

Question: It was only a few short years ago that striped bass populations were at a critical level in the Miramichi. What happened to cause their populations to rebound so dramatically and is a similar rebound a possibility for salmon populations throughout the Miramichi watershed?

First, it should be noted that the striped bass (*Morone saxatilis*) is a native species of eastern Canada with a coastal distribution from Florida to the Maritimes, but some individuals have recently been found in southern Labrador. Like the Atlantic salmon, striped bass are anadromous – meaning it spawns in freshwater but most of its growth and life are spent in the marine environment.

The southern Gulf of St. Lawrence population, which includes those striped bass in the Miramichi River, have been steadily increasing in abundance since 2004 when it was designated as “Threatened” by COSEWIC – the national scientific body that assigns status for endangered wildlife species. A subsequent assessment in 2012 designated the species as “special concern”, noting its increasing population numbers but still a species at risk largely because of only one known spawning location – in the Northwest Miramichi River. Another assessment is currently underway with a status decision due in 2022. Given the steadily increasing numbers, and the fact that other spawning locations have been identified (Southwest and Northwest Miramichi Rivers, and possibly the Nepisiguit River), the species’ designation may be downgraded.

The causes for the species’ population increase, especially in the last decade, are probably related to several factors – abundant prey species, successful spawning in different locations and favourable environmental conditions. Adult striped bass are voracious carnivores, especially of other fishes (a piscivore). Recent and ongoing diet studies by researchers from the Canadian Rivers Institute have demonstrated that gaspereau (alewife and blueback herring) and smelt are the favoured prey species in the estuary and lower river reaches during spring and summer, reflecting their relative abundance. When striped bass enter the Gulf of St. Lawrence, and the coastal waters along the Atlantic coast, their targeted prey probably is more diverse, including crustaceans (e.g., crabs), but again reflecting their opportunistic feeding habit and whatever is locally abundant and available. The species is a spring spawner and has a high fecundity - i.e. many eggs are produced by a single female. For example, a 1kg striped bass female will produce about 12,000 eggs whereas a 1kg salmon female will produce about 1,400 eggs. Striped bass prefer warmer water than Atlantic salmon and are most active at water temperatures $>10^{\circ}\text{C}$. Likely, warming of our rivers and coastal waters in response to climate change is benefitting striped bass. So, it seems that the conditions that have favoured the population increase of striped bass are unlikely to similarly affect salmon numbers.