The Silence of the Sprinklers
April 13, 2017

Water Conservation Update
Reduce Outdoor Water Use
Current California Drought Conditions

April 4, 2017
(Released Thursday, Apr. 6, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>D6</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
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<tbody>
<tr>
<td>Current</td>
<td>76.54</td>
<td>15.22</td>
<td>7.18</td>
<td>1.06</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Last Week 02-20-2017</td>
<td>76.54</td>
<td>15.22</td>
<td>7.18</td>
<td>1.06</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>3 Month’s Ago 01-01-2017</td>
<td>18.97</td>
<td>14.32</td>
<td>13.59</td>
<td>15.65</td>
<td>18.67</td>
<td>18.31</td>
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<tr>
<td>Start of Calendar Year 01-01-2016</td>
<td>18.97</td>
<td>14.32</td>
<td>13.59</td>
<td>15.65</td>
<td>18.67</td>
<td>18.31</td>
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<tr>
<td>Start of Water Year 07-08-2016</td>
<td>0.00</td>
<td>16.41</td>
<td>21.31</td>
<td>10.47</td>
<td>21.76</td>
<td>21.04</td>
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<tr>
<td>One Year Ago 07-08-2015</td>
<td>3.95</td>
<td>5.67</td>
<td>16.21</td>
<td>18.11</td>
<td>23.57</td>
<td>31.68</td>
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</tbody>
</table>

Intensity
- D6 Abnormally Dry
- D3 Extreme Drought
- D1 Moderate Drought
- D2 Severe Drought
- D4 Exceptional Drought

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

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NOAA/NWS/NCEP/CPC

http://droughtmonitor.unl.edu/
California Rainfall

**CALIFORNIA RAINFALL**

From the start of the rainfall season in October to February, California received more rain in this time period since record-keeping began 122 years ago.

Here are the top 10 seasons for the five-month period:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Season</th>
<th>Inches of rain</th>
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<tbody>
<tr>
<td>1.</td>
<td>2016-17</td>
<td>27.81</td>
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<td>2.</td>
<td>1968-69</td>
<td>27.34</td>
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<td>3.</td>
<td>1997-98</td>
<td>26.46</td>
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<td>4.</td>
<td>1982-83</td>
<td>25.36</td>
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<td>5.</td>
<td>1913-14</td>
<td>24.45</td>
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<td>6.</td>
<td>1992-93</td>
<td>24.04</td>
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<td>7.</td>
<td>1940-41</td>
<td>23.96</td>
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<td>8.</td>
<td>1955-56</td>
<td>23.88</td>
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<tr>
<td>9.</td>
<td>1908-09</td>
<td>23.61</td>
</tr>
<tr>
<td>10.</td>
<td>1951-52</td>
<td>22.47</td>
</tr>
</tbody>
</table>

Source: NOAA’s National Centers for Environmental Information

BAY AREA NEWS GROUP
Conservation Update

• City of Davis water production was 22.7% less in 2016 than in 2013
• Despite recent rains, Davis water users have continued to conserve
• Governor lifted the Drought Emergency – water restrictions remain in place
• Long-term water use efficiency regulations were just released by the state
• Weather patterns may change with dry and wet years but the City is committed to looking at long-term efficiency
Water Use Reductions

Davis Water Conservation Tracker

22.7% reduction for 2016!
Water Meter Upgrade Project

• Water meter replacement, automation and hourly water reads.

• Shift to a new water use portal where hourly water usage will be available to City water customers.
Ways to “Silence Your Sprinklers”

• Irrigation Modifications
  – Adjust Sprinklers
  – Install a weather-based irrigation controller/rain sensor
  – Convert to drip

• Convert Your Landscape
  – Turf removal
  – Plant choices and resources

• Greywater Systems
  – Overview
  – Types of Systems

• Rainwater Retention
  – Landscape features
  – Rain barrels and cisterns
Irrigation Modifications

• Adjust your sprinklers

• Install a weather-based irrigation controller/rain sensor

• Convert to drip
Adjust Your Sprinklers

• Turn on your system in the spring
  – Check for broken heads and lines
  – Look for run-off and overspray
    • Adjust sprinklers to avoid run-off
    • Pick-up a free sprinkler screwdriver from the City

• Adjust your timer
  – Modify your timer at least seasonally
  – Turn off during periods of rain
Install a “Smart” Controller

• Install a Weather-Based Irrigation Controller (WBIC)
  – Adjusts irrigation based on current weather conditions
  – Look for the WaterSense label

• Install a rain sensor
  – Turns off the irrigation system when rainfall is received
  – Turns system back on when dry
Convert to Drip

• Advantages:
  – More efficient water use if used properly
  – Minimize evaporation
  – Promotes a good soil/water environment

• Disadvantages:
  – Emitters may clog
  – Not as easy to see when not working properly
  – Can be damaged by animals, insects and humans
Types of Drip

• Soaker hose - many tiny openings throughout the hose where water seeps out
  – Relatively cheap, easy to move, is flexible to circle around trees
  – Uses water where no plants are located

• Polyethylene (Poly) tubing – usually ½” or larger diameter and carries water to distribution points by emitters
  • Inexpensive and allows flexibility in locating emitters and types of emitters
  • Can be a tripping hazard, more fragile than other lines with inline emitters, can be chewed through by animals
More Types of Drip

• Drip Tape – relatively thin-walled, flat polyethylene tube that expands under water pressure. Emitters built into tape at a fixed distance.
  – Relatively inexpensive and can be pressure compensating
  – Can be fragile and susceptible to damage

• Inline emitters – emitters built into the poly tubing.
  – Pressure compensating, sturdy construction
  – May be more expensive and is a relatively fixed structure
Irrigation Resources

• California Landscape Contractors Association
• EcoLandscape California
• EPA WaterSense Outdoor
• Irrigation Association
• Irrigation Controllers for the Homeowner
• UC Guide to Healthy Lawns (Irrigation Scheduler)
• Yolo County Master Gardeners (UCCE)

* Links can be found at SaveDavisWater.org
Convert Your Landscape

• Turf Removal

• Plant Choices and Resources
Turf Removal

- Options include
  - Solarization
  - Sheet mulching
  - Physical removal

- Focus on Sheet Mulching
  - Cut the lawn down
  - Dig a “moat” around the hardscape to keep materials on site
  - Cover with cardboard, overlapping edges
  - Water it down
  - Add 2-3” of compost
  - Add 4-6” of mulch
Timing for Turf Removal

• Removing lawn in spring is ideal
• Leave all summer, may need to water occasionally
• Plant in fall when rain supports plant growth

*View turf removal presentations at SaveDavisWater.org
Plant Choices

• Choose plants appropriate to your soil and micro-climate
• Watch spacing - plan for mature plant size
• Choose low-water plants
• Consider other benefits like pollinators
• Low-water plants still need regular water during establishment
"Life After Lawn"
Local Water-Wise Landscapes

View "Life After Lawn" Davis homes, like the one below, on the Arboretum's website (arboretum.ucdavis.edu) and on the City's GreenerDavis Facebook page.
Plant & Landscape Resources

- California Landscape Contractors Association
- California Native Plant Society
- DWR Water Efficient Landscapes
- EcoLandscape California
- EPA WaterSense Outdoor
- Homeowner’s Guide to a WaterSmart Landscape
- UC Davis Arboretum
- WUCOLS (Water Use Classification of Landscape Species)
- Yolo County Master Gardeners (UCCE)

* Links can be found at SaveDavisWater.org
Greywater Systems

- Overview

- Types of Systems
Overview

• What is greywater?
  – Untreated waste water that has not been contaminated
  – Includes but is not limited to wastewater from bathtubs, showers, bathroom sinks and clothes washers
  – Does not include wastewater from kitchen sinks or dishwashers
Types of Systems

- Laundry to Landscape
  - No permit typically required
  - Some limitations
    - No spray irrigation
    - No ponding
    - Exterior use only
    - Sub-soil irrigation
- Branched Drain (other sources besides the washing machine)
- Pumped Systems (temporary storage tank)
- Dual Drainage Plumbing (typically seen in new construction or remodel)
- Sand filter to drip irrigation
* View the greywater presentation at SaveDavisWater.org
Rainwater Retention

• Overview
• Landscape Features
• Rain barrels and Cisterns
Overview

• Benefits include
  – Conserving water
  – Improving water quality going into storm drains
  – Provides habitat for plants, animals and insects

• Direct rain water
  – Away from impervious pavement
  – From downspouts to rain barrels/cisterns or landscaping
  – Use landscape contours to direct and retain rainwater
Landscape Features

- **Swales**
  - Vegetated landscaped depressions
  - Can absorb pollutants and infiltrate runoff
- **Dry creek beds**
  - Stone-lined channels
  - Promotes infiltration and conveys water
- **Rain gardens**
  - Shallow vegetated basins
  - Collect, retain and infiltrate runoff
- **Pervious paving**
  - Allows rainwater to infiltrate back into the soil
  - Reduce and infiltrate runoff
Rain barrels & Cisterns

• Capture rainwater to improve quality and store for dry months
• In winter, water captured could be used for indoor plants
• Hold between 40 to 75 gallons of water
• Need to have a screen to keep debris and mosquitoes out
• Cisterns are larger scale systems
Online Water Conservation Game

www.SaveDavisWater.org
National Mayor’s Conservation Challenge

Save Water
Save Energy
Reduce Waste
Win Prizes

Take the Mayor’s Challenge
Pledge on behalf of City of Davis
MyWaterPledge.com

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