

Summarized discussion thread on impact of generating station - Almonte

May 2007 MMRA Communiqué	Dr Mosquin
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<p><i>Reader Peter Fedirchuk emailed me about Dr. Ted Mosquin, “a nationally recognized author, biologist and environmentalist who lives on the Mississippi River near McDonalds Corners. Upon hearing about this project, he said that water must tumble over rocks through rapids or over waterfalls to be properly aerated. The replenished oxygen provides life to the vegetation and wildlife in and along the River. Water running through a penstock is not sufficiently aerated. Therefore, all forms of living fish and vegetation will die down stream of the waterfall when the generating station becomes operational.”</i></p>	<p>Waterfalls and rapids do oxygenate flowing waters, but depending on the kind and degree of pollution, the aeration provided will be only partially effective, and possibly not at all if the pollutants can't be oxidized. Aquatic bacteria, of which there are zillions can and do provide a major breakdown for all sorts of organic pollutants and this happens in all areas of rivers and streams below hydro stations and above. The other thing is that "all forms of living fish and vegetation will die downstream" is not so and indeed some species such as snails, slime algae, and a range of microorganisms thrive on certain pollutants and nutrients so one tends to get murky waters and one mass of vegetation, such as dense reed beds and floating green mats, etc. especially as the polluted waters warm up. There are well documented cases of mercury levels below hydro dams (James Bay) being higher than above, and this has been found to be due to mercury contaminated fish being ground up when they go through the turbines.</p> <p>I did a study some years ago on the section of the Mississippi just below Almonte for several miles along a stretch below the sewage lagoon discharge pipe. You would not dream of swimming in that (somewhat smelly too) stretch of the river and I have wondered why the lagoon people don't oxygenate the effluent fully before allowing it to enter the river. I think that hydro dams may not oxygenate waters at all, and particularly if an air stream is not present at and right after the water moves through the turbines (not something I have read up on, however).</p> <p>There is a large literature on this and no doubt some is well presented on Google.</p>
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<p>With regard to Mr. Fedirchuk and Dr. Mosquin's concerns, our Environmental specialist looked at DO content during the EA process. His opinion/advice was as follows:</p> <ul style="list-style-type: none"> - There has not been a historical problem with Dissolved Oxygen levels in the Mississippi River, either above or below the existing plant (despite there being 5 generating stations on the river). - The minimum flow of 2.2cms will still provide substantial opportunities for re-oxygenation. - Probably the biggest factor tending to cause oxygen sag is the impact of the sewage effluent 	<p>On (this), it sounds quite correct. The issue of concern with respect to oxygen levels is a matter of eutrophication from farm run off and overloaded sewage treatment plants such as at Almonte. The Tay River just below the treatment plant in Perth has the same problem although there are not hydro structures on the Tay. I am not familiar with the Carleton Place situation. But if there is a good means of adding oxygen, this should be done with aeration at public expense. It's puzzle why this issue is not taken more seriously, considering the impact on water quality downstream.</p> <p>The group in Ottawa that would have some knowledge and also contacts to expertise in this area</p>
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<p>below the Lower Falls. Even so, the EA studies done for the sewage system showed no large impacts.</p> <ul style="list-style-type: none">- The oxygen 'apetite' of the effluent is going to be substantially reduced again with the new sewage treatment plant.- Given all of these factors, the regulatory agencies (MNR, DFO, etc) did not raise concerns.- We voluntarily committed to install aeration piping in the tailrace so that Oxygen levels can be increased if there is ever a need for whatever reason. <p>So, in summary, no significant oxygen sag is anticipated because of this project, and all regulatory agencies agree... but even if there is, we have a means of adding oxygen.</p>	<p>are "The River Keepers" an offshoot of a larger organization with the same name formed some years ago in the USA. The person in Ottawa that is involved with this excellent group is Dan Brunton (829-4688) who should have some contacts to limnologists and others.</p>
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