
Overview: Drought Risk and Management

One on One Stakeholder Meeting

ADM Stacey Smythe
Alberta Environment and Protected Areas
November 2023



Agenda

1. Importance of Water in Alberta
2. Current Situation
3. Drought Risk
4. Drought Management

Importance of Water in Alberta

Water is essential for:



Municipal water supply

Drinking water supply and wastewater dilution



Agriculture

Farmers and ranchers, agri-business, feedlots



Industrial /Commercial business

Oil and gas, power plants, factories and plants, small businesses that use water, etc...



Aquatic environment

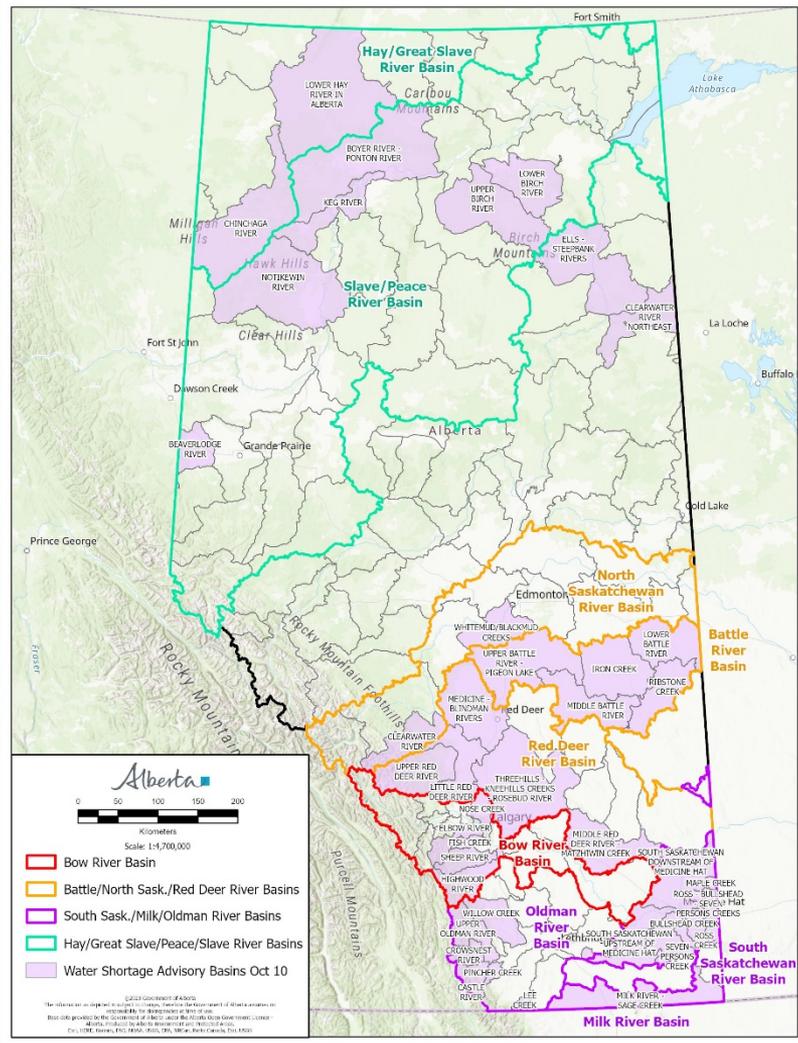
Fish and other aquatic life



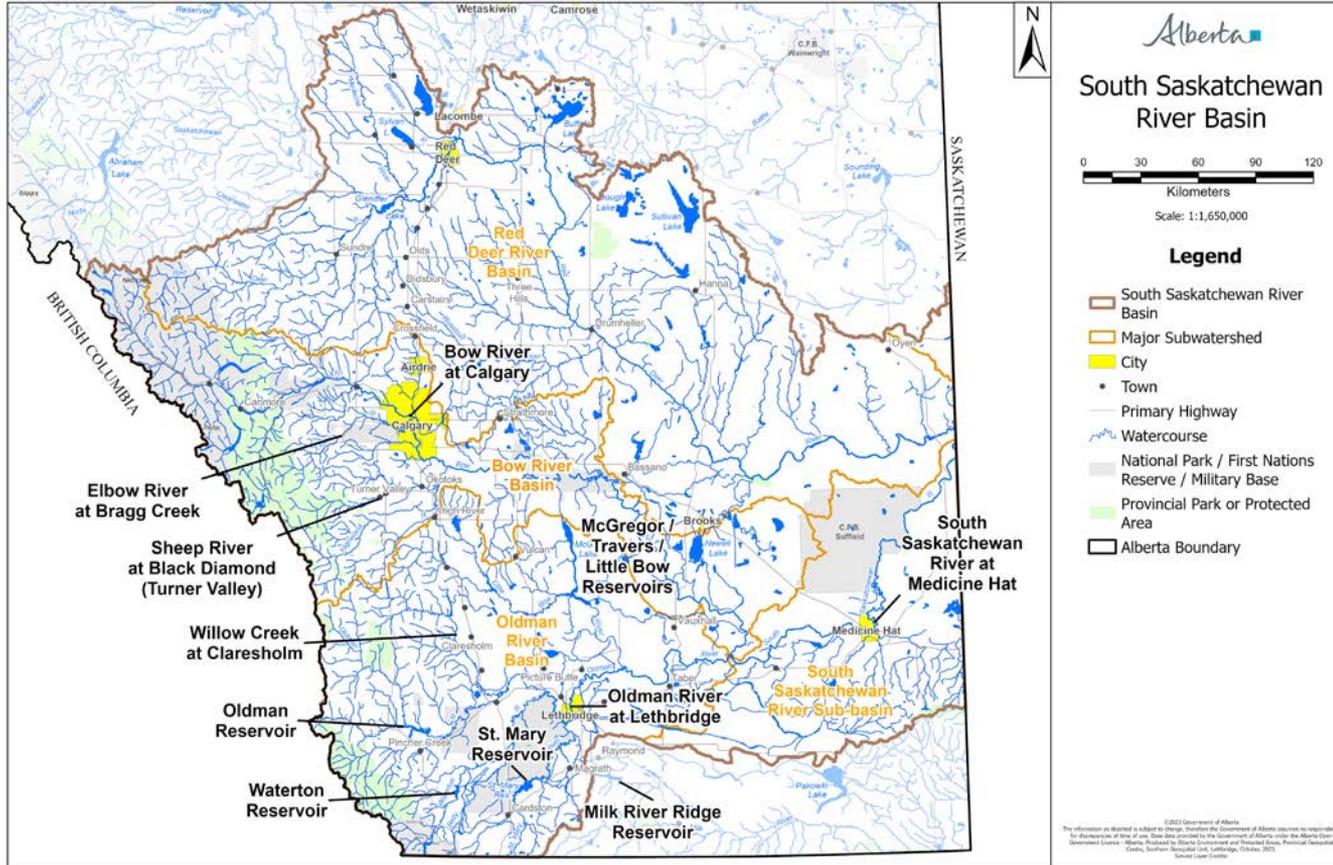
Meeting inter-provincial water apportionment obligations

Current Situation

- Basins in critical water shortage condition due to low rainfall and high temperatures (over the summer):
 - Milk River and Oldman River basins.
 - South Saskatchewan River basin.
 - Bow River basin.
 - Red Deer and North Saskatchewan River basins.
 - Tributaries to the Peace, Athabasca, and Hay Rivers.



South Saskatchewan River Basin



River Flows and Reservoirs: Current vs. Normal

As of November 14, 2023:

- Bow River at Calgary - lowest since 2000.
- Oldman River at Lethbridge - third lowest since 2000.
- South Saskatchewan River at Medicine Hat - second lowest since 2000.

- Water storage at Oldman Reservoir is at 26% and holding.
 - Normal at this time of year is 62-80%.
- Storage at St. Mary Reservoir is at 9.4% and holding.
 - Normal at this time of year is 41-70%.

Oldman Reservoir

Cowley drinking water intakes

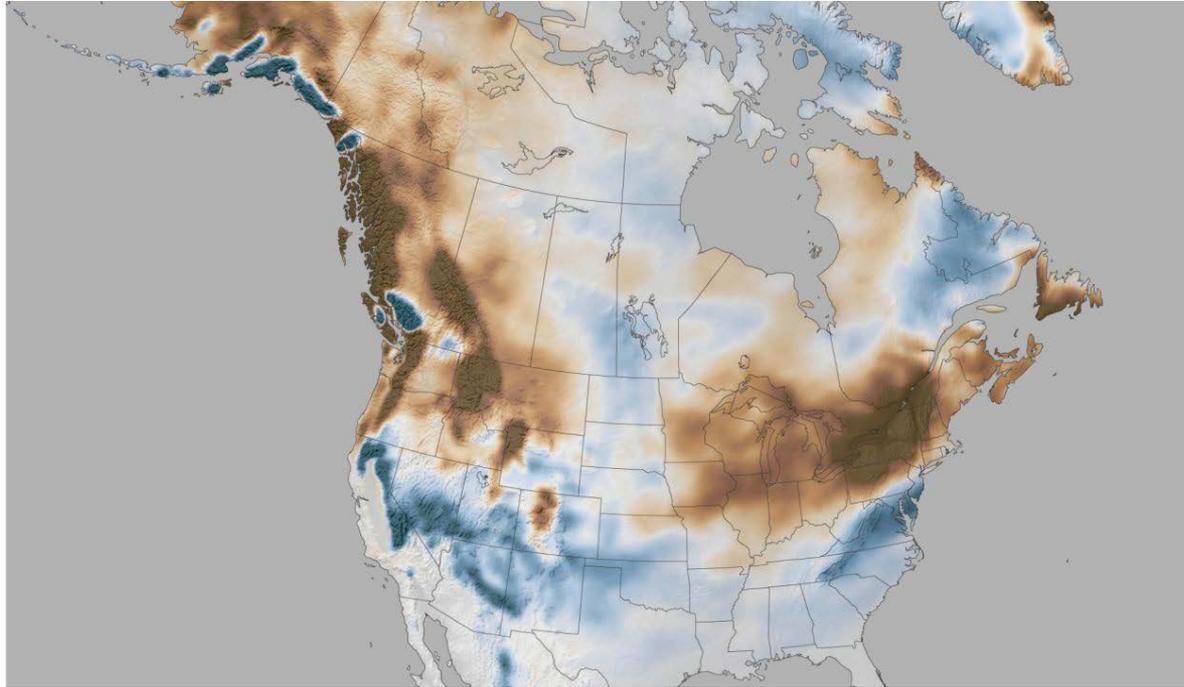


Boat launch at provincial recreation area

Drought Risk: Long Range Forecast

- Oct-Nov-Dec forecast for Alberta (from ECCC)
 - >70% chance of a strong El Nino winter (warm and dry)
 - 40-60% chance of above normal temperatures
 - Minimal precipitation and snowpack forecast* (*but hard to predict)
- Without significant precipitation, spring water levels are expected to be dire
 - “Insurance” from reservoirs used this year
- **Approach → Plan for extreme drought, hope for snow and rain**

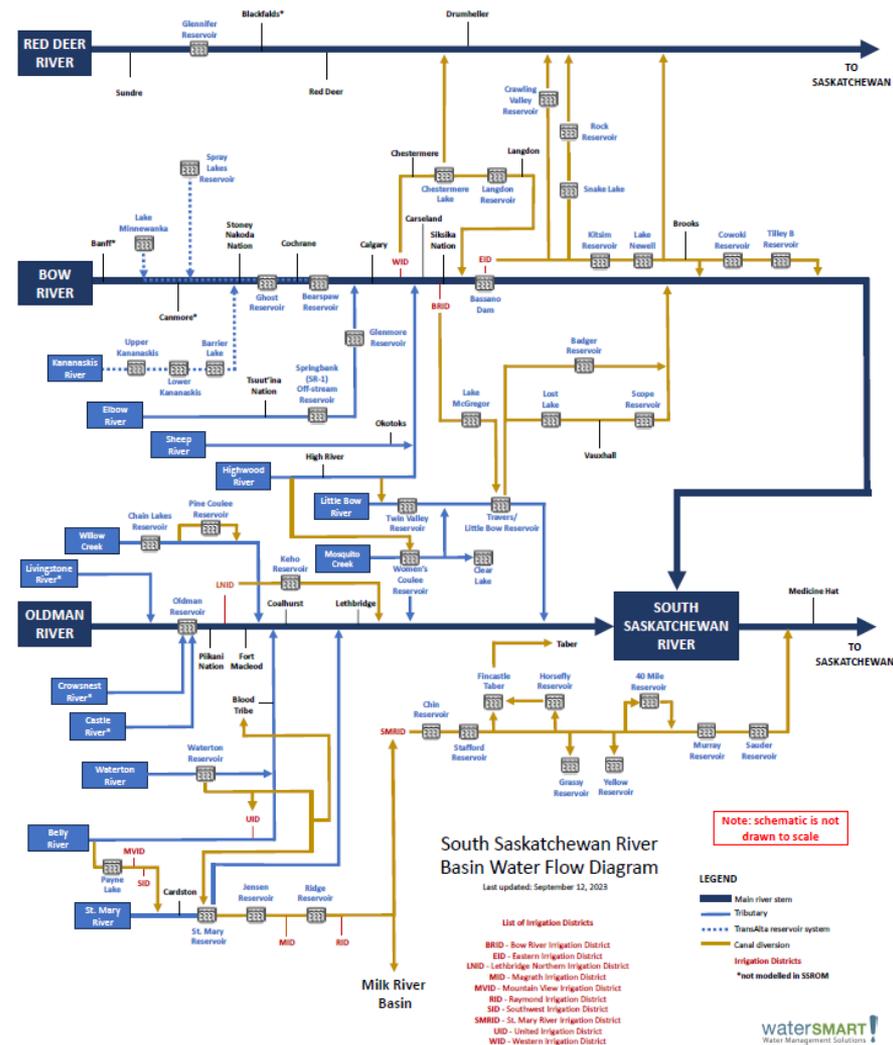
Drought Risk: Predicted El Niño Effects



Snowfall during all stronger El Niño winters (January-March) compared to the 1991-2020 average. Blues indicate more snow than average; browns indicate less snow than average.

Drought Management is Complicated

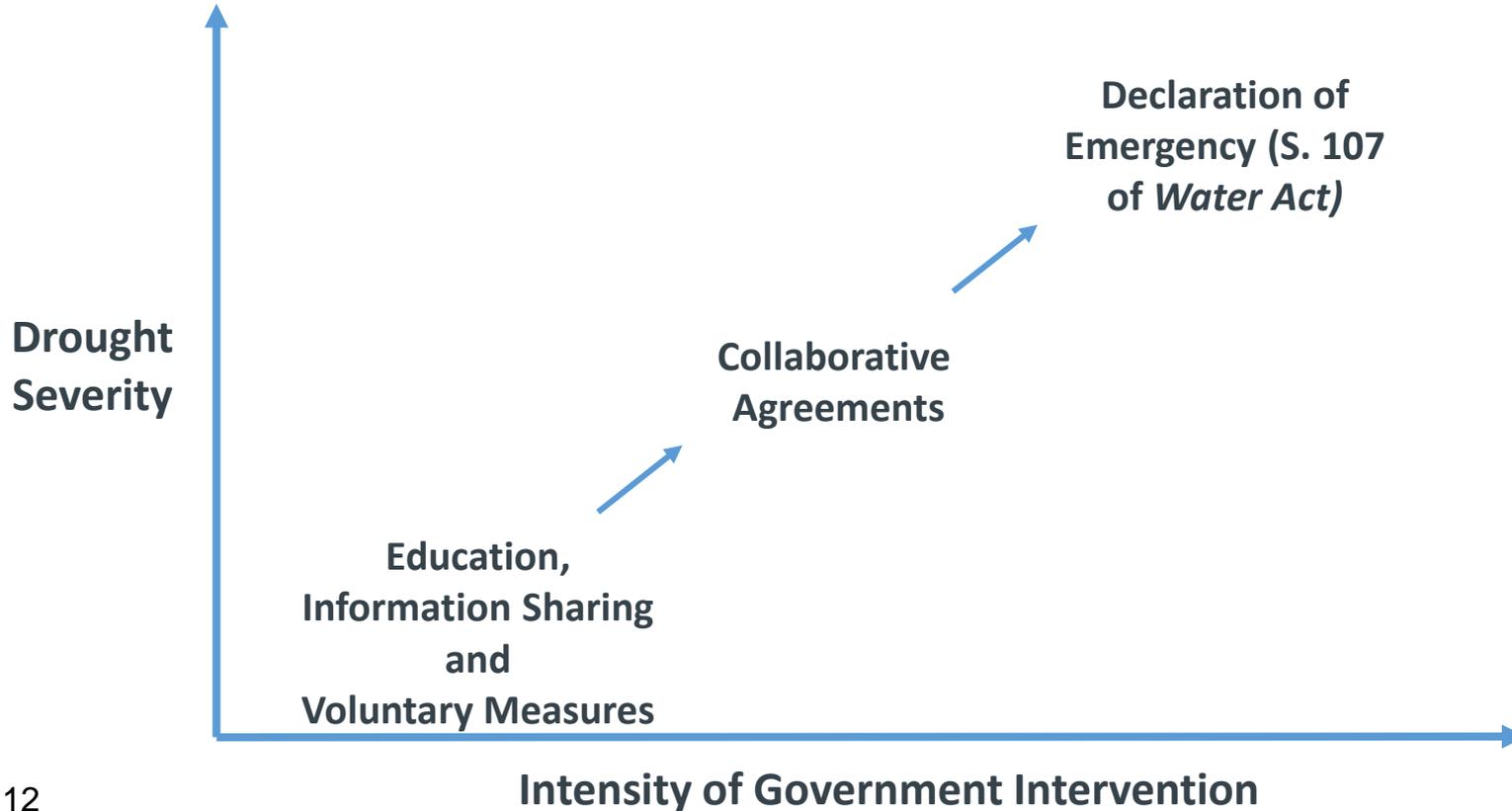
- Network of interconnected rivers, water reservoirs and canals, intakes and outflows.
- Currently uses a priority system set by licence seniority (First in Time, First in Right).
- FITFIR will not effectively prioritize water based on need in a wide scale drought.
- Provincial agreement to send 50% of natural flow in the SSR to Saskatchewan



Impacts

- EPA is actively communicating with licence holders regarding the situation. Many are expressing concerns about the situation into Spring 2024.
- Some licence holders have been asked to stop taking water due to low river levels. EPA is working with these licence holders to find alternative water sources.
 - Examples: Glencoe neighbourhood near Calgary
Canadian Fertilizer near Medicine Hat
Willow Creek farmers and irrigators
- The situation is having **economic and community impacts**.

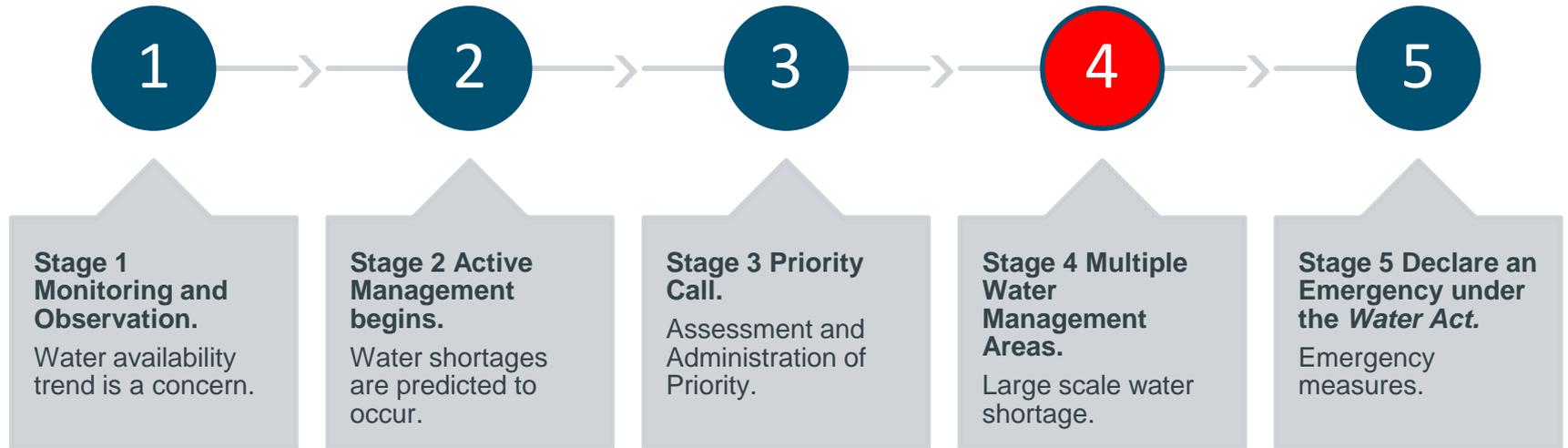
Drought Management Tools



Drought – Key Elements and Timeline



Drought Management



GOA Drought Response Activities

Focused teams have been established to develop:

- Operational preparedness and advanced planning for 2024
- Assessing Alberta's apportionment commitments
- Developing process to enable regulatory drought tools
- Prioritizing monitoring needs to enhance predictive modeling
- Determining the impact that low flows in rivers combined with effluent discharges have on water quality
- Reviewing the provinces Instream Objectives and Water Conservation Objectives

How Can You Help?

- What are the opportunities to work through this together?
- What information, activities, plans do you have underway to manage drought?
- How can we leverage this information?

<https://www.alberta.ca/drought>

Questions/Advice?



Crowsnest River at Hwy 3