

REVIEW OF APPLICATION
OF THE DEER RIPS HYDROELECTRIC FACILITY
FOR CERTIFICATION
BY THE LOW IMPACT HYDROPOWER INSTITUTE

Prepared by Peter Drown, Cleantech Analytics LLC

August 21, 2019

I. INTRODUCTION

This report reviews the application received by the Low Impact Hydropower Institute (LIHI) for Low Impact Hydropower Certification of the Deer Rips/Androscoggin No.3 Hydroelectric Facilities (hereafter referred to as “Deer Rips” or “Facility.”) The Facility is owned and operated by Brookfield White Pine Hydro LLC, a subsidiary of Brookfield Renewable Energy Group. The Facility is located on the Androscoggin River in Maine near the city of Lewiston. The Deer Rips/A-3 Dam consists of a 934-foot-long concrete gravity dam with a maximum height of 50 feet and features an inflatable rubber dam atop the spillway section. Flow is diverted to a 650-foot-long, 75-foot-wide power canal to a powerhouse with five horizontal twin-runner Francis turbine-generator units and two vertical Francis turbine-generator units with installed capacity of 7.038 MW. The A-3 facility includes a 45-foot-long by 38-foot-wide forebay that leads to a powerhouse with a single vertical fixed-blade turbine-generator unit with installed capacity of 4.5 MW. The facility operates in a run-of-river mode.

The Applicant submitted an initial Certification Application on January 10, 2019. I completed a review of the project using LIHI’s intake review process and noted only a minor amount of information was missing. The applicant submitted a revised Certification Application on June 17, 2019 and the application was posted for the 60-day public comment period on June 18, 2019. I have conducted a review of this Application and all supporting materials, the Project record on FERC e-library, and agency comments, and conclude that the Deer Rips/Androscoggin No. 3 Hydroelectric Facilities meet LIHI Criteria contained in the 2nd edition handbook.

II. PROJECT’S GEOGRAPHIC LOCATION

The Facility is located on River Mile 33.7 of the Androscoggin River above the town of Lewiston in southern Maine. The Androscoggin River watershed drains over 3,500 square miles in northern New Hampshire and western Maine on its way to the Merrymeeting Bay in the Gulf of Maine. The headwaters are located along the low mountains on the Canadian border, where rainfall and snowmelt combine to form the northern tributaries of the Androscoggin – the Swift, Dead Diamond, Magalloway, Cupsuptic and Kennebag rivers – before emptying into the Rangeley Lakes chain. Lake Umbagog of this chain is the official beginning of the Androscoggin River, along the New Hampshire/Maine border. The river travels from the rural and scenic areas in the north country through former industrial-focused mill-towns and eventually to the populated areas along the coast, experiencing a sharp transition in forest species as it traverses one of the most mountainous regions of New England. Over 20 major dams have been constructed on the Androscoggin River. For an excellent description of

the geography, history and diverse natural communities within this watershed, see the *Ecological Atlas of the Upper Androscoggin River Watershed* (Appalachian Mountain Club, 2003¹.)

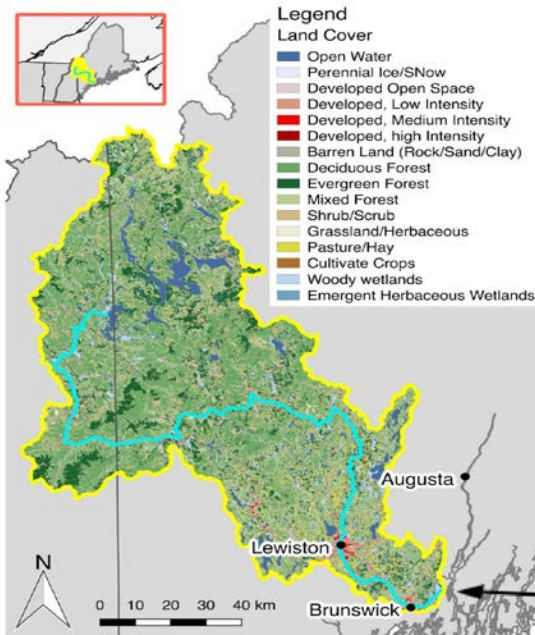


Figure 1 - Androscoggin Watershed Land Cover

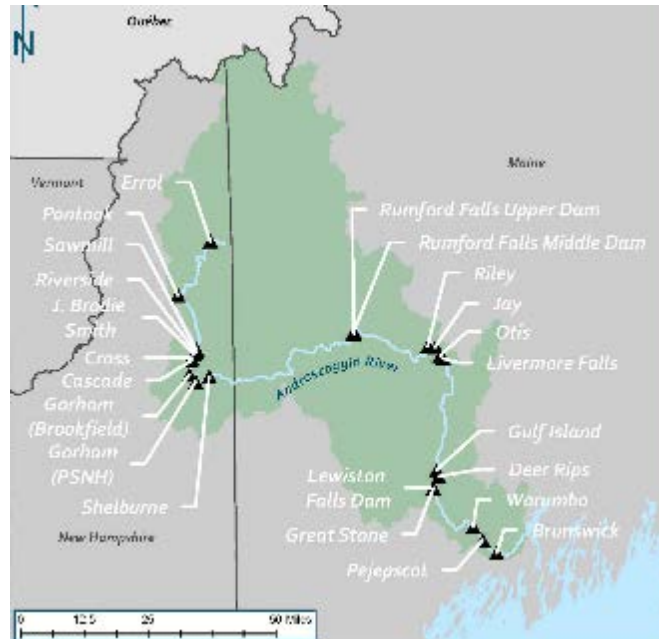


Figure 2 - Androscoggin River major dams

III. PROJECT AND IMMEDIATE SITE CHARACTERISTICS

The area surrounding the Facility is almost entirely undeveloped, forested shoreline. This is broken only by several farms and a cemetery. Lewiston, the second largest city in Maine runs adjacent to the Androscoggin River, but there is a buffer of trees to the shoreline on the most developed side of the river. A 2011 Wildlife Habitat Assessment Report² noted that riparian wildlife habitat along the shorelines was in good condition generally, and the area has not been widely impacted by development. According to the Applicant, some of the Project's shorelines are managed for agricultural uses, including corn and hay production. See Figure 3, Zones of Effect for images of the Project and surrounding shoreline.

IV. ZONES OF EFFECT

The Applicant selected three zones of effect (Figure 3 and tables below). Zone 1 consists of the impoundment, from the upstream Gulf Island dam to the upstream face of the Deer Rips dam. Zone 2 consists of the 250-foot-long bypassed reach section from the Deer Rips dam to the discharge from the A-3 powerhouse. Zone 3 consists of the A-3 powerhouse discharge approximately 800 feet downstream to the extent of the Project boundary, near the location of an island which alters the hydraulic characteristics of the river. I agree that these zones appropriately delineate the area of impact of the Project in the Androscoggin River. The Standards selected by the Applicant are appropriate, given that the tables below apparently included typographical errors for Criterion F, as noted with the corrected Standards in those tables.

¹ <https://www.outdoors.org/wp-content/uploads/pdf/Ecological-Atlas-of-the-Upper-Androscoggin-River-Watershed.pdf>

² <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=12597930>



Figure 1 - Zones of Effect

Zone of Effect: 1 – Impoundment

Criterion	<i>Alternative Standards</i>				
	1	2	3	4	Plus
A Ecological Flow Regimes	X				
B Water Quality		X			
C Upstream Fish Passage	X				
D Downstream Fish Passage	X				
E Watershed and Shoreline Protection		X			
F Threatened and Endangered Species Protection		X			
G Cultural and Historic Resources Protection		X			
H Recreational Resources		X			

Zone of Effect: 2 – Bypass Reach

Criterion	Alternative Standards				
	1	2	3	4	Plus
A Ecological Flow Regimes		X			
B Water Quality		X			
C Upstream Fish Passage	X				
D Downstream Fish Passage	X				
E Watershed and Shoreline Protection	X				
F Threatened and Endangered Species Protection	X	X			
G Cultural and Historic Resources Protection		X			
H Recreational Resources	X				

Zone of Effect: 3 – Regulated Downstream River Reach

Criterion	Alternative Standards				
	1	2	3	4	Plus
A Ecological Flow Regimes		X			
B Water Quality		X			
C Upstream Fish Passage	X				
D Downstream Fish Passage	X				
E Watershed and Shoreline Protection		X			
F Threatened and Endangered Species Protection	X	X			
G Cultural and Historic Resources Protection	X				
H Recreational Resources		X			

V. REGULATORY AND COMPLIANCE STATUS

The Deer Rips development was constructed in 1902-1904, and the A-3 development was constructed in 1927-1928. The Facility included in this LIHI certification is part of the Gulf Island Hydroelectric Project (31.54 MW, FERC Project No. 2283), and the regulatory requirements are included in that Project license³. The original license for the Gulf Island-Deer Rips Project was granted on July 5, 1962 (backdated to July 1, 1958) to Central Maine Power Company. The license expired on December 31, 1993. Central Maine Power submitted a new FERC application for the Gulf Island-Deer Rips Project on December 10, 1991. On December 28, 1998, the Project’s license was transferred to FPL Energy Maine Hydro LLC, and the new owner assumed responsibility for the Project and ongoing application. During that time period, the Project operated under annual licenses. FERC prepared a Final Environmental Impact Statement (EIS) for the entire Lower Androscoggin River Basin, which includes this Project, on August 2, 1996. The Project received new License on August 23, 2006, and there have been two subsequent license amendments. On July 15, 2008, FERC approved a license amendment which incorporated water quality certification (WQC) conditions that were not included in the original license⁴. On July

³ This is appropriate as FERC acknowledges in the Project’s license that the total Project “consists essentially of two developments,” the Gulf Island facility and the Deer Rips/A-3 facility.

⁴ <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=11750503>

13, 2017, FERC approved a license amendment for a turbine replacement and generator refurbishment, which increased the hydraulic and installed capacity of the No. 3 development⁵. The Applicant provided documentation of one instance of a headpond deviation and three instances of run-of-river flow excursions between 2014 and 2018, most related to unit trips, all of short duration, and resource agencies were notified as required. None of these deviations were determined to be license violations by FERC.

VI. PUBLIC COMMENTS RECEIVED OR SOLICITED BY LIHI

I solicited and received comments from the US Fish and Wildlife Service (FWS) and the Maine Department of Environmental Protection (MDEP), both of which are included in Appendix A. These comments are discussed in the relevant criteria below. There were no public comments received.

VII. DETAILED CRITERIA REVIEW

A. Ecological Flow Regimes

Goal: The flow regimes in riverine reaches that are affected by the facility support habitat and other conditions suitable for healthy fish and wildlife resources.

The Applicant selected Standard A-1, Not Applicable/De Minimis for Zone 1, and Standard A-2, Agency Recommendation for Zones 2 and 3. The Project operates in run-of-river mode using inflows from the Gulf Island development which operates in a peaking mode. The Project is required to maintain an impoundment level in the Deer Rips reservoir of 205.7 ft NGVD (or within 1 foot of the dam crest) and maintain minimum flows downstream of the Project of 1,700 cubic feet per second (cfs) from May 1 through November 30 and 1,400 cfs from December 1 through April 30, or inflow, whichever is less. There are additional restrictions on down-ramping flows and procedures for passing minimum flows during abnormal conditions (e.g. a unit tripping offline). Monitoring requirements are contained in the Project Operations and Flow Monitoring Plan (“Flow Plan”), approved by FERC on July 10, 2007 and by revision on March 19, 2012. Minimum flows, and headpond and tailwater elevations are monitored via the Project’s SCADA system, documented on an hourly average basis, and archived for compliance and operational reference. The Flow Plan states that recorded data may be obtained by resource agencies within 30 days by submitting a request in writing.

The measures listed above were developed based on instream flow studies conducted by state and federal fishery agencies during the Project relicensing⁶. The minimum flow requirement was determined to provide slightly improved zone-of-passage for downstream migrating herring, and enhanced shad and herring spawning and incubation. In addition, a ramping study was conducted to determine the effects on resident species, and an appropriate down-ramping rate⁷ was developed to limit stranded fish in pools on the western side of an island downstream of the Project. The Project meets the LIHI standard for A-2, Agency Recommendation in Zones 2 and 3. Zone 1 can select Standard A-1, Not Applicable/De Minimis because it is an impoundment zone. The Project was determined to be in compliance with its flow requirements during a FERC Environmental Inspection

⁵ <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14635893>

⁶ <https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=12554701> – FERC Final Environmental Impact Statement Volume 1

⁷ Condition 3 of the FERC License provides that down ramping of flows from full generating flow to required minimum flow shall be restricted to a rate no faster than linearly over 20 minutes.

conducted on July 26, 2016⁸. Based on the review of the application and supporting documentation, the Project satisfies the Ecological Flows Criterion in all zones.

B. Water Quality

Goal: Water quality is protected in waterbodies directly affected by the facility, including downstream reaches, bypassed reaches, and impoundments above dams and diversions.

The Applicant selected Standard B-2, Agency Recommendation, for all zones. The Androscoggin River has historically been “severely degraded” according to the FERC EIS, due to industrial wastewater discharges. In fact, the pollution in the Androscoggin River was so severe that it inspired Maine Senator Edmund Muskie to draft the Clean Water Act in 1972. Water quality has improved recently, due to improved wastewater management practices. The impacted river is designated as Class C and impaired for PCBs and dioxins caused by legacy pollutants, as well as by mercury from atmospheric deposition. Class C waters are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation; and as a habitat for fish and other aquatic life. The Project received a state water quality certification on September 21, 2005 which was amended on June 8, 2010.

The upstream Gulf Island development (part of this FERC License but excluded from this LIHI application,) has a history of water quality issues. Specifically, dissolved oxygen (DO) concentrations in portions of the Gulf Island impoundment do not meet water quality standards for Class C waters. This is thought to be related to historic discharges into the river and impacted by thermal stratification caused by the Gulf Island dam. As part of the Gulf Island Pond Oxygenation Project Partnership which includes two paper companies in addition to the hydropower project, the Applicant has contributed by upgrading and maintaining an oxygenation system to enhance DO, and the Applicant monitors water quality in the Gulf Island impoundment’s “Deep Hole” an area about 60-80 feet deeper than the rest of the impoundment where thermal stratification occurs and DO can be low. Results from 2018 monitoring showed some instances of low DO in the Deep Hole⁹. MDEP commented on that report stating that the DO criterion is not attained for a “narrow but critical layer near the thermocline for a significant part of the summer”; and that state permit limits for the paper mill discharges and the oxygenation system “largely mitigate both current discharges and effects from hydropower operation”.

However, in their correspondence to me for this application (see Appendix A), the MDEP noted that DO criteria are still not met and therefore could not support LIHI certification for this Project. In response to this letter, I informed MDEP that the Gulf Island dam was outside the zone of effect of this application, which only considers the Deer Rips/Androscoggin No. 3 portion of the Project. By a response on August 9, 2019, MDEP confirmed that based on a 2010 survey the facility did not cause or contribute to the non-attainment of the DO criteria. Based on the review of the application and supporting documentation, the Project satisfies the Water Quality Criterion in all zones.

⁸ <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14334092>

⁹ <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15138115>

C. Upstream Fish Passage

Goal: The facility allows for the safe, timely, and effective upstream passage of migratory fish. This criterion is intended to ensure that migratory species can successfully complete their life cycles and maintain healthy, sustainable fish and wildlife resources in areas affected by the facility.

The Applicant selected Standard C-1, Not Applicable/De Minimis for all zones, stating that the downstream Lewiston Falls prevents passage for diadromous fish species such as herring and American shad. The application cites a 2013 opinion by the National Marine Fisheries Service (NMFS) which states that Lewiston Falls was the historic barrier to upstream migration of alewife (herring) and shad, while Rumford Falls (upstream of this Project) was the upstream extent of Atlantic Salmon migration. The Maine Department of Marine Resources states that these species were historically “very abundant” in the Androscoggin River prior to the construction of dams in 1807¹⁰. According to Maine Rivers, the last Atlantic Salmon was seen at Lewiston Falls in 1816¹¹. These dates all pre-date the construction of the Deer Rips facility, which occurred in 1902-1904. Therefore, Deer Rips cannot be responsible for the extirpation of these species.

The FWS and NMFS recently published an updated Species Recovery Plan for the Gulf of Maine Distinct Population Segment of Atlantic Salmon¹². The plan includes designated Salmon Habitat Recovery Units (SHRU), which comprises much of the lower Androscoggin River¹³. I contacted FWS to understand whether any current or upcoming recovery plans would impact the Deer Rips Project and was informed that the Deer Rips Project is upstream of the boundary of the SHRU and therefore no salmon recovery actions impact the Facility (see Appendix A). The FERC license and WQC include agency reservation of authority to prescribe fishways in the future.

Having established that the Facility did not contribute to the extirpation of herring, shad or Atlantic Salmon, it is important to consider American eels, a species that has made a comeback in various rivers and tributaries in the Northeast and that has the potential to ascend falls. During the 2019 LIHI review for the upstream Rumford Falls Hydroelectric Project (LIHI #38), the Applicant reached out to Maine Department of Inland Fisheries and Wildlife and received a determination that there are no confirmed occurrences of eels for any Androscoggin mainstem or tributary above the city of Auburn (see Appendix A). The record did identify one occurrence in Joe’s Pond, located just upstream off a tributary of the Androscoggin, and records from the 1940s of occurrences in several additional ponds upstream. I contacted the Regional Fisheries Office for that portion of the state to determine whether that was a stranded/isolated population. MDIFW responded that a significant population of eels were identified in East Carry Pond, however this is not associated with Androscoggin River. Based on the agency determination and the written record, it is reasonable to conclude that the Facility did not contribute to the extirpation of this species, and the Facility therefore meets standard C-1 for all zones and satisfies the Upstream Fish Passage Criterion.

¹⁰ <https://www.maine.gov/dmr/science-research/searun/programs/androscoggin.html>

¹¹ <https://mainerivers.org/androscoggin.html>

¹² <https://www.fisheries.noaa.gov/resource/document/recovery-plan-2019-gulf-maine-distinct-population-segment-atlantic-salmon-salmo>

¹³ This SHRU is known as the Merrymeeting Bay SHRU.

D. Downstream Fish Passage

Goal: The facility allows for the safe, timely, and effective downstream passage of migratory fish. For riverine (resident) fish, the facility minimizes loss of fish from reservoirs and upstream river reaches affected by facility operations. All migratory species can successfully complete their life cycles and to maintain healthy, sustainable fish and wildlife resources in the areas affected by the facility.

The Applicant selected Standard D-1, Not Applicable/De Minimis for all zones. The same rationale used above in Criterion C applies to this criterion – there are no migratory species present at the Facility, and the record does not show that the Facility was responsible for the extirpation of any such species. With regard to resident species, both warm water and cold water species present in the Gulf Island impoundment include largemouth and smallmouth bass, white and yellow perch, pickerel, northern pike, brown bullhead, and various species of shiner. Some of these species may be flushed into the Deer Rips impoundment during periods of spill at Gulf Island dam. The state had stocked brown trout but has since ceased that program in the Project vicinity. There are no downstream fish passage facilities at Gulf Island dam or at Deer Rips/Androscoggin No. 3; however, agencies reserved their authority at relicensing to prescribe fishways in the future (license Article 408, WQC condition 4). Protections for downstream passage of resident fish species that may be present include the limited drawdown, ramping restrictions, and minimum flow provisions that were based on instream flow studies conducted to identify appropriate flows for aquatic habitat.

The Applicant demonstrated compliance with each of these measures and with Standard D-1, Not Applicable/De Minimis for all zones. Therefore, the Project satisfies the Downstream Fish Passage and Protection Criterion.

E. Shoreline and Watershed Protection

Goal: The facility has demonstrated that sufficient action has been taken to protect, mitigate or enhance the condition of soils, vegetation and ecosystem functions on shoreline and watershed lands associated with the facility.

The Applicant selected Standard E-2, Agency Recommendations for Zones 1 and 3, and Standard E-1, Not Applicable/De Minimis for Zone 2. The area surrounding the Facility is almost entirely undeveloped, forested shoreline. This is broken only by several farms and a cemetery. Lewiston, the second largest city in Maine runs adjacent to the Androscoggin River, but there is a buffer of trees to the shoreline on the most developed side of the river. The 2011 Wildlife Habitat Assessment Report noted that riparian wildlife habitat along the shorelines was in good condition generally, and the area has not been widely impacted by development. According to the Applicant, some of the Project's shorelines are managed for agricultural uses, including corn and hay production. See Figure 3, Zones of Effect for images of the Project and surrounding shoreline. With regard to Zone 2, the bypassed reach, there are virtually no lands associated with that reach which includes only the dam and canal abutments.

In addition to the run-of-river and operational requirements included in the criteria above, the agency recommendations are contained in a Recreation Plan (license article 411) and Land/Trail Management Plan (license article 412), approved by FERC on March 25, 2010. Pursuant to this Plan¹⁴, the Applicant conducted a survey of land within a 200-foot boundary of the Project reservoirs to assess wildlife habitat (eagle nesting, deer

¹⁴ <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=11849391>

wintering and waterfowl wading habitats) and provide shoreland protection if necessary (by acquiring and protecting the property). The results found “no demonstrated need for additional lands that might be necessary for project purposes and no evidence of significant risk of damage to essential wildlife habitat...”¹⁵ The Plan required an update to this assessment every five years, and the most recent 2017 update showed “no changes to essential wildlife habitats were documented.”¹⁶

The Applicant is in compliance with the requirements contained in the Recreation Plan and Land/Trail Management Plan, and therefore meets Standard E-2, Agency Recommendations in all zones and satisfies the Shoreline and Watershed Protection Criterion.

F. Threatened and Endangered Species Protection

Goal: The facility does not negatively impact federal or state listed species.

The Applicant selected Standard F-2, Agency Recommendations for Zone 1 and Standard F-1, Not Applicable/De Minimis for Zones 2 and 3 in the Zone matrix tables but discusses only Standard F-2 in the body of the application. This review finds that Standard F-2 is applicable in all zones and it is likely that the matrix tables had typographical errors for this Criterion. Article 409 of the license required the licensee to submit a Threatened and Endangered Species Management Plan, which was approved by FERC on October 11, 2007. The Plan required field surveys to identify bald eagle nest sites and roosting areas, and eventually this led to conversations about a conservation easement. However, on May 22, 2018 the Plan was amended to reflect the state’s de-listing of the bald eagle and an alternative approach that the Applicant would support local raptor rehabilitation efforts, in the amount of \$15,000/year for 10 years (2018-2028), in lieu of continued bald eagle monitoring and/or establishment of a conservation easement. The Maine Department of Inland Fisheries and Wildlife and FWS supported the amendment.

The Applicant provided a list of federal and state-listed species (not included in the public version of the application posted on the LIHI website), including the Northern long-eared bat, the Little brown bat and the Eastern small-footed bat (state-listed), and the small whorled pogonia¹⁷. There are no critical habitats associated with the Project. As noted in numerous prior LIHI reviews, bat species are typically only impacted when roosting tree clearing occurs. The Applicant noted that vegetation removal is limited to mowing and brush removal on the appurtenant structures and that “there are generally no tree-clearing activities or corridor maintenance activities”, and that any tree cutting would be conducted in accordance with the FWS 4(d) rule for bats. According to the Maine Field Office of FWS, the primary threats to small whorled pogonia is habitat destruction as a result of residential or commercial development¹⁸. There are no new development activities as a result of ongoing operations at the Project and therefore the Project does not appear to pose a threat to this species particularly since habitat for the species is upland forest habitat which is not included within the Project boundary.

¹⁵ <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=12598187>

¹⁶ <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14502596>

¹⁷ Additional species were cited as “Species of Concern,” however these do not meet the LIHI handbook’s definition of listed “Threatened or Endangered Species.”

¹⁸ https://www.fws.gov/mainfieldoffice/small_whorled_pogonia.html

The Applicant demonstrated compliance with Agency Recommendations included in the Threatened and Endangered Species Management Plan and does not pose a threat to any listed species at the site, therefore it satisfies the Threatened and Endangered Species Protection Criterion.

G. Cultural and Historic Resource Protection

Goal: The facility does not unnecessarily impact cultural or historic resources that are associated with the facility's lands and waters, including resources important to local indigenous populations, such as Native Americans.

The Applicant selected Standard G-2, Approved Plan for Zones 1 and 2, and Standard G-1, Not Applicable/De Minimis for Zone 3. The Approved Plan consists of a Programmatic Agreement (PA) reached between FERC, the Advisory Council on Historic Preservation and the Maine State Historic Preservation Officer (SHPO) to manage historic structures and eligible archeological sites impacted by ten hydroelectric projects in Maine, including the Gulf Island/Deer Rips Project. Initial surveys identified eight sites that were eligible for inclusion in the National Register of Historic Places, and the Agreement required that these sites be monitored for potential adverse impacts, and reports filed with FERC. The application included links to these reports from 2013 – 2019, which show that they have completed data recovery excavation work within the Project boundary. The Applicant noted that 38 boxes of artifacts recovered from this and two other Projects were deposited at the Abbe Museum in Bar Harbor, Maine. The most recent annual Cultural Resources Report submitted to FERC in 2019 indicated that the "Irish" site was no longer eligible for listing on the National Register and that the Project's cultural and historic resources obligations under the PA would be complete once a final report on that site is filed and approved by the SHPO.

The Applicant adequately demonstrated compliance with the Programmatic Agreement, and therefore meets the requirements for Criteria G-2, Approved Plan, and G-1, Not Applicable/De Minimis for the bypassed reach where there are no cultural or historic resources. The Project therefore satisfies the Cultural and Historic Resources Protection Criterion.

H. Recreational Resources

Goal: The facility accommodates recreation activities on lands and waters controlled by the facility and provides recreational access to its associated lands and waters without fee or charge.

The Applicant selected Standard H-2, Agency Recommendation for Zones 1 and 3, and Standard H-1, Not Applicable/De Minimis for Zone 2. There are no recreational uses or purposes in Zone 2, the bypassed reach.

The Facility accommodates recreational activities pursuant to the Recreation Plan and Land and Trails Management Plan, which is required by Articles 411 and 412 of the license. The plan was developed in consultation with the National Park Service (NPS,) MDEP, Maine Department of Conservation (MDOC,) the cities of Lewiston and Auburn and the Androscoggin Land Trust. Recreation consists primarily of boating and fishing, and access points are provided at an informal carry-in boat launch in the impoundment, canoe portage trail with canoe resting stations around Gulf Island dam and around Deer Rips dam (see Figure 4), and a small roadside parking area and fishing access point at Switzerland Road (associated with the Gulf Island development). Project waters can also be accessed from a boat launch in the Lewiston Falls impoundment located downstream. Most recreation facilities are located at the Gulf Island impoundment.

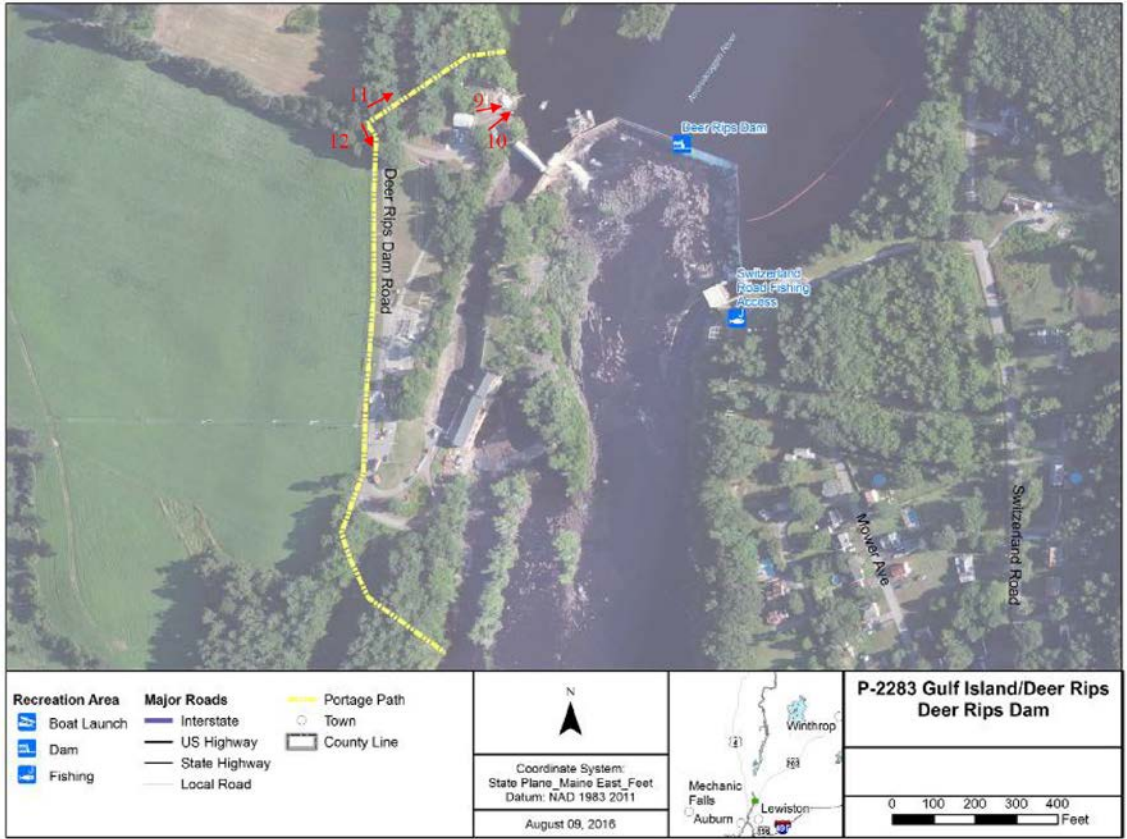


Figure 2 - Recreational Access Points

During Project relicensing, numerous recreational enhancements were proposed by the licensee, including enhanced recreational access and parking areas, canoe portage routes, monitoring of recreational activity and maintenance of existing recreational facilities. The Applicant complied with the terms of this plan as noted in the most recent FERC Environmental Inspection (2016)¹⁹. Three areas of minor corrective action were identified in that inspection order to improve recreation, including repositioning a picnic table, replacing a welcome sign, and repairing gravel and documentation of completion of those actions was submitted to FERC on September 30, 2016.

The Applicant demonstrated compliance with an enforceable recreation plan, and therefore meets Criteria H-2, Agency Recommendation in Zones 1 and 3, and Not Applicable/De Minimis in Zone 2, and satisfies the Recreational Resources Criterion.

VIII. GENERAL CONCLUSIONS AND REVIEWER RECOMMENDATION

Based on this review, the Deer Rips/Androscoggin No. 3 Project meets the LIHI Criteria for certification as a Low Impact Hydropower facility, and a five (5) year is recommended. No conditions are recommended.

¹⁹ <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14334092>

Appendix A. Agency Comments

Date: August 9, 2019
Contact Person: Christoper Sferra
Agency: Maine Department of Environmental Protection
Gmail - Comment for Deer Rips Hydroelectric Project

8/12/2019



Peter Drown <peter.drown@gmail.com>

Comment for Deer Rips Hydroelectric Project

Sferra, Christopher <Christopher.Sferra@maine.gov>
To: Peter Drown <peter.drown@cleantechanalytics.com>

Fri, Aug 9, 2019 at 1:39 PM

Hi Peter,

I see, I thought the entire project was being considered together. I had to check some data out in order to answer your question. According to a 2010 survey, it doesn't appear that Deer Rips dam causes or contributes to non-attainment of the water quality DO criteria. So if Gulf Island Pond is being excluded from this LIHI certification, then the Deer Rips project does meet water quality standards. Apologies for the confusion.

Chris Sferra

Hydropower Specialist III, Bureau of Land Resources

Maine Department of Environmental Protection

Cell: (207) 446 - 1619

www.maine.gov/dep

Date: August 6, 2019
Contact Person: Christopher Sferra
Agency: Maine Department of Environmental Protection



JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



GERALD D. REID
COMMISSIONER

August 06, 2019

RE: LOW IMPACT HYDROPOWER INSTITUTE APPLICATION FOR CERTIFICATION FOR THE GULF ISLAND/DEER RIPS/ANDROSCOGGIN NO. 3 HYDROELECTRIC PROJECT (FERC NO. 2283)

To whom it may concern:

The Gulf Island/Deer Rips/Androscoggin No. 3 (A-3) Hydroelectric Project (Project) is located on the Androscoggin River in the cities of Lewiston and Auburn and the Towns of Turner, Greene, Leeds and Livermore, in Androscoggin County, Maine. The project is a two-dam, three powerhouse project consisting of the Gulf Island Dam and the Deer Rips/A-3 Dam (located 1.3 miles downstream of the Gulf Island Dam). The Deer Rips/A-3 Dam consists of a concrete gravity spillway equipped with rubber dams, an intake and canal that conveys water to the Deer Rips Powerhouse and the A-3 Powerhouse on the opposite bank. The A-3 development was constructed in 1927-1928 and the Deer Rips development was constructed in 1902-1904. Brookfield Renewable Energy Group applied for a LIHI Certification for the Project on June 17, 2019.

The Department of Environmental Protection (the Department) has reviewed its most recent water quality data for surface waters of the Gulf Island/Deer Rips/A-3 Hydroelectric Project. The Gulf Island Dam creates an impoundment known as Gulf Island Pond, which extends upstream approximately 15 miles and has a surface area of approximately 2,862 acres at a normal full pond elevation of 262 feet (msl). The Androscoggin River surface waters associated with the project dams are Class C waters, the 4th highest classification. The Department has evidence to suggest that the continued operation of the project will negatively impact the designated uses, numeric or narrative criteria of its classification standards (Class C).

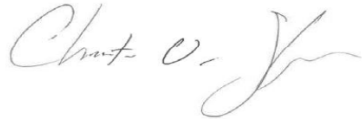
On December 7, 2018 Brookfield White Pine Hydro LLC (BWPH) submitted the *Ambient Water Quality Monitoring Report, June-September 2018* on behalf of the Gulf Island Pond Oxygenation Project Partnership (GIPOP). The Department provided a comment letter on this report on January 3, 2019. In the Department's review of the 2018 study, DEP acknowledges that the water quality, particularly the dissolved oxygen (DO) concentration, at the Gulf Island Pond (GIP) impoundment does not meet water quality standards for Class C waters. The project continues to improve since 2004 due to the efforts of the members of GIPOP. These efforts included upgrading of the oxygenation system as well as reductions in discharges from two Maine paper mills and a New Hampshire paper mill upstream of the project. However, the Department concludes that DO criteria are not attained for a critical layer of water near the thermocline for a significant part of the summer months. Non-attainment is thought to be related to sediment oxygen demand (SOD) from historic discharges, as affected by reduced mixing due to thermal stratification, caused by the GIP impoundment. Given the long history of discharges of organic pollutants to this river reach, it may take a considerable amount of additional time before SOD rates decline allowing attainment of DO criteria in the impoundment. Continued

monitoring is needed to assess improvements to DO concentrations and attainment of water quality standards.

The Department's latest Integrated Water Quality and Assessment Reports (305b/303d Reports) indicate the river is not attaining all water quality standards. The reports indicate that GIP has advisories for dioxins, algal blooms, total phosphorus, total suspended solids and PCB contamination. In addition to not attaining the designated use of 'habitat for fish and other aquatic life' and DO criteria, the Androscoggin River is also not attaining the designated use of fishing, since there is a statewide fish consumption advisory for all freshwaters due to mercury. The Department has determined that the non-attainment status due to the fish consumption advisory is not a result of the operation of the Gulf Island/Deer Rips/A-3 Project. No fish passage facilities are present at the project, however, there are several hydroelectric dams and the natural Lewiston falls downstream of the Project and no diadromous fish species are found in the river reaches between the Gulf Island Pond Dam and the Deer Rips/A-3 Dams.

Due to non-attainment of dissolved oxygen criteria for Class C waters at the GIP impoundment, the Department does not support the Low Impact Hydropower Certification of the Gulf Island/Deer Rips/A-3 Project (FERC No. 2283)

Please feel free to contact me at (207) 446-1619 or via email at Christopher.Sferra@maine.gov if you have any questions regarding this project. Sincerely,

A handwritten signature in black ink, appearing to read "Chris O. Sferra". The signature is fluid and cursive, with a large, sweeping flourish at the end.

Christopher O. Sferra, Acting Project Manager
Bureau of Land Resources

Date: July 23, 2019
Contact Person: Steven Shepard
Agency: U.S. Fish and Wildlife Service

7/23/2019

Gmail - New Atlantic Salmon Recovery Plan - Deer Rips Hydro



Peter Drown <peter.drown@gmail.com>

New Atlantic Salmon Recovery Plan - Deer Rips Hydro

Shepard, Steven <steven_shepard@fws.gov>

Fri, Jul 19, 2019 at 10:51 AM

To: Peter Drown <peter.drown@cleantechanalytics.com>

Cc: Antonio Bentivoglio <Antonio_Bentivoglio@fws.gov>, "Becker, Drew" <drew_becker@fws.gov>, Peter Lamothe <peter_lamothe@fws.gov>

Deer Rips is within the historic area occupied by salmon, which includes the Androscoggin River to the historic location of Rumford Falls in Rumford, Maine. However, the boundary of the Merrymeeting Bay SHRU (i.e., current habitat of ESA listed salmon in the Kennebec/Androscoggin river basins) ends in Lewiston at the tailrace of Lewiston Falls Project. That is downstream of Deer Rips.

Thus, the Recovery Plan includes no salmon recovery actions within the the Deer Rips Project boundary. I suppose there could be some recovery actions in the Project area with a new/revised plan in the future, but that seems unlikely at this point.

~ ~ ~ ~ ~
Steven Shepard
U.S. Fish and Wildlife Service
Direct: 207-902-1572
Mobile: 207-949-1288
~ ~ ~ ~ ~

Follow the law, follow the science, and be transparent—Bill Ruckelshaus

[Quoted text hidden]

Date: March 12, 2019

Contact Person: Merry Gallagher, Native Fish Conservation Biologist

Agency: Maine Department of Inland Fisheries and Wildlife

-----Original Message-----

From: Gallagher, Merry <Merry.Gallagher@maine.gov>

Sent: Tuesday, March 12, 2019 3:21 PM

To: Leblanc, Matthew <matthew.leblanc@brookfieldrenewable.com>

Cc: Dill, Richard <Richard.Dill@brookfieldrenewable.com>; Deluca, Ernest
<Ernest.Deluca@brookfieldrenewable.com>

Subject: RE: eels

Hi Matt,

I searched through our efishing database and do not have any confirmed eel occurrences for any Androscoggin mainstem or tributary site above about Auburn for American eel. Records go back to about 1990 in that database. However, I do have one confirmed eel presence for Joes Pond (watcode = 7618; lat 44.533, long -70.582). Presence confirmed in 2001. If you want additional info on this occurrence, you would have to contact the regional fishery office (Strong; phone 778-3322) for further info about the record.

I do also have historical records for eel presence in North, South and Round Ponds near Locke Mills from the 1940's.

I hope that helps!

Cheers!

Merry

Merry Gallagher

Native Fish Conservation Biologist

Division of Fisheries & Hatcheries

Maine Department of Inland Fisheries & Wildlife

650 State St.

Bangor, ME 04401

(207) 941-4381

Merry.Gallagher@maine.gov

Correspondence to and from this office is considered a public record and may be subject to a request under the Maine Freedom of Access Act. Information that you wish to keep confidential should not be included in email correspondence.