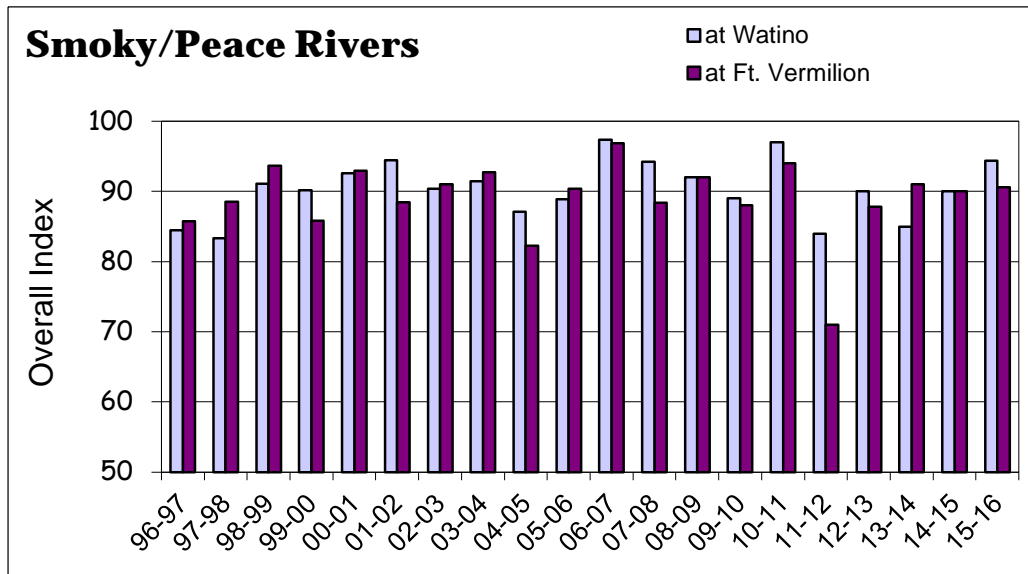
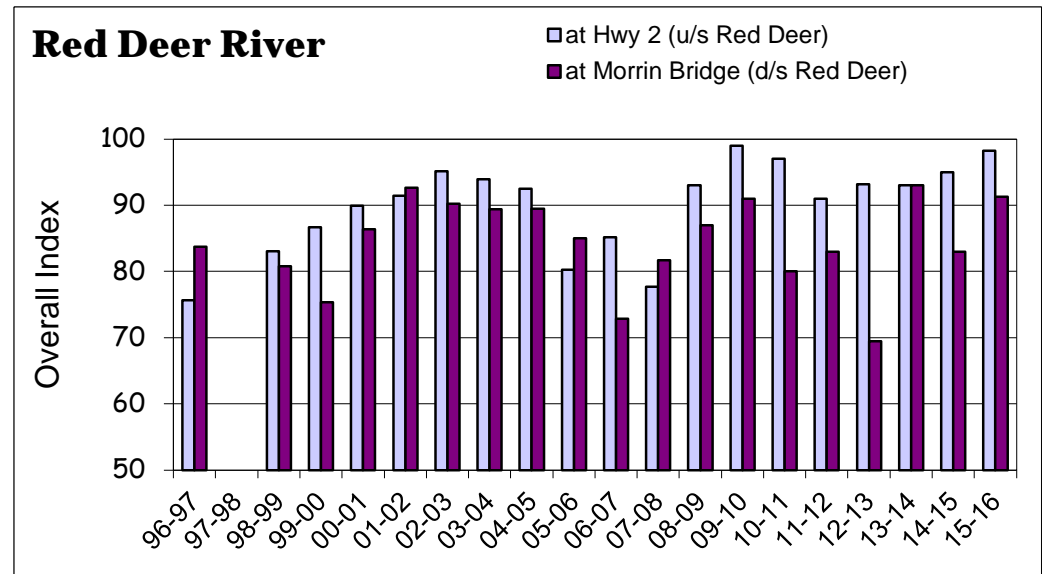


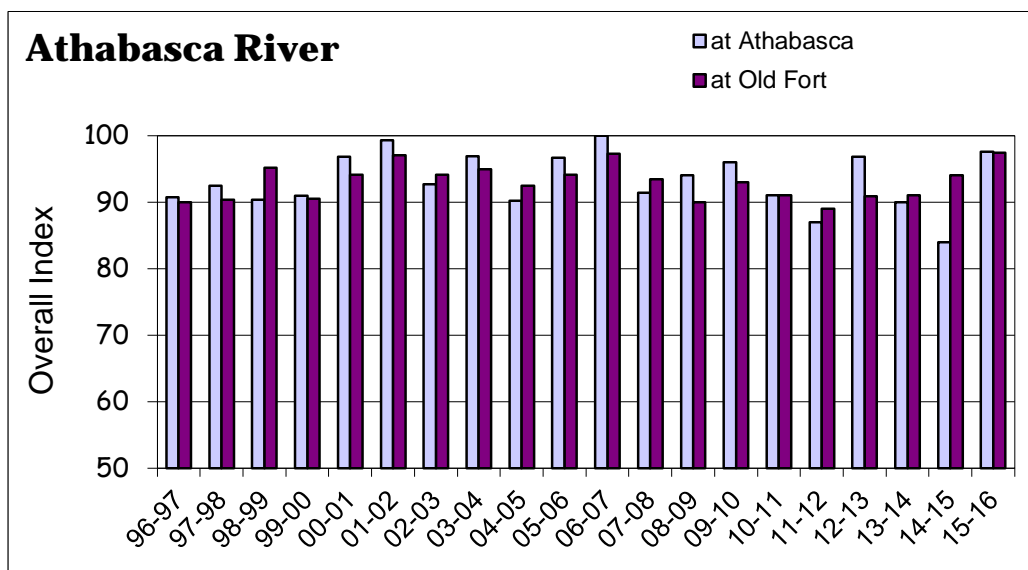
Alberta River Water Quality Index, April 1996 - March 2016



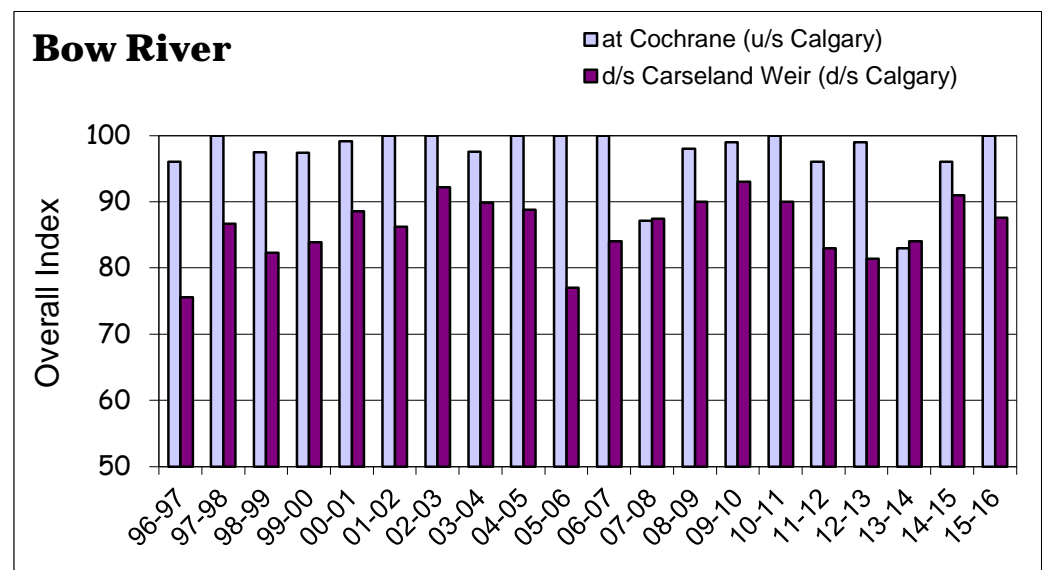
The Index scores for the Smoky/Peace river stations have received consistently 'good' index ratings, with the exception of 2011/12, when the downstream site rated 'fair'. The lower scores were likely due to higher summer precipitation throughout the basin and the resulting higher flows as recorded by the Water Survey of Canada in the river. Runoff events associated with rainfall and snowmelt can lead to the introduction of non-point source contaminants to rivers. In 2015/16, there were a few exceedances of metals (7) and nutrient (3) at the Ft. Vermilion site and exceedances of nutrient (2) and bacteria (1) indicators at the Smoky River site.



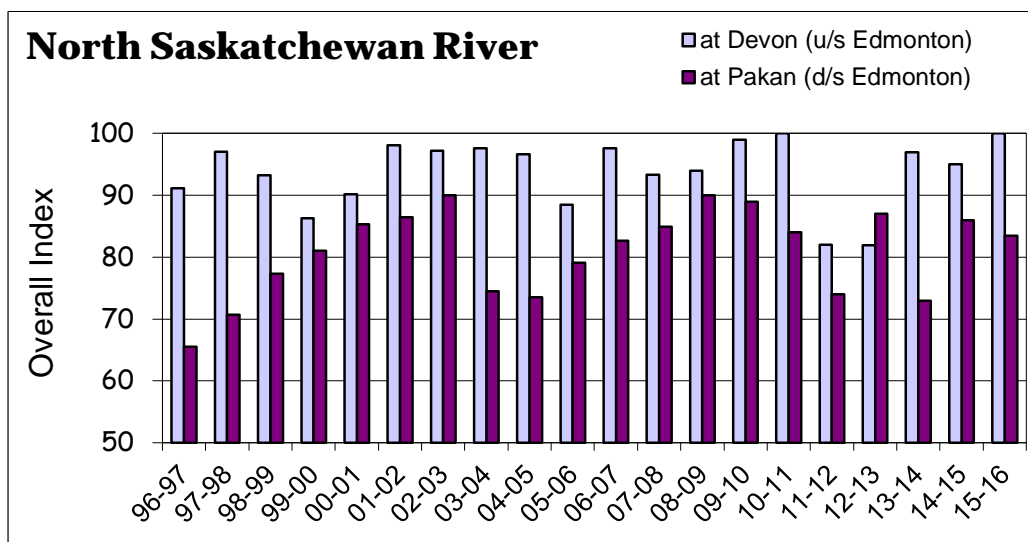
Index ratings for the upstream Red Deer River site have generally been good or excellent, while downstream of Red Deer, ratings are generally lower. In 2012/13, sampling at the Morrin Bridge coincided with a July precipitation event that resulted in exceedances of nutrient, bacteria and metals guidelines, resulting in an annual rating of fair. In 2013/14, both sites had similar ratings of 'Good' with a few exceedances of nutrients and a few pesticide detections. In 2015/16, the site at Hwy 2 u/s of Red Deer had a rating of 'excellent', while the downstream site at Morrin bridge had a rating of 'good'. There were 2 pesticide detections at the upstream site, while the downstream site scores were decreased due to 11 pesticide detections and exceedances of nutrient (2) and bacteria (2) guidelines.



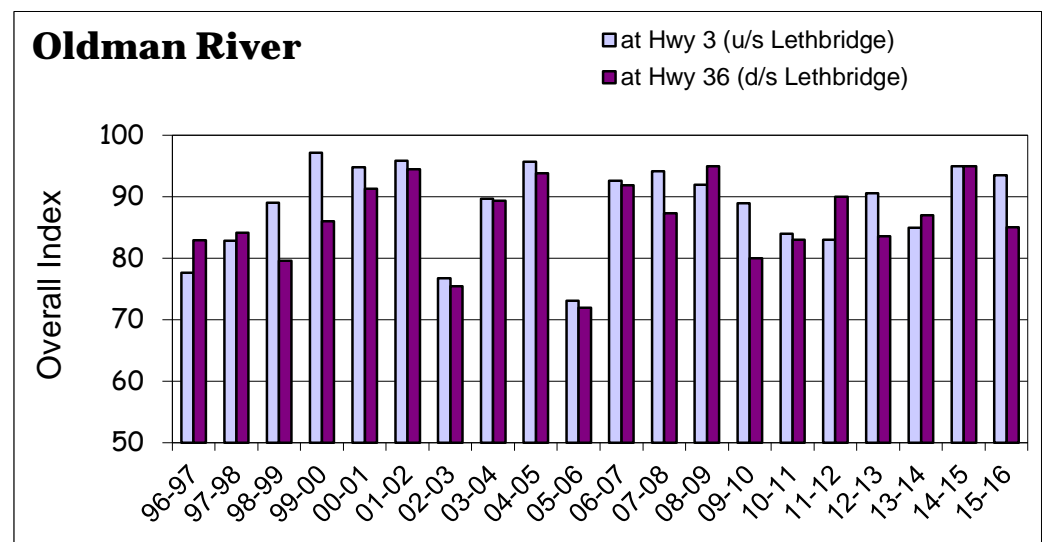
Monitoring stations on the Athabasca River have consistently achieved ratings of good to excellent since the onset of Water Quality Index reporting. Both sites received a rating of 'excellent' in 2015/16. Both the upstream and downstream sites were influenced by water quality guideline exceedances for nutrients.



Since the development of the Index, ratings upstream of Calgary have generally been 'excellent', with the exception of 2013/14 when water quality was impacted due to the large flooding event that resulted in some metals exceedances (2) and bacteria exceedances in October. In 2015/16, there were no guideline exceedances at the Cochrane site, resulting in a rating of 'excellent'. Downstream of Calgary there are typically more frequent exceedances of nutrient and bacteria guidelines. In 2015/16, this site had an overall rating of 'good' due to exceedances of nutrient guidelines (9), bacteria (2), and pesticide detections (9).



Index ratings for the North Saskatchewan River generally show a decrease between upstream and downstream sites. In 2015/16, ratings at the upstream site were "Excellent" and no guidelines were exceeded. At the site downstream of Edmonton, exceedances of metal guidelines (3), bacteria (4) and nutrients (3) resulted in an overall rating of 'Good'.



2015/16 Index ratings for the Oldman River fall within the historical range for this basin, with similar results for the past few years, with both sites having ratings of 'Good'. At the upstream site, there were exceedances of bacteria (2) and metals (2) guidelines and pesticide detections (8). Downstream scores were influenced by exceedances of nutrients (2), bacteria (2) and metals (1) as well as pesticide detections (5).