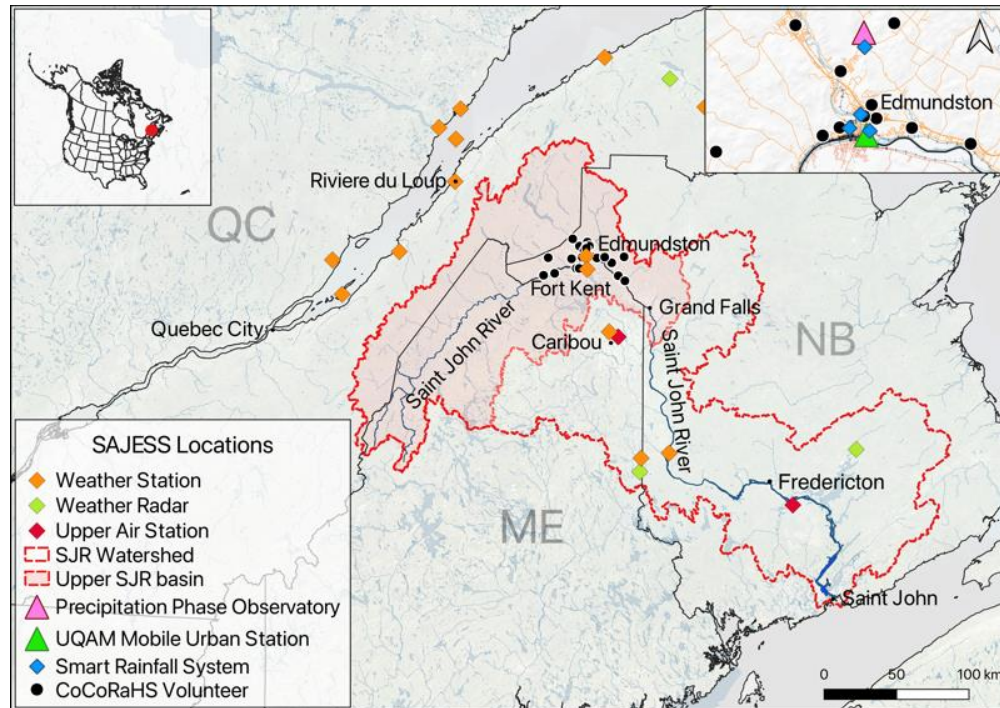


## Global Water Futures 2021 Operations Team Meeting – Project Reporting Template

<b>Project Name:</b>	Saint John River Experiment on Cold Season Storms (SAJESS)
<b>Our major accomplishments to date are:</b>	
<ul style="list-style-type: none"><li>● Conducted a field experiment in two phases: 1) A Precipitation Phase Observatory was installed from 1 December 2020 to 30 April 2021, and 2) the UQAM Mobile Urban Station was installed near the Saint John River from 5 March to 30 April 2021. Precipitation amounts and types were measured manually by observers from 1 March 2021 to 27 April 2021.</li><li>● To obtain the spatial variability of precipitation across the region, around 20 CoCoRaHS stations were installed and volunteers collected precipitation amounts and snow depth each day. Data are available through the CoCoRaHS network.</li><li>● Winter 2020-21 was warmer than climatology, particularly December and January, which were warmer by <math>\sim 5^{\circ}\text{C}</math>. Rain, snow and mixed precipitation were often reported during the field experiment.</li><li>● Data collected from the CoCoRAHS volunteer network are similar to the automatic measurements, however, more precipitation was recorded west (upstream), with a greater amount of liquid phase precipitation in the Edmundston area, near the precipitation phase observatory.</li><li>● External data covering the Saint John River basin (ERA5/ERA5 land, hydrological data, DEM data, etc.) have been extracted for analysis, modelling, and GIS use.</li></ul>	
<b>Our current activities are:</b>	
<ul style="list-style-type: none"><li>● Organizing the collected data and uploading them to an open-access repository, in conjunction with drafting a manuscript detailing the resulting dataset.</li><li>● Analyzing precipitation types using data from the optical-disdrometer, manual observations, and the Multi-Angle Snowflake Camera (MASC).</li><li>● Analyzing storms and precipitation prior to the ice breakup on the upper Saint John River.</li><li>● Identifying the key parameters responsible for the 2020-21 peak streamflow, and comparing them with factors that contributed to major flooding in 2007-08, 2017-18 and 2018-19.</li><li>● Investigating the impact of using various precipitation phase partitioning methods on the evolution of the seasonal snowpack and snowmelt runoff.</li></ul>	
<b>The main accomplishments expected by the end of the project are:</b>	
<ul style="list-style-type: none"><li>● Open access database of meteorological conditions, including precipitation phase, types, and macrophotography</li><li>● Assessment of the role of precipitation amount and phase on the timing of ice breakup, peak streamflow, and snowpack evolution in the upper Saint John River.</li><li>● Presentations of key results to the upper Saint John River community, Edmundston emergency management, and other interested stakeholders.</li></ul>	

Here is a key visual from the project (figure, photo, table, graph, etc.)



**Figure 1:** The Upper Saint John River Basin (shaded red), straddling the borders of Québec (QC), Maine (ME, US) and New Brunswick (NB) is a sub-basin of the Saint John River Basin (red line). The Environment and Climate Change Canada (ECCC) and National Weather Service (NWS) weather stations, dual-polarized weather radars, upper air stations, SAJESS-supplied CoCoRaHS stations (black circles), the Precipitation Phase Observatory (pink triangle), and the UQAM Mobile urban station (green triangle) are shown.