

# Genetic Crisis – Eggs found in Male Rainbow Darter Fish (across Canada) due to Estrogen

**Summary:** sewage treated by old systems allow pharmaceuticals into environments and kill fish populations

## Overview

Studies were completed over a period of 5 years by multiple professors partnered through multiple universities across Canada. The rivers had high outfall (treated sewage entering the river) from Traditional Sewage Lagoons. Studies commonly found 100% incidence of eggs in Male Testes. Population is crashing, genetic defects are common and impact to humans and environment is a critical crisis and concern.

**Links to sample Scientific Publications are included below:**

<http://www.ncbi.nlm.nih.gov/pubmed/25543172>

<http://www.ncbi.nlm.nih.gov/pubmed/23633427>

[https://uwspace.uwaterloo.ca/bitstream/handle/10012/6621/Tetreault\\_Gerald.pdf?sequence=1](https://uwspace.uwaterloo.ca/bitstream/handle/10012/6621/Tetreault_Gerald.pdf?sequence=1)

**Sample pictures are included in the Appendix**

**Other facts about sewage not being treated properly (estrogen) & how we need to act immediately:**

<http://www.cbc.ca/news/canada/calgary/fish-feminizing-in-alberta-rivers-1.892767>

<http://www.cbc.ca/news/health/drinking-water-contaminated-by-excreted-drugs-a-growing-concern-1.2772289>

<http://www.cbc.ca/radio/quirks/the-birth-control-pill-is-harming-fish-2014-10-18-pt-1-1.2803992?autoplay=true>

<http://www.cbc.ca/radio/quirks/quirks-quarks-for-oct-18-2014-1.2842745/the-birth-control-pill-is-harming-fish-1.2842755>

## Recent Article about Mussels near Victoria, BC

<https://www.cheknews.ca/mussels-near-victoria-sewage-outfalls-test-positive-pain-killers-antidepressants-420214/>

Victoria tested mussels near the outfall of one of the region's major sewage pipes and found samples revealing high concentrations of pharmaceuticals including painkillers, birth control, antibiotics and antidepressants, among other things. "The outfall is over a kilometre offshore at 60 metres depth and we collect mussels immediately after the outfall, 200 metres, 400 metres, up to 800 metres away"