Biological Opinion

Replacement of Bridge No. 140 on SR 1138 over the Dan River, Rockingham County, North Carolina TIP number B-5716

FWS Project Code #: 2023-0100375-S7

Prepared by:

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August 3, 2023

Date

TABLE OF CONTENTS

CONSULTATION HISTORY

This section lists key events and correspondence during the course of this consultation. A complete administrative record of this consultation is on file with the Service's Raleigh Field Office.

2018-08-06 – The Service began discussions with the North Carolina Department of Transportation (NCDOT) regarding the need for formal Section 7 consultation.

2018-09-06 – Service staff met onsite with NCDOT to discuss the proposed action.

2023-02-24 – The Service received a draft Biological Assessment (BA) from the NCDOT.

2023-02-27 – The Service provided comments on the draft BA.

2023-06-08 – The Service received a revised draft BA from NCDOT.

2023-06-12 – The Service provided comments on the revised draft BA.

2023-06-28 – The Service received a final BA dated 2023-06-13 and a letter from the Federal Highway Administration (FHWA) requesting initiation of formal Section 7 consultation.

2023-07-03 – The Service provided a letter to the FHWA stating that all information required for initiation of formal consultation was either included with their 2023-06-28 letter or was otherwise available.

2023-07-05 – The Service provided the FHWA and NCDOT with a draft Biological Opinion.

BIOLOGICAL OPINION

1. INTRODUCTION

A biological opinion (BO) is the document that states the findings of the U.S. Fish and Wildlife Service (Service) required under section 7 of the Endangered Species Act of 1973, as amended (ESA), as to whether a Federal action is likely to:

- jeopardize the continued existence of species listed as endangered or threatened; or
- result in the destruction or adverse modification of designated critical habitat.

The Federal action addressed in this BO is the Federal Highway Administration (FHWA) funding of the North Carolina Department of Transportation (NCDOT) proposed replacement of Bridge No. 140 on SR 1138 over the Dan River, Rockingham County, North Carolina, STIP number B-5716 (Action). This BO considers the effects of the Action on the Roanoke Logperch. The Action does not affect designated critical habitat; therefore, this BO does not address critical habitat.

The Service previously concurred with the FHWA conclusion that the Action is not likely to adversely affect the James Spinymussel (*Parvaspina collina*) by letter dated July 3, 2023. This concurrence fulfilled the FHWA responsibilities for the Action under §7(a)(2) of the ESA for this species. We do not further address this species in this BO.

BO Analytical Framework

A BO that concludes a proposed Federal action is *not* likely to *jeopardize the continued existence* of listed species and is *not* likely to result in the *destruction or adverse modification* of critical habitat fulfills the Federal agency's responsibilities under §7(a)(2) of the ESA.

> *"Jeopardize the continued existence* means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR §402.02).
> "*Destruction or adverse modification* means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species" (50 CFR §402.02).

The Service determines in a BO whether we expect an action to satisfy these definitions using the best available relevant data in the following analytical framework (see 50 CFR §402.02 for the regulatory definitions of *action, action area, environmental baseline, effects of the action*, and *cumulative effects*).

a. *Proposed Action*. Review the proposed Federal action and describe the environmental changes its implementation would cause, which defines the action area.
b. *Status*. Review and describe the current range-wide status of the species or critical habitat.
c. *Environmental Baseline*. Describe the condition of the species or critical habitat in the action area, without the consequences to the listed species caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or

private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early consultation, and the impacts of State or private actions which are contemporaneous with the consultation.

d. *Effects of the Action*. Predict all consequences to species or critical habitat caused by the proposed action, including the consequences of other activities caused by the proposed action, which are reasonably certain to occur. Activities caused by the proposed action would not occur but for the proposed action. Effects of the action may occur later in time and may include consequences that occur outside the action area.
e. *Cumulative Effects*. Predict all consequences to listed species or critical habitat caused by future non-Federal activities that are reasonably certain to occur within the action area.
f. *Conclusion*. Add the effects of the action and cumulative effects to the environmental baseline, and in light of the status of the species, formulate the Service's opinion as to whether the action is likely to jeopardize species or adversely modify critical habitat.

2. PROPOSED ACTION

The NCDOT proposes to replace Bridge No. 140 on SR 1138 over the Dan River in Rockingham County, North Carolina (Action). The Action is Federally funded by the Federal Highway Administration. The existing bridge is considered structurally deficient. Components of both the superstructure and substructure have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities. The existing bridge is a 410 foot long, 10-span structure with two interior bents within the Dan River under normal flow conditions. The structure consists of prestressed concrete cored slabs on steel piles supported by reinforced concrete footings and timber abutments.

2.1. Construction of New Bridge

The new bridge will be a five-span structure (two at 116 feet, two at 115 feet, and one at 81 feet) totaling 543 feet. The new bridge will first be constructed parallel to the existing bridge on the downstream side. Temporary work bridges and platform fingers will be used to construct two interior bents within the river. Instream impacts include 174 square feet of permanent bank stabilization at the base of an added ditch running parallel to the southeastern side of the bridge and 87 square feet of impact to the channel bottom from the two interior bents. Approach work for both ends of the new bridge will include minimal tree clearing (south side only) and placement of fill material to raise the bridge and road elevation to provide a grade-separated crossing over the existing Norfolk Southern Railroad on the north side of the bridge. In total, the duration of construction is expected to take 24 months.

2.2. Demolition of Existing Bridge

After completion of the new bridge, the existing bridge will be removed in a top-down manner. The demolition will use non-shattering methods to remove the bridge in the fewest intact sections as possible. Concrete decks will be removed using a saw to remove deck and beam segments as individual pieces, which will be removed via crane in order to avoid dropping components into the water. For the south end bent and interior bents #1-6, the substructure will

be cut off below natural ground level and removed via crane. Interior bents #7-9 will be removed via crane, with the possibility that cofferdams may be required in the substructure removal. On the north end bent, the substructure will be left in place along with the addition of class II rip rap to rock plate the abutment slope. The use of causeways is unlikely; however, they cannot be completely ruled out subject to the selected contractor's methodology. If causeways are utilized, they will extend no more than halfway across the river. NCDOT's Best Management Practices for Construction and Maintenance Activities (NCDOT 2003) will be utilized.

2.3. Conservation Measures

The following will be incorporated into the design and construction of the Action to avoid and minimize effects to the Mayo River.

Regardless of the surface water quality classification, NCDOT will adhere to Design Standards in Sensitive Watersheds described in 15A NCAC 04B.0124.

(a) Uncovered areas in High Quality Water (HQW) zones shall be limited to a maximum total area of 20 acres within the boundaries of the tract. Only the land-disturbing activity within a HQW zone shall be governed by this Rule. Larger areas may be uncovered within the boundaries of the tract with the written approval of the Director upon providing engineering justification with a construction sequence that considers phasing, limiting exposure, weekly submitted self- inspection reports, and more conservative design than the 25-year storm. The Director may also stipulate the inclusion of other conditions in the plan as necessary based on specific site conditions.

(b) Erosion and sedimentation control measures, structures, and devices within HQW zones shall be planned, designed, and constructed to provide protection from the runoff of the 25-year storm that produces the maximum peak rate of runoff as calculated according to procedures in the United States Department of Agriculture, Natural Resources Conservation Service's "National Engineering Field Handbook 630 for Conservation Practices." Other methodologies may be used if based on generally accepted engineering standards that are shown to the Division to be equivalent to or improved over the procedures in Handbook 630. The Division shall determine acceptability of an alternative methodology based upon a showing that the runoff model used was based on observed data in agreement with the predictive model.

(c) In order to provide for water quality protection in HQW zones, sediment basins that discharge to those areas shall be designed and constructed to meet the following criteria:
    (1) use a surface withdrawal mechanism, except when the basin drainage area is less than 1.0 acre;
    (2) have a minimum of 1800 cubic feet of storage area per acre of disturbed area;
    (3) have a minimum surface area of 325 square feet per cfs of Q25 peak inflow;
    (4) have a minimum dewatering time of 48 hours; and
    (5) incorporate 3 baffles, unless the basin is less than 20 feet in length, in which case 2 baffles shall be sufficient.

(d) Upon a written request of the applicant, the Director may allow alternative design or control measures in lieu of meeting the conditions required in Subparagraphs (c)(2) through (c)(5) of this Rule if the applicant demonstrates that meeting all of those conditions will result in design or operational hardships and that the alternative measures will provide an equal or more effective level of erosion and sedimentation control on the site. Alternative measures may include quicker application of ground cover, use of sediment flocculants, and use of enhanced ground cover practices.
(e) Newly constructed open channels in HQW zones shall be designed and constructed with side slopes no steeper than two horizontal to one vertical if a vegetative cover is used for stabilization, unless soil conditions permit a steeper slope or where the slopes are stabilized by using mechanical devices, structural devices, or other forms of ditch liners proven to the Division as being effective in restraining accelerated erosion. The angle for side slopes shall be sufficient to restrain accelerated erosion.

Special procedures will also be used for clearing and grubbing, grading operations, seeding and mulching, and staged seeding within the project. NCDOT will designate the affected area as an Environmentally Sensitive Area.

- Clearing and Grubbing
  In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the Standard Specifications. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

- Grading
  Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete, and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the Standard Specifications.

- Seeding and Mulching
  Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment. Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches, and other areas within the Environmentally Sensitive Areas.

- Stage Seeding
  The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages

on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

All applicable Best Management Practices (BMPs) from the following documents will be used during project design and construction: Erosion and Sediment Control Design and Construction Manual (NCDOT 2015); Stormwater Best Management Practices Toolbox (NCDOT 2014); and Best Management Practices for Construction and Maintenance Activities (NCDOT 2003).

2.4. Other Activities Caused by the Action

A BO evaluates all consequences to species or critical habitat caused by the proposed Federal action, including the consequences of other activities caused by the proposed action, that are reasonably certain to occur (see definition of "effects of the action" at 50 CFR §402.02). Additional regulations at 50 CFR §402.17(a) identify factors to consider when determining whether activities caused by the proposed action (but not part of the proposed action) are reasonably certain to occur. These factors include, but are not limited to:

(1) past experiences with activities that have resulted from actions that are similar in scope, nature, and magnitude to the proposed action;
(2) existing plans for the activity; and
(3) any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

A shared 50-foot-wide Century Link/Duke Energy utility easement runs along the upstream side of the existing bridge. Aerial lines completely span the river through the easement with a pole on each bank. Although undetermined at this time, the aerial lines may need to be relocated.

2.5. Action Area

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" (50 CFR §402.02). Delineating the Action Area is necessary for the Federal action agency to obtain a list of species and critical habitats that may occur in that area, which necessarily precedes any subsequent analyses of the effects of the action to particular species or critical habitats.

It is practical to treat the Action Area for a proposed Federal action as the spatial extent of its direct and indirect "modifications to the land, water, or air" (a key phrase from the definition of "action" at 50 CFR §402.02). Indirect modifications include those caused by other activities that would not occur but for the action under consultation. The Action Area determines any overlap with critical habitat and the physical and biological features therein that we defined as essential to the species' conservation in the designation final rule. For species, the Action Area establishes the bounds for an analysis of individuals' exposure to action-caused changes, but the subsequent consequences of such exposure to those individuals are not necessarily limited to the Action Area.

Figure 2.5 shows the locations of all activities that the proposed Action would cause and the spatial extent of reasonably certain changes to land, water, or air caused by these activities, based

Figure 2.5: Action Area

on the descriptions and analyses of these activities in sections 2.1–2.4. The Action Area for this BO includes the SR 1138 (Lindsey Bridge Road) right-of-way at Rockingham County Bridge No. 140 beginning approximately 840 feet from the south end of the existing bridge and continuing approximately 1295 feet northeast of the existing bridge, plus the Dan River for a

distance of 328 feet (100 meters) upstream to 1,312 feet (400 meters) downstream. The Action Area consists mainly of developed/industrial areas, a maintained/disturbed roadside vegetative community, the SR 1138 pavement and bridge structure, the Dan River channel, and a small amount of riparian forest.

3. SOURCES OF CUMULATIVE EFFECTS

A BO must predict the consequences to species caused by future non-Federal activities within the Action Area, *i.e.,* cumulative effects. "Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 CFR §402.02). Additional regulations at 50 CFR §402.17(a) identify factors to consider when determining whether activities are reasonably certain to occur. These factors include but are not limited to: existing plans for the activity; and any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

In its request for consultation, the FHWA did not describe, and the Service is not aware of, any future non-Federal activities that are reasonably certain to occur within the Action Area. Therefore, we anticipate no cumulative effects that we must consider in formulating our opinion for the Action.

4. STATUS OF SPECIES

This section summarizes best available data about the biology and condition of the Roanoke Logperch (RLP, *Percina rex*) throughout its range that are relevant to formulating an opinion about the Action. The Service published its decision to list the RLP as endangered on August 18, 1989 (54 FR 34468–34472). No critical habitat has been designated for the species. The Species Status Assessment (SSA) Report was published in 2022 (USFWS 2022).

4.1. Species Description

The RLP is a large darter with an elongate body up to 165 mm in total length (Roberts and Rosenberger 2008). It has a bulbous snout, eight to 11 lateral blotches, dorsal scrawling, and an orange streak on the first dorsal fin which is especially vivid in mature males (Jenkins and Burkhead 1994).

4.2. Life History

The RLP is a benthic invertivore that uses a feeding tactic whereby it flips pebbles and gravel with its snout and eats the exposed invertebrates. Because of this specialized feeding behavior, they prefer habitat with loose, unembedded, and unsilted substrates and substrates of a size that are easily flipped (Rosenberger and Angermeier 2003, Lahey and Angermeier 2007). The maximum life span is approximately 6.5 years (Burkhead 1983), and reproductive maturity occurs at 2-3 years (Jenkins and Burkhead 1994). Spawning occurs in April or May in deep runs over gravel and small cobble. Logperch typically bury their eggs and provide no subsequent

parental care (Jenkins and Burkhead 1994). For additional life history information, see Section 2.2 of the SSA (USFWS 2022).

4.3. Numbers, Reproduction, and Distribution

The RLP is endemic to the Roanoke, Dan, and Chowan basins of Virginia and North Carolina. The known geographic distribution of RLP has expanded dramatically over time, from four streams by the end of the 1940s to 14 streams by the time of its ESA listing in 1989 to 31 streams currently. Because survey effort also increased dramatically over this time, we cannot determine whether RLP's range increased because of true range expansion via dispersal, new discovery of existing but undiscovered populations, or both. The species' current distribution is assessed as four metapopulations (Roanoke Mountain, Roanoke Piedmont, Dan, and Chowan). Each of these metapopulations harbors 1-5 demographically independent management units (MUs) with a total of 11 currently occupied MUs extending 2033.7 km. More detailed information regarding numbers, reproduction, and distribution can be found in Table 5, Section 2.3, and Section 3.5 of the SSA (USFWS 2022).

4.4. Conservation Needs and Threats

The RLP was listed as endangered under the ESA in 1989 based on its small geographic range, vulnerability to anthropogenic impacts like urbanization, reservoir construction, and water pollution, and projected future increases of those threats. Six factors have a particularly strong influence on RLP condition. First, fine-sediment deposition emanating from urbanization, agriculture, and other sources smothers eggs and reduces feeding efficiency, potentially resulting in reduced growth, survival, and recruitment. Second, chronic chemical pollution reduces habitat suitability for RLP, and acute pollution events reduce survival and population size. Third, dams and other barriers inhibit fish movement, fragmenting populations into smaller areas and reducing demographic rescue and gene flow among populations. Fourth, climate change may alter hydrology and sediment delivery by increasing flood magnitudes and flow variability in general, reducing flow predictability, decreasing summer/fall base flows, and increasing erosion and runoff of sediment, potentially reducing habitat suitability for all age-classes of RLP and increasing direct mortality of vulnerable juveniles during spring floods. Fifth, existing legal and regulatory mechanisms such as ESA protections, the U.S. Clean Water Act, and state-level equivalents likely benefit the species through prohibitions on activities that may cause take and by facilitating funding opportunities that can be used for RLP research and conservation. Sixth, management activities aimed at improving habitat quality (e.g., riparian revegetation to reduce silt loading), restoring habitat connectivity (e.g., removing dams), and directly manipulating populations through propagation, augmentation, reintroduction, translocation, and introduction of fish could increase the resiliency and redundancy of populations. More detailed information regarding conservation needs and threats can be found in Section 3.3 of the SSA (USFWS 2022).

5. ENVIRONMENTAL BASELINE

This section describes the best available data about the condition of the RLP in the Action Area without the consequences caused by the proposed Action.

5.1. Action Area Numbers, Reproduction, and Distribution

From 2015 to 2021, seven fish surveys were conducted within the Action Area yielding 2, 0, 2, 1, 1, 2, and 0 captures of RLP, respectively. Roberts et al. (2016) generated a capture probability for RLP of 0.092 for surveys consisting of electrofishing into a stationary seine. The number of RLP captured during each of the seven surveys can be divided by 0.092 to calculate the estimated number of individuals potentially present during each of the surveys. Taking the average number of individuals for the seven surveys (21.74 + 0 + 21.74 + 10.87 + 10.87 + 21.74 + 0) / 7 would result in 12 (rounded down) individuals potentially present within the Action Area. This estimate assumes an even distribution of individuals throughout the Action Area.

5.2. Action Area Conservation Needs and Threats

The Action Area covers approximately 0.4% of the Middle Dan MU (0.5 km/122.8 km) and represents approximately 0.02% (0.5 km/2033.7 km) of all habitat within the 11 occupied MUs. The Action Area has the same conservation needs and threats listed in Section 4.4. However, given its proximity to the Towns of Madison and Mayodan, the Action Area has increased threats from continuing urbanization. The adverse effects to aquatic systems from increased urbanization and impervious surface is well understood (Wheeler et al. 2005, Rosenberger 2007).

6. EFFECTS OF THE ACTION

In a BO for a listed species, the effects of the proposed action are all reasonably certain consequences to the species caused by the action, including the consequences of other activities caused by the action. Activities caused by the action would not occur but for the action. Consequences to species may occur later in time and may occur outside the action area.

We identified and described the activities included in the proposed Action in sections 2.1–2.3. We identified and described other activities caused by the proposed Action in section 2.4. Our analyses of the consequences caused by each of these activities follows.

6.1. Construction of New Bridge

The greatest potential for adverse effects to RLP from the Action is prolonged erosion of the disturbed area on and along the banks of the river within the Action Area during the construction of the bridge, placement of rip rap, and approach road earthwork. A major storm event could erode soil from within the disturbed construction area and wash it into the river, potentially clogging their gills, interfering with feeding, burying eggs, and otherwise degrading habitat. To avoid or minimize the potential for this effect, NCDOT has developed stringent erosion control measures and other conservation measures (see Section 2.3) which greatly reduce the likelihood of sediment entering the river. Even in the unlikely event of catastrophic failure of erosion control measures, the effects of the Action are likely sub-lethal for adults. Given the mobility of the species under normal flow conditions, RLP could temporarily relocate to areas of better habitat upstream or downstream of the bridge. Upstream or downstream movements of RLP could also be hindered temporarily by the disturbance created from the placement of new bents within the channel.

6.2. Demolition of Existing Bridge

Habitat for RLP may be affected by the removal of the existing in-channel bents and temporary causeways (if utilized). Disturbed sediment could redeposit downstream within RLP habitat. However, the increased turbidity and substrate disturbance would be temporary and have sub-lethal effects on adults. Upstream or downstream movements of RLP could be hindered temporarily by the disturbance created during bent removal and the placement/removal of the temporary causeways.

6.3. Conservation Measures

The conservation measures are primarily designed to minimize erosion, sedimentation, and turbidity, thus reducing the potential for effects to the species.

6.4. Other Activities Caused by the Action

The potential relocation of aerial utility lines adjacent to the existing bridge is not expected to affect the species.

6.5. Summary

It is estimated that up to 12 RLP may occur within the Action Area at any time and could thus be harmed. Given the highly mobile nature of the species, the Action is unlikely to kill any RLP. However, erosion of sediment into the river and increased turbidity could harm RLP by clogging their gills, interfering with feeding, burying eggs, and otherwise degrading habitat. The use of BMPs and other conservation measures will minimize the potential for such effects. The movements of RLP could temporarily be impeded by in-channel disturbance.

7. CUMULATIVE EFFECTS

In Section 3, we did not identify any activities that satisfy the regulatory criteria for sources of cumulative effects. Therefore, cumulative effects to RLP are not relevant to formulating our opinion for the Action.

8. CONCLUSION

In this section, we summarize and interpret the findings of the previous sections (status, baseline, effects, and cumulative effects) relative to the purpose of the BO for the RLP, which is to determine whether the Action is likely to jeopardize its continued existence.

The RLP is endemic to the Roanoke, Dan, and Chowan basins of Virginia and North Carolina, and its known range has expanded from 14 streams at the time of its ESA listing in 1989 to 31 streams currently. The species current distribution consists of 11 occupied MUs. The Action Area represents only about 0.02% of all known occupied habitat. The estimated number of RLP

present in the Action Area is up to 12 individuals. While mortality of RLP is unlikely, individuals within the Action Area may be temporarily harmed by the effects of sedimentation or by disturbance from in-water work. Conservation measures designed to reduce erosion and sedimentation will minimize such effects.

After reviewing the status of the species, the environmental baseline for the Action Area, the effects of the Action and the cumulative effects, it is the Service's biological opinion that the Action is not likely to jeopardize the continued existence of the RLP.

9. INCIDENTAL TAKE STATEMENT

ESA §9(a)(1) and regulations issued under §4(d) prohibit the take of endangered and threatened fish and wildlife species without special exemption. The term "take" in the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (ESA §3(19)). In regulations, the Service further defines:

- "harm" as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering;" (50 CFR §17.3) and
- "incidental take" as "takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant" (50 CFR §402.02).

Under the terms of ESA §7(b)(4) and §7(o)(2), taking that is incidental to a Federal agency action that would not violate ESA §7(a)(2) is not considered prohibited, provided that such taking is in compliance with the terms and conditions of an incidental take statement (ITS).

For the exemption in ESA §7(o)(2) to apply to the Action considered in this BO, the FHWA must undertake the non-discretionary measures described in this ITS, and these measures must become binding conditions of any permit, contract, or grant issued for implementing the Action. The FHWA has a continuing duty to regulate the activity covered by this ITS. The protective coverage of §7(o)(2) may lapse if the FHWA fails to:

- assume and implement the terms and conditions; or
- require a permittee, contractor, or grantee to adhere to the terms and conditions of the ITS through enforceable terms that are added to the permit, contract, or grant document.

9.1. Amount or Extent of Take

This section specifies the amount or extent of take of listed wildlife species that the Action is reasonably certain to cause, which we estimated in the "Effects of the Action" section of this BO. We estimate take of RLP of up to 12 individuals. This take is expected to be sub-lethal in nature for adults.

9.2. Reasonable and Prudent Measures

The Service believes that no reasonable and prudent measures are necessary or appropriate to minimize the amount or extent of incidental take of RLP caused by the Action. Avoidance and minimization of RLP habitat previously occurred during the routine project development and design process. Minor changes that do not alter the basic design, location, scope, duration, or timing of the Action would not reduce incidental take below the amount or extent anticipated for the Action as proposed. Therefore, this ITS does not provide RPMs for this species.

9.3. Terms and Conditions

No reasonable and prudent measures to minimize the impacts of incidental take caused by the Action are provided in this ITS; therefore, no terms and conditions for carrying out such measures are necessary.

9.4. Monitoring and Reporting Requirements

In order to monitor the impacts of incidental take, the FHWA must report the progress of the Action and its impact on the species to the Service as specified in the ITS (50 CFR §402.14(i)(3)). This section provides the specific instructions for such monitoring and reporting (M&R), including procedures for handling and disposing of any individuals of a species killed or injured. These M&R requirements are mandatory.

As necessary and appropriate to fulfill this responsibility, the FHWA must require any permittee, contractor, or grantee to accomplish the M&R through enforceable terms that the FHWA includes in the permit, contract, or grant document. Such enforceable terms must include a requirement to immediately notify the FHWA and the Service if the amount or extent of incidental take specified in this ITS is exceeded during Action implementation.

M&R1. Disposition of Dead RLP

If dead fish suspected of being RLP are observed during the construction and demolition activities of the Action, such fish must be collected (if can be safely done) and preserved for identification. Since RLP generally do not exceed 165 mm (6.6 inches), no dead fish larger than this need to be collected. Collected fish should ideally be preserved in 95% non-denatured ethyl alcohol/ethanol. If no ethyl alcohol is initially available, the fish may be temporarily stored on ice (not frozen) until ethyl alcohol is available. The fish should initially be submitted to the NCDOT Biological Surveys Group (Jared Gray, phone 919-707-6120) as soon as possible for identification. If determined to be RLP, the Service's Raleigh Field Office must be notified.

M&R2. Erosion Control Measures Failure

In the event of any visible sediment loss within the Action Area, a review of turbidity levels will be made upstream and downstream 400 meters (0.25 mile) to determine if sedimentation effects are occurring beyond 400 meters downstream. If visual observation of turbidity levels downstream appears to be elevated beyond upstream observations, the project inspector will

contact the Division Environmental Officer. If determined that project-related sedimentation is occurring beyond 400 meters, the Service's Raleigh Field Office must be contacted immediately to discuss potential remediation.

10. CONSERVATION RECOMMENDATIONS

§7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by conducting conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary activities that an action agency may undertake to avoid or minimize the adverse effects of a proposed action, implement recovery plans, or develop information that is useful for the conservation of listed species. The Service offers the following recommendations that are relevant to the listed species addressed in this BO and that we believe are consistent with the authorities of the FHWA.

1. Contribute funding to any ongoing or future RLP research, monitoring, or conservation efforts conducted by others.

11. REINITIATION NOTICE

Formal consultation for the Action considered in this BO is concluded. Reinitiating consultation is required if the FHWA retains discretionary involvement or control over the Action (or is authorized by law) when:

a. the amount or extent of incidental take is exceeded;
b. new information reveals that the Action may affect listed species or designated critical habitat in a manner or to an extent not considered in this BO;
c. the Action is modified in a manner that causes effects to listed species or designated critical habitat not considered in this BO; or
d. a new species is listed or critical habitat designated that the Action may affect.

12. LITERATURE CITED

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