

Instructions for Completing *Stream Crossing Programmatic Notification Form*

This instruction guide is meant to help in completing the Stream Crossing Programmatic Notification Form *. The form is to be completed by an applicant to notify all relevant Federal agencies of the applicant's intention to remove, install, replace or repair a stream crossing located within the areas of Maine that are important to the recovery of the Gulf of Maine Distinct Population Segment of Atlantic salmon, which is listed as endangered by the Federal Endangered Species Act (ESA). This form is part of a streamlined U.S. Army Corps of Engineers (Corps) permitting and ESA section 7 consultation process that is applicable only to stream crossing work that meets the criteria for natural and sustainable design embodied in the U.S. Forest Service's document, *Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings*, available online and for download:

https://www.fs.fed.us/biology/nsaec/fishxing/aop_pdfs.html

It is expected that any applicant completing this form contact a representative of one of the relevant Federal agencies as soon as possible in the project planning process for guidance on whether or not Atlantic salmon are likely to be present near a project site, which will dictate the type of ESA section 7 consultation for the project. Additionally, applicants are encouraged to work with appropriate organizations that can help the applicant to complete this form. Individuals in these organizations can assist with elements of the form that the applicant may not be able to complete on its own.

Another important online resource providing valuable information on primarily public stream crossings is the *Maine Stream Habitat Viewer* (<https://webapps2.cgis-solutions.com/MaineStreamViewer/>). Zoom in to your project area, and if there is a crossing symbol at that approximate location, click on the symbol, and you will receive information on the crossing, some of which may be helpful in completing this form.

The following instructions proceed through each item on the project notification form in the order they appear on the form. The form is organized in four sections divided by heavy black lines:

- Page 1 – General project information, including project location and applicant contact
- Page 2 – Top – Information on threatened and endangered species likely in the project area
- Page 2 – Bottom – Stream and proposed structure information
- Page 3 – Data and documents related to the project's Stream Simulation design

When completing the form, you may use the tab key to move from one element to the next in order. Complete all required (red-outlined) and relevant elements of the form, save the completed form to identify it uniquely with its project, and send it electronically with all attached documentation to the lead Federal action agency. See page 6 of this document for agency contacts.

Example Plans and Project Documents – The example plans and documents provided (*Sample Plan Set.pdf*, *Sample Supplemental Documents.pdf*) are meant to represent one possible approach to providing the required materials to represent and support the project's Stream Simulation design objectives and details. This notification process is not meant to specify a particular format for these documents, but to ensure that all those submitted are complete, clear, readable, and sufficiently detailed to provide all necessary elements of an effective Stream Simulation design. As such, maps and plans should include keys to symbols, and all documents should have titles, dates and appropriate notations to provide clear and unambiguous information about critical elements of the design, including, but not limited to elevations, dimensions and particular specifications unique to the project.

Lead Agency – To be provided to the applicant by the Federal agency(ies) involved in the project; in general, the U.S. Army Corps of Engineers will be the lead agency. See page 6 for agency contacts.

* Refers to the Programmatic Consultation Package and Biological Opinion, *Stream Connectivity Restoration Activities to Benefit Atlantic Salmon Recovery in Maine*.

Form Page 1

Applicant – Generally, the organization (town, company, non-profit organization) that owns or manages the stream crossing, and is responsible for submitting this form, though it could be an individual.

Project Contact – The individual who is managing the project for the applicant.

Contact Email / Telephone– Contact information for the individual above.

Project Name – The name of the project to avoid confusion or ambiguity among multiple projects, usually referring to the town, road and stream names if possible.

Submittal Date – The date when the notification form is completed and submitted.

Town / County – The town and county in which the project site is located.

Stream – The name of the stream, if known, or as noted on USGS topographic maps; enter *Unknown* if the stream is unnamed, or enter a locally used name if that is the only known name.

Road– The name of the road, if known, or as noted on available maps; enter *Unknown* if unnamed.

Location – Enter the latitude and longitude of the approximate center of the project site in decimal degrees to five decimal places, with longitude preceded by a negative sign (e.g., 43.63652, -70.24953).

SiteID – *Optional* - The unique identifying number generally given to stream crossings in Maine, and available on the *Maine Stream Habitat Viewer* if a site is on a public road and has been surveyed.

Location Description – *Optional* - If there is any ambiguity about the location of a project site based on possible confusion with other nearby crossings, add information here to specify the project site location.

Construction Dates – Enter the planned start and end dates for construction, including initial staging of construction materials through to completion of work, such as final paving or guard rail installation.

Activity Type – Select the option that best matches the work to be done. The Maintenance and Repair option is only applicable for a crossing that originally met Stream Simulation Design criteria, and is in need of minor repairs or maintenance.

Project Description – Enter information sufficient for someone reviewing this form and its attached documentation to understand the general scope and essential elements of the project. For instance, an applicant replacing an undersized culvert with a Stream Simulation Design structure should give at least basic information about the size and position of existing and proposed structures, and the context in which the project is occurring. Additional information may include the size of the drainage, the type of road involved, and significant factors affecting the design, such as extensive bedrock requiring particular construction techniques, or extent of elevation adjustments expected in the stream channel due to the new structure's elevation in relation to historically accumulated sediments. Any major deviations from expected design standards should be noted here. One need not provide exhaustive details that are clear in the accompanying documentation.

Page 2 – Top – ESA-Listed Species

IPaC Species List Attached – Attach the Official Species List generated by the Information for Planning and Consultation (IPaC) website (<https://ecos.fws.gov/ipac/>). 1) Log in; 2) zoom to the project area; 3) use one of the drawing tools to indicate the work area of the project; 4) define the project (***note: a resource list is not an Official Species List***); 5) request an Official Species List; 6) download the resulting Official Species List as a PDF document to attach to this notification. Depending on species that could be present, one or more surveys may be recommended in addition to the species list (e.g., rusty patched bumble bee, or small whorled pogonia).

Atlantic Salmon Listed and Atlantic Salmon Critical Habitat – Check one or both of these boxes as they apply based on the IPaC species list. Atlantic salmon critical habitat is a subset of the entire listing area for salmon in Maine, and so may not apply to your site, but all sites in critical habitat are also “Listed”, so for those sites you must check both boxes.

Upstream Salmon Habitat Miles – Record (to two decimal places) the number of total miles upstream of the project area up to the next upstream barriers or potential barriers, including all tributaries. For public (and some private) crossing sites, this value can usually be taken from the *Maine Stream Habitat Viewer* in the attribute named *Upstream Blocked Miles*. If this data is not available on the *Viewer*, please contact the U.S. Fish and Wildlife Service (USFWS) Gulf of Maine Coastal Program for help.

Form Page 2 – Top – ESA-Listed Species (continued)

Salmon Habitat Units Gained – Record (to one decimal place) the number of upstream Atlantic salmon habitat units (1 unit = 100 m²) to which the project will gain access upstream. For public (and some private) crossings, this value can be taken from the *Maine Stream Habitat Viewer* in the item named *Atlantic Salmon Modeled 100 sq m Habitat Units Blocked* (within the *Identify* tab) in the section titled *Potential Effects of this Crossing*. If this data is not available on the *Viewer*, please contact the USFWS Gulf of Maine Coastal Program for help.

Fish Removal & Conducted by – Select this checkbox if fish removal will be conducted, and pick from the list or enter the organization responsible for removing and excluding fish from the work site. Fish removal is required when Atlantic salmon are likely present at the project site and encouraged for other projects. Information on whether salmon are likely present can be obtained from one of the Federal action agencies involved with your project. Individuals conducting fish removal who are not employed by the listed fisheries agencies must list their names and qualifications in the *Additional Details* section.

Canada Lynx and Canada Lynx Critical Habitat – Check one or both of these boxes as they apply based on the IPaC species list. Canada Lynx critical habitat is a subset of the entire listing area for lynx in Maine, and so may not apply to your site, but all sites in critical habitat are also “Listed”, so for those sites you must check both boxes.

Northern Long-eared Bat and Tree Removal Area – Check this box if the IPaC list includes this species, and enter the number of acres of trees $\geq 3"$ dbh (diameter at breast height) to be removed. If fewer than 10 trees exceeding this size are to be removed, enter 0.1 acres in the box to the right. If no trees are to be removed, enter 0.

Rusty Patched Bumble Bee – Check this box if the IPaC species list includes this species.

Small Whorled Pogonia – Check this box if the IPaC species list includes this species.

Habitat Use Description – Use this box to include important information about the occurrence of habitats for listed species at or near the project site, as well as information about species’ use of the project area. For example, in areas where Atlantic salmon are listed, record here data on occurrence of salmon of any age class in the project area, and in the stream (and tributaries) upstream and downstream of the site. Also include information on nearby redd counts or stocking activity that may be relevant to how salmon may be affected by the project. If a survey is conducted for any species on the IPaC list, note that here and attach relevant survey documentation. Surveys for federally listed species should be coordinated with the Federal action agency or USFWS before the survey is conducted to ensure compliance with the ESA.

Form Page 2 – Bottom – Proposed Structure Data

Structure Width – Record proposed width here as the total inside span in feet (to two decimal places).

Reference Bankfull Width – Record the average of multiple measurements of bankfull width in feet (to one decimal place) taken from a “reference” section of the stream outside the influence of the crossing.

Cross-Sectional Area – Record the area in square feet (to one decimal place) of the opening of the proposed structure through which stream flow will pass. Do not include any area of the structure embedded or taken up with stream bank or substrate material.

Design Discharge – Record the expected peak discharge (in cubic feet per second) estimated through hydrologic analysis and used to design the proposed structure. This value should be the 100-year discharge, or that expected to occur with a probability of 0.01, or once every 100 years.

Headwater Ratio – Record the ratio of design inlet water depth at the expected maximum design flow to the total (interior) opening height of the proposed structure. This ratio should not exceed 0.8.

Stream Slope – Record the overall slope of the stream from the top to bottom of the surveyed reach in percent (to two decimal places).

Reference Slope – Record the slope of the stream reach used as a reference for design of the new crossing in percent (to two decimal places).

Bed Slope – Record the slope of the proposed stream bed within the new crossing structure in percent (to two decimal places).

Form Page 2 – Bottom – Proposed Structure Data (continued)

Structure Alignment – Describe briefly here how the proposed structure aligns with the stream. If the structure will be placed at an angle to the stream $> 45^\circ$, add further explanation in the *Additional Details* portion of this form.

Embedment – For closed-bottom culverts only, enter the average depth of substrate (in feet, to two decimal places) to be placed and expected to be maintained in the bottom of the structure.

Substrate Type – Select the dominant (most common) substrate type in the reference reach.

Drainage Area – Record the drainage area in square miles (to two decimal places) upstream of the project site.

Form Page 3 – Design Materials Submitted

Title Sheet – This may be a cover sheet to a full set of plans and documentation, or simply a cover letter giving an overview of the project.

Project Location Map – Provide a map showing the project location and its drainage area boundary. Include hydrography, roads, town boundaries and topographic data, all labeled as appropriate. Include a locator map showing the project location in Maine in relation to major geographic features.

Site Photos – Provide at least these four fundamental views of the existing or proposed crossing, including surrounding area for context: 1) Inlet – toward the inlet; 2) outlet – toward the outlet; 3) Upstream – looking upstream; and 4) Downstream – looking downstream.

Plan Views:

Topographic Site Maps – Existing and Proposed Conditions– Show in *either* one or two maps or plans: use one if little will be changed at the site other than the crossing structure itself, in which case indicate the existing structure along with the proposed. Use two maps if major changes are proposed that are difficult to represent on one map. Indicate the extent of the work area.

Bed & Bank Plan – Show the arrangement of any proposed bed and bank materials, particularly indicating the number and type of grade control structures or bed roughness elements to be incorporated to the crossing, the bank dimensions, and showing connection of the natural to the constructed stream banks.

Water & Sediment Control Plan – Show the location of any water control devices such as cofferdams, bypass channels and pumps for moving clean and dirty water, filtration basins, and block nets for excluding fish from the work site.

Cross-Section Views:

Reference Reach – Show at least one cross-section of an undisturbed location upstream or downstream of the project site meant to represent the basis of design for the proposed crossing in terms of slope, channel dimensions and bed materials. Be sure to include cross section photos.

Proposed Structure Elevation (inlet or outlet) – Indicate all pertinent dimensions and elevations from the road surface down to top, bottom and sides of the proposed crossing structure, any headwall or wingwalls, bed and banks, and top and bottom of any footings or abutments to be used to support a structure. Also indicate the existing structure in this view.

Profile Views:

Stream Profile – Show the existing and proposed stream bed upstream, through the crossing and downstream to indicate changes in elevation as a result of the project. This view may be incorporated with the *Structure Profile* if that combined view clearly represents all necessary information about elevations of both the stream bed and the proposed structure.

Structure Profile – Indicate all pertinent elevations from the road surface down to the bed and banks inside the structure, as well as structure dimensions, and elevations of any footings or abutments, wingwalls and headwalls.

Hydrologic and Hydraulic Analysis:

Peak Discharges – Provide a table of expected peak discharges in cubic feet per second (*cfs*) for 1, 2, 5, 10, 25, 50 and 100-year events for the project site.

Peak Discharge Headwater Elevation Graphic – Provide a graphical view of the proposed structure during the design discharge (the 100-year flow), normally as output from one of several hydraulic modeling programs.

Hydraulic Data by Discharge – Provide a table of data representing hydraulic performance of the proposed crossing structure for the modeled discharges, including (at least) the headwater, inlet and outlet depths, flow types, and outlet velocity (in feet/second).

Hydrologic Model – Check the model used to estimate discharge data for the project, either *USGS StreamStats* or *Other*. If *Other* is checked, enter the commonly used name of the alternative, professionally accepted approach followed; use the *Additional Details* section for more detail.

Hydraulic Model – Check the model used to test performance of the proposed crossing structure. Check *Other* if needed and enter information to explain how hydraulics were analyzed; use the *Additional Details* section to provide more detail.

Bed Mobility & Stability Analysis:

Reference Substrate Distribution – Provide a graphical representation of the substrate distribution at the reference cross-section used to design the proposed structure. This graphic should clearly indicate commonly used percentiles for analyzing sediment stability and mobility, including D_{16} , D_{50} , D_{84} and D_{95} . For streams composed almost entirely of sand and finer particles, this element is unnecessary. Millimeters are common units for such distributions, but inches may also be provided.

Key Pieces & Bedforms – As applicable, provide a table of key piece dimensions (x, y, z measures) from a reference reach relevant to design of grade controls to be placed in the proposed crossing structure. For bedrock controls, provide data on the range of hydraulic drops (step heights) at grade controls from which structure grade controls have been designed. Millimeters are common units for such measurements, but inches may also be provided.

Geotechnical Analysis Summary – Provide any information regarding evidence or study of subsurface conditions at the project site that may influence design and construction, such as bedrock or clay. Attach relevant documentation.

Designer Qualifications– List or describe the qualifications of the designer(s) of the proposed project, including specific training and experience in Stream Simulation design and relevant related areas of knowledge.

Additional Details– Provide any information helpful to reviewers not contained elsewhere in this notification form, or in attached documentation, including clarification of any departures from standards of Stream Simulation design or from conditions represented in any reference reach. For instance, if two reference reaches were evaluated with different slopes and substrate distributions, but the crossing design fits one much more closely than the other, explain the rationale for relying on a particular set of reference conditions. Use this section to list the names and qualifications of individuals who will be conducting fish removal when not in one of the fisheries agencies listed in the “Conducted by:” dropdown box near the top of page 2.

Lead Agency Contacts

The following contacts are current as of the date of this version of the notification form, but may change without notice. In general, email correspondence is the best way to reach contacts below. If in doubt as to which person to contact at a particular agency, please call the main telephone number for each agency office to locate the person responsible for your project.

U.S. Army Corps of Engineers Maine Project Office Telephone: 207-623-8367

Contact	Email	
Shawn Mahaney	Shawn.B.Mahaney@usace.army.mil	Extension 4
LeeAnn Neal	LeeAnn.Neal@usace.army.mil	Extension 2

U.S. Fish and Wildlife Service Maine Field Office

Contact	Email	
Wende Mahaney	Wende_Mahaney@fws.gov	207-902-1569
Fred Seavey	Fred_Seavey@fws.gov	207-902-1571

U.S. Fish and Wildlife Service Maine Fisheries Resource Office Telephone: 207-902-1566

Contact	Email
Scott Craig	Scott_Craig@fws.gov

U.S. Fish and Wildlife Service Gulf of Maine Coastal Program Telephone: 207-781-8364

Contact	Email	
Bill Bennett	William_Bennett@fws.gov	Extension 15
Alex Abbott	Alex_Abbott@fws.gov	Extension 21

FEMA* Region 1 Environmental Officer Telephone: 617-832-4791

Contact	Email
David Robbins	David.Robbins@fema.dhs.gov

* Federal Emergency Management Agency