

# Nova Scotia Water Conditions Report 2025

**Reporting Organization:**

Nova Scotia Environment and Climate Change (NSECC)  
Water Resource Management Branch  
Sustainability and Applied Science Division

**Information Classification and Distribution:**

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**Report Description:**

This report summarizes surface water and groundwater conditions across Nova Scotia for the 2025 monitoring year, based on data from provincial hydrometric stations and groundwater observation wells. It highlights seasonal patterns, low-water conditions, and recovery trends to support understanding of provincial water availability. Where relevant, data from the first quarter of 2026 are included to illustrate post-2025 recovery conditions.

**Date:**

April 15, 2026

**Prepared By:**

Water Resource Management Branch  
Nova Scotia Environment and Climate Change

# EXECUTIVE SUMMARY

## Surface Water

- In spring 2025 (April to June), river levels across the province were mostly within the normal range. Snowmelt and seasonal rainfall helped support typical spring flows.
- Conditions became drier as the year progressed. During the summer and early fall (July to October), very low river levels were widespread across the province, affecting about 80–90% of monitoring stations.
- River flows began to improve in late fall. In November, water levels increased but varied from place to place and over time. By December 2025, most rivers had returned to near normal and more stable conditions.
- Overall, 2025 was a generally dry year, with low river levels occurring across much of the province. Rivers responded quickly to rainfall, resulting in occasional high flow events despite the dry conditions.
- In the first few months of 2026, river conditions continued to improve. Fewer than 10% of monitoring stations were still recording below normal water levels, indicating a partial recovery from the dry conditions experienced in 2025.

## Groundwater

- Nova Scotia experienced periods of abnormally low groundwater levels in 2025, with the most notable declines occurring from July through to October.
- Several groundwater observation wells experienced new monthly minimums at some point in 2025. Of these, declines were up to 0.2 m lower when compared to previous seasonal lows. This represents a relatively modest change compared to the typical annual fluctuation range observed in Nova Scotia.
- Groundwater levels recovered substantially in November and December of 2025.
- By the first quarter of 2026, groundwater conditions continued to improve, with many wells returning to normal or above-normal ranges. Persistent low-level conditions remained in some areas, most notably within the Annapolis Valley.

# OVERVIEW OF OUR MONITORING NETWORKS

## Surface Water and Groundwater Context

Surface water refers to water flowing or stored on the land surface, such as rivers and streams, while groundwater is water stored below ground within aquifers. Although these systems are hydrologically connected, they respond differently to climate conditions, geology, and seasonal processes. Surface water typically responds rapidly to precipitation events, whereas groundwater responds more slowly and provides longer-term storage. Evaluating both provides a more complete understanding of water availability, drought development, and recovery processes across Nova Scotia.

## Surface Water

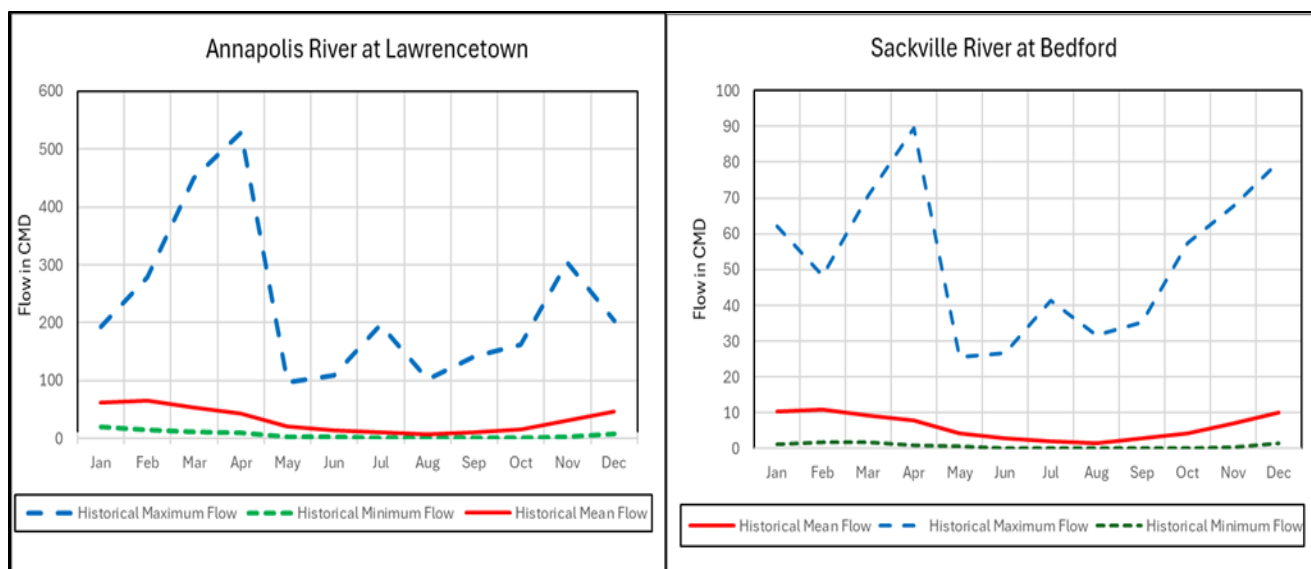
Nova Scotia Environment and Climate Change (NSECC) monitors surface water levels and flow at 39 hydrometric stations across the province to support assessments of hydrological conditions and water availability. Water level measurements reflect river channel geometry and hydraulic conditions, while flow represents the volume of water moving through a river cross-section over time. Together, these data can inform flood risk, drought conditions, declining storage, and water availability for downstream users, including municipalities and hydropower operations.

The province's hydrometric monitoring network continues to expand, with coverage varying by region. In some locations, newer stations have limited historical records, which reduces the ability to conduct long term comparisons with 2025 conditions.

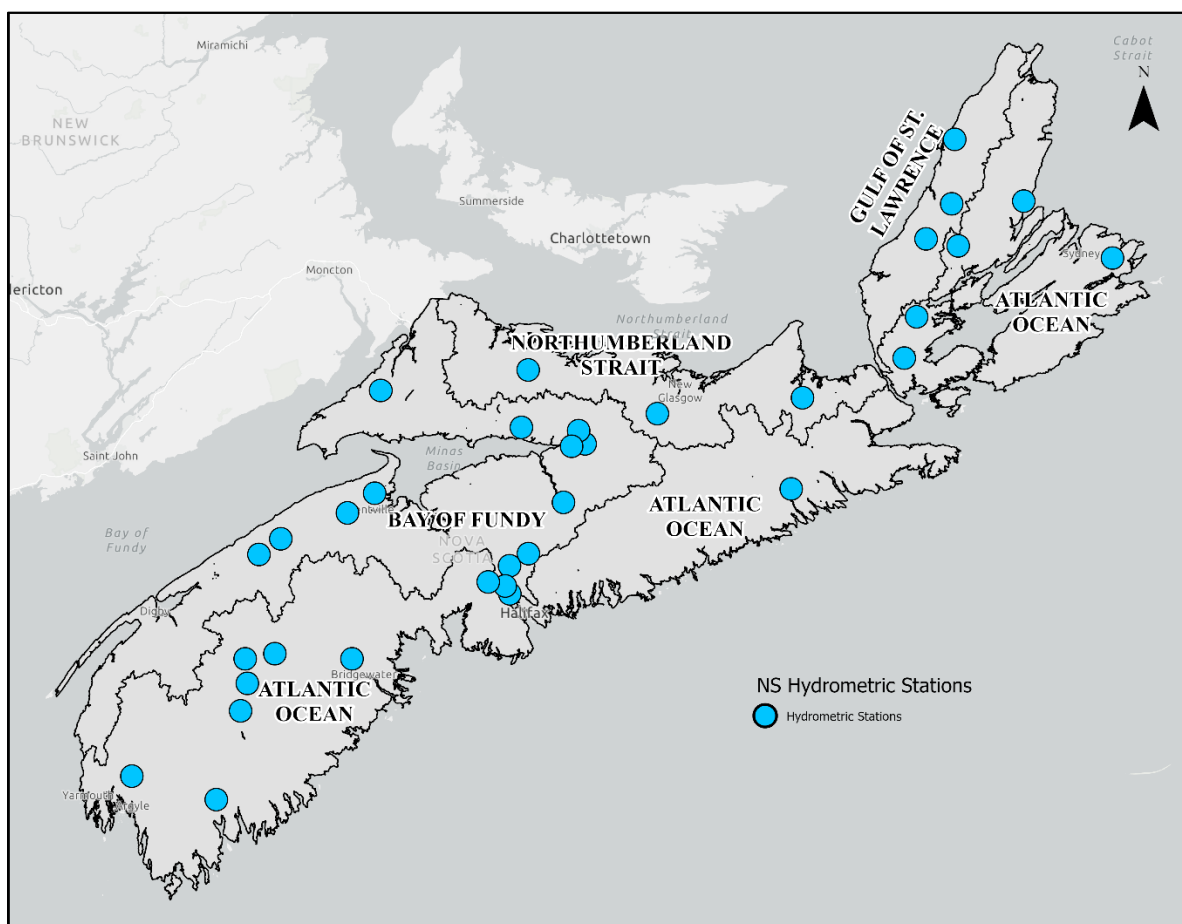
Surface water conditions across the network exhibit a strong and consistent seasonal pattern driven by Nova Scotia's climate. River flows are generally lowest in winter, when precipitation is stored as snow and ice, and in summer, when evapotranspiration is highest, and precipitation is lower. Flows increase during spring due to snowmelt and rainfall, and again during fall in response to frequent rainfall events.

Because rivers and monitoring stations differ in size, shape, and how they are measured, water level data are best understood by looking at each station on its own or by comparing stations within the same region or watershed. Combining all stations into a single province wide dataset can hide important local differences in river behaviour.

For example, the hydrology of the Annapolis River at Lawrencetown shows strong seasonal variation, with flows exceeding 500 cubic metres per day ( $\text{m}^3/\text{day}$ ) during the spring. The Sackville River at Bedford exhibits similar seasonal patterns, but with a much lower maximum flow that does not exceed 90  $\text{m}^3/\text{day}$ .



**Figure (1): Comparison of Historical Monthly Flow Variation in the Annapolis and the Sackville Rivers**



**Figure (2): Nova Scotia's Hydrometric Stations Network Relative to NS Drainage Watersheds**

## Groundwater

Groundwater levels in Nova Scotia exhibit predictable seasonal patterns throughout the year influenced by precipitation, snowmelt, infiltrations, and aquifer properties. The NSECC Groundwater Observation Well Network (GOWN), established in 1965, is the primary system used to monitor groundwater levels.

The network currently monitors 40 dedicated observation wells equipped with telemetry for near real-time groundwater level monitoring, with periodic groundwater quality sampling. Wells range in depth from 8 to 158 metres below ground surface, with an average depth of approximately 55 metres. The GOWN wells are distributed across the province and includes a wide range of geological settings (units). Observation wells monitor ambient (undisturbed) groundwater conditions across the province and are not used for water supply.

Groundwater levels are recorded daily and stored in a centralized database that supports statistical evaluation. Typical depths to the water table observed range from 1 to 7 metres below ground surface, with seasonal fluctuations generally between 3 to 5 metres. These fluctuations are modest relative to the depth of common household drilled wells in the province, which generally range from 30 to 100 metres deep.

During periods when groundwater levels (the water table) drop, shallow wells may be negatively affected. Wells most at risk of water loss due to greater-than-usual groundwater level fluctuations include all dug wells and shallow drilled wells less than approximately 15 metres deep. Deeper wells may also be affected, depending on local hydrogeological conditions and individual well construction.

A representative seasonal hydrograph, based on real well data, illustrates typical patterns. Figure 3 shows how groundwater levels tend to decline in early summer due to reduced precipitation and are followed by recovery in late fall and winter. While individual wells vary, many exhibit this general seasonal cycle.

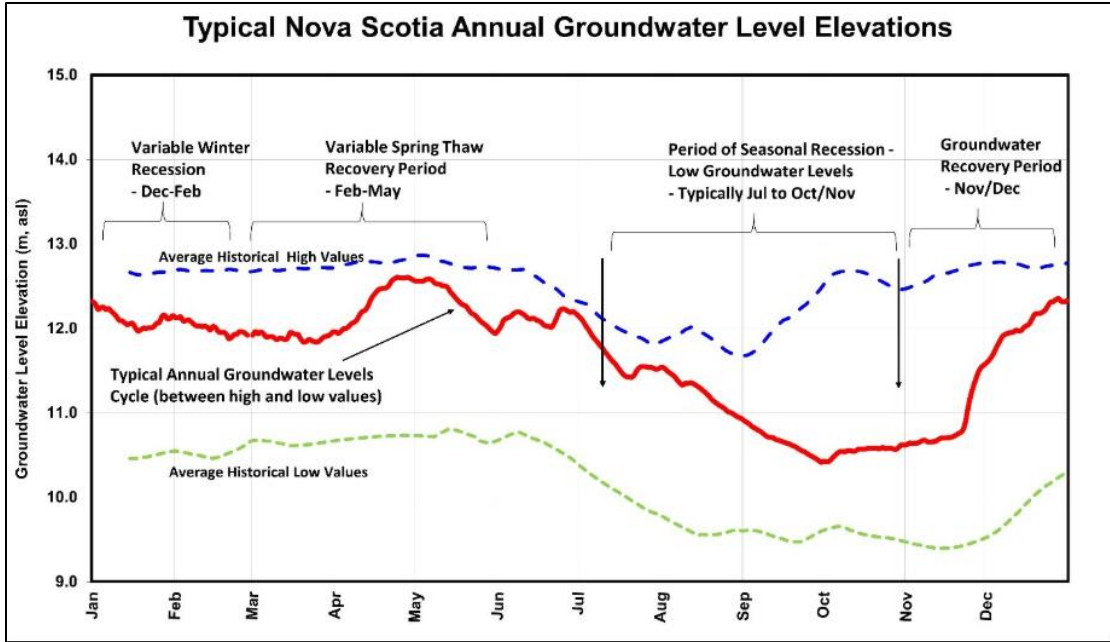


Figure (3): Typical Groundwater Hydrograph

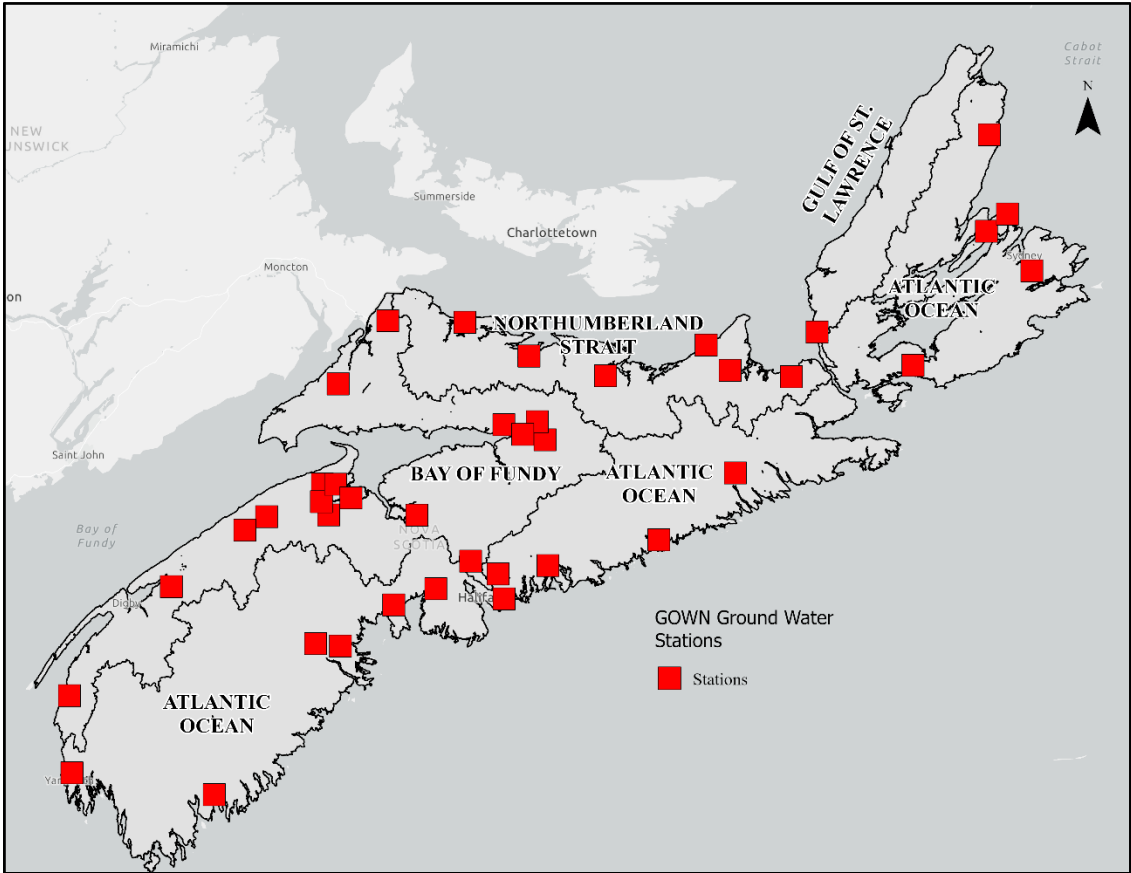


Figure (4): Nova Scotia Groundwater Observation Well Network Well Locations

## WATER LEVEL CONDITIONS SUMMARY

Median surface water flow and median groundwater level values for each monitoring station were evaluated against historical percentile rankings to classify hydrologic conditions. For the seasonal summary, conditions were classified for each three-month period in 2025 and for the first quarter of 2026. Comparisons were made only for periods where sufficient 2025 data were available. Data may be unavailable for several reasons, most commonly due to issues with station instrumentation or data transmission.

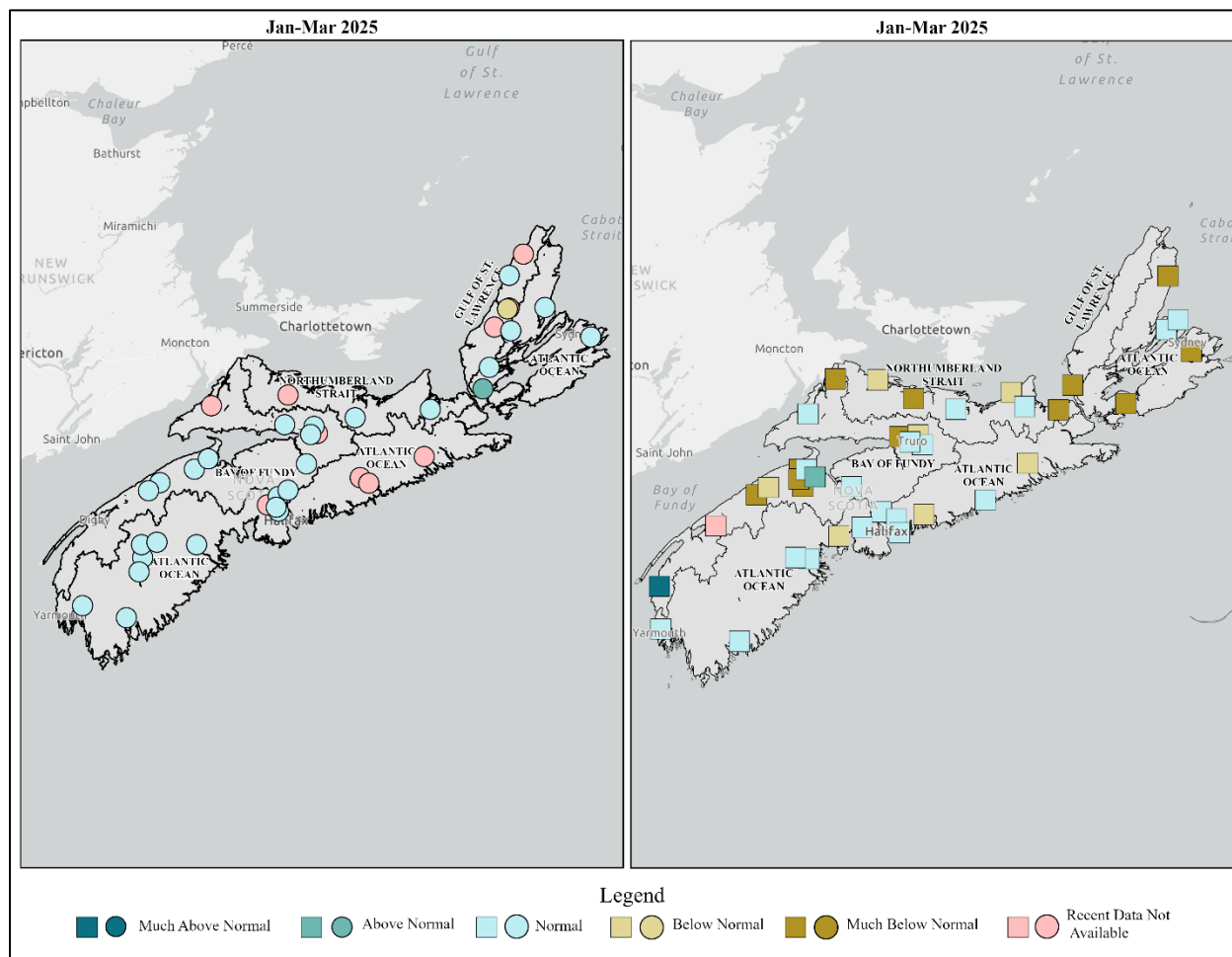
The same data availability criteria were applied to the annual summary, which evaluates conditions by comparing median values to historical percentiles on a monthly basis over the full assessment period from January 2025 through March 2026, rather than by three-month intervals.

In both the seasonal and annual summaries, median values were compared only at stations with sufficient historical records to calculate percentile rankings, defined as a minimum of 10 years of data. As a result, stations installed within the last 10 years cannot have their median values evaluated relative to historical percentiles.

In cases where either current-year median data or sufficient historical data were unavailable, hydrologic conditions are classified as “Recent Data Not Available.” or “Insufficient Data”.

## Seasonal Overview

### Winter: January – March 2025



**Figure (5): Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Jan-Mar 2025)**

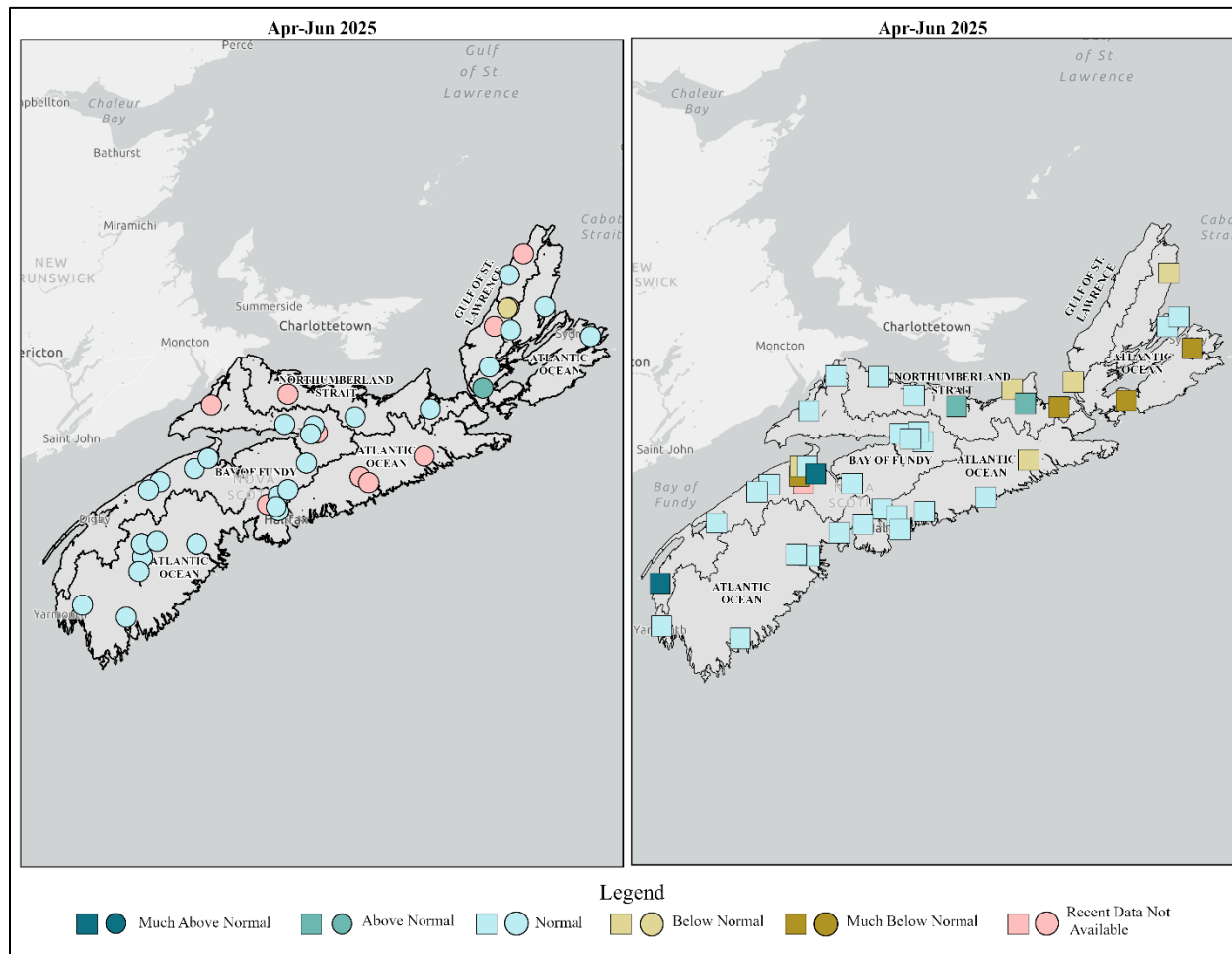
#### Surface Water

Flow conditions were recorded below normal to much below normal streamflow across most of the province, indicating generally dry conditions with a few stations reporting normal to above-normal flows.

#### Groundwater

“Much below normal” groundwater levels were observed in several areas, including the Annapolis Valley, Northern Mainland, and Cape Breton.

Spring: April – June 2025



**Figure (6): Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Apr-Jun 2025)**

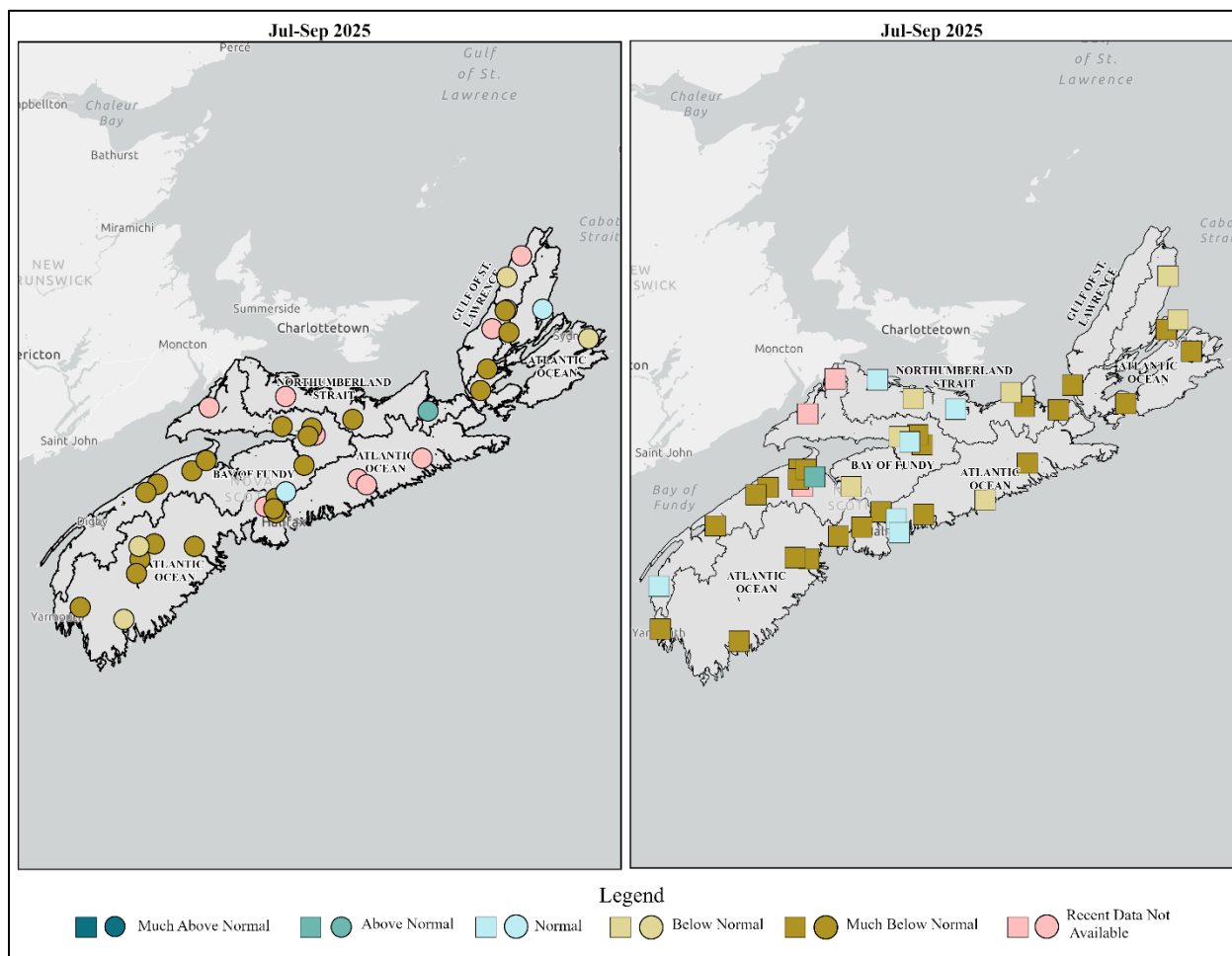
#### Surface Water

Flow conditions were recorded within normal ranges across the province. Some stations recorded above-normal flows, consistent with spring runoff from snowmelt and rainfall.

#### Groundwater

Groundwater levels were generally within normal ranges across most of the province, with some localized low conditions.

## Summer: July – September 2025



**Figure (7): Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Jul-Sep 2025)**

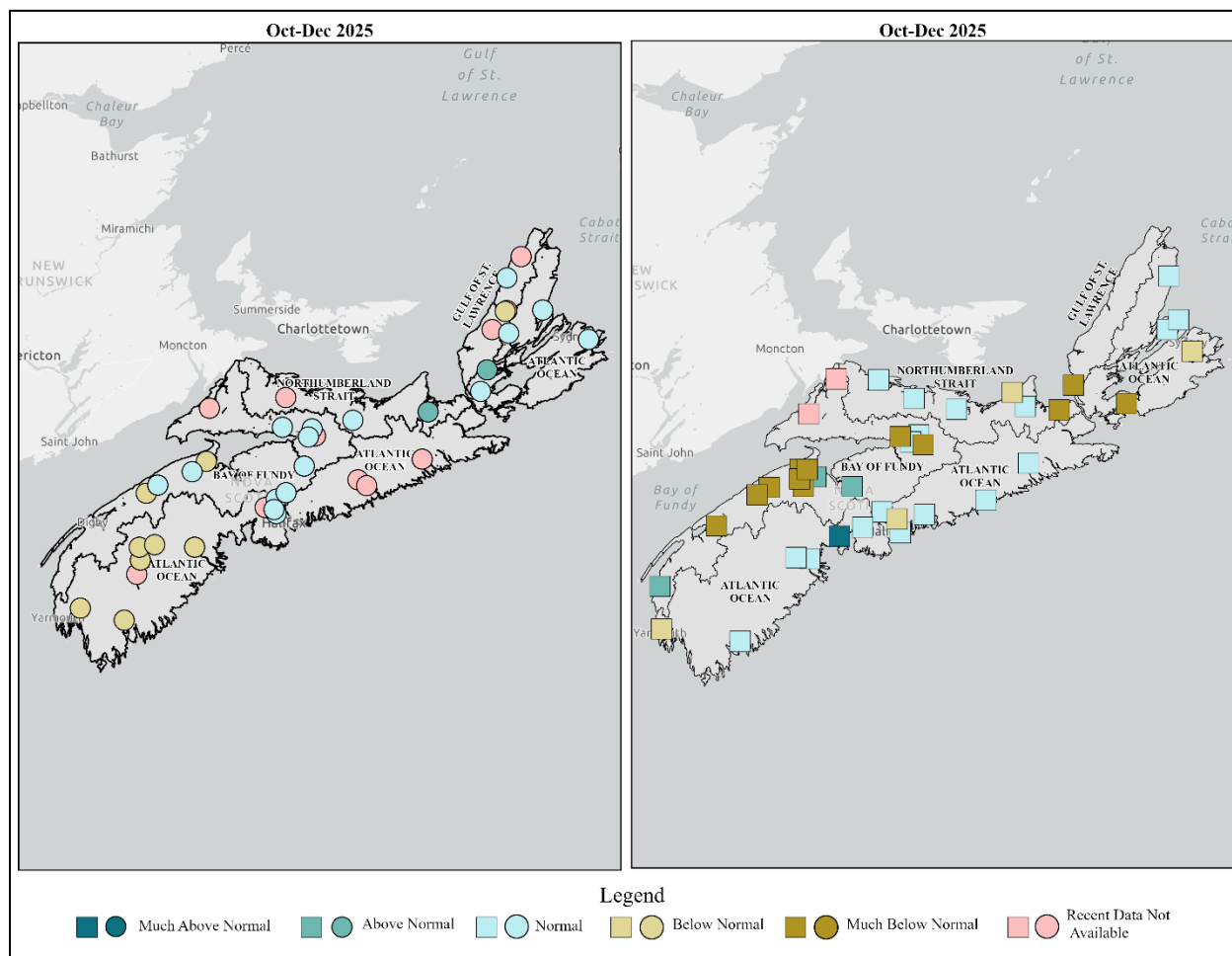
### Surface Water

Flow conditions shifted sharply toward below-normal and much below-normal conditions across most regions. Very low flows were widespread, particularly in southern and central areas, reflecting sustained dry conditions.

### Groundwater

The majority of observations wells experienced “much below normal” or “below normal” groundwater levels, reflecting prolonged dry conditions.

## Autumn: October – December 2025



**Figure (8): Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Oct-Dec 2025)**

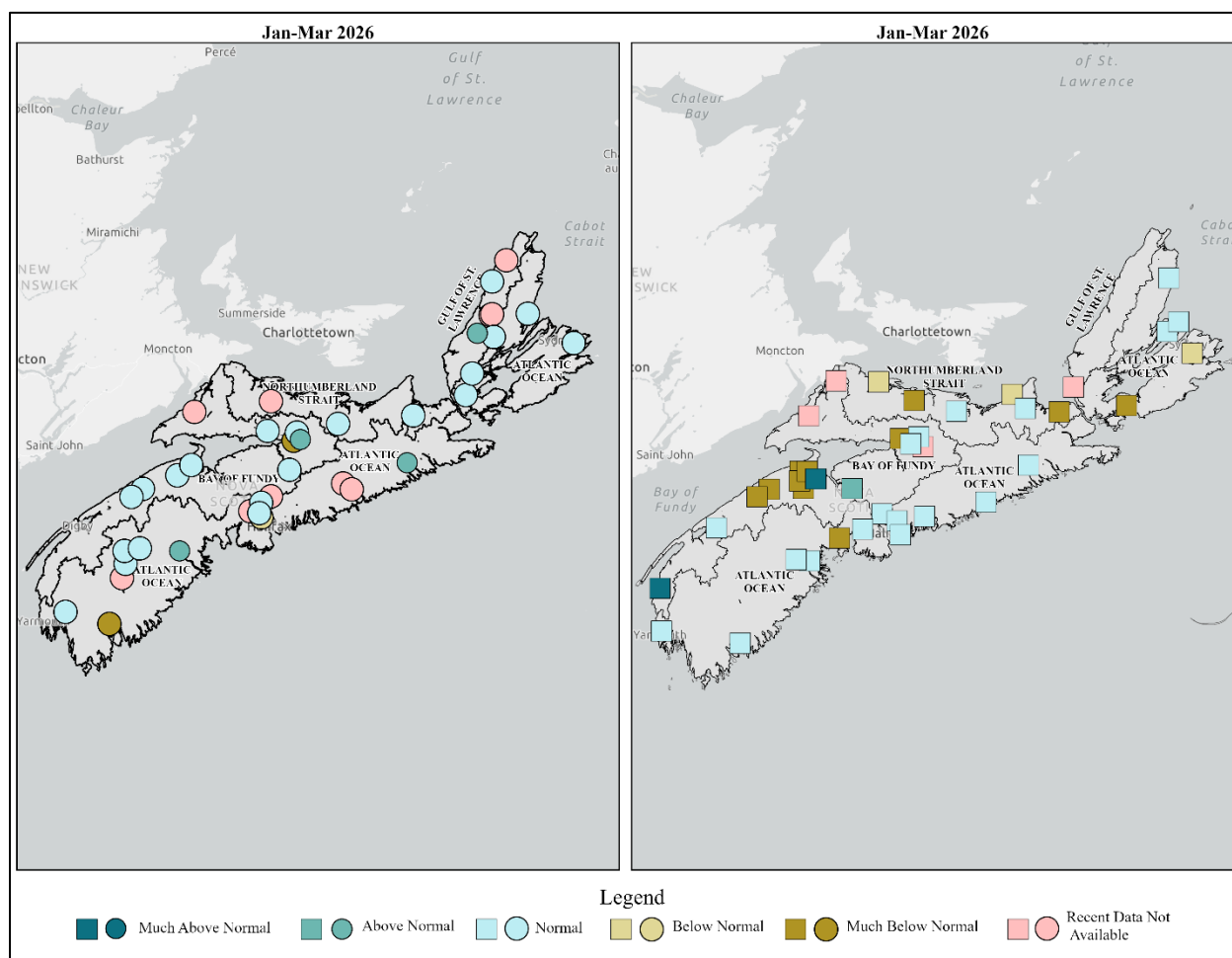
### Surface Water

Flow conditions gradually recovered from summer lows. An increasing number of stations return to the normal range, with several reaching above-normal flows later in the period. By November and December, below-normal conditions were limited to the western region of the province, indicating improved and more stable hydrologic conditions entering winter.

### Groundwater

Groundwater recovery occurred in many regions, including HRM, the South Shore, Eastern Shore, and Acadian Shores. Recovery was slower in parts of the Annapolis Valley and Cape Breton.

## Winter: January – March 2026 (Most Recent Data)



**Figure (9): Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Jan-Mar 2026)**

### Surface Water

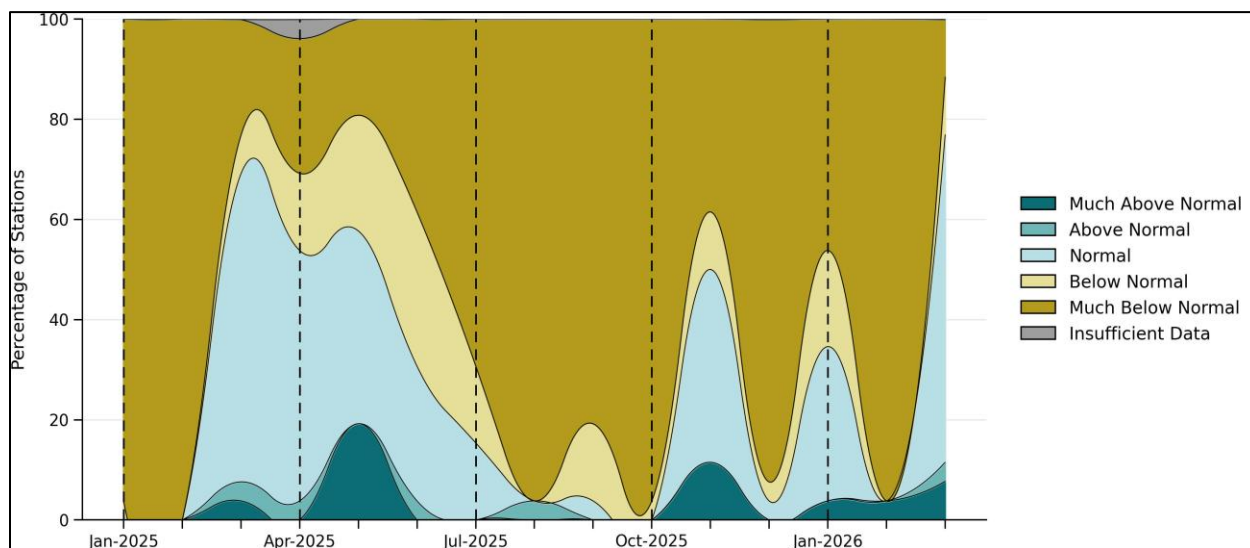
Flow conditions across Nova Scotia were generally normal to above normal, indicating continued recovery from the dry conditions experienced in 2025. Most hydrometric stations reported stable flows, with several areas showing above-normal conditions and only limited below-normal flows, suggesting improved overall water availability.

### Groundwater

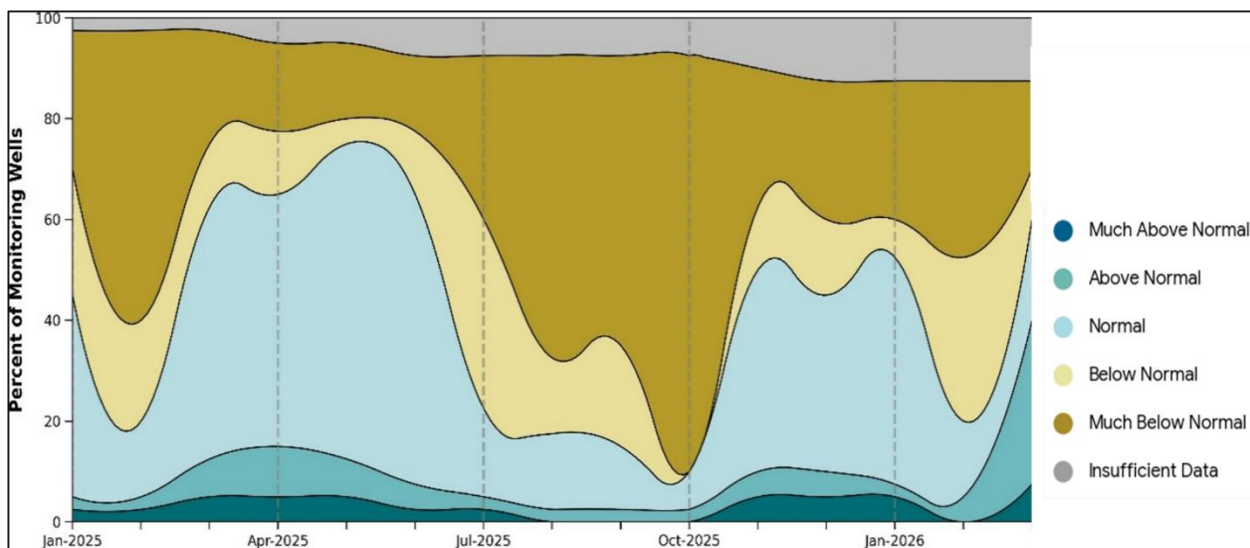
Recovery of groundwater levels continued into early 2026, although persistent “much below normal” conditions remained in some areas, particularly within the Annapolis Valley.

## Annual Overview

Charts of surface water flow and groundwater level variation (Figures 10 and 11) show the percentage of hydrometric stations and GOWN wells, respectively, recording each percentile-based condition for each month of the year.



**Figure (10): 2025 Surface Water Flow Conditions Across the Hydrometric Station Network**



**Figure (11): 2025-2026 Groundwater Level Conditions in the Monitoring Network**

## Surface Water

The monthly flow conditions recorded in 2025 indicate that the overall flow conditions vary seasonally. Monthly flow conditions show:

- **Strong seasonal signal:** Flow conditions shift from mostly Normal to High in late winter–spring to predominantly Very Low conditions in mid-summer (July–September).
- **Spring recharge period:** Normal conditions dominated in spring (April–June), with some High and Very High flows, consistent with snowmelt and spring precipitation.
- **Summer low-flow dominance:** The majority of stations fall into Very Low or Low categories during late summer, with the peak occurrence around August–September extending the drought conditions to early October.
- **Limited extremes:** Very High flows occur intermittently and make up a small proportion of stations, mainly outside the summer low-flow period.
- **Brief improvement:** In October–November, Normal flows increase and Much Below Normal conditions decline, followed by a return to mostly Much Below Normal conditions by December.
- **Spring Recovery:** Much Below Normal dominates early winter, but Normal (and much Above Normal) flows increase sharply by March 2026.

## Groundwater

The 2025-2026 Groundwater Levels in the Monitoring Network chart generally shows what can be expected for groundwater – seasonally low water level conditions in the summer dry months and higher water level conditions in the fall-winter.

- **Much below normal groundwater levels** (“browns”) were prevalent from July to November 2025. These conditions affected more observation wells than has typically occurred in the past.
- **Below normal conditions** continued into March 2026, but appear to be improving significantly more recently.
- **Normal or above normal water levels** are represented by “blues”. These show a cyclical response in groundwater with:
  - decreases early in January 2025 (winter recession)
  - increases between about February to July, from the spring thaw and spring rain recharge
  - decreases again between July to November to due summer dry conditions
  - increases again in November to December
  - decreases in January and February 2026 during winter recession, and
  - starting to show increase during Spring 2026, due to spring thaw and spring rain recharge

# Key Observations

## Surface Water

- During early winter 2025, most hydrometric stations showed low flow conditions that improved by February with a sharp increase in normal to very high flows.
- In spring 2025, conditions improved, with most hydrometric stations reporting normal to very high flows.
- During summer 2025, 80–90% of stations experienced Low to Very Low flows. Conditions became more variable through the fall, with a brief improvement in late November followed by a decline in December.
- Flow conditions continued to improve by the end of the first quarter of 2026 resulting in most of the stations reporting normal to above normal conditions.

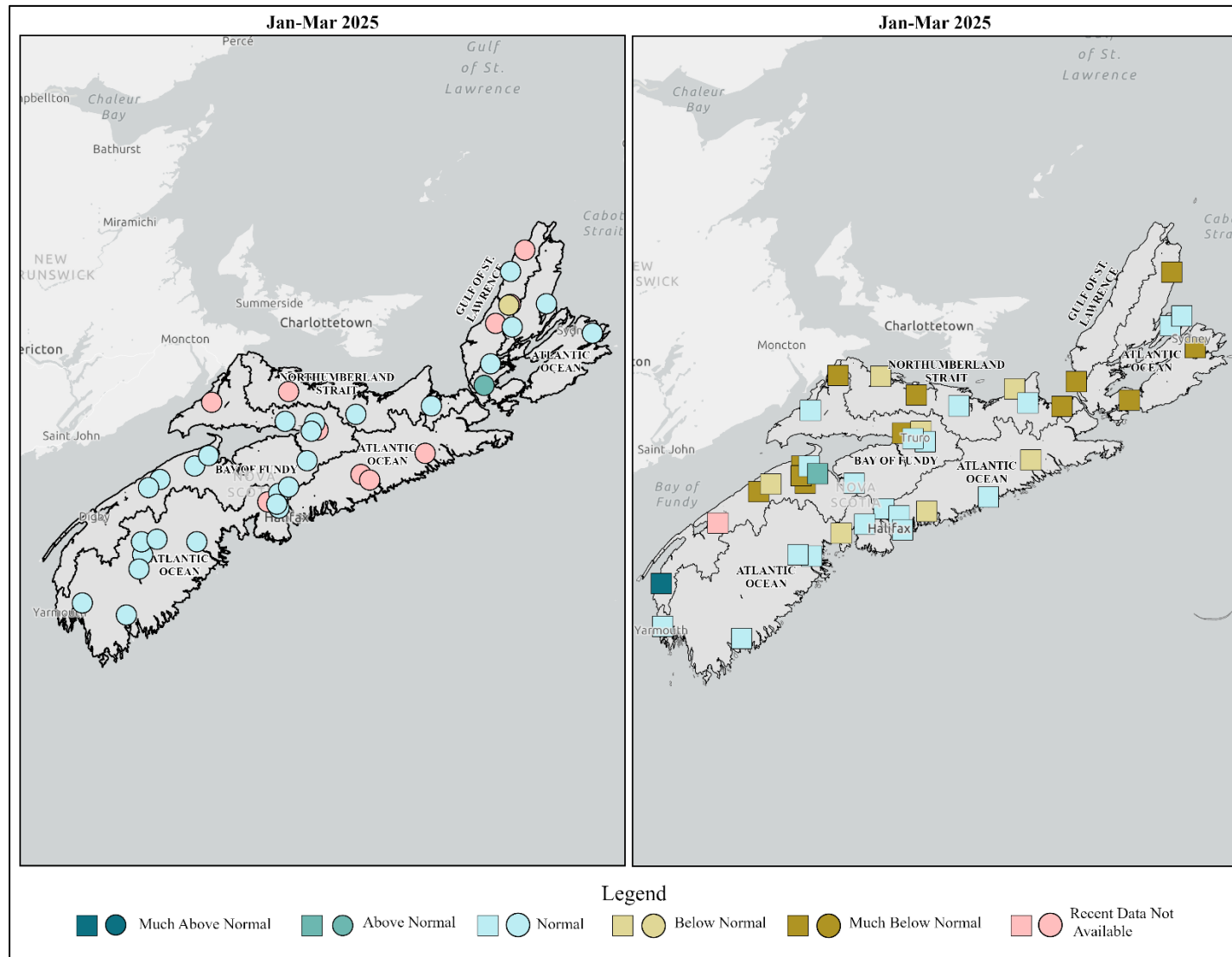
## Groundwater

- Groundwater levels “much below normal” occurred during summer 2025 across much of Nova Scotia
- Several new relative historical minimum water levels were recorded, with about 70% of wells affected in October 2025, declining to 29% in March 2026.
- “Below normal” groundwater levels persisted in some areas into early Spring 2026, particularly in the Annapolis Valley.
- The magnitude of groundwater level changes below previous historical minimums across the province was an average of about 0.2 metres. This is a relatively low level of change given the typical annual groundwater seasonal fluctuations (3 to 5 metres) that occur, and the much greater depth of most drilled water supply wells (about 30-100 metres).
- Spring groundwater recharge conditions normally provide antecedent groundwater level conditions, ahead of typical summer declines. Higher groundwater levels in the spring result in a higher volume of groundwater stored in aquifers.
- A comparison of groundwater levels to surface water flows (Figure 10 and Figure 7) shows how these two water cycle systems are closely linked. Averaged groundwater levels show a similar response to variation that is seen in averaged surface water flows – with likely only a small, delayed response of several days to a week or so, as well as an overall “dampened” effect. These effects are largely due to the delayed recharge time of groundwater infiltration. Overall, both surface water flows and groundwater levels will be closely related to precipitation conditions.

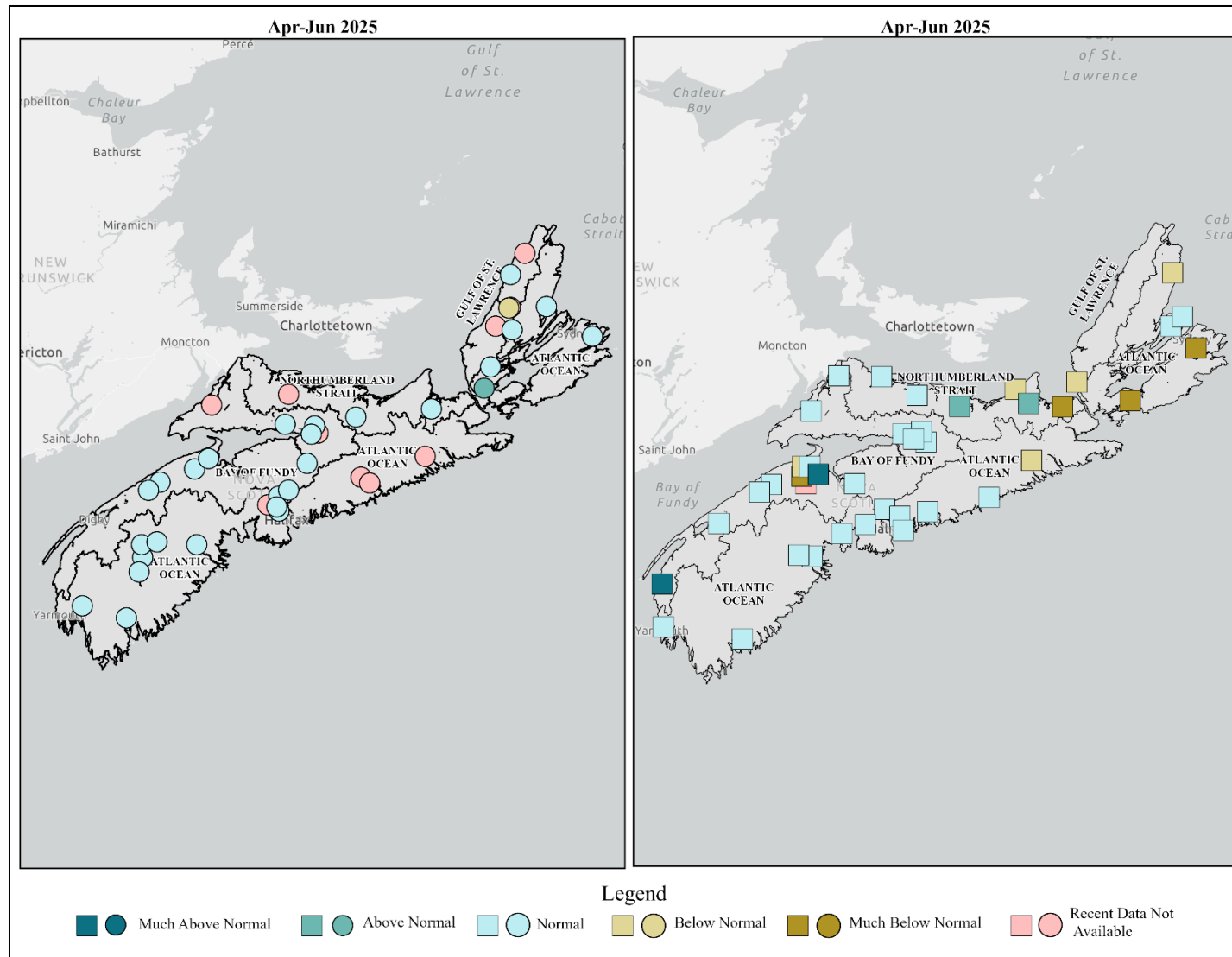
## APPENDIX A

### Full-Page Maps

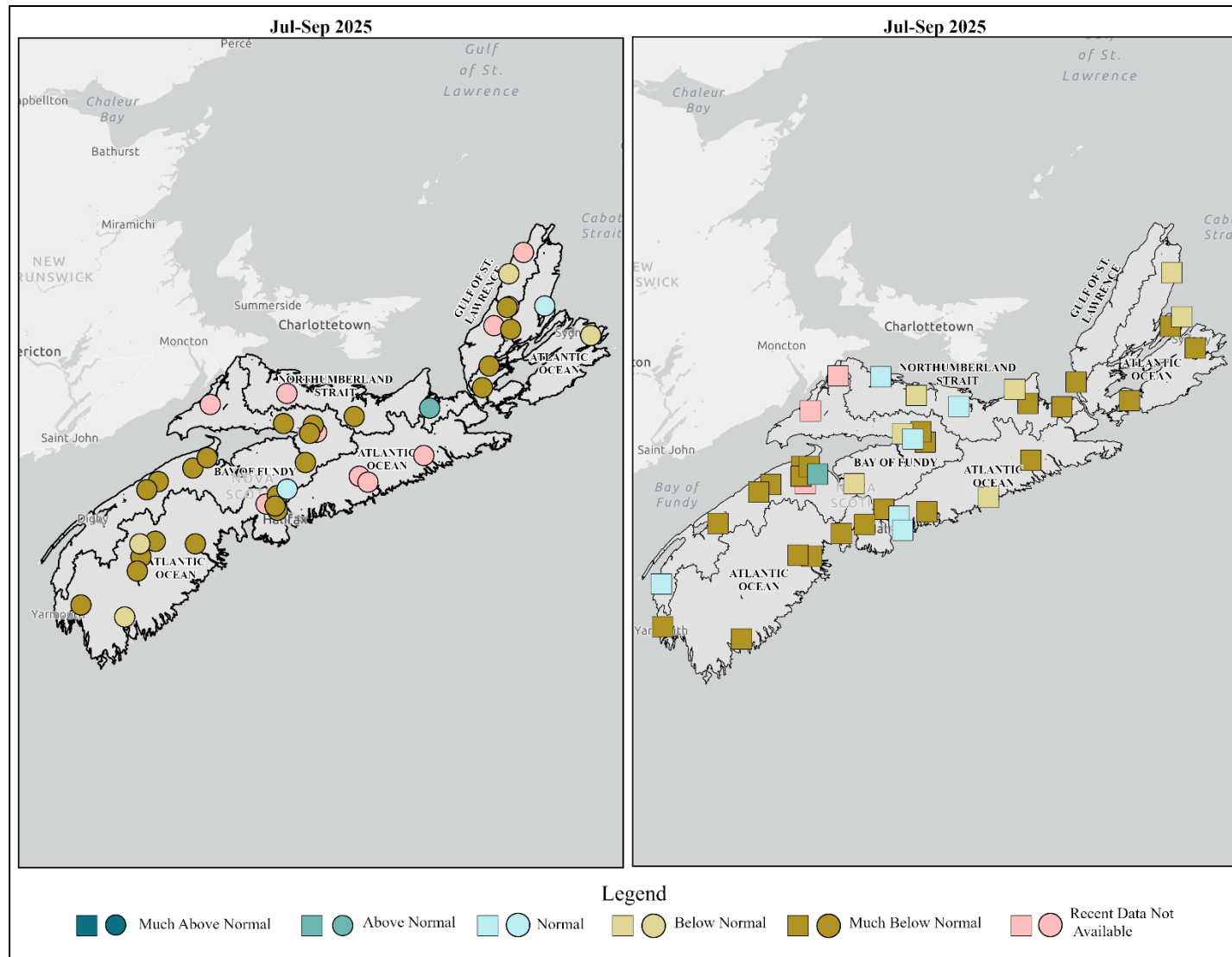
## Surface Water and Groundwater



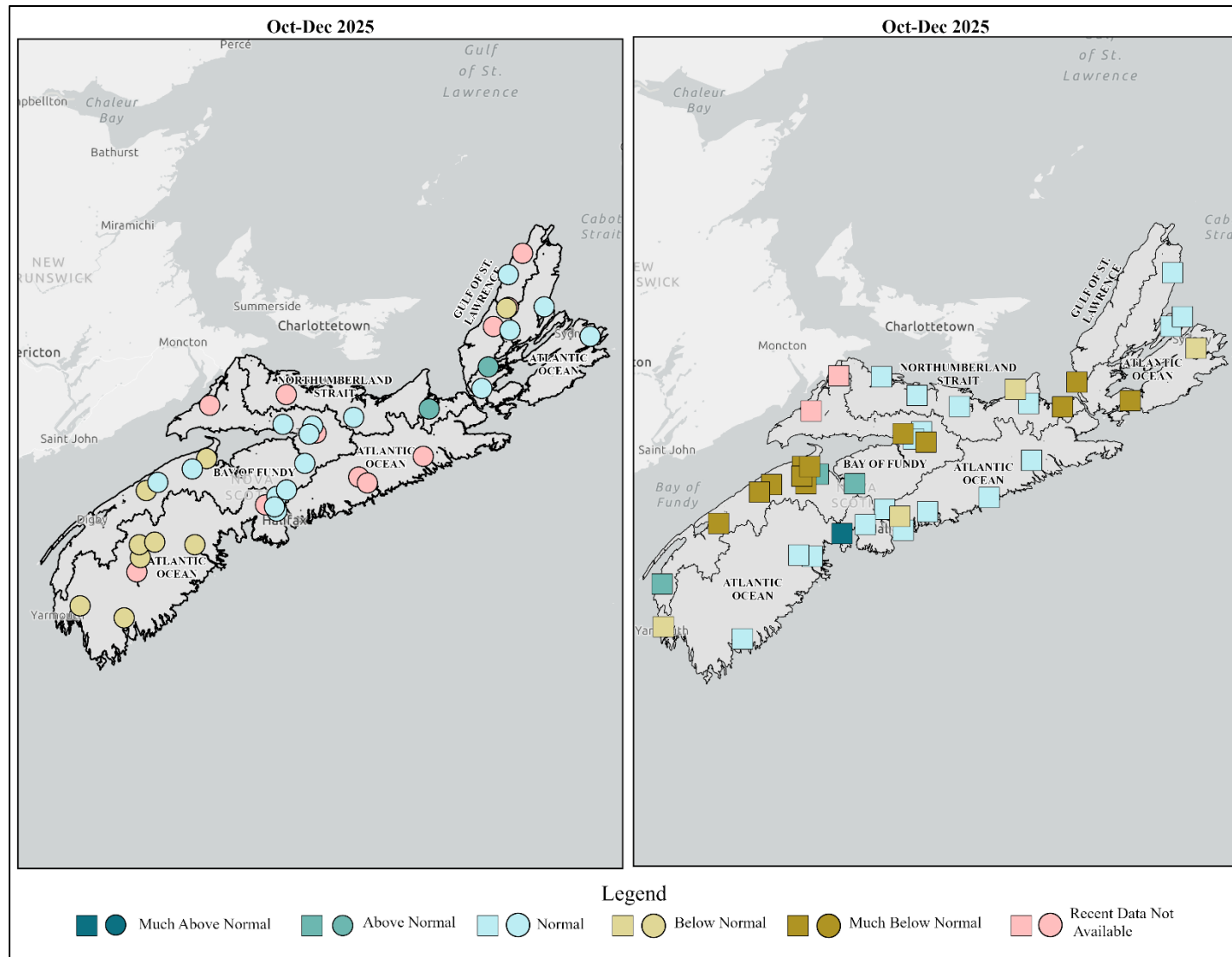
**Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Jan-Mar 2025)**



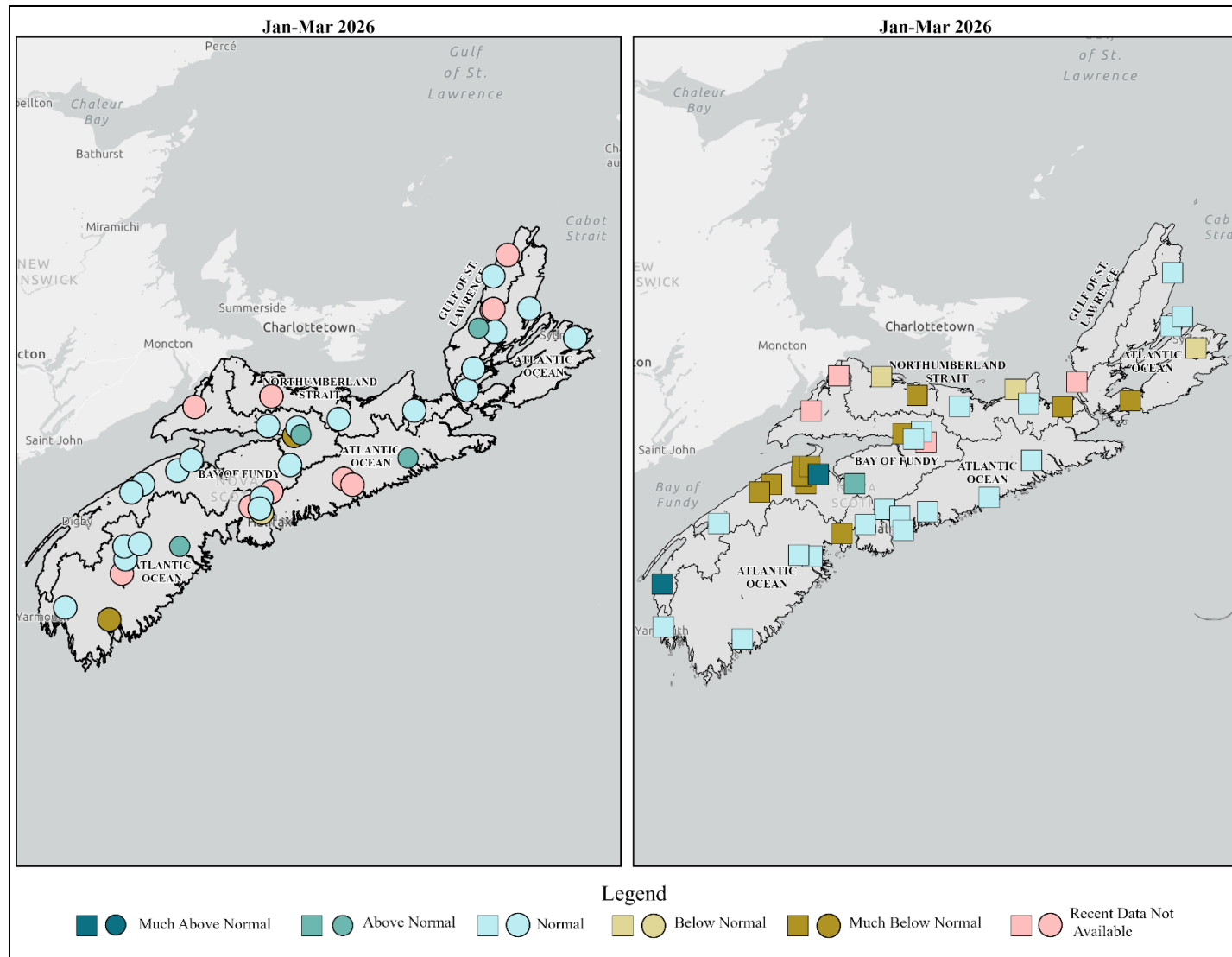
**Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Apr-Jun 2025)**



**Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Jul-Sep 2025)**

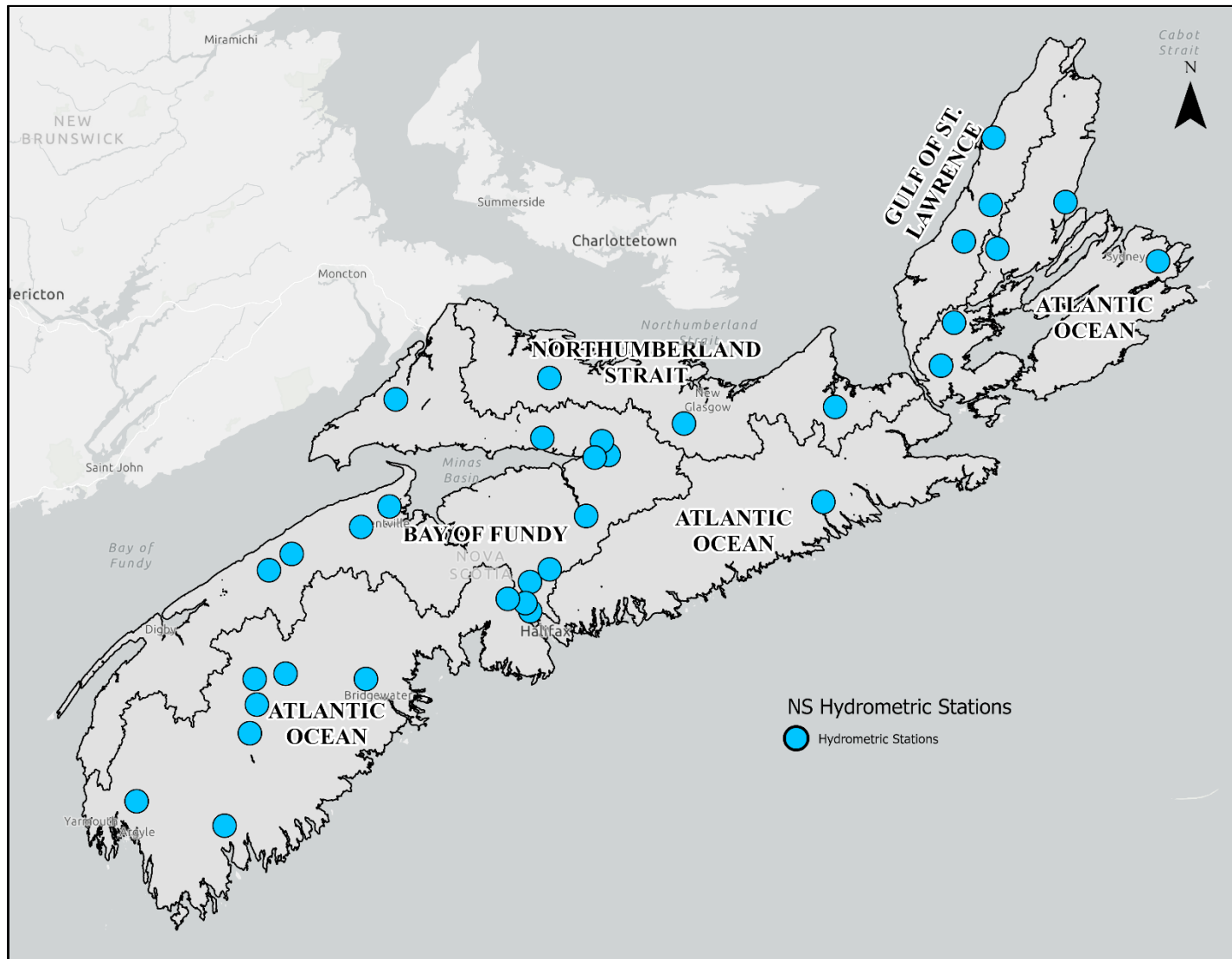


Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Oct-Dec 2025)

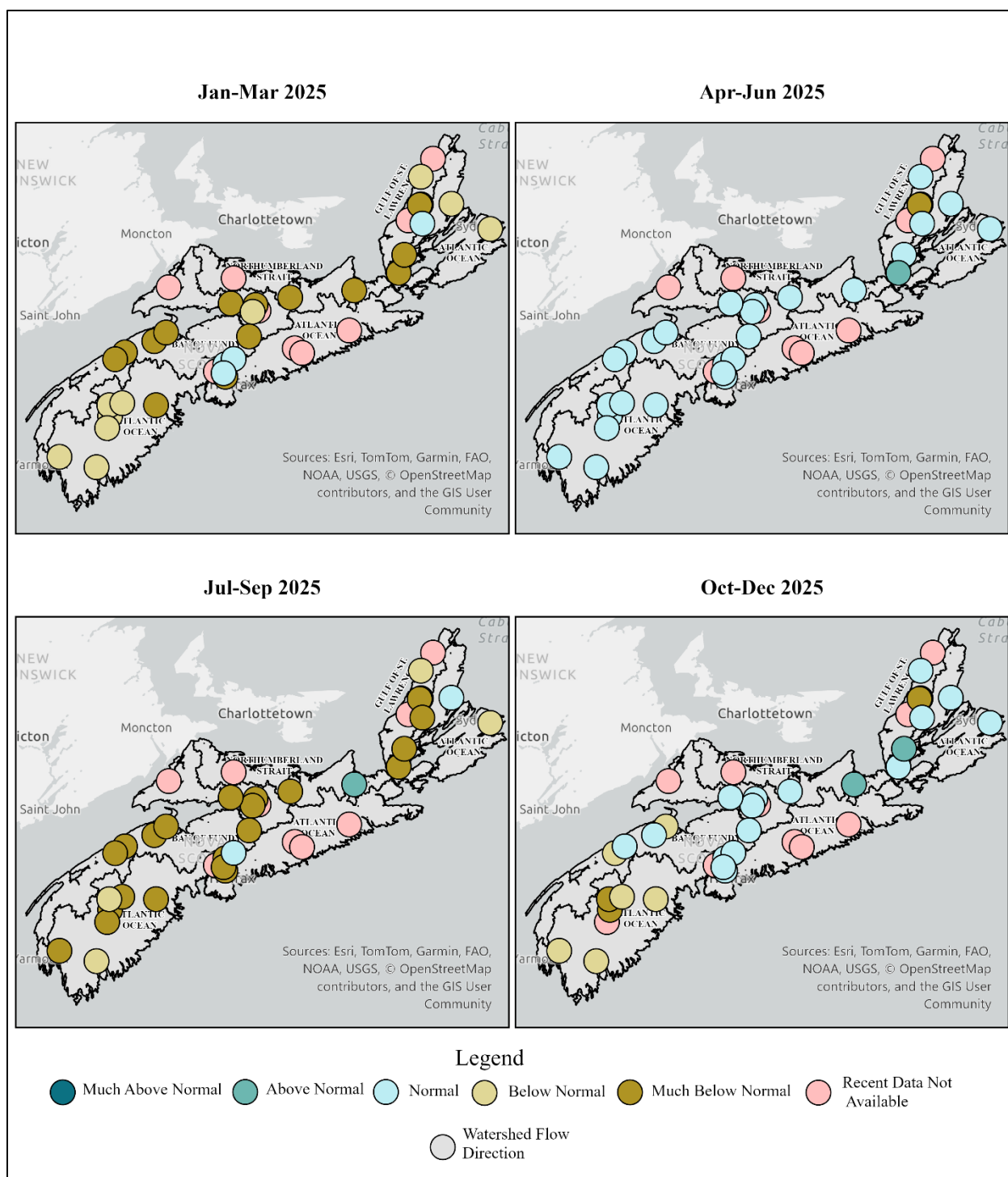


**Groundwater Level and Surface Water Flow Conditions Across Nova Scotia (Jan-Mar 2026)**

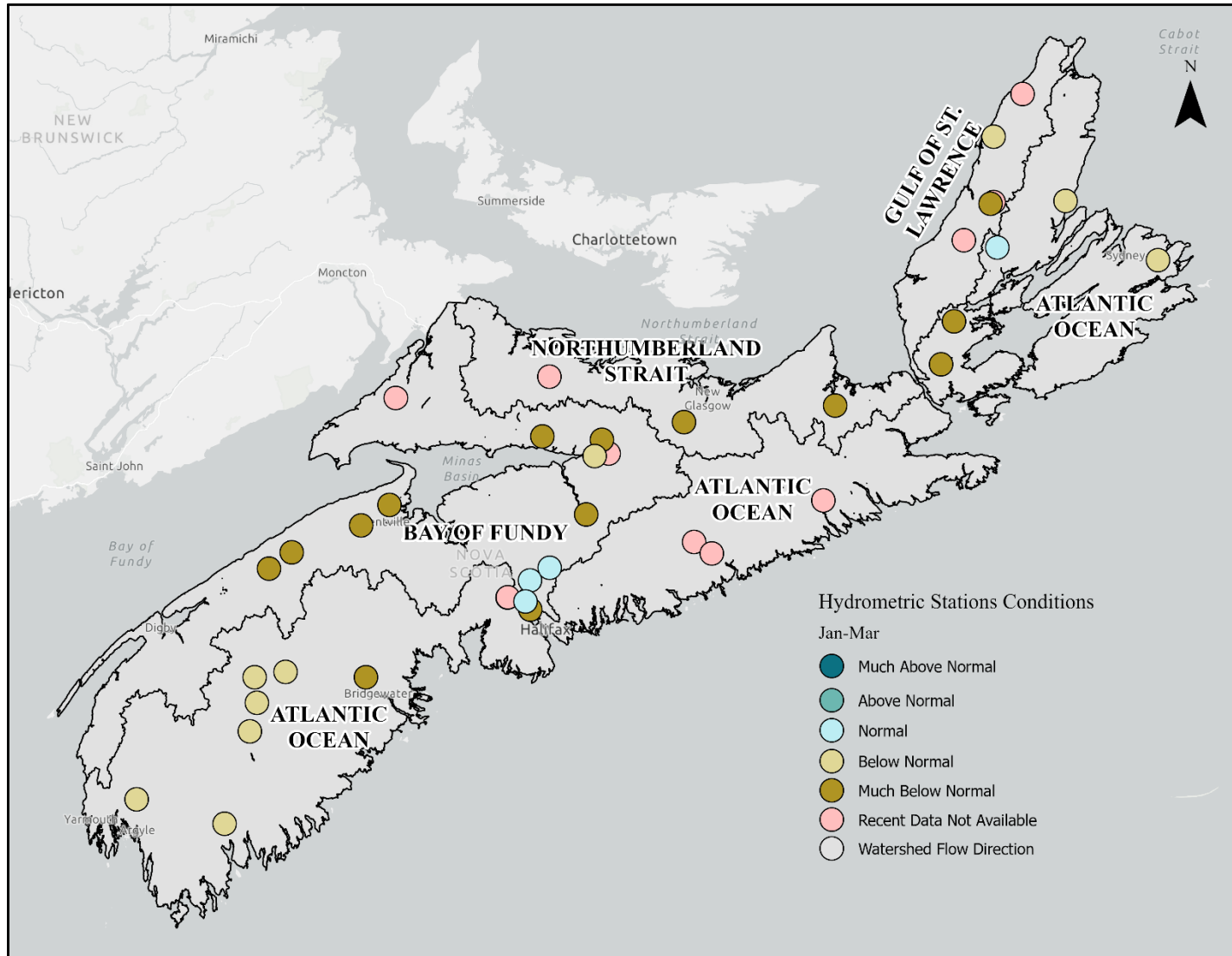
## Surface Water



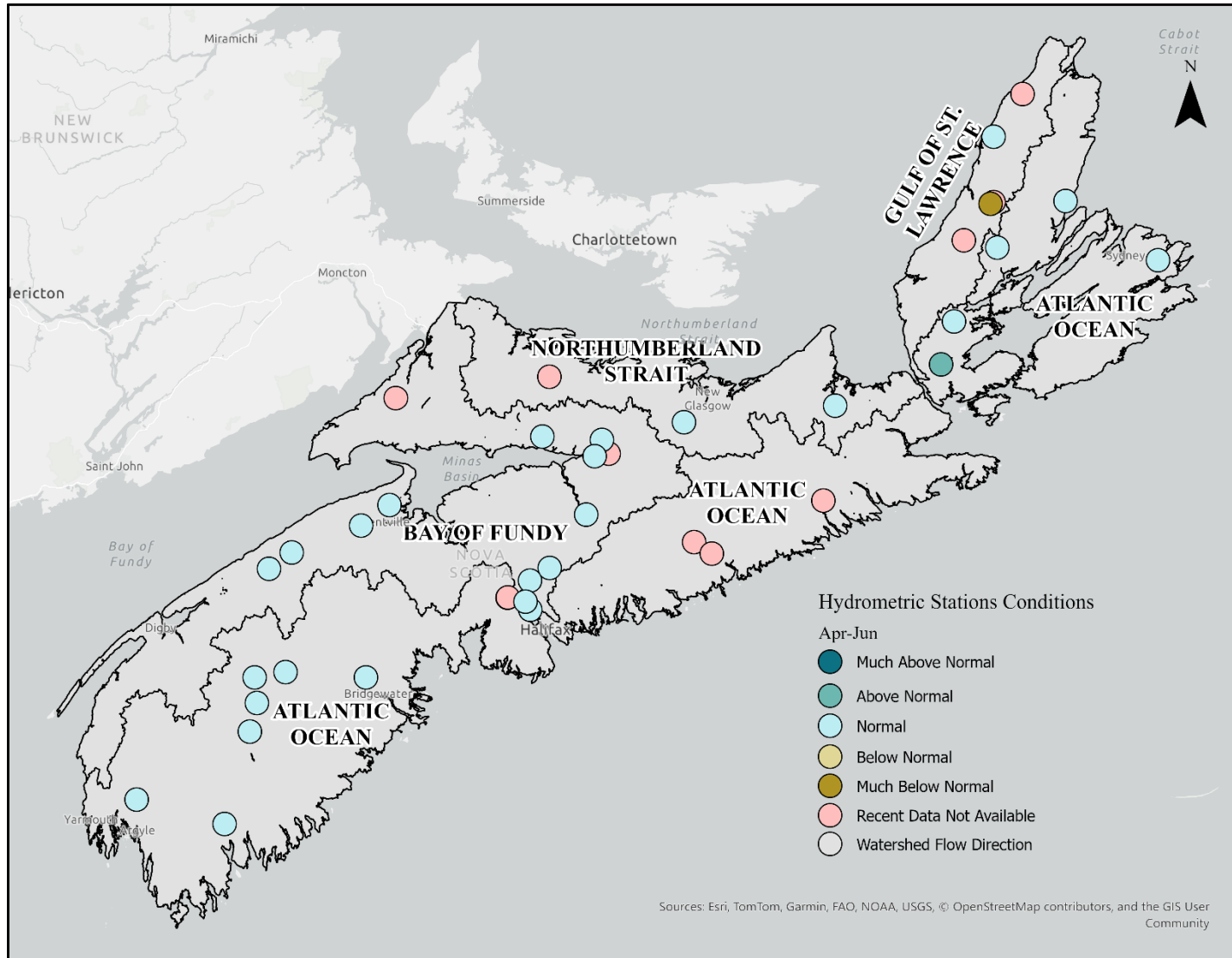
Nova Scotia's Hydrometric Stations Network Relative to NS Drainage Watersheds



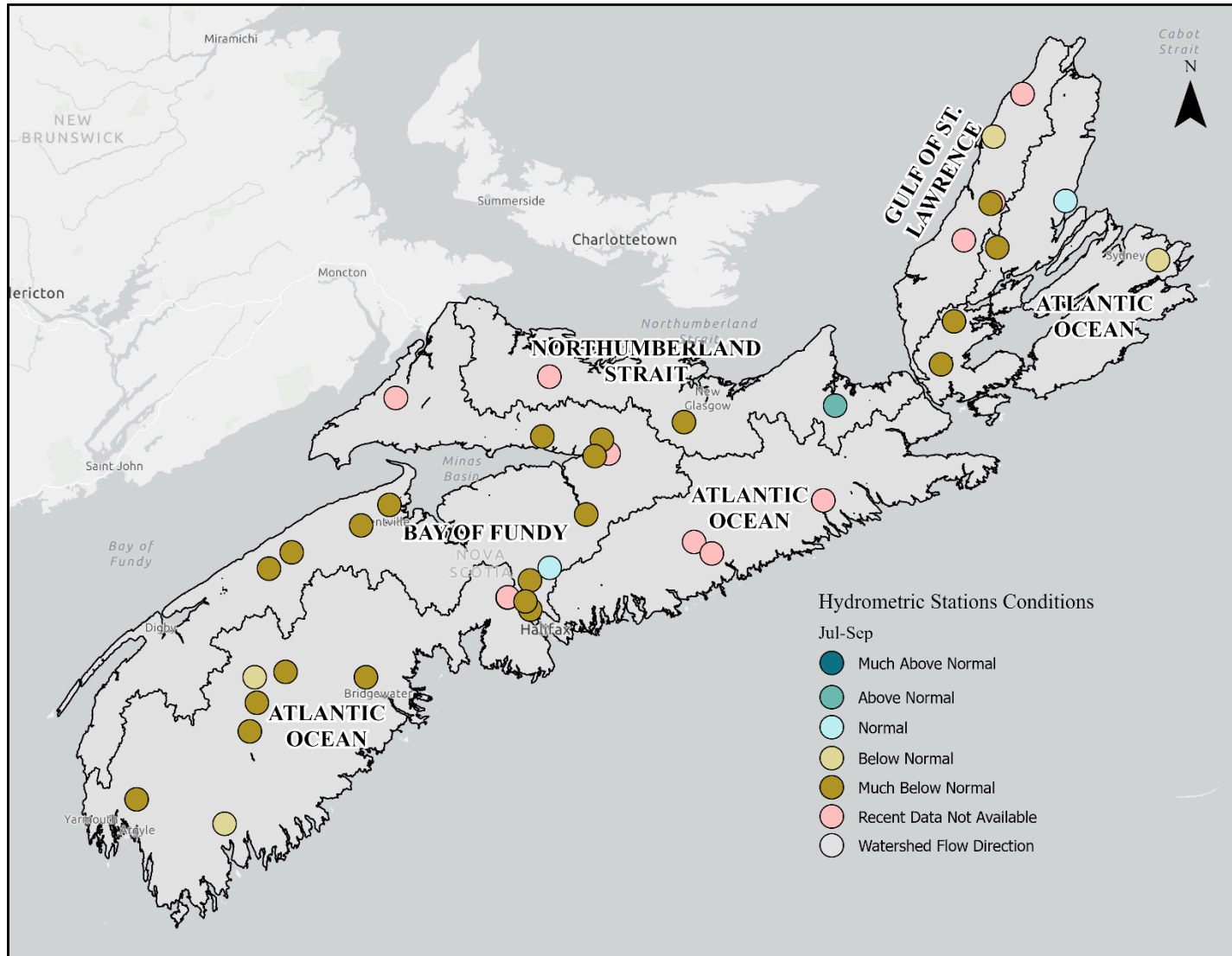
**2025 Seasonal Surface Water Flow Conditions Across the Monitoring Network**



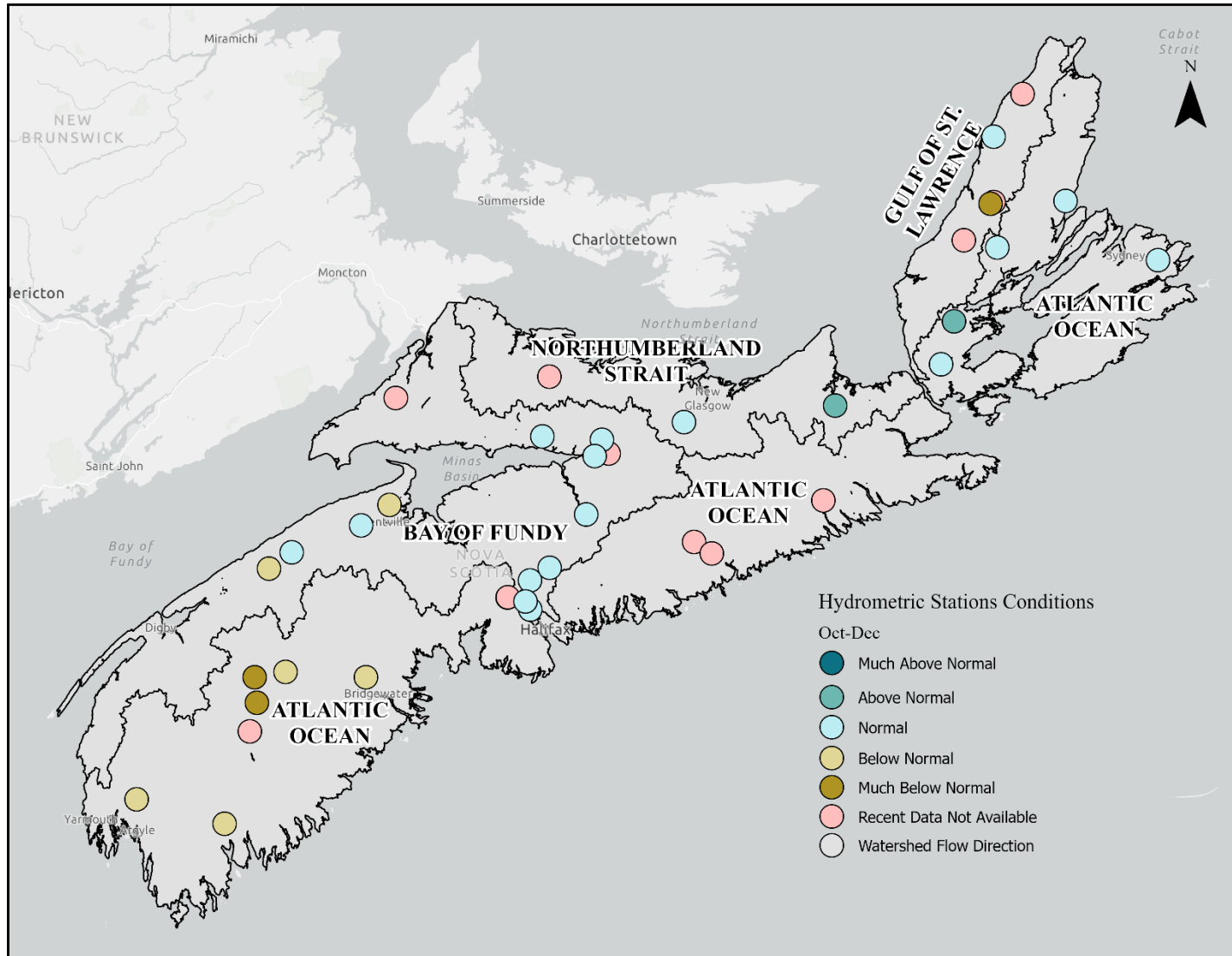
Seasonal Surface Water Flow Conditions Across the Monitoring (January – March 2025)



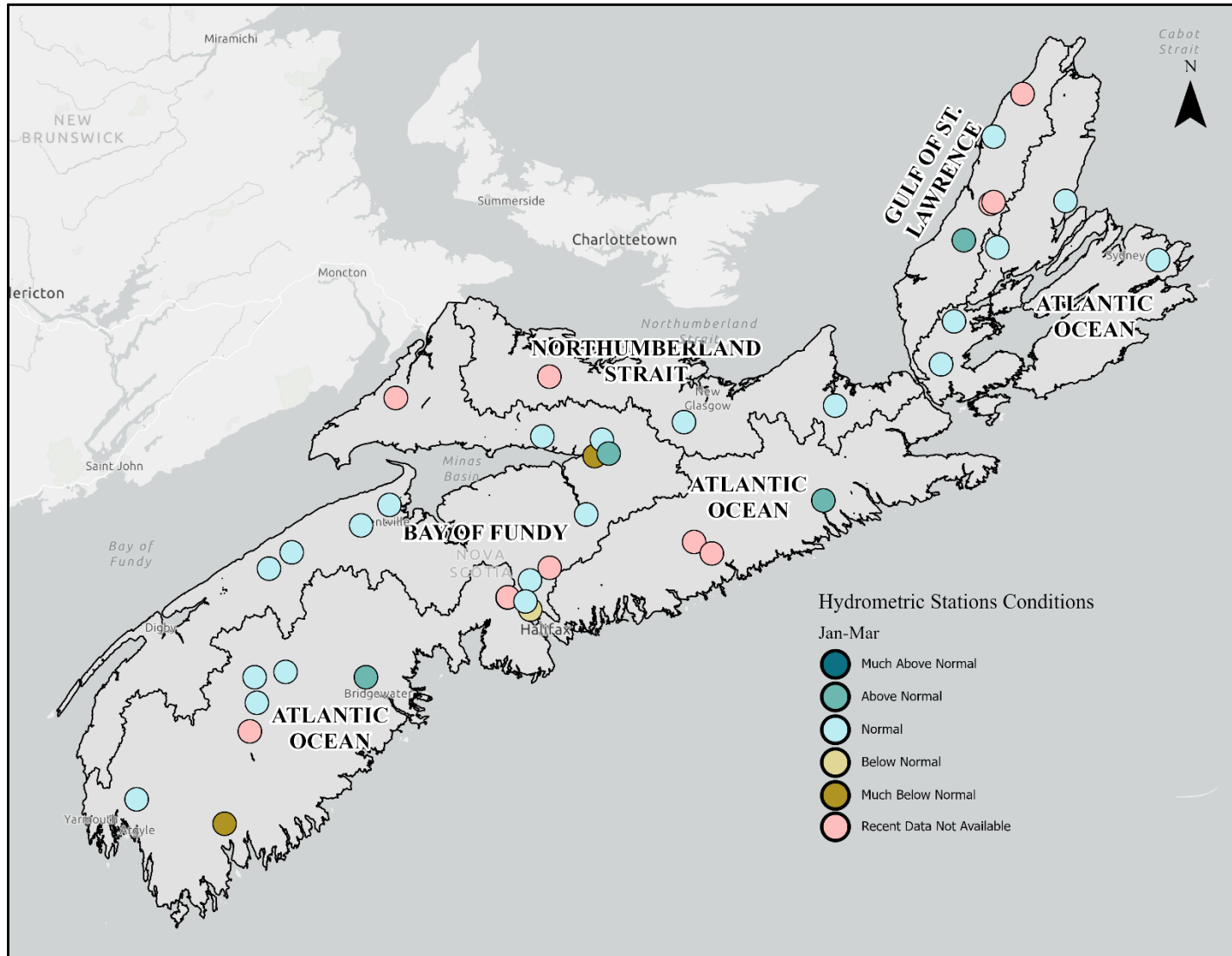
**Seasonal Surface Water Flow Conditions Across the Monitoring (April – June 2025)**



Seasonal Surface Water Flow Conditions Across the Monitoring (July – September 2025)

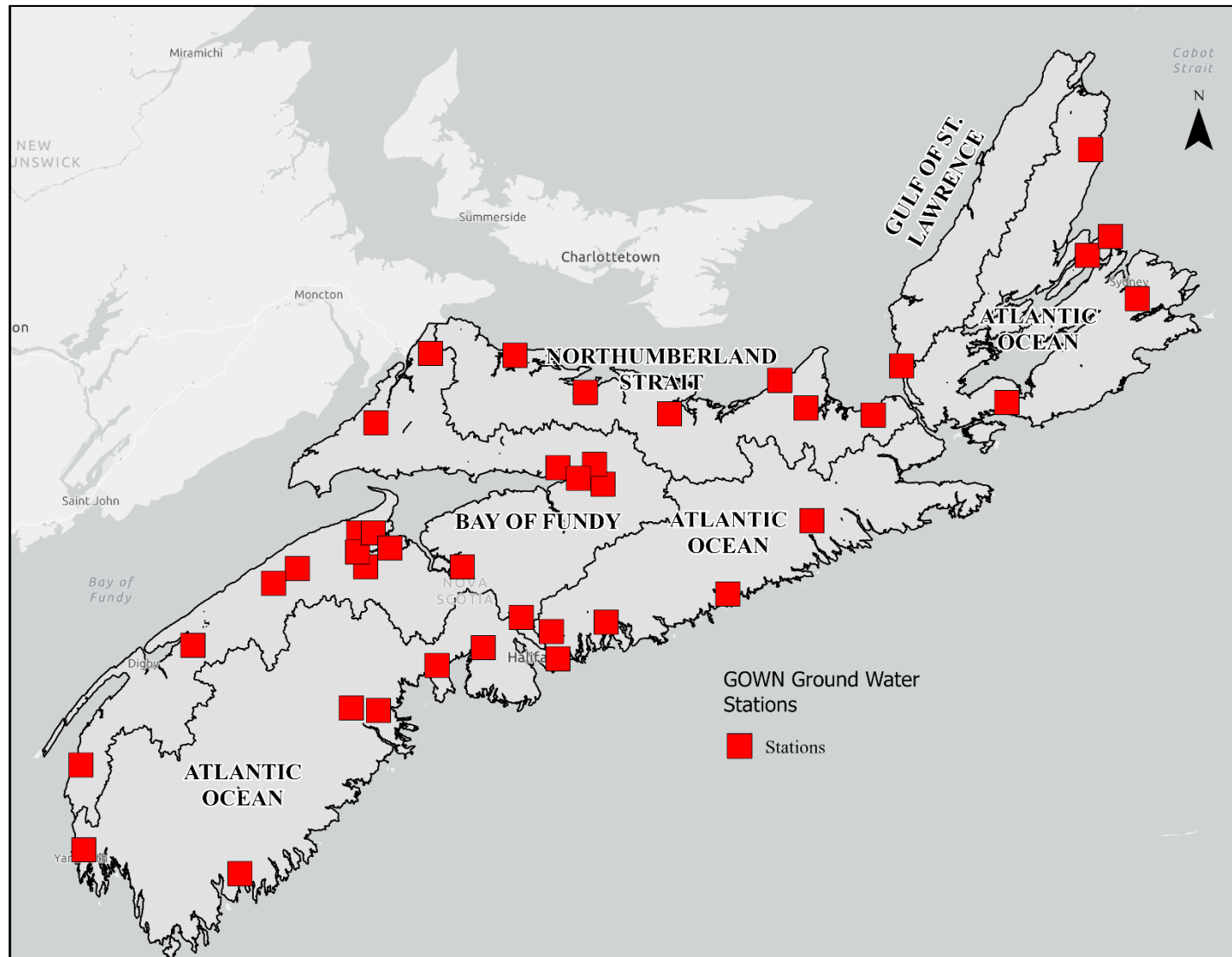


**Seasonal Surface Water Flow Conditions Across the Monitoring (October – December 2025)**

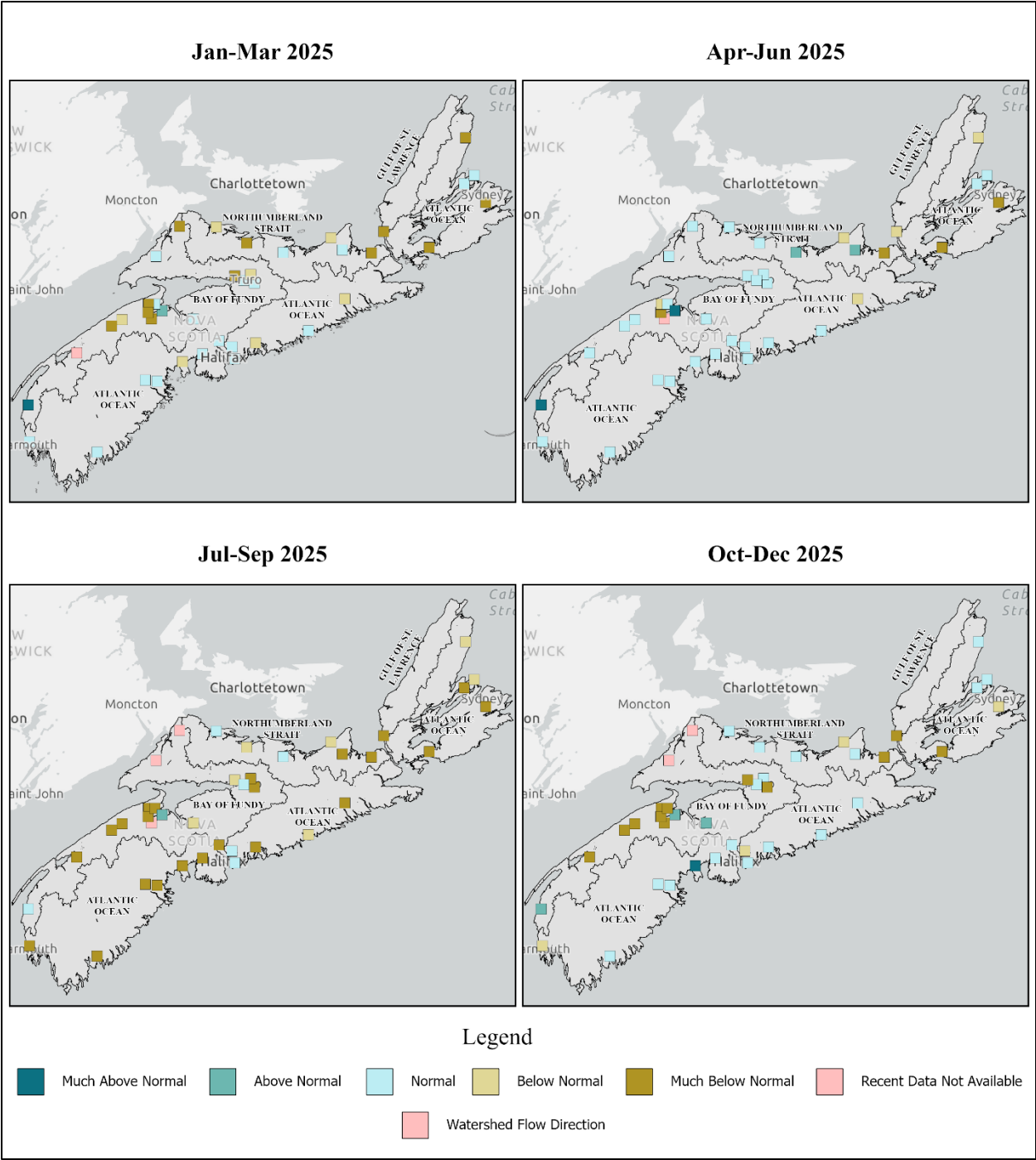


Seasonal Surface Water Flow Conditions Across the Monitoring (January – March 2026)

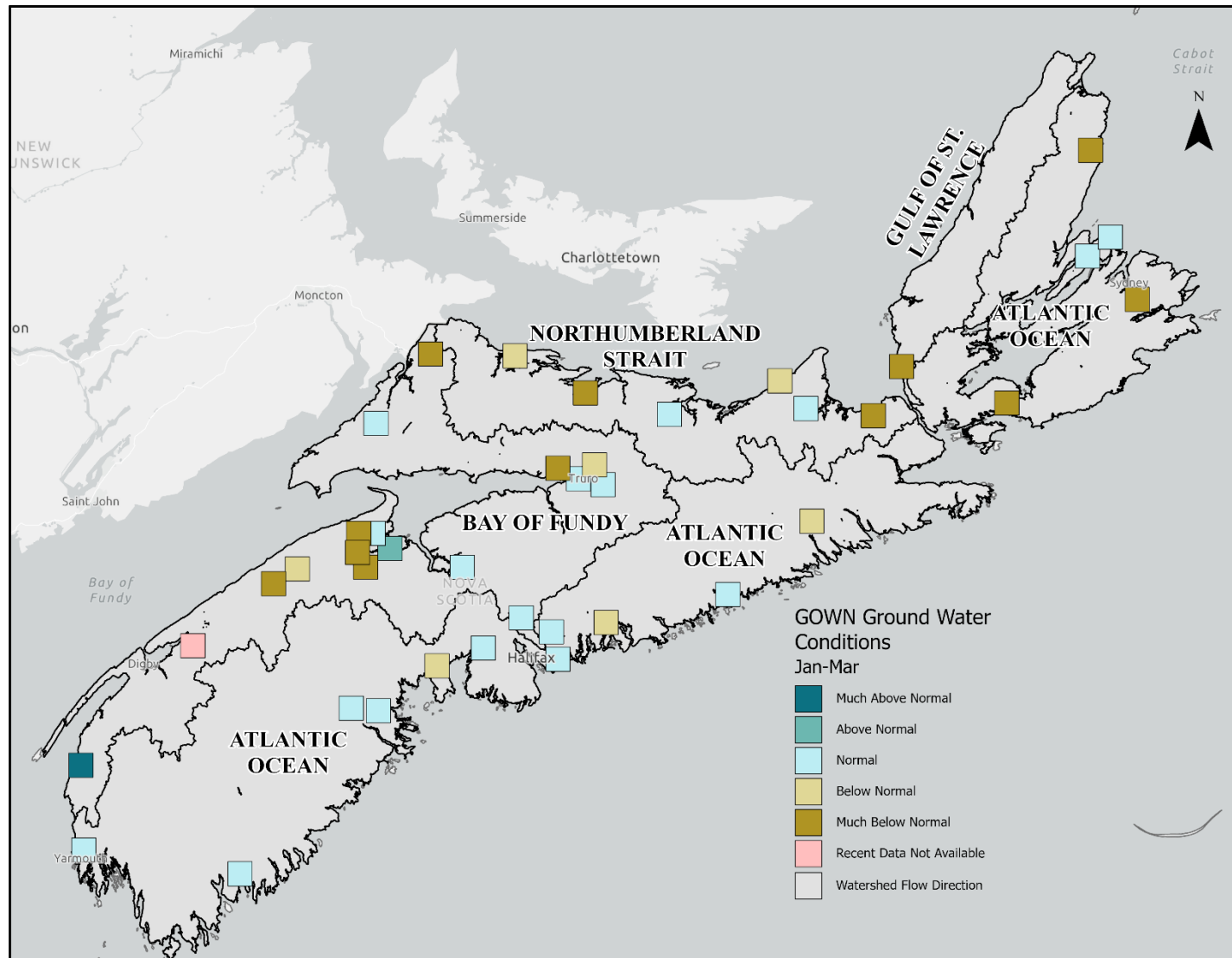
## Groundwater



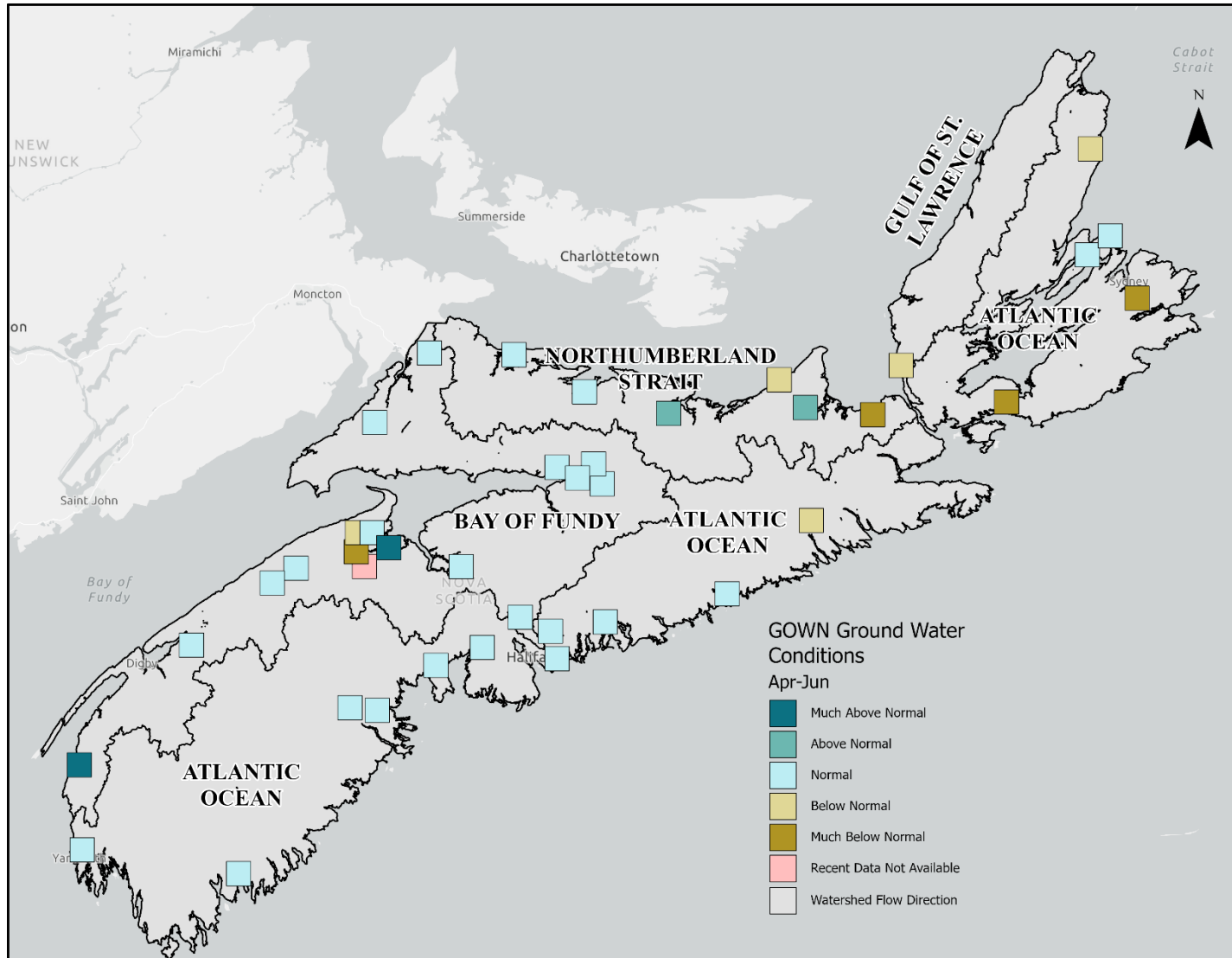
Nova Scotia Groundwater Observation Well Network Well Locations



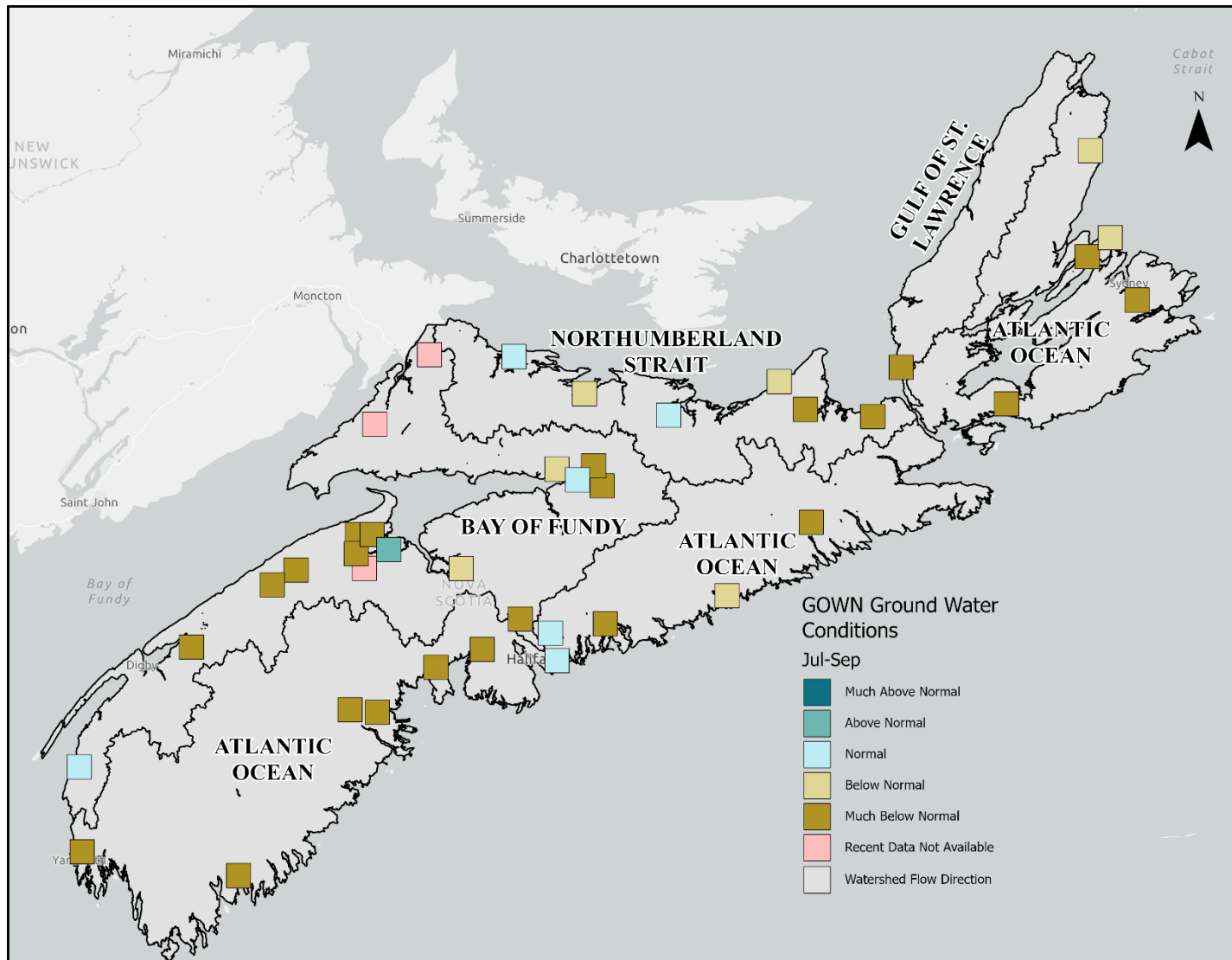
2025 Annual Groundwater Levels Across the Monitoring Network



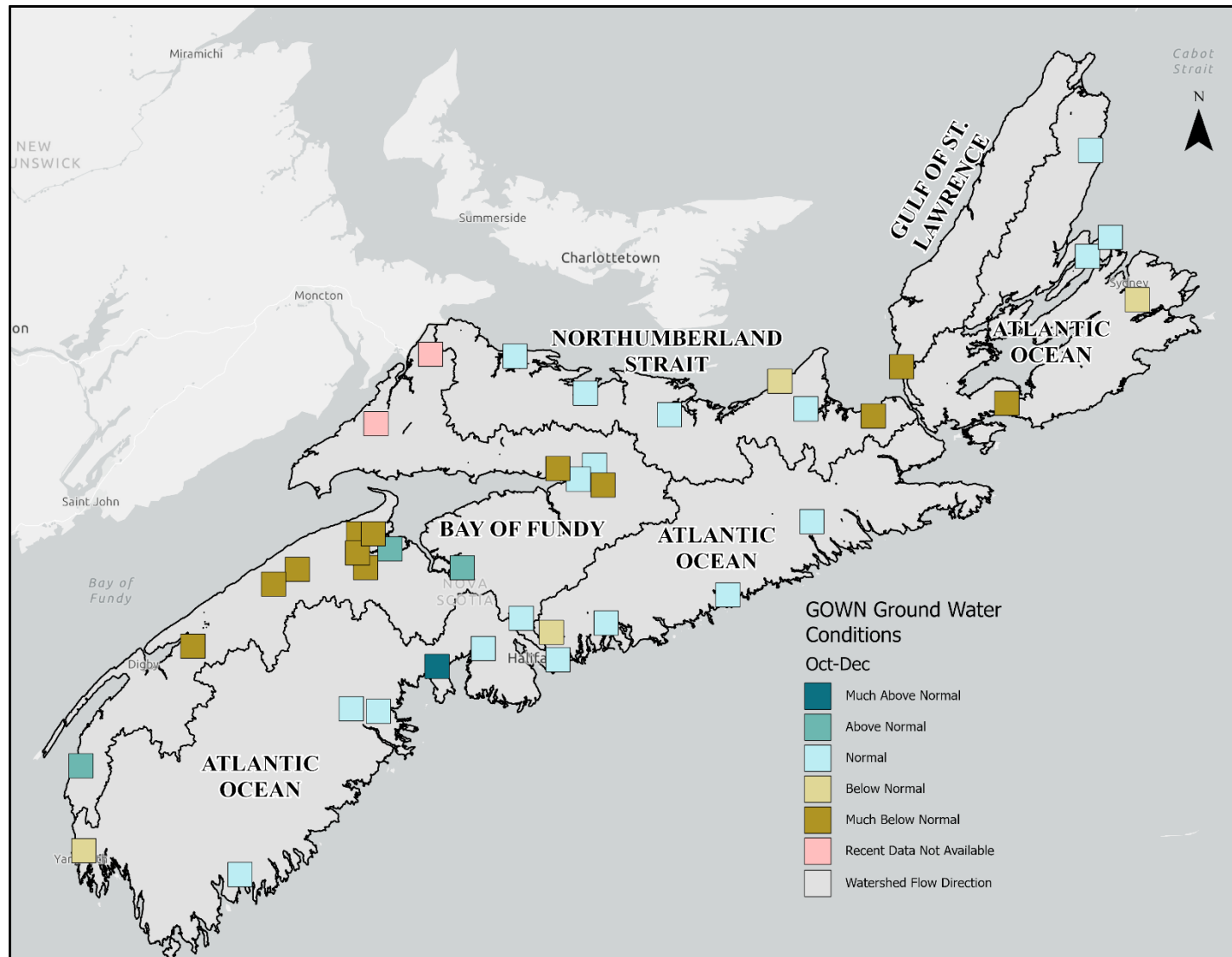
Seasonal Groundwater Levels Across the Monitoring Network (January – March 2025)



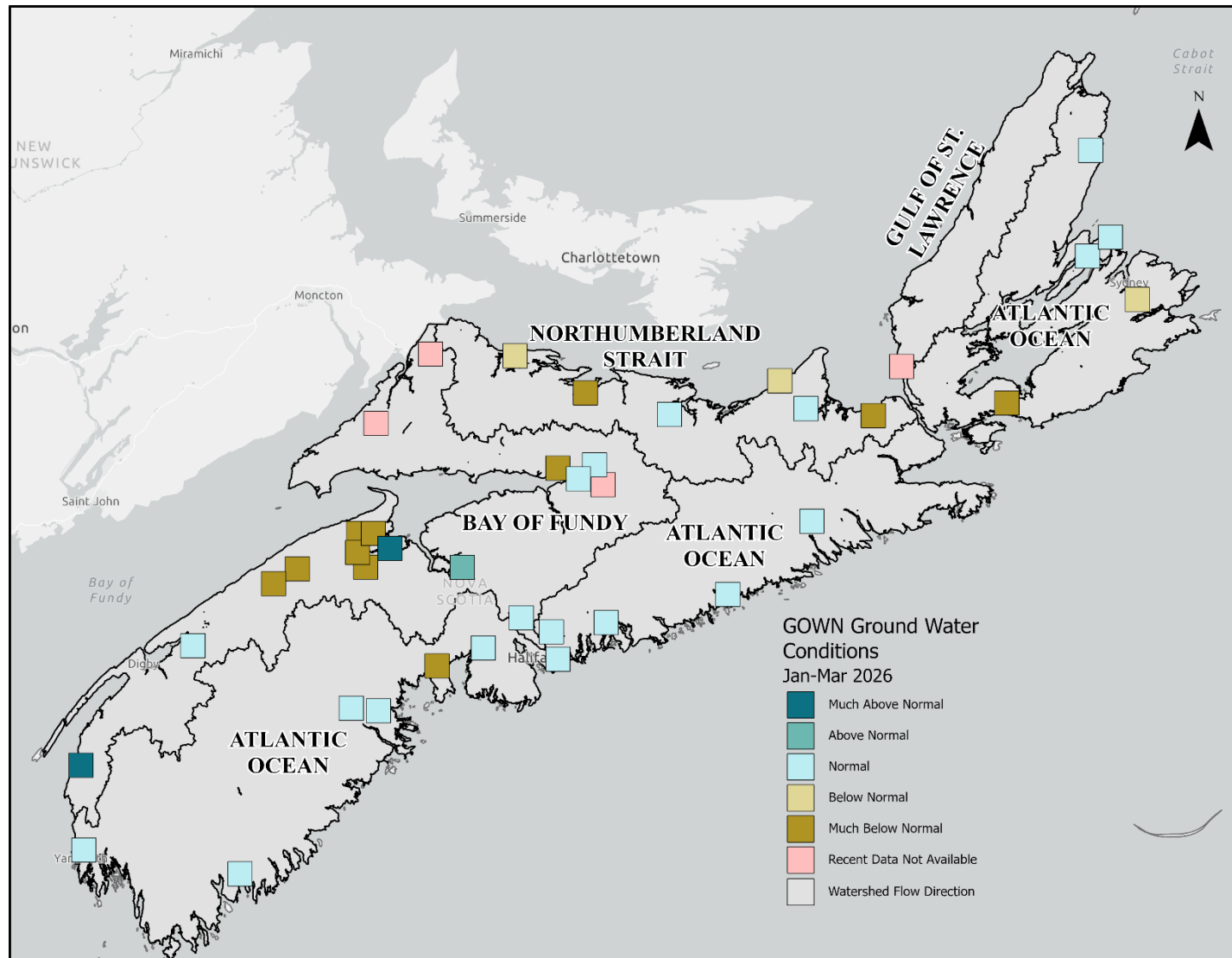
Seasonal Groundwater Levels Across the Monitoring Network (April – June 2025)



Seasonal Groundwater Levels Across the Monitoring Network (July – September 2025)



Seasonal Groundwater Levels Across the Monitoring Network (October – December 2025)



**Seasonal Groundwater Levels Across the Monitoring Network (January – March 2026)**