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.
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)
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
### Drought Levels

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

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

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

Map of British Columbia showing drought regions and locations.
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?