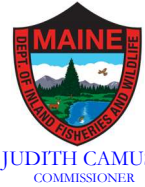




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JUDITH CAMUSO
COMMISSIONER

VIA ELECTRONIC FILING

June 19, 2024

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

Re: MDIFW Comments and Study Requests for the Brunswick Hydroelectric Project (FERC No. 2284)

Dear Acting Secretary Reese:

On February 21, 2024, Brookfield White Pine Hydro LLC (Brookfield, Licensee) submitted a Notice of Intent (NOI) to file an application for a new license and a Pre-Application Document (PAD) for the Brunswick Hydroelectric Project (FERC No. 2284). The Project is located on the Androscoggin River in Androscoggin County, Maine. The Maine Department of Inland Fisheries and Wildlife (MDIFW) is a cabinet-level agency of the State of Maine, and under Maine State Law (12 MRSA, §10051) MDIFW's mandate is "*...to preserve, protect, and enhance the inland fisheries and wildlife resources of the State; to encourage the wise use of these resources; to ensure coordinated planning for the future use and preservation of these resources; and to provide for effective management of these resources.*" Based on our statutory responsibility we have prepared the following comments on the PAD and are submitting appropriate Study Requests:

Comments on the PAD

Section 3.4 Project Operations

The Project is currently operated as a run-of-river facility with no stated storage or flood control capacity. However, the Licensee does possess some ability to regulate impoundment drawdowns through turbine-generator operation. Furthermore, the current FERC license limits impoundment fluctuations to less than two feet below the top of the spillway crest. Based on water level data provided in Figures 3.4.1-1 through 3.4.1-5, impoundment drawdowns of one foot or greater were variable year-to-year but relatively frequent for the period shown (2018-2022). Outside of identified maintenance drawdowns, the maximum drawdown appeared to be approximately two feet as limited by the current FERC license. MDIFW appreciates the inclusion of these impoundment level and outflow figures, but also requests that the raw data for outflow and impoundment level be provided for the same 2018-2022 time period. Without these data, it is difficult to identify the magnitude, frequency, or duration of reduced impoundment levels that may have impacted resident fish species.

Typically, MDIFW recommends hydropower projects limit impoundment drawdowns to one foot or less without prior notification to the Department. This protects inland aquatic species from habitat loss and reproductive failure and is particularly important during the spawning seasons for fish species. Based on surveys performed by Yoder et al. (2006), smallmouth bass (*Micropterus dolomieu*) represent one of the most common recreationally targeted species in the Lower Androscoggin River; bass are particularly prone to reproductive failure from impoundment fluctuations as nests are typically formed in shallow depths of water bodies. Other species such as redbreast sunfish (*Lepomis auritus*) may similarly be impacted by large reductions in water level during critical nesting periods. Both smallmouth bass and redbreast sunfish are also likely to be found “in relatively large abundance” in the Project area (Section 5.3.3.1; Yoder et al. 2006). Further data on past Project operations may aid in determining the potential for impacts to these and other resident fish species. Without clarification on Project operations and drawdown necessity, fluctuations in the Project impoundment should be limited to one foot or less below the top of the spillway crest without prior approval, consistent with hydropower requirements across similar projects statewide.

Section 5.3 Fish and Aquatic Resources

5.3.1

While data collected by Yoder et al. in 2003 were relatively comprehensive at the time, more recent changes and invasions in the Androscoggin River are not fully reflected. Relative species composition of the river and Project impoundment may not be the same as it was over twenty years ago. Additionally, MDIFW data indicate that abundance of non-native species such as northern pike (*Esox lucius*), black crappie (*Pomoxis nigromaculatus*), spottail shiner (*Notropis hudsonius*) and rock bass (*Ambloplites rupestris*) have increased in the Androscoggin River since 2003.

In the overview of fish assemblage of the Androscoggin River (page 86), it should be clarified that brook trout (*Salvelinus fontinalis*) may also provide a limited contribution to the Project impoundment via wild production. Multiple tributaries to the impoundment are known to support brook trout populations.

Table 5.3.1-3 also requires further clarification. The “Status” column is inconsistent and does not describe the intended difference between species labelled as “introduced” versus “exotic.” Collectively referring to these species as “non-native” may help provide a better contrast with those native species also listed. Further, stocked trout species are not given a designation of native/non-native but are simply listed as being stocked. As clarified above, brook trout likely provide a contribution to the impoundment beyond as a stocked species. Finally, chain pickerel (*Esox niger*) are listed as “introduced” but are a native species to Maine.

5.3.3

On page 99, four taxonomic groupings are listed as applying “respectively” to only three species of resident fish below. The family “Salmonidae” should be dropped from the taxonomic list here as no salmonid species are described below. Additionally, Centrarchidae is a family belonging to the order Perciformes and does not necessarily represent a distinct taxonomic group. The

Licensee should clarify the intention of these chosen groupings and consider applying a common level of taxonomic hierarchy to the groups listed.

5.3.5

The Licensee cites a 2017 draft Fisheries Management Plan for the Lower Androscoggin River that was developed jointly by the Maine Department of Marine Resources (MDMR) and MDIFW (pages 128-130). However, when listing stated goals pertaining to the Project, only those goals related to the Project as a migratory pathway for diadromous species are included. Notably, most of MDIFW's management goals are omitted, including those related to the promotion of recreational angling opportunities. These goals can be found on page 27 of the draft Fisheries Management Plan and should be included for a more comprehensive view of fisheries present at the Project. MDIFW's stated goals are foundational to management of resident fisheries and include, but are not limited to, promotion of sport fisheries for both salmonids and bass, habitat improvement, enhancement of public access, and limitation of the distribution and spread of invasive species.

Currently, the Project represents a key barrier to the volitional upstream movement and spread of multiple invasive species, including white catfish (*Amieurus catus*) and common carp (*Cyprinus carpio*). Controlling the spread of known and possible future Aquatic Invasive Species (AIS) not only aligns with the Department's statutory authority and mandate but are identified and reflected in at least three different strategic statewide management plans to maintain healthy ecosystems in the inland waters of Maine. Fishway operations include the critical component of a trap-and-sort facility, which prevents the passage of AIS upstream. Regardless of any future changes to fish passage facilities or Project operations, successful management of resident fish species is dependent on the continual operation of the trap-and-sort facility. The Licensee should work with both MDIFW and the agencies tasked with the management of diadromous fish to ensure that fish passage facilities are effective at both passing native species and preventing the spread of AIS.

Section 5.7 Recreation and Land Use

MDIFW appreciates the Licensee's proposal of a Project recreation site inventory and condition assessment as part of the relicensing process. Public access to surface waters is an important State and Department goal that gives residents and visitors an opportunity to participate in various traditional outdoor activities including fishing, hunting, and multiple forms of recreational boating. Maintaining and expanding public access opportunities is particularly important in southern Maine, as traditional access opportunities to these important resources are being lost at an alarming rate due to development, land posting, and other changes in land use. The Licensee is not currently proposing any improvements to public access and suggests that two hand-carry sites provide adequate watercraft access to the Project impoundment. At approximately 175 acres and extending 4.5 miles, the Project impoundment is a relatively sizable body of water. MDIFW contends that both sites are essentially designed as canoe portages and currently limit recreational access for the purposes of fishing and boating. The upstream site, located just below the Pejepscot Dam, is particularly steep and limits access for some users and watercraft types. The downstream Mill Street Canoe Portage is located over 4 miles away and presents recreational users with a long paddle to reach the upstream end of the impounded area.

Furthermore, the Mill Street site is closed when the boat barrier upstream of the Brunswick Dam is not present in the river, cutting off recreational access from fall through late spring. Additionally, the PAD suggests that the Project impoundment is “too shallow for large, trailered boats.” The Licensee should clarify and provide data to support this assertion as many forms of trailered watercraft can operate effectively in less than five feet of water depth. Given the above, MDIFW requests the Licensee be required to secure a permanent boat launch site at the Brunswick impoundment with adequate parking capacity for trailered and non-trailered rigs, as well as appropriate signage to inform the public of the site.

Inland Fisheries Study Requests

Bass Survey: The goal of this study is to determine whether Project operations (specifically, impoundment fluctuations) are impacting reproductive success of black bass species. Black bass species including largemouth (*Micropterus salmoides*) and smallmouth bass may be particularly susceptible to rapid changes in water level, especially during the spring while eggs and larvae are most vulnerable. Past data collected by Yoder et al. in 2003 indicate that smallmouth bass represent one of the dominant fish species in Project waters. Additionally, bass are one of the most popular sportfish in Maine, with the Androscoggin River providing popular, quality smallmouth fisheries throughout most of its length. To ensure the health of these fisheries and the continued ability of Maine anglers to utilize this popular resource, MDIFW is requesting a study of black bass. A comprehensive survey of largemouth (if present; not detected in Yoder et al. 2006) and smallmouth bass nests within the Project impoundment during mid-May to mid-June will help determine the degree to which fluctuations in headpond level may impact bass populations. Furthermore, collection of adult bass and subsequent aging of some individuals, when correlated with past data on impoundment fluctuations, will help identify any Project operations that may have led to bass year-class failure. Knowledge of the current status of these important sportfish will help determine the best course of action for future Project operations.

Fish Assemblage Study: While data on the fish assemblage of the Androscoggin River were relatively comprehensive when collected by Yoder et al. in 2003, much has changed in the intervening years. The proliferation of non-native species such as northern pike, spottail shiner, black crappie, and rock bass throughout the Androscoggin drainage calls into question the status of the fish community within the Project impoundment. Importantly, Project operations may help create an environment in which many of these species may thrive. All of the above-listed species are often associated with more lentic habitats and higher levels of vegetation, characteristics that are more likely to be found in impounded reaches of a river. As the State of Maine continues to combat the spread of these introduced species, it is imperative to understand the degree to which operations of hydropower projects may influence their expansion. By conducting a comprehensive study of the fish assemblage in the Project impoundment, we can learn how each of these species may respond to impounded habitat and inform future operations for this project and for hydropower around the state.

References

Yoder, C.O., B. H. Kulik, and J.M. Audet. 2006. The Spatial and Relative Abundance Characteristics of the Fish Assemblages in three Maine Rivers. MBI Technical Report MBI/12-05-01. Grant X-98128601 report to U.S. Environmental Protection Agency, Region 1, Boston, Massachusetts. 136 pp. and appendices.

Study Request 1: Bass Survey

1. *Describe the goals and objectives of each study proposal and the information to be obtained.*

The goal of this study is to analyze the extent to which impoundment fluctuations may be impacting reproductive success of black bass species. Smallmouth bass in particular are a popular sportfish in the Androscoggin River, and information regarding their natural recruitment is essential to successful management. Objectives include 1) determining the number, depth, and spatial extent of black bass nests during a typical spawning season, as well as their vulnerability to fluctuations in impoundment level, and 2) collecting adult bass, aging of a subset of individuals to correlate with data on past drawdowns in impoundment level, and determination of any year-class failures related to Project operations.

2. *If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.*

This study is requested to ensure that any agreed upon impoundment level fluctuations meet inland fisheries needs. Rapid changes in water level, such as those associated with large drawdowns in impoundments, can lead to habitat loss, nest failure, and insufficient recruitment to sustain resident fish populations.

3. *If the requestor is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.*

MDIFW is a cabinet level agency of the State of Maine. Under Maine State Law (12 MRSA, §10051), MDIFW's mandate is "...to preserve, protect, and enhance the inland fisheries and wildlife resources of the State; to encourage the wise use of these resources; to ensure coordinated planning for the future use and preservation of these resources; and to provide for effective management of these resources."

4. *Describe existing information concerning the subject of the study proposal, and the need for additional information.*

The PAD states that the Project is operated as run-of-river, but that impoundment drawdowns are allowed up to two feet below the top of the spillway crest. It is unclear what the exact frequency, magnitude, and duration of impoundment fluctuations may be under existing Project operations. This information should be provided. There is also no information on the current status of bass recruitment or year-class failure within the Project impoundment.

5. *Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.*

MDIFW typically requires notification prior to impoundment drawdowns exceeding one foot for hydropower projects and/or precludes them during sensitive spawning periods. Data collected will determine whether Project operations, which currently allow for impoundment drawdowns

of up to two feet below the top of the spillway crest, are adversely impacting resident fish species. Further, results will inform the need for changes to existing Project operations pertaining to impoundment level for the upcoming license renewal.

6. *Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.*

Surveys of resident fish populations are commonly requested during hydropower relicensing. This study request may be able to be accomplished in parallel with additional surveys of fish assemblage, both resident and diadromous, and should be a collaborative effort between MDIFW, other interested agencies, and the Licensee. Therefore, the study details, including the actual methodology, should be developed after a review of all study requests to minimize redundancy and meet the collective need for fish assemblage analyses. Black bass nests typically occur in relatively shallow water so surveys and counts can often be accomplished through visual analysis. Peak spawning usually occurs in southern Maine between mid-May and mid-June. Additionally, a similar electrofishing methodology as Yoder et al. (2006) and/or gillnetting may allow for sufficient collection of adult bass for aging purposes.

7. *Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.*

The level of effort and cost is commensurate with a project the size of the Brunswick Hydroelectric Project and the likely license term. Only evaluation of bass nets *in situ* during the spawning season will allow for determination of risk to nests due to impoundment drawdowns.

Study Request 2: Fish Assemblage Study

1. *Describe the goals and objectives of each study proposal and the information to be obtained.*

The goal of this study is to assess relative changes to the fish community of the Project impoundment since previous surveys were completed in 2003. Of particular importance is the degree to which introduced species may have expanded their dominance of the fish community and therefore their probability of invading nearby systems. Objectives include a comprehensive analysis of species present and their relative abundances in the overall fish community.

2. *If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.*

This study is requested to ensure that a full understanding of the present fish community is in place prior to the new license term. The spread of introduced species is a major concern for the State of Maine and knowledge of source populations is imperative to limiting the impacts to resident fisheries.

3. *If the requestor is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.*

MDIFW is a cabinet level agency of the State of Maine. Under Maine State Law (12 MRSA, §10051), MDIFW's mandate is "...to preserve, protect, and enhance the inland fisheries and wildlife resources of the State; to encourage the wise use of these resources; to ensure coordinated planning for the future use and preservation of these resources; and to provide for effective management of these resources."

4. *Describe existing information concerning the subject of the study proposal, and the need for additional information.*

The most recent comprehensive survey of Project fish assemblage was completed in 2003. Since that time, it is unclear how introduced species such as northern pike, black crappie, spottail shiner, and rock bass may have changed utilization of Project habitat. For some species that were not present in the Androscoggin River in Maine in 2003 (bluegill [*Lepomis macrochirus*], rock bass) it is unclear to what degree they may have established and influenced existing fish communities.

5. *Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.*

Project operations create impounded riverine habitat that resembles lentic habitat in function and may allow for more vegetative growth. This habitat type is associated with the proliferation of many of the introduced species referenced above. Therefore, study results would seek to determine the degree to which Project operations may have influenced colonization by introduced species. This information will further aid in evaluation of whether the Project meets Maine designated uses, habitat, and aquatic life criteria which may inform the water quality certification process. Results would not only inform direct effects of the Project on the Androscoggin River drainage but could be applied statewide to the cumulative impacts of impounded hydropower projects.

6. *Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.*

Surveys of resident fish populations are commonly requested during hydropower relicensing. This study request may be able to be accomplished in parallel with additional surveys of fish assemblage, both resident and diadromous, and should be a collaborative effort between MDIFW, other interested agencies, and the Licensee. Therefore, the study details, including the actual methodology, should be developed after a review of all study requests to minimize redundancy and meet the collective need for fish assemblage analyses. However, a similar electrofishing methodology as Yoder et al. (2006) may be appropriate and would provide comparable data to previous sampling efforts. Additional methods such as gillnetting and/or

shallow water seine netting may aid in collection of fish species that are often difficult to capture via electrofishing methods (e.g., American eel, northern pike).

7. *Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.*

The level of effort and cost is commensurate with a project the size of the Brunswick Hydroelectric Project and the likely license term. Only evaluation of the fish assemblage *in situ* will allow for determination of current community composition and relative influence of introduced species.

MDIFW also supports study requests from other natural resource agencies, including but not limited to the Maine Department of Marine Resources, Maine Department of Environmental Protection, US Fish and Wildlife Service, and the National Marine Fisheries Service.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,



John Perry
Environmental Review Coordinator

Cc: Francis Brautigam, Joe Overlock—MDIFW Fisheries Division, Augusta Headquarters
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