

# Actionable Science for Water Utility Planning:

## Portland Water Bureau

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PNW DEWS, Feb 3 2016



# Water Supply Systems Are Complex



# Drought ≠ Water Supply Shortage



## U.S. Drought Monitor CONUS

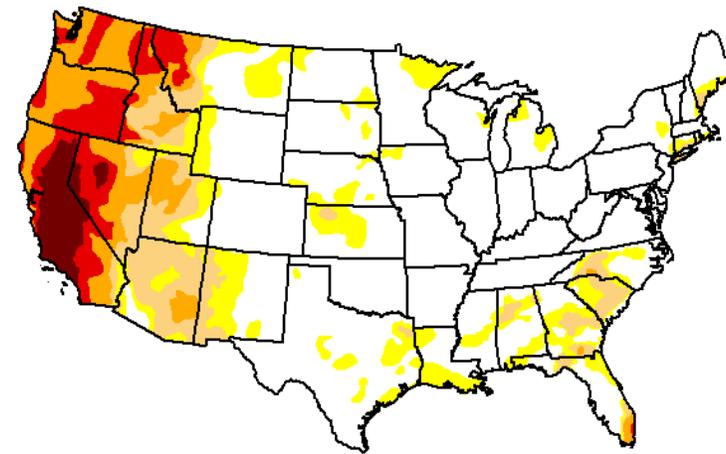
**July 28, 2015**

*(Released Thursday, Jul. 30, 2015)*

Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	61.11	38.89	25.71	17.17	8.79	2.83
<b>Last Week</b> <i>7/21/2015</i>	64.01	35.99	26.06	16.74	7.48	2.83
<b>3 Months Ago</b> <i>4/28/2015</i>	46.75	53.25	37.41	20.03	8.10	3.41
<b>Start of Calendar Year</b> <i>12/31/2014</i>	53.20	46.80	28.68	16.93	8.96	2.54
<b>Start of Water Year</b> <i>9/30/2014</i>	52.22	47.78	30.57	18.66	9.41	3.85
<b>One Year Ago</b> <i>7/29/2014</i>	52.50	47.50	34.06	22.77	10.60	3.90



### Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

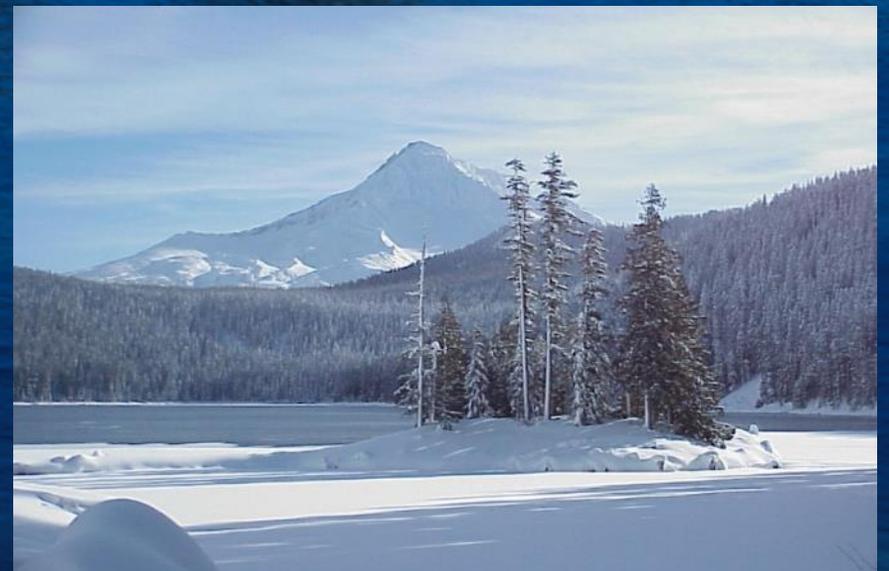
*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

**Author(s):**  
Richard Heim  
NCEI/NOAA



<http://droughtmonitor.unl.edu/>

# Climate Risks: turbidity, drawdown, wildfire, water quality



# Water Utility Climate Alliance



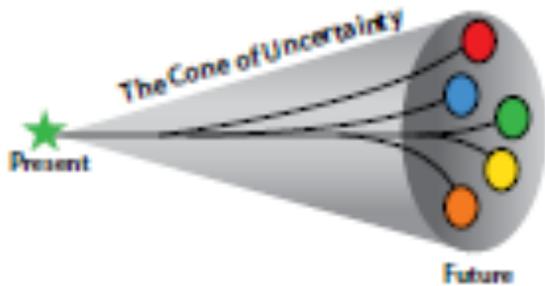
## Mission Statement

The Water Utility Climate Alliance provides leadership in assessing and adapting to the potential effects of climate change through collaborative action. We seek to enhance the usefulness of climate science for the adaptation community and improve water management decision-making in the face of climate uncertainty.

# Embracing Uncertainty & Actionable Science in Practice

## EMBRACING UNCERTAINTY

A Case Study Examination of How Climate Change Is Shifting Water Utility Planning



Available at:  
[www.wucaonline.org](http://www.wucaonline.org)



## ACTIONABLE SCIENCE IN PRACTICE



Co-producing Climate Change Information for Water Utility Vulnerability Assessments

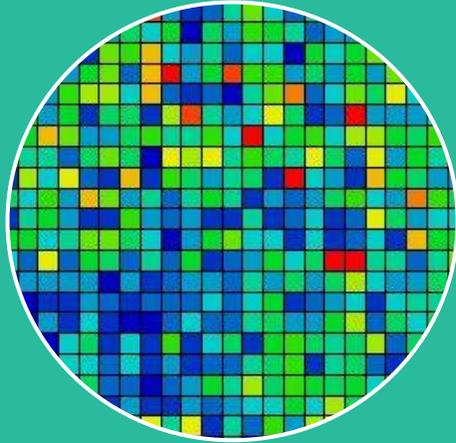
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# Co-Producing Actionable Science at PWB



Develop a hydrologic model



Downscale climate data

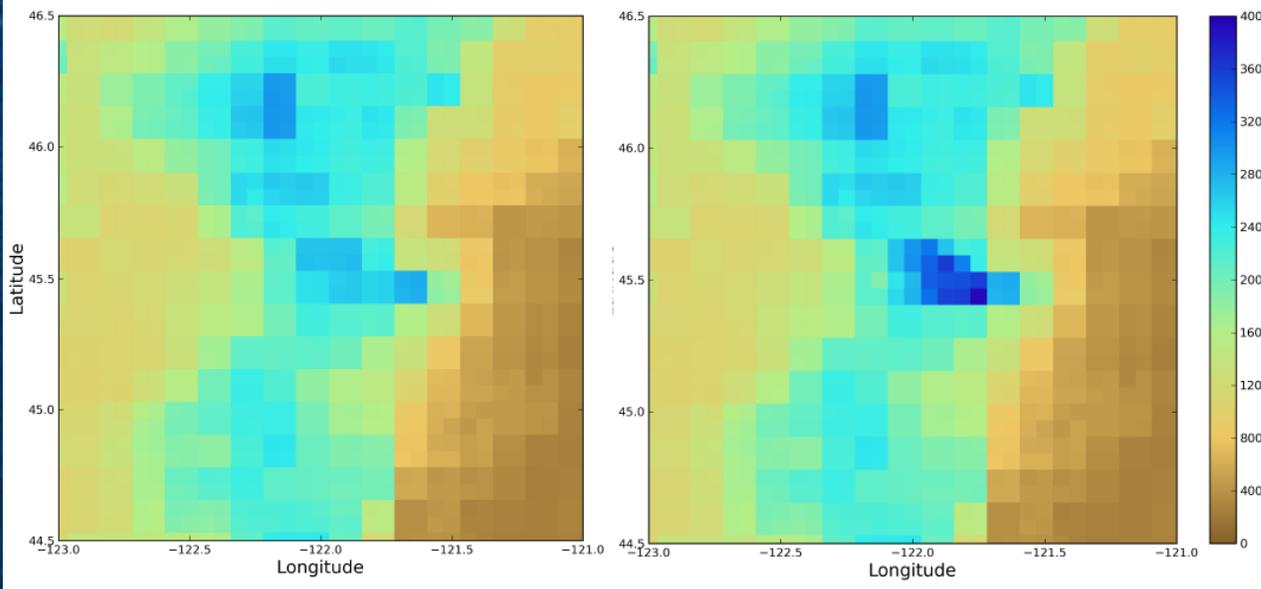
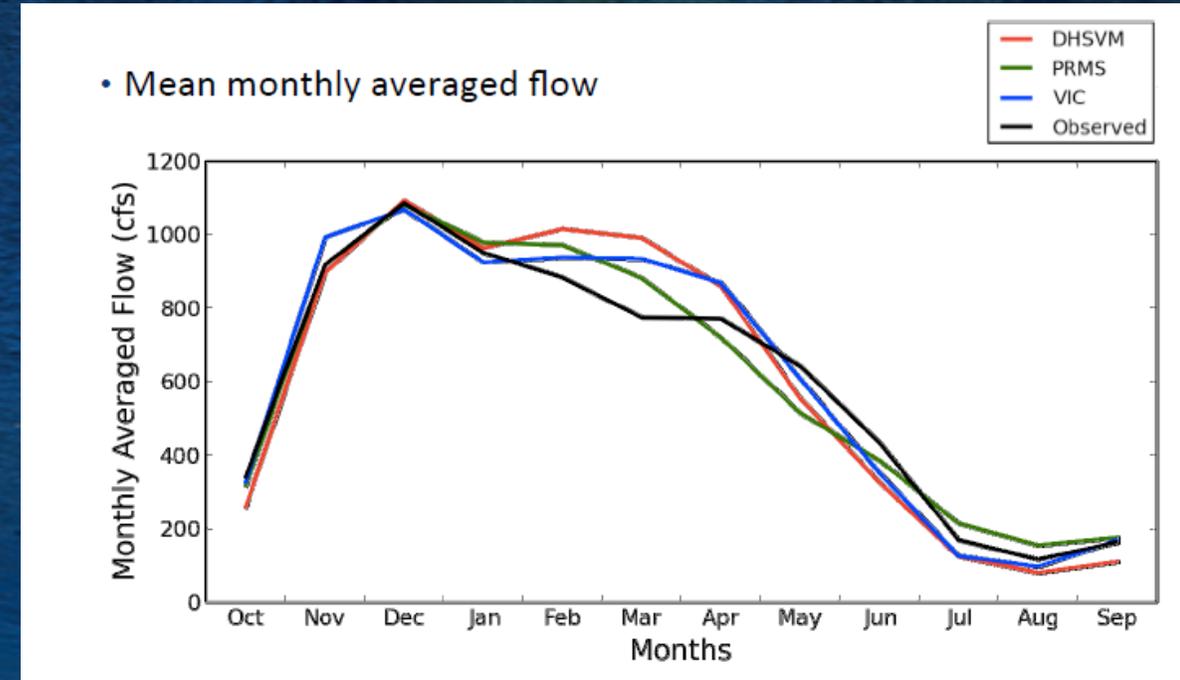
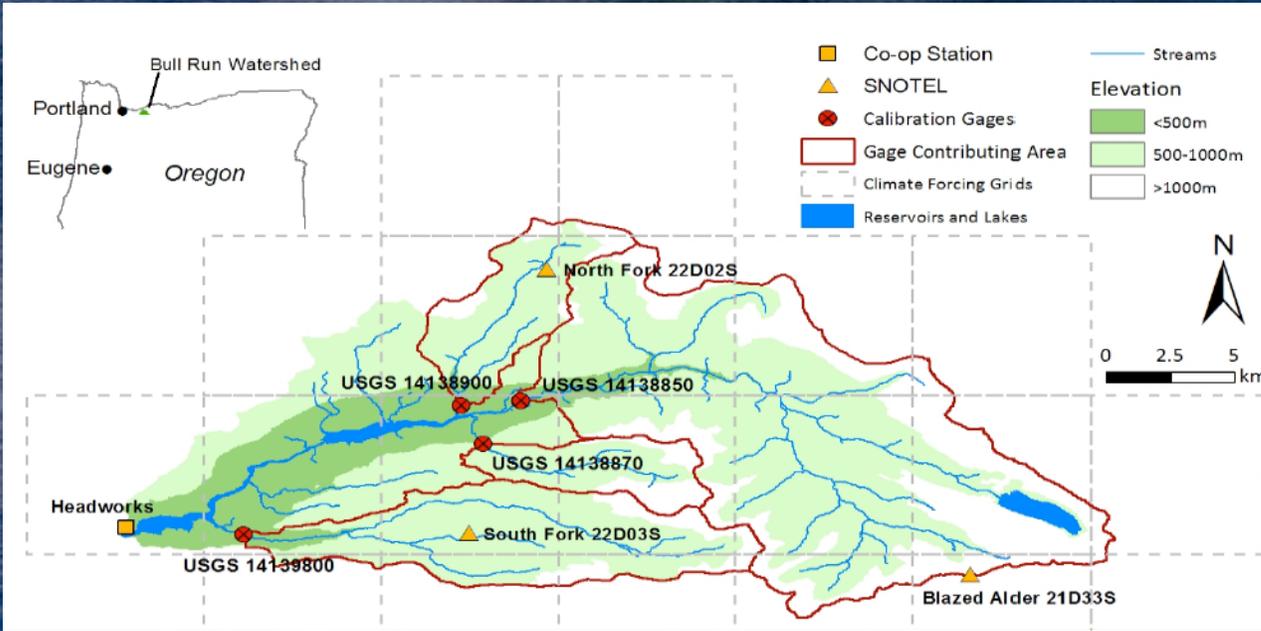


Build institutional capacity

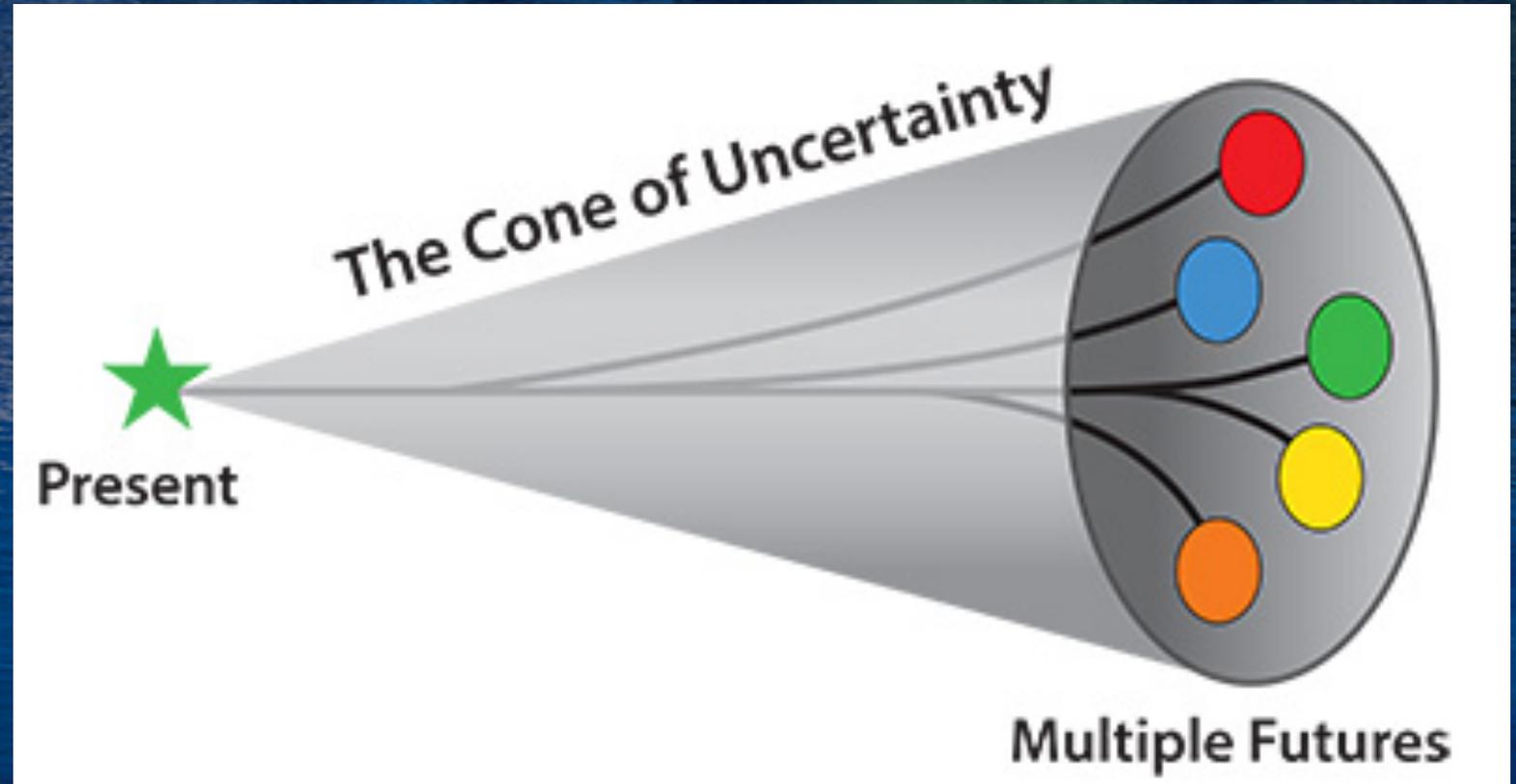
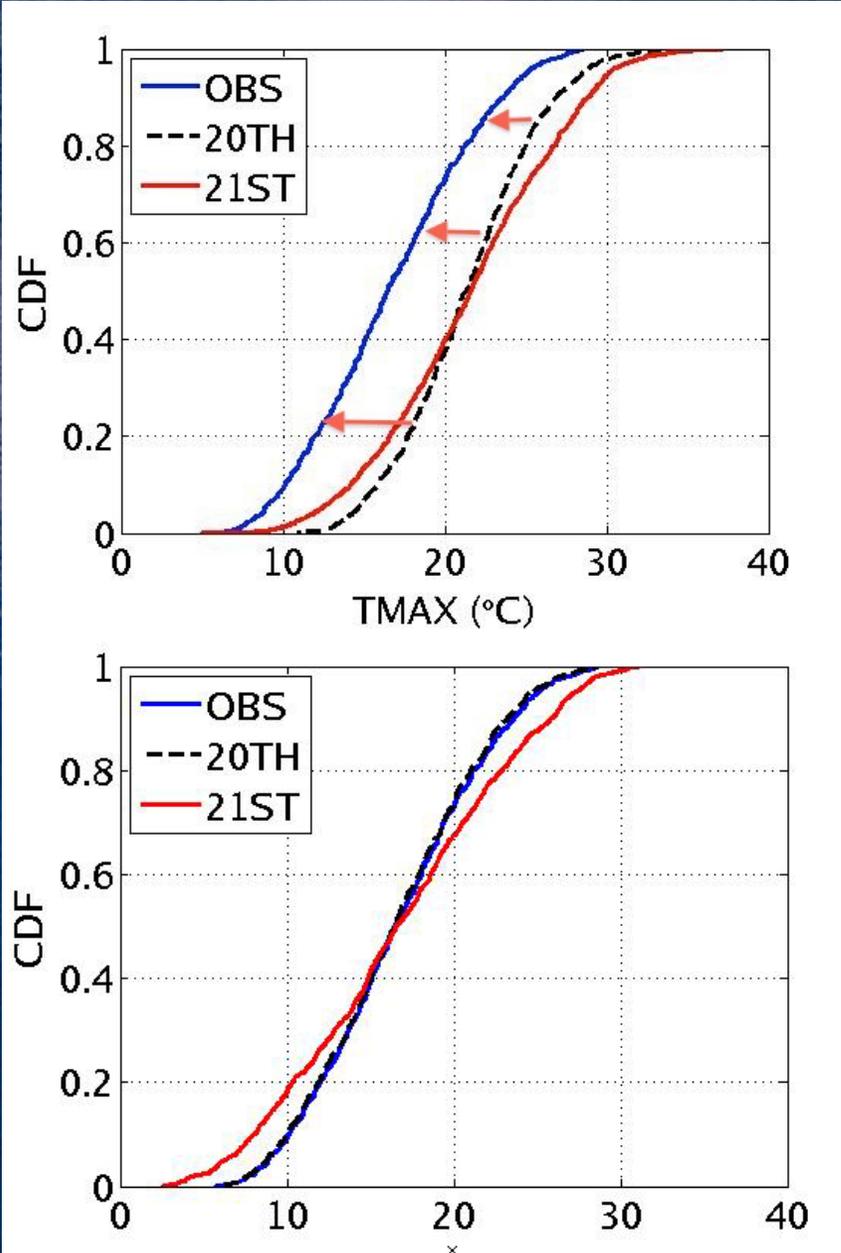
Co-produced & actionable science



# Co-Producing Actionable Science at PWB



# Co-Producing Actionable Science at PWB



Water Utility Climate Alliance: Embracing Uncertainty, 2015