

Colonel Robert H. Reardon, Jr.  
U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, Virginia 23510-1096

Attn: Thom Leedom  
Regulatory Branch

Re: City of Salem, Permit Application No.

96-1700, Salem, Virginia

Dear Colonel Reardon:

The U.S. Fish and Wildlife Service has reviewed the Department of the Army permit application, 96-1700, submitted by the City of Salem, to replace a sewer line in Salem, Virginia. Your March 13, 1997 request for formal consultation was received on March 18, 1997. This document represents the Service's biological opinion on the effects of that action on the Roanoke logperch (*Percina rex*) in accordance with Section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 et seq.). A complete administrative record of this consultation is on file in this office.

## I. CONSULTATION HISTORY

01-17-97 The Service received a request from the U.S. Army Corps of Engineers to review the proposed project for federally listed species.

01-31-97 The Service sent a facsimile to the Corps stating that we had concerns about the Roanoke logperch for the proposed project.

03-18-97 The Service received the Corps' request to initiate formal consultation and receive a draft of the biological opinion.

05-07-97 The Service sent the draft biological opinion to the Corps.

05-28-97 The Corps contacted the Service via telephone and indicated that they had no comments on the draft biological opinion.

## II. BIOLOGICAL OPINION

### DESCRIPTION OF PROPOSED ACTION

The applicant proposes to install two sanitary sewer line siphons in the City of Salem, Virginia (Figure 1) to replace the existing sewer line. The stated purpose of the project is to eliminate sanitary sewer overflows into Mason Creek, a tributary to the Roanoke River, and to increase the sanitary sewer flow capacity of

the existing interceptor by eliminating the two crossings that are currently attached to bridge abutments. Both crossings will be encased in concrete, and will be installed with the use of non-erodible cofferdams. Construction at both crossings will occur by installing a cofferdam in ½ of the stream and then installing the siphon. After installation, the cofferdam will be removed and the second half of the stream will be crossed. After installation, riprap will be placed over the siphon. Both existing siphons will be left in place.

Lower Crossing - The applicant proposes to cross Mason Creek approximately 500 feet upstream of its confluence with the Roanoke River. This crossing will involve 49 linear feet of submerged pipeline. Riprap (900 square feet) will be placed on the stream banks after the crossing is complete. Construction of the siphon will take approximately 3 to 4 weeks, with approximately 1 week of instream work.

Upper Crossing - The second crossing of Mason Creek is approximately 1,000 feet downstream of Roanoke Boulevard, approximately 2,150 feet upstream from the confluence of Mason Creek and the Roanoke River. This crossing involves 32 linear feet of submerged pipeline. Blasting may be necessary for siphon installation. Riprap (300 square feet) will be placed on the stream banks after the crossing is complete. Construction of the siphon will take approximately 3 to 4 weeks, with approximately 1 week of instream work.

#### RANGEWIDE STATUS OF THE SPECIES

This information on the Roanoke logperch was recently provided to the Corps in two biological opinions, dated October 1, 1996 and March 14, 1997.

#### ENVIRONMENTAL BASELINE

As defined in 50 CFR 402.02 "action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies in the United States or upon the high seas. The "action area" is defined as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. The direct and indirect effects of the actions and activities resulting from the federal action must be considered in conjunction with the effects of other past and present federal, State, or private activities, as well as the cumulative effects of reasonably certain future State or private activities within the action area. The Service has determined that the action area for this project is Mason Creek and its streambanks from 200 m upstream of the upper crossing to its confluence with the Roanoke River and the Roanoke River and its streambanks from the confluence with Mason Creek to 780 m downstream.

Status of the Species in the Action Area - The Roanoke logperch has been documented in lower Mason Creek (Jenkins and Burkhead 1993). In 1947, the logperch was documented at the location of the upper crossing. In 1940, the logperch was documented upstream of the upper crossing. A recent Roanoke logperch survey has not been conducted in Mason Creek. The applicant has chosen to assume this species is present in areas with appropriate habitat. The logperch has been documented in the Roanoke River both upstream and downstream of its confluence with Mason Creek.

Effects of the Action - Direct effects to the logperch will occur in several ways. There is likely to be direct killing and/or injury of logperch during preparation for pipeline installation through blasting and instream work (cofferdam installation/removal and dewatering). Maximum total days of instream work is approximately 14 days. If blasting for the upper crossing occurs, fish in the immediate blast area will be killed and fish in the vicinity will be temporarily stunned and/or permanently injured; some of the stunned fish will recover, while others will have spinal injuries (R. Neves, Virginia Cooperative Fish and Wildlife Research Unit, pers. comm. 1996). Siltation and turbidity of all habitat types is of concern. Installation/removal of cofferdams, blasting, and dewatering will result in siltation and turbidity. Moderately silted areas and areas with high turbidity will be unusable by the logperch for foraging and spawning. This will occur in the immediate project vicinity as well as downstream areas. Heavy siltation is also likely to result in a loss of prey items. If instream work occurs during warm months, fish will not be able to forage in and near work areas due to instream construction, siltation, and turbidity. If the work occurs during spawning, the fish will be unable to successfully spawn in these areas. If work occurs after completion of spawning, crushing or removal of eggs is likely to occur. In cold months, the construction activity may force fish from their pool habitat, resulting in death or injury.

Temporary loss of instream habitat will occur during installation and use of cofferdams. In addition, riprap will be permanently placed instream for stream bed stabilization. However, if the material placed instream is similar to that which was present pre-construction, no permanent habitat loss should occur. Permanent habitat alteration will occur adjacent to streambanks where vegetation is to be removed (1,200 square feet) and replaced with riprap. Loss of streambank vegetation will result in increased water temperatures and changes in light regime in these relatively small areas.

Indirect effects are defined as those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50 CFR 402.02). Instream pipeline maintenance and/or breakage is not likely because the pipeline will be encased in concrete and in some places will be installed in bedrock. Therefore, no indirect effects are anticipated.

Cumulative Effects - Cumulative effects include the effects of future State, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA. Sewer upgrades may be necessary in the future; however, this will likely require permits from the Corps and will therefore be handled through Section 7 consultation.

Floodplain construction/clearing, streambank clearing, and chemical spills have occurred in the past and are likely to occur in the future in the action area. Floodplain and streambank alteration results in siltation, turbidity, and microhabitat alteration as discussed above. Eleven chemical spills have been documented in the Roanoke River and its tributaries between October, 1970 and March, 1992 (U.S. Fish and Wildlife Service 1992). Chemical spills may result in minor stream impacts or complete fish kills within a given stream reach. A complete fish kill may result in a significant setback in recovery of the Roanoke logperch, and it may take several years before the logperch population in that stream reach is restored to pre-spill levels.

The biological impacts of the proposed project are not significant to the continued existence of the Roanoke logperch population within or outside of the action area for several reasons: (1) Mason Creek likely contains few logperch even during periods of peak use, (2) the majority of the impacts from the project will be temporary, and (3) the only permanent habitat alteration that will occur is from the placement of a small amount of riprap in and adjacent to portions of the waterways.

## CONCLUSION

After reviewing the current status of the Roanoke logperch throughout its range and in the action area, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the installation of the sewer line, as proposed, is not likely to jeopardize the continued existence of the Roanoke logperch. No critical habitat has been designated for this species, therefore, none will be affected.

## III. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral 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. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency or applicant. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

## AMOUNT OR EXTENT OF TAKE

The Service anticipates that incidental take of the Roanoke logperch will be difficult to detect because of the species' small body size and cryptic coloring. In addition, finding a dead or impaired specimen is unlikely. The action area is 1.635 stream kilometers (sk) in length (0.780 sk in the Roanoke River and 0.855 sk in Mason Creek). Based on surveys conducted by Angermeier and Ensign (1991) within and upstream of the City of Roanoke, an average of 3.43 logperch (adults and juveniles) per sk are likely to occur in this section of the Roanoke River. Using this density, approximately 3 logperch may occur within the Roanoke River portion of the action area at any time. The Service anticipates that no more than 25% of the Roanoke logperch population (1 individual Roanoke logperch) will be taken in the Roanoke River during construction of the project, as proposed. Because a survey has not been conducted within Mason Creek and the numbers of logperch in this much smaller waterway are not likely to be similar to that of the Roanoke River, the Service cannot quantify the anticipated take of logperch in Mason Creek. However, the Service anticipates that 25% of the logperch in Mason Creek between 200 m upstream of the upper

crossing and the confluence of Mason Creek and the Roanoke River will be taken. The incidental take is expected to be in the form of direct injury or death, harassment, and harm. In addition, permanent habitat loss is expected to occur instream from the pipeline crossings (2,025 square feet). Permanent habitat alteration will also occur adjacent to streambanks where vegetation is to be removed (1,200 square feet) and replaced with riprap.

### REASONABLE AND PRUDENT MEASURES

The measures described below are nondiscretionary, and must be implemented by the Corps so that they become binding conditions of any permit issued to the applicant in order for the exemption in Section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of Section 7(o)(2) may lapse. The Service considers the following reasonable and prudent measures to be necessary and appropriate to minimize take of the Roanoke logperch.

- o Instream work will be conducted outside of the spawning season, preferably during low flow conditions, in order to minimize the effects of the action on eggs, larvae, and juvenile logperch.
- o Instream and streambank impacts and duration of instream activities will be minimized to reduce siltation, which adversely affects the logperch.

### TERMS AND CONDITIONS

In order to be exempt from the prohibitions of Section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline the required reporting/monitoring requirements. Monitoring is not required for this project because only a small population of logperch is likely to be affected by the proposed project and the anticipated take is minimal. These terms and conditions are nondiscretionary.

1. No instream work will be conducted from 15 March through June 30 of any year. Instream work will be conducted during the low flow period of any year, 1 August through 31 October, when possible.
2. Instream work in Mason Creek associated with one crossing will not occur within 14 days of instream work associated with other crossing.
3. Blasting will only be conducted where other methods of excavation are infeasible, and will be coordinated with the Service prior to initiation.
4. All cofferdams must be constructed of non-erodible materials. If aggregate is utilized, it must be of a size large enough that it cannot be moved by normal stream flows, and shall contain minimal amounts of fine particles.

5. All maintenance of temporary and permanent sedimentation and erosion control facilities shall be carried out in accordance with Section 1.7 of the Virginia Erosion and Sediment Control Handbook regulations (VR 625-02-00). During the period that the project site is under construction, the contractor will be responsible for inspection of the sedimentation and erosion control facilities on a daily basis. Any damage discovered will be repaired promptly by the contractor.

6. No excavated material will be stockpiled instream or between the water's edge and 25 feet landward of the top of the streambank.

7. All excavated material will be immediately taken off-site unless the majority is composed of stone. In those cases, the excavated material will be placed over the pipeline after installment instead of riprap obtained off-site.

8. All backfill on top of pipelines and riprap placed instream will consist of stone that is of approximately the same size as the stone existing in the waterway prior to construction.

9. Loose or free concrete and other construction materials will be prevented from entering the waterway.

10. Refueling of equipment or vehicles will not occur instream or between the water's edge and 25 feet landward of the top of the streambank.

11. Within 5 days of completion of installation of permanent riprap along streambanks, shade-producing vegetation (such as trees or shrubs) will be planted upslope of the riprap such that the vegetated area is equal to the area covered by vegetation prior to initiation of the clearing associated with this project.

12. Water needed for bank seeding will not be obtained from the Roanoke River or its tributaries.

13. The permittee or the Corps is required to notify the Service before initiation of construction and upon completion of the project at the address given below. All additional information to be sent to the Service should be sent to the following address:

Virginia Field Office  
U.S. Fish and Wildlife Service  
P.O. Box 99  
6669 Short Lane  
Gloucester, VA 23061  
Phone: (804) 693-6694  
Fax: (804) 693-9032

14. Care must be taken in handling any dead specimens of proposed or listed species that are found

in the project area to preserve biological material in the best possible state. In conjunction with the preservation of any dead specimens, the finder has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not unnecessarily disturbed. The finding of dead specimens does not imply enforcement proceedings pursuant to the ESA. The reporting of dead specimens is required to enable the Service to determine if take is reached or exceeded and to ensure that the terms and conditions are appropriate and effective. Upon locating a dead specimen, notify the Service at the address provided.

#### IV. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to further minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans and other recovery activities, or to develop information to benefit the species.

The Service recommends that a thorough Roanoke logperch survey be conducted in Mason Creek. We also recommend that additional surveys be conducted during and after construction to monitor impacts to the logperch. The Service would be pleased to provide recommendations for survey methodology.

In order for the Service to be kept informed of actions that minimize or avoid adverse effects or benefit listed species or their habitats, the Service requests notification of the implementation of any of these conservation recommendations by the Corps.

#### V. REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in the Corps' request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If this opinion does not contain national security or confidential business information, the Service will provide copies to the appropriate state natural resource agencies ten business days after the date of this opinion.

The Service appreciates this opportunity to work with the Corps in fulfilling our mutual responsibilities under the ESA. Please contact Cindy Schulz of this office at (804) 693-6694, extension 127 if you require additional information.

Sincerely,

Karen L. Mayne  
Supervisor  
Virginia Field Office

Enclosure

LITERATURE CITED

Angermeier, P.L. and W.E. Ensign. 1991. Reconnaissance survey of the Roanoke logperch (*Percina rex*) in the Roanoke River, Salem and Roanoke, Virginia. Phase 1 - Assessment of construction impacts of the Roanoke River Flood Reduction Project on the endangered Roanoke logperch (*Percina rex*). Report to Wilmington District Corps of Engineers, Wilmington, NC.

Jenkins, R.E. and N.M. Burkhead. 1993. Freshwater fishes of Virginia. American Fisheries Society, Bethesda, MD.

U.S. Fish and Wildlife Service. 1992. Roanoke logperch (*Percina rex*) recovery plan. Newton Corner, MA. 34pp.

(CSchulz:5/28/97)

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bcc: ARD-South, Region 5  
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