DISTRICT OF LAKE COUNTRY

# Drought Preparedness and Water Conservation Strategy

APRIL 2010

Using water wisely makes good sense

# Contents

# 1. Introduction

The beginning of this year has been drier than normal, raising qualms that we may be entering a drought cycle. The recent drought management workshop, held by the BC Ministry of Environment, defined drought as a deficiency in precipitation over an extended period of time. As the risk of drought and potential water shortages increases, so does the need to ramp up conservation efforts. This paper provides information on our current water supply status with a plan to manage water supply and demand.

Because precipitation is outside our control and can change dramatically over time, drought management plans need to be conservative – erring on the side of caution – yet flexible enough to enable increased or decreased action as conditions warrant.

Using water wisely just makes good sense. Water conservation and a conservation ethic is something we should always strive to achieve and improve upon.

Two key principles for the drought response plan are as follows:

1) Lake Country is part of the broader Okanagan Basin water users community and environment. Responses should target the needs of our

community and that of the broader basin, especially regarding downstream impacts and the environment.

2) Attention to water demand is as important as water supply. Whenever more water than necessary is being used and wherever water can be used more efficiently, conservation will provide benefit and the establishment of demand management measures is right.

The tools and techniques we have available to manage water capacity issues can be divided into supply side and demand side strategies. Supply side strategies primarily involve infrastructure improvements such as increasing reservoir storage or installing larger pipes. Demand side strategies are directly associated with water conservation and include, but are not limited to, the following items:

1) Operations and maintenance
    - Leak detection and repair
    - Water system pressure reductions
    - Water audits

2) Educational
    - Newsletters and brochures
    - Advertisements
    - Outreach programs

3) Regulatory
    - Watering restrictions

4) Economic and Financial
    - Universal metering programs
    - Escalating rate structures
    - True cost accounting

# 2. Current Water Supply Status

Snow pack levels are down across the province, sparking concerns that drought conditions may arise later in the year for many regions. The Province and various stakeholder groups are taking action in the form of education and drought management preparation workshops.

At the end of March, the snow pack feeding the upper level lakes upon which the District relies for its water supply was approximately 74% of normal. Oyama Lake is currently 10% lower than normal for this time of year while Swalwell (Beaver) Lake is at normal levels.

Based on experience, District Operations projects that Swalwell Lake will reach or approach full pool subsequent to freshet, but Oyama Lake will not.

The following table provides a comparison of water storage values for the end of march in the Oyama Lake Reservoir, compared to average conditions and to the 2003 drought year. The reduced storage volume equates to approximately 25 days of usable storage during summertime high-demand periods.

| Source | Full Pool | | March Average | | March 2003 | | March 2010 | |
|---|---|---|---|---|---|---|---|---|
| | Depth [1](m) | Volume [2](ML) | Depth (m) | Volume (ML) | Depth (m) | Volume (ML) | Depth (m) | Volume (ML) |
| Oyama Lake | 3.3 | 7200 | 2.4 | 4700 | 2.25 | 4400 | 2 | 3800 |

[1] m = metres
[2] ML = megalitres

It is worth noting that there is a lot of storage in the upper watershed reservoirs, representing fairly robust supply. Thus, it is multi-year or prolonged drought cycles that are the real concern.

It is prudent to take early proactive action to safeguard against longer-term water shortages. The key is to prevent problems from arising, as opposed to having to take large-scale actions after water storage has diminished to perilous levels.

# 3. Project History on Mitigative Measures

In recent years, the District has undertaken numerous initiatives to safeguard against water shortages. Supply side improvement projects have been the primary focus and much has been accomplished:

1) Oyama Lake outlet control automation (2006). By automating the outlet control feed for Oyama Lake, discharges can be adjusted frequently and easily to better match system demands. This in turn enables more water to be held in storage for use at later dates.

2) Eldorado Balancing Reservoir (2006). The Eldorado Balancing Reservoir serves to provide peaking storage such that water from Swalwell lake can be released at a constant rate. Demand fluctuations that occur over the course of the day are accommodated by the balancing reservoir. The Eldorado Reservoir has had a profound effect on the District's success in conserving water and controlling water release.

3) Okanagan Lake Booster Pump Station (2003). The purpose of the Okanagan Lake Booster Pump Station is to supply Okanagan lake water to the upper pressure zones of the Winfield system. This enables supplementing supply from Okanagan Lake as well as the option to switch over entirely to Okanagan Lake during winter flows.

4) Oyama Lake Balancing Reservoir (in progress). The proposed Oyama Lake Balancing Reservoir will be located near the existing Wood Lake water intake and will perform the same function as the Eldorado Balancing Reservoir, for the portion of the Lake Country Water System serviced by the Wood Lake water source.

5) System Maintenance (ongoing). System maintenance to detect and repair leaks and maintain PRV facilities to manage system pressures is a priority component of system operations.

Demand side management techniques have also included public education campaigns and watering restriction protocols for both agricultural and domestic irrigation.

# 4. The Drought Management & Water Conservation Plan

Water conservation and drought preparedness are interrelated and our best tool to manage potential water shortages as a reactionary measure is demand side management. The following point-form list details our drought preparedness/water conservation action plan for 2010.

1) Check agricultural irrigation dole valves and measure actual consumption rates to ensure water usage matches allotments. Work will be performed by water operations staff as part of their regular duties. Cooperative follow up with farmers to rectify any issues and help educate will be an integral part of this task.

2) Improve on existing protocols for ongoing water supply turn on/offs on the Oyama Lake source to better control demands as a shared resource.

3) Enforce water regulations per District bylaws to ensure negligent water use is not occurring. Every effort will be made to educate and cooperate with water users to achieve voluntary compliance.

4) Monitor supply status on a continuing basis and keep water users informed through the District website and special means (advertisements, brochures) as necessary.

5) Public outreach and education. Perform field audits and monitoring of residential neighbourhoods. Provide educational materials to water users found watering during restricted times or in an improper fashion.

6) Oyama Lake Supply Irrigation Allotment. Provide early notification to farmers of potential reduction in the number of watering days, from 120 to 110. Provide updates over time as information becomes available or the situation changes.

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Greg Buchholz
Operations Manager

# Appendices

**Ministry of Environment Snow Survey Bulletin**

**Okanagan Basin Snow Water Index**

**Dealing with Drought (excerpt)**

**Okanagan and Similkameen Drainage Basin Snow Pack Statistics**

Print and Close Cancel

# Ministry of Environment

## Water Supply and Snow Survey Bulletin

**March 1, 2010**

The March 1 snow survey is now complete. Data from 152 snow courses and 50 snow pillows around the province, with 18 out-of-province sampling locations and climate data from Environment Canada, have been used to form the basis of the following report.

The entire document including text, data and graphs can be viewed as an Adobe pdf file.

The detailed snow survey data can be viewed as an Excel file.

The Basin Snow Index Map can be viewed here.

**Weather**

Weather has been variable over the winter, with the effects of a moderate El Niño dominating weather across much of the province for the past two months. Beginning near Christmas and lasting through to today, much of central and southern BC has experienced warm weather, with well above normal temperatures. For some locations in BC, the January and/or February average temperature was the warmest on record, or close to the warmest on record. As a result of the unseasonably warm weather, melt of low and mid slope snow occurred in most areas of the Coast and Interior.

Precipitation was variable during January, with a series of Pacific frontal storms bringing heavy rain to Vancouver Island and the South Coast (producing flooding on Vancouver Island). Some small parts of the very southern parts of BC, including Penticton and the south Okanagan, appeared to be in the path of January's frontal storms, and received above normal precipitation during January, but precipitation was generally well below normal throughout most of the interior. February brought a similar pattern, with near normal or slightly below normal precipitation on Vancouver Island and the South Coast, but with well below normal precipitation throughout most of the interior. Castelgar, in the West Kootenay, experienced the lowest February snowfall ever recorded (based on a 45-year record). The Skeena and Nass basins have been particularly dry. Precipitation at Terrace from October 1st to Feb 28th was the lowest of record for that period (based on a 55-year record).

**Snowpack**

Snowpacks in all major river basins across B.C. are below normal for March 1st, varying from a low of 65% of normal in the East Kootenay basin to a high of 95% of normal in the North

Thompson. Basin snow water indices have declined steadily over the last two months across the province, following the warm and dry January and February.
In most areas, low elevation snow is generally absent and mid-elevation snow throughout Interior valleys is well below normal, following the warm weather of January and February. This is generally not measured well by the BC snow survey, which is biased towards high elevation locations. Use caution in interpreting the basin snow index numbers reported here, as they are likely to indicate greater snow water in some basins than is actually present.

**Upper Fraser:** Individual snow courses range from 63% of normal (Kaza Lake) to 105% (McBride Upper), with an overall basin index of 92%.

**Nechako:** Similar to the Upper Fraser, with an overall basin index of 94%

**Mid Fraser:** Individual snow courses range from 48% of normal (Deadman River) to 127% (Green Mountain snow pillow), with an overall basin index of 91%. High elevation portions of the Quesnel Highland and the Fraser Plateau appear to be near 65-90%. Some portions of the Bridge River basin have been affected by January's frontal storms, and have localized heavier snowpacks.

**North Thompson:** Individual snow courses range from 62% of normal (Knouff Lake) to 107% (Mount Cook snow pillow), with an overall basin index of 95%.

**South Thompson:** Individual snow courses range from 59% of normal (Anglemeont) to 103% (Celista snow pillow), with an overall basin index of 94%.

**Upper Columbia:** Individual snow courses range from 56% of normal (Field) to 107% (Downie Slide), with an overall basin index of 88%.

**Lower Columbia:** The Lower Columbia is very dry. Individual snow courses range from 72% of normal (St. Leon Creek) to 90% (Record Mountain), with an overall basin index of 77%.

**East Kootenay:** The east Kootenay is very dry. Individual snow courses range from 35% of normal (Sinclair Pass) to 83% (Floe Lake), with an overall basin index of 65%.

**West Kootenay:** The West Kootenay is very dry**.** Individual snow courses range from 53% of normal (Nelson) to 94% (Redfish Creek snow pillow), with an overall basin index of 77%.

**Kettle:** The Kettle basin is very dry. Individual snow courses range from 66% of normal (Monashee Pass) to 90% (Big White Mountain), with an overall basin index of 75%.

**Okanagan:** The Okanagan basin is dry. Individual snow courses range from 43% of normal (Vaseux Creek) to 119% (Mount Kobau), with an overall basin index of 86%. A portion of the South Okanagan (approximately Penticton and south) appears to have near or above normal snow at high elevation, while the rest of the Okanagan is below normal.

**Similkameen:** The Similkameen basin is very dry. Individual snow courses range from 51% of

normal (Hamilton Hill) to 78% (Blackwall Peak snow pillow), with an overall basin index of 67%.

**South Coast:** Individual snow courses range from 53% of normal (Dog Mountain) to 108% (Upper Mosley snow pillow), with an overall basin index of 84%. The Metro Vancouver north shore basins appear to be in the 55-90% of normal range, with the highest amounts at high elevation.

**Vancouver Island:** There are very few snow measurement sites on Vancouver Island. Individual snow courses range from 60% of normal (Jump Creek snow pillow) to 117% (Wolf River Middle), with an overall basin index of 89%.

**Peace:** The Peace is very dry. Individual snow courses range from 62% of normal (Aiken Lake snow pillow) to 88% (Monkman Creek), with an overall basin index of 79%.

**Skeena/Nass:** The Skeena, Nass and Bulkley river basins are very dry. Individual snow courses range from 45% of normal (Cedar-Kiteen snow pillow) to 101% (Tsai Creek snow pillow), with an overall basin index of 73%.

**BC Snow Basin Indices – March 1, 2010**

| Basin | % of Normal* | Basin | % of Normal* |
|---|---|---|---|
| Upper Fraser | 92% | Kootenay | 71% |
| Nechako | 94% | Okanagan-Kettle | 86% |
| Middle Fraser | 91% | Similkameen | 67% |
| Lower Fraser | 88% | South Coast | 84% |
| North Thompson | 95% | Vancouver Island | 89% |
| South Thompson | 94% | Peace | 79% |
| Columbia | 83% | Skeena-Nass | 73% |

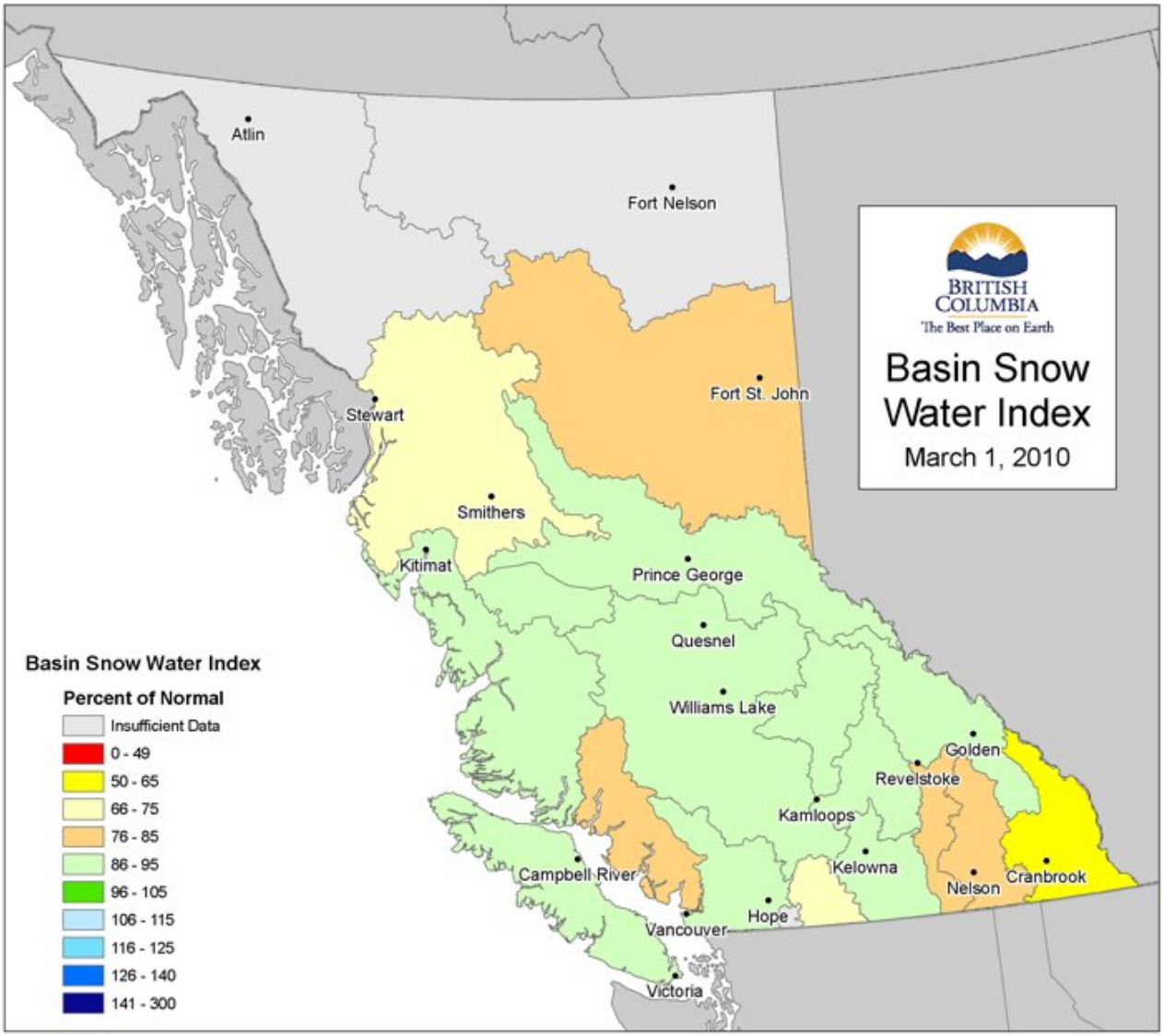
**Outlook**

By this date, generally about 80% of the BC mountain snowpack has accumulated, and there is only 4-6 weeks of winter remaining to accumulate additional snow. Conditions as of March 1st indicate a likelihood of below normal freshet runoff during May and June, and low risk for freshet flooding risk in the major river basins (Fraser, Thompson, Skeena, Nass, Peace, etc.). The below average snowpack conditions across much of the Interior (Okanagan, Nicola, Kettle, Similkameen, South Thompson, Kootenay, Skeena, Nass, Peace) indicate potential for water-supply challenges to develop this summer. To reduce the potential for summer low flow or drought problems, spring rainfall (April, May and June) will need to be at or above normal. In the case of the South Interior (Okanagan, Nicola, Kettle, Similkameen, South Thompson), current snow conditions suggest the potential to redevelop conditions similar to the 2009 summer drought (which resulted in very low river levels, and depletion of lake, reservoir and groundwater storage in the South Interior and in other parts of the province), should the spring weather remain dry.

Based on current snow and weather conditions, and incorporating the dryness of 2009, the River Forecast Centre is forecasting inflows to Okanagan Lake for the Feb-July period to be 69% of normal (±19%), and inflows to Nicola Lake to be 63% of normal (±20%).

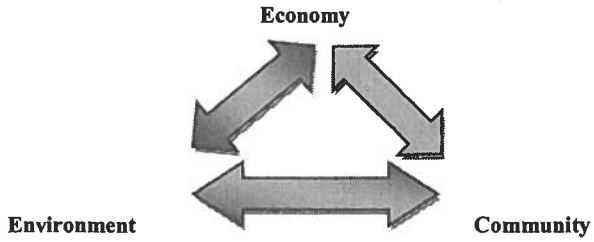
The El Niño Southern Oscillation (ENSO) is an important factor for determining seasonal weather patterns in western North America. British Columbia is currently being affected by a warm ENSO (El Niño), and the warm and dry weather over the past 10 weeks is consistent with the El Niño. Recent commentary from the National Oceanic and Atmospheric Administration (NOAA) anticipated a continuation of El Niño conditions through spring, resulting in potential for continuation of the above normal temperatures and below normal precipitation.

* Every effort is made to ensure that data reported on these pages are accurate. However, in order to update the graphs and indices as quickly as possible, some data may have been estimated. Please note that data provided on these pages are preliminary and subject to revision upon review.


Atlin
Fort Nelson
Fort St. John
Stewart
Smithers
Kitimat
Prince George
Quesnel
Williams Lake
Golden
Revelstoke
Kamloops
Kelowna
Nelson
Cranbrook
Campbell River
Hope
Vancouver
Victoria
BRITISH COLUMBIA
The Best Place on Earth
Basin Snow Water Index
March 1, 2010
Basin Snow Water Index
Percent of Normal
Insufficient Data
0 - 49
50 - 65
66 - 75
76 - 85
86 - 95
96 - 105
106 - 115
116 - 125
126 - 140
141 - 300

## What are the Effects of Drought?

Drought affects communities, the environment, and the economy through a reduction of water for communities, agriculture, industry, and forestry. It also affects the sustainability of aquatic ecosystems.



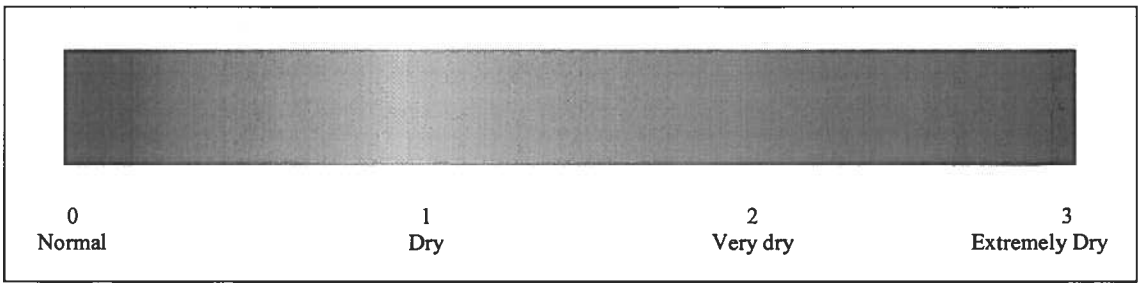

- Lower water levels may increase concentrations of nutrients or contaminants, leading to poor water quality.
- With less available potable surface water, people may make heavier draws on ground water supplies, wells, and springs.
- Water that is necessary for biological or industrial production processes may be reduced, and agriculture and industry users may lose the ability to produce crops or provide goods and services to communities of the province, impacting the health and economy of an area.
- Coping with the effects of reduced supplies may cause chronic stress for some individuals and negatively affect the social fabric of a community.
- Drought conditions will also increase the risk of forest fires and limit water supplies for firefighting.
- Lower stream flows and the corresponding increased water temperatures threaten the survival of many fish and aquatic species.

## How is Drought Measured?

By being familiar with local climate and water supplies, a community can anticipate and prepare for drought and "stressed" systems. To determine if your water supplies are "stressed" by drought, examine your supplies for one or more of the following conditions:

- streamflows are significantly lower than the recorded average,
- water quality does not meet water quality standards,
- key habitat factors, such as temperature, quality, cover, substrate, and accessibility – all necessary to sustain a biologically diverse community – are degraded,
- typical seasonal demands cannot be fully met,
- restrictions are currently in place, and anticipation of increasing severity of restrictions exists, or
- water use conflicts have arisen.

To assist suppliers, the provincial government monitors precipitation and streamflows across the province and posts regular updates to the River Forecast centre website at http://www.env.gov.bc.ca/rfc/index.htm . General responses applicable to each stage have been provided in the Drought Stages and Responses Matrix (Appendix 2-1).



# Appendix 2

## Planning Templates

**Introduction**

The templates included in this appendix are intended to assist with water supply planning with the purpose of protecting community supplies for drinking water, sanitation, and fire prevention. They are also intended to assist in protecting water supplies for protecting fish and aquatic ecosystems, and sustaining industrial development and economic activity. The templates highlight the information needs for water supply planning recommended by the Dealing with Drought handbook.

- **Drought Stage and Responses Matrix** – provides an overview of appropriate responses during the different stages of drought (Normal, Dry, Very Dry, and Extremely Dry). An assessment of regional drought stages will be provided online and will inform water suppliers of the surrounding conditions as well as the responses and management actions that are appropriate for those conditions. Updates of regional drought stages will be provided online at: http://www.env.gov.bc.ca/rfc/river_forecast/water-supply.htm

- **Drought Management Plan Template** – the plan includes establishing a local drought management team, identifying drought stages and corresponding responses, and clearly assigning responsibilities, to ensure that the party responsible and the expected actions have been planned and agreed upon among the major users of the watershed.

- **Water Supply and Demand Analysis Template** – provides a framework for conducting a hydrology study to characterize the present supply of water to a local system. The study also assesses current demands and evaluates future growth in demands, examines the adequacy of the supply to meet those demands, and suggests alternative management strategies.

- **Water Conservation Plan Template** – encompasses strategies and tools for reducing water demands on a long term basis.

2-1 Drought Stages and Response Matrix

| Stage | Goal/Targets | Action/Response | Communication |
|---|---|---|---|
| Normal | Prevent entrance to Dry Stage | Encourage conservation, stewardship, and education; complete water supply, conservation, drought management, and emergency drought consequence plans | Promote conservation programs through local media |
| Dry | Prevent and prepare for Very Dry stage, target water use reduction of 10-20% | Voluntary conservation among all users, as well as an increase in monitoring efforts and watering restrictions | Use local media releases to advise of watering restrictions, encourage conservation, update current supply status and share forecasts of future conditions |
| Very Dry | Prevent and prepare for Extremely Dry, target water use reduction 20-40% | Use sector-specific restrictions based on priority water licence rights; eliminate filling of public fountains and watering of public parks, gardens, medians, and other similar areas; limit new connections or uses. Province may limit the number of, and impose restrictions on, new licences, regulate storage, or invoke conditions on existing licences | Directly contact users, explain priority licensed uses and conservation needs; have local media explain restrictions and enforcement; increase communication between province and local jurisdictions (seek contact information at http://www.env.gov.bc.ca/wsd/ |
| Extremely Dry | Prevent and prepare for possible loss of supplies, maximum possible reductions for all sectors | Regulatory control rather than voluntary – monitor and enforce restrictions and allocations through bylaws; no outdoor or summer usage. Province may restrict use by lower priority licensees or those with conditional clauses, may assist communities seeking alternative sources | Increase frequency of communication with all users, continue reporting to province, forecast future scenarios, and explain the expected responses in the case of a loss of community supplies |
| | | | |
| Loss of Community Supplies | Ensure health and safety, aim to re-enter lower drought classification | Follow the steps of your Emergency Drought Consequence Plan. Allocate water on a per capita basis, no outdoor or summer usage, no potable water used on landscapes, monitor compliance, seek and use alternative supplies | Declare a state of emergency, provide frequent updates through all forms of media on necessary actions |

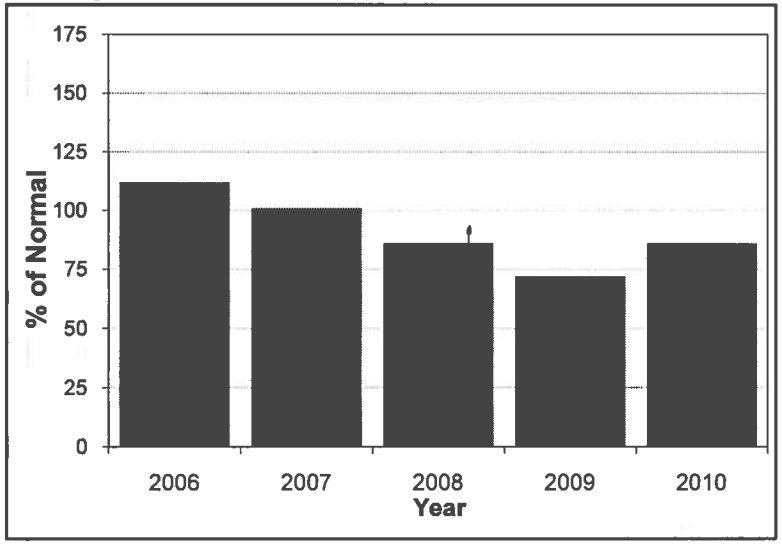
## OKANAGAN Drainage Basin

| Snow Course Name and Number | | Elev. metres | Date of Survey | Mar 2010 | | | Historic, Water Equivalent (mm) | | | | | Yrs of Record |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Snow Depth cm | Water Equiv. mm | % of Normal | 2009 mm | 2008 mm | Max. mm | Min. mm | Normal mm | |
| SUMMERLAND RESERVOIR | 2F02 | 1280 | 25-Feb | 68 | 174 | 81 | 128 | 187 | 381 | 97 | 214 | 49 |
| MC CULLOCH | 2F03 | 1280 | 01-Mar | 46 | 127 | 81 | 223 | 115 | 249 | 71 | 157 | 70 |
| ABERDEEN LAKE | 1F01A | 1310 | | | | | | 106 | 231 | 51 | 145 | 55 |
| OYAMA LAKE | 2F19 | 1340 | 01-Mar | 44 | 110 | 70 | 135 | 116 | 241 | 73 | 157 | 40 |
| POSTILL LAKE | 2F07 | 1370 | 01-Mar | 43 | 116 | 62 | 152 | 121 | 274 | 98 | 186 | 60 |
| VASEUX CREEK | 2F20 | 1400 | 03-Mar | 22 | 60 | 43 | 86 | 72 | 284 | 52 | 139 | 39 |
| BOULEAU LAKE | 2F21 | 1400 | 27-Feb | 91 | 190 | 64 | 166 | 216 | 432A | 165 | 295 | 39 |
| TROUT CREEK | 2F01 | 1430 | 25-Feb | 61 | 172 | 102 | 141 | 154 | 335 | 55 | 169 | 70 |
| TROUT CREEK (WEST) | 2F01A | 1430 | 24-Feb | 58 | 196 | N/A | *No historic record* | | | | | 1 |
| BRENDA MINE | 2F18 | 1460 | 25-Feb | 80 | 256 | 89 | 160 | 240 | 495 | 130 | 287 | 41 |
| BRENDA MINE | 2F18P | 1460 | 01-Mar | N/A | 286E | 84 | 198 | 288 | 431 | 184 | 342 | 17 |
| ISLAHT LAKE | 2F24 | 1480 | 25-Feb | 91 | 230 | 73 | 163 | 287 | 497 | 161 | 317 | 28 |
| GREYBACK RESERVOIR | 2F08 | 1550 | 03-Mar | 61 | 192 | 97 | 184 | 154 | 312 | 91 | 198 | 43 |
| ESPERON CR (UPPER) | 2F13 | 1650 | 26-Feb | 95 | 260 | 70 | 206 | 284 | 635 | 157 | 371 | 41 |
| ISINTOK LAKE | 2F11 | 1680 | 25-Feb | 48 | 116 | 71 | 92 | 89 | 358 | 53 | 164 | 45 |
| MACDONALD LAKE | 2F23 | 1740 | 25-Feb | 117 | 346 | 88 | 225 | 387 | 583 | 170 | 394 | 33 |
| MUTTON CREEK NO. 1 | WA07 | 1740 | 26-Feb | 114 | 320 | 104 | | 325 | 589 | 0 | 307* | 65 |
| MISSION CREEK | 2F05P | 1780 | 01-Mar | 101 | 308 | 79 | 330 | 349 | 610 | 206 | 388 | 38 |
| GRAYSTOKE LAKE | 2F04 | 1810 | | | | | | 230Z | 605 | 128 | 330 | 29 |
| MOUNT KOBAU | 2F12 | 1810 | 28-Feb | 105 | 308 | 119 | 164 | 195 | 488 | 61 | 259 | 44 |
| WHITEROCKS MOUNTAIN | 2F09 | 1830 | 28-Feb | Not sampled | | | 248 | 464 | 809 | 180 | 499 | 54 |
| SILVER STAR MOUNTAIN | 2F10 | 1840 | 02-Mar | 146 | 562 | 88 | 502 | 649 | 912 | 347 | 636 | 51 |

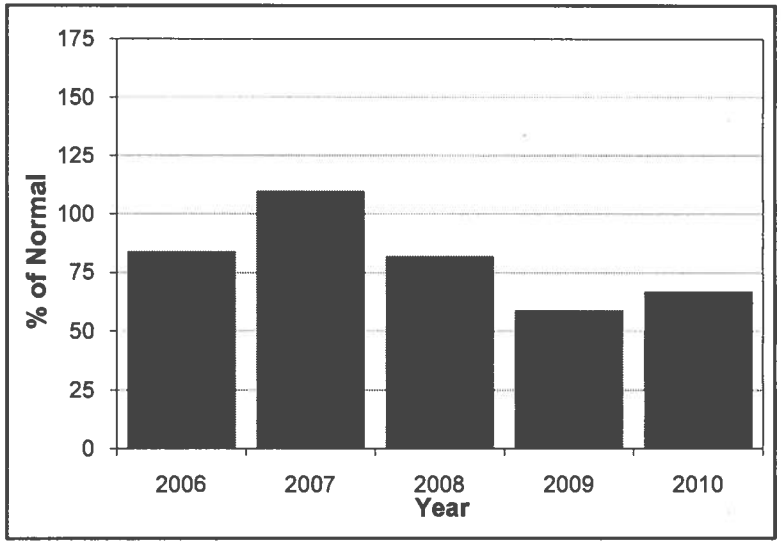
## SIMILKAMEEN Drainage Basin

| Snow Course Name and Number | | Elev. metres | Date of Survey | Mar 2010 | | | Historic, Water Equivalent (mm) | | | | | Yrs of Record |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Snow Depth cm | Water Equiv. mm | % of Normal | 2009 mm | 2008 mm | Max. mm | Min. mm | Normal mm | |
| BROOKMERE | 1C01 | 980 | 28-Feb | 45 | 109 | 56 | 64 | 160 | 351 | 53 | 194 | 65 |
| FREEZEOUT CREEK TRAIL | WA11 | 1070 | 26-Feb | 46 | 132 | 49 | 229 | 312 | 615 | 15 | 269* | 60 |
| LIGHTNING LAKE | 3D02 | 1220 | 27-Feb | 68 | 184 | 65 | 201 | 314 | 497 | 36 | 282 | 36 |
| HAMILTON HILL | 2G06 | 1490 | 27-Feb | 61 | 166 | 51 | 149 | 247 | 676 | 102 | 326 | 48 |
| MISSEZULA MOUNTAIN | 2G05 | 1550 | 26-Feb | 54 | 128 | 58 | 88 | 145 | 363 | 76 | 221 | 46 |
| ISINTOK LAKE | 2F11 | 1680 | 25-Feb | 48 | 116 | 71 | 92 | 89 | 358 | 53 | 164 | 45 |
| LOST HORSE MOUNTAIN | 2G04 | 1920 | 02-Mar | 45 | 158 | 77 | 154 | 135 | 508 | 92 | 204 | 47 |
| BLACKWALL PEAK | 2G03P | 1940 | 01-Mar | 154 | 566 | 78 | 484 | 739 | 1323 | 213 | 728 | 42 |
| HARTS PASS | WA09 | 1980 | 25-Feb | 201 | 746 | 80 | 668 | 1021 | 1636 | 312 | 931* | 59 |
| HARTS PASS | WA09P | 1980 | 01-Mar | 170 | 674 | 84 | 620 | 902 | 1320A | 356 | 805* | 12 |

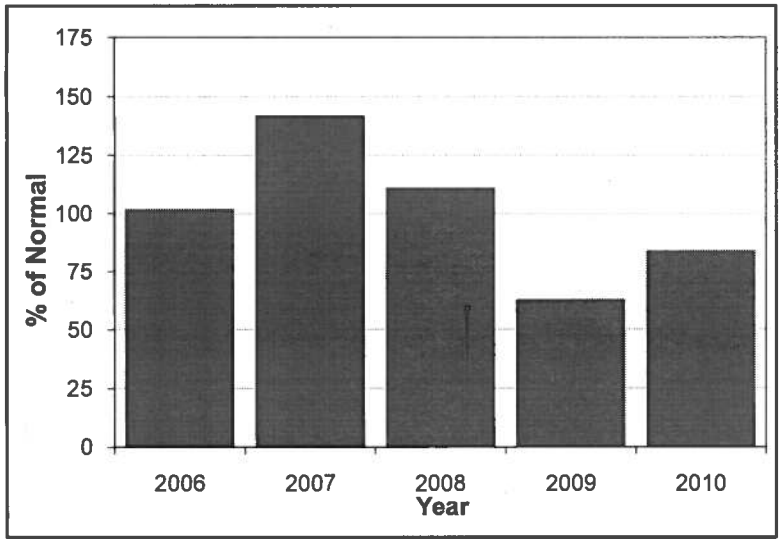
**Okanagan-Kettle**




**Similkameen**




**South Coast**




**Vancouver Island**