



# **Thompson Okanagan Drought Assessment and Response**

Okanagan Basin Water Board  
Drought Triggers for Okanagan Mainstem Lakes  
Workshop

November 16, 2016



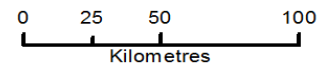
# Overview

- **Drought plan**
- **The team**
- **Monitoring**
- **Assessment**
- **Drought response**
- **2016 learnings**

# Ministry of Forests, Lands and Natural Resource Operations



- Thompson-Okanagan Region - Outlined
- Water Management Precincts - Outlined
- Districts**
- Cascades Natural Resource District
- Okanagan Shuswap Natural Resource District
- Thompson Rivers Natural Resource District





Ministry of  
Forests, Lands and  
Natural Resource Operations

# Thompson Okanagan Region 2016 Drought Response Implementation Plan

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Thompson Okanagan Drought Response Team

Version 2.0

April 2016





# **Drought Response Team**

- **FLNR Thompson Okanagan Region**
- **Hydrologists, biologists, hydrogeologists, water allocation officers**
- **First Nations, DFO and Ministry of Agriculture**
- **2-4 staff from every major office - Kamloops, Vernon, Penticton, Merritt**
- **Convene May 1 every year, develop game plan based on emerging conditions**



# Low Flow Indicators

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



# Flow Monitoring

- **Stream flow focus**
- **Assess potential for low flows based on previous winter snow pack, timing of freshet, el nino vs la nina, long range weather forecast, ocean warm water “blob”, etc.**
- **Have developed a stream watch list, collect data from real time and manual hydrometric stations**
- **Added a sensitive aquifer watch list, expertise provided by groundwater specialists**



## **Response Triggers**

- **Fish centric, percentile based approach**
- **Drought levels 1 and 2 - things are considered to be OK**
- **Level 3 and 4 – actions required**
- **EFN usually around 20% MAD, if  $\leq$  concern**
- **CEFT is around 5% MAD, but dependent on life stage of fish (migration is 10-15%)**





# Assessment

- **As year progresses, a few streams become higher priority**
- **Analyze WSC hydrometric data for priority streams**
- **Produce current conditions reports weekly**
- **Basin/sub-basin drought level assignment - Provincial Technical Drought Working group**



# **Current Conditions Report**

- **Automated decision tool which provides a weekly update of flows and temperatures for priority streams**
- **Species present, life history, critical flow thresholds for each life stage**
- **Developing spatial component which will show emerging concerns at a glance**



## **Response**

- **As dry conditions escalate, our regional response escalates, biweekly to daily**
- **Goal is to manage flows above critical thresholds**
- **Weekly (or more frequent) communication with managers and minimum biweekly communication with licensees and stakeholders**
- **Voluntary requests**
- **Regulatory reductions**



## **Regulatory Action**

- **WSA Section 86 – Ministerial declaration of water shortage**
- **WSA Section 87 – regulate users based on FITFIR**
- **WSA Section 88 – Ministerial fish protection Order**



## 2016

- **Fairly wet year, though still some chronic problems – Coldwater River, Salmon River**
- **In general, storage-backed systems present less flow problems than the natural systems**
- **Groundwater has a big influence on surface flows – we are just entering this arena**
- **Regional all staff debrief in September – region is on a path of continual improvement**



## **2017 ??**

- **La Nina winter = cooler, more snow**
- **Warm water “blob” off Vancouver Island is a concern**
- **As always, pray for rain**



**Thank you**