



# Introduction

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**Indian Health Service, California Area  
Office of Environmental Health & Engineering**

## **Drought Update**

**Program Directors Meeting**

**Sacramento, CA. Monday, October 31, 2016.**

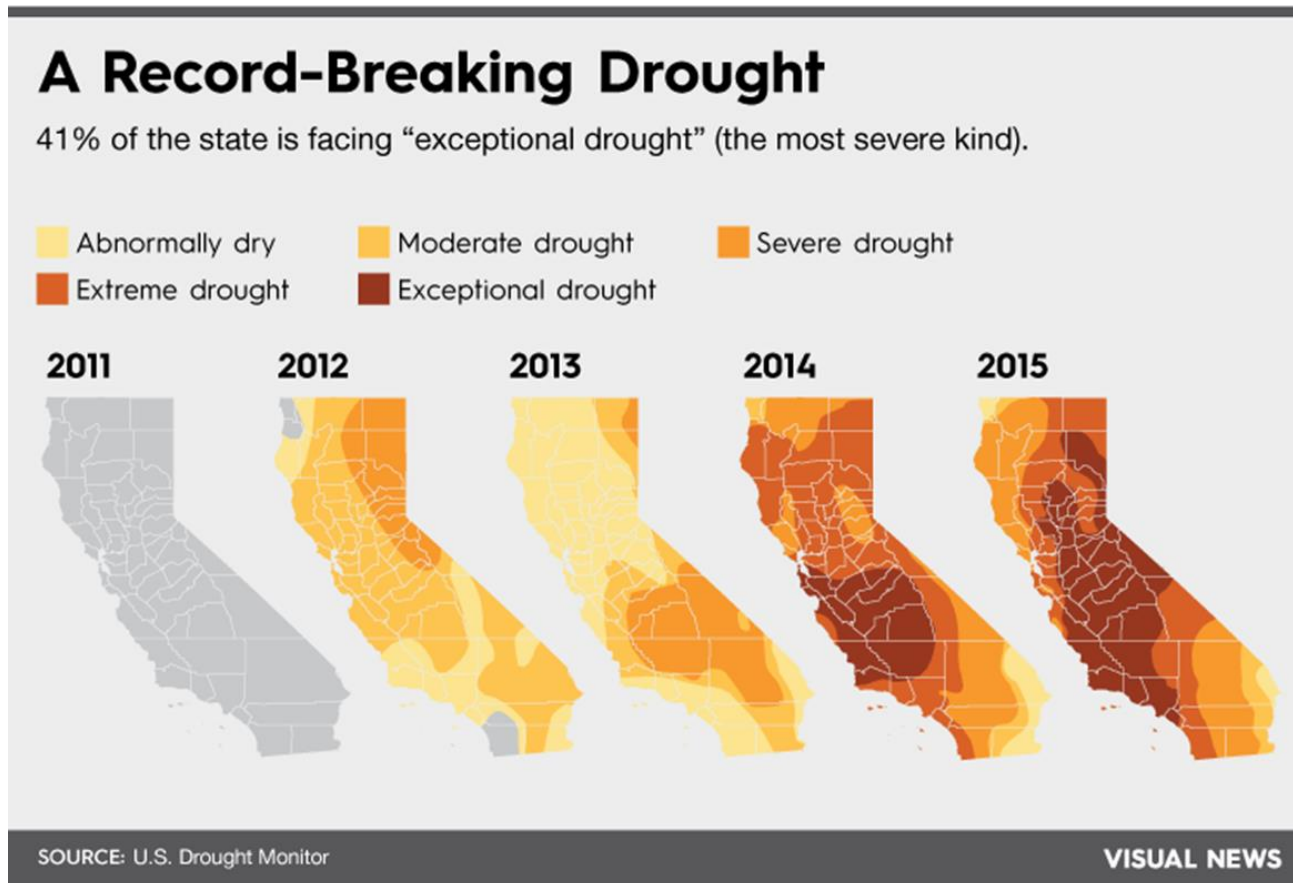
Christopher Brady, Deputy Director  
Division of Sanitation Facilities Construction  
Indian Health Service, California Area

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# Background

- Record driest four-year period of statewide precipitation (2012 to 2015).



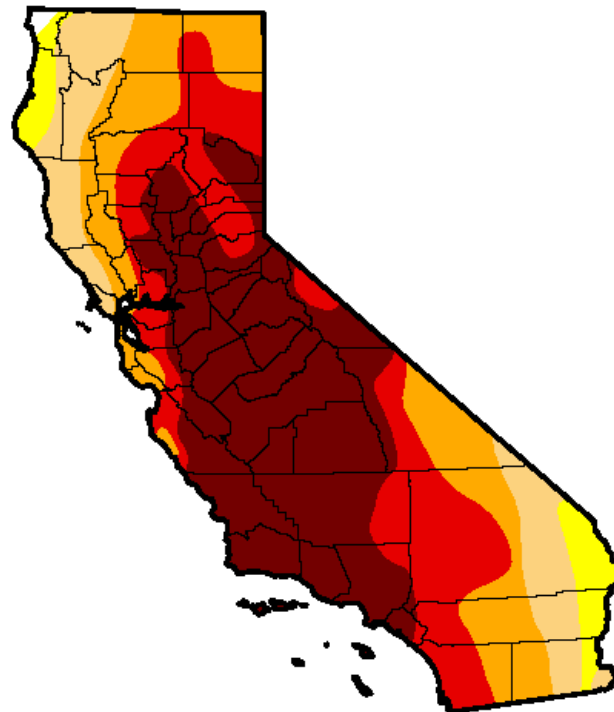


# February 2016

## Early 2016.....

- In February 2016, over 60% of California was still at extreme or exceptional drought conditions.

### U.S. Drought Monitor California



**February 16, 2016**

(Released Thursday, Feb. 18, 2016)

Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.29	99.71	94.69	81.82	61.40	38.48
<b>Last Week</b> 2/9/2016	0.22	99.78	94.77	81.82	61.40	38.48
<b>3 Months Ago</b> 11/17/2015	0.14	99.86	97.33	92.26	70.55	44.84
<b>Start of Calendar Year</b> 12/29/2015	0.00	100.00	97.33	87.55	69.07	44.84
<b>Start of Water Year</b> 9/29/2015	0.14	99.86	97.33	92.36	71.08	46.00
<b>One Year Ago</b> 2/17/2015	0.16	99.84	98.10	93.44	67.46	41.20

#### 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:**

Eric Luebehusen  
U.S. Department of Agriculture



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

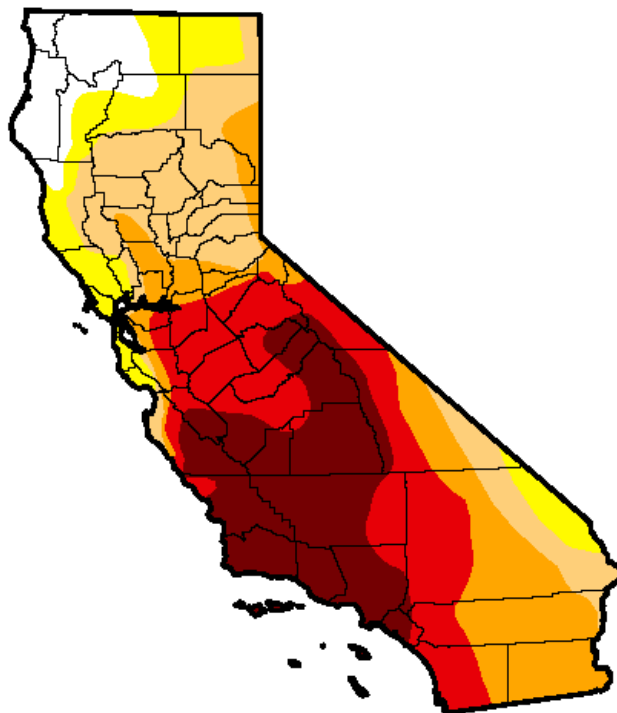


# October 2016

## And now.....

- As of October 2016, over 40% of California is still at extreme or exceptional drought conditions.

### U.S. Drought Monitor California



**October 18, 2016**

(Released Thursday, Oct. 20, 2016)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	7.77	92.23	81.12	81.80	42.80	21.04
Last Week 10/11/2016	0.00	100.00	83.59	62.27	42.80	21.04
3 Months Ago 7/19/2016	0.00	100.00	83.59	59.02	42.80	21.04
Start of Calendar Year 12/29/2015	0.00	100.00	97.33	87.55	69.07	44.84
Start of Water Year 9/27/2016	0.00	100.00	83.59	62.27	42.80	21.04
One Year Ago 10/20/2015	0.14	99.86	97.33	92.27	71.08	46.00

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Author:

Eric Luebehusen

U.S. Department of Agriculture



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



# Tribal and IHS Activities

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## Tribal and IHS Drought-related activities:

- Coordination with State and other Federal agencies.
  - Periodic vulnerability/risk assessments of water systems.
  - Monitor systems at high risk including water source (e.g. drawdown/recovery) and per capita demand.
  - Develop specific drought-related projects and obtain resources/funding from State and Federal agencies.
  - Develop guides including a *Drought Contingency Plan* and *Drought Planning Handbook for Emergency Drinking Water Supply*.
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# Tribal water systems at high risk due to drought conditions:



**Updated August 1, 2016– Updates will be made as conditions change and information becomes available.**

#	Tribe	System Name	# of Indian Homes
	Tule River	Apple Valley	9
	Big Sandy	Big Sandy CWS	46
	Tule River	Cow Mountain	9
	Tule River	Main	282
	Grindstone Rancheria	Grindstone CWS	51
	Table Mountain Rancheria	North Water System	18

**Total Systems to Date = 6**





# Drought Projects



**Trinity River Water Source – Hoopa Indian Reservation**



**Stony Creek - Grindstone Rancheria Water Source**



**Eradicated marijuana plants – Tule River and Yurok Indian Reservations**



**Water hauling - Yurok Indian Reservation**



**Water vending machine – Yurok Indian Reservation**



# Drought Handbooks

## Develop drought-related templates and handbooks:

- Drought Contingency Plan, Public Water System
- Planning Handbook, Emergency Drinking Water Supply

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### Drought Contingency Plan Public Water System

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**Name of Tribe/Band**  
Address of Tribe/Band  
P.O. Box XXXX  
City, California 95555

**Name of Tribal Utility Department/Water Department**  
Address of Tribal Utility Department/Water Department  
P.O. Box XXXX  
City, California 95555

**Name of Tribal Public Water System**  
Public Water System ID Number: 1234567

**Date [00/00/2014]**

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March 2014      Drought Contingency Plan for Public Water System

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### Drought Planning Handbook Emergency Drinking Water Supply For California Indian Tribes

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Prepared by State of California and Federal Agencies

October 2015



October 2015      Drought Emergency Planning Handbook for Drinking Water Supply





# Drought Contingency Plan Template

## Drought Contingency Plan:

- Tribes customize template according to community situation
- Develop system-specific drought triggers and response actions
- Progress in developing plans:
  - 10% in early 2014
  - 65% in late 2015

### 1. Declaration of policy, purpose, and intent

#### 1.1. General

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the [ ] [name of Tribe/Band] hereby adopts the following regulations and restrictions on the delivery and consumption of water through an ordinance or resolution.

The Drought Contingency Plan (Plan) is a framework of forward-leaning planning for scenarios and objectives, managerial and technical actions, and potential response systems in order to prevent, or better respond to, a drought-related emergency or critical situation. The overall goal of the Plan, and the contingency planning process, is to facilitate rapid emergency response. The intention of the Plan is to be functional, flexible, and easy to implement, and also serve as a tool for maintaining control over the events or limiting the risk of loss of control. The Plan should be periodically updated.

The primary focus is placed on best management practices to manage water use demand, while evaluating options for alternative water supply sources. Water uses regulated or prohibited under the Plan are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply condition are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in this Plan.

#### 1.2. Water use priorities

The risks to public health from water shortages could be high and include issues of water quality, water quantity, sanitation, and hygiene for personal use and food preparation. As a result of this, the Plan establishes the following priorities for use in developing demand reduction programs and allocations during a water shortage emergency. Priorities for use of available water, from highest to lowest priority, are:

1. Health and safety: residential home interior uses, sanitation, and fire fighting
2. Commercial, industrial, and governmental: maintain jobs and economic base
3. Existing landscaping: especially trees and shrubs
4. New demand: projects without permits when shortage is declared

#### 1.3. Application

The provisions of this Plan shall apply to all customers and property utilizing water provided by the public water system.

### 2. Drought task force

A drought task force was created by the Tribe/Band in order to develop this Plan and to assist in further developing and implementing effective drought monitoring, mitigation, and response actions. The drought task force consists of representatives from the following:

- [ ] [name of tribal office or official]



# IHS California Area Drought Website

IHS California Area  
Drought Website at:  
[www.ihs.gov/california](http://www.ihs.gov/california)

**Indian Health Service**

Home About IHS Locations for Patients for Providers Community Health Career Opportunities Newsroom

CA Home CA Site Map CA Member Portal Access

**California Area**  
INDIAN HEALTH SERVICE

HEALTH PROGRAMS TRIBAL CONSULTATION NEWS & EVENTS ABOUT US OFFICES FAQs

Home Offices Office of Environmental Health & Engineering (OEHE) Division of Sanitation Facilities Construction (DSFC) Drought 2016

## Drought 2016

### Office of Environmental Health and Engineering (OEHE)

With the release of the emergency drought declaration by the state of California, the Indian Health Service/California

Area Office (IHS/CAO) is concerned that tribal community water systems could be impacted by one of the driest winters on record in California. Precipitation in January 2015 across the Northern Sierra -- a region crucial to statewide water supplies -- was just 20 percent of average.

### Division of Sanitation Facilities Construction

The IHS/CAO, OEHE&E, has taken a proactive approach to plan for drought conditions and possible impacts to Indian

**NEW Posted January 13, 2016**

[Drought Planning Handbook - Emergency Drinking Water for California Indian Tribes](#) (PDF) - Prepared by State of California and Federal Agencies - October 2015

**General drought facts/information:**

[Map of Drought Locations in California](#) University of Nebraska

[Saving our Water](#) Save our Water

[California Water Fact Sheet \(EPA\)](#) (PDF) Environmental Protection Agency

**Drought contingency planning tools/resources:**

[California Drought Vulnerability - Risk Assessment Form](#) (XLS)

[Drought Assessment Form for Tribal Drinking Water Systems](#) (PDF)

[Drought Contingency Plan TEMPLATE](#) (DOCX)

[List of local Office of Emergency Services by County](#) State of California, Offices of Emergency Services

[Free California Drinking Water Workshops](#) (PDF) Rural Community Assistance Corporation

[Emergency Community Water Assistance Grants \(ECWAG\)](#) (PDF) U.S. Department of Agriculture



# Outlook for the Future

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## According to the State Department of Water Resources:

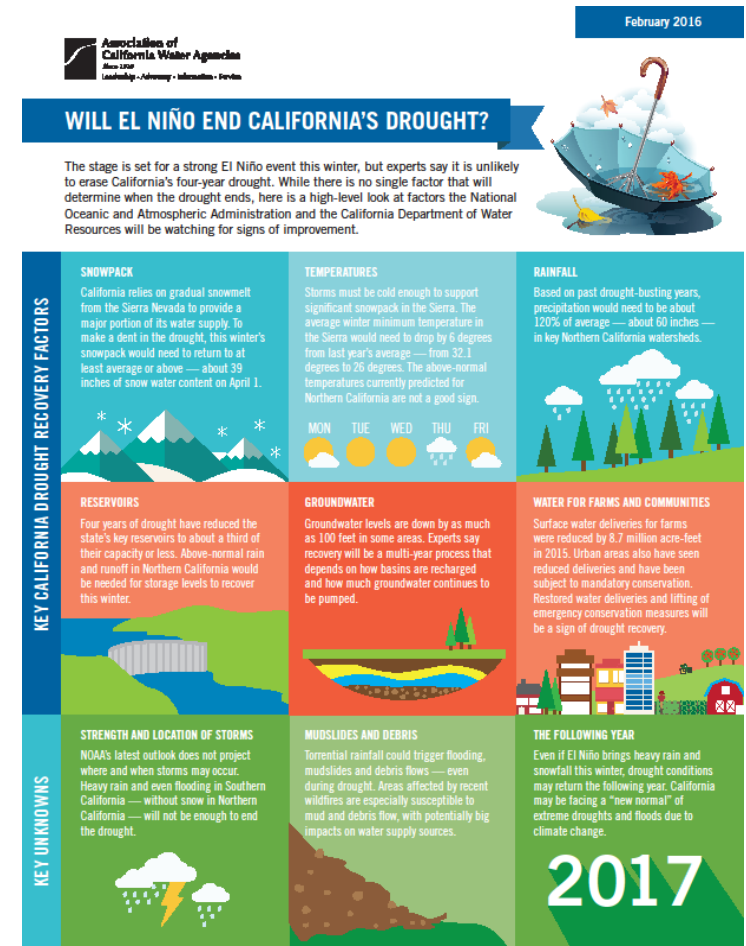
- Historically, multi-year droughts have been ended by an above-average water year where statewide precipitation was in the range of **150 percent of average**.
  - For water year 2016, precipitation from October through January was about 115 percent of average statewide so far (compared to 80 percent in 2015).
  - Even when precipitation returns to normal following a multi-year dry period, storage may not recover as quickly – especially storage in groundwater basins where longer time periods are required for recharge to occur.
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# Outlook for the Future

## According to the Association of California Water Agencies:

- Even if El Niño brings heavy rain and snowfall this winter, drought conditions may return the following year.
- California may be facing a “**new normal**” of extreme droughts.





# Planning for the Future

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## Planning considerations – because droughts may be a “new normal”:

- Our success or failure in responding to future drought emergencies will be determined by what we do **now** (when it's raining and the reservoirs are full), and not by what we do when the extreme drought has occurred (when the rivers and tanks are empty).







# Planning for the Future

## Planning activities could include:

1. Awareness of current drought conditions at the state and local levels
2. Continue to coordinate/communicate with neighboring partners - county/state/federal
3. ***Develop/review/update drought contingency plans***
4. Identify and implement projects to increase resiliency in water management including:
  - A. Supply management (e.g. identify/repair leaks)
  - B. Demand management (e.g. water conservation)

