

# MAIN ST DAM BLACKSTONE RIVER

## BIOLOGICAL ANALYSIS

Prepared using IPaC

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The purpose of this document is to assess the effects of the proposed project and determine whether the project may affect any federally threatened, endangered, proposed, or candidate species. If appropriate for the project, this document may be used as a biological assessment (BA), as it is prepared in accordance with legal requirements set forth under [Section 7 of the Endangered Species Act \(16 U.S.C. 1536 \(c\)\)](#).

In this document, any data provided by U.S. Fish and Wildlife Service is based on data as of November 20, 2025.

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# MAIN ST DAM BLACKSTONE RIVER BIOLOGICAL ASSESSMENT

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# 1 DESCRIPTION OF THE ACTION

## 1.1 PROJECT NAME

Main St Dam Blackstone River

## 1.2 EXECUTIVE SUMMARY

The proposed project involves the construction of a vertical slot fishway at the Main Street Dam on the Blackstone River in Pawtucket, Rhode Island. The purpose of the project is to restore upstream and downstream passage for diadromous fish species while maintaining existing hydrologic conditions and respecting cultural and historic resources within the project area. Work is limited to in-water construction within an already developed and heavily altered urban river corridor. No tree clearing, vegetation removal, or upland habitat disturbance is proposed, and no permanent lighting or structures that would affect wildlife behavior will be introduced.

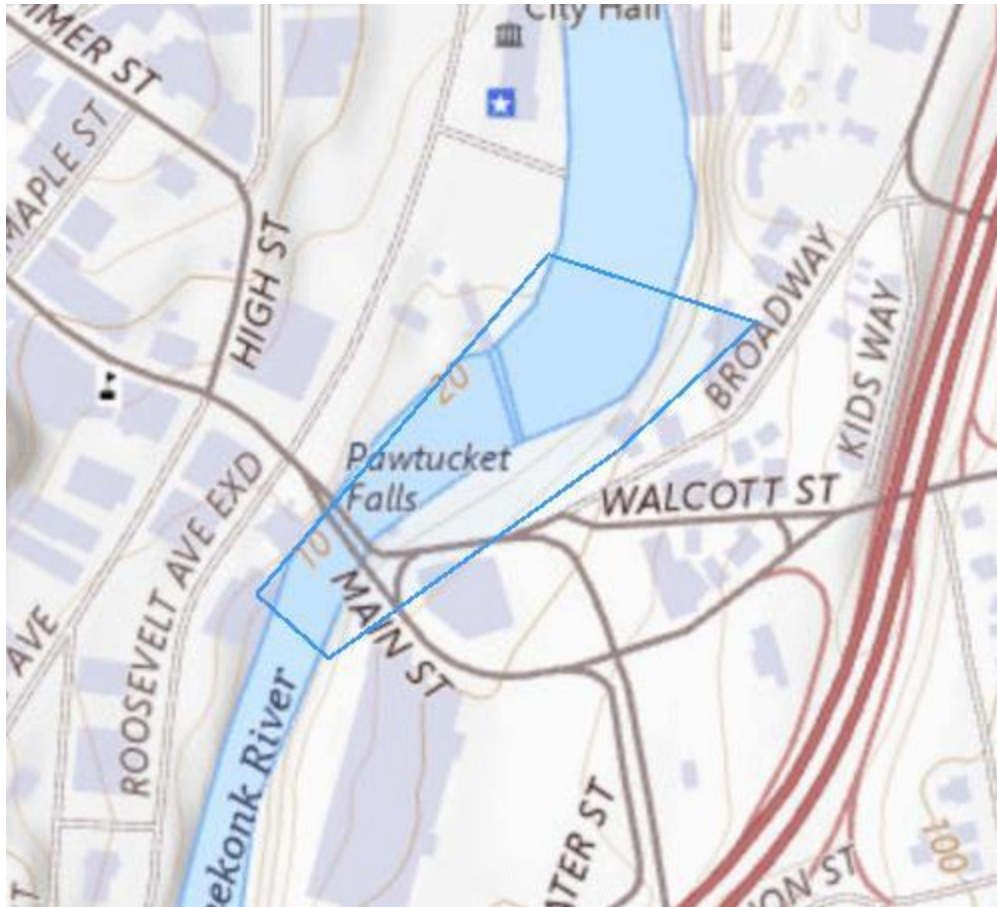
Based on a review of the U.S. Fish and Wildlife Service (USFWS) IPaC Official Species List, two species were evaluated for potential interactions with the proposed project: the monarch butterfly (*Danaus plexippus*) and the tricolored bat (*Perimyotis subflavus*). No designated critical habitat occurs within the action area. Because the project includes no impacts to suitable upland habitat, roosting structures, riparian forest, or nectar-producing vegetation, and because construction activities are confined to the existing river channel and developed shorelines, neither species is expected to be affected. The project therefore qualifies for “no effect” or “not likely to adversely affect” determinations as detailed below.

## 1.3 EFFECT DETERMINATION SUMMARY

SPECIES (COMMON NAME)	SCIENTIFIC NAME	LISTING STATUS	PRESENT IN ACTION AREA	EFFECT DETERMINATION
<a href="#">Monarch Butterfly</a>	<i>Danaus plexippus</i>	Proposed Threatened	Excluded from analysis	Excluded from analysis
<a href="#">Tricolored Bat</a>	<i>Perimyotis subflavus</i>	Proposed Endangered	Excluded from analysis	Excluded from analysis

## 1.4 PROJECT DESCRIPTION

### 1.4.1 LOCATION



#### LOCATION

Providence County, Rhode Island

## 1.4.2 DESCRIPTION OF PROJECT HABITAT

The project area contains a mix of urban riverine, tidally influenced coastal riverbank, and narrow riparian wetland habitats associated with the Blackstone River surrounding the Main Street and Slater Mill Dams. Habitat quality varies from moderately disturbed to highly altered due to historic industrial development, retaining walls, hydropower operations, and long-standing dam structures.

**Riverine Habitat:** The Blackstone River at this location includes a combination of freshwater and tidal-influenced flow. Substrates range from bedrock and cobble near the dams to finer sediments in depositional areas upstream. This reach provides habitat for resident freshwater species and supports diadromous species attempting upstream migration, although passage is currently blocked by the dams. Aquatic habitat quality is limited by turbidity, channel constraints, and altered hydrology, but still functions as a migratory corridor.

**Riparian and Fringe Wetland Habitat:** Narrow riparian zones occur along both banks, with vegetation including willow, ash, maple, multiflora rose, and herbaceous wetland species. These areas provide shading, limited nesting and perching habitat, and movement corridors for birds, small mammals, and amphibians. Habitat quality is moderate due to invasive plants, steep banks, and adjacent development. Wetland delineations and wildlife assessments completed by Natural Resource Services (2019) describe these communities in detail (see uploaded survey).

**Coastal/Tidal Riverbank Habitat:** Below the Main Street Dam, the river becomes tidally influenced and transitions into a hardened coastal shoreline contained by stone and concrete walls. Vegetation occurs primarily at the top of bank. Habitat quality is low to moderate, reflecting urban conditions, but still provides resting and foraging opportunities for waterfowl and wading birds. **Impoundment/Backwater Habitat:** A small impoundment exists between the two dams, supporting slow-water habitat with fringe wetland vegetation. Substrate is primarily soft sediment, and habitat quality is moderate. This area provides foraging habitat for warmwater fish, waterfowl, and semi-aquatic mammals. Overall, habitat on site is fragmented and urban, but retains ecological value as a river corridor supporting fish passage, riparian wildlife use, and wetland functions. Habitat characteristics, species observations, and vegetation data are documented in the wetland and wildlife assessment conducted by Natural Resource Services (NRS, 2019) and referenced in the supporting materials.

## RELEVANT DOCUMENTATION

- [Blackstone Wetland Report - 2022-028 LOF slater mill](#)

### 1.4.3 PROJECT PROPONENT INFORMATION

*Provide information regarding who is proposing to conduct the project, and their contact information. Please provide details on whether there is a Federal nexus.*

#### REQUESTING AGENCY

Private Entity

#### FULL NAME

Kyla Drewry

#### STREET ADDRESS

3 Davol Square C200

#### CITY

Providence

#### STATE

RI

#### ZIP

02903

#### PHONE NUMBER

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#### E-MAIL ADDRESS

kyla.drewry@fando.com

### 1.4.4 PROJECT PURPOSE

While the Blackstone River system is home to over 30 species of freshwater fish, including resident and diadromous species, one of the major impediments to anadromous fish passage in the Blackstone River is the number of dams preventing upstream passage and overall river connectivity to Narragansett Bay (Illustration 3). Therefore, the primary purpose of this project is to restore fish passage and establish connectivity between the Seekonk River and the Blackstone River. The installation of the vertical slot fishway structure will allow unimpeded diadromous fish passage during adult and juvenile migration periods, which will provide ecological benefits to the river and upper Narragansett Bay and restore historic diadromous fish spawning and rearing areas.



### 1.4.5 PROJECT TYPE AND DECONSTRUCTION

This project is a floodplain/riparian habitat creation/restoration project.

### 1.4.5.1 PROJECT MAP



#### LEGEND

-  Project footprint
-  Layer 1: Addition of fill, biological survey (freshwater), construct shallow-water cofferdam, debris removal, excavate soils/sediments, finish grading, geomorphic, hydrology, hydraulics, and sediment transport analysis field work, geotechnical investigation, maintain/repair restoration features, prepare the project site (terrestrial), staging area construction, work pad construction in water, restored habitat (structure)

#### **1.4.5.2 RESTORED HABITAT**

##### **STRUCTURE COMPLETION DATE**

*Unspecified*

##### **REMOVAL/DECOMMISSION DATE (IF APPLICABLE)**

*Not applicable*

##### **STRESSORS**

This activity is not expected to have any impact on the environment.

##### **DESCRIPTION**

The project involves the construction of a linear vertical slot fishway at the Main Street Dam and related fish passage improvements at the Slater Mill Dam. Work will occur within portions of the Blackstone River, including temporary and permanent in-water construction zones, adjacent riparian areas, and upland work areas supporting site access and restoration. The project is intended to restore upstream and downstream passage for migrating fish, improve aquatic habitat, enhance river continuity, and support ongoing waterfront redevelopment efforts in downtown Pawtucket. The fish passage improvements will benefit species such as American shad, alewife, blueback herring, American eel, and other resident and migratory species historically present in the watershed.

#### **1.4.5.3 ADDITION OF FILL**

##### **ACTIVITY START DATE**

*Unspecified*

##### **ACTIVITY END DATE**

*Unspecified*

##### **STRESSORS**

This activity is not expected to have any impact on the environment.

##### **DESCRIPTION**

Small quantities of fill associated with structural construction may be placed below the ordinary high-water mark, including:

All fill is integral to the fish passage structures and has been minimized to the greatest extent practicable. Final fill volumes will be discussed in Section 3.6 and included with the WQC submission.

#### 1.4.5.4 BIOLOGICAL SURVEY (FRESHWATER)

##### ACTIVITY START DATE

*Unspecified*

##### ACTIVITY END DATE

*Unspecified*

##### STRESSORS

This activity is not expected to have any impact on the environment.

##### DESCRIPTION

Wetland delineations for the project area were completed by Applied Bio-Systems, Inc. on July 11, 2024. The project area is located at the transition between Rhode Island Department of Environmental Management (RIDEM) freshwater wetland jurisdiction and Rhode Island Coastal Resources Management Council (CRMC) coastal jurisdiction. The Pawtucket Lower Dam (immediately upstream of Main Street) separates freshwater wetlands under RIDEM jurisdiction from coastal jurisdiction downstream under CRMC. Because the proposed fishway and associated river modifications occur near this jurisdictional transition, coordination with both agencies is required. The primary wetland resource identified near the project includes a deciduous wooded Swamp associated with wetland flags #100–112, in addition to the Blackstone River, a regulated riverine wetland. The wooded Swamp is located within the active floodplain and is subject to periodic inundation when river levels rise. At the time of inspection, portions of the Swamp showed evidence of recent flooding. Dominant vegetation within this wetland includes eastern cottonwood (*Populus deltoides*), silky dogwood (*Swida amomum*), purple loosestrife (*Lythrum salicaria*), and goldenrod (*Solidago* sp.). The wooded Swamp is less than one acre in size. Therein, RIDEM assigns a 25-foot perimeter wetland extending inland from the delineated edge. Based on this delineation, the project does not require a RIDEM Freshwater Wetland Permit unless construction activities extend into the 25-foot perimeter wetland associated with the small wooded Swamp located upstream of the project reach. All work currently proposed is located within the river channel and perimeter. The project will proceed under a CRMC Category B Assent and a RIDEM Section 401 Water Quality Certification, unless final design modifications introduce new impacts within the wetland buffer.

#### 1.4.5.5 CONSTRUCT SHALLOW-WATER COFFERDAM

**ACTIVITY START DATE**

*Unspecified*

**ACTIVITY END DATE**

*Unspecified*

**STRESSORS**

This activity is not expected to have any impact on the environment.

**DESCRIPTION**

Work zones will be isolated where feasible to prevent turbidity migration and to avoid off-site sedimentation within adjacent wetlands, including the wooded Swamp and riverbank areas. No permanent alterations to the wooded Swamp are proposed, and its 25-foot perimeter wetland will be protected during construction. A conventional cofferdam system such as sandbags and/or a Portadam system in conjunction with substantial pumping operations should be considered as the project continues to progress. These systems are proven and can be modified to accommodate variable field conditions; however, given the irregular nature expected along the river bottom, it could prove advantageous to utilize a dual Earth Support and cutoff system. A secant wall has been discussed, however, based on our understanding of the geometry at the entrance, secant piles will be difficult to construct, as they need to cure in situ and then be excavated. Here, below the rock excavation, a secant style grout curtain could seal the bedrock and isolate the work area below rock; however, pipe piles spaced 8 feet on center and panels would need to be installed in the open water. A poly barrier could be used for temporary open water control water.

#### 1.4.5.6 DEBRIS REMOVAL

**ACTIVITY START DATE**

*Unspecified*

**ACTIVITY END DATE**

*Unspecified*

**STRESSORS**

This activity is not expected to have any impact on the environment.

**DESCRIPTION**

· Boulders, and other site demolition debris, including buried historic debris should be expected and be chased to its full extent during site preparation stages.

#### **1.4.5.7 EXCAVATE SOILS/SEDIMENTS**

**ACTIVITY START DATE**

*Unspecified*

**ACTIVITY END DATE**

*Unspecified*

**STRESSORS**

This activity is not expected to have any impact on the environment.

**DESCRIPTION**

The fishway will likely need to be installed from downstream to upstream. The entrance area will require rock removal and construction below tidal waters. A conventional cofferdam system such as sandbags and/or a Portadam system in conjunction with substantial pumping operations should be considered as the project continues to progress. These systems are proven and can be modified to accommodate variable field conditions; however, given the irregular nature expected along the river bottom, it could prove advantageous to utilize a dual Earth Support and cutoff system. A secant wall has been discussed, however, based on our understanding of the geometry at the entrance, secant piles will be difficult to construct, as they need to cure in situ and then be excavated. Here, below the rock excavation, a secant style grout curtain could seal the bedrock and isolate the work area below rock; however, pipe piles spaced 8 feet on center and panels would need to be installed in the open water. A poly barrier could be used for temporary open water control water. Dewatering operations are considered necessary throughout construction. Measures should be taken to control water seepage, precipitation, infiltration, and river/tidal water inflow within the excavation to minimize disturbance, maintain the integrity of bearing surfaces, and permit foundation construction to proceed in-stable conditions (ideally dry). As the work progresses inland, requiring a cut behind the existing wall, a secant pile wall should be considered on the seaward side to serve as both the earth support system during construction and the permanent fishway wall. The system can be sealed and will be a primary component in control of water. The value of this approach will be of dual purpose. Our review indicated a system consisting of 24-inch diameter overlapping primary and secondary concrete shafts with secondary shafts reinforced steel members, drilled 25 feet into rock below bottom of excavation would be feasible. Additional information is required before this design can be finalized. On the landward side and in areas where utilities will need to be supported, Soldier Piles are recommended. Soldier piles and lagging uses vertical steel piles with horizontal lagging. Typically, H-piles or pipe-piles are drilled and grouted (5000 psi grout recommended) or driven at regular intervals along the perimeter of the planned excavation. Lagging consisting of wood, steel or precast concrete panels which are inserted behind the front pile flanges or welded steel angles as the excavation proceeds. The load of the retained soil is resisted by the lagging and is transferred to the piles. The walls can receive additional lateral support from bracing.

#### **1.4.5.8 FINISH GRADING**

**ACTIVITY START DATE**

*Unspecified*

**ACTIVITY END DATE**

*Unspecified*

**STRESSORS**

This activity is not expected to have any impact on the environment.

**DESCRIPTION**

The shoreline of project area below Pawtucket falls is tidal and defined as FEMA Flood Zone AE with a base flood elevation of 12 feet (1%, 100 year flood). Upgradient, Zone X is delineated and is subject to inundation by the 0.2% (500 year) or less than one foot by the 1% or 100 year flood. Upstream of the Main Street Bridge the shoreline is riverine, defined as the regulatory floodway, AE, with an established base flood elevation (BFE) of approximately 33 feet. Structural design of the passage elements and site grading will need to consider regulatory requirements associated with this, including resistance to uplift.

#### **1.4.5.9 GEOMORPHIC, HYDROLOGY, HYDRAULICS, AND SEDIMENT TRANSPORT ANALYSIS FIELD WORK**

**ACTIVITY START DATE**

*Unspecified*

**ACTIVITY END DATE**

*Unspecified*

**STRESSORS**

This activity is not expected to have any impact on the environment.

**DESCRIPTION**

See a 2019 hydraulic assessment performed by Fuss & O'Neill as documented in its *Written Evaluation to Support Preliminary Determination Application, Main Street Dam Fish Passage Restoration (September 2019)*.

#### **1.4.5.10 GEOTECHNICAL INVESTIGATION**

##### **ACTIVITY START DATE**

*Unspecified*

##### **ACTIVITY END DATE**

*Unspecified*

##### **STRESSORS**

This activity is not expected to have any impact on the environment.

##### **DESCRIPTION**

Fuss & O'Neill, Inc. and RMA Environmental, LLC (RMA) conducted Geotechnical Investigations for the Slater Mill Park and Apex Building areas, respectively. RMA implemented a subsurface exploration designed in coordination with the project team, provided a fulltime Geotech staff onsite to observe and log boring/test pits and Standard Penetration Testing (SPT) results, obtain and classify soil/rock samples, and prepare field logs. Fuss & O'Neill provided subsurface exploration program design and general project coordination, as well as survey boring and test pit locations.

#### 1.4.5.11 MAINTAIN/REPAIR RESTORATION FEATURES

##### **ACTIVITY START DATE**

*Unspecified*

##### **ACTIVITY END DATE**

*Unspecified*

##### **STRESSORS**

This activity is not expected to have any impact on the environment.

##### **DESCRIPTION**

Restoration activities commenced prior to survey, and thus, disturbance should be noted. The exploration locations and ground surface elevations should be considered accurate only to the degree implied by the methods used. Furthermore, this information should be formalized and included on future survey plans developed for the project. The following aquatic passage criteria were considered in assessing each alternative.

- The extent to which the project maximizes fishway attraction to the passage structure.
- Whether the alternative maximizes the effectiveness of the fishway, specifically with regard to safe, timely and effective fish passage.
- The extent to which the alternative maximizes access to upstream spawning habitats for all aquatic species. The ability for the largest range of aquatic species to reach the upstream spawning habitats.
- The extent to which the project maximizes aquatic connectivity for all aquatic animals within the river system. This criteria also considers natural functions such as sediment transport and other riverine processes.

#### 1.4.5.12 PREPARE THE PROJECT SITE (TERRESTRIAL)

##### ACTIVITY START DATE

*Unspecified*

##### ACTIVITY END DATE

*Unspecified*

##### STRESSORS

This activity is not expected to have any impact on the environment.

##### DESCRIPTION

Excavation for the foundation system should be carried down until sound, "GOOD" rated bedrock is reached. The work should be completed in a controlled manner using a combination of ripping and a hydraulic jackhammer, and detailed project specifications will be required prior to construction. Subgrades on bedrock should be prepared as flat as practical. Up to 2 ft of lean concrete may be used to extend the rock bearing surface to the bottom of the slab. Lean concrete shall be a minimum of 1000 psi. Depressions within the foundation bearing surface on bedrock should be sealed with a 3-in. minimum thick lean concrete working mat or 6 to 9-in. thick layer of  $\frac{3}{4}$  inch crushed stone placed immediately upon approval of the exposed bedrock surface. Continuous wall footing must bear entirely on rock, or the rock should be over-excavated to tie the wall into the slab. In general, disturbed or loose bedrock fragments should be removed down to intact bedrock. Some fractured rock may remain at subgrade elevations beneath structures provided the subgrade is recompact with heavy vibratory equipment. Rock which is judged to be significantly disturbed by the Geotechnical Engineer must be removed. We recommend a thin layer of lean concrete placed over bedrock to provide a level uniform surface. Over-excavation (6-in min. thickness) and replacement with thin layer of lean concrete to footing bearing elevation should be conducted. There is the potential for foundation elements to be above bedrock elevation, especially upstream where the fish passage slopes upward. In this case, all materials considered unsuitable shall be over-excavated and proof compacted (as outlined above) and then replaced with Structural Fill (as called out below) compacted in 12" lifts to the bearing elevation. Crushed stone, if desired, should be wrapped in non-woven geotextile fabric (6oz/sy) approved by the geotechnical engineer and be placed in loose 6" lifts.

#### **1.4.5.13 STAGING AREA CONSTRUCTION**

**ACTIVITY START DATE**

*Unspecified*

**ACTIVITY END DATE**

*Unspecified*

**STRESSORS**

This activity is not expected to have any impact on the environment.

**DESCRIPTION**

- o No expected impacts from on-land temporary construction staging/access areas as all areas previously developed

#### **1.4.5.14 WORK PAD CONSTRUCTION IN WATER**

**ACTIVITY START DATE**

*Unspecified*

**ACTIVITY END DATE**

*Unspecified*

**STRESSORS**

This activity is not expected to have any impact on the environment.

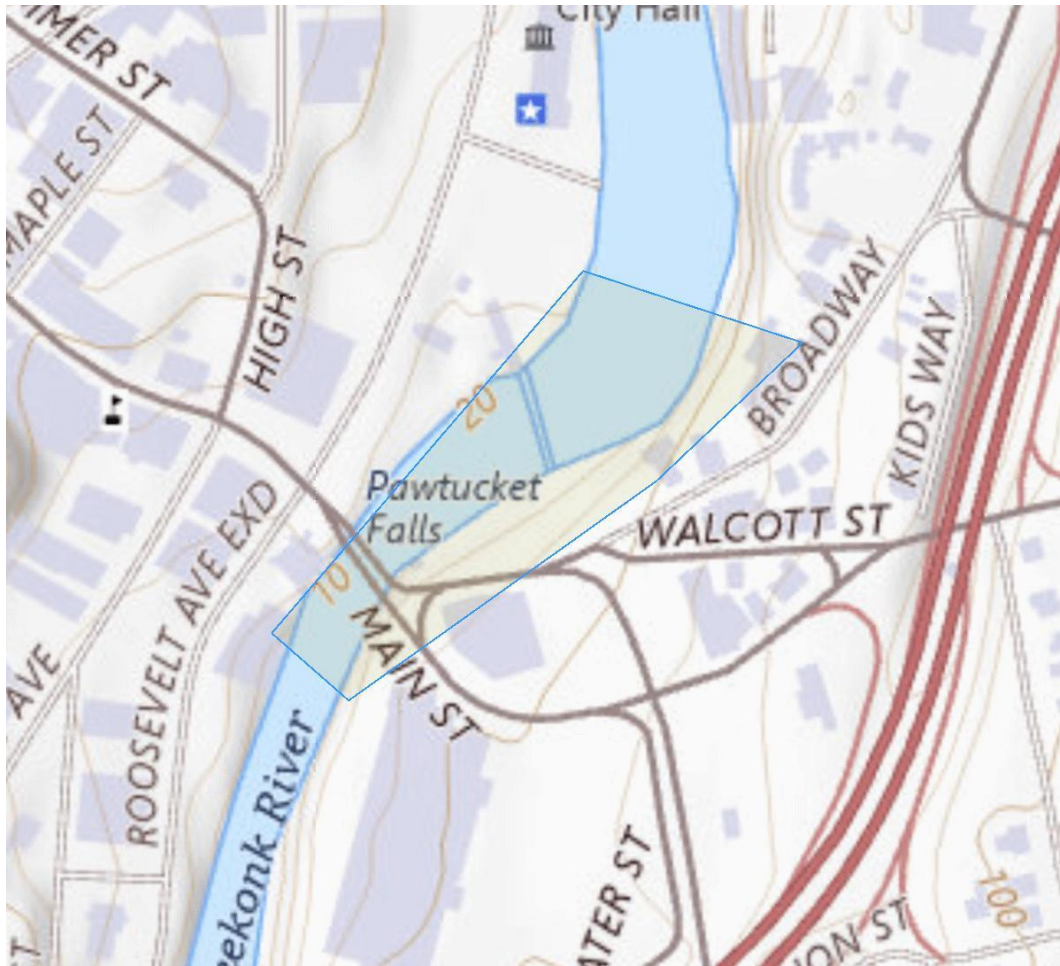
**DESCRIPTION**

During construction, temporary dewatering will be required to control water seepage, precipitation, infiltration, and river/tidal water inflow within the excavation to minimize disturbance, maintain the integrity of bearing surfaces, and permit foundation construction to proceed in-stable conditions (ideally dry). Discharge from the dewatering system shall meet current regulatory (including environmental) requirements.



#### **1.4.6 ANTICIPATED ENVIRONMENTAL STRESSORS**

*Describe the anticipated effects of your proposed project on the aspects of the land, air and water that will occur due to the activities above. These should be based on the activity deconstructions done in the previous section and will be used to inform the action area.*

## 1.5 ACTION AREA



### LEGEND

-  Project footprint
-  Stressor location

## **1.6 CONSERVATION MEASURES**

*Describe any proposed measures being implemented as part of the project that are designed to reduce the impacts to the environment and their resulting effects to listed species. To avoid extra verbiage, don't list measures that have no relevance to the species being analyzed.*

***No conservation measures have been selected for this project.***

## **1.7 PRIOR CONSULTATION HISTORY**

The proposed fish passage improvements at the Main Street Dam and Slater Mill Dam have undergone prior coordination with the U.S. Fish & Wildlife Service (USFWS) during an earlier design and permitting effort led jointly by the Rhode Island Department of Environmental Management (RIDEM) and the Natural Resources Conservation Service (NRCS) between 2010 and 2012. That earlier project proposed Denil-style fish ladders at both dams and advanced through technical review and agency coordination; however, the project did not proceed to construction due to construction bids that exceeded available funding. No adverse effects to listed species were identified during that preliminary coordination, and no formal consultation under Section 7 was required at that time.

For the current project, USFWS has again been involved in early design development and continues to provide technical review support to RIDEM and The Nature Conservancy. This coordination has focused primarily on fish passage design criteria, migratory species benefits, and restoring river connectivity. No federally listed species are expected to be affected by the proposed action, and no formal consultation has been initiated or required to date.

## 1.8 OTHER AGENCY PARTNERS AND INTERESTED PARTIES

The Main Street Dam and Slater Mill Dam Fish Passage Restoration Project is being implemented by the **Rhode Island Department of Environmental Management (RIDEM)** in partnership with **The Nature Conservancy (TNC)** and with technical input from the **U.S. Fish & Wildlife Service (USFWS)**.

The **Pawtucket Redevelopment Agency** is the project owner and the entity responsible for authorizing permit applications for work within the City of Pawtucket. The project also involves coordination with the **Rhode Island Coastal Resources Management Council (CRMC)** for coastal and in-water work, and with the **U.S. Army Corps of Engineers (USACE)** for federal authorization under the Programmatic General Permit for the discharge of dredged or fill material. Construction-phase stormwater management will be regulated under the **Rhode Island Pollutant Discharge Elimination System (RIPDES) Construction General Permit**, administered by RIDEM.

The project occurs adjacent to a culturally significant area and has active support and engagement from the **Narragansett Indian Tribe** and the **Hassanamisco Band of the Nipmuc Nation**, both of whom participate in outreach and consultation associated with restoring diadromous fish passage to the river historically known as the Kittacuck.

Additional local coordination includes the **City of Pawtucket**, particularly for staging areas, traffic management during construction, and integration with ongoing downtown redevelopment initiatives. These agencies and tribal partners collectively provide regulatory oversight, design review, cultural consultation, technical guidance, and project sponsorship.

## 1.9 OTHER REPORTS AND HELPFUL INFORMATION

### RELEVANT DOCUMENTATION

- [Blackstone Wetland Report - 2022-028 LOF slater mill](#)
- [BlackstoneRiverWatershedNeedsAssessment\\_finalforweb](#)
- [CN20325.3TM 2008 BlackstoneFishPop](#)

## 2 SPECIES EFFECTS ANALYSIS

*This section describes, species by species, the effects of the proposed action on listed, proposed, and candidate species, and the habitat on which they depend. In this document, effects are broken down as direct interactions (something happening directly to the species) or indirect interactions (something happening to the environment on which a species depends that could then result in effects to the species).*

*These interactions encompass effects that occur both during project construction and those which could be ongoing after the project is finished. All effects, however, should be considered, including effects from direct and indirect interactions and cumulative effects.*

### 2.1 MONARCH BUTTERFLY

*This species has been excluded from analysis in this environmental review document.*

#### RELEVANT DOCUMENTATION

- [CN20325.3TM 2008 BlackstoneFishPop](#)
- [BlackstoneRiverWatershedNeedsAssessment\\_finalforweb](#)

I have found a fish population assessment and a needs/habitat assessment included.

Previous work has also identified species in this area: The species list identified the northern long-eared bat (*Myotis septentrionalis*), an endangered species, and the monarch butterfly (*Danaus plexippus*), a candidate species for listing, as potentially being present in the project area.

#### JUSTIFICATION FOR EXCLUSION

The banks of the river may be used as habitat for the monarch and bats identified, but the proposed work will not impact this habitat.

"The proposed action does not include any activities that would alter suitable roosting habitat, foraging habitat, or bat hibernacula or cause changes in noise levels or visual disturbance in an area. Furthermore, the proposed action does not include any activities that would alter suitable habitat for monarch butterflies, expose monarch butterflies to insecticides, or otherwise cause direct injury or mortality. Therefore, there would be no effect on federally listed threatened and endangered species from implementing management areas or management actions and strategies to achieve desired conditions and manage to indicators, thresholds, and visitor capacities. The National Park Service would consult with the US Fish and Wildlife Service on any proposed future actions within the park that may adversely affect the northern long-eared bat or monarch butterfly. For these reasons, federally listed threatened or endangered species were not carried forward for analysis."

## **2.2 TRICOLORED BAT**

*This species has been excluded from analysis in this environmental review document.*

### **RELEVANT DOCUMENTATION**

- [CN20325.3TM 2008 BlackstoneFishPop](#)
- [BlackstoneRiverWatershedNeedsAssessment\\_finalforweb](#)

### **JUSTIFICATION FOR EXCLUSION**

The proposed action does not include any activities that would alter suitable roosting habitat, foraging habitat, or bat hibernacula or cause changes in noise levels or visual disturbance in an area. Furthermore, the proposed action does not include any activities that would alter suitable habitat for monarch butterflies, expose monarch butterflies to insecticides, or otherwise cause direct injury or mortality. Therefore, there would be no effect on federally listed threatened and endangered species from implementing management areas or management actions and strategies to achieve desired conditions and manage to indicators, thresholds, and visitor capacities. The National Park Service would consult with the US Fish and Wildlife Service on any proposed future actions within the park that may adversely affect the northern long-eared bat or monarch butterfly. For these reasons, federally listed threatened or endangered species were not carried forward for analysis

### **3 CRITICAL HABITAT EFFECTS ANALYSIS**

*No critical habitats intersect with the project action area.*

## 4 SUMMARY DISCUSSION AND CONCLUSION

### 4.1 SUMMARY DISCUSSION

The proposed fish passage improvements at the Main Street Dam and Slater Mill Dam will have net beneficial effects on aquatic species within the action area, which includes the lower Blackstone River from the tidal head at Slater Mill to the upstream extent of project construction. The project will restore upstream and downstream connectivity for multiple diadromous and resident fish species by providing a continuous volitional migration route between Narragansett Bay and upstream freshwater spawning and rearing habitats. Species expected to benefit include American shad, alewife, blueback herring, American eel, sea lamprey, and resident species such as smallmouth bass, white sucker, and fallfish. No designated critical habitat for federally listed species occurs within the action area. However, the project improves access to migratory pathways and supports habitats that are regionally important for the life cycles of diadromous species of conservation concern. The vertical slot fishway is designed to meet biological swimming performance criteria for target species and to maintain suitable hydraulic conditions during spring and fall migrations.

Short-term construction impacts to species will be limited and localized. In-water work may temporarily increase turbidity, disturb benthic habitat, and displace fish from the immediate construction zone. These impacts will be minimized through isolation measures (cofferdams), staged dewatering, turbidity control, limited-duration sediment removal, and timing restrictions to avoid sensitive migration periods where required. No long-term barriers, entrainment hazards, or significant alteration of flow or temperature regimes will result from the project.

In the long term, the project will enhance fish passage, increase access to more than seven miles of upstream riverine habitat, and improve ecological connectivity that has been absent for over two centuries. Stabilization of disturbed areas and targeted channel improvements at the fishway entrance and exit will reduce localized sedimentation and support improved habitat function. Because the project does not modify dam crests or create new hydraulic obstructions, no adverse hydrologic effects or loss of habitat are anticipated.

## **4.2 CONCLUSION**

Based on the species identified in the IPaC Official Species List for the project area, the proposed Blackstone River fish passage project will have no effect on designated critical habitat and may affect, but is not likely to adversely affect federally listed species present in the vicinity, including listed bat species and the monarch butterfly.

The project involves no tree removal, no permanent lighting, and only temporary in-water construction, with all work occurring in a previously developed and highly disturbed river corridor. Any effects to foraging bats or transient monarchs will be short-term, insignificant, and discountable.

Accordingly, the project meets the criteria for a Not Likely to Adversely Affect (NLAA) determination for all species identified in the IPaC list, and No Effect for critical habitat.