2019 Wilmot Creek Fisheries Assessment Results

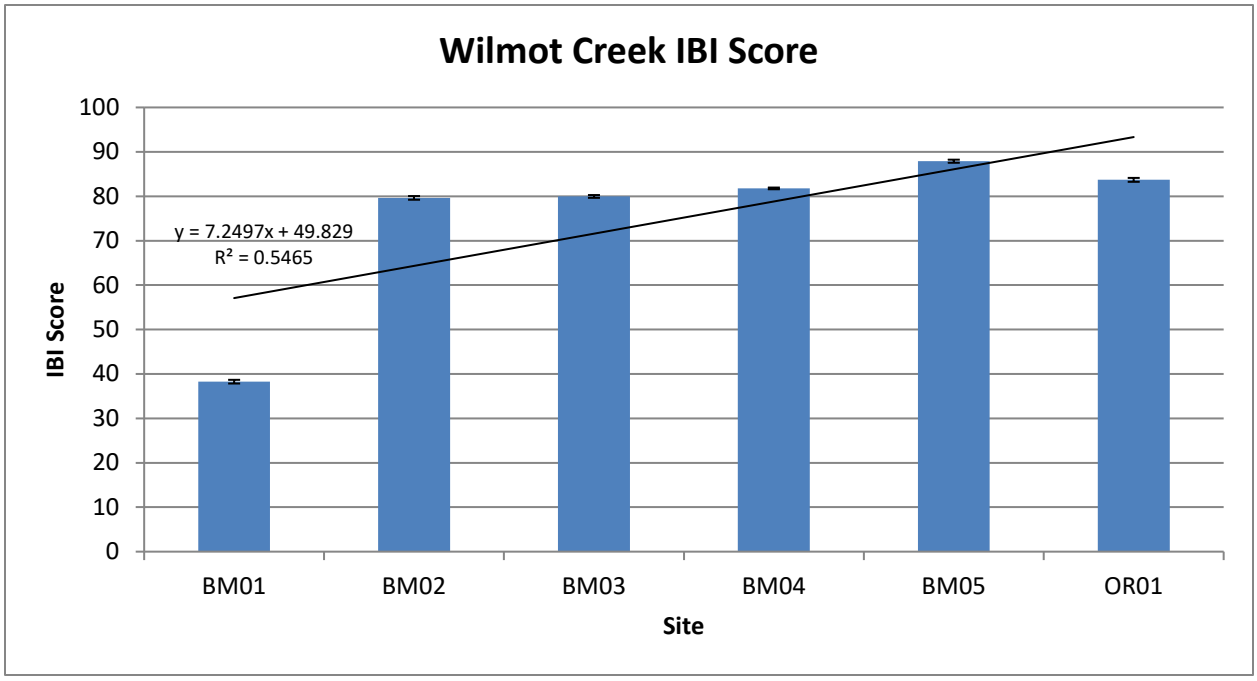

Figure 1: Average IBI scores for each Wilmot Creek fisheries site.

Using the IBI metrics, the sites can be classified into poor (0-25), fair (26-50), good (51-75), and excellent (76-100) stream health. The IBI results indicate that the sites in the headwaters are in better ecological condition, with a decline closer to Lake Ontario. Site BM01 is the only site that is not in excellent condition, and is classified as fair health. BM01 is close to the 401, which has led to negative impacts, such as a high relative abundance of tolerant species and less salmonids.

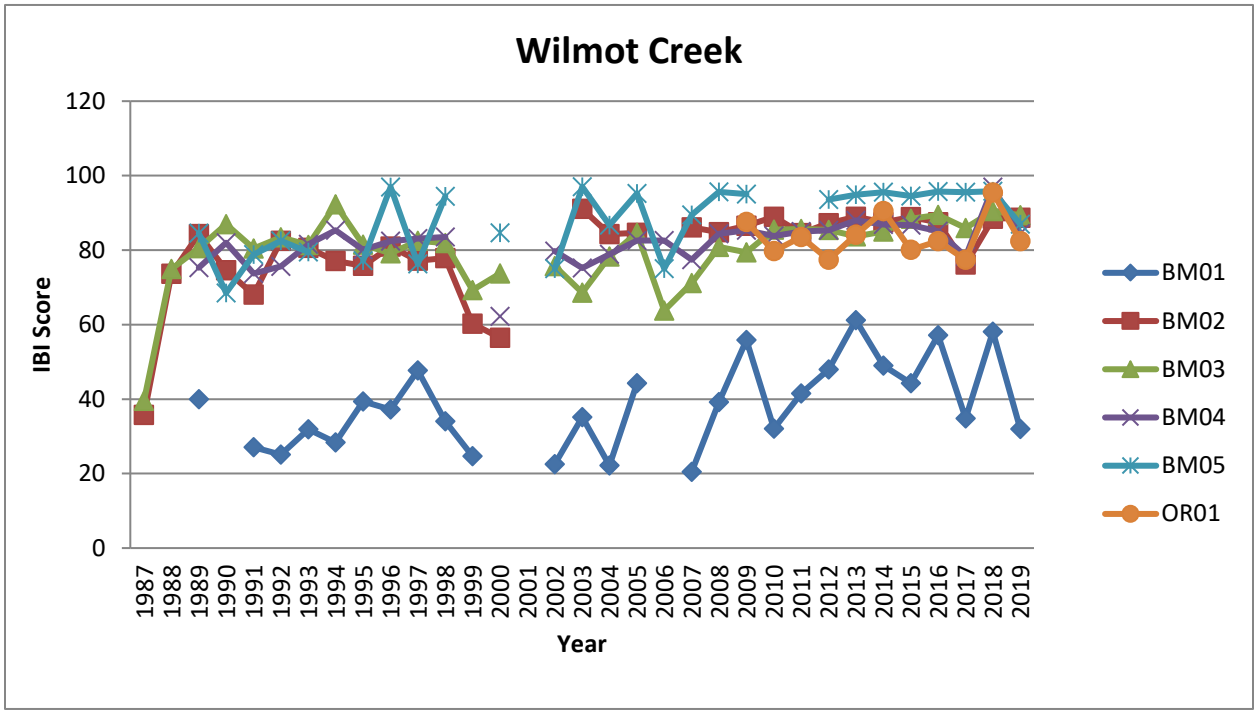

Figure 2: IBI scores for each Wilmot Creek fisheries site from 1987-2019

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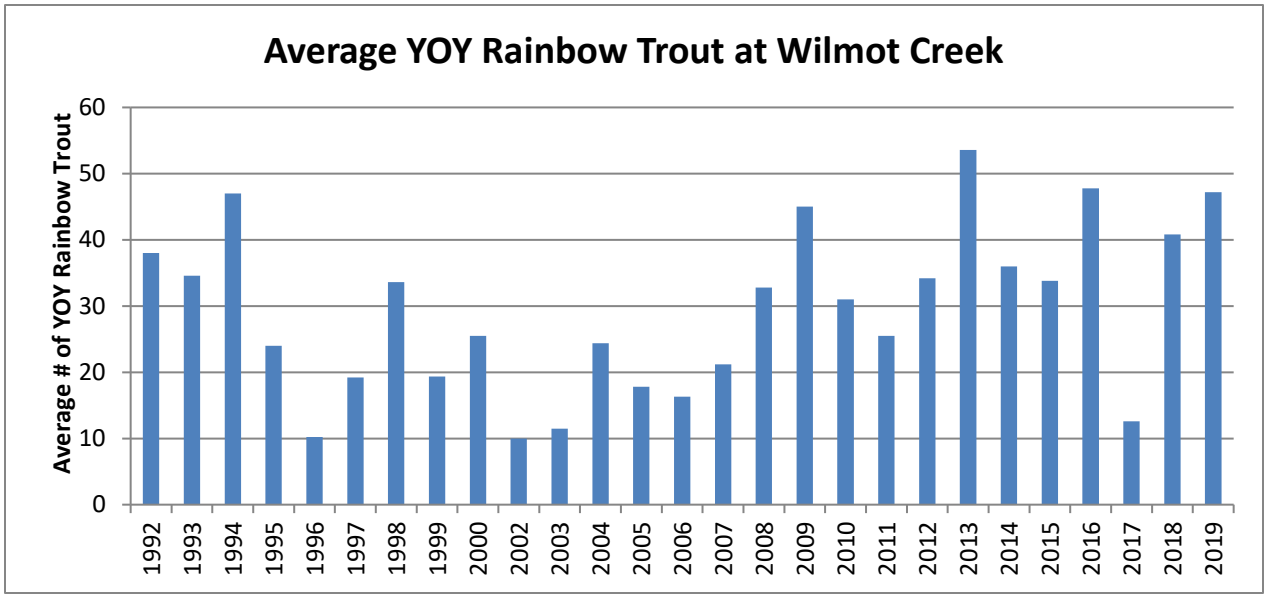

Figure 3: Year class strength of Wilmot Creek Rainbow Trout from 1992-2019.

This graph shows that the Rainbow Trout population in Wilmot Creek may have been negatively impacted by something in 2002 and 2003, but the population has recovered, showing an increase in young-of-year (YOY) Rainbow Trout. This demonstrates that the population in Wilmot Creek is sustainable.

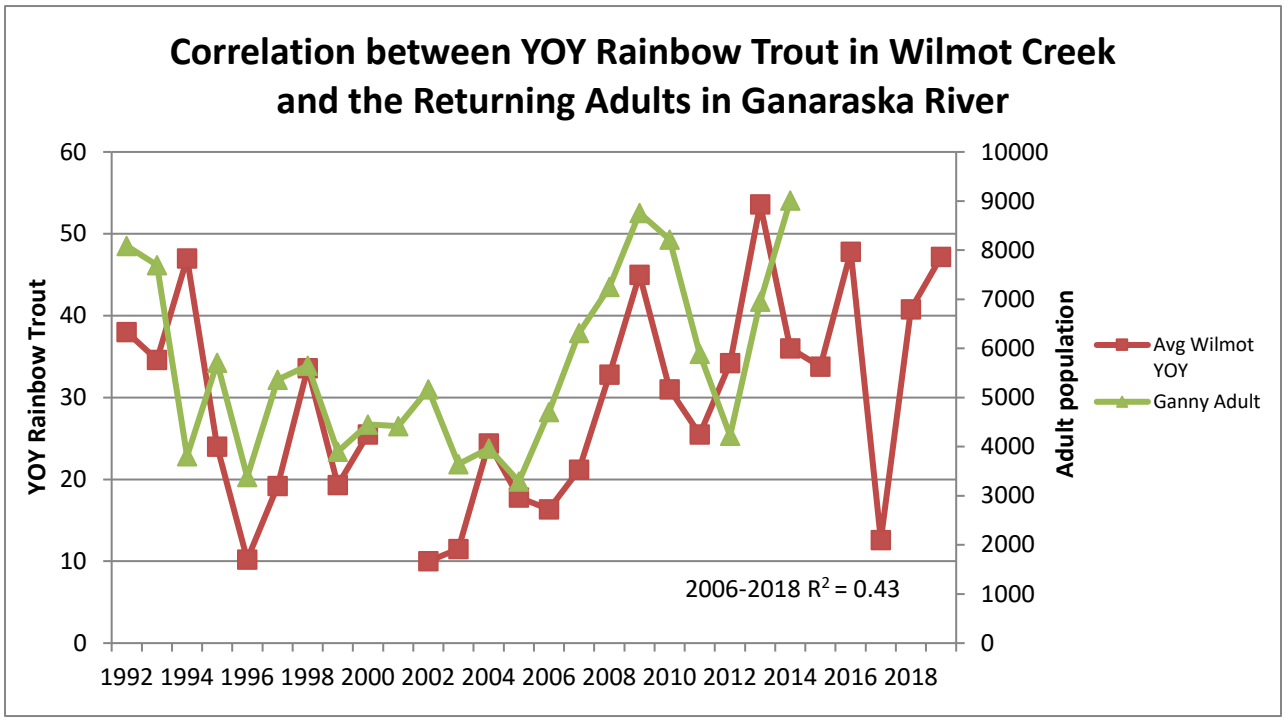

Figure 4: Correlation between Wilmot Creek young-of-year (YOY) Rainbow Trout and the adult Rainbow Trout returns of the Ganaraska River four years after.

In order for a biological correlation to be considered meaningful it most have a value greater than 0.5. Therefore, there is a positive correlation between the YOY Rainbow Trout in Wilmot and the adult Rainbow Trout in Ganaraska River, but it is not statistically meaningful.

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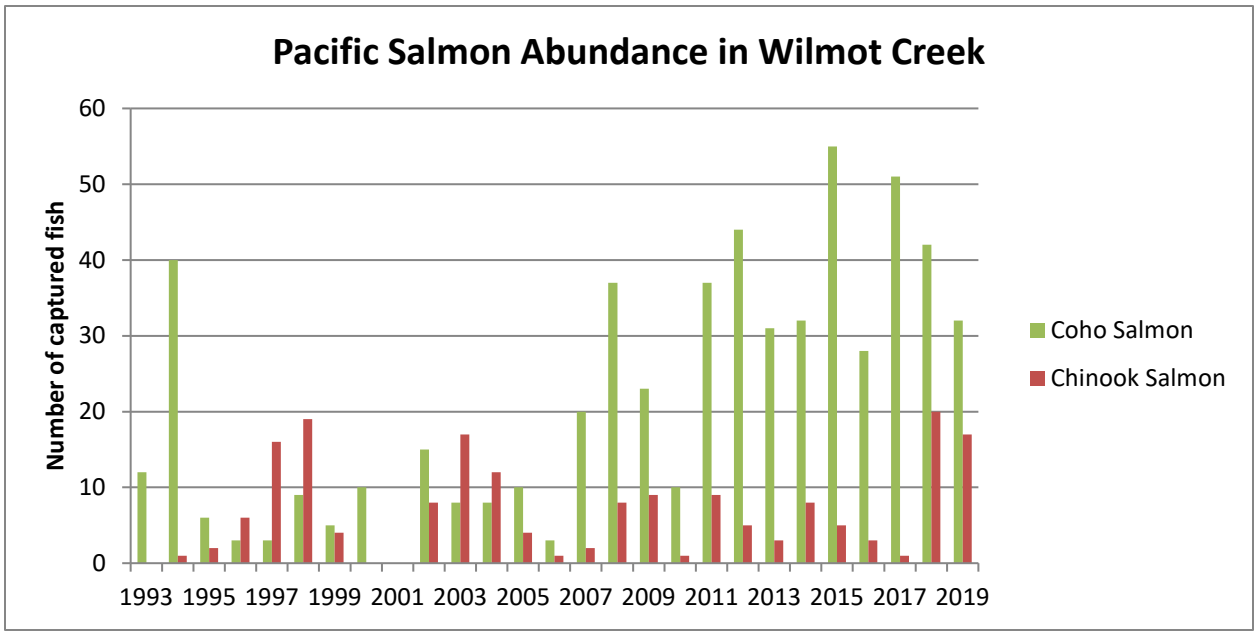

Figure 5: Year class strength of Wilmot Creek Chinook Salmon and Coho Salmon from 1993-2019.

Since 2005, Wilmot Creek has had a higher relative abundance of Coho Salmon compared to Chinook Salmon. It also shows that there has been an increase in Chinook Salmon populations in 2018 and 2019.

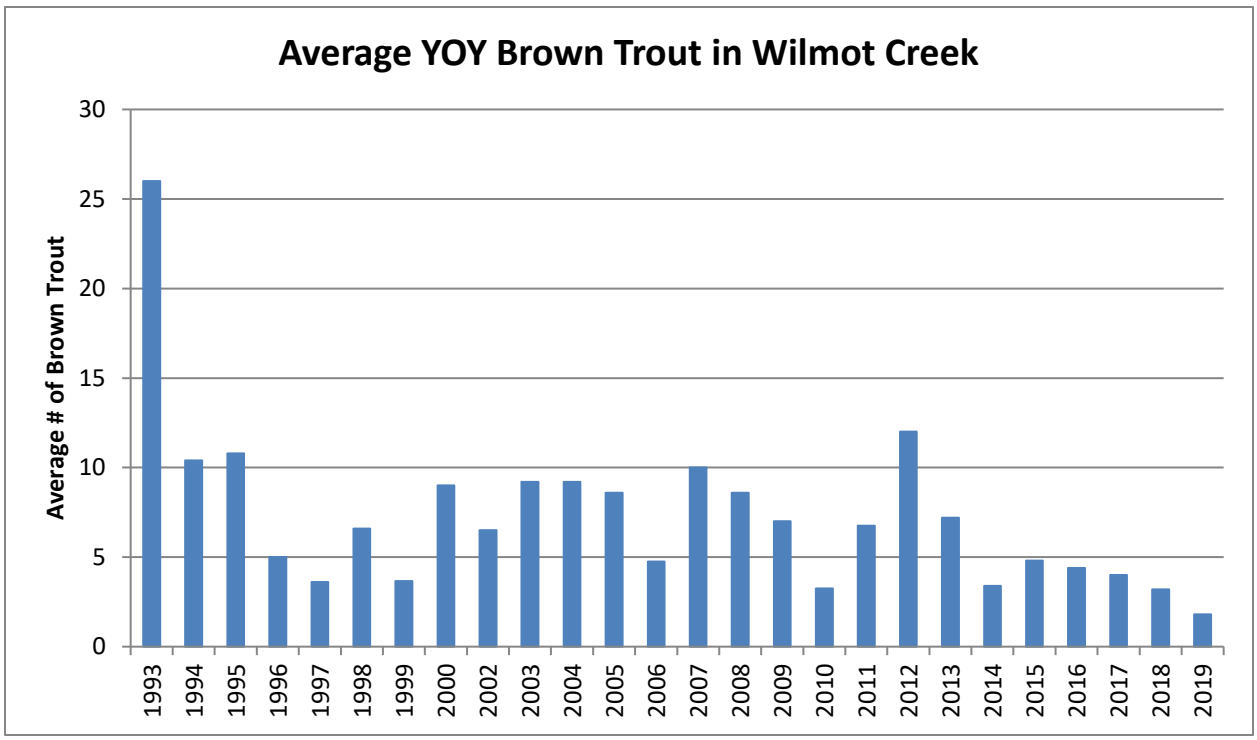

Figure 6: Year class strength of Wilmot Creek Brown Trout from 1993-2019.

With an increase in Rainbow Trout and Pacific Salmon populations in Wilmot Creek, we also see a decrease in Brown Trout young-of-year. Perhaps species competition is responsible for this decline.