

**Testimony to the Environment and Natural Resources Committee
May 3, 2021
From the Androscoggin River Watershed Council**

The Androscoggin River Watershed Council is neither for nor against the reclassification of the subject part of the Lower Androscoggin River from Class C to Class B. The Watershed Council's mission is "to continuously improve environmental quality..." and we encourage all stakeholders, including the State of Maine, to continue to improve the water quality of the Androscoggin River. The Council has been active in working with many other groups and businesses to bring more attention to the Androscoggin River, to remove impediments to fish passage, especially brook trout, and to increase and improve access.

The water quality of the river has continually improved since passage of one of Senator Muskie's signature pieces of legislation, the Clean Water Act. This is thanks to the federal law, innovative state laws stewarded by John Nutting, and continuing efforts by many of the stakeholders including the paper mills and the publicly owned treatment facilities. Many are discharging well below their permitted limits.

However, the Androscoggin River is a very complex ecosystem. The river is considerably different than the Kennebec and Penobscot on which the tide impacts waters a considerable distance inland. The Androscoggin not only has one of the greatest drops of any river in Maine from its headwaters to its mouth, but it also has two major waterfalls at a similar distance upriver to the tidal influence on the Kennebec and Penobscot. While diadromous fish historically made their way upriver over the natural falls, they were blocked from further migration by Rumford Falls, being one of the largest waterfalls east of Niagara Falls.

Having a significant drop it was only natural for the river to attract industrial development especially in the late 1800s and early 1900s. The river was dammed, hydroelectric plants were constructed, canals were built to provide power to the numerous mills that located along the river from Berlin, New Hampshire to Brunswick. The Androscoggin is often referred to as a "working river." However, at it has become cleaner, the work of the river has expanded from supporting hydroelectric generation and pulp and paper mills and other industries to recreation. Whether the recreation is on walking paths, shoreline parks, or on the water in the form of fishing, boating and paddling, the work of the river is broadening. We expect it to continue to be favorably viewed for aesthetics and recreation and we expect activities on and around the river to continue to increase.

The Lower Androscoggin has been subject to numerous attempts to upgrade its classification since the water quality showed remarkable improvements in the 1970's and 80's. There has been some water quality monitoring on the river, although, in our opinion, possibly not enough to create a thorough understanding of the river. As noted, it is a very complex system, caused by a number of factors some of which are provided in written testimony, the most relevant ones of which include:

Flows are highly dependent on storage dams in the upper watershed, above Errol, New Hampshire.

Many aspects of Gulf Island Pond and its impact on water quality are not well understood or documented.

The non-point source pollution sources (including agriculture, road drainage, urban stormwater runoff, and even forestry) and diurnal (day and night) variations due to vegetation and algae are not documented.

Apparent increasing temperatures of river water probably due to climate change further complicate the issues of classification.

Improved monitoring would be technically difficult and costly to adequately assess the quality of the water under all conditions of flow and temperature.

Due to the difficulties and costs associated with improved water quality monitoring, the DEP uses an EPA approved computer model to help guide its work on classification and discharge permitting. We believe the staff at DEP has done their best to model the river as accurately as possible. However, every model has its inherent drawbacks; models are dependent on a number of inputs including flow, temperature, and morphological inputs. Water quality data is needed to calibrate the model. Given the complex nature of the Androscoggin, especially from the headwaters of Gulf Island Pond to Merrymeeting Bay, we do question how accurate the model can be. If it provides a result that shows that the dissolved oxygen is slightly below the B standard, is it really that accurate? In addition, while we have not confirmed this with DEP staff, some reliable sources have indicated the model shows that under low, critical (7Q10) conditions the river could not obtain the Class B dissolved oxygen standard even with no point source discharges.

This is not to say that we believe that the dissolved oxygen content always meets Class B standard or that we believe it does not. We believe it does come very close to achieving the standard if it does not meet it 100% of the time. It is also very difficult to determine what would be the consequences if the dissolved oxygen fell a few tenths of a milligram per liter below the 7.0 class B standard. We believe that the consequences would not be significant nor noticeable.

Many of the past decisions on classification seem to have been based as much on politics as they have on water quality, and because of the intricacies, this may be the only way to make a determination on Classification and related discharge levels. The legislature can use the process currently before them or they can create a process to provide a deeper discussion and resolution of the issues of classification and permits. So far, it has only been through effective legislation and the goodwill of the dischargers that the river has attained the water quality that is at the very least, very close to B. The Watershed Council wants to see continuous improvement, but we want to see it done in a responsible manner where all stakeholders understand the complex issues, both technical and political.

As further background to the complexity of the Androscoggin River, especially the Lower Androscoggin, the following is submitted.

There are more than 25 dams located along the river from its headwaters to Brunswick. There are over 100 dams in the watershed. The dams, especially the upper storage dams above Lake Umbagog, have considerable impact on the flow and, possibly the river's ability to clean itself, although here again, there is scarce information relating to this.

Gulf Island Pond, the pond created by Gulf Island Dam has relatively slow moving water and in at least one location known as “the Deep Hole” may act somewhere between a lake and a river. The water stratifies in this area and the bottom layer can have a dissolved oxygen level of zero. Yet, it is not quite a lake, since there is a current in the lower layer so the water does refresh itself. There is probably also years of organic matter on the bottom built up from the years prior to improved treatment, and even possibly from the trees that were left when the area was flooded. While much of the bottom of the pond has been flushed, it is uncertain what impact the organic matter may have on the water leaving Gulf Island Dam.

In hopes of increasing the dissolved oxygen to Class C levels throughout the pond and in the Deep Hole, “bubblers” have been installed to infuse oxygen into the water in Gulf Island Pond. Because of reductions in waste load from the mills over the years, it appears we do not fully understand how effective the bubblers are.

We also do not appear to fully understand the currents around the dam to determine exactly what level of the pond the water passing through the turbines or over the dam comes from.

We also do not have a good knowledge of the non-point source (pollution from stormwater runoff from various land uses) contributions to the river.

As the river leaves the Lewiston-Auburn downtown area, it becomes very wide and shallow in a number of places. In these areas, there is obvious vegetative growth in the river. Several of these areas are not backwaters of the dams in the lower section of river since there are rapids below them, before reaching the dams. This vegetation, whether these sections of river always had similar growth or whether it is caused by excess nutrients from discharges or non-point sources, takes oxygen out of the water at night, but then produces oxygen during daylight hours. (The Kennebec and Penobscot do not experience this wide, shallow channel on their way to the ocean. Where they widen, they are tidal.)

It is difficult to accurately monitor the water quality, especially at numerous or even several locations, during critical low flows on which classification and discharge permits are based. It is also difficult to model it for a number of reasons as noted in the testimony.