



Real-time flood and precipitation monitoring for linear infrastructure across North America

Harmen Van Hove

Workshop on Flow Forecasting – Vancouver, BC

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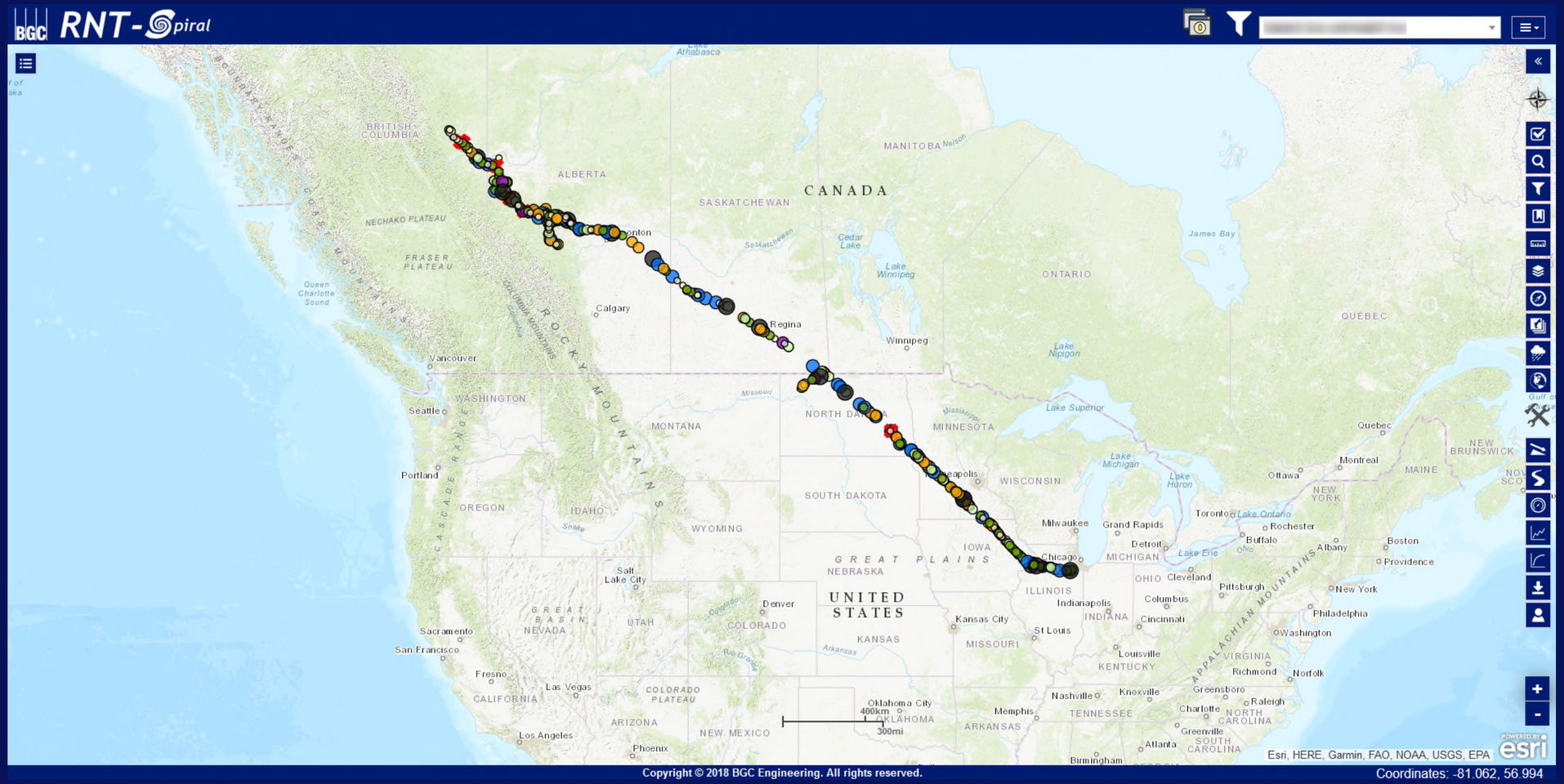
Flood monitoring can potentially reduce the adverse effects of flood induced damage to linear infrastructure at watercourse crossings







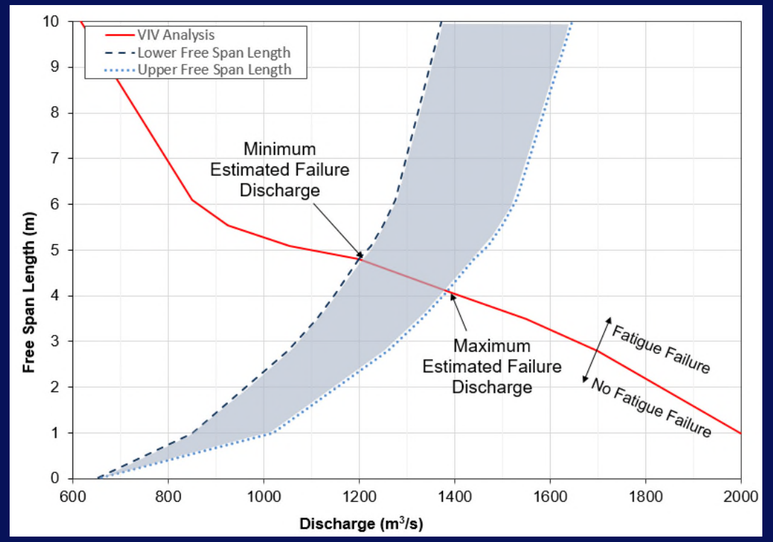
Linear infrastructure can cover large geographical extents



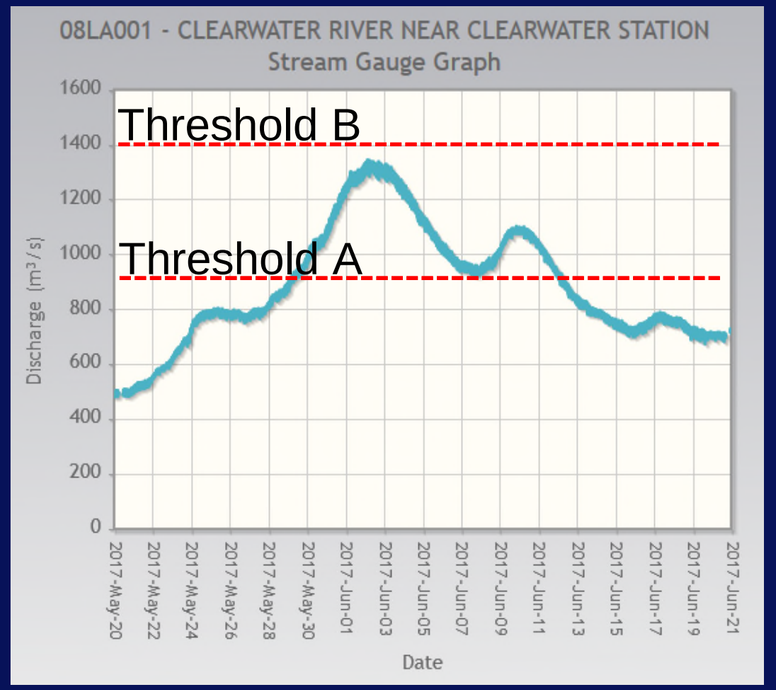
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Three Parts are needed for a successful monitoring program

1. Threshold Definition



2. Monitoring



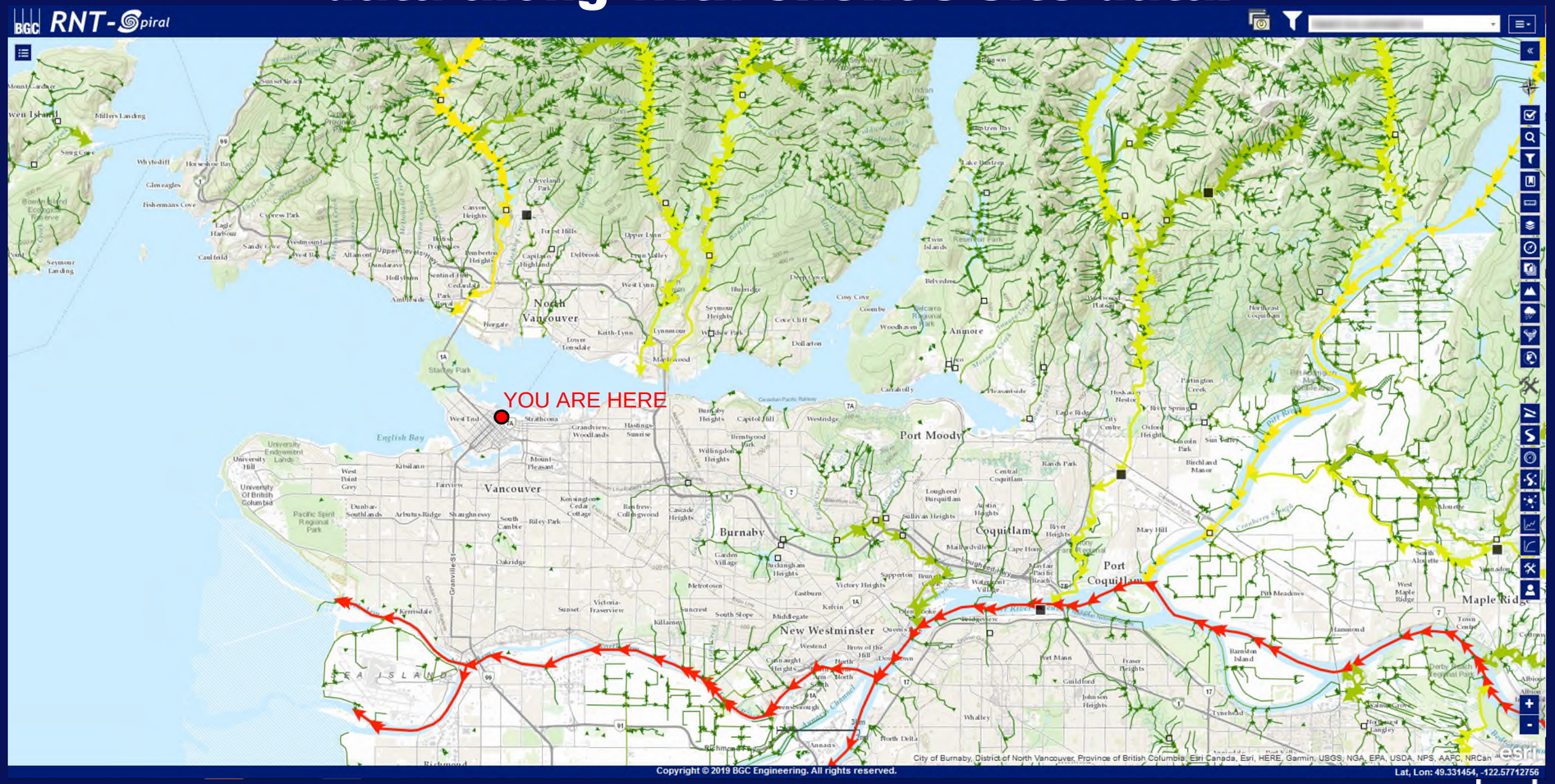
3. Response Plan



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BGC's River Network Tools™ is a web-based application that houses publicly available stream network and gauge data along with client's site data.



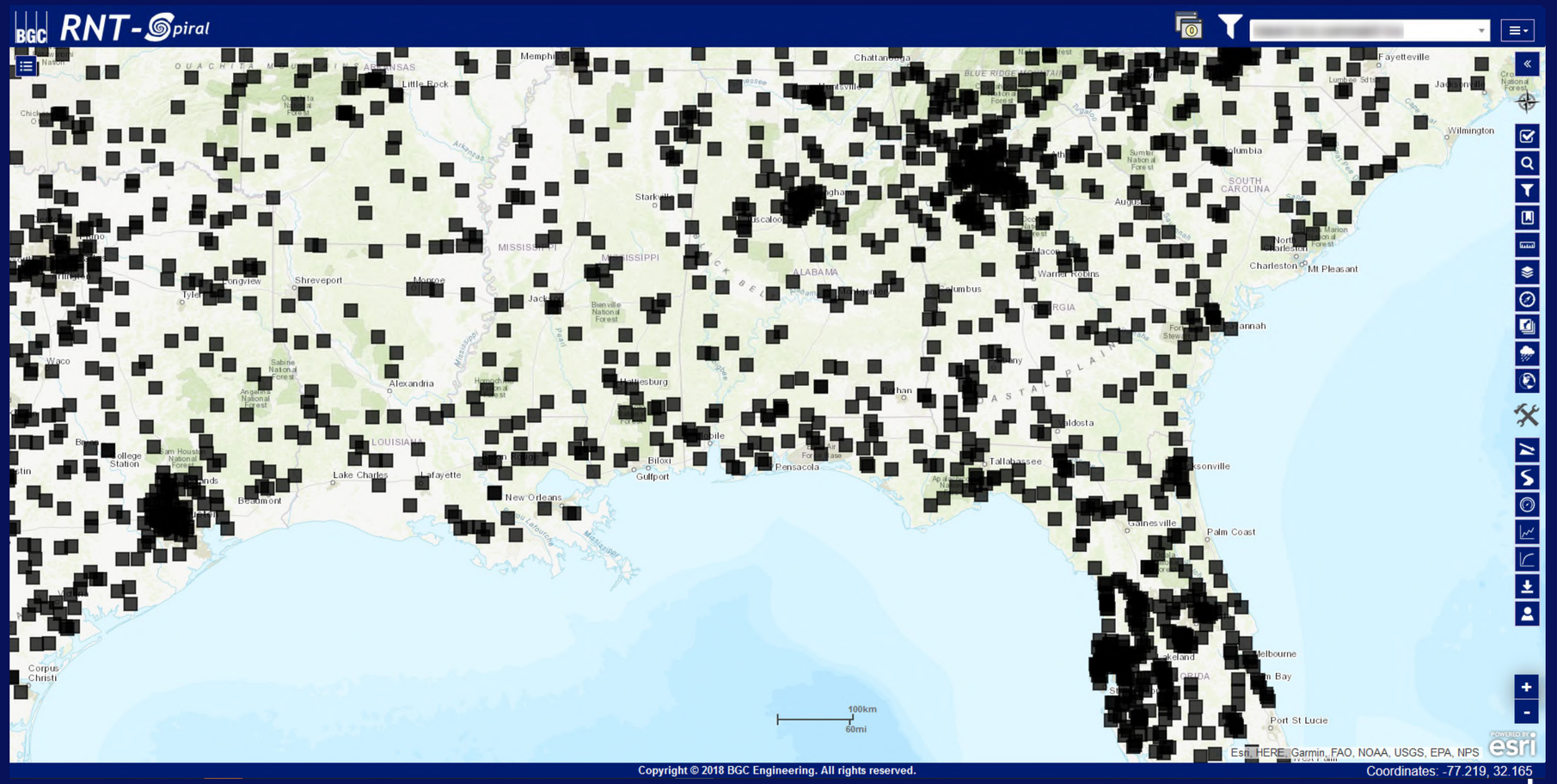
Legend

- Real-time Gauge
- Non-real-time (historical) Gauge

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The real-time gauge network extends across North America



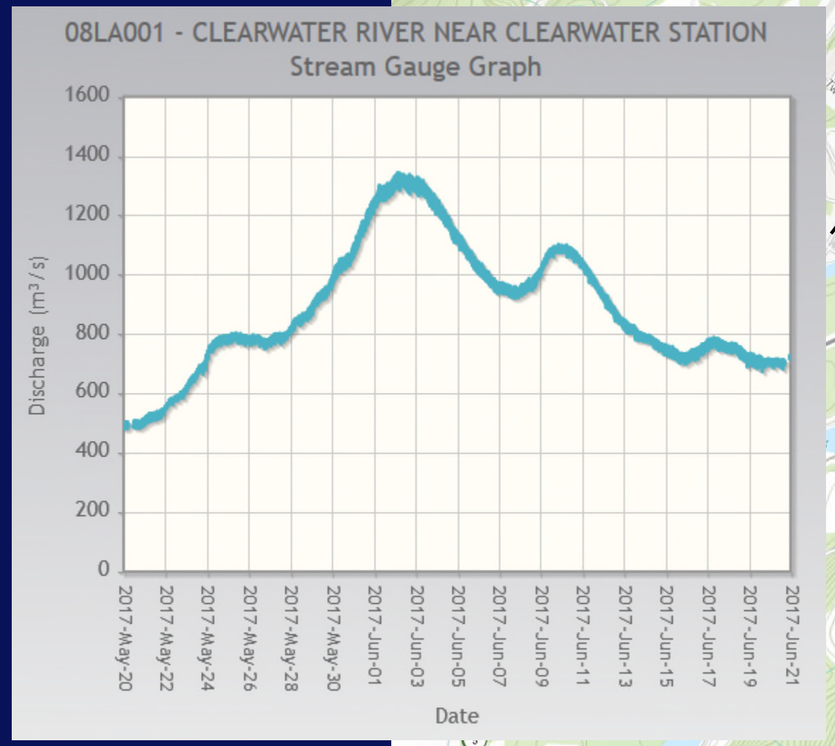
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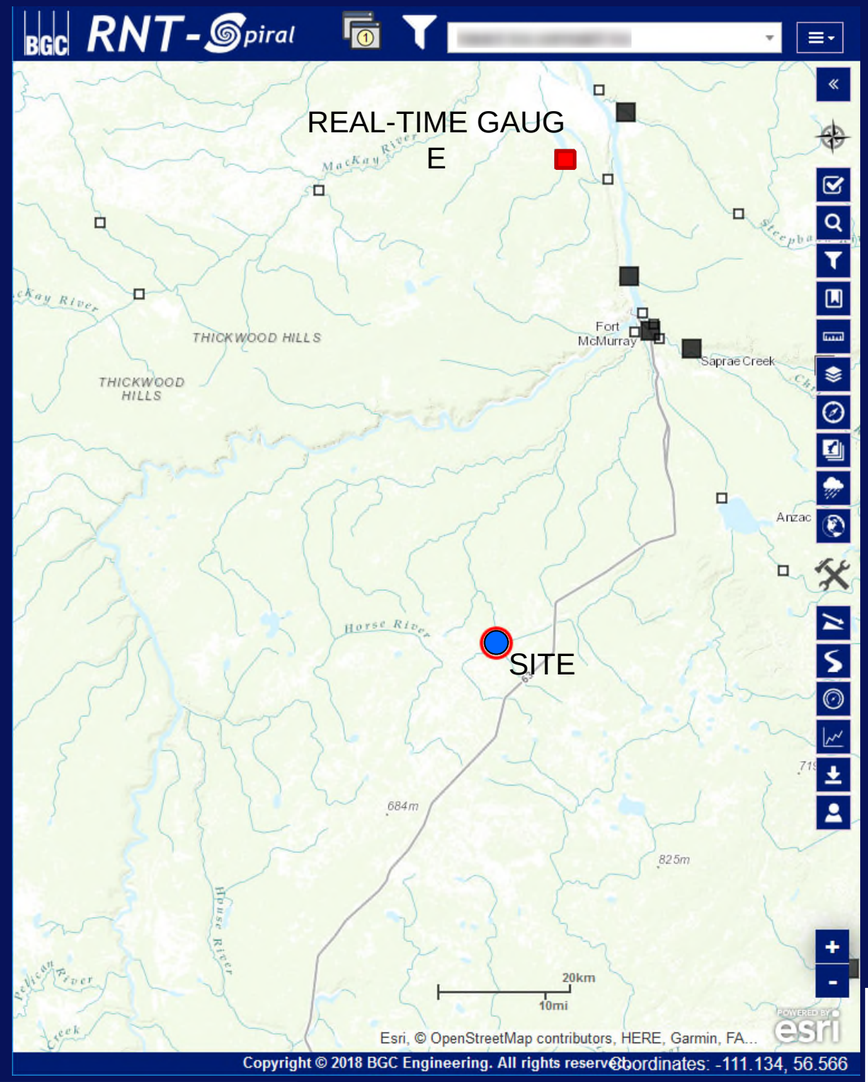
The monitoring process is automated, but manual interventions can be made by an engineer/geoscientist





Flows at a site are determined by assigning a representative real-time gauge to the site





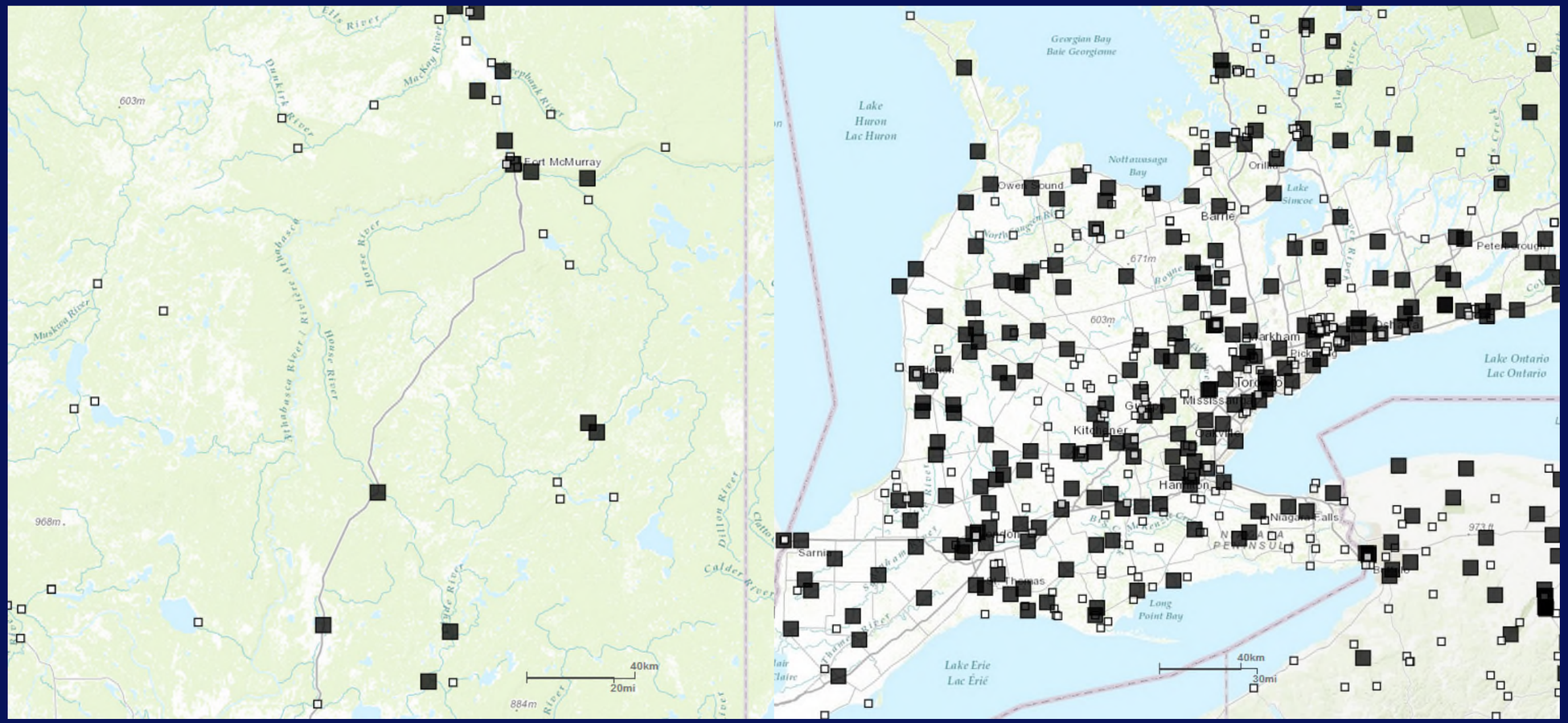
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Legend

- Real-time Gauge
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Data might be limited in availability and/or quality.



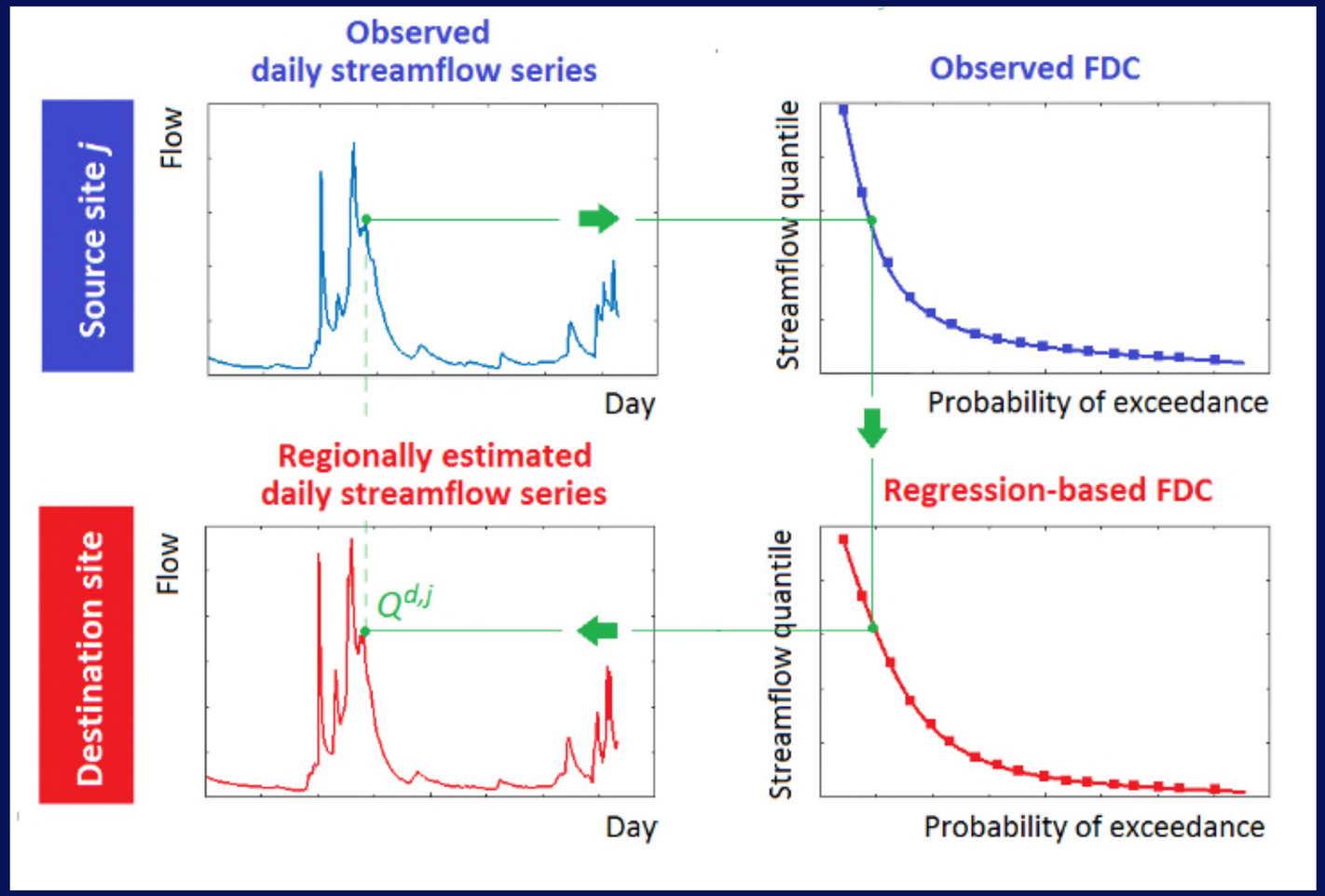
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To further reduce the limitations of monitoring we have partnered with the INRS to develop flows at ungauged locations



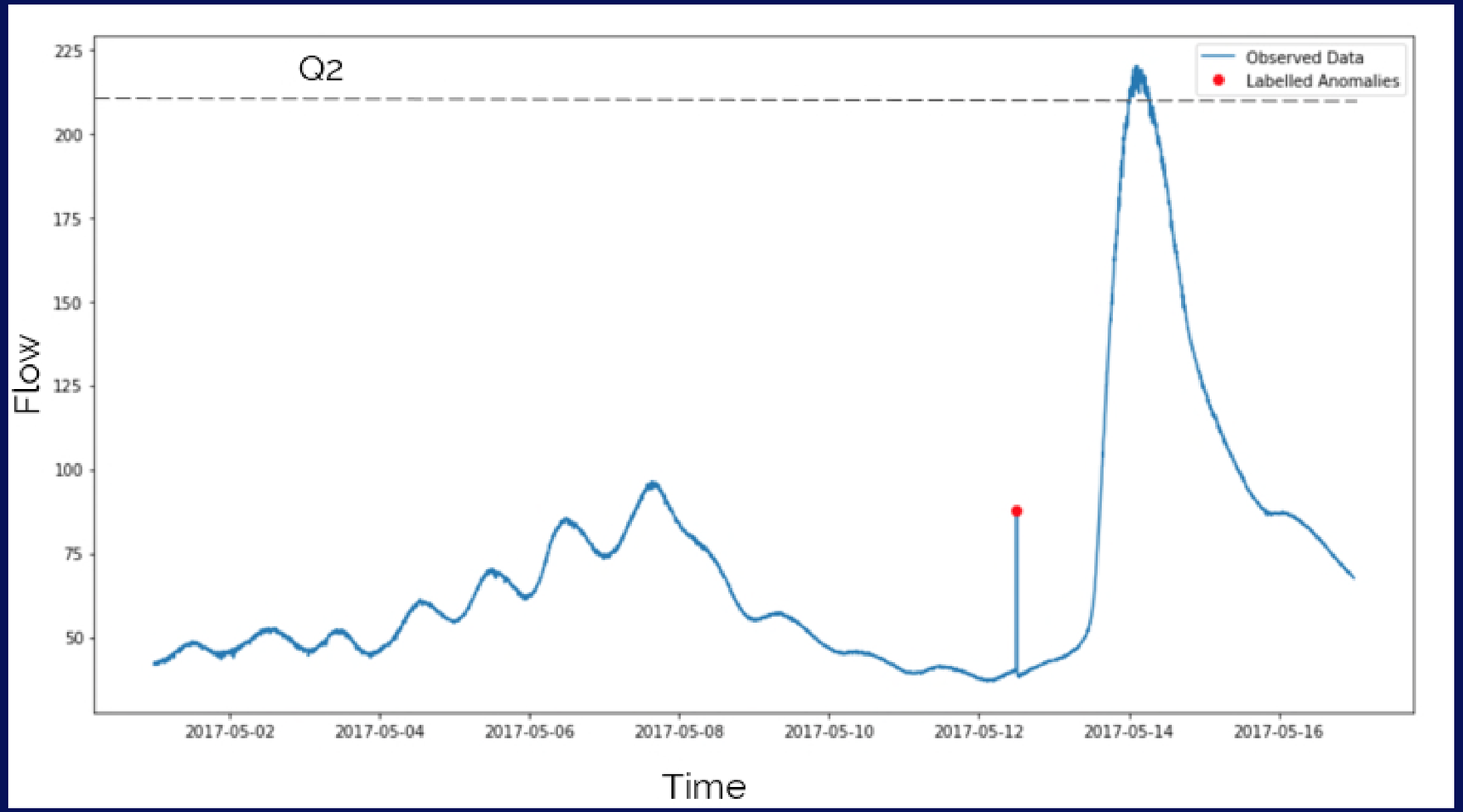
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NSERC CRSNG

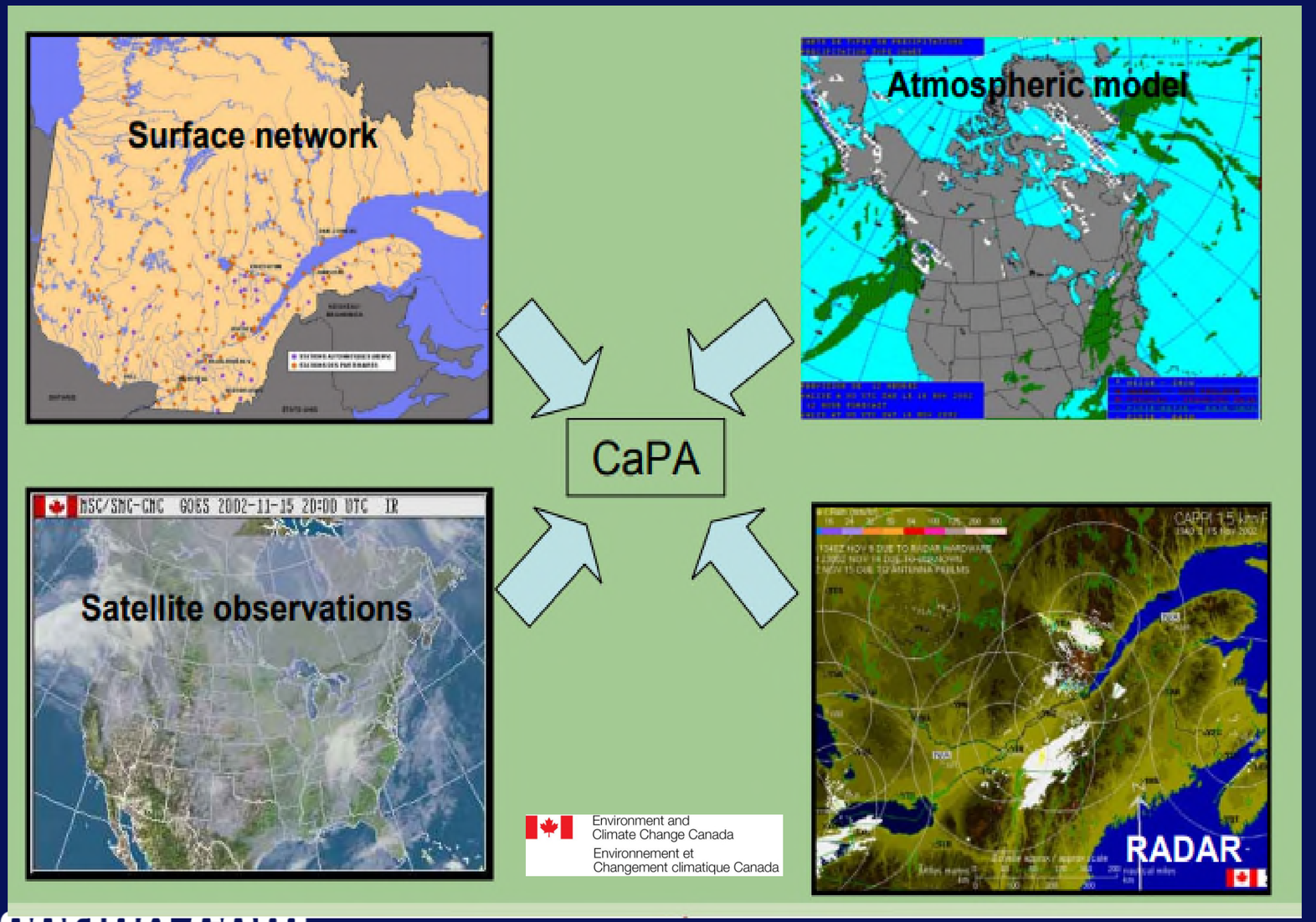
INRS Université d'avant-garde

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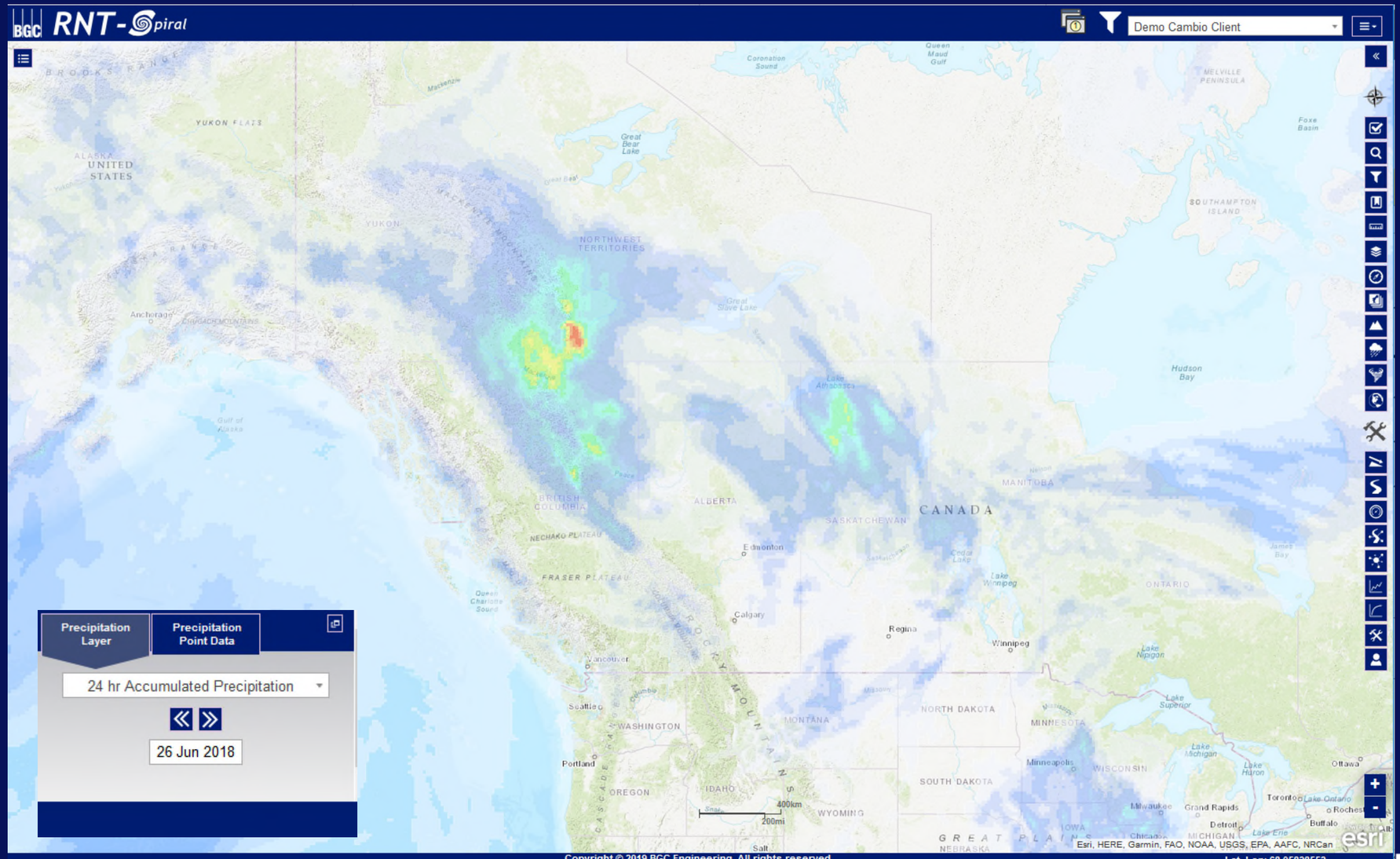
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Real-Time precipitation monitoring can complement streamflow monitoring...

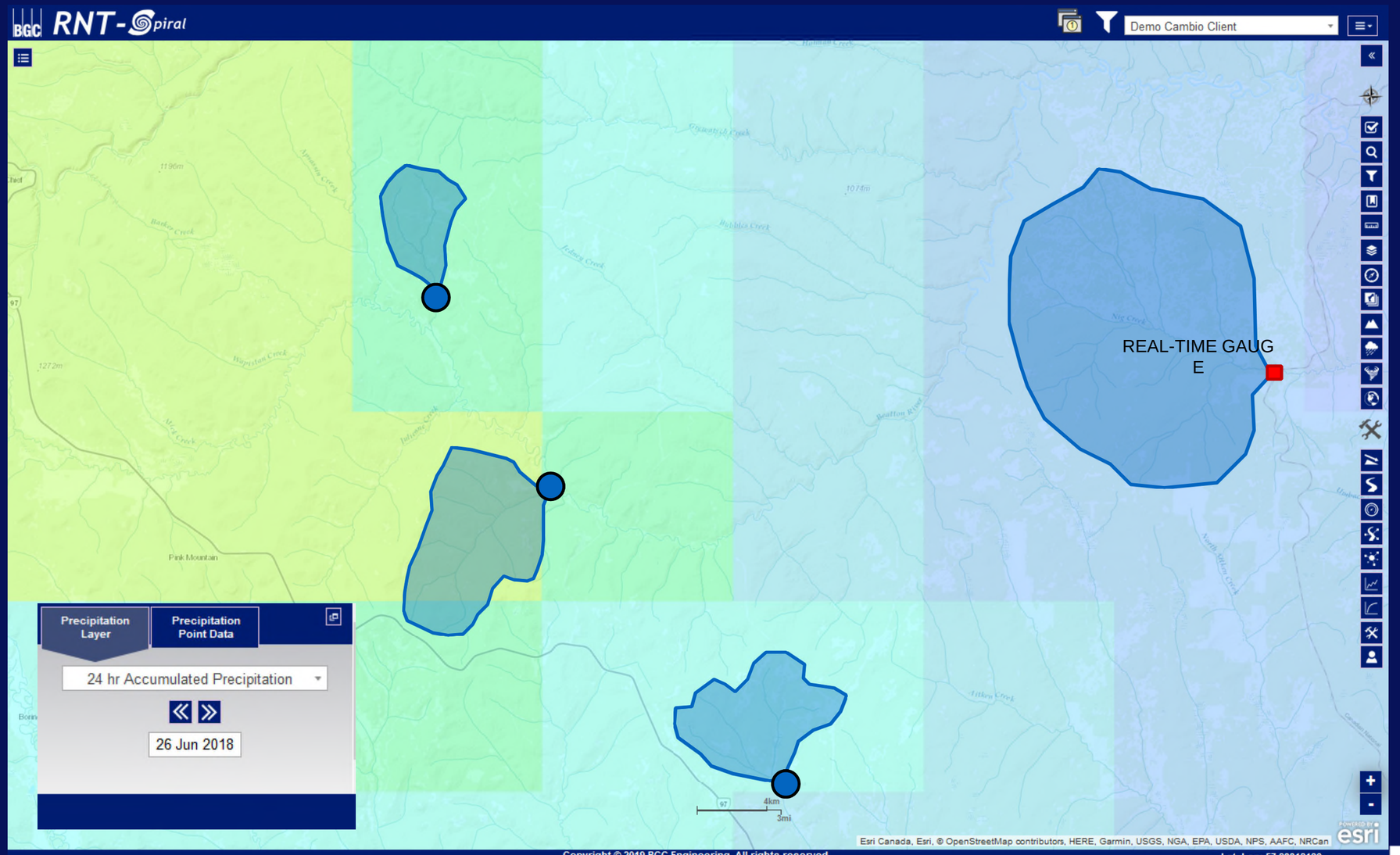


..and reduce uncertainty where streamflow data is limited

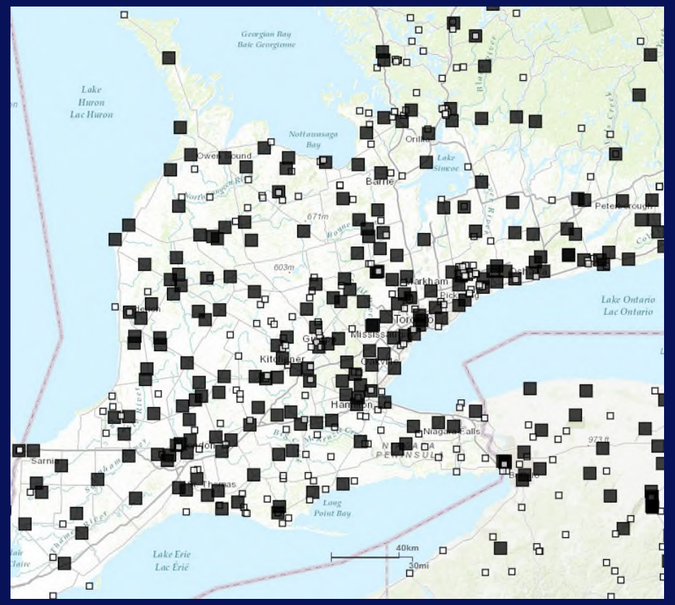


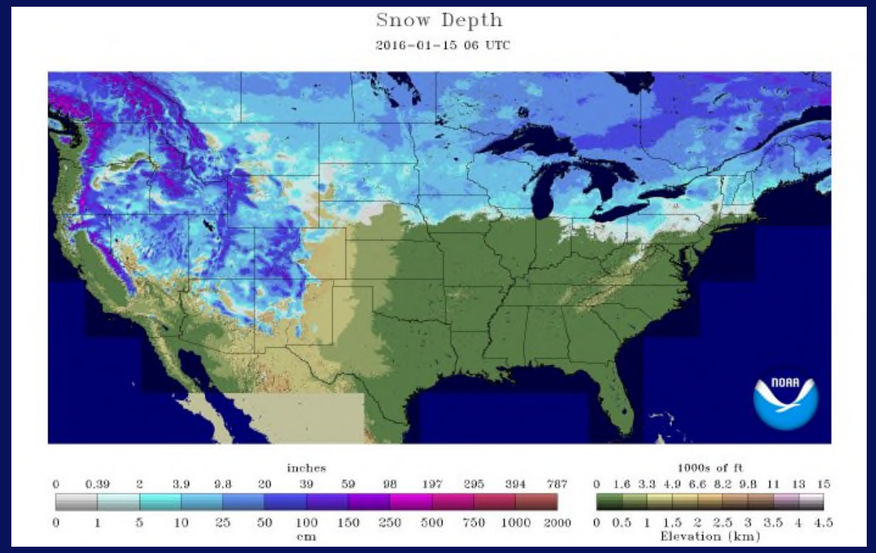
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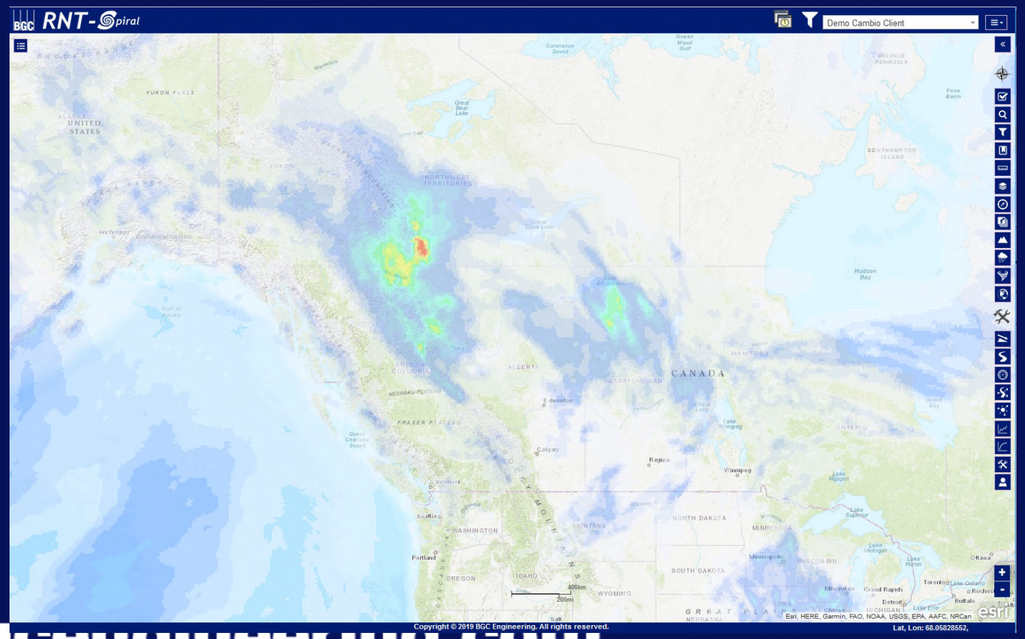
Precipitation can be overlain on a site's catchment area to determine cumulative precipitation for refined monitoring

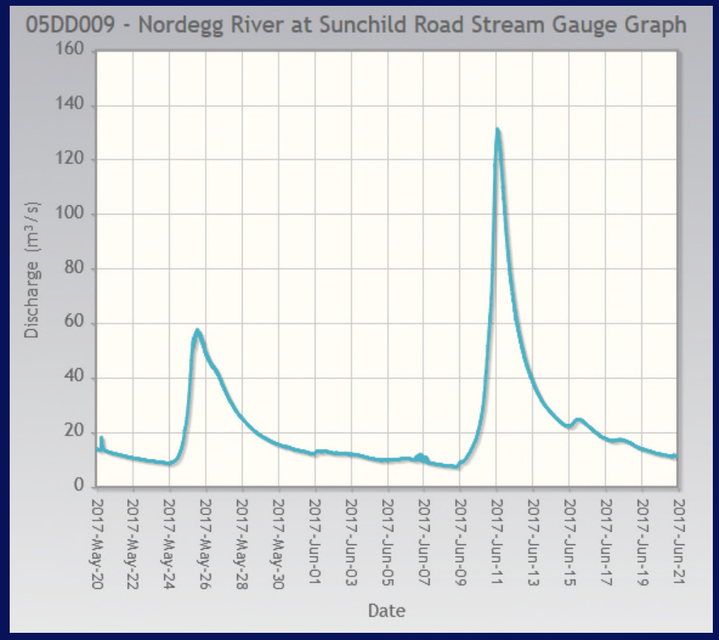


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