Hawaii Water Conservation Plan and Implementation

1st Annual Joint State Water Conference
Kauai Community College – Performing Arts Center

Lihue, Hawaii
January 14, 2013

Commission on Water Resource Management

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Overview

- Water Conservation Project Background
- Water Conservation Advisory Group
- Priority WC programs for implementation
- Important lessons
- Next steps

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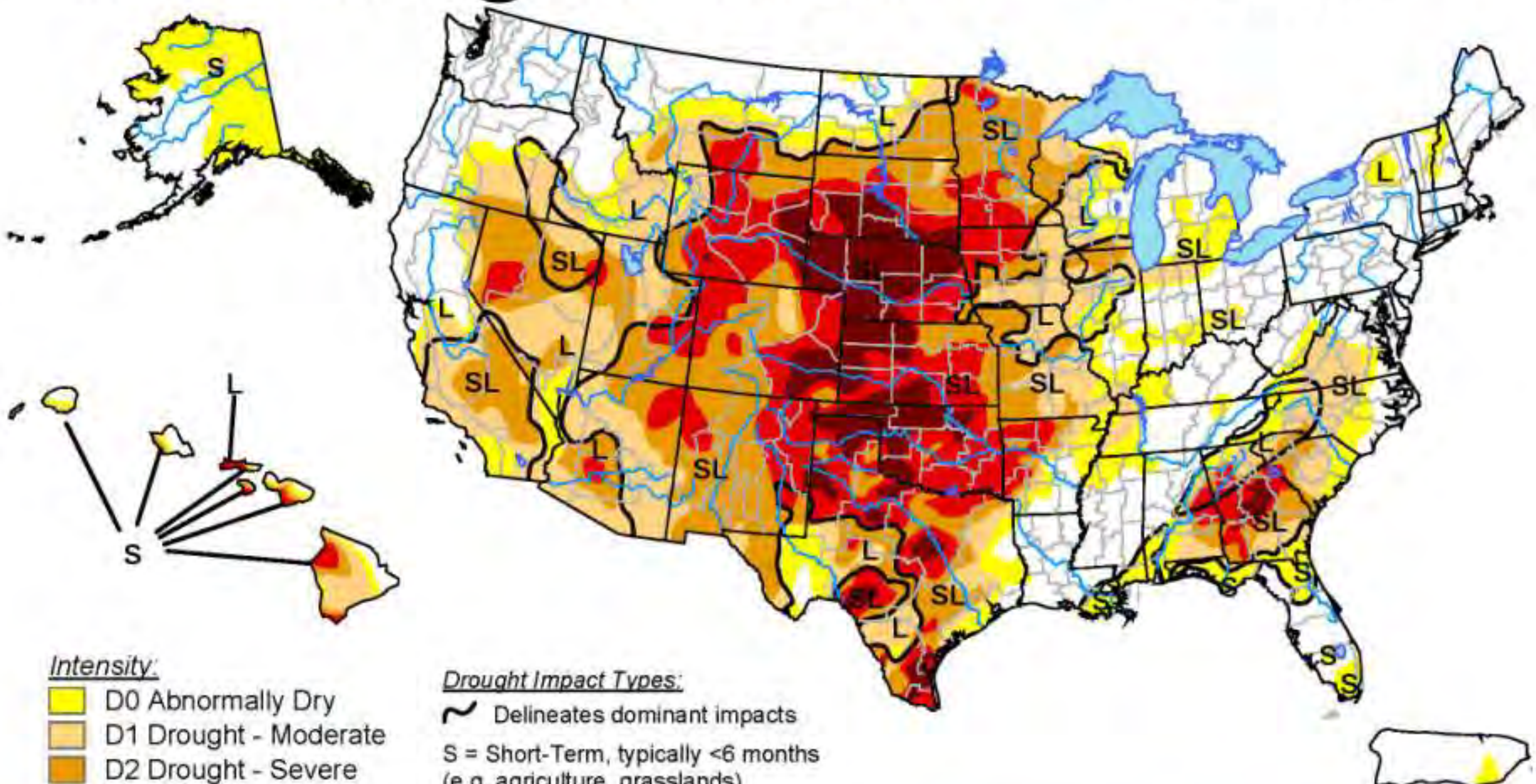
U.S. Drought Monitor

January 8, 2013
Valid 7 a.m. EST



Intensity:

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

Drought Impact Types:

~ Delineates dominant impacts

S = Short-Term, typically <6 months (e.g. agriculture, grasslands)

L = Long-Term, typically >6 months (e.g. hydrology, ecology)

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

http://droughtmonitor.unl.edu/

Released Thursday, January 10, 2013

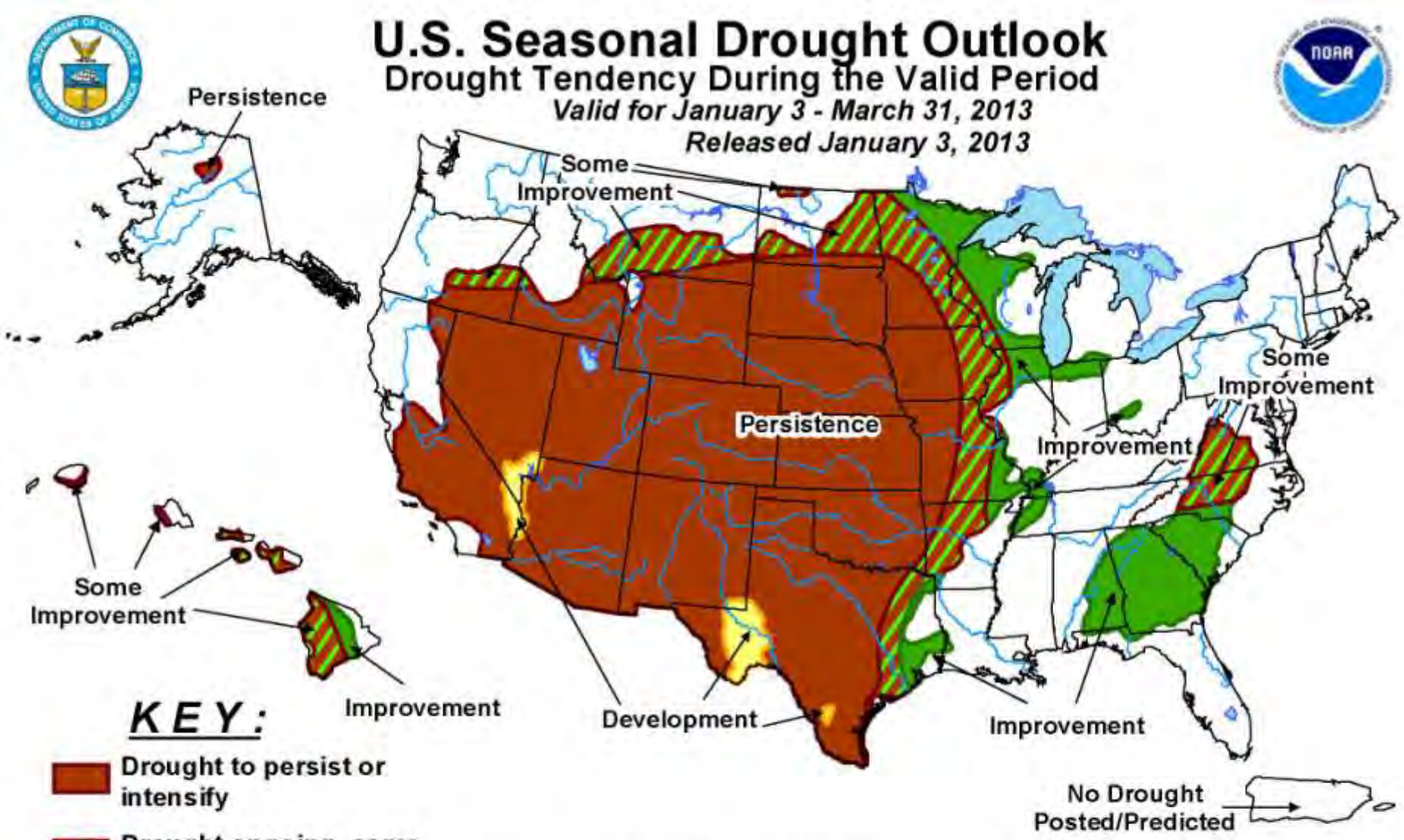
Author: David Simeral, Western Regional Climate Center

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for January 3 - March 31, 2013

Released January 3, 2013



KEY:

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

Why a Statewide Water Conservation Program?

- Competition for water, increasing population, development pressure on water resources, increased awareness of environmental water needs, uncertainty of climate change, food/ energy security and sustainability
- Improved coordination of water use efficiency programs across all water use sectors
- Need for some sectors to initiate water use efficiency planning and programs
- Opportunity for Commission to provide policy guidance
- Support and enhance existing water conservation programs

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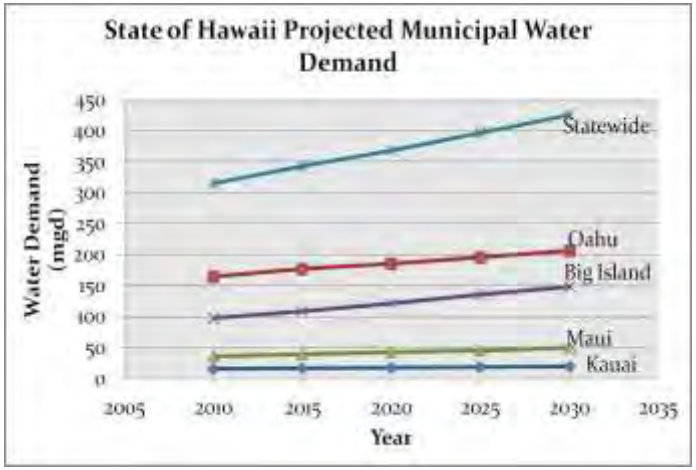
Project Background

- Commission approved the development of program
- Partnership between U.S. Army Corps of Engineers and Commission
- Contractor CH2MHILL
- 2-year project



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Statewide Water Conservation Project Objectives

- Develop a coordinated statewide water conservation planning strategy and policy framework
- Establish a statewide water conservation program to implement the planning strategy and policy framework
- Work collaboratively with stakeholders to achieve our water conservation objectives

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Project Team

- U.S. Army Corps of Engineers
- Commission on Water Resource Management
- CH2MHILL

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Water Conservation Advisory Group (WCAG)

- 36 volunteer members in WCAG
- Government and private sector
- County water departments
- Military
- Agriculture
- Landscape industry

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WCAG Meeting Schedule

1. May 23, 2011
2. August 24, 2011
3. November 17, 2011
4. March 22, 2012
5. August 23, 2012
6. January 10, 2013

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Meetings Informed Planning Strategy

- Identify opportunities where there are needs for water conservation programs – and potential for sizable water savings
- Consult with affected stakeholders to select and prioritize sector-based BMPs
- Grouped top ranked BMPs into packaged water conservation program elements that would best help stakeholders achieve their goals or assist with any existing programs

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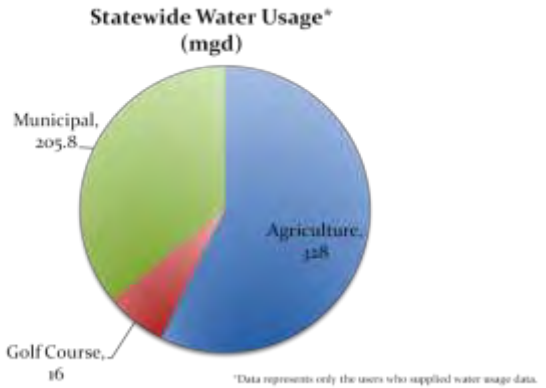
Some Key Findings

- Water use sectors identified: municipal, military, agriculture, golf course, *landscape*
- Lack of water use data collection & reporting
- Currently unable to set target reductions
- Education and training important to WCAG
- Agriculture and municipal are largest water use sectors



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Municipal WC Program Elements

- Water conservation recognition program
- Procedure for conducting and requiring annual water loss audit
- Model ordinance for landscape and irrigation design
- Policy in support of EPA WaterSense program
- Efficient commercial equipment rebate program
- WaterSense/high efficiency equipment rebate program
- Efficient commercial equipment incentive program
- Irrigation technology demonstration and research program

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Military WC Program Elements

- Model ordinance/standards for landscape and irrigation design
- Annual water loss program
- Water efficient irrigation performance contracts
- Policy to install meters at users/buildings

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Agriculture WC Program Elements

- Irrigation metering demonstration project
- Irrigation metering and reporting enforcement
- Irrigation metering incentives and technical assistance
- Irrigation water purveyor conveyance efficiency education and demonstration
- Irrigation water purveyor water conservation plan requirement
- Irrigation water user workshop
- Agriculture climate station network development

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Golf Course WC Program Elements

- Golf course industry water conservation award program
- Irrigation design and construction contractor registry

EPA WaterSense

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Selection of Program Elements for Early Implementation by Commission

- Best opportunity for water savings in high water use sectors
- Improvement of data collection
- Emphasis on education and training
- Early actions should be achievable yet meaningful
- Commission staffing and funding constraints
- 10-year implementation plan with expanding program areas

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Priority Program Implementation for Years 1-2

- Procedure for conducting & requiring annual water loss audit (municipal)
  - Survey
  - Training and/or technical assistance
  - Initially directed at large systems
  - May lead to policy on requirement for annual water loss audit
- Irrigation metering demonstration project (agriculture)
  - Training workshop
  - Would lead to improved surface water diversion measurement and reporting
  - Simple and inexpensive methods

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Procedure for Conducting and Requiring Annual Water Loss Audit

- **Issue:** Need for standardization in water loss reporting by public water systems
- **Solution (BMP):** Water Loss Control
- **Implementation Type**: Education and Regulatory
- **Implementation Program:** Education will take place on the AWWA/IWA Water Audit methodology and AWWA Free Water Audit Software © for public water systems in Hawaii. Following the training, public water systems will be required to conduct water loss audits using the methodology and software and submit to CWRM on an annual basis.

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Procedure for Conducting and Requiring Annual Water Loss Audit

- **Responsibility for Implementing:** CWRM will use existing educational materials available from AWWA and other states that have implemented similar programs. Municipal water system staff familiar with this methodology could participate and assist with education statewide. Requirement will phase in based on water system size, as appropriate.
- **Funding Source/Partners:** CWRM, municipal water systems
- **Commission Staff Needs: 0.3 FTE for 2 years**
- **Commission Program Expenses:** $10,000 for first year, $5,000 for year 2

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Other Policy Actions

- Continue development of water use data collection, analysis, and reporting system to enable accurate assessment of water.
- Explore policy changes to make improvements in water use efficiency and related reporting (e.g., State Water Code, building codes, county ordinances, etc).
- Require development and submittal of water conservation plan and annual reporting on implementation of water conservation plan measures as a condition of receiving a water use permit.

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Other Policy Actions

- Re-evaluate the existing Hawaii Water Management Plan to ensure that water conservation policies and approaches are clearly defined and that recommendations from this Statewide Water Conservation Plan are included in the broader water management plan.
- Enhance the existing Hawaii Water Management Plan by including a water conservation target that can be established in the context of known, available, or anticipated future water resources.

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Other Policy Actions

- Explore policy changes to proactively plan for the expanded use of reclaimed water for agriculture, landscaping, irrigation, recharge, and industrial uses.
- Establish a water resource management public awareness campaign that incorporates climate change, energy/water nexus, food scarcity, viable agriculture, watershed management, and source protection and augmentation.

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Implementation

- Convene implementation program committee
- Develop work plan for water audit training and surface water demo project
- Planning on conducting workshops
- Looking for partners to host and assist
- Beginning in 2013

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Important Lessons

- Universal water conservation ethic
- Many water efficiency programs underway
- Water conservation activities vary greatly between organizations & sectors
- Government should lead by example
- Build on successful programs
- Technical assistance / training should precede policy changes and regulations
- Start with small steps

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Next steps

- WC Program implementation
- Program evaluation
- Quarterly WCAG meetings

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Mahalo

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