



Ministry of **F**orests, **L**ands  
and **N**atural Resource **O**perations

***Tools and Strategies for Provincial  
Response to Local Drought***

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## *Key Questions*

- What does drought in the Northeast look like?
- How might climate change affect drought?
- What actions can the Province take in a drought situation?
- What is the Province doing to improve drought response?
- Can a provincial drought strategy be effective in the Northeast with its unique climate and stressors?



## ***Drought in the Northeast***

### **Three main watershed types in the region:**

- Plains (e.g. Kiskatinaw, Beatton, Fontas)
  - Most susceptible to drought. Low storage, less precipitation, often higher demand
- Mountain (e.g. Halfway, Pine)
  - More snow and precipitation than plains, prolonged freshet
- Glacial (e.g. Murray, Sikanni Chief)
  - Generally drought-resistant but vulnerable to climate change



# *Climate Change and Drought*

## **Higher temperatures year-round:**

- In summer:
  - Increased evapotranspiration
  - Increased demand (agricultural, dust control, municipal suppliers)
- In winter:
  - Shorter snow accumulation season
  - More mid-winter melt events
  - Earlier freshet

Precipitation changes uncertain, but definitely less snow, especially in mountainous areas.



# *Water Sustainability Act*

## **New tools:**

- Regulating groundwater use
  - Non-domestic groundwater users must have authorizations
  - Applications could be refused if negative impacts on other users or the environment
- Water Sustainability Plans
  - Local management of water resources
- WSA s.87 order protecting a critical environmental flow threshold
  - Where there is potential for significant or irreversible harm to an aquatic ecosystem due to low flow
- Protection of “essential household use” (250 L/day)



## *Water Sustainability Act cont'd*

### Existing tools:

- FITFIR (water use priority)
  - Now includes groundwater users
- WSA s.88 fish population protection order
  - Formerly within *Fish Protection Act*
  - Where survival of a fish population may be threatened by low flow

Flexible! Tools available to protect water users, aquatic ecosystems and fish populations.



# ***Provincial Drought Working Groups***

## **Inter-Agency Drought Working Group (IADWG) - Strategic**

- Provincial and federal ministries, agencies, departments
- Sets provincial direction, updates plans, develops tools

## **Provincial Technical Drought Working Group (PTDWG) - Operational**

- Regional operations staff from around the province
- Meets every two weeks in summer to discuss and set drought levels
  - Local knowledge with support from technical experts
  - Learning from other regions' experiences



# Ministry of Forests, Lands and Natural Resource Operations

## *Drought levels*

Level	Conditions	Significance	Objective	Target
1 (Green)	Normal Conditions	There is sufficient water to meet human and ecosystem needs	Preparedness	Ongoing reductions in community water use
2 (Yellow)	Dry Conditions	First indications of a potential water supply problem	Voluntary conservation	Minimum 10% reduction
3 (Orange)	Very Dry Conditions	Potentially serious ecosystem or socioeconomic impacts are possible	Voluntary conservation and restrictions	Minimum additional 20% reduction to a minimum total of 30%
4 (Red)	Extremely Dry Conditions	Water supply insufficient to meet socio-economic and ecosystem needs	Voluntary conservation, restrictions and regulatory action as necessary.	Maximum reduction
Loss of Supply		Potential loss of a community's potable or fire fighting supply	Emergency response	Ensure health and safety

Early season: basin snow measures, seasonal volume runoff forecasts

Drought season: 7-day avg streamflow, 30 day % of avg precipitation



# Drought Information Portal

British Columbia **Drought** Information Last Drought Level Update - October 5, 2016    BRITISH COLUMBIA

Drought in BC BC Drought Map BC Angling Closure Map 7-Day Average Streamflow Map Drought Information Site 



British Columbia Drought Map

 Search for a location



# Ministry of Forests, Lands and Natural Resource Operations

## *Local Teams*

### **Regional Drought Response Team**

- Members from FLNRO (Water, Fish & Wildlife, Compliance & Enforcement), OGC, AGRI, BC Parks
- Issues advisories, collects data, determines regional actions

### **Northeast Water Strategy**

- Provincial ministries, local governments, First Nations, Geoscience BC, industry, external stakeholders
- Framework for collaborative sustainable water management
- Information sharing, coordination of projects and research
  - Improving understanding of impacts of climate change on water resources in the Northeast
  - Ecohydrology studies to better understand vulnerabilities of aquatic ecosystems



## *Looking forward...*

- Provincially initiatives include:
  - Continuing to refine existing drought plans and tools
  - Improving public outreach and awareness
  - Enhancing streamflow monitoring and forecasting
  - Preparing for a future with more frequent / more extreme meteorological droughts
- Locally, continue to work with NEWS to increase engagement, share knowledge and better understand impacts of climate change in the Northeast



***Thanks for listening!***

***Questions or comments?***