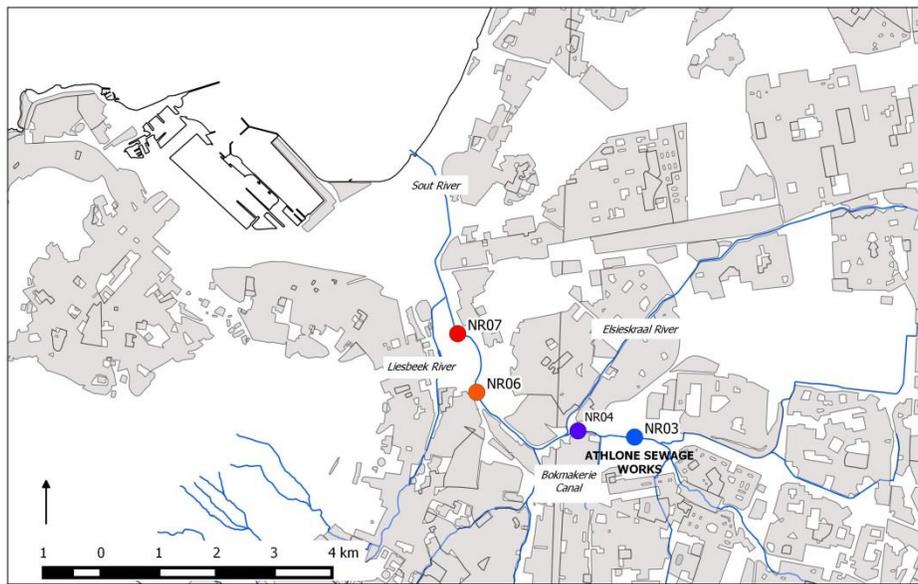


Has the upgrade of the Athlone Sewage Work made a difference to the Black River?

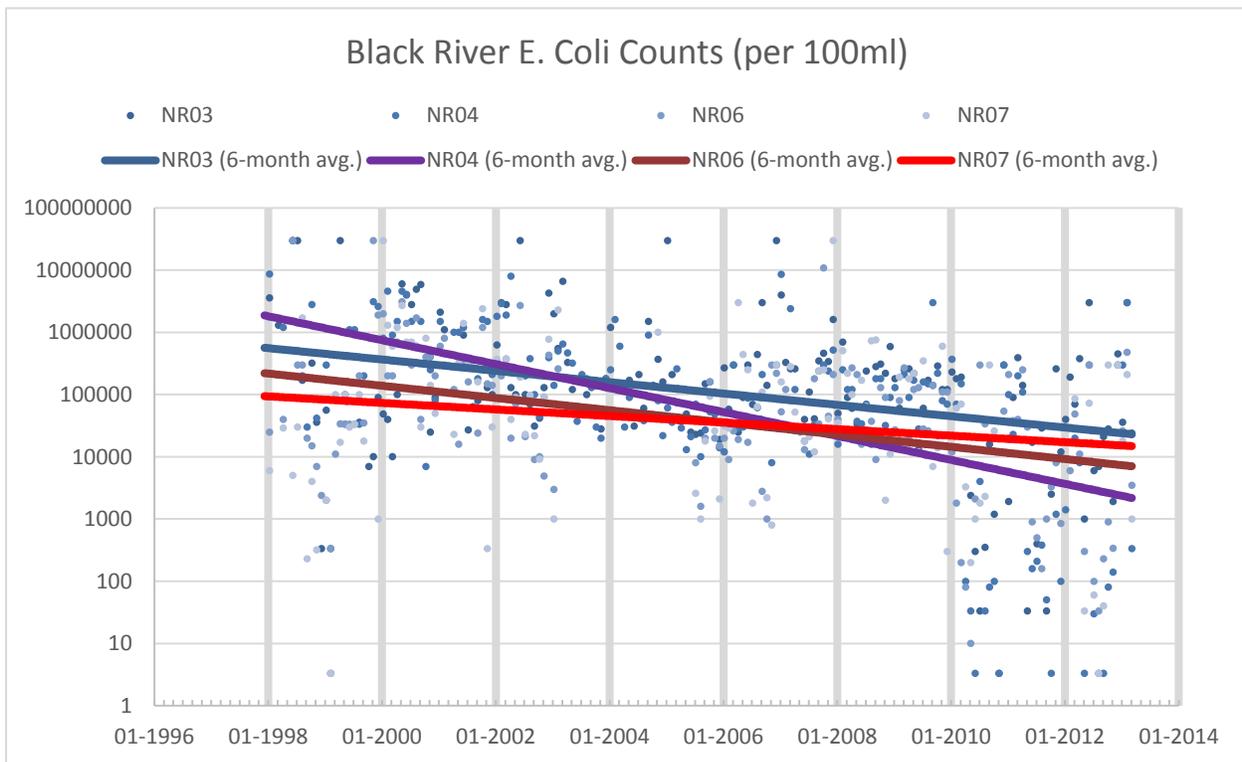
Over the last ten years the Athlone Sewage Works has been upgraded multiple times at a cost of millions of rands. These upgrades were necessary. In mid-2000s the sewage plant was known as the Athlone ‘pong’ because of the strong toilet smell. The plant was operating over its capacity of 105 Mm³ with too much water coming in and too little resident time to effectively treat the water. The discharge of contaminated water from the sewage works contains high concentrations of nutrients such as nitrogen, ammonia and phosphorous, and bacteria. This water is discharged into the Black River. Excess nutrients provide liquid fertilizer which stimulate the growth of water hyacinth and other aquatic weeds. The State of the Rivers Report (2005) described the Black River water quality as “unacceptable” and that the condition of the river as a “detriment to the region when it could be an asset”.

More recently there have been some noticeable changes. The arrival of colonies of Greater Flamingos on the river has been a talking point. These birds feed off the algae in the water and micro-organisms. The water quality is much clearer and they are able to pick from the bed of the river. These birds have detected a difference! Water quality data obtained from the City of Cape Town (CCT) shows some improvements downstream of the Athlone sewage works, but levels of pollution are still unacceptable in the Black River. Data from four sites on the Black River for phosphorous and bacteria shows just how much of the difference the upgrade of Athlone sewage works has made a difference. The conclusion is just not nearly enough. The sampling sites are shown on the map. Water quality do vary from month to month. The trend from 1998 to early 2013 shows that e.coli bacteria has decreased significantly (Figure 1). At site NR04, for example, the levels are close to 1000 counts/100ml which is much closer to an acceptable level of human contact with the water. However, Phosphorous concentrations, one of the main nutrients that feed the growth of aquatic weeds, have increased (Figure 2). Phosphorous is difficult to manage in a waste water treatment plant especially if the system is being pushed to beyond the capacity to allow sufficient time for the particles to settle in the ponds. A further more pressing issue is that pollutants entering into the Black River don’t all come from the sewage works. The Salt Rier catchment is a large area that drains into the Black river from multiple sources of underserviced areas where there are significant pressing social and economic issue. While investment in the continual upgrade of the sewage works is necessary, the issues lie further upstream. The potential to make the green corridor of the Black River a viable asset remains a massive challenge in which the solutions are not in technical upgrades alone.

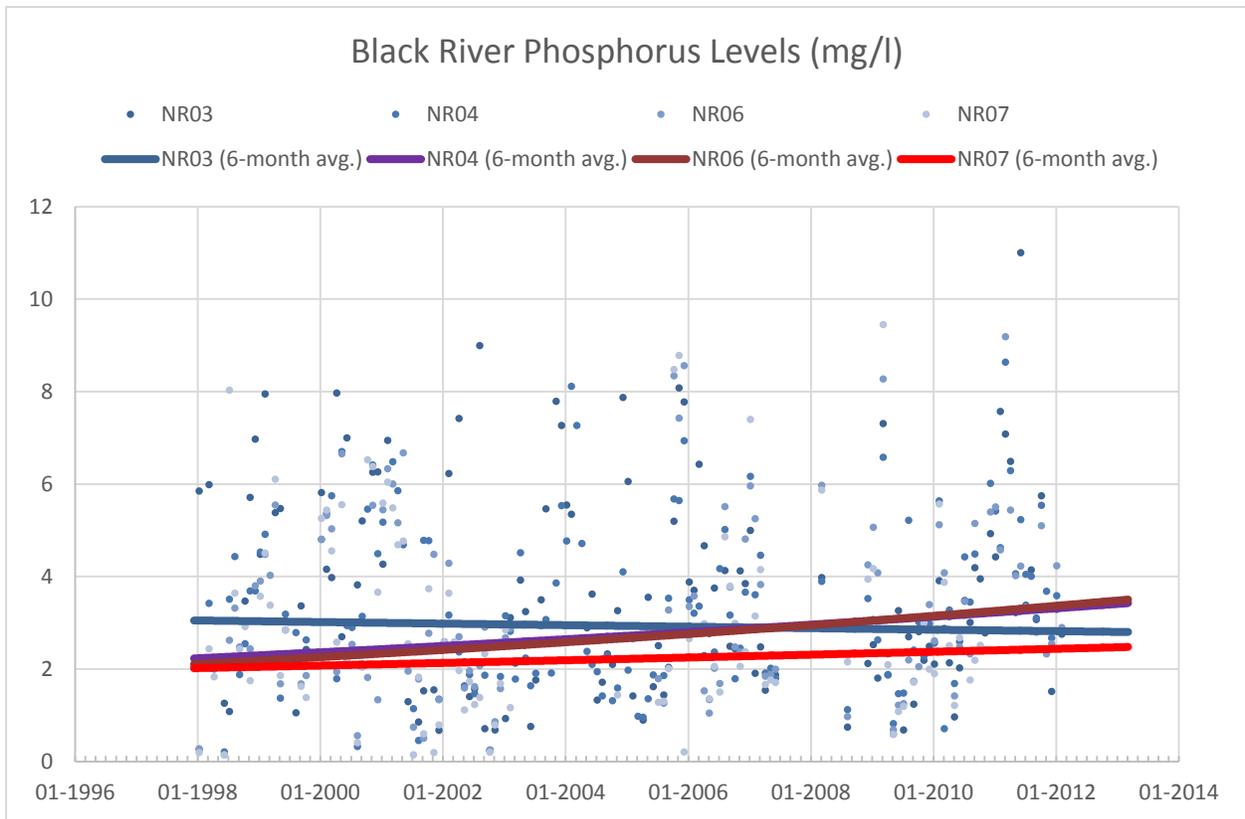
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Four sampling sites along the Black River where data are collected every month by the City of Cape Town: one upstream of the WWTW discharge point (NR03) and three downstream of the discharge point (NR04, NR06 & NR07).



The upgrade of the disinfection unit at Althone is mainly responsible for a decrease in bacteria shown by the e.coli counts from 1998 to 2013.



Trends in phosphorous concentration (mg/l) have been rising since 1998, an indication that the sewage plant and other sources continue to feed the river with nutrients.



Bokmakierie Canal littered with visible solid waste, material which is released into the Black River. Living conditions and social behaviour are challenges that require attention and investment.