Louise Atkins

From: Randy Owen
Sent: Monday, June 25, 2018 6:24 AM
To: jpa.permits@mrc.virginia.gov
Subject: FW: ESSLog# 22598_14-0343_JamesRiverWaterSupply_minorMod_DGIF_AME20180622
Attachments: MusselGuidelines_Jun22_2015_WatFinaldraft_20160810.pdf

DGIF 14-0343

RECEIVED
JUN 25 2018
MARINE RESOURCES COMMISSION

From: Amy Ewing [mailto:amy.ewing@dgif.virginia.gov]
Sent: Friday, June 22, 2018 3:26 PM
To: Brian Mcgurk <brian.mcgurk@deq.virginia.gov>
Cc: Brian Watson <brian.watson@dgif.virginia.gov>; Randy Owen <randy.owen@mrc.virginia.gov>
Subject: ESSLog# 22598_14-0343_JamesRiverWaterSupply_minorMod_DGIF_AME20180622

Hi Brian McGurk,
Am I reading the documents correctly that the current modification request is for a new 40 linear feet of impacts upon an unnamed tributary of the Rivanna River, at site #201, and additional wetland impacts in the same area resulting from access road widening? If that is currently the only revision we are reviewing, we offer the following comments. If there is something else I am supposed to be reviewing, let me know.

As you probably are aware, the James and Rivanna rivers have been designated Threatened and Endangered Species Waters due to the presence of state Threatened Atlantic pigtoes and state Threatened green floaters. In addition, we document recently federally-listed (threatened) yellow lances from both the Rivanna River and James River, although due to a lag in data updates, these waterbodies have not been formally designated TE Waters for this species. If the UNT to the Rivanna River in which work is proposed is perennial, we recommend that a mussel survey be performed from 100 meters upstream through 400 meters downstream of impact areas. This survey should be performed by a qualified, permitted biologist, preferably no more than six months prior to the start of construction. If mussel relocations are necessary, they should be coordinated with Brian Watson, VDGIF Region II Aquatic Resources Biologist (434-525-7522), and no federally listed species should be relocated without first coordinating with the USFWS (804-693-6694). All survey and relocation activities should adhere to the attached draft guidance. In addition, we recommend a time of year restriction on all instream work (in perennial and/or intermittent waters, not including any mussel surveys) from April 15 through July 31 and August 15 through September 30 of any year. Survey results should be made available to Amy Ewing in VDGIF's Headquarters office in Henrico and Brian Watson in VDGIF's Forest Office. Upon review of the results, we will make final recommendations regarding the protection of listed species known from the area. All survey reports should reference the ESSLog# displayed in the subject line of this email.

If the applicant prefers, they may provide us with good, representative photographs of the impact area(s) for our review. The photos should clearly depict the size of the stream, the substrate type, and the banks up and downstream of the site. Upon review of the photos, we may be able to rule out the need for a mussel survey based on the habitat available on site.

Further, we recommend coordination with the USFWS regarding federally listed species in the area.

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. Due to future maintenance costs associated with culverts, and the loss of riparian and aquatic habitat, we prefer stream crossings to be constructed via clear-span bridges. However, if this is not possible, we recommend countersinking any culverts below the streambed at least 6 inches, or the use of bottomless culverts, to allow passage of aquatic organisms. We also recommend the installation of floodplain culverts to carry bankfull discharges.

This project is located within 2 miles of a documented occurrence of a state or federal threatened or endangered plant or insect species and/or other Natural Heritage coordination species. Therefore, we recommend coordination with VDCR-DNH regarding the protection of these resources.

We recommend coordination with the USFWS regarding potential impacts upon federally Threatened northern long-eared bats associated with tree removal, and regarding potential impacts upon federal threatened yellow lances, mentioned above.

To minimize the adverse impacts of linear utility/road project development on wildlife resources, we offer the following general recommendations: avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable; maintain naturally vegetated buffers of at least 100 feet in width around wetlands and on both sides of perennial and intermittent streams, where practicable; conduct significant tree removal and ground clearing activities outside of the primary songbird nesting season of March 15 through August 15; and, implement and maintain appropriate erosion and sediment controls throughout project construction and site restoration. We understand that adherence to these general recommendations may be infeasible in some situations. We are happy to work with the applicant to develop project-specific measures as necessary to minimize project impacts upon the Commonwealth's wildlife resources.

Thanks, Amy

Amy Ewing
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Manager, Fish and Wildlife Information Services
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CONSERVE. CONNECT. PROTECT.

FRESHWATER MUSSEL GUIDELINES FOR VIRGINIA

Virginia Field Office
U.S. Fish and Wildlife Service
6669 Short Lane
Gloucester, VA 23061
804-693-6694

Virginia Dept. of Game and Inland Fisheries
4010 West Broad Street
P.O. Box 11104
Richmond, VA 23230
804-367-1000

Last Updated: 6-22-15

DRAFT

LIST OF ENCLOSURES

1 - Federal and State-Listed Species in Virginia
2 - Mussel Survey and Relocation Guidelines in Virginia
3 - Surveyor List for Atlantic Slope Mussels in Virginia
4 - Surveyor List for Upper Tennessee River Basin Mussels in Virginia
5 - Time of Year Restrictions (See Freshwater Mollusks)
6 - Map of Federally-Designated Critical Habitat for Mussels in Virginia

INTRODUCTION

These guidelines are for project applicants and consultants planning certain activities that will impact rivers, streams, creeks, or other waterways in Virginia. The guidelines provide recommendations for conducting freshwater mussel surveys and relocations for small construction projects of short duration involving non-point pollution sources and affecting no more than 100 linear feet of waterway. Larger projects that impact waters containing State or federally listed mussels may require additional coordination or permits from the Virginia Department of Game and Inland Fisheries (VDGIF) and/or the U.S. Fish and Wildlife Service (FWS). Coordination with these agencies should always be initiated to ensure compliance with Federal and State laws.

FWS is responsible for the conservation and management of *federally* listed freshwater mussel species. VDGIF is responsible for the conservation and management of *all* freshwater mussel species throughout Virginia. If it is known that federally listed species or critical habitat (Enclosure 6) are not present within a two-mile radius of a given site, coordination with VDGIF, but not FWS, is still necessary.

GENERAL LIFE HISTORY

Freshwater mussels are often prominent in benthic stream communities where, for the most part, they are sedentary filter-feeders consuming a major portion of the suspended particulate matter. Therefore, mussel beds act as biological filters by removing inorganic and organic material from

the water column while improving water quality downstream. Individuals are typically long-lived, with particular species living for more than 50 years, while some individuals may live for more than 130 years. Because these mussels are long-lived, sedentary filter-feeders, they are prominent indicators of water quality. Freshwater mussels also serve as an important dietary component to a variety of animals, including muskrats, otters, raccoons, and some fishes.

During spawning, male mussels release sperm into the water column that females take in through their gills. The resulting larvae (known as glochidia) may be released by the female into the water column or packaged to attract fish. These larvae must attach to a fish host to survive. While attached to the gills of the fish host, development of the glochidia begins. Once metamorphosis is complete, the juvenile mussel drops off the fish host and continues to develop on the stream bottom.

Freshwater mussels are generally divided into two reproductive categories known as short-term (tachytictic) or long-term brooders (bradytictic). Short-term brooders usually spawn and release glochidia during May through July in Virginia. Long-term brooders usually spawn from August through September and release glochidia the following April through June.

SURVEYS AND RELOCATIONS

Enclosure 1 is a list of federally endangered, threatened, and candidate mussels and State endangered and threatened mussels. If a project occurs in an area that may contain suitable habitat for one of these species, FWS and/or VDGIF may recommend a survey. To determine which waterways may contain suitable habitat for State or federally-listed species, contact VDGIF for guidance (804-367-2211 or 2733). Applicants should contact FWS and VDGIF early in the planning process to determine whether federally or State-listed species or critical habitat may be impacted by the project. The effects of a project may include direct impacts from construction activities as well as downstream impacts from sedimentation and effluent discharges. If mussels were found during any previous survey/s, however old, coordination with VDGIF and FWS (where applicable) will be required. Surveys where mussels are not found (negative surveys) are typically valid for two years, after which another survey should be performed. Guidelines for freshwater mussel surveys and relocations are found in Enclosure 2. Surveyor lists are included in Enclosures 3 and 4. If listed mussels are found in or downstream of a project area, VDGIF and/or FWS are likely to recommend time of year or other restrictions to reduce impact to the mussels. Time of year restrictions are listed in Enclosure 5. If FWS determines that the project "may affect" a federally listed species or critical habitat, consultation with FWS will be required.

LAWS AND REGULATIONS PROTECTING MUSSELS

Federal Endangered Species Act (ESA) (87 Stat. 884; 16 U.S.C. 1531 et seq.; 50 CFR Part 17) Section 7(a)(2) requires Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally listed threatened or endangered species, or result in the destruction or adverse modification of critical habitat. The regulations implementing this Act (50 CFR 402) require the Federal agency to review its actions

at the earliest possible time to determine whether its actions may affect listed species or critical habitat. If a Federal agency determines that its action "may affect" a listed threatened or endangered species or critical habitat, the agency is required to consult with FWS regarding the degree of impact and measures available to avoid or minimize the adverse effects.

Section 9 of the ESA makes it illegal for any person subject to the jurisdiction of the United States to "take" any federally listed endangered or threatened species of fish or wildlife without a special exemption. "Person" is defined under the ESA to include individuals, corporations, partnerships, trusts, associations, or any other private entity; local, State, and Federal agencies; or any other entity subject to the jurisdiction of the United States. Under the ESA, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

Section 10 establishes an incidental take permit provision for private entities that includes the development of habitat conservation plans. This provision authorizes FWS, under some circumstances, to permit the taking of federally listed fish and wildlife if such taking is "incidental to, and not the purpose of carrying out otherwise lawful activities." This process is also intended to be used to reduce conflicts between listed species and private development and to provide a framework that would encourage "creative partnerships" between the private sector and local, state, and Federal agencies in the interest of endangered and threatened species and habitat conservation. When approved by FWS, this regulatory procedure results in the issuance of a permit authorizing incidental take, provided such take is mitigated by appropriate conservation measures for habitat maintenance, enhancement, and protection, coincident with development.

Virginia Endangered Species Act (29.1-563 - 29.1-570) - This law provides that VDGIF is the state regulatory authority over federally or state listed endangered or threatened fish and wildlife in the Commonwealth, defining *fish or wildlife* as "*. . . any member of the animal kingdom, vertebrate or invertebrate, except for the class Insecta, and includes any part, products, egg, or the dead body or parts thereof.*" It prohibits the taking, transportation, processing, sale, or offer for sale within the Commonwealth of any fish or wildlife listed as a federally endangered or threatened species, except as permitted by the Board of Game and Inland Fisheries for zoological, educational, scientific, or captive propagation for preservation purposes. State-listed species are provided the same protection per VDGIF Regulation 4 VAC 15-20-130.

The law further authorizes the Board of the Virginia Department of Game and Inland Fisheries to adopt the Federal list of endangered and threatened species, to declare by regulation that species not listed by the Federal government are endangered or threatened in Virginia, and to prohibit by regulation the taking, transportation, processing, sale, or offer for sale of those species. Implementing regulations pursuant to this authority (4 VAC 15-20-130 through 140) further

define "take" and other terms similarly to the Federal ESA.

Federal Endangered Species Act Cooperative Agreement - Federally listed species are also protected under VDGIF jurisdiction via a cooperative agreement signed in 1976 with FWS pursuant to Section 6 of the ESA. This Cooperative Agreement recognizes VDGIF as the Virginia agency with regulatory and management authority in Virginia over federally listed or threatened animals, excluding insects, and provides for Federal/State cooperation regarding the protection and management of those species.

Enclosure 1: Federal and State Listed Mussel Species in Virginia

U.S. Fish and Wildlife Service: Environmental Conservation Online System (ECOS) (http://ecos.fws.gov/ecp/)

Virginia Department of Game and Inland Fisheries: Special Legal Status Faunal Species in Virginia (https://www.dgif.virginia.gov/wp-content/uploads/virginia-threatened-endangered-species.pdf)

Enclosure 2: Mussel Survey and Relocation Guidelines in Virginia

There are four general assessment/survey types including:

A. **Land-based review** - land-based site visit used to determine whether a water-based survey (site assessment, abbreviated, or full survey) is warranted. During a land-based review, the surveyor should look for obvious signs that would negate the need for additional, water-based surveys. For example, if it can be determined that the water body is non-perennial and/or contains no potential mussel habitat, it is unlikely that additional surveys would be needed or recommended by VDGIF or FWS. If it is determined that suitable habitat is present, the appropriate survey will be recommended. Photographs of the project site clearly showing instream habitat conditions, as well as a thorough site description, should be sent to VDGIF and FWS for review in lieu of the site assessment. If it is determined that suitable habitat is present, the appropriate survey will be recommended.

B. **Site assessment** - 20 m upstream / 80 m downstream. A site assessment is recommended to determine if suitable habitat is present at a project location and may be recommended if the presence of a listed species is questionable. If suitable habitat is present, the appropriate survey will be recommended even in the absence of mussels, since the site assessment does not serve as a substitute for a mussel survey; however, the presence of freshwater mussels should be documented during the assessment.

C. **Abbreviated survey** - 100 m upstream / 400 m downstream of project footprint.

D. **Full survey** - 200 m upstream / 800 m downstream of project footprint.

The assessment/survey type is based on the scope of the project, potential impacts, and known species distributions. Survey lengths are measured from the project footprint. *Survey distances have primarily been developed for projects where physical alteration/disturbance of the stream is the primary impact (e.g., bridge repair/replacement, utility line crossings, etc.). Potential impacts from projects involving activities such as point and non-point source discharges, water intakes, and mining may require greater survey lengths and different methods.*

Project applicants should contract with a qualified mussel surveyor. Enclosures 3 and 4 provide a list of pre-approved mussel surveyors. If a pre-approved surveyor is not selected, please provide the proposed surveyor's qualifications and proposed survey design to FWS and VDGIF a minimum of 30 days prior to survey initiation. Individuals who take federally listed threatened

and endangered animals must obtain a permit from VDGIF, prior to surveying. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Contact information follows:

Ms. Shirl Dressler
Virginia Department of Game and Inland Fisheries
4010 W. Broad Street
P.O. Box 11104
Richmond, Virginia 23230-1104
Phone: (804) 367-6913
CollectionPermits@dgif.virginia.gov

A plan for mussel relocations, including initial surveys, must be presented to VDGIF and FWS (where applicable) for comment and approval prior to initiation of construction. Failure to provide a mussel relocation and/or survey plan may affect review and permitting of the project by VDGIF and FWS.

The recommended time of year to conduct mussel surveys and relocations is April 1 through October 31. Surveying during the cooler months is discouraged because mussels tend to be located deeper in the substrate and a greater percentage of the population is subsurface, therefore making them more difficult to find, particularly rare species. A more specific time frame may be recommended depending on the target species. A survey conducted outside this time frame requires VDGIF and Service (where applicable) approval.

Guidelines if federally-listed mussels are not present

During the initial survey, mussel species within the direct project footprint or within imminent danger from project impacts may be relocated to suitable habitat unless otherwise directed by VDGIF. Suitable habitat typically includes an area upstream of project impacts and which also harbors freshwater mussels. If such an area cannot be found, the surveyor should determine the location of most suitable habitat. The direct project footprint shall be defined as the area of potentially disturbed substrate, any zone of heavy equipment operation, plus the distance downstream that may experience significant sedimentation from construction. If not determined prior to the relocation, the surveyor is responsible for determining the most suitable relocation area. All relocated mussels must be at least partially placed in the substrate, anterior end down. Project applicants may be required to monitor relocated mussels to determine relocation success/failure.

Standard mussel relocation protocols are outlined below. These protocols may vary based on factors such as the scope of the project and the results of the initial mussel survey. If the relocation protocols vary, VDGIF will clearly outline the appropriate protocols with the project applicant. It is the project applicant's responsibility to ensure that the proper relocation protocols are used and that the contracted mussel surveyor is aware of any modifications to the standard protocols.

The reach from which mussels are to be relocated will be at least 100 m long including the

project footprint. The standard protocol is as follows:

- The 1st relocation survey must occur within 30-45 days of instream construction activities and at least 7 days prior to the 2nd relocation survey.

- The 2nd relocation survey must occur within 30 days of instream construction activities and at least 7 days after the 1st relocation survey.

- All relocation surveys must include at a minimum, two passes. The target relocation percentage of the initial number of mussels collected is 80%. If on the 2nd pass, more than 20% of the initial number of mussels is collected, continued passes must be conducted until no more than 20% of the initial number of mussels is collected on the final pass. The target relocation percentage may be adjusted higher or lower depending on the species and numbers collected during the initial survey.

- If a state-listed species is found, continued passes must be conducted until no listed species are found on the final pass. If repeated passes result in continual collection of state-listed species, modification of the survey techniques may be required.

If relocation surveys are not possible due to natural conditions such as high water, contact VDGIF to arrange contingency plans.

The location of all relocated mussels must be accurately documented (preferably with geographic coordinates) and reported to VDGIF. All state-listed mussel species must be tagged and measured for potential future monitoring.

Project applicants may be required to adhere to time of year restrictions for mussel relocations as directed by VDGIF. If this is the case, for the long-term brooders, relocations can occur from June 16 though August 14 and October 1 through October 31. For short-term brooders, relocations can occur from April 1 through May 14 and August 1 through October 31.

All mussel survey and relocation results, including tag and measurement data, must be submitted to VDGIF for review, prior to instream construction activities. Reviews will be expedited due to the potential short timeframe between surveys and/or relocations and the start of instream work. Reports must contain, at a minimum, number of species found, number of individuals per species and their sizes, and number of individuals tagged.

Guidelines if federally-listed mussel species are present

Federally-listed mussels must *not* be relocated during the initial survey. If federally-listed mussels are found, they must remain exactly where found and all specimens should be photo documented, if possible. Coordination with FWS and VDGIF must occur to determine future actions.

If it is determined that a project may affect a federally-listed species, FWS will complete a consultation with the Federal action agency and prepare a biological opinion in accordance with the Federal Endangered Species Act. The relocation procedures for federally listed mussels will be specified in FWS's biological opinion and will be determined on a project-specific basis.

If relocation surveys are not possible due to conditions such as high water, contact FWS and VDGIF to arrange contingency plans. All listed mussels must be moved to suitable habitat upstream of any potential project impacts. Mussels may be relocated downstream if habitat upstream is determined unsuitable by VDGIF and FWS. If not determined prior to the relocation, the surveyor is responsible for determining the most suitable relocation area. All relocated mussels must be at least partially placed in the substrate, anterior end down. Project applicants may be required to monitor relocated mussels to determine relocation success/failure.

The location of all relocated federally-listed mussels must be accurately documented (preferably with geographic coordinates) and reported to FWS and VDGIF. All federally-listed mussel species also must be tagged and measured for potential future monitoring.

All mussel survey and relocation results must be submitted to FWS and VDGIF for review, prior to instream construction activities. Reviews will be expedited due to the potential short timeframe between surveys and/or relocations and the start of instream work. Reports must contain, at a minimum; number of species found, number of individuals per species and their sizes, number of individuals tagged, etc.

Project applicants may be required to adhere to time of year restrictions (Enclosure 5) for mussel relocations as recommended by FWS and VDGIF. Time of year restrictions will be specified in a letter or in FWS's biological opinion.

Enclosure 3: Surveyor List for Atlantic Slope Mussels in Virginia

Approved Surveyors in Virginia for Atlantic Slope Freshwater Mussels (http://www.fws.gov/northeast/virginiafield/pdf/endspecies/Surveyor_Lists/PDF%20Format/SURVEYOR%20LIST%20-%20Atlantic%20Slope%20Mussels.pdf)

Enclosure 4: Surveyor List for Upper Tennessee River Basin Mussels in Virginia

Approved Surveyors in Virginia for Tennessee River Drainage Freshwater Mussels (http://www.fws.gov/northeast/virginiafield/pdf/endspecies/Surveyor_Lists/PDF%20Format/SURVEYOR%20LIST%20-%20TN%20Drainage%20Mussels.pdf)

Enclosure 5: Time of Year Restrictions

Virginia Department of Game and Inland Fisheries Time of Year Restrictions (TOYR) Table (https://www.dgif.virginia.gov/wp-content/uploads/VDGIF-Time-of-Year-Restrictions-Table.pdf)

Enclosure 6 - Federally-Designated Critical Habitat for Mussels in Virginia

Map of Federally-Designated Critical Habitat in Virginia (http://fws.maps.arcgis.com/apps/Viewer/index.html?appid=f6e84e675ba1461b8ae6a351adea1429)