DEALING WITH DROUGHT
It's Takes More Than Planning

Okanagan Drought Planning Workshop
23 July 2009
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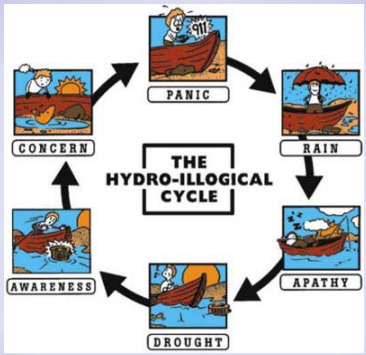
Ministry of Environment



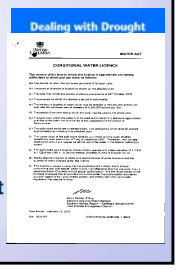
Reference: I.R. Tannehill, *Drought: Its Causes and Effects*, Princeton University Press, Princeton, New Jersey, 1947

OVERVIEW

1. Provincial Resources
2. *Dealing With Drought* Handbook
3. Comprehensive Drought Management Program
4. Drought Planning
5. Lessons Learned
6. How to Testing & Practice Your Plan

Provincial Resources

- **Living Water Smart - www.livingwatersmart.ca**
- **River Forecast Centre - www.env.gov.bc.ca/rfc/**
- ***Dealing with Drought* Handbook**
- **Drought Working Group**
- **Infrastructure & Capital grants**
- **Provincial Emergency Program**
- **Ministry of Agriculture & Lands**
- **Real Time Climate Network (Farmwest)**
- **Legislative, Regulatory & Policy support**



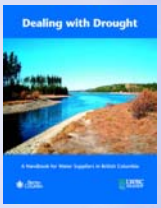
OKANAGAN COMMUNITIES WITH FUNDING IN 2004

Westbank Irrigation District
Lakeview Irrigation District
District of Peachland
District of Summerland
City of Penticton
Town of Oliver
Osoyoos Irrigation District
City of Kelowna
Kaleden Irrigation District
District of Lake Country
Village of Lumby
Black Mountain Irrigation District
Glenmore Ellison Improvement District
Rutland Waterworks District
South East Kelowna Irrigation District
South Okanagan Mission Improvement District
RD Central Okanagan
RD North Okanagan
RD Okanagan-Similkameen
Okanagan Falls Irrigation District
West Bench Irrigation District

Dealing With Drought Handbook

Brief Text on:

- **Why Prepare for Drought?**
- **What is Drought?**
- **What are the Effects of Drought?**
- **How is Drought Measured?**
- **How to Prepare for Drought**
- **How to Minimize the Impacts of Drought**



Dealing With Drought Handbook

Appendices:
- Local Drought Management Teams (App. 1)

Planning Templates:
- Drought Stage and Response Matrix (App. 2-1)
- Drought Management Plan Template (App. 2-2)
- Water Supply and Demand Analysis Template (2-3)
- Water Conservation Plan Template (App. 2-4)
- Emergency Drought Consequences Template (App. 3)
- Example Bylaws (App. 4)
- Drought Planning Resources (App. 5)

Drought Management Team

- Establish membership (include major users, consider existing groups)
- Develop mandate, specify roles for members
- Identify goals and responsibilities
- Create timelines to meet goals
- Provide information to group

Drought Management Team

Possible roles:
- Advisory committee to the water utility
- Compile data on supply and use (voluntary monitoring)
- Coordinating with other groups (e.g. fisheries and agriculture agencies & organizations, industrial water users, other communities)
- Obtain public input and promote involvement
- Assist with public education
- Encourage conservation and appropriate responses
- Develop the plans and participate in testing

Comprehensive Drought Management Program

- Assess water supply and future demands and develop a Water Supply Plan; know & understand your source & demand
- Improve water use efficiency through a Water Conservation Plan (long-term)
- Develop a Drought Management Plan based on stages and criteria of drought (or water shortage)
- Develop an Emergency Drought Consequence Plan for loss of water supplies
- Test your Plans
- Update your Plans
- Involve your stakeholders through a Drought Management Team and communicate, educate, participate

Drought Stage Response Matrix

Appendix 2-1:

Sets out suggested:
goals, actions, and communication methods
for each of five stages of drought:
normal, dry, very dry, extremely dry, and loss of water supplies

Drought Management Plan Template

Appendix 2-2:
- Put your local drought management team to work
- Determine impacts of drought (economic, social, and environmental)
- Define how you will monitor water supply & climate
- Define drought stages
- Determine goals and responses appropriate for each stage (see drought stage/response matrix), including communication at each stage, when & by whom
- Draft the required bylaws
- Test your plan
- Monitor effectiveness and revise plan as necessary

Capital Regional District -success story-

- 2001 was driest winter since 1916
- Sooke Reservoir at less than 70% of capacity
- Developed Drought Management Action Plan
- Goal to reduce April - September water use by 25-30%
  - Stage 3 restrictions for first time ever
  - Captured & diverted sources not normally used
  - Major public awareness campaign
  - Reduced releases to Goldstream River in consultation with DFO

Capital Regional District -success story-

- Developed Public Sector BMP Manual (led by example)
- Lots of communications
- Enforcement
- Results:
  - buy-in by community
  - 28% drop in water use
  - maintained water quality

Contact - Jack Hull (www.crd.bc.ca)

Tofino - Lessons Learned -

- 2004 – Received Planning Grant & developed Drought Plan
- 2006 – Community water supply ran low
- Lessons Learned:
  - Accurate monitoring
  - Test drive your Drought Plan & practice it annually
  - Drought Plan implementation must be the responsibility of one person & be part of routine procedures
  - Identify confirmed and cost-effective alternate water supply; verify annually

Tofino - Lessons Learned -

- Ensure sufficient detail in your plans:
  - Responses to drought stages need to be specific for each water user group; residential, agriculture, institutional, commercial sectors
  - Clear understanding of streamflow requirements to meet DFO legal requirements
  - Document & train on the obvious…E.g. Identify valves and document pressure requirements for valves should water need to be trucked in.

Tofino - Lessons Learned -

- Communication:
  - Well documented communication strategy & messaging
  - One spokesperson; practiced messaging
  - Key media contact within each water user group to ensure accurate & consistent information

Tofino Mayor John Fraser, September 1, 2006
Photo credit: ctv.ca

Testing the Plan

- Testing needed to ensure the Plan's assumptions, assignments and other details work
- Goals in testing are to:
  - Discover any planning weaknesses
  - Reveal resource needs
  - Determine if training is sufficient
  - Improve coordination and response
  - Practice the communication network
  - Clarify roles and responsibilities
  - Improve readiness for response

Training & Orientation

- Before testing, all staff need to be familiar with the plan and those with direct involvement should be trained
- Orientation seminar for all staff
- Hands-on-training for those with specific responsibilities
- Involve your Drought Management Team
- Invite your neighbouring utilities

Connecting Tofino to Ucluelet, Photo credit: ctv.ca

"Drill Day" - Testing the Plan

Tabletop Exercise

- Develop scenarios and test all aspects of the plan against the scenarios
- Seek alternative solutions when problems are encountered
- Document test results to record what parts of the plan work well, what needs attention and where additional training is required
- Modify the plan
- Test it again

LESSONS LEARNED

- Every drought is different
- Every community responds to drought differently
- Drought Management Plans must be specific to the community
- Local Drought Management Team is key
- Drought Management Plans must contain sufficient detail that anyone can follow it
- Drought Management Plans must be practiced to find the flaws

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Water for BC; Safe, sustainable & valued by all.

www.env.gov.bc.ca/wsd/public_safety/drought_info/index.html