel species found are provided below.

5.1.1 Elliptio complanata (Eastern Elliptio)

This species was described as *Mya complanata* from the Potomac River in Maryland (Lightfoot 1786). Shell characteristics are highly variable. Shell shape varies from

typically trapezoidal to rhomboid and from compressed to inflated. The usually straight ventral margin is mostly parallel with the dorsal margin and the posterior margin is broadly rounded. Shell thickness varies from thin to solid. This species is widely distributed along the Atlantic Slope from Altamaha River Basin in Georgia north to the St. Lawerence River Basin, and west to Lake Superior and parts of the Hudson Bay Basin. It can be found in a variety of habitats from large rivers and, lakes to small headwater streams. The species is widespread and common throughout its range and considered "Stable" (Williams et al. 1993).

5.1.2 Elliptio fisheriana (Northern Lance)



This species was described from the Chester River in Maryland (Lea 1838). The shell is more than twice as long as high coming to a posterior point, usually at or above the midline between the dorsal and ventral margins. The dorsal ridge is angled. The smooth periostracum of the northern lance is usually yellowish-green with darker green rays, becoming black with age. Johnson (1970) synonymized this species and 25 other named species of lance-shaped elliptio mussels into *Elliptio lanceolata*. Recent genotypic and phenotypic analysis suggests that some of these formally described species are valid, including "true" *Elliptio lanceolata* (type locality, Tar River). Northern populations are thinner and more elongate than those from the south. The nacre may be purple or white. The northern lance likely encompasses several lanceolate elliptios, with similar characteristics that were described from a number of river basins along the Atlantic Slope. Because of taxonomic uncertainty, the status of this species is undetermined.

6.0 CONCLUSIONS

While the JSM was not found during these surveys, appropriate habitat and a mussel fauna is present in the survey reach, thus, while unlikely, the presence of this and other rare mussel species known from the James River Basin cannot altogether be ruled out. A biological conclusion on potential impacts from the James River Streambank Stabilization Project to the JSM is provided below.

Biological Conclusion James Spinymussel: May Affect Not Likely To Adversely Affect

Relocation efforts to be conducted in 2015 in accordance with USFWS and VDGIF guidelines will provide further survey data for this conclusion and minimize impacts to the mussel fauna of this section of the James River.

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APPENDIX A: Transect Survey Data

Transect #	Meter 1	2	3	4	5	6	7	8	9	10	11	12
1	S/Co	S/Co: 1 ELCO	S/Co	B/Co/S	B/Co/S	B/Co/S	B/Co/S	B/Co/S	B/Co/S	B/Co/S	B/Co/S	B/Co/S
2	Si/B	Si/B	Si/B	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S
3	S	S/Co/G	S/Co/G	S/Co/G	S/Co/G	S/Co/G	S/Co/G	S/Co/G	S/Co/G	S/Co/G	S/Co/G	S/Co/G
4	G/Co/S	G/Co/S: 2 ELCO	G/Co/S	G/Co/S	G/Co/S	G/Co/S	G/Co/S	S/Co/G	S/Co/G	S/Co/G	S/Co/G	S/Co/G
5	S	S/Co/G	S/Co/G	S/Co/G	G/Co/S: 1 ELCO	G/Co/S	G/Co/S	G/Co/S	G/Co/S	S/Co/G	S/Co/G	S/Co/G
6	Si/Co	Si/Co: 1 ELCO	Si/Co	Co/B	Co/B	Co/B	Co/B	Co/B	Co/B	Co/B	Co/B	Co/B
7	Si/Co: 1 ELCO	Si/Co: 1 ELCO	Si/Co	Si/Co/B	Si/Co/B: 1ELCO	Si/Co/B	B/Co	B/Co	B/Co	B/Co	B/Co	B/Co
8	B/Si	B/Si	B/Si	B	B	B	B/Co	B/Co	B/Co	B/Co	B/Co	B/Co
9	B/Si	B/Si	B/Si	B/Co	B/Co	B/Co	B/Co	B/Co	B/Co	B/Co	B/Co	B/Co
10	Co/G	Co/G: 1 ELCO	Co/G	Co/G	Co/G/B: 1 ELCO	CO/G/B	CO/G/B	CO/G/B	CO/G/B	B/Co/G	B/Co/G	B/Co/G
11	S/shell: 1 ELCO	S/G	S/G: 1 ELCO	S/G	S/G	LWD	Co	Co	Co/Bo	Co/Bo	Co/Bo	B
12	G	G	G/Co	B	B	Co	B	B	B	B	B	B
13	Rip Rap Co/Bo	S/G	G	G	G/Co	G/Co	G/Co	G/Co	G/Co	G/Co	B	B
14	Si/G	S/G	S/G: 1 ELCO	S/G	G: 1 ELCO	G	G	G	S/G/Co	S/G/Co	S/G/Co	S/G/Co
15	Bo	S/G	G	G	G	G	G	G/Co	G/Co	G/Co/Bo	G/Co/ Bo	G/Co/ Bo
16	Cl: 1 ELCO	Si	S	S/G	S/G	S/G	S/G	S/G	S/G	S/G/Co	S/G/Co	S/G/Co
17	Cl	Si	Si	Si	Si: 1 ELCO	S	S/G	S/G: 1 ELCO	S	S	S	S
18	Si	Si	S/G: 2 ELCO	B	B	B	S/G/Co	B	B	B	B	B
19	Si	Si	S	S	B	S/G	B	B	B	B	S	B
20	Si	S/G/Co	S/G/Co	S/G/Co	S/G/Co	S/G/Co	S/G/Co	S/G/Co	S/G/Co	S/G/Co: 1 ELCO	S/G/Co	B/Bo

Cl=Clay, Si=Silt, S=Sand, G=Gravel, Co=Cobble, Bo=Boulder, B=Bedrock, LWD=Large Woody Debris, ELCO=Elliptio complanata

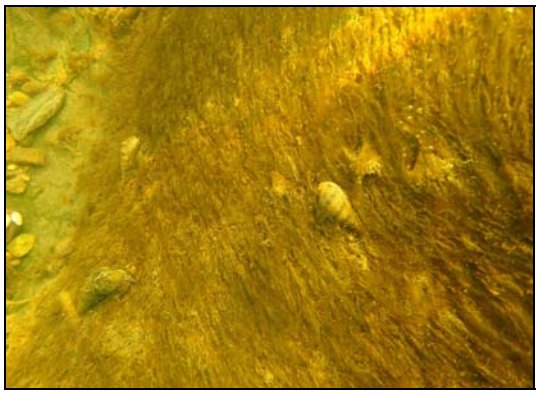
APPENDIX B: Select Photographs

Elliptio complanata

Elliptio complanata forms

Elliptio fisheriana shell

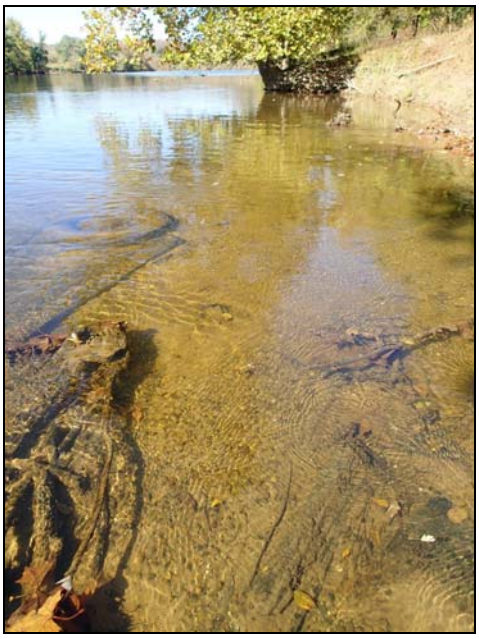
Elliptio complanata forms



Elimia virginica on bedrock

Elliptio complanata aperture in sand

Elliptio complanata aperture in silt



Bank habitat 19-20

Riffle habitat 13-14

Appendix C – Fish and Wildlife Information Service; Information, Planning and Conservation Database; and Natural Heritage Database Search Results

VaFWIS Search Report Compiled on 3/27/2015, 3:40:07 PM

Known or likely to occur within a **3 mile radius around point 37.4074460 -79.1069085**
in **009 Amherst County, 031 Campbell County, 680 Lynchburg City, VA**

View Map of Site Location

591 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 41) (41 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name
010214	FESE	I	Logperch, Roanoke	Percina rex
060017	FESE	I	Spinymussel, James	Pleurobema collina
110240	FSSE	I	Supercoil, spirit	Paravitrea hera
040096	ST	I	Falcon, peregrine	Falco peregrinus
040129	ST	I	Sandpiper, upland	Bartramia longicauda
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus
040379	ST	I	Sparrow, Henslow's	Ammodramus henslowii
010353	ST	II	Darter, Carolina	Etheostoma collis
010127	FSST	II	Madtom, orangefin	Noturus gilberti
060081	ST	II	Floater, green	Lasmigona subviridis
060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans
050022	FP		Bat, northern long-eared	Myotis septentrionalis
010038	FC	IV	Alewife	Alosa pseudoharengus
080214	FS	I	Stonefly, Beartown perlodid	Isoperla major
080216	FS	I	Stonefly, Nelson's early black	Taeniopteryx nelsoni
100248	FS	I	Fritillary, regal	Speyeria idalia idalia
020039	FS	II	Salamander, Peaks of Otter	Plethodon hubrichti
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus
080336	FS	II	Beetle, Gammon's stenelmis riffle	Stenelmis gammoni
100154	FS	II	Butterfly, Persius duskywing	Erynnis persius persius
010110	FS	III	Jumprock, bigeye	Moxostoma ariommum
060029	FS	III	Lance, yellow	Elliptio lanceolata
080340	FS		Caddisfly, Buffalo Springs	Ceratopsyche etnieri
080342	FS		Caddisfly, hydropsychid	Hydropsyche bassi
080357	FS		Caddisfly, philopotamid	Wormaldia mohri
080345	FS		Microcaddisfly	Hydroptila anisoforficata
030012	CC	IV	Rattlesnake, timber	Crotalus horridus
010077		I	Shiner, bridle	Notropis bifrenatus

040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius
040319		I	Warbler, black-throated green	Dendroica virens
040306		I	Warbler, golden-winged	Vermivora chrysoptera
010174		II	Bass, Roanoke	Ambloplites cavifrons
020023		II	Salamander, mole	Ambystoma talpoideum
040052		II	Duck, American black	Anas rubripes
040036		II	Night-heron, yellow-crowned	Nyctanassa violacea violacea
040213		II	Owl, northern saw-whet	Aegolius acadicus
040105		II	Rail, king	Rallus elegans
040320		II	Warbler, cerulean	Dendroica cerulea
040266		II	Wren, winter	Troglodytes troglodytes
070138		II	Amphipod, Bland County	Crangonyx sp. 3

To view **All 591 species**View 591

***FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

****I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams

(3 records)

View Map of All Anadromous Fish Use Streams

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE*	Highest Tier**	
P189	James River 4	Potential	0			Yes
P21	Beaver creek	Potential	0			Yes
P23	Blackwater creek	Potential	0			Yes

Impediments to Fish Passage

(2 records)

View Map of All Fish Impediments

ID	Name	River	View Map
763	SCOTTS MILL DAM	JAMES RIVER	Yes
835	SILVER SPRINGS LAKE DAM	TR-OPOSSUM CREEK	Yes

Threatened and Endangered Waters

(1 Reach)

View Map of All
Threatened and Endangered Waters

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
James River (02080203)	ST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

(3 records)

View Map of All Query Results
Bald Eagle Nests

Nest	N Obs	Latest Date	DGIF Nest Status	View Map
AH0101	11	Mar 2 2013	RECENTLY ACTIVE	Yes
AH1001	1	May 10 2010	UNKNOWN	Yes
AM0101	1	May 1 2001	HISTORIC	Yes

Displayed 3 Bald Eagle Nests

Habitat Predicted for Aquatic WAP Tier I & II Species

(5 Reaches)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
James River (20802031)	FSST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
James River (20802032)	FSST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
Ivy Creek (20802032)	ST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes

James River (20802031)	ST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes
James River (20802032)	ST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Virginia Breeding Bird Atlas Blocks

(4 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
38086	Kelly, SE	63		IV	Yes
38085	Kelly, SW	1			Yes
37084	Lynchburg, CE	57		IV	Yes
37086	Lynchburg, SE	58		III	Yes

Public Holdings:

N/A

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
009	Amherst	394	FESE	I
031	Campbell	364	FPST	I
680	Lynchburg City	347	FPST	I

USGS 7.5' Quadrangles:
City Farm
Lynchburg
Rustburg
Kelly

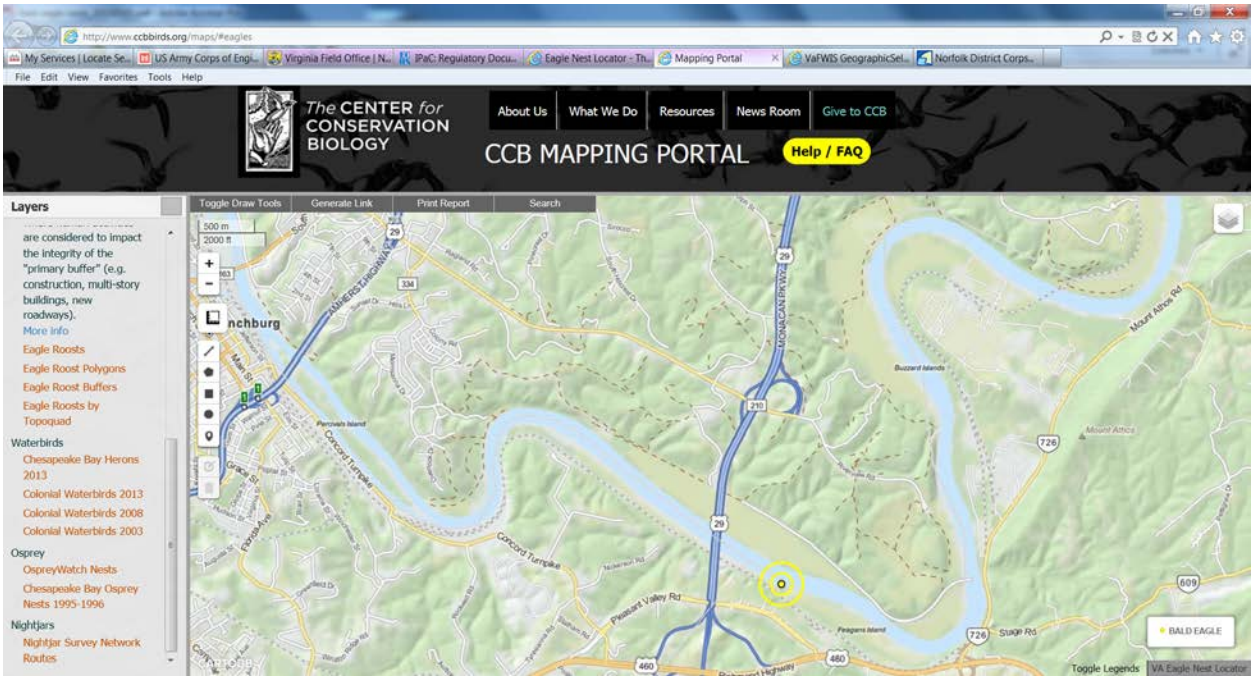
USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
JM10	Blackwater Creek	54	FSST	I
JM11	James River-Opossum Creek	54	FSST	II
JM12	Beaver Creek	43	FS	II
JM13	James River-Beck Creek	52	FSST	II
JM14	James River-Stonewall Creek	55	FSST	I

Compiled on 3/27/2015, 3:40:07 PM V640969.0 report=V searchType= R dist= 4827 poi= 37.4074460 -79.1069085


http://www.ccbbirds.org/maps/#eagles
My Services | Locate Se...
US Army Corps of Engi...
Virginia Field Office | N...
IPaC: Regulatory Docu...
Eagle Nest Locator - Th...
Mapping Portal
VaFWIS GeographicSel...
Norfolk District Corps...
File Edit View Favorites Tools Help
The CENTER for CONSERVATION BIOLOGY
About Us
What We Do
Resources
News Room
Give to CCB
CCB MAPPING PORTAL
Help / FAQ
Layers
are considered to impact the integrity of the "primary buffer" (e.g. construction, multi-story buildings, new roadways).
More info
Eagle Roosts
Eagle Roost Polygons
Eagle Roost Buffers
Eagle Roosts by Topoquad
Waterbirds
Chesapeake Bay Herons 2013
Colonial Waterbirds 2013
Colonial Waterbirds 2008
Colonial Waterbirds 2003
Osprey
OspreyWatch Nests
Chesapeake Bay Osprey Nests 1995-1996
Nightjars
Nightjar Survey Network Routes
Toggle Draw Tools
Generate Link
Print Report
Search
500 m
2000 ft
Concord Turnpike
Pleasant Valley Rd
Mount Athos Rd
Stage Rd
BALD EAGLE
Toggle Legends
VA Eagle Nest Locator

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 SHORT LANE
GLOUCESTER, VA 23061
PHONE: (804)693-6694 FAX: (804)693-9032
URL: www.fws.gov/northeast/virginiafield/

Consultation Code: 05E2VA00-2016-SLI-0323 October 28, 2015
Event Code: 05E2VA00-2016-E-00388
Project Name: James River Streambank Stabilization Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: James River Streambank Stabilization Project

Official Species List

Provided by:

Virginia Ecological Services Field Office
6669 SHORT LANE
GLOUCESTER, VA 23061
(804) 693-6694
http://www.fws.gov/northeast/virginiafield/

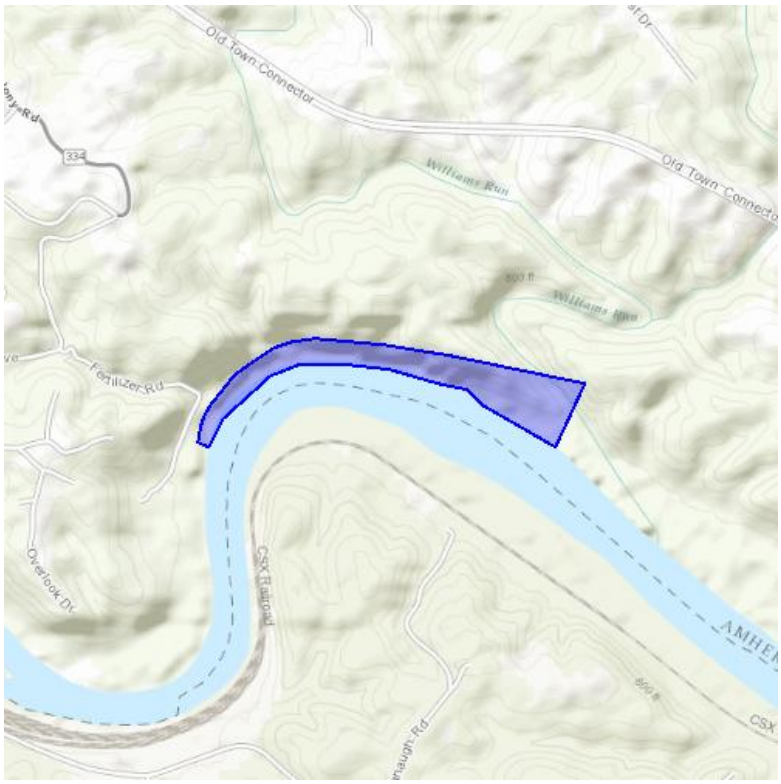
Consultation Code: 05E2VA00-2016-SLI-0323
Event Code: 05E2VA00-2016-E-00388

Project Type: ** OTHER **

Project Name: James River Streambank Stabilization Project
Project Description: The Amherst County Service Authority, within the City of Madison Heights, requested the assistance of the U.S. Army Corps of Engineers to evaluate erosion issues along the bank of the James River as it is placing the existing sanitary sewer pipeline that runs approximately parallel to the river at imminent risk of rupture. The Preferred Alternative is the placement of stone revetment (riprap) at a 1,250 linear feet stretch along the bank of the James River south of the Blackwater Creek Trail.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-79.11289215087889 37.405193066021894, -79.1124415397644 37.40596009191685, -79.11076784133911 37.40713618303818, -79.10978078842163 37.40744298638143, -79.10802125930786 37.407460030974754, -79.10658359527588 37.4073066294951, -79.10495281219482 37.406948691487706, -79.1039228439331 37.406761199468036, -79.103364944458 37.40631803464727, -79.10085439682007 37.405193066021894, -79.09982442855835 37.406948691487706, -79.10450220108032 37.40771569940956, -79.10681962966919 37.408005455914235, -79.10920143127441 37.4081759003935, -79.1099739074707 37.40810772264832, -79.1106390953064 37.40790318904056, -79.11196947097778 37.40717027236061, -79.11287069320679 37.40635212434192, -79.11306381225586 37.406045316531575, -79.11319255828857 37.40575555244596, -79.11329984664917 37.405295336594904, -79.11289215087889 37.405193066021894)))

Project Counties: Amherst, VA

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Mammals	Status	Has Critical Habitat	Condition(s)
Northern long-eared Bat *(Myotis septentrionalis)*	Threatened		

Critical habitats that lie within your project area

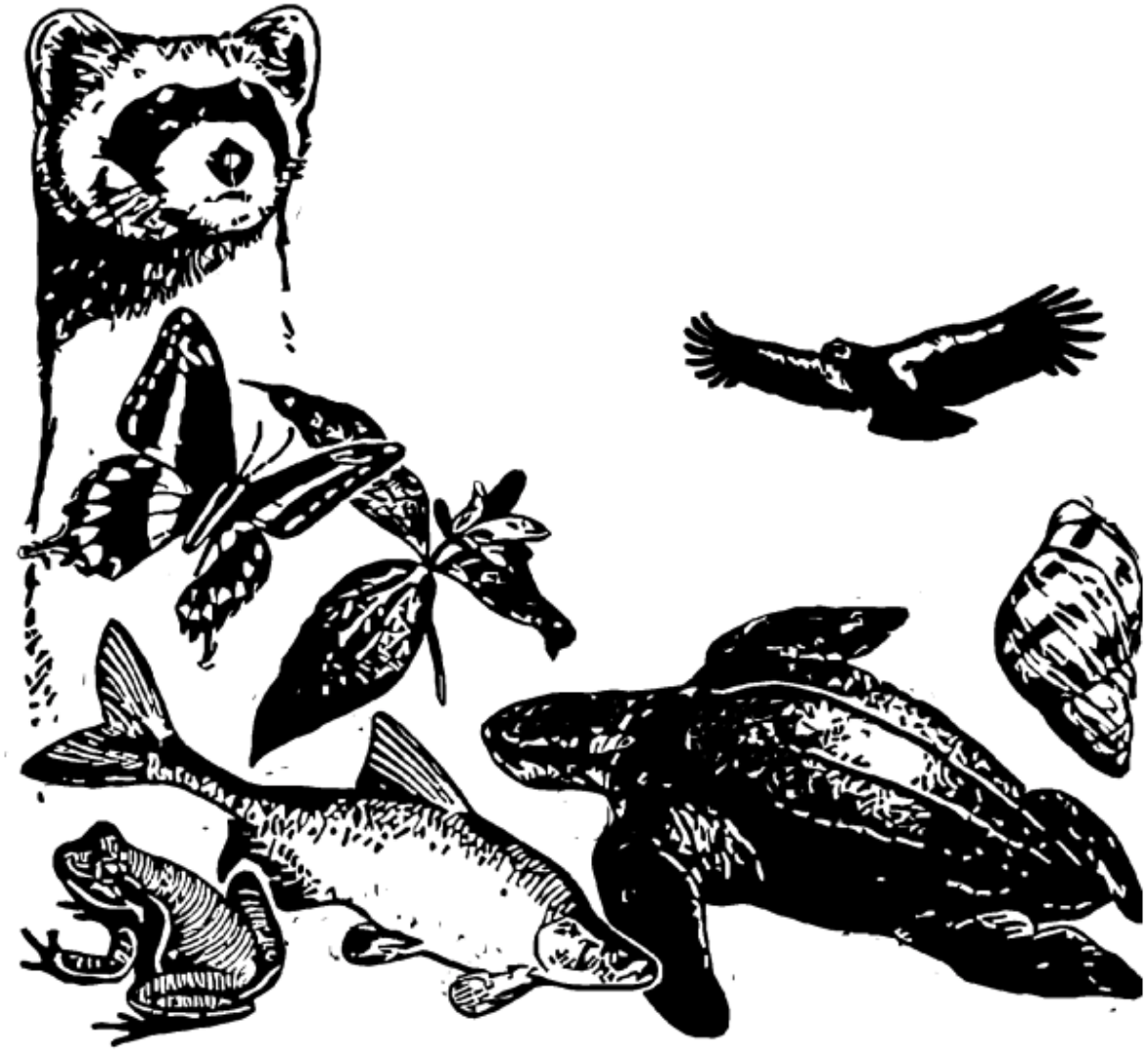
There are no critical habitats within your project area.

James River Streambank Stabilization Project

IPaC Trust Resource Report

Generated October 28, 2015 01:08 PM MDT

This report is for informational purposes only and should not be used for planning or analyzing project-level impacts. For projects that require FWS review, please return to this project on the IPaC website and request an official species list from the Regulatory Documents page.



US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

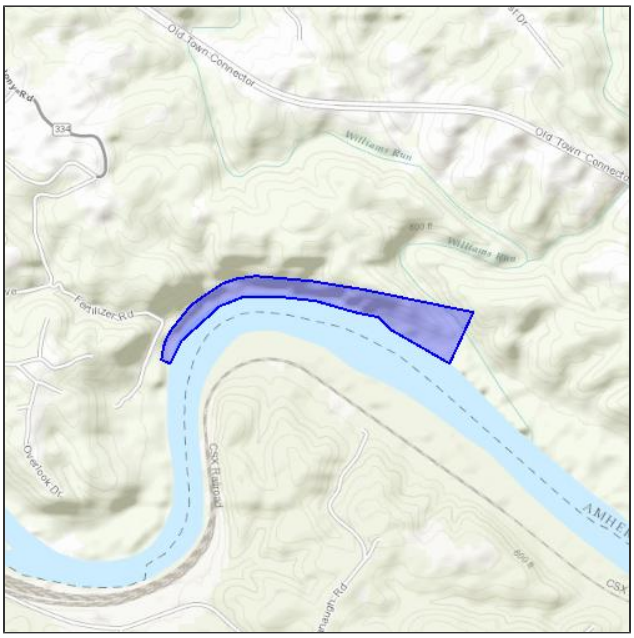
James River Streambank Stabilization Project

PROJECT CODE

FTGF2-KGRI5-ABRCT-V2OKN-QZZCXI

LOCATION

Amherst County, Virginia



DESCRIPTION

The Amherst County Service Authority, within the City of Madison Heights, requested the assistance of the U.S. Army Corps of Engineers to evaluate erosion issues along the bank of the James River as it is placing the existing sanitary sewer pipeline that runs approximately parallel to the river at imminent risk of rupture. The Preferred Alternative is the placement of stone revetment (riprap) at a 1,250 linear feet stretch along the bank of the James River south of the Blackwater Creek Trail.

U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under Section 7 of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an official species list on the Regulatory Documents page.

Mammals

Northern Long-eared Bat Myotis septentrionalis — Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0JE

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

American Bittern Botaurus lentiginosus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Blue-winged Warbler Vermivora pinus — Bird of conservation concern
Season: Breeding

Fox Sparrow Passerella iliaca — Bird of conservation concern
Season: Wintering

Kentucky Warbler Oporornis formosus — Bird of conservation concern
Season: Breeding

Loggerhead Shrike Lanius ludovicianus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY

Pied-billed Grebe Podilymbus podiceps — Bird of conservation concern
Year-round

Prairie Warbler Dendroica discolor — Bird of conservation concern
Season: Breeding

Prothonotary Warbler Protonotaria citrea — Bird of conservation concern
Season: Breeding

Red-headed Woodpecker Melanerpes erythrocephalus — Bird of conservation concern
Year-round

Rusty Blackbird Euphagus carolinus — Bird of conservation concern
Season: Wintering

Wood Thrush Hylocichla mustelina — Bird of conservation concern
Season: Breeding

Worm Eating Warbler Helmitheros vermivorum — Bird of conservation concern
Season: Breeding

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

Refuge data is unavailable at this time.

Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Freshwater Forested/shrub Wetland

PFO1E 11.0 acres

Riverine

R2UBH 10000.0 acres

Natural Heritage Resources

Your Criteria

Taxonomic Group: Select All

Federal Legal Status: Select All

State Legal Status: Select All

County: Amherst

Physiographic Province: Northern Piedmont

Watershed (8 digit HUC): 02080203 - Middle James-Buffalo

Subwatershed (12 digit HUC): JM11 - James River-Opossum Creek

Search Run: 3/23/2015 14:32:45 PM

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences
Amherst						
Northern Piedmont						
Middle James-Buffalo						

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences
James River-Opossum Creek BIVALVIA (MUSSELS)						
Green Floater	Lasmigona subviridis	G3	S2	None	LT	64

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

For Additional Information on locations of Natural Heritage Resources please submit an information request.

To Contribute information on locations of natural heritage resources, please fill out and submit a rare species sighting form.