

**ENVIRONMENTAL FARMING ACT SCIENCE ADVISORY PANEL (EFA SAP)
CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE**

MEETING AGENDA

February 23, 2016

10 AM to 4 PM

**Stanislaus County Agricultural Commissioner Office
3800 Cornucopia Way
Room G
Modesto, CA 95358
916-654-0433**

REMOTE ACCESS

Please join the webinar (registration required):

<https://attendee.gotowebinar.com/register/6887826093800006913>

Webinar ID: 155-775-155

Call-in information

1-877-238-3903

Passcode: 6655460

Some presentation materials will be posted at the following link prior to the meeting:

https://www.cdfa.ca.gov/EnvironmentalStewardship/Meetings_Presentations.html

EFA SAP MEMBERSHIP

Don Cameron, Member and Chair

David Bunn, Resources Agency, Member Jocelyn Bridson, MSc, Member

David Mallory (CalEPA), Acting Member Jeff Dlott, PhD, Member

Luana Kiger, MSc, Subject Matter Expert

Doug Parker, PhD, Subject Matter Expert

- | | |
|---|---|
| 1. Introductions | Chair Cameron |
| 2. Updates | |
| • Minutes from previous meetings | Chair Cameron |
| • Healthy Soils Initiative | Dr. Gunasekara |
| 3. The State Water Efficiency and Enhancement Program (SWEEP) | |
| • Update on program | Dr. Gunasekara |
| • ARB QM Methodology and Tool | Cari Anderson (ARB)
Bailey Smith (ARB) |
| • Opportunities for additional enhancements – subsurface drip irrigation in field crops | Chair Cameron |
| 1. Dr. Daniel Putnam – UC ANR, UC Davis | |
| 2. Dr. Daniel Munk – UCCE, UC Davis | |
| 3. California Ag Solutions – Mikel Winemiller | |
| 4. Public Comments on SWEEP | Chair Cameron |
| 5. Next meeting and location | Chair Cameron |

Amrith (Ami) Gunasekara, PhD, CDFA Liaison to the Science Panel

All meeting facilities are accessible to persons with disabilities. If you require reasonable accommodation as defined by the American with Disabilities Act, or if you have questions regarding this public meeting, please contact Amrith Gunasekara at (916) 654-0433.

More information at: <http://cdfa.ca.gov/Meetings.html> and http://www.cdfa.ca.gov/EnvironmentalStewardship/Meetings_Presentations.html

**CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE (CDFA)
ENVIRONMENTAL FARMING ACT SCIENCE ADVISORY PANEL**

Byron Sher Auditorium
California Environmental Protection Agency
1001 I Street
Sacramento, CA 95814

July 17, 2015

MEETING MINUTES

Panel Members

Don Cameron, Member and Chair
Mike Tollstrup, Member
Jeff Dlott, PhD., Member
Bruce Gwynne (Alternate), Natural Resources Agency
Jocelyn Bridson, MSc., Member (via webcast)

Subject Matter Experts

Doug Parker, PhD., Subject Matter Expert
Luana Kiger, MSC, Subject Matter Expert

State Agency Staff

Amrith Gunasekara, PhD. (CDFA)
Jenny Lester Moffitt, Deputy Secretary (CDFA)
Evan Johnson (CalRecycle)
Carolyn Cook (CDFA)

AGENDA ITEM 1

The meeting was called to order at 10:10 AM by the Chair, Mr. Don Cameron. Panel Chairman Mr. Cameron introduced the Healthy Soils Initiative (HSI) as an issue of relevance to all farmers. Introductions were made. Members present at the meeting include Mr. Cameron, Dr. Dlott, Mr. Tollstrup, and Mr. Gwynne (alternate for Dr. Bunn from Natural Resources Agency). A quorum was established.

AGENDA ITEM 2

Welcome Address- CalRecycle Deputy Director, Howard Levenson and CDFA Deputy Secretary Jenny Lester Moffitt

Deputy Secretary Moffitt welcomed the panel and audience to the meeting and provided background information on the Healthy Soils Initiative. CDFA was charged with leading

the Healthy Soils Initiative as described in the Governors January 2014-15 budget proposal and under the authority of the Environmental Farming Act of 1995. Dr. Levenson welcomed the group on behalf of EPA and Cal Recycle.

AGENDA ITEM 3
PREVIOUS MEETING MINUTES

CDFA staff presented the minutes from the previous May 14, 2015 meeting. The motion was made to accept the minutes as presented by Mr. Tollstrup, and seconded by Mr. Gwynne. The motion was moved by all members present and was accepted without further changes.

STATE WATER EFFICIENCY AND ENHANCEMENT PROGRAM (SWEEP)

Dr. Gunasekara provided an update on the State Water Efficiency and Enhancement Program (SWEEP). \$10 million are available through the current fiscal year for grants to farmers to install irrigation systems that reduce water use and reduce greenhouse gas emissions. The application period closed on June 29, 2015. 345 applications were received, totaling \$30.3 million in requests. The program was oversubscribed by 300%. A technical review period of the application had begun. Dr. Gunasekara noted that he would continue to update the Science Panel members at each meeting on SWEEP since the program continues to receive funding.

VACANT POSITION ON EFA SAP

Dr. David Bunn, Director of the Department of Conservation, has been appointed to serve on the EFA SAP from the Natural Resources Agency. Bruce Gwynne was filling in for Dr. Bunn at this meeting.

AGENDA ITEM 4 – HEALTHY SOILS INITIATIVE

A. IMPACT OF SOIL ORGANIC MATTER ON NUTRIENT CONSERVATION AND SOIL HEALTH – DR. WILLIAM HORWATH

Dr. Horwath provided an overview of soils, soil organic matter (SOM) and its role in soil health. Dr. Horwath also discussed the microbial environment and its contribution to building SOM. He also discussed the abiotic contribution to building SOM such as climate and moisture. His presentation included a case study and research studies which attempted to build SOM. Dr. Horwath facilitated questions from the Science Panel members and the public following his presentation.

MICROBIAL COMMUNITIES, COMPOST AND IMPLICATIONS FOR SOIL HEALTH – DR. GARY ANDERSEN

Dr. Gary Anderson of U.C. Berkeley presented on thermophilic aerobic decomposition (composting) and discussed some benefits of compost to soil health. Dr. Anderson's research team has been studying which microbes are active in compost production. They are using microchip technology to detect different bacteria and archaea and understand how the different microbial species play different roles in the compost process and who dominants when and at what stages of the composting cycle. Dr. Anderson answered questions from the Science Panel members and the public following his presentation.

CALRECYCLE EFFORTS TO DATE ON COMPOST – DR. HOWARD LEVENSEN

Dr. Howard Levenson of CalRecycle provided an update on current policies and progress on promoting composting in California. He noted that California has policy drivers for increasing composting, including a statewide goal of 75% of solid waste diverted from landfills by 2020. Since organic waste makes up one-third of solid waste, composting will be a critical component of meeting that goal. Dr. Levenson noted that CalRecycle is engaged on several research initiatives on compost and suggested future research needs. Dr. Levenson answered questions from the Science Panel members and the public following his presentation.

A TOOL FOR INCENTIVIZING SOIL HEALTH IN AGRICULTURE (COMET-PLANNER) – DR. ADAM CHAMBERS

Dr. Adam Chambers provided an overview of a new tool (Comet-Planner) developed to quantify the GHG benefits of various farm management practices. Dr. Chambers showed how to use the tool and find background information and quantification methodology for each practice. He noted that soil health is an important priority and there is the goal of 111-124 MMTCO₂e reduction by 2025. USDA NRCS used historical accomplishments in soil health through EQIP since 1997 to extrapolate what can be accomplished by 2025. Dr. Chambers facilitated questions from the Science Panel and the public following his presentation.

PUBLIC COMMENT AND DISCUSSION

Daniel Morash, California Safe Soil: They are exploring California aerobic enzymatic digestion. Additionally, unless we can prove the value of these products to farmers then projects won't be successful. Need research to back up and prove benefits to farmers.

Niles Brinton, Char Born: Commented that he was encouraged by the initiative. He suggested that the addition of biochar to compost can reduce off-gassing of ammonia and methane. The finished compost product also has a higher nitrogen content, possibly leading to less fertilizer demand. Biochar is a needed solution for dealing with woody biomass waste (ex; forest).

Pablo Garza, Nature Conservancy: Excited regarding the Healthy Soils Initiative and potential incentives for landowners, but also concerned about application of compost on rangelands because it can lead to a decline in biological diversity. Requested that rangelands are discussed in the subcommittee on compost application rates.

Calla Rose Ostrander, Rathmann family foundation: Has maps and materials to share with the panel on various waste sources. Wants to promote a systems approach and management of organics in a way that protects air and water quality and gets organics back on land.

Cole Smith, UC Cooperative Extension: Inquired on the next steps in education and outreach. Hard to organize and disperse scientific information to the public. Dr. Gunasekara responded that CalRecycle and CDFA can reach out to UC Extension and try to involve them in the discussion.

Pelayo Alvarez, Carbon Cycle Institute: Inquired on the timeframe of the Healthy Soils Initiative. Inquired on how public input will be collected and how the public can participate. Dr. Gunasekara replied that this meeting is part of the public process in the development of the program. The EFA SAP meeting will continue to be the public venue for Healthy Soils discussions and open to the public. Interagency coordination is also occurring; there is a 2-page document available on goals for the initiative on CDFA Environmental Stewardship webpage.

Adam Kotin, CalCAN: Inquired if there have been further conversations on goals for the initiative or opportunities for public involvement. Dr. Gunasekara responded that there would be further public and stakeholder conversations on the potential of setting SOM goals.

Nick Lapis, Californians Against Waste: The 2-page document on the initiative includes interesting short term and long term goals. Commented that it would be helpful to know how we are going to reach these goals. Dr. Gunasekara responded that this meeting is part of reaching the goals. Multiple agencies are participating. Different agencies will take different actions. CDFA is using SAP to determine what to focus on.

AGENDA ITEM 5 – ADJOURN

Chair Cameron adjourned the meeting at 2:47 PM.

Respectfully submitted by:

Amrith Gunasekara, Ph.D.

Date

THE HEALTHY SOILS INITIATIVE

An Update

February 23, 2016

Environmental Farming Act Science Advisory Panel

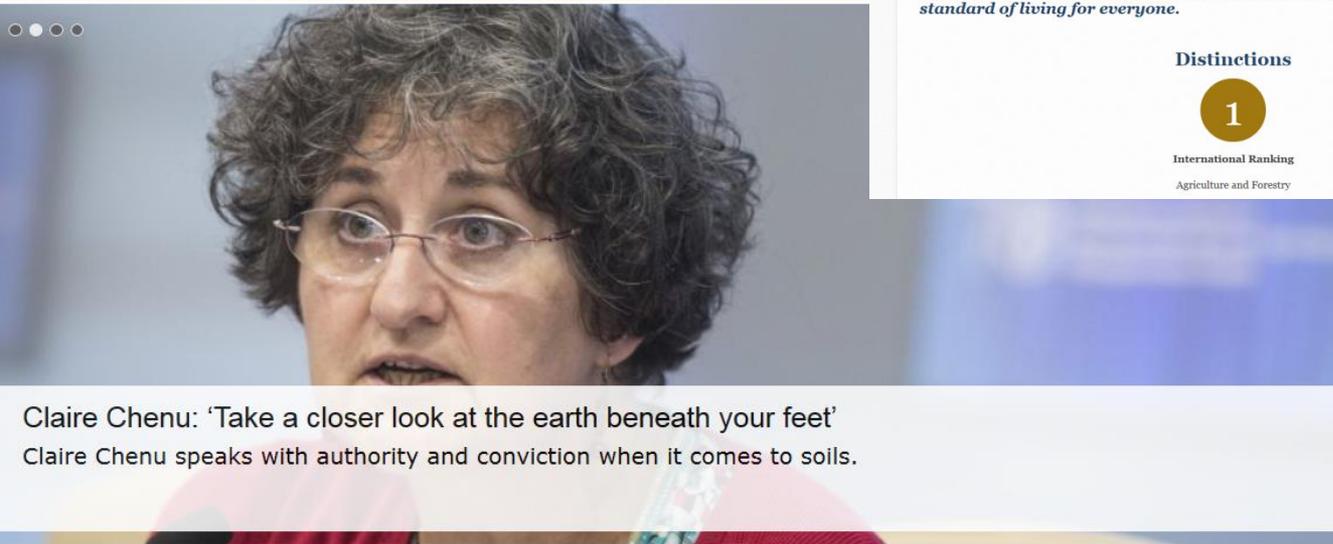
Amrith (Ami) Gunasekara, PhD
Science Advisor to the Secretary



INTERNATIONAL YEAR OF THE SOIL



Home About News Events Resources Communications toolkit Blog FAQs



Claire Chenu: 'Take a closer look at the earth beneath your feet'
Claire Chenu speaks with authority and conviction when it comes to soils.

A screenshot of the UC Davis website's 'Facts & Distinctions' page. The header includes the 'One UC DAVIS' logo and navigation links for Home, About, Students, Research, Outreach, News, and Get Involved. The main content area features a quote: 'Solving real-world problems in the agricultural, environmental, and human sciences to produce a better world, healthier lives, and an improved standard of living for everyone.' Below this is a 'Distinctions' section with a large number '1' in a circle, indicating 'International Ranking' in 'Agriculture and Forestry'. A sidebar on the right lists navigation options under 'About our College' and 'Facts and Distinctions'.

IN FOCUS



Download our information

INFOGRAPHIC



Our soils under threat

IN FOCUS



Special Ambassadors

Latest blog posts

Las bibliotecas de las Islas Canarias organizan actividades de concienciación sobre los suelos
02/10/2015

<http://www.fao.org/soils-2015/en/>



Reduced Fumigant and Synthetic Inputs

Build Soil Organic Matter

Reduced Sediment Erosion and Dust

Sequester and Reduce GHGs



Water Retention

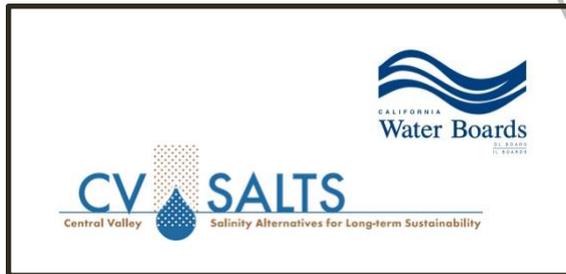
Soil Health

Improved Plant Health and Yields



Reduced Salinity

Improved Water Quality



GOVERNORS JANUARY BUDGET

- \$20 million for CDFA HSI in budget proposal
- For new incentive program and demonstration projects
- Proposing to use Comet-Planner
 - (ARB needs to approve QM)
- Program framework to be developed
 - starting in July, 2016
 - Required public comment and feedback
- Plan to use EFA SAP for feedback and public comment

Healthy soil = adequate soil organic matter or humus

NRCS Practice Standards for Greenhouse Gas Emission Reduction and Carbon Sequestration

Qualitative Ranking N=Neutral	Practice Code	Practice Standard and Associated Information Sheet	Beneficial Attributes
 <p>GHG Benefits of this Practice Standard</p>	327	Conservation Cover (Information Sheet)	Establishing perennial vegetation on land retired from agriculture production increases soil carbon and increases biomass carbon stocks.
	329	Residue and Tillage Management, No Till/Strip Till/Direct Seed (Information Sheet)	Limiting soil-disturbing activities improves soil carbon retention and minimizes carbon emissions from soils.
	366	Anaerobic Digester (Information Sheet)	Biogas capture reduces CH ₄ emissions to the atmosphere and provides a viable gas stream that is used for electricity generation or as a natural gas energy stream.
	367	Roofs and Covers	Capture of biogas from waste management facilities reduces CH ₄ emissions to the atmosphere and captures biogas for energy production. CH ₄ management reduces direct greenhouse gas emissions.
	372	Combustion System Improvement	Energy efficiency improvements reduce on-farm fossil fuel consumption and directly reduce CO ₂ emissions.
	379	Multi-Story Cropping	Establishing trees and shrubs that are managed as an overstory to crops increases net carbon storage in woody biomass and soils. Harvested biomass can serve as a renewable fuel and feedstock.
	380	Windbreak/Shelterbelt Establishment (Information Sheet)	Establishing linear plantings of woody plants increases biomass carbon stocks and enhances soil carbon.
	381	Silvopasture Establishment	Establishment of trees, shrubs, and compatible forages on the same acreage increases biomass carbon stocks and enhances soil carbon.
	512	Forage and Biomass Planting (Information Sheet)	Deep-rooted perennial biomass sequesters carbon and may have slight soil carbon benefits. Harvested biomass can serve as a renewable fuel and feedstock.





Carbon and greenhouse gas evaluation for NRCS conservation practice planning

This tool was developed with the generous support of the Rahrman Family Foundation and the Marin Carbon Project

Evaluate potential carbon sequestration and greenhouse gas reductions from adopting NRCS conservation practices

[Click to View Introduction Video](#)

NRCS Conservation Practices included in COMET-Planner are only those that have been identified as having greenhouse gas mitigation and/or carbon sequestration benefits on farms and ranches. This list of conservation practices is based on the qualitative greenhouse benefits ranking of practices prepared by NRCS.

Project Name:

State:

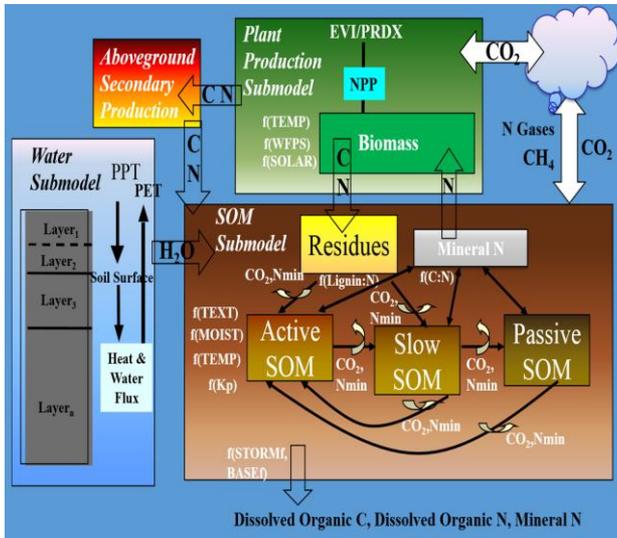
County:

NRCS Conservation Practices - Select Your Practice(s)

Name CPS (Conservation Practice Standard Number)

- + Cropland Management (9 Items)
- + Cropland to Herbaceous Cover (10 Items)
- + Cropland to Woody Cover (7 Items)
- + Grazing Lands (3 Items)
- + Restoration of Disturbed Lands (5 Items)





INCENTIVE PROGRAM

- Comet-Planner



COMET-PLANNER  **NRCS**  **USDA** 

Carbon and greenhouse gas evaluation for NRCS conservation practice planning

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Evaluate potential carbon sequestration and greenhouse gas reductions from adopting NRCS conservation practices

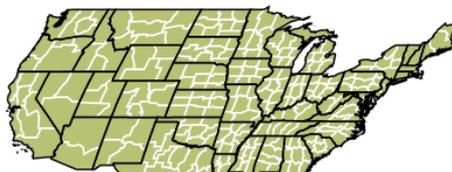
[Click to View Introduction Video](#)

NRCS Conservation Practices included in COMET-Planner are only those that have been identified as having greenhouse gas mitigation and/or carbon sequestration benefits on farms and ranches. This list of conservation practices is based on the qualitative greenhouse benefits ranking of practices prepared by NRCS.

Project Name:

State:

County:



NRCS Conservation Practices - Select Your Practice(s)

Name CPS (Conservation Practice Standard Number)

+ Cropland Management (9 Items)

- Cropland to Herbaceous Cover (10 Items)

Conservation Cover - Retiring Marginal Soils (CPS 327)

Forage and Biomass Plantings - Full Conversion (CPS 512)

Forage and Biomass Plantings - Partial Conversion (CPS 512)

Herbaceous Wind Barriers (CPS 603)

4. What is CDFA going to do?

INCENTIVE PROGRAM

- Comet-Planner

County:

Fresno



Windbreak/Shelterbelt Establishment (CPS 380)

Windbreak/Shelterbelt Renovation (CPS 650)

Riparian Forest Buffer (CPS 391)

Hedgerow Planting (CPS 422)

Alley Cropping (CPS 311)

Approximate Carbon Sequestration and Greenhouse Gas Emission Reductions¹
(tonnes CO₂ equivalent per year)

Enter Acreage	Carbon Dioxide (CO ₂)	Nitrous Oxide (N ₂ O)	Methane (CH ₄)	Total CO ₂ -Equivalent
NRCS Conservation Practices (Click Practice Name for Documentation)				
Windbreak/Shelterbelt Renovation (CPS 650) [delete]	2	0	0	2
10 ac				
Total	2	0	0	2

INCENTIVE PROGRAM

- Comet-Planner

How are your carbon sequestration and greenhouse gas emission reduction estimates calculated?

Emission reduction coefficients were derived from recent meta-analyses and reviews. Coefficients were generalized at the national-scale and differentiated by dry and humid climate zones. More information on quantification methods can be found in the [COMET-Planner Report](#).

Each emission reduction is calculated using the following equation:

$$\text{Emission reduction} = \text{Area (acres)} * \text{Emission Reduction Coefficient (ERC)}$$

Emission Reduction Coefficients (ERC) (tonnes CO₂ equivalent per acre per year)

Greenhouse Gases

Carbon Dioxide (CO ₂)	Nitrous Oxide (N ₂ O)	Methane (CH ₄)
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NRCS Conservation Practices

Windbreak/Shelterbelt Renovation (CPS 650)	0.21	0.00	N.E. ²
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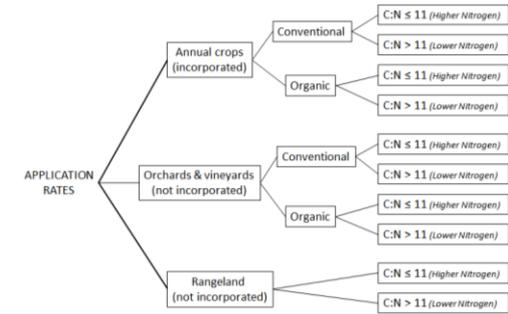
Recommended use of COMET-Planner

This evaluation tool is designed to provide generalized estimates of the greenhouse gas impacts of conservation practices and is intended for initial planning purposes. Site-specific conditions (not evaluated in this tool) are required for more detailed assessments of greenhouse gas dynamics on your farm. Please visit [COMET-Farm](#) if you would like to conduct a more detailed analysis.

Please contact Amy Swan (Amy.Swan@colostate.edu) for more information

COMPOST USE

- Not in Comet-Planner (yet)
- Set up scientific subcommittee of the CDFA EFA SAP to determine agronomic application rates for compost so it can be included in any future CDFA incentive program
- Discussed interagency the available nitrogen component
- Results presented at last meeting and included white paper report for public comment
- Established public comment period from January 18th to February 12th (4 weeks)
- Received 20 comment letters – CDFA will review and provide edited report and suggestions from EFA SAP consideration at next meeting.



Thanks...

Important Contacts:

Kelly Gravuer (UC Davis and CDFA)

PhD Candidate

kelly.gravuer@cdfa.ca.gov

Geetika Joshi, PhD.

Environmental Scientist (CDFA)

Geetika.Joshi@cdfa.ca.gov

Amrith Gunasekara, PhD

Liaison to EFA SAP

Amrith.gunasekara@cdfa.ca.gov

SWEEP

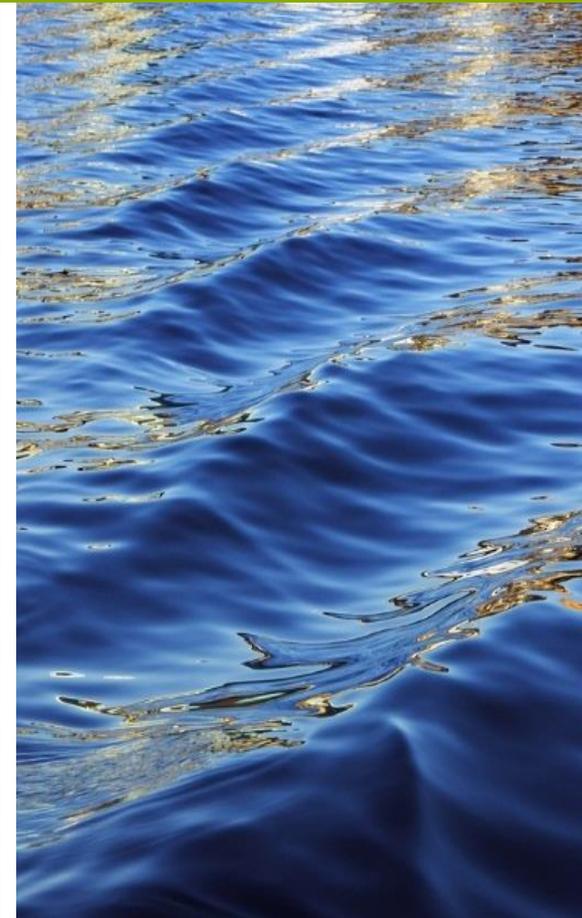
An Update

Amrith (Ami) Gunasekara, PhD
Science Advisor

Carolyn Cook, MSc
Senior Environmental Scientist



CALIFORNIA DEPARTMENT OF
FOOD & AGRICULTURE

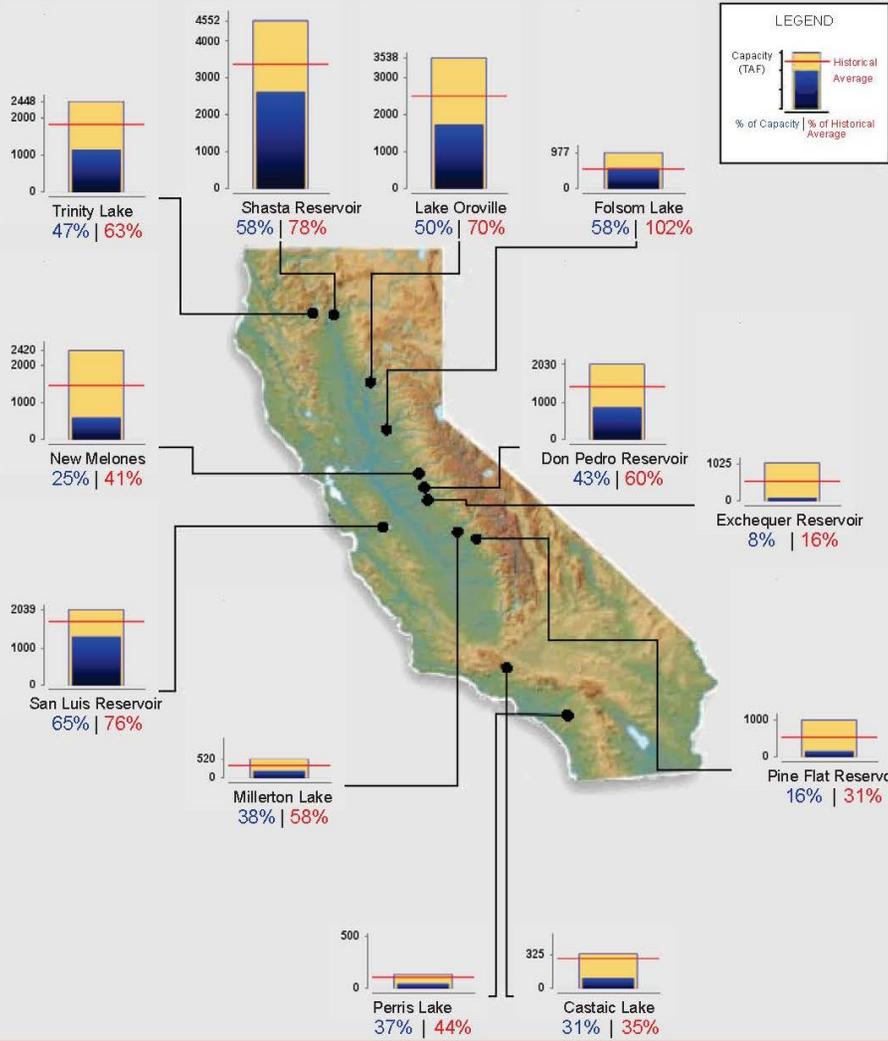




Reservoir Conditions

Ending At Midnight - March 5, 2015

CURRENT RESERVOIR CONDITIONS



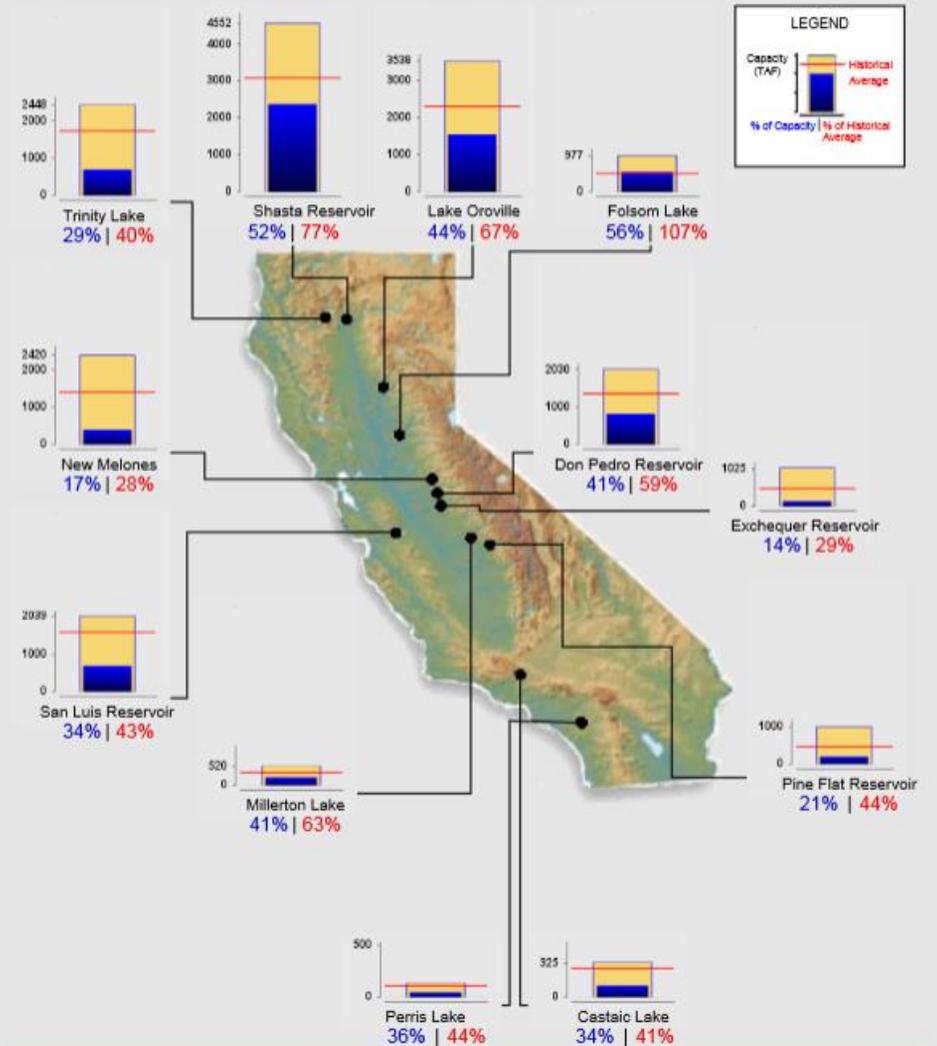
Graph Updated 03/06/2015 12:45 PM



Reservoir Conditions

Ending At Midnight - February 1, 2016

CURRENT RESERVOIR CONDITIONS

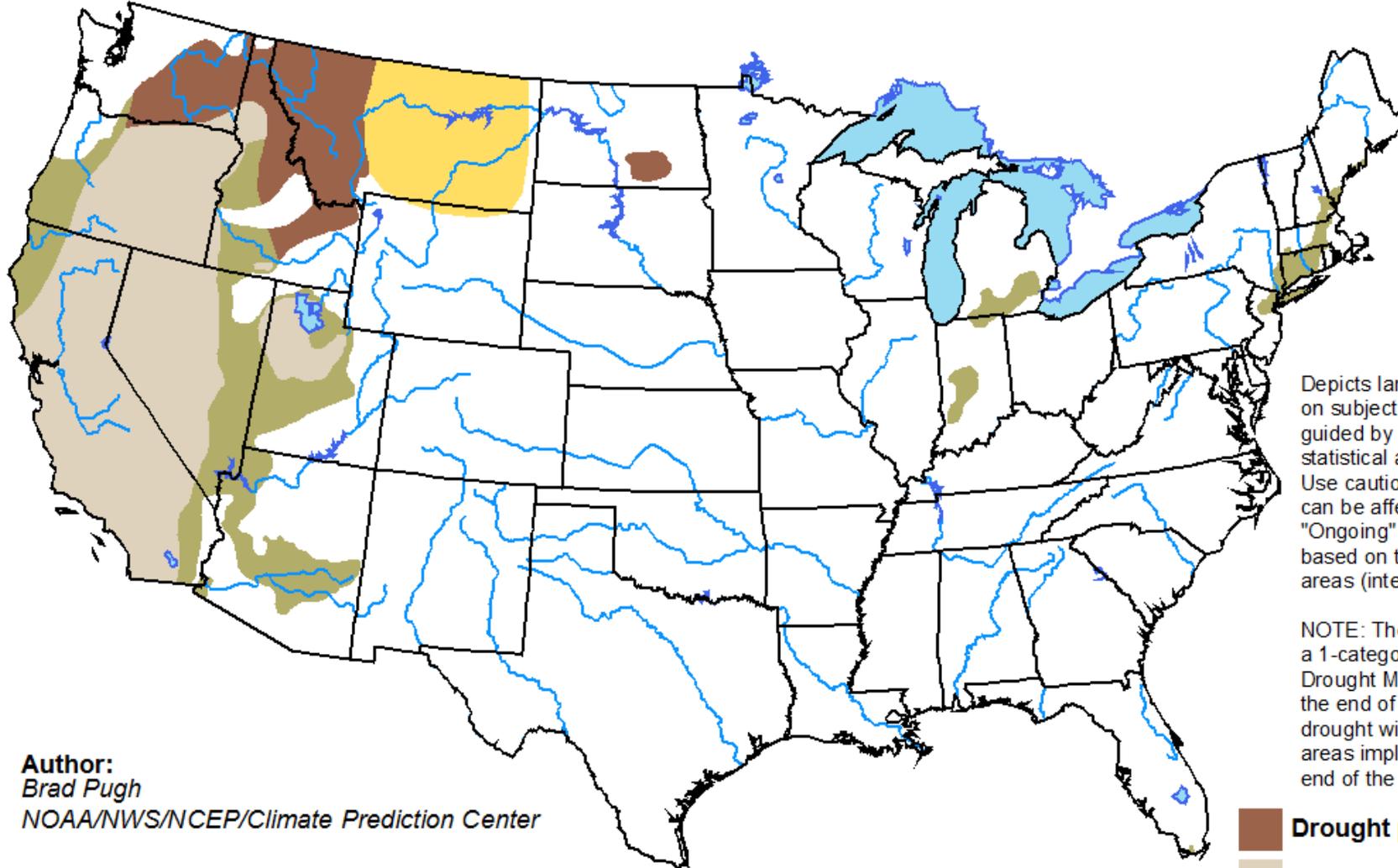


Graph Updated 02/02/2016 10:15 AM

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for December 17 - March 31, 2016
Released December 17, 2015

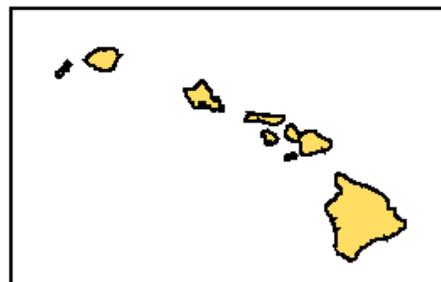
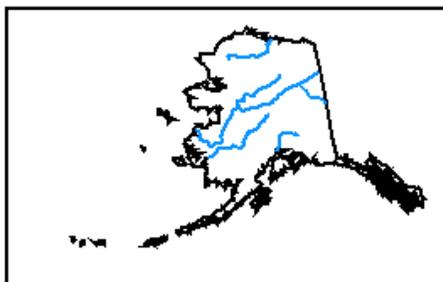


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

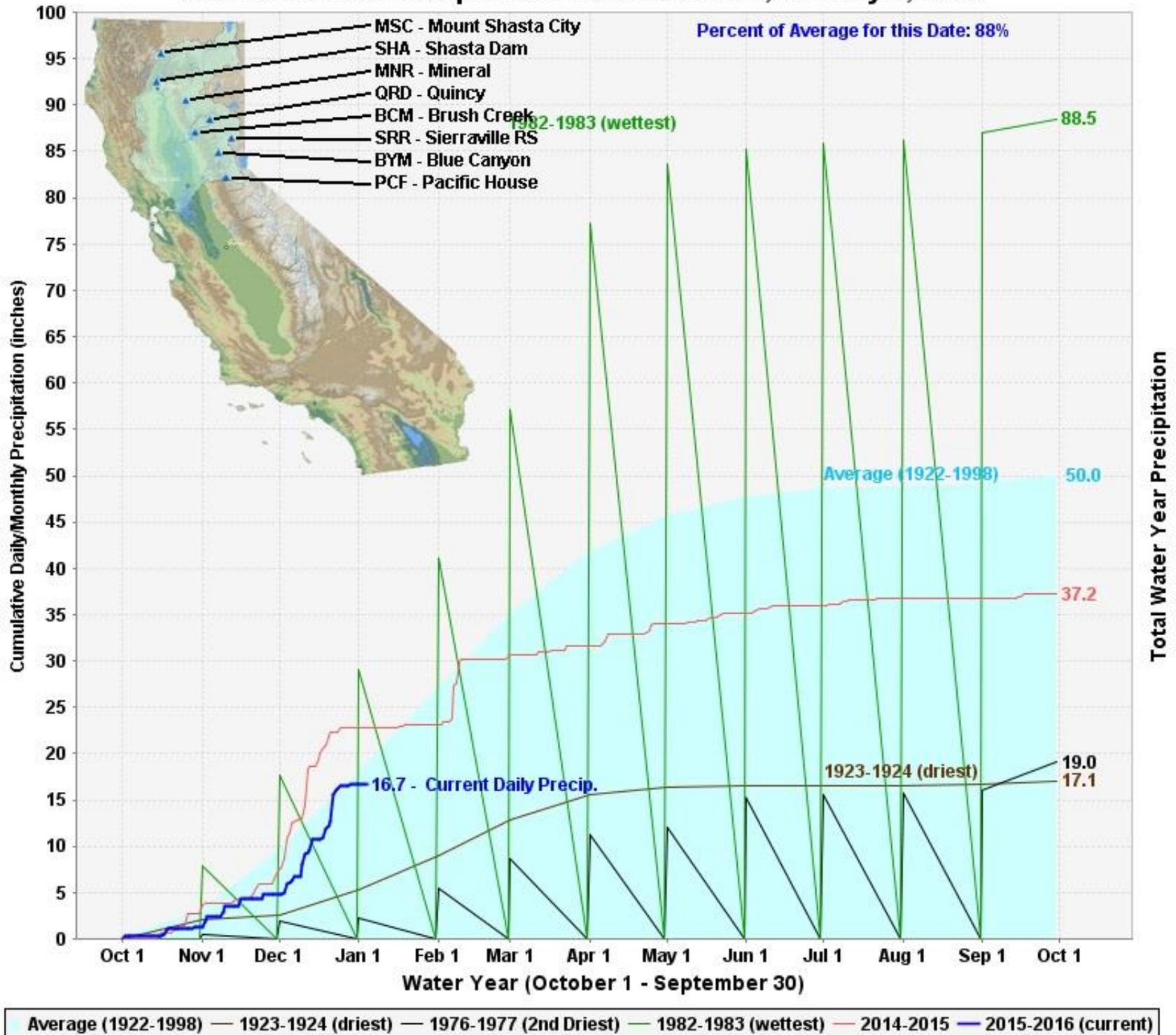
Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center

-  Drought persists
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely

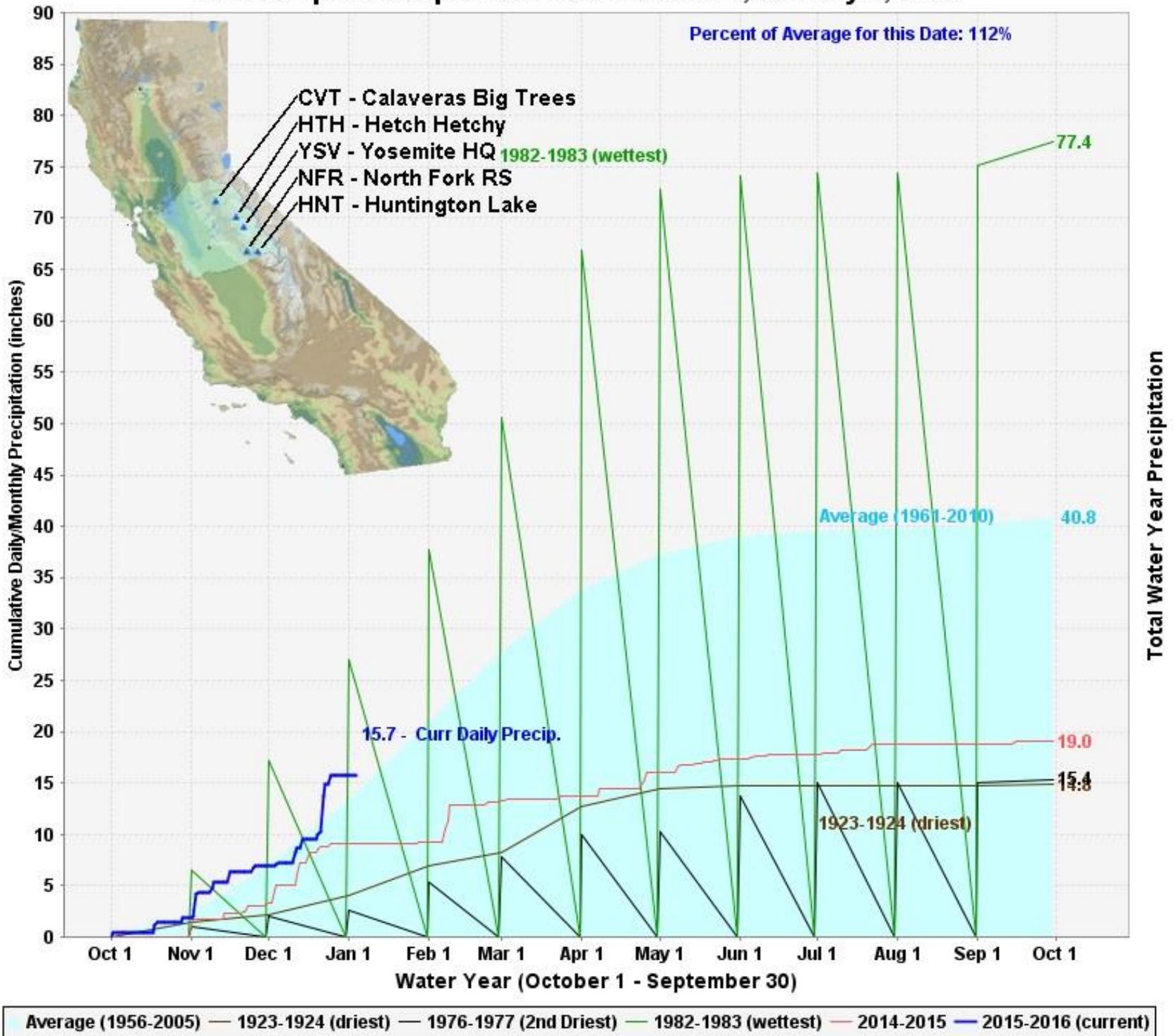


<http://go.usa.gov/3eZ73>

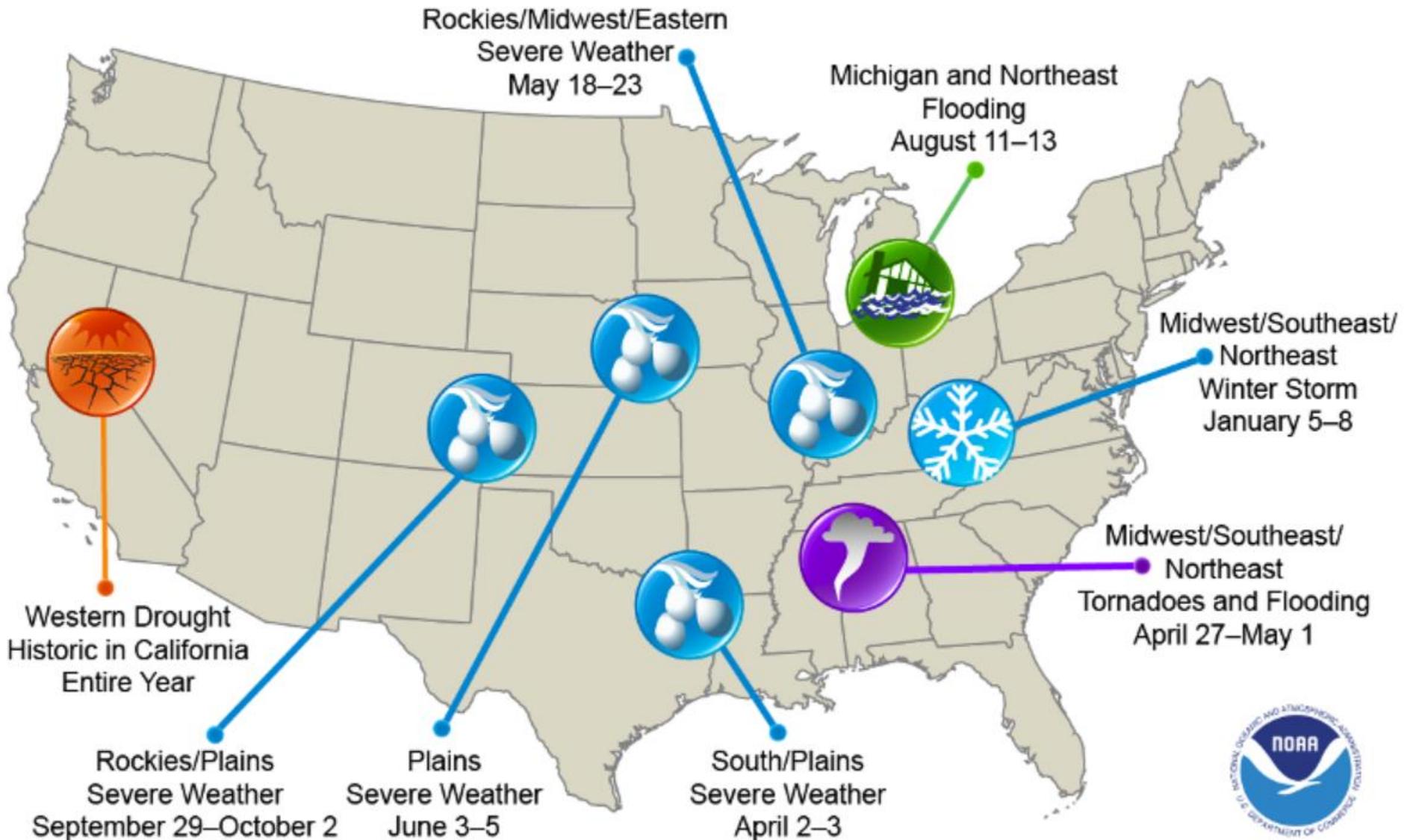
Northern Sierra Precipitation: 8-Station Index, January 4, 2016



San Joaquin Precipitation: 5-Station Index, January 4, 2016



U.S. 2014 Billion-Dollar Weather and Climate Disasters



This map denotes the approximate location for each of the eight billion-dollar weather and climate disasters that impacted the United States during 2014.

STATE WATER EFFICIENCY AND ENHANCEMENT PROGRAM (SWEEP)

- Emergency drought legislation bill (SB 103) signed by Governor Brown on March 1, 2014.
 - \$10 million – for 2014-15
- AB 91 allocated additional funds in March 27, 2015.
 - \$10 million – for 2015-16
- SB 101 signed by Governor in September 24, 2015, allocated additional funds
 - \$40 million – for 2016-17

.....from the **California Climate Investments** fund (Cap and Trade Revenue \$) for the California Department of Food and Agriculture to invest in irrigation and water pumping systems that **reduce water use, energy use and greenhouse gas emissions.**

STATE WATER EFFICIENCY AND ENHANCEMENT PROGRAM (SWEEP)

“coordination with the Department of Water Resources and the State Water Resources Control Board....”

"...to provide financial incentives to agricultural operations to invest in water irrigation treatment and distribution systems that reduce water and energy use, augment supply and increase water and energy efficiency in agricultural applications.“

The SWEEP was implemented under the authority of the Environmental Farming Act of 1995.

Division 1, Part 1, Chapter 3, Article 8.5, Sections 560-568

Section 566 (a)

The department shall establish and oversee an environmental farming program.

The program shall provide incentives to farmers whose practices promote the well-being of ecosystems, air quality, and wildlife and their habitat.

SWEEP by the NUMBERS

- SWEEP 2014-15 funded \$17.8 million for 233 different projects
- Total requested was \$63.7 million for 798 applications
- Total matching funds was \$10.5 million
 - 67% - Soil moisture monitoring systems for better scheduling
 - 37% - Micro-irrigation/drip systems
 - 26% - Energy efficient pumps (switch to electric or solar)
 - 28% - Use of ET data and scheduling
 - 15% - Use of variable frequency drive (VFD) pumps
 - 5% - Use of low pressure irrigation systems
- Cap at \$200,000
- Most recent numbers – 299 applications for \$ 34.8 million
- More \$ available in April 2016 (\$19 million)

SWEEP by the NUMBERS

2014-15 GHG and Water Estimates

- GHG reductions = Estimated 54,600 Tonnes CO₂e/yr (life of practice is 10 years)

Equivalent to removing the following number of vehicles from the road (based on 4.7 Tonnes of CO₂e/yr per vehicle – U.S. EPA from 21.6 miles per gallon and 11,400 miles per year) = 11,630 vehicles/yr

- Water savings = Estimated 37,400 acre feet/yr

Number of 15,000 gallon (average pool size) pools per year = 814,000 pools per year

Number of 1 gallon bottles = 12.2 billion

NEW REQUIREMENTS AND STAFF

- Post-project quantification of GHGs and Water Savings = 3 yrs
- All growers must maintain records to support savings = 3 yrs
- Will continue to contract with RCDs on verification
- Two additional staff starting on March 2, 2016 – Responsible for Northern and Southern Regional SWEEP Coordinators
 - CDFA staff will partner with RCD staff on verifications
 - Lead Technical Staff on projects
 - Assisting in leading public workshops
 - Conduct post project GHG and water quantification
- Growers must use QM methodology and tool



Sunday, February 21, 2016

This page last reviewed February 19th, 2016

UP LINKS

- ▶ [Reducing Air Pollution - ARB Programs](#)
- ▶ [Climate Change](#)
 - ▶ [Cap-and-Trade Program](#)
 - ▶ [Auction Proceeds](#)

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California Climate Investments



What's New?

- [ARB CVRP Market Sustainability Metrics Work Group Meeting](#) Feb. 19 - Sacramento
- [CVRP Long-Term Program Considerations Work Group Meeting](#) Feb. 23 - Sacramento
- [Light Duty Pilot Project Work Group Teleconference](#) Feb. 25
- [TIRCP Pre-application Meetings](#) Feb. 22 - 26
- [AHSC Notice Of Funding Availability \(NOFA\)](#) - Concept applications due March 16
- [FY 2016-17 TIRCP Funding Available](#) - Project Applications due April 5



[Climate Change Events Calendar](#)
[What's New Archive](#)

Background and Resources

- [State Budget Appropriations](#)
- [Investment Plan](#)
- [Implementing Legislation](#)
- [Annual Report to the Legislature](#)
- [Expenditure Records](#)
- [CalEnviroScreen](#)
- [CalEPA Identifies Disadvantaged Communities](#)

Current Activities

- [Funded Programs and Upcoming Events](#)
- [Transportation](#)
- [Energy](#)
- [Resources and Waste](#)

ARB Guidance for Agencies

- [Guidance and Maps for Investments to Benefit Disadvantaged Communities](#)
- [Funding guidelines for administering agencies](#)
- [Quantification Materials](#)
- [ARB Workshops and Public Meetings](#)

www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm



Sunday, February 21, 2016

This page last reviewed February 9, 2016

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Cap-and-Trade Auction Proceeds Quantification Materials

The Air Resources Board (ARB) is required to develop quantification methods for agencies receiving Greenhouse Gas Reduction Fund (GGRF) appropriations per SB 862 (Senate budget and Fiscal Review Committee, Chapter 36, statutes of 2014). For Fiscal Year (FY) 2013-14, some administering agencies developed interim GHG quantification methodologies in consultation with ARB. For FY 2014-15, ARB prioritized the development of quantification methods based on program timelines, with an initial focus on programs using GHG emission reductions as part of the criteria to score projects in a competitive process. The tables below provide links to the GHG quantification methods developed by ARB in consultation with administering agencies. As the GGRF program continues, quantification methodologies for all programs will continue to be developed or updated and posted below as necessary.

Note: These quantification methods have been developed specifically for the Greenhouse Gas Reduction Fund Programs and are not intended for use in other programs.

For questions about any of the quantification methods below, please email us at GGRFProgram@arb.ca.gov. To help us serve you better, please provide the following information: name and company/industry, contact information, and question or comment.

Transportation and Sustainable Communities

Agency / Department	Quantification Materials
High-Speed Rail Authority (HSRA)	<i>High-Speed Rail (HSR)</i> <ul style="list-style-type: none"> • Quantification Methodology for FY 2014-15 (PDF)
California State Transportation Agency (CalSTA)	<i>Transit and Intercity Rail Capital Program (TIRCP)</i> <ul style="list-style-type: none"> • Quantification Methodology for FY 2016-17(PDF) • TIRCP GHG Emission Reduction Calculator for FY 2016-17 (.xls) <p>Archived Versions:</p> <ul style="list-style-type: none"> • Quantification Methodology for FY 2014-15 (PDF) • Frequently Asked Questions (PDF) - April 2015
Department of Transportation (Caltrans)	<i>Low Carbon Transit Operations Program (LCTOP)</i> <ul style="list-style-type: none"> • Quantification Methodology for FY 2015-16 (PDF) • Greenhouse Gas Emission Reduction Calculator for FY 2015 16* (.xls)

Clean Energy and Energy Efficiency

Agency / Department	Quantification Materials
Community Services and Development (CSD)	<p><i>Low-Income Weatherization Program</i></p> <ul style="list-style-type: none"> • Quantification Methodology for FY 2014-15 (PDF) <p><i>Low-Income Weatherization Program - Large Multi-Family</i></p> <ul style="list-style-type: none"> • Quantification Methodology for FY 2014-15 (PDF)
Department of Food and Agriculture (CDFA)	<p><i>Dairy Digester Research and Development Program</i></p> <ul style="list-style-type: none"> • Quantification Methodology for FY 2014-15 (PDF) <p><i>State Water Efficiency and Enhancement Program</i></p> <ul style="list-style-type: none"> • Quantification Methodology for FY 2015-16* (PDF) • SWEEP GHG Emission Reduction Calculator for FY 2015-16* (PDF) <p>Archived Versions:</p> <ul style="list-style-type: none"> • Interim Quantification Methodology for FY 2015-16 (PDF) • Interim Quantification Methodology for FY 2013-14/2014-15 (PDF) <p><i>*Accepting public comments on the draft FY 15-16 quantification methodology and calculator through February 23, 2016.</i></p>
Department of Water Resources (DWR)	<p><i>Water-Energy Efficiency</i></p> <ul style="list-style-type: none"> • Interim Quantification Methodology for FY 2013-14/2014-15 (PDF)

THANKS.....

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