

Drought Communication & Response Plan

Ministry of Forests, Lands, &
Natural Resource Operations

Northeast Regional
Operations

1/1/2016



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INTRODUCTION

The Northeast Drought Communication and Response Plan (DRP) is intended to support effective and timely responses during periods of low streamflow levels. The objective is to advance the Ministry's understanding of drought awareness and preparation. In order to accomplish this goal, Water Stewardship has created this document to guide and track its progress.

The Ministry of Forests, Lands and Natural Resource Operations (FLNRO) regulates water use through issuance of various authorizations under the legislative authority of the BC *Water Sustainability Act*. It is essential to establish strategies and operational plans to monitor, manage, and take action. With the objective to protect resource users' rights, the environment and fish populations, and aquatic ecosystem functions that drought situations have the potential to adversely impact, Ministry objectives and implementation strategies need to be communicated collectively to essential regulatory agencies and their associated partners, stakeholders and clients.

FLNRO Water Stewardship (WS) is responsible for conveying, at a provincial-level, the current conditions in the Northeast Region (NER). In order to best manage FLNRO's clients, WS will be monitoring basins across the NER to determine the severity of drought conditions throughout the region according to a myriad of hydrometrics and statistical analysis. Communication bulletins will be issued to clients informing them of the current drought conditions, and how the identified drought level will affect their resource rights and water utilization levels.

DROUGHT RESPONSE LEVELS

The DRP is organized around four successive levels of drought. In early season (January to May) the levels represent a forecast of potential drought conditions. Historically, late June is the month when the likelihood and extent of drought be accurately assessed.

Level 1 (Green): Conditions are normal and there is sufficient water to support ecosystem and socio-economic needs. Emphasis is focused on preparedness and taking action in advance of droughts in order to increase readiness of water users and communities when it inevitably occurs.

Level 2 (Yellow): Conditions are dry and first indications of potential water supply shortages are recognized. Emphasis is on stewardship and voluntary conservation through education, communication and planning.

Level 3 (Orange): Conditions are becoming very dry. Potentially serious ecosystem or socio-economic impacts are possible and minor impacts may already be occurring. Emphasis continues to be on voluntary conservation but increasing use of watering restrictions may be imposed by water service providers.

Level 4 (Red): Conditions are extremely dry and there is insufficient supply to meet community or ecosystem needs. Progressively more severe and widespread socio-economic impacts are expected. Voluntary measures and increasing use of restrictions will continue but may be augmented by regulatory responses by the Provincial Government including use of authorities provided under the *Water Sustainability Act* and other supporting legislation.

Table 1: Drought response levels summary.

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 response	Maximum reduction
Loss of Supply		Potential loss of a community's potable or fire fighting supply	Emergency response	Ensure health and safety

Ministry's Response to Classifying Drought Levels

Water Stewardship has identified quantifiable, objective streamflow discharge benchmarks to classify the severity of drought conditions. Table 1 is based on the best available data and subject to revisions throughout the summer months pending data collection and observations made in the field.

Table 2: Drought level stream order classification regime.

Drought Condition	Benchmark Target	Drought Length (days)	Stream Order						
			1	2	3	4	5	6	≥ 7
Normal	>130% MAD	n/a	Level 1	Level 1	Level 1	Level 1	Level 1	Level 1	Level 1
Dry	<130% MAD	<14	Level 2	Level 2	Level 2	Level 2	Level 1	Level 1	Level 1
		>14	Level 3	Level 3	Level 2	Level 2	Level 2	Level 2	Level 1
Very Dry	>20% MAD or <80% exceedance	<14	Level 3	Level 3	Level 3	Level 3	Level 2	Level 2	Level 2
		>14	Level 4	Level 4	Level 3	Level 3	Level 3	Level 3	Level 3
Extreme Dry	<20% MAD or >80% exceedance	<14	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 3
		>14	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

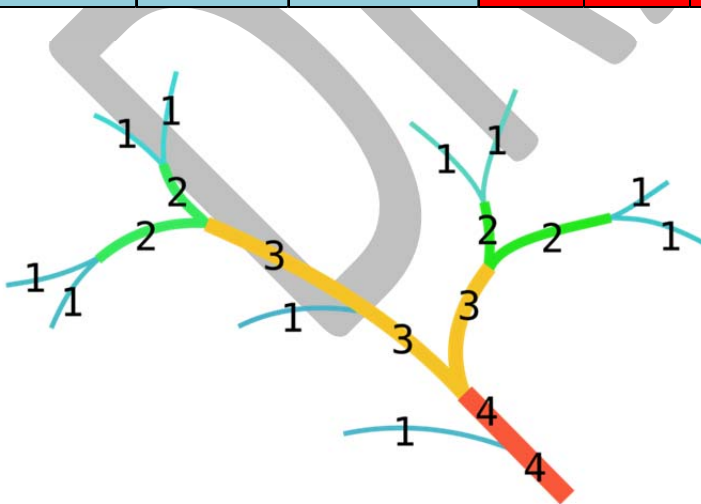


Figure 1: Hortonian stream order classification system.

		Timing of Use	
		Early Season (Jan-May)	Seasonal (June-Oct)
Indicator	Core Indicators	Basin Snow Measures	7-Day Average Streamflow
		Seasonal Volume Runoff Forecasts	30 Day Percent of Average Precipitation
	Supplemental Indicators	Aquifer Levels Individual Indicator Hydrometric Station Results Multi-Year Trends Reservoir Inflows Wildfire Danger Class Ratings	

Figure 2: Provincial core and supplemental drought level classification indicators.

	Level 1 (Green)	Level 2 (Yellow)	Level 3 (Orange)	Level 4 (Red)
Basin Snow Measures±	>80%	80-65% of normal	<65% of normal	
Seasonal Volume Runoff Forecasts	>80%	80-61% of normal	60-45% of normal	<45% of normal
30 Day % of Average Precipitation ¥	>80%	80-51% of average	50-25% of average	<25% of average
7-Day Average Streamflow	>25 percentile	11-25 percentiles	6-10 percentiles	<6 percentiles

Figure 3: Provincial core drought level classification indicators.

COMMUNICATION OBJECTIVES, TARGETS, AND STRATEGIES

Communication Objectives

Objective 1

Maintain a level of drought awareness for water resource users within the NER by providing technical information regarding water supply and low flow demands. This will be done through the implementation of risk ranking analysis and classification.

Educated decisions are made as drought awareness assessments and information is provided to clients, who can then justify modifying their standard operations and can subsequently implement restriction recommendations. As part of the authorization process is the communication of assigned drought indicators and levels; these will be communicated prior to issuance of authorization documents.

Objective 2

Provide a conduit for provincial and federal agencies to provide technical information regarding the water supply for local communities and facilitate the return of this information back to governing agencies.

Educated decisions are prepared and implemented, allowing management practices to adapt when data and information is shared across ministries, agencies, and other user groups.

Encourage and enable the continued participation of Water Stewardship and Drought Response Working Group to network and develop decision making strategies with other local user water interest groups and stakeholders.

Objective 3

Communicate water conservation requirements and the potential consequences of failing to meet these target requirements to the public. Explain the importance of mitigating drought conditions and how the public's continued involvement will aid in maintaining critical ecosystem functions, and therefore socio-economic impacts.

Define measurable targets in response to each drought level. These targets indicate to water users the magnitude to which their water use will be affected. In extreme situations of drought, water use may be severely curtailed by government-issued orders. It is also important to communicate what the public may experience if water is not conserved. In times of drought, this objective becomes very time sensitive, especially if the drought is a prolonged one. The strategy is to complete the discussion at the permitting and renewal stage of water authorizations for prospective water users.

Communication Targets

Communication activities are the methods, tools or vehicles that carry the message to the target audience.

Table 3: Specified restriction targets for the corresponding drought level.

<u>Levels</u>	<u>Condition</u>	<u>Target</u>	<u>Audience</u>	<u>Authority/Statute</u>
1 (Green)	Normal Conditions	Drought preparedness	General public Use Approval holders and Water Licence holder	N/A
2 (Yellow)	Dry Conditions	10% reduction in water use through <i>voluntary</i> conservation	General public Use Approval holders and Water Licence holder	<i>Water Sustainability Act</i> , Part 4: Section 93
3 (Orange)	Very Dry Conditions	20% additional reduction in water use through <i>voluntary</i> conservation	Direct contact with major water users and sensitive area users	<i>Water Sustainability Act</i> , Part 4: Section 93
4 (Red)	Extreme dry Conditions	Maximum <i>compulsory</i> reduction in water use	All water resource users	<i>Water Sustainability Act</i> , Part 3: Section 86 Section 87 Section 88

Communication Strategies

In the DRP the Provincial Government has identified a number of strategies for recognizing, mitigating, and implementing drought response objectives. Among them are the four drought response levels, early warning of potential for drought later in the year, information and data collection for dissemination, and identifying communication roles for local authorities and local drought management teams.

Table 4: Specified communication strategy for the corresponding drought level.

Level 1 – Normal Conditions	<ul style="list-style-type: none"> Communicate predictions from scientific models of likelihood of potential for low streamflow conditions (hydrological drought) Issue information bulletin
Level 2 – Dry	<ul style="list-style-type: none"> Issue information bulletins to local governing agencies Communicate with First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted water basins and specific watersheds/streams Where appropriate, advise agricultural producers to take early action such as filling reservoirs and filling soil profiles with freshet water if available Use direct and indirect communication to request water licensees to voluntarily work together, conserve, share water and consider in-stream needs
Level 3 – Very Dry	<ul style="list-style-type: none"> Intensify communication efforts as appropriate based on current conditions Continue to issue local media releases and/or targeted advertising to advise of watering restrictions, encourage conservation, provide updates on local water supply status and forecast future conditions specific to the community Provide regular direct updates to local government and water suppliers Communicate with First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted geographic region Advise high volume water licensees (or all licensees on high risk streams) directly of conditions and request that they implement voluntary conservation measures

**Level 4 –
Extremely Dry**

- Increase frequency of communication from all levels of government and water suppliers with all water users through media, advertising, internet, email updates and other channels
- Continue to issue information bulletins to local governments, water suppliers, First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted geographic regions
- *Water Sustainability Act* orders


DRAFT



Ministry of
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Local Drought Response Working Group

Communications are currently in the process of being sent to organizations in order to solicit individual(s) to act as a representative on behalf their respective associations.



Ministry of
Forests, Lands and
Natural Resource Operations

Drought Response Working Group

Date: April 12, 2016

This communication has been sent to your organization as you have been identified as a potential partner with the Ministry of Forests, Lands, and Natural Resource Operations in order to facilitate and coordinate efforts to improve drought response in the Northeast Region.

The purpose of this communication is to solicit an individual(s) to represent your organization as a member of the Drought Response Working Group (DRWG). The group will act as a conduit for agencies, stakeholders, and governing bodies to maintain a level of drought awareness and provide guidance and clarity when responding to drought impacts across the region.

The objectives of the DRWG will be to:

- Communicate predictions of potential drought situations;
- Maintain a level of drought awareness;
- Share technical information across agencies and stakeholder groups;
- Implement water conservation strategies;
- Coordinate an integrated approach to dealing with drought.

Once the DRWG has been established, the group members will decide on the frequency, duration, and communication method that the team will utilize.


Thank you for taking the time to respond to this communication by filling in the information of the appropriate individual from your organization in the table below. If you have any questions or comments please contact me at (250) 784-1220.

☐

Organization	Contact	Position	Phone No.	Email
FLNRO	Jameson Mailloux	Water Officer	(250) 784-1220	Melvin.Mailloux@gov.bc.ca

☐

Sincerely



Jameson Mailloux, PAg
Regional Water Stewardship Officer
Northeast Region

Ministry of Forests, Lands &
Natural Resource Operations

Northeast Region

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9000 – 17th Street
Dawson Creek BC

Mailing Address:
9000 17th Street
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Figure 4: Copy of the letter currently being drafted and sent to organizations as identified in Table 4.

Table 5: Drought Response Working Group (local) stakeholder contacts tracking ledger.

Organization	Contacted	Responded
FLNRO Water Stewardship	Y	Y
Peace River Regional District	N	N
Dawson Creek	N	N
Chetwynd	N	N
Taylor	N	N
Fort St John	N	N
Fort Nelson	N	N
Hudson's Hope	N	N
Tumbler Ridge	N	N

First Nation	Contacted	Responded
Fort Nelson	N	N
Doig River	N	N
Prophet River	N	N
Blueberry River	N	N
Dene Tha	N	N
Saulteau	N	N
McLeod Lake	N	N
West Moberly	N	N
Halfway River	N	N
Horse Lake	N	N



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Regional Drought Response Working Group

Information bulletins have been drafted for the four drought levels that will be sent to clients who possess Use Approvals and Water Licences for potential drought impacted streams.

Level 1 – Awareness & Preparation



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**Water Stewardship Division
Information Bulletin**

Potential for Low Streamflow Anticipated

The Ministry of Forests, Lands, & Natural Resource Operations (FLNRO) is dedicated to providing responsible natural resource management in British Columbia. At this time, the Ministry would like to make you aware that it has been identified that due to meteorological conditions over the winter months, the potential for low streamflows is highly probable. At this time, please ensure that water usage is compliant with water licence conditions and permit requirements.

Northeastern BC is currently classified as **Drought Level 1 (Drought Awareness & Preparation)**, indicating that potential exists for upcoming low streamflows. These shortages may affect community and domestic water supplies, agriculture, industry, and aquatic ecosystem functions.

The Ministry of Forests, Lands, & Natural Resource Operations will advise industry of any further changes that may affect licensed water users in northeastern BC. It is recommended that industry water users be vigilant in preparing for water shortages should predictions continue at the current trend.

Current information regarding drought and drought preparedness can be found on the following websites:

British Columbia River Forecast Centre: <http://bcRFC.env.gov.bc.ca/>

Government of Canada Drought Watch: <http://www.agr.gc.ca/eng/>

Water Sustainability in BC: <http://waterbucket.ca/guidance-resources/>

Questions and concerns regarding this Information Bulletin can be directed to:

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Regional Water Stewardship Officer
Ministry of Forests, Lands and Natural Resource Operations
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Ministry of Forests, Lands &
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Water Stewardship Division Information Bulletin

Low Streamflow Advisory

The Ministry of Forests, Lands, & Natural Resource Operations (FLNRO) is soliciting industry to be conscientious in licensed water withdrawals and diversions. Please ensure that water usage is compliant with water licence conditions and permit requirements. At this time, FLNRO is recommending licensed water users voluntarily reduce their allocated water usage by 10%.

Northeastern BC is currently classified as **Drought Level 2 (Dry Conditions)**, indicating that reduced stream and lake water levels have the potential to lead to minor water shortages in some basins. These shortages may affect community and domestic water supplies, agriculture, industry, and aquatic ecosystem functions. The northeast is anticipating a continual increase in Drought Levels until a significant precipitation event occurs.

The Ministry of Forests, Lands, & Natural Resource Operations will advise industry of any further changes that may affect licensed water users in northeastern BC. It is recommended that industry water users be vigilant in preparing for supplementary water shortages should the drought persist.

Current information regarding drought and drought response can be found on the FLNRO River Forecast Centre website:

<http://bcRFC.env.gov.bc.ca/>

Questions and concerns regarding this Information Bulletin can be directed to:

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Level 3 – 30% Reduction



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**Water Stewardship Division
Information Bulletin**

Low Streamflow Advisory

The Ministry of Forests, Lands, & Natural Resource Operations (FLNRO) is soliciting industry to be conscientious in licensed water withdrawals and diversions. Please ensure that water usage is compliant with water licence conditions and permit requirements. At this time, FLNRO is being proactive and recommending licensed water users voluntarily reduce their allocated water usage by an additional 20%.

Northeastern BC is currently classified as **Drought Level 3 (Very Dry Conditions)**, indicating that reduced stream and lake water levels have the potential to lead to water shortages in some basins. These shortages may affect community and domestic water supplies, agriculture, industry, and aquatic ecosystem functions. The northeast is anticipating a continual increase in Drought Levels until a significant precipitation event occurs.

The Ministry of Forests, Lands, & Natural Resource Operations will advise clients of any further changes that may affect licensed water users in northeastern BC. It is recommended that water users be vigilant in preparing for supplementary water shortages should the drought persist.

The voluntary conservation of water withdrawals by FLNRO water users is now expanded to include the following watersheds identified on the attached map.

Current information regarding drought and drought response and water conservation strategies can be found on the FLNRO websites:

River Forecast Centre: <http://bcRFC.env.gov.bc.ca/>
Living Water Smart: <http://www.livingwatersmart.ca/>

Questions and concerns regarding this Information Bulletin can be directed to:

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Level 4 – Maximum Reduction



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Water Stewardship Division Information Bulletin

Low Streamflow Advisory

The Ministry of Forests, Lands, & Natural Resource Operations (FLNRO) is soliciting industry and domestic users to be conscientious in licensed water withdrawals and diversions. Please ensure that water usage is compliant with water licence conditions and permit guidelines. At this time, FLNRO will be implementing compulsory restrictions on licensed water withdrawals on various water sources within the Northeast Region. Please contact Water Stewardship staff for further information and direction.

~~Northeast~~ BC is currently classified as **Drought Level 4 (Extreme Dry Conditions)**, indicating that reduced stream and lake water levels have the potential to lead to serious water shortages in some basins. These shortages may affect widespread community and domestic water supplies, agriculture, industry, and aquatic ecosystem functions. The northeast is anticipating a continual increase in Drought Levels until a significant precipitation event occurs.

The Ministry of Forests, Lands, & Natural Resource Operations will advise both domestic and industrial licence holders of any further changes that may affect licensed water users in ~~northeastern~~ BC. It is recommended that all water licence users be vigilant in preparing for supplementary water shortages should the drought persist.

Current information regarding drought and drought response can be found on the FLNRO River Forecast Centre website:
<http://bcrcfc.env.gov.bc.ca/>

Questions and concerns regarding this Information Bulletin can be directed to:

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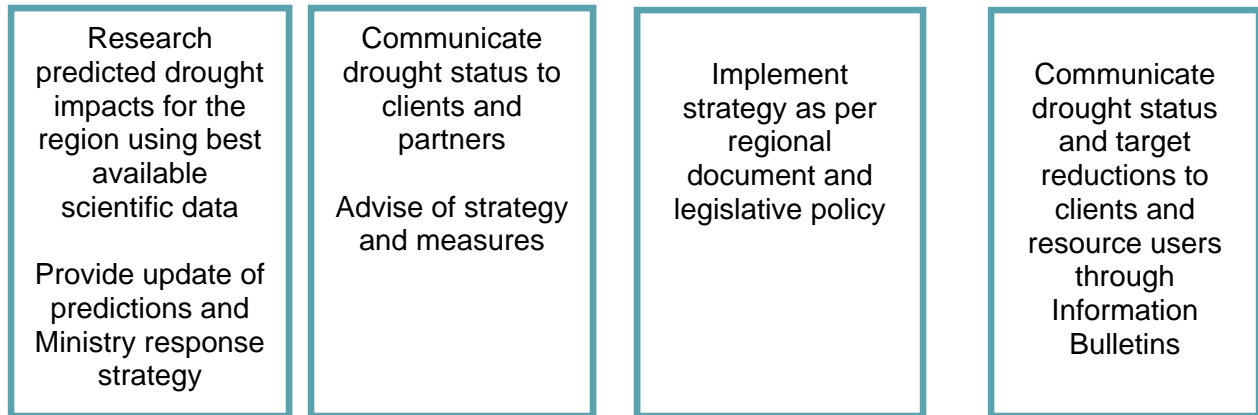
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Ministry of
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Delivering Our Message



Local Drought Response Working Group

- Email / telephone communications and information as required
- Meetings – Peace Natural Resource Office as required

Client and Resource Users

- Broad / General Communication
 - Radio
 - Newspaper
 - Internet – Regional FLNRO website
- Individual Water Use Holders
 - Email
 - Phone
 - Field Site Visit – FLNRO; C&E Staff
 - Meetings – Peace Natural Resource Office as required
- Individual Licence Holders
 - Email
 - Phone
 - Field Site Visit – FLNRO; C&E Staff
 - Meetings – Peace Natural Resource Office as required



REGIONAL OPERATIONS MANAGEMENT RESPONSIBILITIES

FLNRO & FLNRO Regional Operations

- Provides advice on region and watershed specific drought response levels based on best available scientific data;
- Issues advisories and notifications on drought conditions;
- Supports pre-drought preparedness in BCs most drought vulnerable regions.

Level 2 (Yellow)

Level: Level 2 (Yellow)	
Objective: Voluntary conservation among all sectors and users	
Target: Minimum 10% reduction in total water use	
Actions:	Lead Responsibility
Communication and Coordination	
Notify IADWG and TDWG; reaffirm duties and responsibilities; schedule regular meetings for duration of dry season	FLNR (Chair IADWG)
Update drought communications plans based on streamflow conditions and forecasts in impacted geographic regions	FLNR (Chair IADWG) GCPE
Initiate direct contact and information exchange protocols between key contacts in FLNR and DFO	FLNR DFO
Initiate direct contact and implement information exchange protocols between FLNR and key contact(s) in water suppliers in impacted geographic regions	FLNR (Regions) Local government and water suppliers
Initiate direct contact and implement information exchange protocols between AGRI and key agricultural industry groups in impacted geographic regions	AGRI
Initiate direct contact and information exchange between FLNR and key contact(s) in the FLNR-Wildfire Management Branch in impacted geographic regions to coordinate on wildfire threats and potential impact on water supplies, including use of water in fire fighting	FLNR (Chair IADWG) FLNR Office of Fire Commissioner
Issue province-wide news release and targeted news releases in impacted geographic regions	FLNR GCPE
Issue information bulletin to local governments, water suppliers, First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted geographic regions	FLNR
Issue and distribute Low Stream Flow Advisories as required in impacted geographic regions	FLNR DFO
Provide regular updates via email to local governments, water suppliers, First Nations, industry and stewardship groups, major licensees and other key stakeholders in drought areas	FLNR
Update FLNR drought and RFC internet sites to provide up-to-date streamflow and groundwater data and information	FLNR (Chair IADWG) FLNR
Use local media releases and/or targeted advertising to advise of watering restrictions, encourage conservation, provide updates on local water supply status and forecast future conditions	Local government and water suppliers
Review water conservation advice, guidelines and materials for local government and water suppliers and update as appropriate	FLNR MCSCD
Review water conservation advice, guidelines and materials for agricultural producers and irrigators and update as appropriate	AGRI
Where appropriate, advise agricultural producers to take early actions such as filling reservoirs and filling the soil reservoir where possible.	AGRI
Coordinate with Agriculture and Agri-food Canada drought response equipment such as pumps for dugout filling.	AGRI
Designate local spokesperson to coordinate interaction with the public and media on local level issues	FLNR GCPE

Level 2 (Yellow) Continued

Level:	Level 2 (Yellow)
Other Actions	
Notify local governments and water suppliers that they should communicate with residents and businesses to request voluntary conservation efforts	FLNR (Chair IADWG) MCSCD
Implement appropriate watering restrictions to achieve targeted reduction in water use	Local government and water suppliers
Temporarily discontinue issuing major new water licences or short term use approvals as appropriate	FLNR (Regions)
Request provincial government agencies to conserve water at public facilities, particularly outdoors	FLNR (Chair IADWG)
Use direct and indirect communications to request water licensees voluntarily work together, conserve, share water and consider in-stream needs	FLNR (Regions)
Review inventory list of sensitive ecoregions, specific streams and identify likely fish sensitive periods	FLNR (Regions)
Encourage and train agricultural producers on the use of irrigation scheduling techniques and other tools such as the on-line irrigation scheduling calculator on specific streams	AGRI
Monitoring	
Increase monitoring effort as required on streamflow conditions and aquifer levels in impacted geographic regions	FLNR FLNR (Regions) DFO
Monitor stream conditions for additional information such as dry riffles, dewatered spawning redds, reported fish deaths, water temperature, etc. in impacted geographic regions	FLNR FLNR (Regions) DFO
Monitor community and licensee water use	FLNR (Regions) Local government and water suppliers
Monitor and enforce compliance with restrictions and allocations through bylaws	Local government and water suppliers
Documentation and Preparation for Next Level	
Develop a database of water licensees and short term use approval holders on streams that have or may have Low Stream Flow Advisories issued	FLNR FLNR (Regions)
Identify and prepare to use additional communication channels for next level including social media (e.g. facebook) and mass media advertizing	FLNR (Chair IADWG)
Identify possible community groups and key stakeholders that may assist with information distribution in next phase	FLNR (Regions)
Inform Natural Resources Board and Minister of FLNR of possible move to Level 3 (Orange)	FLNR (Chair IADWG) FLNR (Executive)
Document conservation actions taken to date; maintain registry of groups and individuals contacted	FLNR (Chair IADWG) FLNR (Regions) AGRI



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Level 3 (Orange)

Level:	Level 3 (Orange)
Objective:	Voluntary conservation and restrictions
Target:	Minimum additional 20% reduction in total water use
Actions:	Lead Responsibility
Communication and Coordination	
Increase frequency of IADWG meetings as appropriate	FLNR (Chair IADWG)
Intensify communication efforts as appropriate based on current streamflow conditions; issue updated province-wide news release and targeted news releases with updated information and conservation requests in impacted geographic regions	FLNR GCPE
Hold media news conference to announce activation of additional drought measures and to provide updated information; outline media plan to notify public of changes to streamflows and additional conservation measures	FLNR GCPE
Continue to issue local media releases and/or targeted advertizing to advise of watering restrictions, encourage conservation, provide updates on local water supply status and forecast future conditions specific to the community	Local government and water suppliers
Continue provision of regular updates on streamflow and groundwater data on the internet; increase frequency of updates as appropriate	FLNR
Advise high volume water licensees (or all licensees on high risk streams) directly of conditions via mail or email and request they implement voluntary conservation measures	FLNR (Regions)
Provide regular updates via email to local governments, water suppliers, First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted geographic regions; intensify frequency of updates as appropriate	FLNR (Chair IADWG) FLNR (Regions)
Commence utilization of additional communication channels as appropriate to inform water users and the public about drought conditions including print advertizing, social media (e.g. facebook), community and agricultural associations, etc.	FLNR AGRI GCPE
Ensure ongoing direct contact between key contacts in FLNR and EMBC; review information exchange protocols on drought and emergency response	FLNR EMBC
To reduce water use on streams for which an order from MOE is under consideration, provide the first communication with producers on the process and requirements that are to be followed.	AGRI
Prepare to provide access to information on stress management resources for agricultural producers as required via internet and other forums	AGRI
Prepare information on provincial and federal drought programs that can assist producers to help cope with drought	AGRI
Organize workshops for producers in affected areas to provide guidance on water conservation activities, drought assistance programs and processes for application if appropriate	AGRI AAFC
Submit drought assessment reports as necessary to deputy ministers and other senior executives	FLNR (Chair IADWG) FLNR (Executive)



Ministry of
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Level 3 (Green) Continued

Level: Level 3 (Orange)	
Other Actions	
Impose restrictions as appropriate based on priority water licence rights, in addition to voluntary water conservation requests	FLNR (Regions)
Limit the number of, or impose restrictions on, new licences, regulate storage or invoke conditions on existing licences	FLNR (Regions)
Implement next stage watering restrictions to achieve targeted reduction in water use	Local government and water suppliers
Eliminate filling of public fountains and watering of public parks, gardens, medians and other similar areas	Local government and water suppliers
Limit new connections or uses as appropriate	Local government and water suppliers
Request Stop Work Diversion Initiatives on Flow Sensitive Fish Streams as appropriate	FLNR (Regions) DFO
Ensure that water bailiffs are appointed and active on appropriate streams in drought areas; complete any necessary briefings or training with water bailiffs	FLNR (Regions)
Modify flood prevention, flow augmentation and power generation reservoir activities as appropriate to minimize impact of drought	BC Hydro Local government and water suppliers
Provide technical assistance and specific measures to water suppliers experiencing problems with system management or promotion of conservation	MCSCD
Commence reporting on status of water supplies and forecasted future scenarios to MoE	Local government and water suppliers Potential help from Drinking Water Protection Officers
Request provincial government agencies elevate efforts to conserve water at public facilities	FLNR (Chair IADWG)
Implement drought assistance programs such as dugout filling in regions that are affected	AAFC
Monitoring	
Monitor and enforce compliance with next stage restrictions and allocations through bylaws	Local government and water suppliers
Prioritize and intensify monitoring of stream conditions as required in impacted regions; identify most efficient alternatives for monitoring	FLNR FLNR (Regions) DFO
Continue to monitor water use by communities and water licensees; increase monitoring as required	FLNR (Regions) Local government and water suppliers
Monitor and enforce compliance with restrictions and allocations through bylaws; increase enforcement effort as appropriate	Local government and water suppliers
Documentation and Preparation for Next Level	
Identify additional groups and associations that may assist with actions at next level	FLNR (Regions)
Inform Natural Resources Board, Minister of FLNR, and EMBC of possible move to Level 4 (Red) and identify impacted geographic regions	FLNR (Chair IADWG) FLNR (DM Office) EMBC
Assess impacts to livestock and crops in drought affected regions that are currently not irrigated	AGRI
Identify and document needs of agriculture in areas supplied by high risk streams	AGRI
Document conservation actions taken to date; maintain registry of	FLNR (Chair

Level 4 (Red)

Level:	Level 4 (Red)	
Objective:	Voluntary conservation, restrictions and regulatory responses as required	
Target:	Maximum reduction	
Actions:	Lead Responsibility	
Communication and Coordination		
Increase frequency of communication by all levels of government and water suppliers with all water users through media, advertizing, internet, email updates and other forums	FLNR	Local government and water suppliers
Increase frequency of communication between FLNR and EMBC regarding geographic areas of concern	FLNR (Chair IADWG) EMBC	
Continue to issue information bulletins to local governments, water suppliers, First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted geographic regions	FLNR	
Continue to issue and distribute Low Stream Flow Advisories as required in impacted geographic regions	FLNR DFO	
Continue to provide regular updates via email to local governments, water suppliers, First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted geographic regions	FLNR (Chair IADWG) FLNR FLNR (regions)	
Continue to update FLNR drought and RFC internet sites to provide up-to-date streamflow and groundwater data and information	FLNR (Chair IADWG) FLNR FLNR (regions)	
Submit drought assessment reports as necessary to deputy ministers and other senior executives	FLNR(Chair IADWG) FLNR (DM & ADMs) FLNR FLNR (regions)	
Clearly communicate to agricultural producers the watersheds where the minimum income requirement to maintain farm status for tax assessment purposes may be waived.	AGRI	
To reduce water on streams for which an order from MOE is being considered, provide the first communication with producers on the process and requirements that are to be followed.	AGRI	
Prepare information on provincial and federal drought programs that can assist producers to help cope with drought	AGRI	
Organize workshops for producers in affected areas to provide guidance on water conservation activities, drought assistance programs and processes for application if appropriate	AGRI AAFC	



Ministry of
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Level 4 (Red) Continued

Level:	Level 4 (Red)
Other Actions	
Use consensus building process to confirm priorities for water use reductions in drought affected areas	FLNR (Regions) Local government and water suppliers
Implement next stage watering restrictions to achieve targeted reduction in water use	Local government and water suppliers
Implement regulatory controls under the <i>Water Act</i> , <i>Fish Protection Act</i> or other statutes as appropriate if voluntary measures are not enough to protect water uses and fish	FLNR
Restrict use by lower priority licensees or those with conditional clauses in their water licences	FLNR (Regions)
Review Emergency Drought Consequence Plans and prepare for implementation; ensure alternative water supplies are identified and available on short notice	Local government and water suppliers
Provide assistance to communities seeking alternative or temporary water supplies	EMBC
Ensure water bailiffs are actively regulating and controlling the diversion and use of water from the streams they are appointed to and are accurately communicating drought conditions and watering restrictions and targets	FLNR (Regions)
Provide access to information on stress management resources for agricultural producers as required via internet and other forums	AGRI
Implement drought assistance programs such as dugout filling in regions that are affected	AAFC
Continue to provide technical assistance and specific measures to water suppliers experiencing problems with system management or promotion of conservation	MMSCD
Monitoring	
Monitor and enforce compliance with restrictions and allocations through bylaws; intensify enforcement efforts as appropriate	Local government and water suppliers
Continue reporting on status of water supplies and forecasted future scenarios to FLNR	Local government and water suppliers
Monitor and enforce compliance with orders issued under provincial legislation	FLNR
Intensify monitoring of stream conditions and aquatic ecosystems examining the efficacy of water conservation measures	FLNR FLNR (Regions) DFO
Documentation and Preparation for Next Level	
Prepare for emergency response where risk of loss or failure of supply exists	EMBC Local government and water suppliers
Inform Natural Resources Board and Minister of FLNR of possible loss or failure of supply where the risk exists	FLNR (Chair IADWG) FLNR (Executive)
Determine losses due to drought and/or from orders to reduce water use for both livestock and crops	AGRI
Document conservation actions taken to date; maintain registry of groups and individuals contacted; record potential social, environmental (e.g., fish population and habitat loss) and economic impacts	FLNR (Chair IADWG) FLNR (Regions) AGRI

Table 6: Chronology of key government actions in a typical drought year.

[illegible]

Table 7: Drought response communications summary table.

	Province Wide Communications		Region Wide Communications		Targeted Regional Communications*		Direct Communication with Water Licensees	
Level 2 (Yellow)	Task	Who	Task	Who	Task	Who	Task	Who
	Issue province-wide news release	GCPE	Issue targeted news releases in impacted geographic regions	GCPE	Provide updates via email to key stakeholder groups and major licensees	FLNR	Use direct and indirect communications to request water licensees voluntarily conserve & share water	FLNR, DFO
	Regularly issue updated online water supply and snow bulletins	FLNR	Issue Low Stream Flow Advisories in impacted geographic regions	FLNR	Attend public meetings	FLNR, AGRI, DFO	Where appropriate, advise agricultural producers to take early actions	AGRI
			Designate local media spokesperson(s) for local level issues	GCPE				
Level 3 (Orange)	Task	Who	Task	Who	Task	Who	Task	Who
	Issue updated province-wide news release	GCPE	Intensify local communication efforts as appropriate based on current streamflow conditions	GCPE, FLNR	Intensify frequency of updates as appropriate via email to key stakeholder groups and major licensees	FLNR	Advise high volume water licensees directly via mail; request voluntary conservation	FLNR
	Potentially hold media news conference to announce activation of additional drought measures and to provide updated information	GCPE, FLNR	Issue updated targeted news releases in impacted geographic regions	GCPE	Commence utilization of additional communication channels (e.g. print, social media, associations, etc.)	GCPE, FLNR	Use direct and indirect communications to request water licensees voluntarily conserve & share water	FLNR, DFO
	Continue to regularly issue updated online water supply and snow bulletins	FLNR			Attend public meetings	FLNR, AGRI, DFO	Where appropriate, work with BCAC and AAFC to advise agricultural producers to take early actions	AGRI

Level 4 (Red)	Task	Who	Task	Who	Task	Who	Task	Who
	Increase frequency and intensity of province wide communication through media, advertizing, internet, email updates and other forums	GCPE	Increase frequency and intensity of targeted local communication through media, advertizing, internet, email updates and other forums	GCPE, FLNR	Continue to issue frequent updates as appropriate via email to key stakeholder groups and major licensees	FLNR	Advise high volume water licensees directly of conditions via mail or other direct means;	FLNR
	Continue to regularly issue updated online water supply and snow bulletins	FLNR					Continue to request voluntary conservation; undertake regulatory action as required	
							Contact producers that may be required to reduce water use	AGRI

* Targeted regional communications includes direct communication with community groups, user groups, local governments, First Nations and others as well as participation in community events, response to local media inquiries and other local level activities.

SUPPLEMENTAL MINISTRY RESOURCES

- Front Counter Staff – support for mass email and / or telephone calls
- Compliance and Enforcement – monitoring of clients' adherence to Ministry objectives and regulations

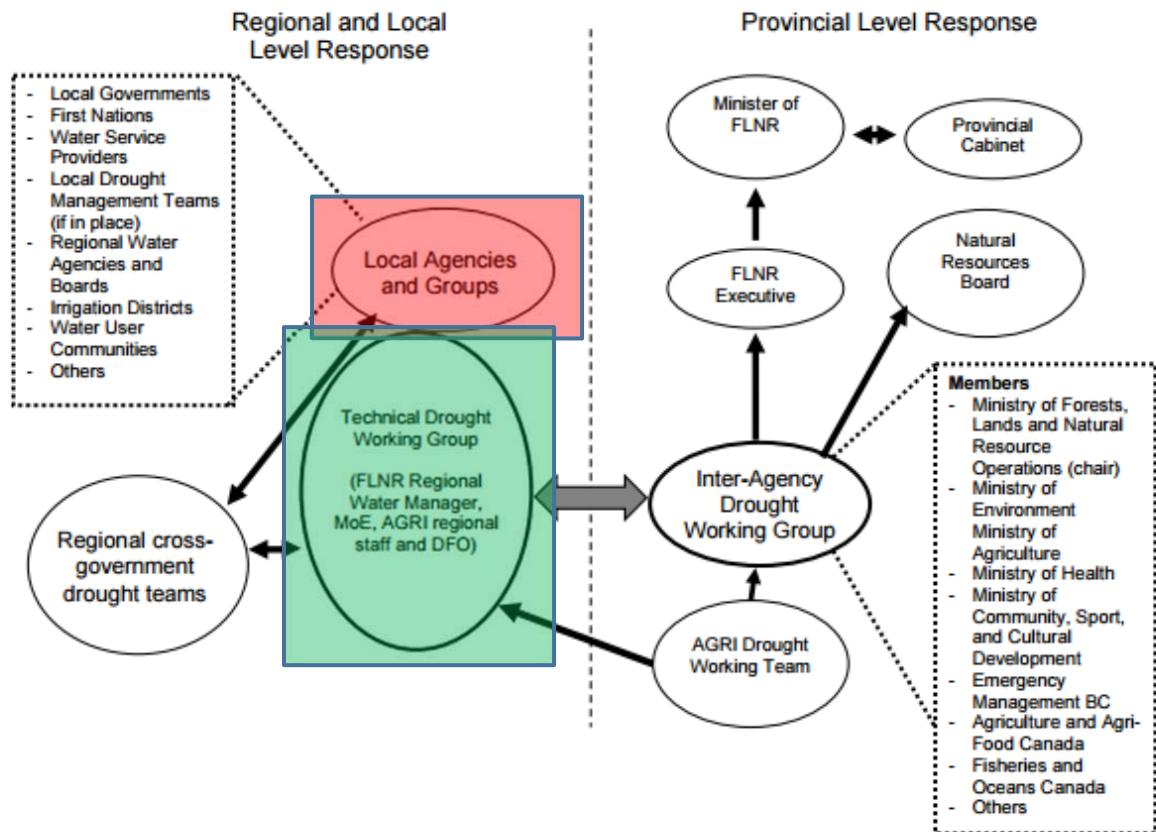


Figure 5: Key coordinating agencies for drought management and response in the province. The red box indicates ongoing implementation by WS staff; the green box indicates existing participation by WS staff.



WATER SUSTAINABILITY ACT

Authority to Impose Actions During Water Scarcity

During times of water scarcity or drought, priority for the use of water is first given to essential household needs and critical environmental flows, and then managed according to the precedence of water rights or first-in-time, first-in-right (FITFIR).

- [Section 22, Water Sustainability Act](#)

Essential Household Use During Water Scarcity

When a significant water shortage has been declared by a ministerial order, the top priority for water use is to satisfy “essential household needs”. Essential household use includes up to 250 litres of water a day for the occupants of one private dwelling and their household animals and poultry to use for drinking water, food preparation and sanitation.

Precedence of Rights

The precedence of water rights is known as first-in-time, first-in-right (FITFIR). FITFIR establishes who is allowed to divert their full allocation of water first during times of water scarcity or drought. Priority is given to those who were granted authorizations first, with more recent licensees having lower priority. Use approvals are given the most junior priority dates, and are the first to be temporarily restricted. When two or more licences have the same start date, priority is determined by a ranking of water use purposes.

- [Section 22, subsection 7, Water Sustainability Act](#)

Surface water and groundwater

A stream, its tributaries and any aquifer that is hydraulically connected to the stream are managed as a single resource. Licensees who use surface water from the stream may be competing for priority with licensees who use groundwater from an aquifer that is connected to the stream.

Unrecorded water and groundwater for domestic use

In the event of a water shortage, people who use groundwater for domestic purposes and people who use unrecorded water can still access water to meet their essential household needs.

Critical environmental flows

A critical environmental flow threshold is a short-term flow threshold, below which significant or irreversible harm to the stream's aquatic ecosystem is likely to occur. When the Minister of Forests, Lands and Natural Resource Operations (FLNR) or Lieutenant Governor in Council declares a significant water shortage order, the Comptroller of Water Rights determines the critical environmental thresholds, which may require temporarily limiting water use.



Ministry of Forests, Lands and Natural Resource Operations

- [Sections 86 and 87, *Water Sustainability Act*](#)

Fish Population Protection Order

If the flow of water in a stream becomes so low that the survival of a fish population is threatened, a fish population protection order may restrict all uses of water from the stream, its tributaries and hydraulically connected aquifers. Priority is given to recovering the fish population above other water uses, regardless of precedence. Prior to giving the order, the Minister must give due consideration to the needs of agricultural users.

- [Section 88, *Water Sustainability Act*](#)

DRAFT



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