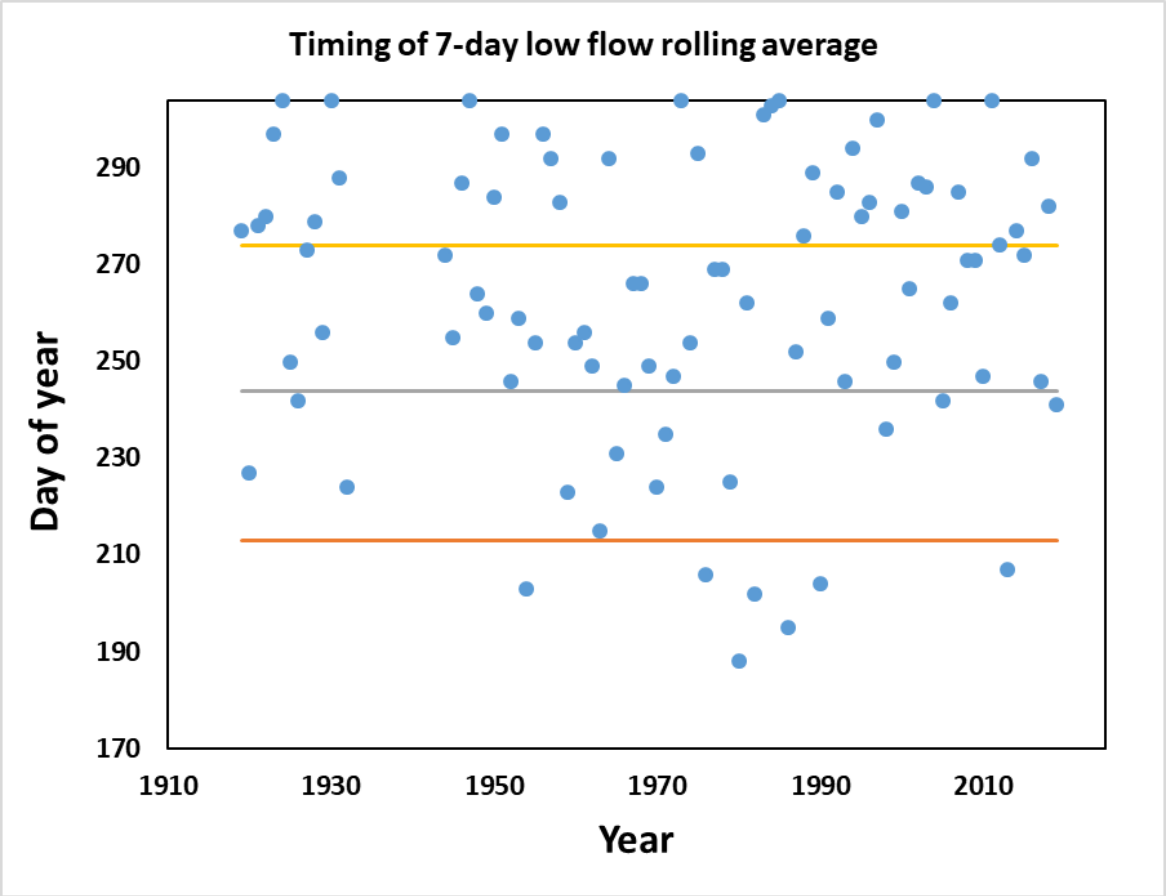
Science Committee Report

The Scientific Committee met on January 26th and 27th 2022. With respect to the Covid-19 pandemic and to follow rules and regulations, the event was held online (Zoom). The committee assessed the state of fish and fish habitat in the Restigouche River watershed for 2021. The primary objective of this meeting was for members of various non-government organizations (NGO), government organizations (Federal and Provincial), academics as well as indigenous organizations conducting research in the watershed gather to share their 2021 work. A total of 59 participants joined the meeting to discuss, present and partake in the knowledge sharing.

The Environment Canada station on the Upsalquitch River serves as a reference site for the Restigouche River. An analysis was conducted to compare the yearly timing of the lowest summer flows in the river over the last century. The period considered was between June 15th (Julian day 166) and October 31st (Julian day 304). The date identified (blue dot) represents the last of the lowest seven-day average. The figure below shows when the lowest flows occurred over time. The orange line represents August 1st (day 213), the gray line represents September 1st (day 244) and the yellow line represents October 1st (day 274).



Discharge greatly influences water temperature. Two real-time water temperature monitoring stations are located at Brandy Brook and Tobique Camp. These stations will be monitoring in 2022 as well. In the summer, real-time water and air temperature data can be found at www.gmrc.ca/rivtemp.

For the 2021 fishing season, many of the camps did not have guests and some did not operate due the continued closure of the Canadian border to international fly fishers. Fishing effort (rod-days) was not reported by fishing camps. On Quebec rivers, the fishing effort data has not yet been made available by the regional office of the Ministère de Faune, Forêts Parcs.

In 2021, the number of spawners contributing to the recruitment of the Restigouche River was not determined by visual snorkel count surveys due to poor visibility and high-water conditions in late September.

All telemetry efforts were resumed in 2021 following a hiatus in 2020 due to the pandemic. The Gespe'gewaq Mi'gmaq Resource Council (GMRC) carried out smolt and kelt tagging in spring 2021 in close collaboration with the Atlantic Salmon Federation (ASF), DFO, fishing camps and local Mi'gmaq communities. This large collaborative project was funded by the Environmental Studies Research Fund. Acoustic receivers were deployed below the Van Horne Bridge, Dalhousie, and Gesgapegiag to record the tagged fish. A total of 36 kelts were tagged on the Restigouche River, 140 smolts on the Kedgwick River and 60 smolts on the Upsalquitch River. Tagged Restigouche smolts continue to have a relatively good survival rate to the Head of Tide (~96%) Outer Bay (~84%) and Strait of Belle Isle (~49%) compared to tagged Miramichi smolts.

The geomatics analysis of habitat connectivity, initiated in 2017 with UNB, continued until 2019 with the development of a model for Atlantic salmon habitat fragmentation in the watershed using LiDAR imagery. GMRC addressed stream fragmentation issues in New Brunswick and Québec watershed at 7 locations. In total, 7 Rock weirs, 3 Eel ladders, 2 Concrete pours (steps and baffles) were constructed to reconnect 49 km of stream habitat. Further, the GMRC is researching the long-term effectiveness of habitat restoration in the Restigouche River Watershed as part of the Indigenous Habitat Protection Program (IHPP). GMRC and RRWMC have partnered to out restoration activities aimed at reducing the amount of silt runoff into the river as well as reconnecting fragmented habitats by retrofitting culverts and removing dams. We continued this project in 2021 and will pursue it until 2025, and as part of an ongoing monitoring effort in New Brunswick and Quebec. Through these monitoring efforts, we have sampled fish communities, water chemistry, algae, plants and aquatic insects to assess any changes within the food web and the effects of habitat restoration on the Atlantic salmon populations.

Thermal refuges were also being further investigated on the Matapedia River in 2021. This project was led by the Gespe'gewaq Mi'gmaq Resource Council in collaboration with the Matapedia-Restigouche Watershed Organization. This project focused on priority streams and wetlands providing persistent cold water to the mainstem thus supporting Atlantic salmon thermoregulation during hot water events. Land use mapping was conducted in both Matapedia and Avignon counties and a review of proactive measures to enhance protection on private lands is underway.

A cumulative effects collaborative research planning workshop was held on Tuesday, March 15th 2022. The GMRC hosted the workshop at the Quality Inn in Campbellton, NB. The goal of the workshop was to focus on cumulative effects framework on salmon and salmon habitat. The workshop brought together groups and science committee members to share their expertise on this topic. As we work towards improving Atlantic salmon habitat in our region. This bottom-up approach is well adapted and informed by our communities and local groups. This work will be useful, relevant and readily applicable to our habitat restoration strategy going forward.

Listuguj Fisheries have continued to lead data collection on biological and population level characteristics of adult salmon and striped bass and these efforts will continue in 2022.

Finally, representatives of the organizations present summarized their provisional work activities for the next field season.

Dr. Carole-Anne Gillis, Chair of the Scientific Advisory Committee