



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

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August 04, 2014

Mr. Juan Hernandez, State Conservationist  
Natural Resources Conservation Service  
967 Illinois Avenue, Suite 3  
Bangor, Maine 04401

Dear Mr. Hernandez:

The enclosed document contains a Tier 2 biological opinion (Opinion) prepared by the U.S. Fish and Wildlife Service (Service) pursuant to section 7(a) (2) of the Endangered Species Act (ESA) on the effects of the replacement of two road-stream crossings, one on an unnamed tributary of Northern Stream and one on an unnamed tributary of Richardson Brook, on the federally endangered Atlantic salmon (*Salmo salar*) and its critical habitat. These two projects, which the Natural Resources Conservation Service (NRCS) are proposing to fund, are located on private forest land in T19 ED BPP, Maine. The objectives of these projects are to 1) restore aquatic organism passage and 2) restore natural stream function to these two streams, which are within the East Machias River watershed. These projects were determined by the Service to be covered activities already evaluated by the Service in the "Proposed Funding of Eight Specific Conservation Activities throughout the State of Maine Programmatic Biological Opinion" dated November 21, 2011 (PBO). We incorporate by reference this PBO and its attached incidental take statement.

In this Tier 2 Opinion, Service concludes that the actions, as proposed, are not likely to jeopardize the continued existence of Atlantic salmon. Furthermore, these actions are not likely to result in the destruction or adverse modification of designated critical habitat for Atlantic salmon.

As required by section 7 of the ESA, the Service is providing an incidental take statement with this Opinion. The incidental take statement incorporates by reference the reasonable and prudent measures found in the PBO that the Service considers necessary or appropriate to minimize incidental take associated with this action. The PBO take statement sets forth nondiscretionary terms and conditions, including reporting requirements, which the Federal agency and any person involved with this project must comply with in order to carry out the reasonable and prudent measures. Incidental take from activities that meet these terms and conditions will be exempt from the ESA take prohibition.

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We appreciate your cooperation on this consultation and look forward to our continued collaboration on projects that will benefit Atlantic salmon and their aquatic habitats. The NRCS is a vital Federal agency partner in working towards the recovery of this species. Please contact Wende Mahaney by email at [wende\\_mahaney@fws.gov](mailto:wende_mahaney@fws.gov) or by telephone at 207/866-3344, Extension 118 if you have any questions regarding this consultation.

Sincerely,



Laury Zicari  
Field Supervisor  
Maine Field Office

Enclosure

cc: Max Tritt, NMFS – Orono, Maine  
Dave Garcelon, NRCS – Bangor, Maine  
Ben Naumann, NRCS – Bangor, Maine  
Jeff Norment, NRCS – Bangor, Maine  
Colby Bruchs, MEDMR – Jonesboro, Maine

**TIER 2 BIOLOGICAL OPINION UNDER THE NATURAL RESOURCES  
CONSERVATION SERVICE FROMAL PROGRAMMATIC BIOLOGICAL OPINION  
(Log No. 53411-2010-F-0198)**

Lead Action

Agency: U.S. Department of Agriculture, Natural Resources Conservation Service

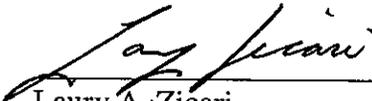
Activity: Project SHARE and Atlantic Salmon Federation Culvert Replacement  
Activities and Effects to Atlantic Salmon and Critical Habitat

Consultation

Conducted By: U.S. Fish and Wildlife Service, Maine Field Office  
(Log No. 05E1ME00-2014-F-0203)

Date Issued: August 04, 2014

Approved By:

  
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Laury A. Zicari,  
Field Supervisor

This biological opinion (Opinion) is provided in response to the Natural Resources Conservation Service's (NRCS) June 12, 2014 request to initiate formal consultation pursuant to section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended. Your biological evaluation, as submitted through an ME-ECS-1 form, describes the potential effects of the Project SHARE and Atlantic Salmon Federation (ASF) culvert replacement projects on the federally endangered Atlantic salmon (*Salmo salar*) and its designated critical habitat.

The Federal action reviewed in this Opinion is the proposed funding by the NRCS of two Wildlife Habitat Incentive Program (WHIP) projects, one planned by the Project SHARE in T19 ED BPP, Washington County, Maine and one planned by the ASF in T19 ED BPP, Washington County, Maine. Project SHARE is under contract with the NRCS to replace a culvert on an unnamed tributary of Northern Stream and the ASF is under contract to replace a culvert on an unnamed tributary of Richardson Brook (although Project SHARE will manage the construction of the ASF project). Both projects will occur on private forest land where landowner permission has been granted for construction. These projects will involve removal of an existing, under-sized round culvert and replacement with a channel-spanning bottomless arch culvert. The new road-stream crossing structures will result in improvements to aquatic organism passage and improvements to natural stream function in both tributaries. These perennial streams are designated as critical habitat for the endangered Atlantic salmon.

This Opinion and incidental take statement (ITS) were prepared by the U.S. Fish and Wildlife Service (Service) in accordance with section 7(b) of the ESA of 1973, as amended (16 U.S.C. 1531, *et seq.*), and implementing regulations at 50 CFR 402. With respect to designated critical habitat, the following analysis relied only on the statutory provisions of the ESA and not on the regulatory definition of "destruction or adverse modification" at 50 CFR 402.02.

## **I. Background**

On November 21, 2011, the Service completed a programmatic biological opinion (PBO) for the effects of eight specific activities that the NRCS may fund throughout the state of Maine on Atlantic salmon and their critical habitat. This PBO covers activities over a period of five years.

The eight activities addressed by the PBO are the following:

- a. Stream crossing replacements
- b. Stream crossing culvert removals
- c. Stream bank and shoreline stabilization using soil bioengineering techniques
- d. Low-water crossings
- e. Large woody debris and boulder supplementation
- f. Side channel or off-channel reconnection
- g. Remnant log drive dam removals
- h. Installation/repair/replacement of existing fish passage structures

Information on the specific characteristics of each covered activity can be found in greater detail in the PBO and the NRCS's programmatic biological assessment (March 26, 2010), both of which we incorporate herein by reference. The PBO established a two-tiered consultation process for each applicable future Federal action regarding activities subject to section 7(a)(2) of

the ESA, with issuance of the PBO being Tier 1 and all subsequent site-specific project analyses constituting Tier 2 consultations covered by the PBO. Under this tiered consultation process, the Service produces a Tier 2 Opinion when it is determined that a proposed Federal action is “likely to adversely affect” federally endangered Atlantic salmon or designated critical habitat in the action area and the project is covered by the PBO.

Both the NRCS and the Service have determined that the Project SHARE and ASF projects meet the criteria for inclusion as an activity covered by the PBO. Therefore, this Tier 2 Opinion regarding the effects of the project on Atlantic salmon and Atlantic salmon critical habitat in an unnamed tributary of Northern Stream and an unnamed tributary of Richardson Brook can tier from the November 21, 2011 PBO.

## **II. Consultation History**

The PBO contains information on the consultation history for the Tier 1 process, specific information on the status of Atlantic salmon and Atlantic salmon critical habitat throughout the Gulf of Maine Distinct Population Segment (GOM DPS) (pages 35-48), the environmental baseline for each future Tier 2 project (page 49), and the Service’s analysis of the effects of stream crossing replacement projects (pages 50-63).

The PBO concluded that, after considering the current status of Atlantic salmon and its designated critical habitat, the environmental baseline, the effects of the proposed action, and the potential for future cumulative effects in the action area, it is the Service’s biological opinion that the proposed action by the NRCS – implementation of eight specific conservation activities – is not likely to jeopardize the continued existence of the GOM DPS of Atlantic salmon throughout all or a significant portion of its range. Furthermore, the proposed action is not expected to result in the destruction or adverse modification of critical habitat. In reaching these conclusions, the Service considered the best available scientific and commercial information regarding Atlantic salmon and the likely effects of the eight NRCS conservation activities on salmon and their critical habitat.

The consultation history for the Project SHARE and ASF projects is as follows:

- On February 10, 2014, the NRCS sent the Service information regarding four potential road-stream crossing replacement sites in Hancock County (1 site) and Washington County (3 sites), Maine.
- On February 12, 2014, staff from the NRCS and the Service met to discuss these same four potential road-stream crossing replacement projects and verified that each would require ESA section 7 consultation. These projects are located on Allen Brook, Meadow Brook, an unnamed tributary to Richardson Brook and an unnamed tributary to Northern Stream. The NRCS is proposing to provide WHIP funding to the Project SHARE and ASF to construct these projects.
- On June 12, 2014, the NRCS submitted a “bundled” request for section 7 consultation for the four road-stream crossing replacement projects.
- On July 25, 2014 the Service provided the NRCS with written concurrence that the two projects located on Allen Brook and Meadow Brook would be “not likely to adversely

affect” both Atlantic salmon and salmon critical habitat, as described in the NRCS request for consultation.

- The Service has reviewed the information contained in the biological evaluation submitted by the NRCS on June 12, 2014. Your submittal included the ME-ECS-1 form and supplemental information, as agreed upon in the PBO. Since submission of the biological evaluation, the NRCS has provided additional information by email as requested by the Service.

We concur with your determination that the Project SHARE and ASF projects are likely to adversely affect Atlantic salmon, which may occur within the action areas based on the findings in your biological evaluation. We have also determined, based on information given in your biological evaluation, that the Project SHARE and ASF projects are likely to adversely affect the primary constituent elements of the critical habitat present in the action areas.

### **III. Scope of the Tier 2 Biological Opinion and Applicability of the PBO**

The Project SHARE and ASF projects both fit the description of “*Stream Crossing Replacements*” as evaluated in the Tier 1 PBO. The project on an unnamed tributary of Northern Stream also includes removal of 3 or 4 “foundation” logs that appear to be the last remaining pieces of an old crib dam located just upstream of the culvert that will be replaced. Although not being funded by the NRCS, Project SHARE is proposing to remove these logs in association with replacement of the road-stream crossing structure. Removal of a “*remnant log drive dam*” is one of the eight activities addressed by the PBO. Typically, the National Marine Fisheries Service (NMFS) would have the section 7 consultation lead for a Tier 2 consultation regarding a remnant dam removal. In this case, because the activity associated with remnant dam removal is quite minimal (removal of 3 or 4 logs sitting on the stream bottom) and only being done because of the adjacent stream crossing replacement project, the NMFS has agreed to defer to the section 7 consultation between the NRCS and the Service as long as the log removal activities are considered together with the stream crossing replacement (Max Tritt, NMFS; personal communication July 29, 2014).

Both projects are also consistent with the “*General Prescriptions*” that apply to all activities covered by the PBO. The effects of the Project SHARE and ASF projects, on both Atlantic salmon and critical habitat, are also expected to be consistent with those described in the PBO. As a result, the Project SHARE and ASF projects can be activities covered by the PBO and then evaluated using the Tier 2 abbreviated consultation approach.

### **IV. Project description (from the NRCS biological evaluation and ME-ECS-1)**

#### **A. Project SHARE – Unnamed Tributary to Northern Stream**

The proposed project involves the removal of an existing 0.91 meter (m) (3 foot (ft)) plastic culvert from Round Lake Road, an unpaved forest management road in T19 ED BPP, Maine. The existing culvert on an unnamed tributary of Northern Stream also has a beaver “deceiver” made of fencing and plastic pipes associated with the upstream inlet of the culvert. The inlet of the culvert is blocked with considerable debris, a situation being exacerbated by the presence of

the beaver “deceiver”. This structure will be removed along with the existing culvert. Currently, water is impounded upstream of the road due to both the undersized culvert and the debris caught in the beaver “deceiver”. Approximately 30.48 m (100 ft) downstream of the road-stream crossing, the stream channel becomes braided due to large amounts of road fill material that has washed into the stream after numerous crossing failures. The existing road-stream crossing represents at least a partial, if not a complete, barrier to aquatic organism passage, including Atlantic salmon.

The existing 0.91 m culvert will be replaced with a 3.66 m (12 ft) wide corrugated metal bottomless arch culvert. The new road-stream crossing structure is being designed by the NRCS consistent with requirements of the PBO. Bankfull width of the stream was determined by the NRCS to be approximately 3.05 m (10 ft), based on both field measurements in reference stream reaches and hydrology regression equations.

Project-specific final engineering drawings will be provided to the Service prior to the start of construction, as required by the PBO. Although the PBO requires that final drawings will be provided to the Service at least 30 days prior to project implementation, the NRCS has notified the Service that drawings for this project likely will not be ready in this timeframe but will be provided to the Service as soon as possible (Dave Garcelon, NRCS; personal communication July 30, 2014). This is an acceptable modification to the PBO requirements in this situation.

In association with replacing the road-stream crossing structure, the road surface will be improved on either side of the crossing. The elevation of the road surface will be raised, as necessary, to reduce the potential for high water flows to top the road and to allow sufficient cross-sectional area within the arch culvert to pass at least a 25-year storm (a requirement of the PBO). All side slopes and disturbed ground will be stabilized with hay or straw mulch to reduce potential erosion and will also be seeded with an appropriate perennial grass seed mix.

In addition to the replacement of the road-stream crossing structure and improvements to the road surface, Project SHARE also intends to remove three or four foundation logs that are resting on the stream bottom upstream of the culvert and appear to be the last in-water remnants of an old crib dam. The logs are likely anchored to some degree into the stream bank. The NRCS is not funding this portion of the project, but removal of these logs would likely not happen but for the replacement of the road-stream crossing structure. Project SHARE intends to remove these logs from the stream channel before the culvert replacement work begins and would use hand tools, such as a Griphoist® (July 30, 2014 email from Ben Naumann, NRCS to Wende Mahaney, Service). The Project SHARE is currently authorized under the Service’s Regional Endangered Species Recovery Permit TE-697823 to take juvenile Atlantic salmon in association with the removal of remnant log-drive dams with hand labor and hand tools. According to this permit, use of heavy equipment (e.g. excavator) by the Project SHARE for a remnant dam removal work requires prior written approval by the Service.

#### **B. Atlantic Salmon Federation – Unnamed Tributary to Richardson Brook**

The proposed project involves the removal of an existing 0.91 m (3 ft) corrugated metal culvert from an unpaved forest management road in T19 ED BPP, Maine. Currently, water is slightly impounded in the unnamed tributary of Richardson Brook upstream of the road due to the

undersized culvert. There is considerable road fill material deposited in the stream channel downstream of the culvert as a result of numerous crossing failures. The existing road-stream crossing represents at least a partial barrier to aquatic organism passage, including Atlantic salmon. Although the NRCS is contracting this project with the ASF, Project SHARE will manage the project and provide construction over-sight on behalf of the ASF.

The existing 0.91 m (3 ft) culvert will be replaced with a 2.74 m (9 ft) wide corrugated metal bottomless arch culvert. The new road-stream crossing structure is being designed by the NRCS consistent with requirements of the PBO. Bankfull width of the stream was determined by the NRCS to be approximately 1.83 m (6 ft), based on both field measurements in reference stream reaches and hydrology regression equations.

Project-specific final engineering drawings will be provided to the Service prior to the start of construction, as required by the PBO. Although the PBO requires that final drawings will be provided to the Service at least 30 days prior to project implementation, the NRCS has notified the Service that drawings for this project likely will not be ready in this timeframe but will be provided to the Service as soon as possible (Dave Garcelon, NRCS; personal communication July 30, 2014). This is an acceptable modification to the PBO requirements in this situation.

In association with replacing the road-stream crossing structure, the road surface will be improved on either side of the crossing. The elevation of the road surface will be raised, as necessary, to reduce the potential for high water flows to top the road and to allow sufficient cross-sectional area within the arch culvert to pass at least a 25-year storm (a requirement of the PBO). All side slopes and disturbed ground will be stabilized with hay or straw mulch to reduce potential erosion and will also be seeded with an appropriate perennial grass seed mix.

### **BMPs to Minimize Adverse Effects**

A number of best management practices (BMPs), as outlined in the PBO, will be incorporated into the Project SHARE and the ASF projects to ensure that adverse effects to Atlantic salmon and its critical habitat are avoided and minimized as much as possible. Most of these BMPs are outlined on pages 21 through 32 of the PBO under **General Prescriptions**.

Required BMPs include (but are not limited to) the following (see the PBO for a complete list of required conservation measures):

- A pre-construction meeting with the NRCS, program cooperator and their contractor will be held at least one week prior to construction.
- The NRCS will review and approve the sediment and erosion control plan.
- Erosion controls will be installed prior to any soil disturbing activities.
- Existing roads or travel paths will be used to access the project site and all work will be conducted with equipment operating from the existing roads and reaching into the streams as necessary.
- All instream work will be conducted from July 15 to September 30.
- Instream work will be conducted in the dry and downstream flows will be maintained during construction with negligible changes in water quality.

- Fish will be excluded and removed from the worksite before any instream work is started (with the exception of cofferdam installation and dewatering) using protocols described in the PBO (pages 25 through 29).
- All disturbed areas will be properly stabilized and revegetated within 3 days of the end of construction activities.

## **V. Status of the Species and Critical Habitat**

The species description, life history, population dynamics, status and distribution are fully described in the PBO on pages 35 through 48 for the Atlantic salmon and its critical habitat and are hereby incorporated by reference. Since issuance of the Service's PBO in November 2011, there are no substantial changes in status of Atlantic salmon or its critical habitat. Minor updates to the Status of the Species and Critical Habitat section of the PBO can be found in a more recent Biological Opinion issued by the Service on November 18, 2013 (USFWS 2013). A copy of this Biological Opinion can be obtained by contacting Service's Maine Field Office (see page 12 for contact information).

## **VI. Environmental Baseline**

The Tier 1 PBO could not predict the exact location and action area for future projects and, therefore, could not describe the environmental baseline for any particular project. Consequently, the PBO provided several assumptions regarding the environmental baseline that should be applicable to each future NRCS project action area and that allowed the Service to complete our programmatic analyses regarding both 1) jeopardy to the species and 2) destruction or adverse modification of critical habitat (page 49).

We have reviewed these PBO assumptions in relationship to the Project SHARE and ASF project action areas and have determined that these assumptions are applicable to this project. Below is a brief summary regarding the current status of Atlantic salmon and their habitat in and near the action areas for both projects.

### **A. Project SHARE - Unnamed Tributary to Northern Stream**

The proposed project is located about 80.77 m (265 ft) upstream of the confluence of the unnamed tributary with Northern Stream. Northern Stream is a tributary of the East Machias River. The project location is within the range of the GOM DPS and within the Downeast Coastal Salmon Habitat Recovery Unit (SHRU) for Atlantic salmon. The East Machias River and several of its tributaries, including Northern Stream, are actively managed by the Service, the NMFS, and the Maine Department of Marine Resources (MEDMR) to facilitate recovery of endangered Atlantic salmon in this watershed.

Atlantic salmon habitat in Northern Stream has been field mapped by agency biologists. Northern Stream contains 48.03 units (one unit of salmon habitat = 100 m<sup>2</sup>) of spawning habitat. Northern Stream also contains 257.77 units of juvenile rearing habitat. Within Northern Stream salmon habitat is generally concentrated in two stream reaches, one stretch below the outlet of

Love Lake (the headwaters of Northern Stream) and one stretch above where Richardson Brook flows into Northern Stream.

Atlantic salmon habitat has not been field mapped in the unnamed tributary of Northern Stream where the proposed project is located. This tributary flows into mapped juvenile rearing and spawning habitat in Northern Stream. A model developed to predict the occurrence of juvenile salmon rearing habitat within perennial streams in the GOM DPS, however, shows approximately 8.49 units of juvenile rearing habitat available within this tributary (Wright et al. 2008). The majority of this juvenile habitat is above the culvert location. Biologists with the MEDMR have identified this tributary as providing an important source of summer cold water refuge habitat for salmon.

The existing culvert is negatively impacting Atlantic salmon habitat by at least partially blocking upstream passage. Furthermore, this undersized and blocked culvert is negatively affecting the movement of sediment and woody debris through the stream and causing water to be unnaturally impounded upstream of the culvert. The current condition of the road at the crossing results in the stream frequently over-topping the road, which washes road materials into the stream and degrades aquatic habitat. The large impoundment upstream of the road, where riparian trees have been killed by higher water levels, is also likely to be causing elevated stream temperatures in the action area.

In recent years Atlantic salmon are known to have spawned in Northern Stream, including in the vicinity of the confluence with this unnamed tributary. Some of this spawning is the result of adults returning from the sea to spawn, while other spawning is the result of pre-spawn hatchery salmon being released into Northern Stream. In 2013, however, there was no documented spawning in Northern Stream near the project area.

In an effort to increase future adult returns to the Northern Stream watershed, Atlantic salmon juveniles are stocked each year into appropriate rearing habitat in Northern Stream and some of its tributaries. In 2013, 0+ parr (i.e., juvenile salmon hatched in spring 2013) were stocked in the fall in the following locations and numbers:

- 1) Barrows Stream – 1,676
- 2) Creamer Brook – 1,584
- 3) Northern Stream – 7,388
- 4) Richardson Brook - 501

In the spring of 2014, Creamer Brook was stocked with 5,583 salmon fry. Northern Stream, Richardson Brook, and Barrows Stream are all slated for fall 2014 stocking with 0+ parr in numbers similar to or greater than those stocked in 2013. Fall 2014 stocking will occur in October or November. Juveniles that are either stocked in the Northern Stream watershed or produced from salmon spawning could move into the project action area.

#### **A. Atlantic Salmon Federation – Unnamed Tributary to Richardson Brook**

The proposed project is located about 518.16 m (1,700 ft) upstream of the confluence of the unnamed tributary with Richardson Brook and about 1402.08 m (4,600 ft) upstream of where

Richardson Brook flows into Northern Stream. Northern Stream is a tributary of the East Machias River. The project location is within the range of the GOM DPS and within the Downeast Coastal SHRU for Atlantic salmon. The East Machias River and several of its tributaries, including Northern Stream, are actively managed by the Service, the NMFS, and the MEDMR to facilitate recovery of endangered Atlantic salmon in this watershed.

Atlantic salmon habitat has not been field mapped by agency biologists in either Richardson Brook or any of its tributaries. A model developed to predict the occurrence of juvenile salmon rearing habitat within perennial streams in the GOM DPS, however, shows approximately 127.87 units of juvenile rearing habitat available within Richardson Brook and its perennial tributaries (Wright et al. 2008). The proposed project location does not appear as a perennial stream on the U.S. Geological Survey's 1:24,000 scale topographic map of the area, so the habitat model does not predict juvenile rearing habitat in this stream. Nevertheless, this stream (which has been identified in the field by the NRCS as perennial) is likely to offer some juvenile rearing habitat for Atlantic salmon.

The existing culvert is negatively impacting Atlantic salmon habitat by at least partially blocking upstream passage. Furthermore, this undersized culvert is negatively affecting the movement of sediment and woody debris through the stream and causing water to be unnaturally impounded upstream of the culvert. The current condition of the road at the crossing results in the stream frequently over-topping the road, which washes road materials into the stream and degrades aquatic habitat. The impounded area upstream of the road, where riparian trees have been killed by higher water levels, is also likely to be causing elevated stream temperatures in the action area.

As discussed above for the Project SHARE action area, Richardson Brook and Northern Stream are known to be currently occupied by Atlantic salmon, both as the result of restoration stocking activities and spawning by sea-run adults. Although the action area of the ASF project is not specifically stocked with salmon and has not been surveyed for the presence of salmon, it is feasible that juveniles could move into this tributary from nearby stocking or spawning locations. Although territorial by nature, juvenile salmon are known to move to seek out appropriate habitat, particularly sources of cold water during hot summer conditions.

## **VII. Effects of the Action**

Based on our analysis of the information provided in your biological evaluation for the Project SHARE and ASF projects, the Service concurs that the proposed projects will result in adverse effects to Atlantic salmon and Atlantic salmon critical habitat within an unnamed tributary of Northern Stream and an unnamed tributary of Richardson Brook due to installation of cofferdams, stream dewatering, sedimentation, and disturbing or handling salmon during fish evacuation activities. These adverse effects will all be relatively short-term during the proposed construction activities.

In the long term, these two projects will result in beneficial effects to Atlantic salmon and their critical habitat by removing two undersized culverts that are having negative effects on fish passage and natural stream function. Installation of two channel-spanning bottomless arch

culverts should allow relatively natural movements of salmon and other fish species in these two streams and should also improve natural stream functions, like movement of sediment and woody debris through these stream reaches. Furthermore, improvements to the design of the road in the vicinity of the two stream crossings should reduce the amount of road-related sediment that is discharged into these streams and improve downstream aquatic habitat conditions.

### **VIII. Cumulative Effects**

Cumulative effects include the effects of future State, local, or private (non-Federal) actions that are reasonably certain to occur in the action area considered in this Opinion. A non-Federal action is “reasonably certain” to occur if the action requires the approval of a State or local resource or land-control agency, such agencies have approved the action, and the project is ready to proceed. Other indicators which may also support such a “reasonably certain to occur” determination include whether a) the project sponsors provide assurance that the action will proceed; b) contracting has been initiated; c) State or local planning agencies indicate that grant of authority for the action is imminent; or d) where historic data have demonstrated an established trend, that trend may be forecast into the future as reasonably certain to occur. These indicators must show more than the possibility that the non-Federal project will occur; they must demonstrate with reasonable certainty that it will occur. 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 Act and would be consulted on at a later time.

Cumulative effects are described on pages 76 through 77 of the Tier 1 PBO and are hereby incorporated by reference. Since issuance of the Service’s PBO, there have been no substantial changes in cumulative effects associated with the action areas for either the Project SHARE or ASF projects.

### **IX. Conclusions**

The Service concludes that the proposed Project SHARE and ASF projects in T19 ED BPP, Maine are consistent with the Tier 1 PBO for effects to Atlantic salmon and salmon critical habitat. After reviewing site specific information including 1) the scope of the Federal action; 2) the environmental baseline; 3) the status of the Atlantic salmon in the Northern Stream watershed, including the two unnamed tributary streams, and the potential occurrence of salmon within the project action areas; 4) the status of Atlantic salmon critical habitat within the project action areas; 5) the effects of the two projects; and 6) any cumulative effects, it is the Service’s biological opinion that the Project SHARE and ASF projects, as described, are not likely to jeopardize the continued existence of the GOM DPS of Atlantic salmon throughout all or a significant portion of its range. Furthermore, the proposed actions are not expected to result in the destruction or adverse modification of salmon critical habitat. In reaching these conclusions, the Service considered the best available scientific and commercial information regarding Atlantic salmon and the likely effects of the proposed actions on Atlantic salmon and their critical habitat.

## X. Incidental Take Statement

Section 9 of ESA and Federal regulations pursuant to section 4(d) of ESA prohibit the take of endangered and threatened species without special exemption. 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, and applies to individual members of a listed species. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed wildlife by annoying it 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 defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. 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 to be prohibited taking under ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement (ITS).

The Department of the Interior, acting through the Service, is implementing all pertinent Reasonable and Prudent Measures and implementing Terms and Conditions that are stipulated in the Tier 1 PBO Incidental Take Statement (pages 82 through 83 of the PBO), which will minimize the anticipated incidental take of Atlantic salmon. If the amount or extent of incidental take outlined in the Tier 1 PBO and the Tier 2 Opinion is exceeded for the Project SHARE and ASF projects, the NRCS will expeditiously reinitiate consultation with the Service.

The Service anticipates that there may be both lethal and non-lethal take of juvenile Atlantic salmon as a result of the proposed actions addressed in this Opinion. Incidental take caused by the adverse effects of the proposed action will include the following: 1) the capture and relocation of juvenile fish during instream work area isolation and dewatering; 2) the death of juvenile salmon as a result of capture techniques, including electrofishing; and 3) the death of juvenile salmon left stranded inside of dewatered cofferdams. The following discussion summarizes the anticipated amount of incidental take associated with these activities, as derived from the analysis and discussion in Section IV of the November 21, 2011 PBO (pages 50 through 56).

**Project SHARE Action** – The NRCS estimates that about 74.32 m<sup>2</sup> (800 ft<sup>2</sup>) of stream channel will be temporarily affected during construction activities. This area of disturbance is equivalent to about three-quarters of one salmon habitat unit (one unit = 100 m<sup>2</sup>). The MEDMR expects that salmon juvenile density near the project site during the hottest summer temperatures could equal or exceed the highest juvenile salmon densities recorded during electrofishing surveys of adjacent rearing habitat in Northern Stream, given the cold water refuge habitat present near the project site. As water temperatures typically cool into September, the MEDMR expects that juvenile salmon density near the project would be at or below the lowest salmon densities recorded in adjacent habitat. From 2010-2013, measured juvenile salmon densities in adjacent rearing habitat have ranged between 3.7 and 12.3 parr per habitat unit (100 m<sup>2</sup>).

Therefore, the Service authorizes the take of up to 13 juvenile Atlantic salmon during construction of the Project SHARE culvert replacement. This amount of take accounts for the highest likely number of juvenile salmon that could be present in the area of stream affected by construction during the hottest summer temperatures. Instream construction work will disturb nearly one unit of juvenile salmon habitat; therefore, we are authorizing take to account for the highest number of salmon likely to be present within one unit of habitat. Take of Atlantic salmon would primarily be related to fish relocation activities carried out in association with isolation and dewatering of the instream work area for the culvert replacement. This authorized take includes both non-lethal (e.g., capture and relocation) and lethal (e.g., mortality associated with electrofishing or stranding inside a de-watered cofferdam) take of juvenile Atlantic salmon. Fall parr stocking planned for 2014 in Northern Stream, Richardson Brook, and Barrows Stream will not increase the number of juvenile salmon likely to be present in the action area because stocking will occur in October or November, after instream construction work is completed.

**Atlantic Salmon Federation Action** - The NRCS estimates that about 74.32 m<sup>2</sup> (800 ft<sup>2</sup>) of stream channel will be temporarily affected during construction activities. This area of disturbance is equivalent to about three-quarters of one salmon habitat unit (one unit = 100 m<sup>2</sup>). The MEDMR expects that juvenile salmon would occur at this project site in smaller numbers than at the Project SHARE location, given the more limited and lower quality juvenile rearing habitat in the project area and given the greater distance from recent salmon stocking locations in Richardson Brook. In a tributary of similar size that is not directly stocked and is adjacent to marginal quality rearing habitat, MEDMR has documented 1.5 parr per habitat unit (100 m<sup>2</sup>).

Therefore, the Service authorizes the take of up to two juvenile Atlantic salmon during construction of the ASF project. Instream construction work will disturb nearly one unit of juvenile salmon habitat; therefore, we are authorizing take to account for a reasonable number of salmon likely to be present within one unit of habitat in a similar situation. Take of Atlantic salmon would primarily be related to fish relocation activities carried out in association with isolation and dewatering of the instream work area for the culvert replacement. This authorized take includes both non-lethal (e.g., capture and relocation) and lethal (e.g., mortality associated with electrofishing or stranding inside a de-watered cofferdam) take of juvenile Atlantic salmon. Fall parr stocking planned for 2014 in Northern Stream, Richardson Brook, and Barrows Stream will not increase the number of juvenile salmon likely to be present in the action area because stocking will occur in October or November, after instream construction work is completed.

In summary, the Service authorizes the total take of up to 15 juvenile Atlantic salmon in association with the two culvert replacement projects discussed in this Opinion. This ITS specifically does not authorize the take (lethal or non-lethal) of any **adult** Atlantic salmon. If take of an adult salmon becomes a concern during either project, all activities that may be contributing to this concern – particularly instream construction activities – should immediately cease and the Service should be contacted to discuss next steps. Reinitiation of section 7 consultation may be necessary, depending on the particular circumstances at hand.

As required by the PBO, the NRCS is required to submit an annual report to the Service that summarizes all work conducted under the PBO. This report will account for incidental take associated with each project (including the Project SHARE and ASF projects), as well as a

cumulative accounting of all take of Atlantic salmon authorized under the PBO and subsequent Tier 2 Opinions.

## **XI. REINITIATION NOTICE**

This concludes formal consultation on the actions outlined in the June 12, 2014 request from the NRCS. 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 (or is authorized by law) and if 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the agency 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, the specific action(s) causing such take shall be subject to reinitiation expeditiously.

Requests for reinitiation or questions regarding reinitiation should be directed to the Service Field Office below.

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## **XII. Conservation Recommendations**

Section 7(a)(1) of ESA directs Federal agencies to utilize their authorities to further the purposes of ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of an action on listed species or critical habitat, to help implement recovery plans, or to develop information. Conservation recommendations are provided in the PBO (page 84) and are hereby incorporated by reference.

### **XIII. Documents Cited**

- U.S. Fish and Wildlife Service. 2013. Final biological opinion to the Federal Highway Administration on the proposed funding of a road-stream crossing structure replacement in Brownville, Maine. Orono, ME.
- Wright, J., J. Sweka, A. Abbott, and T. Trinko. 2008. GIS-Based Atlantic Salmon Habitat Model (Draft). Appendix C in: NOAA Fisheries (National Marine Fisheries Service). 2009. Biological valuation of Atlantic salmon habitat within the Gulf of Maine Distinct Population Segment. NOAA National Marine Fisheries Service, Northeast Regional Office, Gloucester, MA.