New York Rivers United's Comments on the Carthage Mill, and Tannery Island Applications for Low Impact Hydropower Certification

New York Rivers United wishes to comment on the pending applications for two projects, Carthage Mills (aka West End Hydro), and Tannery Island, which are located on the Black River in Carthage, New York. In addition to failing to meet the criteria found in the LIHI's Handbook, the applications contained omissions, inaccurate statements and inadvertently documented a license violation.

Flow Regimes

The applications state "The Black River is heavily regulated with 21 dams." The Black River and its tributaries have been developed with forty-two (42) licensed hydropower facilities, forty of which are located in just two counties. Even for the Black River these projects are unique in their proximity and relationship to adjacent facilities. This section contains four impoundments which at their closest point are separated by less than 800 river-feet. On each side of the river are two hydropower facilities, with the outflow of the upper discharging directly into the intake of the lower.

The majority of these facilities were developed by Niagara-Mohawk, a massive power entity which generated and distributed the overwhelming majority of the electricity in the region. The control and operation parameters were designed, configured, and licensed with the understanding that all power projects would be operated in synchrony at the direction of a central controller. Given those assumptions, the projects were licensed by FERC to operate in a maximized configuration with instantaneous run-of-river operations that maintain the majority of impoundments at their dam crests. However, when Niagara-Mohawk was forced to divest its power generation assets the network of linked hydropower facilities operating in coordination became unaffiliated. Independent operators ignored their license requirements for strict coordination of operations, and large uncontrolled river fluctuations began appearing at an alarming frequency.

As the fluctuation moves downstream this can result in a cascading trip scenario where the fluctuation grows in size, requiring increasingly drastic adjustments to maintain pond heights. As a result, cascading unit trips, and other significant fluctuations in river flows are a constant problem on the Black River, occurring multiple times most days.

Best practice is to ensure compliance using programmable logic controllers (PLC) and pond height sensors in the forebay. If the pond height drops below a certain level the system automatically stops the turbine, or trips the unit, to restore pond height.

Repeated studies by FERC have determined that projects in close proximity to each other, with sufficient storage in their impoundment to buffer changes in inflows are susceptible to being

tripped offline. Without the ability to make real-time adjustments, the only method available to the control system to restore pond elevation is to initiate a unit trip. These disruptions are typically caused when upstream turbines trip, or are moved in or out of service without ramping. The applications state that Tannery Island and Carthage Mills do not have any ramping requirements or follow any management plans to reduce their impacts.

The negative operational, environmental and recreational impacts of these fluctuations and their resulting license deviations have been documented for decades. Although studies have determined that the fluctuations can be attributed to hydropower operations, limited corrective actions have been taken and the misoperations persist. As a result, Tannery Island and Carthage Mills are in an area of particular scrutiny in an ongoing investigation by FERC. There is a Request For Information pending which would require the installation of detailed monitoring equipment and reporting. (Attachment 1)

The projects do not have any ramping rate requirements despite the impacts that their operation have on adjacent and downstream facilities. We strongly recommend that the LIHI thoroughly review both FERC project dockets, as well as the docket for Project No. 2695-006 to gain a full understanding of the situation. Given FERC's ongoing investigation, it can not be positively determined if these projects meet any of the standards under Criterion A and B.

Base Flows

Most projects, including Tannery Island and Carthage Mills provide minimum flows using notches in the dam crest. The Carthage Mills application states "At Channel 2 and 3 (minimum flow notches), 79 cfs and 27 cfs are released at all times respectively." However, continuously maintaining minimum flows and fish passage through these notches on the Black River has been rendered impossible by the constant fluctuations in flow. However these disruptions are often brief.

Minimum flows can also be disrupted indefinitely by operator error. This is evidenced in Figure 5 of the application which was captured when the Carthage Mills impoundment reduced below the minimum flow notches for long enough that the concrete is dry. It is impossible to tell how long the misoperation continued, or how frequently this occurs. However, it is clear that at the time the photo was taken the project was failing to provide minimum flows for hours. (Photo 1)

This demonstrates that the failure to provide minimum flows was the direct result of the applicant's failure to comply with their requirements to provide minimum flows and environmental protections. Without ensuring that base flows are maintained it is impossible for the Carthage Mills project to meet the standards under Criterion A and B.

Upstream Fish Passage
US Fish and Wildlife Service has stated that "Eels are historically native to the Black River but have been nearly extirpated in part due to the construction of dams and associated mortality." Yet, the DEC recently documented eels above and below the Carthage Mill and Tannery Island projects, and tracked the migration of multiple individuals down the Black River. (Attachment 2)

Eels require both upstream and downstream passage to complete their unique life cycle. However, there is no upstream fish passage provided at either project. Although "No upstream fish passage is required" correctly describes the FERC exemptions, it is not reflective of the project's environmental impact. Downstream passage is also unacceptable as the existing intake configuration does not prevent eels from entering the turbine.

Although the minimum flows at the projects were created in conjunction with the DEC, the majority of the riverbed is less than a foot deep during a large portion of the year. As described in the application, flow between the projects traverses sideways across a wide riverbed with minimal cover. This significantly increases the risk of predation from a number of bird species, and diminishes water quality. These impacts can not be determined without an assessment to determine how the projects impact the risk of predation to both resident, and migrating eels.

According to the DEC, eel populations in the region have "been reduced by at least 3 orders of magnitude." (Attachment 3) However, eels have been tracked electronically moving throughout the Black River. Currently the DEC and FWS are actively pursuing the installation of upstream and downstream eel passage facilities at projects throughout the region, including licensed and exempted projects on the Black River. (Attachment 4)

The first sentence in Criterion C is " The applicant shall list all migratory fish species… that are present or historically occurred at the facility." However, both applications state that "There are no migratory fish species in the project vicinity." References to American Eels in the applications are limited to a brief reference to an outdated assessment from 2010 and a statement that "barriers downstream of the Project have been the predominant influence on eel populations." These statements are false, and fail to convey the projects' impacts.

Threats to eel populations include barriers to migration, habitat loss and alteration, hydro turbine mortality, and predation. Tannery Island and Carthage Mills significantly affect eels in each of these sensitive areas. Without accounting for American Eels, neither project can be defined as "low impact" or meet any of the standards under Criterion C.

Downstream Fish Passage
Downstream fish passage at both projects is limited to intermittent spillage over the dam crests into the shallow bypass, and minimum flow notches. The Carthage Mills minimum flow notches are significantly removed from the intake with no additional attraction flows. Trash rack spacing does not prevent the entrainment of eels, and there are no additional overlays or protections. These structures do not adequately prevent the entrainment of eels, and can be rendered

useless by project operations as was documented in Figure 5 of the Tannery Island application (Photo 1)

The applications falsely state that “there are no migratory species in the project vicinity”, contain contradictory statements about the presence of eels, and fail to identify resident fish species. Without acknowledging or providing adequate protections for a species which has been determined by resource agencies to inhabit and migrate through the project boundary, both applications fail to meet any standards under Criterion D.

Listed Species

The DEC’s 2023 America Eel Species Status Assessment has also recommended “that the American Eel be listed as Special Concern due to the declines in abundance and distribution seen within the inland populations across New York.” Both applications failed to identify, or provide protections for a listed species which is known to inhabit the project boundary despite the projects’ direct contribution to its extirpation. As a result, both projects fail to meet any of the standards under Criterion F.

Exempted Project Status

Exempted projects operate with significantly less scrutiny, oversight, and public engagement. The lack of protections for American Eels is an excellent example of the increased potential for long-term impacts of exempted projects. While relicensing has provided an opportunity for regulatory agencies to require licensed projects to install protections for migratory species throughout the Black River watershed, there has been no such opportunity at Tannery Island or Carthage Mills.

All of the licensed projects in the Black River watershed have recently completed extensive studies which measured the impacts of project operations and determined where additional mitigation measures are needed. However, exempted projects perform minimal studies prior to FERC approval, and no additional assessments or reviews are required once commissioned. As such, the impacts of Tannery Island and Carthage Mills are largely unmeasured and the applications are based on information which is outdated and unreliable.

Recreational and Public Access

The relicensing process is also a periodic opportunity to accept public comments, and review the applicants’ impacts on the public’s ability to access the shoreline. Tannery Island is a prime location for public enjoyment. However, the applicant has allowed abandoned buildings to deteriorate to the point where they are unstable and threaten public safety. Without maintenance the undergrowth has become largely impassible, and piles of rubble and debris litter the area. (Photos 2-3)

Minimizing impacts should always include maximizing opportunities for the public to enjoy their natural resources, especially in a densely populated area such as Carthage. Despite a “Public Access Recreation Zone” being identified in Figure 1 of the Tannery Island application, there is no formal recreation plan, recreational facilities, or other form of mitigation.

Although the Tannery Island FERC project boundary includes significant parts of the east and north shores, the applications justify a lack of recreational facilities by stating that “Exemption orders do not convey the right of eminent domain.” Beyond failing to be a reasonable justification, the reality is that the applicant owns the entirety of Tannery Island and has simply chosen not to provide any recreational facilities. (Photo 4)

The application extensively inventories town parks and other unaffiliated facilities which are not owned, operated, or subsidized by the applicant. According to the LIHI Handbook, regional resources can not be considered in lieu of providing recreational opportunities at a project seeking certification. With no formal public access or recreational improvements to mitigate the project’s impacts, both applications fail to meet any of the standards of Criterion H.

Shorelines and Public Safety

Both projects were constructed in locations where there were former mills. The ruins of these structures are noted on the drawings included in the applications. Unfortunately, the projects were constructed without properly removing this debris, including the areas within the project boundary. These ruins decrease property values, endanger the public, discourage recreational use, and diminish the natural beauty of the river corridor.

Public safety and visual elements are not referenced in the LIHI’s recreation standards, however they are critical to considering the projects’ impacts on the host community. Photo 3 shows some of the debris immediately behind the project powerhouse which must be traversed to walk the shoreline. Although meaningless to members of the public who may wish to explore the area, it should be noted for the purposes of certification that these conditions exist both inside and outside of Tannery Island’s FERC project boundary. The project’s negative impacts on aesthetics and low-impact recreation disqualify the Tannery Island project from meeting any of the standards of Criterion E.

Certification

The Tannery Island and Carthage Mill Projects fail to meet the majority of the certification criteria for the low-impact certification as defined in the LIHI’s Handbook. Further, the ongoing FERC investigation into flow regimes and the potential for intervention by resource agencies to mitigate the projects’ impacts on American Eels, awarding a LIHI certification would be imprudent.

In addition to rejecting these applications, we recommend that future applications from this applicant, Relevate Power, be handed with a heightened level of scrutiny. Despite sworn

attestations, the applications contained photos from other projects, made inaccurate and contradicting statements, omitted information known by the applicant, incorporated unaffiliated recreation facilities, and inadvertently documented their failure to comply with FERC license requirements. (Photos 5-6)

New York Rivers United is grateful for the opportunity to comment on these applications. We wish to reiterate that the impacts of these projects can not be measured in a vacuum. The applicants are part of a system of more than forty active hydropower facilities in the Black River basin. With dozens of densely packed developments, the impacts of each project compound, requiring the system to be assessed cumulatively.

Thank you,

Alex Barham
Alex Barham
Director,
New York Rivers United

Steven Massaro
Steven Massaro
Director,
New York Rivers United

Photos
Attachments

Photos

Photo 1

Figure 5. Carthage Mill (West End) Project Facilities (Powerhouse, Forebay and Spillway with Minimum Flow section)

Changes in snow cover, weather conditions, and foliage indicate that the photos in the applications were captured separately at different times of the year. Similarly Figure 2 of the Carthage Mills application shows the dam crest covered by several inches of water, but above in Figure 5 the pond is drawn down 4-6 inches below the regulatory requirement and all of the river's flow is entering the powerhouse.

The project exemption requires that the pond height be maintained at the crest of the dam at all times. With the pond below the minimum flow notches below the rest of the dam, the project is not providing any flow into the bypass. Figure 5 of the Carthage Mills application documents the project failing to provide environmental protections required under their project license, and LIHI Criterion A and B.

Photo 2

Trash and debris on Tannery Island at the base of the project works.
Taken August, 2025

Photo 3

Trash and debris dumped behind the Tannery Island powerhouse (top left).
Taken August, 2025

Photo 4

Screen capture from the Lewis County GIS Map showing tax parcels, and the extensive amounts of debris located throughout Tannery Island.

The applicant owns all of the land in this image. Aside from the area immediately adjacent to the roadway, the island is densely vegetated and unimproved. Accessing the majority of Tannery Island requires extensive bushwhacking through the dense, unmanaged undergrowth. The entire island is littered with debris, trash, rubble, and remnants of the former mill.

Despite ample recreational opportunities, there are no recreational facilities or improvements. Instead, the applicant's failure to perform maintenance has diminished the recreational value of the area and discourages the public from entering the area. Given the direct impacts on the local community, Tannery Island can not meet the LIHI's recreational or shoreline requirements without making substantial permanent improvements.

Photos 5 and 6

Figure 4. Tannery Island Project Facilities (Powerhouse Tailrace)

Figure 4 of the Tannery Island application shows the tailrace of an unknown project.
Below is an actual view of the Tannery Island Tailrace which was taken in August of 2025.

Attachment 1

FEDERAL ENERGY REGULATORY COMMISSION
Washington, D. C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 2695-006 – New York
Dexter Project
Hydro Development Group Acquisition, LLC

Project No. 4796-037 – New York
Glen Park Project
Black River Hydroelectric, LLC

Project No. 2538-097 – New York
Beebee Island Project
Erie Boulevard Hydropower, L.P.

Project No. 2569-166 – New York
Black River Project
Erie Boulevard Hydropower, L.P.

Project No. 5801-001 – New York
Diamond Island Project
Niagara Mohawk Power Corporation

Project No. 2442-069 – New York
Watertown Project
City of Watertown, New York

Project No. 5800-008 – New York
Carthage Mill Project
Carthage Industrial Development Corporation

Project No. 4908-017 – New York
Tannery Island Hydroelectric Project
Tannery Island Hydro LLC

Project No. 4636-032 – New York
Long Falls Project
Ampersand Long Falls Hydro LLC

Project No. 10887-032 – New York
Carthage Paper Maker Mills Project
Carthage Specialty Paperboard, Inc.

Project No. 2548-057 – New York
Lyons Falls Projects
Northbrook Lyons Falls, LLC

Project No. 6447-003 – New York
Port Leyden (Lower)
Black River Hydro Associates

Project No. 6380-006 – New York
Rock Island Project
Black River Hydro Associates

Project No. 6412-002 – New York
Port Leyden Project
Lyonsdale Hydroelectric Co., Inc.

Project No. 5571-002 – New York
Denley Project
Black River Hydro Associates

Project No. 4900-089 – New York
Forestport Project
Forestport Hydro, LLC

Project No. 5000-077 – New York
Kayuta Lake Project
Ampersand Kayuta Lake Hydro, LLC

Project No. 2593-040 – New York
Beaver Falls Project
Eagle Creek Beaver Falls, LLC

Project No. 2645-173 – New York
Beaver River Project
Erie Boulevard Hydropower, L.P.

Project No. 6743-004 – New York
Stillwater Reservoir Project
Stillwater Associates

Project No. 4349-034 – New York
Moose River Project
Eony Generation Limited

Project No. 3255-017 – New York
Lyonsdale Project
Lyonsdale Associates, LLC

December 2, 2025

VIA FERC Service

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Subject: Project Operation Investigation

Dear Licensee/Exemptee:

This letter is regarding a comment, filed May 7, 2024, detailing unnatural flow fluctuations on the Black River and its primary tributaries of the Moose and Beaver Rivers, in New York.[1] The commenters detail observed unnatural fluctuations in water levels at the U.S. Geological Survey (USGS) gage site 04260500, situated on the Black River in Watertown, New York. The commenters also explain the adverse effects on whitewater recreation due to the flow fluctuations and request that the Commission conduct a thorough investigation into the causes of these fluctuations. Your project is located on the Black River or its tributaries.

Data and Additional Information Request

On September 20, 2024, we issued a letter requesting data and information on the operations of 22 projects on the Black, Moose, and Beaver Rivers from January 1, 2019, through July 31, 2024.[2] Specifically, we requested:

a. All current operational requirements of the license/exemption (elevation, flows, ramping rates, etc.). This includes from the license/exemption, approved plans, water quality certification, terms and conditions, etc.
b. A review of operational data for the project from January 1, 2019, through July 31, 2024, for conformance with the operating requirements of the project. If any deviations are identified, you must describe the cause, duration, and environmental effects observed for each deviation. You must also describe any corrective measures that were implemented due to the deviation.
c. A discussion of the measures and methods used to monitor, record, and report operational data and subsequently maintain compliance with the operating requirements for the project.
d. Documentation to support item a. above even if already on the Commission record.
e. Operational data (headwater and tailwater elevation, flows, generation, etc.) in electronic format (Microsoft Excel or similar format) in the smallest time

[1] American Whitewater, Appalachian Mountain Club, and New York Rivers United (commenters) jointly filed the comment and it is available on eLibrary - https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20240507-5091. The filing includes the Lower Beaver Falls Project No. 2823; however, this project is now part of the Beaver Falls Project No. 2593. *See Algonquin Power (Beaver Falls), LLC*, 169 FERC ¶ 62,107 (2019).

[2] *See* FERC Accession No. 20240920-3042.

increment available and/or required by the license/exemption to support item b. above.

f. Any additional information that would assist in the investigation, including a response to the comment, if appropriate.

Our September 20, 2024 letter required a response within 30 days. Our October 9, 2024 letter extended the deadline to respond to our September 20, 2024 letter to November 20, 2024.[3] Subsequent to responses filed by licensees/exemptees, we requested supplemental filings via e-mail, as appropriate, to have more complete responses to our September 20, 2024 letter.

January 29, 2025 Additional Comment

On January 29, 2025, the commenters filed an additional comment. The comment discusses coordination of operations, data analysis, ramping regimes, pond level management, and change in operators on the Black River and its tributaries. The comment also requests the Commission to require the projects perform studies which would provide the additional information required to trace flow fluctuations through the Black River Basin.

July 11, 2025 Additional Comments

On July 11, 2025, New York Rivers United and American Whitewater filed comments documenting hydropower operations on the section of the Black River between the City of Watertown and Dexter, New York, on June 29 and July 6, 2025. The filing details the conditions experienced on the river and state these conditions are consistent with irregular fluctuations in flow previously reported in this proceeding.[4] The filing states that the system of disjointed operations which reflect a mix of licensed and exempted projects under varied ownership does not function as designed. The filing continues to request a system-wide approach that communicates river conditions between

[3] *See* FERC Accession No. 20241009-3005.

[4] On August 4, 2025, the exemptee for Project No. 2695 filed a response to the July 11, 2025 filing. The exemptee explains that a combination of unit outages and elevated river flows prevented the operators from drawing the impoundment down to a level that would allow for the safe replacement of the flashboards. Thus, while the observation of below normal operating elevation on June 29, 2025 was correct, this was not below crest elevation nor did it constitute a violation of the exemption. The exemptee successfully replaced the project flashboards on July 2, 2025, three days following the observation on June 29, 2025, and prior to the July 11, 2025 filing. *See* FERC Accession No. 20250804-5036.

projects, collects the operational data needed to understand these failures, develops license requirements accordingly, and incorporates adequate storage capacity into the system to buffer unexpected events. Finally, the commenters repeat the request for an environmental analysis, and ask that the Commission address the compliance issues identified above, and in Commission staff's previous letters expediently.

November 21, 2025 Additional Comments

On November 21, 2025 New York Rivers United filed another comment specifically related to the Dexter Project No. 2695. New York Rivers United responds to the exemptee's August 4, 2025 filing that was in response to the July 11, 2025 comments. The filing includes a discussion on various operational events that took place at the project and additional photographs on different days. New York Rivers United reiterates its concerns with the exemptee's operations of the project and requests the Commission to investigate the matter by: (1) requesting operational information and verification of operational equipment; (2) requiring the exemptee to develop several plans (Flow Monitoring Plan, Flashboard Management Plan, and Recreation Management Plan) in coordination with the resource agencies and project stakeholders; (3) holding annual meetings with project stakeholders; (4) investigating the apparent discrepancy in statements related to the elevation of the impoundment elevation; and (5) revoking the exemption and requiring a license.

Discussion

We have reviewed the comments filed by the commenters, the responses provided by the licensees/exemptees, and supplemental filings from the licensees/exemptees. We found that the following are contributing to flow fluctuations on the Black River and its primary tributaries of the Moose and Beaver Rivers:

a. Not all projects included in this investigation are required to operate as run-of-river.
b. Some projects are not required to monitor and maintain the same level of data and fluctuations may be occurring at smaller intervals than those recorded.
c. Flashboard replacement and unit trips may be causing some fluctuations (P-2538, P-2645, P-2569, P-2695, P-6447, P-5571, etc.).
d. There were periods of inadequate conditions to meet recreational flow releases.
e. There were known compliance issues at P-2548 that were addressed in a separate compliance proceeding (P-2548-053).[5] The licensee has

[5] *See* FERC Accession No. 20231103-3008.

implemented additional measures and is automating monitoring at all developments of the project to improve operational compliance.[6]

We have not found conclusive evidence that a specific project(s) is regularly operating inconsistent with the requirements of the license/exemption that has not previously been addressed. For these reasons, we are not requiring the projects to perform a basin-wide study, at this time. In addition, it is premature to require all the additional measures requested by the New York Rivers United in its November 21, 2025 filing related to the Dexter Project No. 2695. However, the complexity of the investigation, the uniqueness of each project and license/exemption, and the additional comments filed on July 11, and November 21, 2025, warrant additional investigation and measures. Therefore, we are requiring all projects to perform additional review of their operational compliance as explained below.

Requirement to File Operational Compliance Report

Given the complexity of this proceeding and lack of certainty in the information provided in response to our September 20, 2024 letter, and subsequent communications, **we are requiring each project to file an operational compliance report, for Commission approval, within six months from the date of this letter**. The objective of the report is to have each licensee/exemptee identify whether its project is contributing to flow fluctuations and, if so, what additional measures it will take to limit the project's contributions to flow fluctuations in the Black River. The report must include:

a. A review of project operations between June 15 and November 30, 2025, including data to demonstrate compliance with the operational requirements of the license/exemption during the events detailed in the July 11 and November 21, 2025 filing. The review must include the same level of information requested in our September 20, 2024 letter. The review must also directly respond to concerns raised in the July 11 and November 21, 2025 filings, as appropriate.
b. A discussion on the current operations of the project since the initiation of this proceeding. Please explain what was learned about operational compliance and what changes, if any, have been made to improve compliance and compliance monitoring at the project.
c. A discussion of any communications with resource agencies regarding operational compliance and/or the information discussed in this letter.

[6] On November 12, 2025, the licensee filed a revised Streamflow and Water Level Management Plan for Commission approval. *See* FERC Accession No. 20251112-5347. Commission staff approved the revised plan on December 1, 2025. *See Northbrook Lyons Falls, LLC*, 193 FERC ¶ 62,125 (2025).

d. An explanation of the process to coordinate operations with upstream and downstream licensees/exemptees.
e. If the licensee/exemptee determines additional measures to address flow fluctuations or to adequately ensure compliance are needed, it must include in its report a plan and schedule to update the systems and equipment at the project to allow for recording of data at an interval of 15 minutes or less. Each project should be able to electronically record data to demonstrate compliance with the operational requirement of the license/exemption and have protocols in place to account for unforeseen situations that may occur. Please ensure the plan identifies how the improvements align with the operational requirements of the license/exemption.
f. Any additional related information, including if the licensee/exemptee intends to publish operational data for the public to access to improve transparency of its compliance.

We expect all licensees/exemptees to comply with its license/exemption and to have the necessary equipment and systems in place to clearly demonstrate its compliance. This letter does not preclude licensees/exemptees from any other requirements related to other ongoing investigations and proceedings at their project(s). We remind the licensees/exemptees that changes at the project must be allowed by the license/exemption or will require Commission, and in some situations resource agency, approval prior to implementation. If a licensee/exemptee has any uncertainty regarding a proposed change, it should contact us to discuss the matter. We also remind the licensee/exemptee to use the appropriate classification when making filings and only use Critical Energy Infrastructure Information or Privileged when appropriate.

The Commission strongly encourages electronic filing. Please file any responses via the Commission's eFiling system at http://www.ferc.gov/docs-filing/efiling.asp. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov, (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, you may submit a paper copy. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory

Commission, 12225 Wilkins Avenue, Rockville, MD 20852. The first page of any filing should include the project number and the reason for the submittal.

Thank you for your cooperation, and if you have any questions, please contact Jeremy Jessup at (202) 502-6779 or Jeremy.Jessup@ferc.gov.

Sincerely,

KELLY HOUFF Digitally signed by KELLY HOUFF Date: 2025.12.02 13:59:41 -05'00'

Kelly Houff
Chief, Engineering Resources Branch
Division of Hydropower Administration
and Compliance

Attachment 2

United States Department of the Interior
FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, New York 13045

March 20, 2024

Debbie-Anne Reese, Acting Secretary
Federal Energy Regulatory Commission
888 First Street N.E.
Washington, DC 20426

FERC e-file

RE: Black River Hydroelectric Project (Project No. 2569-150)
Beebee Island Hydroelectric Project (Project No. 2538-093)
Carthage Paper Makers Mill Hydroelectric Project (Project No. 10887-030)
Additional Information on American Eel in the Black River

Dear Acting Secretary Reese:

The U.S. Fish and Wildlife Service (Service) is providing additional information pertaining to American Eel (*Anguilla rostrata*) that is relevant to the relicensing of the Black River, Beebee Island, and Carthage Paper Makers Mill hydroelectric projects (Projects) (Project Nos. 2569, 2538, and 10887, respectively). The Black River and Beebee Island projects are owned by Erie Boulevard Hydropower, L.P. (Erie), a wholly owned subsidiary of Brookfield Renewable, and the Carthage Paper Makers Mill Project is owned by Carthage Specialty Paperboard, Inc. The Projects are located on the Black River in Jefferson County, New York. The Black River Project consists of five developments (upstream to downstream): Herrings, Deferiet, Kamargo, Black River, and Sewalls. The Beebee Island and Carthage Paper Makers Mill projects both consist of a single development, located downstream of Sewalls and upstream of Herrings, respectively.

Eels are historically native to the Black River but have been nearly extirpated in part due to the construction of dams and associated mortality.[1,2] The Service has previously provided the following information pertaining to the occurrence of American Eel in the vicinity of the Projects in a letter[3] dated May 4, 2022:

[1] Carlson, D. M., R.A. Daniels, and J.J. Wright. 2016. Atlas of Inland Fishes of New York. Published jointly by the New York State Education Department and Department of Environmental Conservation. p. 29.
[2] Bergmann Associates. 2010. Black River Watershed Management Plan. Prepared for the New York State Department of State Division of Coastal Resources. p. 83. https://tughill.org/wp-content/uploads/2011/10/7BRWFinalDocumentPartI-May2010.pdf
[3] U.S. Fish and Wildlife Service. May 4, 2022. Letter to Erie. FERC Accession No. 20220506-5167.

- On July 13, 2022, the New York State Department of Environmental Conservation (NYSDEC) observed a 27.5-inch eel just below the Carthage Mill and Long Falls hydroelectric projects (Project Nos. 5800 and 4636, respectively), meaning eels are currently known to occur above the Herrings development, the thirteenth dam on the Black River, and below the Carthage Paper Makers Mill Project.[4]

- On April 30, 2022, three eels were collected in a tributary to the Black River just upstream of the Watertown Hydroelectric Project (Project No. 2442), the sixth dam on the Black River.[5]

- In 2018, eels were documented in the Deer River, a tributary to the Black River approximately 5 miles upstream of the Carthage Paper Makers Mill Project.[6]

- In 2006, eels were documented in the Black River below Carthage, New York, during fishery surveys conducted by the NYSDEC.[7]

- In 1994, a 30-inch eel was also observed at the Herrings development during the previous relicensing.[8]

The Service is now aware of three additional occurrences of eel in the lower Black River:

- In August 2023, four yellow eels ranging from two to three feet in length were observed during a dewatering event of the power canal at the Glen Park Hydroelectric Project (Project No. 4796), the second dam on the Black River (Enclosure).[9] This Project is located immediately below the Beebee Island Project.

- In August 2023, the Service assisted in the acoustic tagging and release of 100 eels upstream of the St. Lawrence-FDR Hydroelectric Project (Project No. 2000). Between August and October 2023, four tagged eels migrated upstream through the St. Lawrence River into Lake Ontario and were detected in the Black River Bay. One of these tagged eels was also detected just below the Dexter Hydroelectric Project (Project No. 2695), the first dam on the Black River.

- In August 2023, Erie reported three adult eels impinged on the trashracks at two developments of the Black River Project: one eel was observed at the Deferiet

[4] Personal Communication, R. McDonald, NYSDEC, July 13, 2022.
[5] Personal Communication, L. Resseguie, NYSDEC, May 2, 2022.
[6] Personal Communication, J. Lantry, NYSDEC, November 11, 2021.
[7] According to table 5.6-3 in Erie's Preliminary Application Document for the Black River and Beebee Island projects.
[8] Niagara Mohawk Power Corporation. January 12, 1996. Fish Entrainment and Mortality Study for the Black River Project, Final Report. Prepared by Kleinschmidt Associates. FERC Accession No. 19960119-0264.
[9] Eagle Creek Renewable Energy. November 3, 2023. Glen Park Canal – Fish and Mussel Removal and Relocation Summary Report, 2023.

development on August 12, one at the Kamargo development on August 13, and another at the Deferiet development on August 19, 2023.

* * * *

The Service believes this additional information supports our understanding that American Eel occur to some degree in the Black River watershed. However, there has been no population-level fisheries study on American Eel conducted in the Black River. We maintain that there is sufficient evidence to warrant a targeted study of American Eel not only at the Beebee Island Project, as originally outlined in our study request letter,[10] but additionally at each development of the Black River Project, as requested in subsequent letters.[11,12] We look forward to reviewing Erie's American Eel Survey Report for the Beebee Island Project. The Service intends to provide additional comments on American Eel at the Carthage Paper Makers Mill Project under a separate cover. If you have any questions or desire additional information, please contact Arianna Ramirez or John Wiley at arianna_ramirez@fws.gov or john_wiley@fws.gov, or at 607-753-9334.

Sincerely,

Ian Drew
Field Supervisor

Enclosure

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[10] U.S. Fish and Wildlife Service. November 24, 2021. Letter to Erie Boulevard Hydropower, L.P. FERC Accession No. 20211124-5112.
[11] U.S. Fish and Wildlife Service. May 20, 2022. Letter to Erie Boulevard Hydropower, L.P. FERC Accession No. 20220520-5197.
[12] U.S. Fish and Wildlife Service. August 9, 2023. Letter to Federal Energy Regulatory Commission. FERC Accession No. 20230809-5136.

Eagle Creek Renewable Energy

Glen Park Canal – Fish and Mussel Removal and Relocation Summary Report, 2023

Dewatering of the Glen Park Hydroelectric Project canal as part of repair efforts began on August 3, 2023. Fish and mussels were removed from the canal on August 4-5, 2023 in accordance with the approved Dewatering and Repair Environmental Plan and NYSDEC collection permits.[1] During the removal efforts, some water was still flowing through the canal, providing areas of refuge for fish to reside prior to their removal. Fish were removed using backpack electrofishing equipment and mussels were removed by hand. All fish and mussels captured were relocated to the Project impoundment alive. The large pool at the downstream end of the canal was determined to be too deep for effective fish capture. NYSDEC was consulted regarding the difficulty of fish capture in the pool, and it was determined that no fish capture efforts would occur there unless the pool was drawn down further. No fish kills were observed in the pool over the course of the dewatered period.

In total, 11 species of fish and four species of native freshwater mussel were captured (Tables 1 and 2). American Eel were the only special status fish species collected and were enumerated by size and stage. All four American Eels captured were large yellow eels (Table 1). Though the other fish species were not enumerated, Smallmouth Bass and Margined Madtom dominated the catch with relatively few individuals of the other species captured.

Freshwater mussel density was very low. The canal bed largely consisted of bedrock with discrete depositional areas of smaller substrate and is not considered to be high quality mussel habitat given the substrate limitations and depth. Three common species of mussel and one imperiled (S2) species were found (Table 2). The documented mussels were all captured alive and were relocated successfully. There were no dead mussels found, and no shells representing imperiled species. Representative photos of mussels are included in Appendix A.

The canal was refilled on October 6, 2023.

[1] LCP Scientific #3178; LCP Freshwater Mussels #143

Table 1: Fish species documented during removal and relocation efforts from the Glen Park Canal

Scientific Name	Common Name	Quantified	Number	Size Class	Stage
Micropterus dolomieu	Smallmouth Bass	N	-	-	-
Noturus insignis	Margined Madtom	N	-	-	-
Lepomis gibbosus	Pumpkinseed	N	-	-	-
Hypentelium nigricans	Northern Hog Sucker	N	-	-	-
Ambloplites rupestris	Rock Bass	N	-	-	-
Etheostoma olmstedi	Tessellated Darter	N	-	-	-
Semotilus corporalis	Fallfish	N	-	-	-
Catostomus commersonii	White Sucker	N	-	-	-
Etheostoma flabellare	Fantail Darter	N	-	-	-
Percina caprodes	Logperch	N	-	-	-
Anguilla rostrata	American Eel	Y	4	2-3 ft	Yellow

Table 2: Freshwater mussels documented during removal and relocation efforts from the Glen Park Canal

Scientific Name	Common Name	Imperiled	Number	Percent of Total	Density (N/m^2)
Elliptio complanata	Eastern Elliptio	No	109	75.7%	0.0071
Margaritifera margaritifera	Eastern Pearlshell	Yes (S2)	17	11.8%	0.0011
Lampsilis radiata	Eastern Lampmussel	No	16	11.1%	0.0010
Lasmigona compressa	Creek Heelsplitter	No	2	1.4%	0.0001
Totals	-	-	144	100.0%	0.0093

Attachment 3

Species Status Assessment Cover Sheet

Species Name: American Eel **Date Updated:** January 2023

Current Status: Not Listed – HPSGCN **Updated By:** Kyle Grasso

Current NHP Rank: S2S3

Distribution: The American Eel has a very large range extending from southern Greenland, Labrador, and Newfoundland southward along the Atlantic coast to southern Florida, along the coast of the Gulf of Mexico to the northern tip of the Yucatan Peninsula, and south along the Caribbean coast of Central America and the Atlantic coast of the Caribbean Islands. They are sometimes found as south as northern South America. In New York, American Eels historically penetrated inland throughout much of the state. There are American Eel records in all 18 watersheds within New York; however, the highest frequencies of occurrence for American Eel are in the Long Island, Lower Hudson, and Delaware watersheds where there are fewer barriers to migration.

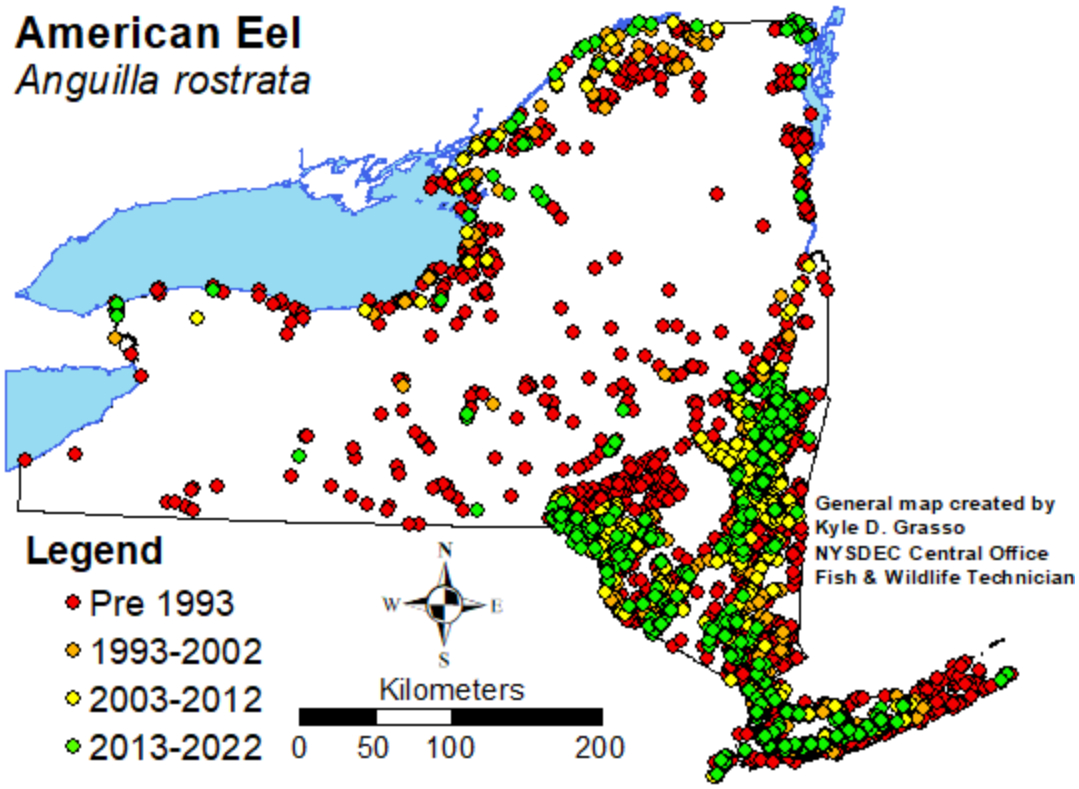
Habitat: American Eels occupy the broadest diversity of habitats of any fish species, using fresh water, marine and brackish habitats. All freshwater systems are used including large rivers and their small tributaries as well as reservoirs, canals, farm ponds and subterranean springs. Habitat use varies depending on what life stage the American Eel is in.

Life History: The American Eel is a catadromous species, which spends the majority of their 20-30 year life in freshwater habitats. They are slow to mature (7-30+ years) and only reproduce once in their lives. However, females can often produce millions of eggs. As adults, they migrate up to thousands of kilometers around summer or fall to the Sargasso Sea to spawn before they die. Spawning occurs in winter and early spring. After hatching, the larvae are transported by currents to areas near the continental margin of North America where they metamorphose into unpigmented "glass eels" during the pelagic stage (8-12 months after hatching, sometimes a year) and actively move toward land. As they enter coastal areas, they begin to develop external pigmentation and are then referred to as “elvers”. Elvers develop into the "yellow eel" stage, which resemble the adult stage, usually by age 2. In the northeastern United States, young eels start moving upstream in river systems before pigmentation is complete. The timing and duration of this upstream migration of elvers and yellow eels varies with location. In the northeastern U.S. it may occur from March through October, with a May-July peak in many areas (July-August.in the St. Lawrence River). Upstream migration may extend for months or years. Some yellow eels move far into stream headwaters whereas others remain in estuaries. In general, eels in fresh water are all or almost all females. After the lengthy "yellow eel" stage, eels may undergo a physical and physiological transformation into a distinct, sexually mature "silver eel" stage, when they begin to move downstream and into the ocean to spawn, thus completing the cycle.

Threats: Threats to the American Eel include barriers to migration, habitat loss and alteration, hydro turbine mortality, oceanic conditions, overfishing (potentially poaching), parasitism, predation, and pollution.

Population trend: In New York, American Eels historically penetrated inland throughout much of the state. There are American Eel records in all 18 watersheds within New York; however, the highest frequencies of occurrence for American Eel are in the Long Island, Lower Hudson, and Delaware watersheds where there are fewer barriers to migration. Once highly abundant in Great Lakes and Atlantic watersheds, eel numbers have declined drastically. Compared to historic and even relatively recent abundances, numbers of American eel are significantly reduced in all of the inland watersheds of New York. In the Susquehanna, eel are absent except for a few recent transfers above the major dams. In the Delaware, lower Hudson and Long Island eel are still common, but reduced. In Lake Champlain, Lake Ontario, and the upper St. Lawrence River numbers have been reduced by at least 3 orders of magnitude. They are very rare in the Allegheny and Genesee watersheds. The last record for those watersheds is 1970 and 1992 respectively. This decrease in abundance in both recruitment and spawning stock has significantly reduced biomass in inland waters. See Dittman et al. (2010) for additional information on New York’s inland populations.

Recommendation: It is recommended that the American Eel be listed as Special Concern due to the declines in abundance and distribution seen within the inland populations across New York.


American Eel
Anguilla rostrata
Legend
Pre 1993
1993-2002
2003-2012
2013-2022
N
W
E
S
Kilometers
0 50 100 200
General map created by
Kyle D. Grasso
NYSDEC Central Office
Fish & Wildlife Technician

Species Status Assessment

Common Name: American Eel **Date Updated:** January 2023

Scientific Name: *Anguilla rostrata* **Updated by:** Kyle Grasso

Class: Actinopterygii

Family: Anguillidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The American Eel is in the class Actinopterygii and the family Anguillidae (freshwater eels). The American Eel has a very large range extending from southern Greenland, Labrador, and Newfoundland southward along the Atlantic coast to southern Florida, along the coast of the Gulf of Mexico to the northern tip of the Yucatan Peninsula, and south along the Caribbean coast of Central America and the Atlantic coast of the Caribbean Islands. They are sometimes found as south as northern South America. Their native range also penetrates inland North America as far as the Mississippi River basin. In New York, American Eels historically penetrated inland throughout much of the state. There are American Eel records in all 18 watersheds within New York; however, the highest frequencies of occurrence for American Eel are in the Long Island, Lower Hudson, and Delaware watersheds where there are fewer barriers to migration. Once highly abundant in Great Lakes and Atlantic watersheds, eel numbers have declined drastically (ASMFC 2000; Haro et al. 2000). “Compared to historic and even relatively recent abundances, numbers of American eel are significantly reduced in all of the inland watersheds of New York. In the Susquehanna, eel are absent except for a few recent transfers above the major dams. In the Delaware, lower Hudson and Long Island eel are still common, but reduced. In Lake Champlain, Lake Ontario, and the upper St. Lawrence River numbers have been reduced by at least 3 orders of magnitude” (Dittman et al. 2010). They are very rare in the Allegheny and Genesee watersheds. The last record for those watersheds is 1970 and 1992 respectively. This decrease in abundance in both recruitment and spawning stock has significantly reduced biomass in inland waters. See Dittman et al. (2010) for additional information on New York’s inland populations. American Eels occupy the broadest diversity of habitats of any fish species (Helfman et al. 1987). Using fresh water, marine, and brackish habitats. All freshwater systems are used including large rivers and their small tributaries as well as reservoirs, canals, farm ponds and subterranean springs (USFWS 2011).

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** Not Listed – HPSGCN

b. Natural Heritage Program

i. **Global:** Apparently Secure – G4

ii. **New York:** S2S3 **Tracked by NYNHP?:** Watchlist

Other Ranks:

- IUCN Red List: Endangered
- Northeast Species of Greatest Conservation Need (Feb. 2022 RSGCN draft list)
- Atlantic State Marine Fisheries Commission: Depleted (2017)
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC): Threatened (5/4/2012)

Status Discussion:

The American Eel is not currently federally listed or listed in the state of New York. However, they are currently listed as a HPSGCN in New York. The American Eel is globally ranked as Apparently Secure by NatureServe.

“On July 6, 2005, the USFWS announced a 90-day finding on a petition to list the American Eel under the ESA. They found the petition presented substantial information indicating that listing may be warranted and initiated a status review. On February 2, 2007, the USFWS announced a 12-month finding on a petition to list this species under the ESA. They found listing the American Eel as either threatened or endangered is not warranted at this time. On 29 September 2011, USFWS announced a 90-day finding on a petition to list the American Eel as threatened under the Endangered Species Act of 1973, as amended (Act). Based on their review, USFWS found that the petition presented substantial scientific or commercial information indicating that listing this species may be warranted (based primarily on changes in oceanic conditions due to climate change). In a 2015 finding, USFWS found that no portion of the American Eel's range warrants further consideration of possible endangered or threatened status under the Act and found that listing the American Eel as a threatened or endangered species throughout all or a significant portion of its range is not warranted at this time” (NatureServe 2022).

II. Abundance and Distribution Trends

a. North America

i. Abundance

Declining: ✓ **Increasing:** _____ **Stable:** _____ **Unknown:** _____

ii. Distribution

Declining: _____ **Increasing:** _____ **Stable:** ✓ **Unknown:** _____

Time Frame Considered: Last 10-20 years

b. Northeastern U.S. (USWFS Region 5)

i. Abundance

Declining: ✓ **Increasing:** _____ **Stable:** _____ **Unknown:** _____

ii. Distribution

Declining: _____ **Increasing:** _____ **Stable:** ✓ **Unknown:** _____

Time Frame Considered: Last 10-20 years

c. Adjacent States and Provinces

CONNECTICUT **Not Present:** _____ **No Data:** _____

i. Abundance

Declining: ✓ **Increasing:** _____ **Stable:** _____ **Unknown:** _____

ii. Distribution

Declining: _____ **Increasing:** _____ **Stable:** _____ **Unknown:** ✓

Time Frame Considered: Last 10-20 years

Listing Status: Not Listed – S5 **SGCN?:** Yes

MASSACHUSETTS **Not Present:**_____ **No Data:**_____

i. **Abundance**

Declining: ✓ **Increasing:**_____ **Stable:**_____ **Unknown:**_____

ii. **Distribution**

Declining:_____ **Increasing:**_____ **Stable:**_____ **Unknown:** ✓

Time Frame Considered: Last 10-20 years

Listing Status: Not Listed – S3S4 **SGCN?:** Yes

NEW JERSEY **Not Present:**_____ **No Data:**_____

i. **Abundance**

Declining: ✓ **Increasing:**_____ **Stable:**_____ **Unknown:**_____

ii. **Distribution**

Declining:_____ **Increasing:**_____ **Stable:**_____ **Unknown:** ✓

Time Frame Considered: Last 10-20 years

Listing Status: Not Listed – SU **SGCN?:** Yes

PENNSYLVANIA **Not Present:**_____ **No Data:**_____

i. **Abundance**

Declining: ✓ **Increasing:**_____ **Stable:**_____ **Unknown:**_____

ii. **Distribution**

Declining: ✓ **Increasing:**_____ **Stable:**_____ **Unknown:**_____

Time Frame Considered: Declines since the 1940s

Listing Status: Not Listed – S5 **SGCN?:** Yes

VERMONT **Not Present:**_____ **No Data:**_____

i. **Abundance**

Declining: ✓ **Increasing:**_____ **Stable:**_____ **Unknown:**_____

ii. **Distribution**

Declining:_____ **Increasing:**_____ **Stable:**_____ **Unknown:** ✓

Time Frame Considered: Last 10-20 years

Listing Status: Special Concern – S2 **SGCN?:** Yes

ONTARIO **Not Present:**_____ **No Data:**_____

i. **Abundance**

Declining: ✓ **Increasing:**_____ **Stable:**_____ **Unknown:**_____

ii. **Distribution**

Declining:_____ **Increasing:**_____ **Stable:**_____ **Unknown:** ✓

Time Frame Considered: Reassessed as Threatened in 2012

Listing Status: Threatened – S1S2 **SGCN?:** N/A

QUEBEC **Not Present:**_____ **No Data:**_____

i. Abundance

Declining: ✓ **Increasing:**_____ **Stable:**_____ **Unknown:**_____

ii. Distribution

Declining:_____ **Increasing:**_____ **Stable:**_____ **Unknown:** ✓

Time Frame Considered: Reassessed as Threatened in 2012

Listing Status: Threatened – S1S2 **SGCN?:** N/A

d. New York

i. Abundance

Declining: ✓ **Increasing:**_____ **Stable:**_____ **Unknown:**_____

ii. Distribution

Declining: ✓ **Increasing:**_____ **Stable:**_____ **Unknown:**_____

Time Frame Considered: Last 10-20 years

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Monitoring programs are carried out by the NYSDEC Rare Fish Unit. The NYSDEC Division of Marine Resources carries out an annual young-of-the-year survey on Long Island which is used in ASMFC stock assessments. Since 2008, the DEC Hudson River Estuary Program and the Hudson River National Estuarine Research Reserve, in partnership with NEIWPCC and the Water Resources Institute at Cornell University has managed the Hudson River Citizen Science Eel Project. During this project, teams of scientists, students, and volunteers collect glass eels using specialized nets and traps on Hudson River tributaries each spring. Regular sampling (electrofishing, seining, etc.) is also done for a variety of reasons in many of the waterbodies where American Eel are found.

Trends Discussion *(insert map of North American/regional):*

In New York, American Eels historically penetrated inland throughout much of the state. There are American Eel records in all 18 watersheds within New York; however, the highest frequencies of occurrence for American Eel are in the Long Island, Lower Hudson, and Delaware watersheds where there are fewer barriers to migration. Once highly abundant in Great Lakes and Atlantic watersheds, eel numbers have declined drastically (ASMFC 2000; Haro et al. 2000). “Compared to historic and even relatively recent abundances, numbers of American eel are significantly reduced in all of the inland watersheds of New York. In the Susquehanna, eel are absent except for a few recent transfers above the major dams. In the Delaware, lower Hudson and Long Island eel are still common, but reduced. In Lake Champlain, Lake Ontario, and the upper St. Lawrence River numbers have been reduced by at least 3 orders of magnitude” (Dittman et al. 2010). They are very rare in the Allegheny and Genesee watersheds. The last record for those watersheds is 1970 and 1992 respectively. This decrease in abundance in both recruitment and spawning stock has significantly reduced biomass in inland waters. See Dittman et al. (2010) for additional information on New York’s inland populations. Glass eel and elver surveys on Long Island have shown a fluctuating trend for glass eel abundance and a decreasing trend for elver abundance (Caitlin Craig, NYSDEC, Personal Communication). Charts of glass eel and elver abundance on Long Island can be found below:

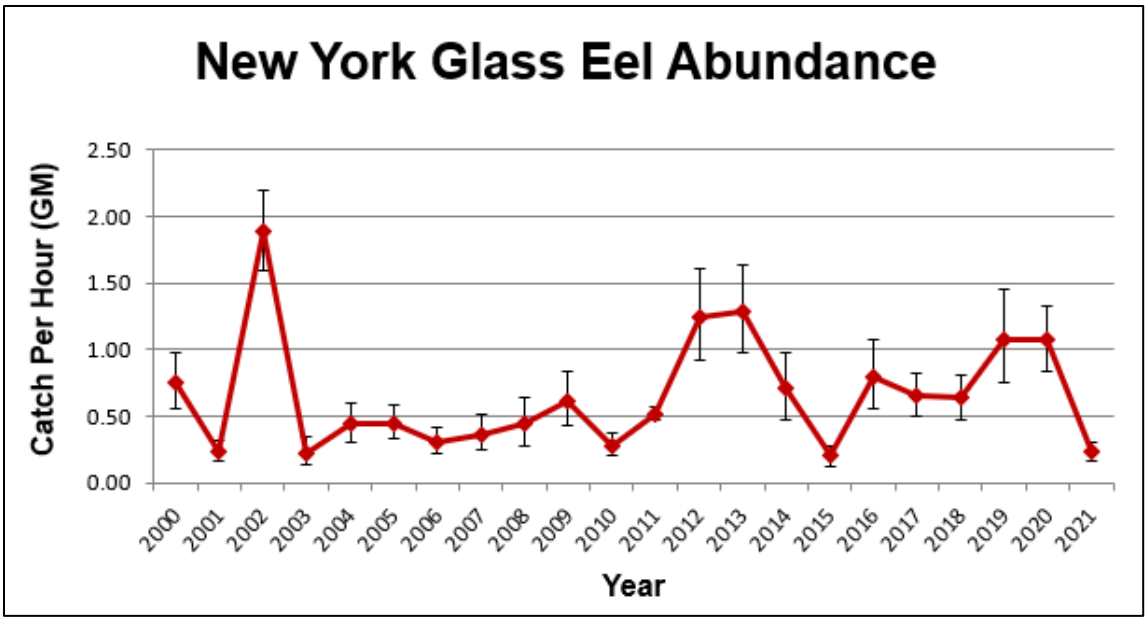


Figure 1: Glass Eel Abundance (Geometric Mean) on Long Island, New York from 2000-2021 (Source: Caitlin Craig, NYSDEC).

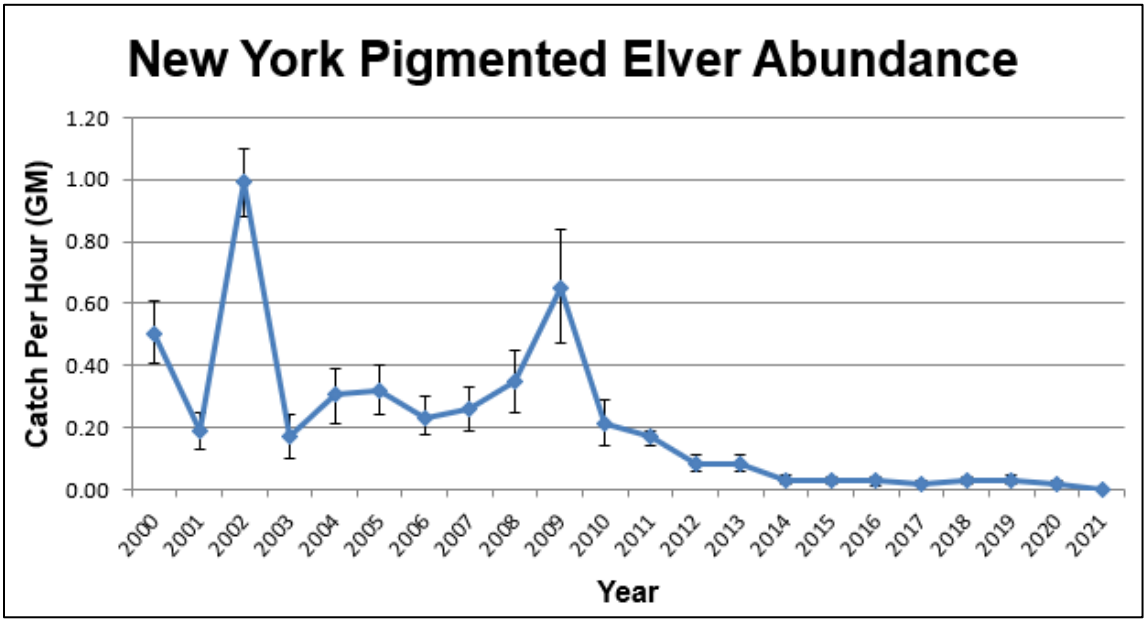


Figure 2: Elver Abundance (Geometric Mean) on Long Island, New York from 2000-2021 (Source: Caitlin Craig, NYSDEC).

"The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) stated that the species is widespread in eastern Canada but has experienced dramatic declines over a significant portion of its distribution (e.g., Lake Ontario and the upper St. Lawrence River). Although trends in abundance in other areas are highly variable, strong declines are apparent in several indices" (NatureServe 2022).

"The 2017 American Eel Stock Assessment Update updates the 2012 American Eel Benchmark Stock Assessment with data from 2010-2016. The trend analysis results in this stock assessment update are consistent with the 2012 results, with few exceptions. Despite downward trends in the indices, commercial yellow American Eel landings have been stable in recent decades along the Atlantic coast (U.S. and Canada), although landings still remain much lower than historical levels. The trend analysis and stable low landings support the Assessment Update's conclusion that the

American Eel population in the assessment range is similar to five years ago and remains depleted. Therefore, the resource is considered depleted and no stock status specific to overfishing determination can be made based on the trend analyses performed (ASMFC 2017)" (ASMFC 2021).

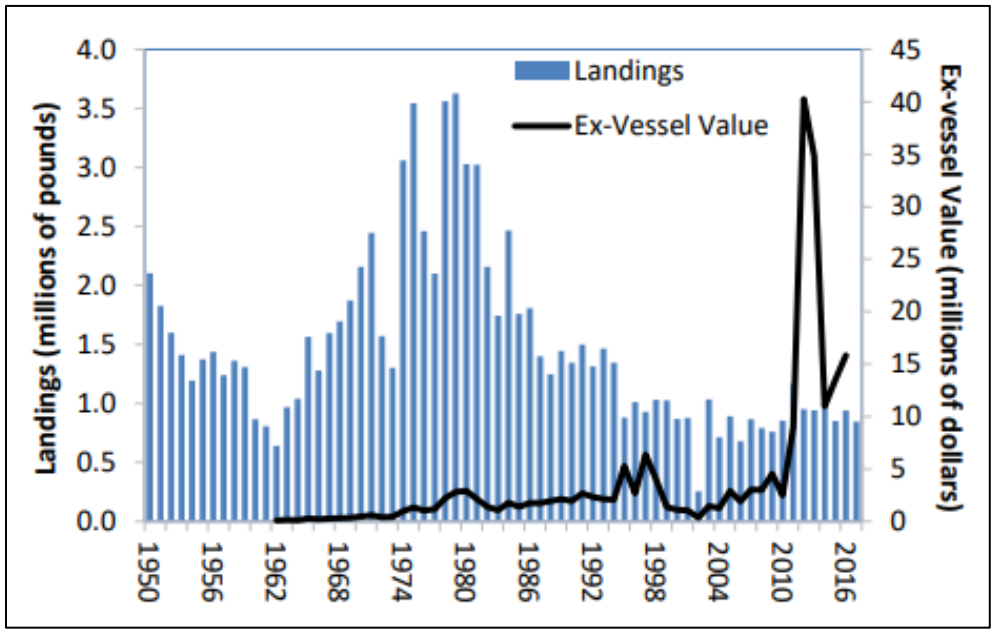


Figure 3: American Eel Commercial Landings and Ex-Vessel Value from 1950-2016 (Source: Atlantic Coastal Cooperative Statistics Program Data Warehouse 2019).

Region	Life Stage	Time Period	2012 Trend	2017 Trend
Gulf of Maine	YOY	2001-2016	NS	NS
Southern New England	YOY	2000-2016	NS	NS
	Yellow	2001-2010	NS	-
Hudson River	YOY	1974-2009	↓	-
	Yellow	1980-2016	↓	↓
Delaware Bay/Mid-Atlantic Coastal Bays	YOY	2000-2016	NS	NS
	Yellow	1999-2016	NS	NS
Chesapeake Bay	YOY	2000-2016	NS	NS
	Yellow	1990-2009	↑	↑
South Atlantic	YOY	2001-2015	NS	↓
	Yellow	2001-2016	↓	↓
Atlantic Coast	YOY (short-term)	2000-2016	NS	NS
	YOY (long-term)	1987-2013	NS	NS
	Yellow (40+ year)	1974-2016	NS	↓
	Yellow (30-year)	1987-2016	↓	↓
	Yellow (20-year)	1997-2016	NS	NS

Table 1: Results of the Mann-Kendall trend analysis applied to regional and coastwide indices of American Eel abundance by young-of-the-year (YOY) and yellow eel life stages. The arrows indicate the direction of the trend if a statistically significant trend was detected (P-value < α; α = 0.05). NS = No significant trend detected. A dash (-) = indices that data were not updated (Source: ASMFC 2017).

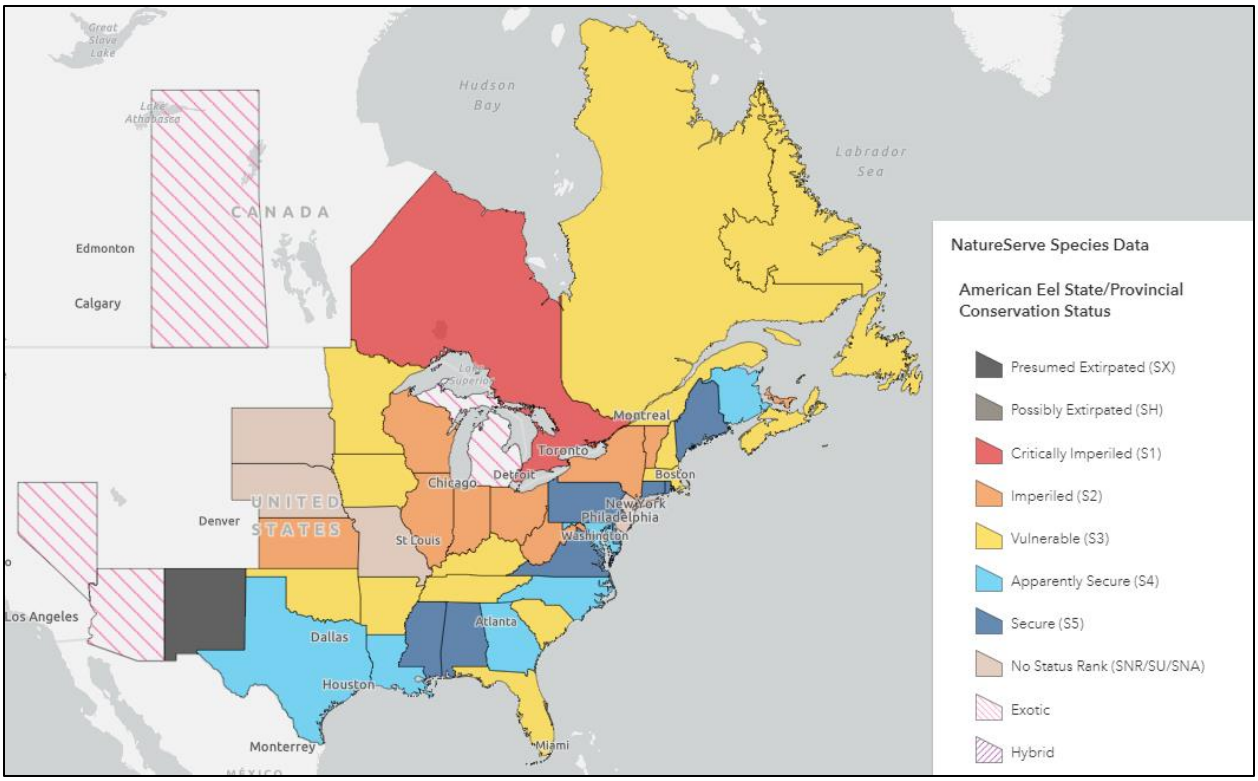


Figure 4: American Eel distribution and status (Source: NatureServe 2022).

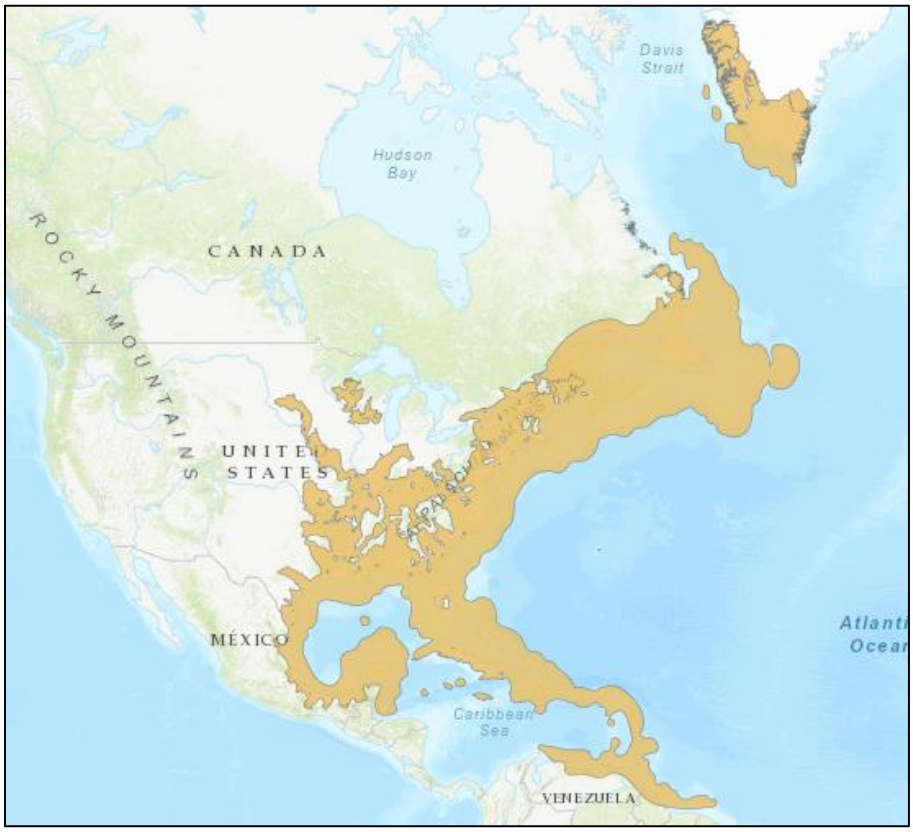


Figure 5: American Eel distribution (Source: IUCN Redlist).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

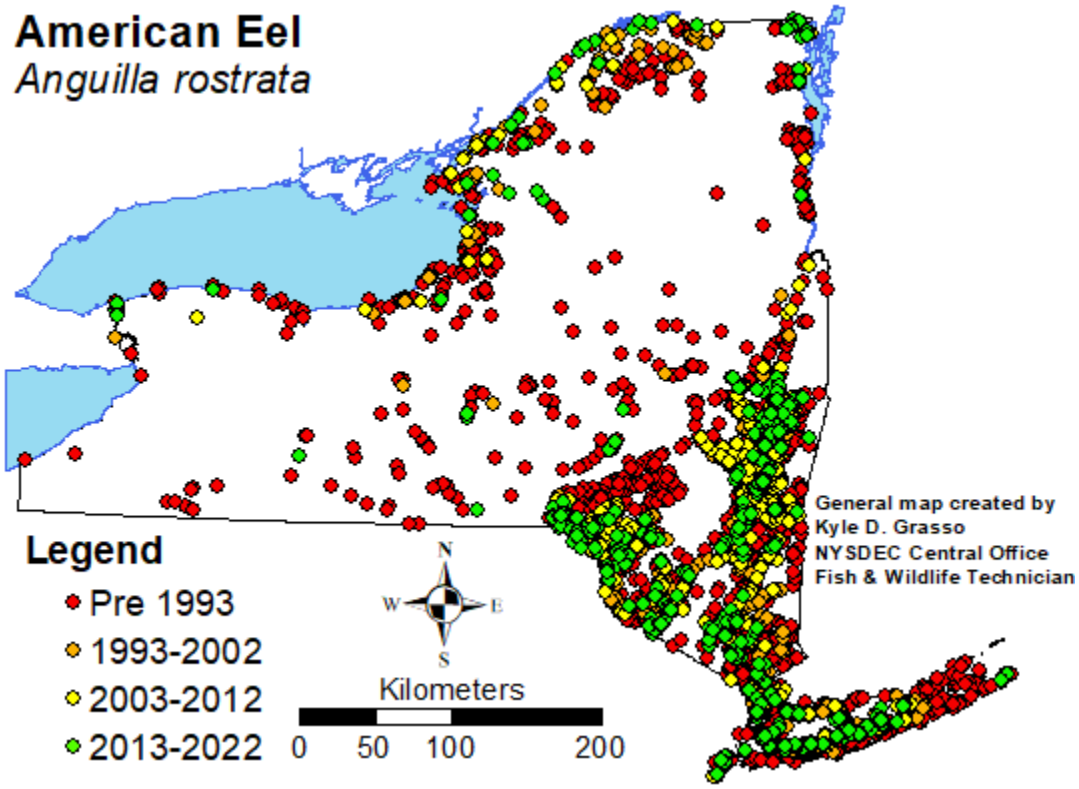


Figure 6: Records of American Eel in New York.

Years	# of Records	# of Waterbodies	% of State
Pre 1993	3245	787	>50%
1993-2002	822	223	>50%
2003 - 2012	876	248	>50%
2013 - 2022	917	203	>50%

Table 2: Records of American Eel in New York.

Details of historic and current occurrence:

In New York, American Eels historically penetrated inland throughout much of the state. There are American Eel records in all 18 watersheds within New York; however, the highest frequencies of occurrence for American Eel are in the Long Island, Lower Hudson, and Delaware watersheds where there are fewer barriers to migration. Once highly abundant in Great Lakes and Atlantic watersheds, eel numbers have declined drastically (ASMFC 2000; Haro et al. 2000). “Compared to historic and even relatively recent abundances, numbers of American eel are significantly reduced in all of the inland watersheds of New York. In the Susquehanna, eel are absent except for a few recent transfers above the major dams. In the Delaware, lower Hudson and Long Island eel are still common, but reduced. In Lake Champlain, Lake Ontario, and the upper St. Lawrence River numbers have been reduced by at least 3 orders of magnitude” (Dittman et al. 2010). They are very rare in the Allegheny and Genesee watersheds. The last record for those watersheds is 1970 and 1992 respectively. This decrease in abundance in both recruitment and spawning stock has significantly reduced biomass in inland waters. See Dittman et al. (2010) for additional information on New York’s inland populations.

New York's Contribution to Species North American Range:

% of NA Range in New York		Classification of New York Range	
100% (endemic):	_____	**Core:**	✓
76-99%:	_____	**Peripheral:**	_____
51-75%:	_____	**Disjunct:**	_____
26-50%:	_____	**Distance to core population:**	
1-25%:	✓	_____	

IV. Primary Habitat or Community Type *(from Northeast Aquatic Habitat Classification)*

a. Size/Waterbody Type: From creeks to large/great rivers, lakes, estuaries, and the Atlantic Ocean

b. Geology: Low/moderately buffered to assume moderately buffered

c. Temperature: Cold to warm

d. Gradient: Low to high gradient

Habitat or Community Type Trend in New York

Declining:_____ **Stable:**_____ **Increasing:**_____ **Unknown:** ✓

Time frame of decline/increase: _____

Habitat Specialist? **Yes:**_____ **No:** ✓

Indicator Species? **Yes:** ✓ **No:**_____

Habitat Discussion:

American Eels occupy the broadest diversity of habitats of any fish species (Helfman et al. 1987). Using fresh water, marine, and brackish habitats. All freshwater systems are used including large rivers and their small tributaries as well as reservoirs, canals, farm ponds and subterranean springs (USFWS 2011). Habitat use varies depending on what life stage the American Eel is in. As stated in the life history section, "larvae drift and swim in prevailing currents (Antilles Current, Florida Current, and Gulf Stream) that take them to areas near continental coasts or continental slope waters. Some elvers travel upstream to spend the majority of their life growing as yellow eels in rivers, streams, ponds, and the shallow, more productive areas of lakes; other eels remain in estuaries for their entire development prior to migration to the ocean" (NatureServe 2022). Based on otolith microchemistry, Secor et al. (2002) found three modes of habitat use by yellow-phase eels in the Hudson River: freshwater (only freshwater use since elver stage), "mixed" modes (use of freshwater for 2-19 years), and brackish water (no evidence of freshwater use), followed by migration to environments with brackish salinities. "Soft, undisturbed bottom sediments may be important to migrating elvers for shelter (Facey and Van Den Avyle 1987). Post larval eels tend to be bottom dwellers and hide in burrows, tubes, snags, plant masses, other types of shelter, or in the substrate; they are inactive in bottom mud in winter in the north" (Van Den Avyle 1984; NatureServe 2022).

V. Species Demographics and Life History

Breeder in New York:_____

Summer Resident:_____

Winter Resident:_____

Anadromous:_____

Non-Breeder in New York:_✓___

Summer Resident:_✓___

Winter Resident:_✓___

Catadromous:_✓___

Migratory Only:_____

Unknown:_____

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The American Eel is a catadromous species, which spends the majority of their 20-30 year life in freshwater habitats. They are slow to mature (7-30+ years) and only reproduce once in their lives. However, females can often produce millions of eggs. Spawning has never been directly observed, and suitable conditions for it remain speculative (NatureServe 2022). As adults, they migrate up to thousands of kilometers around summer or fall to the Sargasso Sea to spawn before they die. Spawning occurs in winter and early spring (McCleave et al. 1987). After hatching, the larvae are transported by currents to areas near the continental margin of North America where they metamorphose into unpigmented "glass eels" during the pelagic stage (8-12 months after hatching, sometimes a year) and actively move toward land. As they enter coastal areas, they begin to develop external pigmentation and are then referred to as “elvers”. Elvers develop into the "yellow eel" stage, which resemble the adult stage, usually by age 2. In the northeastern United States, young eels start moving upstream in river systems before pigmentation is complete. The timing and duration of this upstream migration of elvers and yellow eels varies with location. In the northeastern U.S. it may occur from March through October, with a May-July peak in many areas (July-August.in the St. Lawrence River) (Casselman et al. 1997). Upstream migration may extend for months or years (Haro and Krueger 1991). Some yellow eels move far into stream headwaters whereas others remain in estuaries. In general, eels in fresh water are all or almost all females (Facey and Labar 1981; Helfman et al. 1987). After the lengthy "yellow eel" stage, eels may undergo a physical and physiological transformation into a distinct, sexually mature "silver eel" stage, when they begin to move downstream and into the ocean to spawn, thus completing the cycle (NatureServe 2022).

VI. Threats *(from NY CWCS Database or newly described)*

Threats to the American Eel include barriers to migration, habitat loss and alteration, hydro turbine mortality, oceanic conditions, overfishing (potentially poaching), parasitism, predation, and pollution (Haro et al. 2000; Richkus and Whalen 2000).

“Dams are frequently mentioned as a factor in the apparent declines in American Eel abundance. Dams that reduce or restrict upstream movements limit the amount of habitat available to eels. Many surveys indicate that density and population size of American Eels tend to decrease with increasing distance inland and with increasing severity of obstructions to movement” (NatureServe 2022). There is evidence that dam removals have led to increased numbers in American Eel in upstream habitats that were previously inaccessible (O'Donnell et al. 2001). “Dams are not only barriers to movement but also may alter streamflow patterns. Elvers and young eels are small and not powerful swimmers and seemingly might be affected by alterations in stream flow caused by dams and other structures. However, they successfully move through strong marine, estuarine, and riverine currents, and so altered stream flows may not have much effect on upstream movements” (NatureServe 2022).

Hydro turbines associated with dams may cause mortality to out-migrating adults (Peterson 1997). “Turbine-induced mortality ranges from 5 to 60%, depending on turbine type, flow rate, and the length of the fish (Hadderingh 1990)” (NatureServe 2022).

Oceanic effects (ocean temperature, salinity, and upper-ocean transport conditions) on American Eel recruitment are poorly understand but could play a role in the abundance of eels along the east coast of North America (Peterson 1997). “The decline in recruitment of the American Eel occurred at the same time as that of the European eel (*Anguilla anguilla*). Both species spawn in the Sargasso Sea and migrate as larvae to continental waters, so the coincidence in recruitment failure suggests the likelihood of a common, Atlantic-wide cause” (NatureServe 2022). Wider temporal and spatial disruption of ocean currents like the Gulf Stream may adversely affect eel recruitment in New York.

Overfishing has also been identified as a possible threat to American Eels. The American commercial fishery has typically supplied American Eels at a variety of life cycles for the regional, European, and Asian food markets, as well as bait for domestic sport fisheries (NatureServe 2022). The worldwide demand for eels is greater than what can be supplied by wild populations, so eel farming-has become common in areas of Europe and Asia (Jessop 2000). “The bulk of the commercial eel catch in the United States (80%) occurs in central coastal (mid-Atlantic) states, with less from northern (19%) and southern (1%) states (Casselman 2001)” (NatureServe 2022). Although not frequently reported, poaching of glass eels throughout their range has occurred and may contribute to overfishing.

“An exotic, parasitic swim-bladder nematode (*Anguillicola crassus*) appears to have recently invaded the Hudson River ecosystem and may represent a stress to eels in the Hudson River and elsewhere (Secor et al. 2002)” (NatureServe 2022). This nematode has been documented in Susquehanna River eels as well.

“Increased populations of striped bass (*Morone saxatilis*) since the 1980s (Richards and Rago 1999) could be a factor in the decline in American Eel abundance. Bass predation on blueback herring has been proposed as a contributing factor in the recent herring decline in the Connecticut River (Savoy and Crecco 2004)” (NatureServe 2022).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The Protection of Waters Program provides protection for rivers, streams, lakes, and ponds under Article 15 of the NYS Conservation Law which regulates excavation and fill in waters of New York. However, not all streams are protected, and agricultural activities are exempted from the Part 661 regulations.

New York has several recreational and commercial fishing regulations in place for the harvest of American Eels (NYSDEC 2022). Statewide regulations are subject to change. For the most up to date American Eel regulations check the New York Codes, Rules, and Regulations (NYCRR).

Recreational

As of April 1, 2022, freshwater and marine recreational fishing for American Eel is open all year with a 9” size limit and a daily limit of 25 eels per individual or 50 for party/charter boats. However, there are some exceptions to this regulation. For example, possession is prohibited, and maximum size limits are enforced on some waterbodies. There are also special baitfish regulations associated with American Eel.

Commercial

New York allows commercial harvest of American Eels in state waters. Harvesters are required to report landings to the state. These data are tracked in annual compliance reports to the Atlantic States Marine Fisheries Commission and used in updates to the fishery management plan and stock assessments. All harvested eels must have a minimum total length of 9". Commercial eel season is open all year and there are no trip limits. Harvest takes place in both the marine district of New York and the Delaware and Hudson Rivers. Most eels are harvested using eel pots, but there is also an eel weir fishery in the Delaware River watershed that is limited through ASMFC FMPs to nine participants. New York DEC collects length data from commercial markets and bait and tackle shops for eels caught in New York marine and coastal waters.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The main management goal is to provide migratory passage and access to historic eel freshwater habitat by mitigating the various hazards to the upstream and downstream migration of American Eel. Such mitigation should include, but not be limited to support of fish passage research, requirements for the construction of fish (eel) passage facilities upon construction of dams, power generating facilities and relicensing of same, as well as outright removal of identified hazards to eel passage (ASMFC 2000).

Although knowledge of downstream migration behavior (e.g., environmental cues that trigger migration, depth of migration, effects of light and water currents) is limited, changes in turbine design should also be investigated to improve downstream fish passage and continue efforts to direct eel away from turbine passage to other higher survival passage opportunities using different devices. Investigations should also include feasibility of dam shutdowns during off-peak/nighttime hours to encourage passive escapement of migrating adult eels (ASMFC 2000).

The goals of the ASMFC American Eel FMP (ASMFC 2021) are to protect and enhance the abundance of American Eel in inland and territorial waters of the Atlantic states and jurisdictions and contribute to the viability of the American Eel spawning population with the aim to provide sustainable commercial, subsistence, and recreational fisheries by preventing over-harvest of any eel life stage.

The following objectives will be used to achieve this goal:

1. Improve knowledge of eel utilization at all life stages through mandatory reporting of harvest and effort by commercial fishers and dealers and enhanced recreational fisheries monitoring.

2. Increase understanding of factors affecting eel population dynamics and life history through research and monitoring.

3. Protect and enhance American Eel abundance in all watersheds where eel now occur.

4. Where practical, restore American Eel to those waters where they had historical abundance but may now be absent by providing access to inland waters for glass eel, elvers, and yellow eel and adequate escapement to the ocean for pre-spawning adult eel.

5. Investigate the abundance level of eels at the various life stages necessary to provide adequate forage for natural predators to support ecosystem health and food chain structure.

See Dittman et al. (2010) for additional information on possible management actions for New York’s inland populations.

The 2015 State Wildlife Action Plan included recommendations based on watersheds:

-*Delaware:* Evaluate American Eel population, life history, and harvest.

-*Lake Ontario:* Restore aquatic habitat connectivity for American Eel migration.

-*Lower Hudson/Long Island:* Remove barriers to the migration of Alewife and American Eel.

-*Susquehanna:* Restore aquatic habitat connectivity for American Eel migration.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection):
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Resource & Habitat Protection
2. Land/Water Management	Habitat & Natural Process Restoration
3. Species Management	Harvest Management
4. Species Management	Species Recovery
5. Species Management	Ex-situ Conservation
6. Law & Policy	Policies and Regulations

Table 3: Recommended conservation actions for American Eel.

VII. References

Atlantic States Marine Fisheries Commission (ASMFC). 2000. Interstate fishery management plan for American Eel (*Anguilla rostrata*). ASMFC, Fishery Management Report No. 36, Washington, D.C. 93 pp.

Atlantic States Marine Fisheries Commission (ASMFC). 2017. American Eel stock assessment update. Arlington, VA. 123 pp.

Atlantic States Marine Fisheries Commission (ASMFC). 2021. Review of the interstate fishery management plan, American Eel (*Anguilla rostrata*). Arlington, VA. 16 pp.

Casselman, J. M., L. A. Marcogliese, and P. V. Hodson. 1997. Recruitment index for the upper St. Lawrence River and Lake Ontario eel stock: a re-examination of eel passage at the R.H. Saunders hydroelectric generating station at Cornwall, Ontario. 1974-1995. Pages 161-169 in R. H. Peterson (editor). The American Eel in eastern Canada: stock status and management strategies. Proceedings of Eel Management Workshop, January 13-14, 1997, Quebec City, Quebec. Canadian Technical Report of Fisheries and Aquatic Sciences 2196: v + 174 pp.

Casselman, J. M. 2001. Dynamics of American Eel, *Anguilla rostrata*, resources: declining abundance in the 1990s. Extended abstract of a paper presented to Advances in Eel Biology, Tokyo, Japan, September 28-30, 2001.

Dittman, D. E., L. S. Machut, J. H. Johnson. 2010. American eels: Data assimilation and management options for New York inland waters. Comprehensive study of the American eel for NYSDEC by Tunison Laboratory of Aquatic Science, USGS, Great Lakes Science Center, Cortland, NY 13045.

Facey, D. E., and G. Labar. 1981. Biology of American Eels in Lake Champlain, Vermont. Transactions of the American Fisheries Society 110(3): 396-402.

Facey, D. E., and M. J. Van Den Avyle. 1987. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (North Atlantic): American Eel. U.S. Fish and Wildlife Service. Biological Report 82(11.74). 28 pp.

Hadderingh, R. H. 1990. Eel mortality at hydro-power stations and possible solutions for this problem. N.V. KEMA. Envir. Res. Dept. The Netherlands.

Haro, A. J., and W. H. Krueger. 1991. Pigmentation, otolith rings, and upstream migration of juvenile American Eels (*Anguilla rostrata*) in a coastal Rhode Island stream. Canadian Journal of Zoology 69:812-814.

Haro, A., W. Richkas, K. Whalen, A. Hoar, W. D. Busch, S. Lary, T. Brush, and D. Dixon. 2000. Population decline of the American Eel: implications for research and management. Fisheries 25(9):7-16.

Helfman, G. S., D. E. Facey, L. S. Hales, Jr., and E. L. Bozeman, Jr. 1987. Reproductive ecology of the American Eel. American Fisheries Society Symposium 1:42-56.

International Union for Conservation of Nature (IUCN). 2022. The IUCN Red List of Threatened Species. Version 2021-3. Available at: <https://iucnredlist.org> (Accessed: May 9, 2022).

Jessop, B. M. 2000. The American Eel. Fisheries and Oceans Canada. Ottawa, Ontario. 8 pp.

McCleave, J. D., R.C. Kleckner, and M. Castonguay. 1987. Reproductive sympatry of American and European eel and implications for migration and taxonomy. American Fisheries Society Symposium 1:268-297.

NatureServe. 2022. NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. Available at: <https://explorer.natureserve.org> (Accessed: May 9, 2022).

New York State Department of Environmental Conservation (NYSDEC). 2022. Statewide angling regulations. Available at: <https://www.dec.ny.gov/outdoor/7917.html> (Accessed: May 9, 2022).

O'Donnell, M., N. Gray, G. Wippelhauser, and P. Christman. 2001. Kennebec River diadromous fish restoration annual progress report-2000. Maine Department of Natural Resources. Augusta, ME.

Petersen, R. H. (ed) 1997. The American Eel in eastern Canada: stock status and management strategies. Proceedings of the Eel Workshop, January 13–14, 1997, Québec City, Québec, Canada. Canadian Technical Report of Fisheries and Aquatic Sciences 2196.

Richkus, W. A., and K. Whalen. 2000. Evidence for a decline in the abundance of the American Eel, *Anguilla rostrata* (LeSueur), in North America since the early 1980s. Dana 12:83-97.

Secor, D. H., J. E. Baker, W. E. Morrison, and J. C. Steinbacher. 2002. Ecology and contamination of the Hudson River American Eel. Report submitted to Hudson River Foundation, 40 West 20th Street, Ninth Floor, New York, NY 10011. University of Maryland Center for Environmental Science Tech. Series No. TS-367-02-CBL.

United States Fish and Wildlife Service (USFWS). 2011. 90-Day Finding on a petition to list the American Eel as Threatened. Federal Register 76(189):60431-60444.

Van Den Avyle, M. J. 1984. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (South Atlantic): American Eel. U.S. Fish and Wildlife Service. FWS/OBS-82/11.24.

Attachment 4

United States Department of the Interior
FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, New York 13045

December 22, 2025

Kevin Webb
Hydro Development Group Acquisition, LLC
c/o Patriot Hydro, LLC
670 N. Commercial Street Suite 204
Manchester, NH 03101
kwebb@patriothydro.com

Debbie-Anne Reese, Secretary
Federal Energy Regulatory Commission
888 First Street N.E.
Washington, DC 20426

FERC E-file

RE: Dexter Hydroelectric Project (Project No. 2695)
Request for American Eel Upstream Fishway Siting Study, Standard Article 2 Mandatory Terms and Conditions

Dear Kevin Webb and Secretary Reese:

The U.S. Fish and Wildlife Service (Service) is requesting a siting study for upstream fishways for the American Eel (*Anguilla rostrata*) at the Dexter Hydroelectric Project (Project No. 2695) (Project), owned by Hydro Development Group Acquisition, LLC (Exemptee) and located on the Black River in Jefferson County, New York. In this letter, we are also notifying the Exemptee and the Federal Energy Regulatory Commission (Commission) that the Service plans to submit recommendations for upstream and downstream eel passage and protection facilities at the Project, implemented within a reasonable timeline determined in consultation with the Exemptee and the New York State Department of Environmental Conservation (NYSDEC); these recommendations will be filed with the Commission via letter under a separate cover. The Service provides background on our request for an American Eel upstream fishway siting study and our authority to recommend the installation of eel passage and protection facilities at the Project, below.

Background

The Project was issued an exemption from licensing by the Commission on June 4, 1982, amended August 5, 1986. Standard Article 2 requires the Exemptee to comply with all conditions set by the Service and NYSDEC. The Department of the Interior (Department) provided our conditions in a letter dated August 31, 1981. The NYSDEC provided their conditions by letters dated May 19, 1980 and October 30, 1981. The Department's August 31, 1981, letter contains the following mandatory condition:

> *The Exemptee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operations, as may be ordered by the Federal Energy Regulatory Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.*

The Department provided additional requirements in our March 18, 1986, letter on the amendment:

> *The Exemptee shall, at its expense, design and make operative structures and procedures to enable anadromous fishes to migrate upstream and, if necessary, downstream at the project works; and*
>
> *The Exemptee shall ensure that the design, location, installation, maintenance, repair, and operation of structures necessary for the upstream and, if necessary, downstream migration of fishes past the project conform to the specifications of and are satisfactory to the U.S. Fish and Wildlife Service.*

The NYSDEC's May 19, 1980, letter contains the following mandatory condition:

> *The Hydro Development Group shall, as directed by the DEC, construct and maintain such fish passage facilities and comply with such reasonable modifications to the operation of the project as may be required to assure the conservation and development of fish and wildlife resources that have been identified with this project.*

The Project is the first dam on the Black River. The Project has a vertical slot upstream fishway designed to pass Walleye (*Sander vitreus*) and salmonid fish species; however, its internal velocities may preclude Walleye from passing upstream.[1] There are no downstream passage facilities at the Project, and the existing trashracks range from 1.33-inch to 2-inch clear-spacing. The Project is located 4 miles downstream of the Glen Park Hydroelectric Project (Project No. 4796)[2] and 9.5 miles downstream of the Beebee Island Hydroelectric Project (Project No.

[1] Personal communication, Les Resseguie, NYSDEC, December 8, 2025.

[2] The Glen Park Project has upstream and downstream fish passage and protection designed primarily around salmonid fish species (1.5-inch clear-spaced trashracks).

2538),[3] which is located at the natural upstream barrier for most fish species, except American Eel.

Since 1990, the Service has documented a total of 66 eels on fifty separate occasions within the Project's upstream vertical slot fishway during Sea Lamprey (*Petromyzon marinus*) trapping efforts (between April and June); fifteen of these eels were detected in the previous four years.[4] Additionally, four tagged eels were acoustically detected by the Service in the Black River Bay between August and October 2023. One of these tagged eels was detected 0.3 miles below the Project. American Eel have been documented several times above the Project,[5] although due to the lack of eel-specific passage at the dams in the lower river, collections above the Project are infrequent.

The Project was issued its exemption prior to the regulations contained with the 1986 Electric Consumers Protection Act that required the Commission to give equal consideration to power and non-power values of a waterway. Due to the 40-year advancement in hydropower-related mitigation measures and science, and the well-documented decline of American Eel populations,[6] there are impacts to the fisheries that do not reflect our current guidance and do not support the resource management goals in the Black River. Restoration of American Eel in the Black River is a resource management goal of the Service and the NYSDEC. Several hydroelectric projects in the Black River are currently relicensing,[7] where the Service is working to address fish passage and protection; however, the Project will not undergo relicensing due to the Project's exempt status. Therefore, exercise of reserved authorities is the primary mechanism to address American Eel at the Project.

Given the ongoing relicensing processes occurring at upstream hydroelectric projects, the Service believes it is timely to initiate the implementation of eel passage and protection facilities at the Project. The Service held several conference calls with the Exemptee and the NYSDEC on January 17, 2024, March 7, 2024, and May 6, 2025, to discuss the restoration of American Eel to the Black River via passage and protection facilities at the Project. During our most recent call, the Service provided an overview of the eel's current and historic presence in the Black River, and the Service's intent to provide recommendations for fish passage and protection facilities for eels at the Project. During this call, the Service requested the Exemptee conduct a siting study to determine where and when eels congregate at the Project when attempting to migrate upstream to determine where best to locate upstream passage facilities. The Exemptee requested the Service provide a written request for this study, which is provided, below. The Service anticipates having future discussions with the Exemptee and the NYSDEC to collaboratively determine the scope and timing of the siting study and subsequent fish passage and protection facilities.

---

[3] The Beebee Island Project has downstream fish passage and partial protection designed primarily for Walleye and resident fish species (half-depth 1-inch clear-spaced trashracks).
[4] Personal communication, Matt Symbal, Service Region 3, December 16, 2025.
[5] FERC Accession No. 20240320-5200.
[6] Atlantic States Marine Fisheries Commission. 2023. American Eel Benchmark Stock Assessment and Peer Review Report. Atlantic States Marine Fisheries Commission.
[7] The Black River Hydroelectric Project (five developments) (P-2569), the Beebee Island Hydroelectric Project (P-2538), the Carthage Paper Maker Mills Hydroelectric Project (P-10887), the Lyons Falls Mill Hydroelectric Project (P-2548), and the Forestport Hydroelectric Project (P-4900).

American Eel Upstream Fishway Siting Study

Purpose and Need

The catadromous American Eel is a primary species of concern and target species for restoration in the Black River. Eels are historically native to the Black River but have been nearly extirpated in part due to the construction of dams and associated mortality.[8,9] The Project's dam serves as a barrier to upstream American Eel migration, and eels migrating out of the Black River are subjected to potential mortality from impingement and entrainment at the Project. The Project has a fish ladder designed for the upstream passage of salmonids, but its passage efficiency for eels is unknown. Without suitable substrate to rest and avoid free stream velocities, juvenile eels have difficulty transiting over barriers at velocities greater than 0.98 feet per second,[10] which is prohibitive for the velocities observed in fish ladders designed for salmonids. Nonetheless, several eels have been captured by the Service in the upstream fishway since 1990 during lamprey trapping. Although American Eel have been documented several times above the Project, these collections are infrequent due to the lack of eel-specific passage at the dams in the lower Black River. Information on eel abundance and migratory patterns (i.e., timing and location) is lacking in the vicinity of the Project. Therefore, the Service is requesting an American Eel siting study at the Project to find a suitable location for the installation of an upstream eel passage facility and to determine the best time of year to operate the facility. The Service will use this information, in collaboration with the NYSDEC, to inform our recommendations for eel passage and protection facilities at the Project, as authorized in the Department's October 30, 1981, letter and the NYSDEC's May 19, 1980, letter providing mandatory conditions for the Project.

Resource Management Goals

The Service is the primary Federal agency responsible for the conservation, protection, and enhancement of fish, wildlife, plants, and the habitats on which they depend. The Service's resource management goal for the Black River include to restore eels to their historic range. The NYSDEC's resource management goals include sustaining and enhancing all existing viable fisheries resources of the Black River, especially for American Eel.[11]

Recommended Methodology

[8] Carlson, D. M., R.A. Daniels, and J.J. Wright. 2016. Atlas of Inland Fishes of New York. Published jointly by the New York State Education Department and Department of Environmental Conservation. p. 29.
[9] Bergmann Associates. 2010. Black River Watershed Management Plan. Prepared for the New York State Department of State Division of Coastal Resources. p. 83. https://tughill.org/wp-content/uploads/2011/10/7BRWFinalDocumentPartI-May2010.pdf
[10] Barbin, G. P., & Krueger, W. H. (1994). Behaviour and swimming performance of elvers of the American eel, Anguilla rostrata, in an experimental flume. *Journal of Fish Biology*, *45*(1), 111-121.
[11] FERC Accession No. 20211129-5285.

The Service recommends the use of passive American Eel traps and nighttime surveys throughout the upstream eel migration season in the Black River between April and October.[12,13] These sampling efforts would inform both abundance and migratory patterns (timing and location) of eels at the Project.

The collection of eels through the deployment of eel traps should occur below the Project dam to determine staging and timing of upstream eel migration. Traps should utilize multiple substrates for the size distribution of eels that may be present at the site and should be checked no less than every other day during the study period. The location of the traps should be determined in consultation with and approved by the Service and the NYSDEC. We have the following standard recommendations for the traps:

- Install a temperature monitor in each tank to ensure that temperatures do not exceed ambient water temperatures;
- Provide a cover for each ramp and tank to prevent predation;
- Ensure the tanks are circulated with fresh water continuously;
- Use an appropriate ramp substrate for the size of eels that are expected to be observed at the Project; and
- Ensure the tanks are large enough to accommodate eel densities of 10 elvers per liter. If at any time this density is exceeded, or mortality over 5 percent of the recorded catch is observed, consult with agencies.

Nighttime surveys of Project structures (e.g., the spillways, abutments, gates, the fish ladder) that juvenile eels may climb should be conducted whenever there are freshets from upstream or more than 0.5 inches of rainfall at the Project, and no less than once per week during the study period.

Information and data related to eel behavior, environmental, and weather conditions should be recorded during the study. The Service recommends a field form be provided for our review for checking the traps and for nighttime observations with the following parameters: moon phase, cloud cover, precipitation, air and water temperature, headpond elevation, average daily river flow, and average daily discharge from the powerhouse, spill from the dam, location of release, estimated eel length, and eel behavior. Behaviors may include swimming (swimming within the water column with no apparent direction), staging (congregating in locations with an apparent intent to move upstream), climbing (active climbing of steep or vertical surfaces), or resting (sitting on or within the substrate without movement).

*****

The Service requests the Exemptee provide a draft study plan for an American Eel upstream fishway siting study within 60 days of this letter. The Service recommends the siting study be conducted between April and October 2026, with a final report to the Service during the fourth

[12] Eel ladders are operated on the Oswego River between June 15 and September 15, and on the St. Lawrence River between July 1 and October 31. Several eels have also been detected during sea lamprey trapping efforts in the Project's upstream fishway between April and June over the previous three decades.

[13] Schmidt, R. E., O'Reilly, C. M., & Miller, D. 2009. Observations of American eels using an upland passage facility and effects of passage on the population structure. *North American Journal of Fisheries Management, 29*(3), 717.

quarter of 2026. The Service is available as needed to discuss study goals, methodologies, and timelines. The Service expects to submit recommendations to the Commission for eel passage and protection at the Project by the first quarter of 2027.

Please note that submission of our recommendations to the Commission regarding eel passage and protection are not dependent on the Exemptee providing the draft study plan or conducting our requested siting study. We are providing this recommendation and process for evaluating American Eel as discussed during our current consultation with the Exemptee. If you have any questions or desire additional information, please contact Arianna Ramirez or John Wiley at arianna_ramirez@fws.gov or john_wiley@fws.gov, respectively, or at 607-753-9334.

Sincerely,

IAN DREW Digitally signed by IAN DREW
Date: 2025.12.22 09:18:21 -05'00'

Ian Drew
Field Supervisor

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