



# IN PURSUIT OF SUSTAINABLE AGRICULTURE AND HEALTHY SOILS

JENNY LESTER MOFFITT  
DEPUTY SECRETARY, CDFA

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# CALIFORNIA AGRICULTURE

## ■ Food Production

- In 2015, California's farm production topped \$47 billion
- California has the most diverse food production in the country

## ■ Vibrant Rural Communities

- California's 76,400 farms and ranches cover 25.5 million acres



# CALIFORNIA'S CLIMATE STRATEGY



## VISION

**Reducing Greenhouse Gas Emissions  
to 40% Below 1990 Levels by 2030**

## GOALS

**50%  
reduction  
in petroleum  
use in vehicles**



**50%  
renewable  
electricity**



**Double energy  
efficiency savings  
at existing buildings**



**Carbon  
sequestration  
in the land base**



**Reduce  
short-lived  
climate pollutants**



**Safeguard  
California**



# HEALTHY SOILS



REDUCED EROSION  
AND DUST



REDUCED  
SYNTHETIC INPUTS



BUILD ORGANIC  
MATTER



SEQUESTER AND  
REDUCE GHG'S



WATER  
RETENTION



REDUCED  
SALINITY



IMPROVED  
WATER QUALITY



IMPROVED  
PLANT YIELDS

# HEALTHY SOILS INITIATIVE

*An Interagency Plan to Reduce Greenhouse Gases and Improve Drought Resiliency by Innovating Farm and Ranchland Practices.*



## Healthy Soils Action Plan *An Interagency Plan to Reduce Greenhouse Gases and Improve Drought Resiliency by Innovating Farm and Ranchland Practices*

### California's Climate Future and Soils

California's Healthy Soils Initiative is a collaboration of state agencies and departments, led by the California Department of Food and Agriculture, to promote the development of healthy soils on California's farm and ranchlands. Innovative farm and ranch management practices contribute to building adequate soil organic matter that can increase carbon sequestration and reduce overall greenhouse gas emissions.

The Healthy Soils Initiative is a key part of California's strategy to reduce greenhouse gas emissions by increasing carbon sequestration in and on natural and working lands. Governor Edmund G. Brown Jr.'s Executive Order 8-30-15 (April 2015), codified by SB 32 in September 2016, established a new interim statewide greenhouse gas emission reduction target at 40 percent below 1990 levels by 2030. The Executive Order points to carbon sequestration in California's forests and farmlands as one way to help meet that goal. The Brown administration also recognized the importance of soil health in the Governor's 2015-16 proposed budget by highlighting that "as the leading agricultural state in the nation, it is important for California's soils to be sustainable and resilient to climate change."

In building soil health, California can also make use of wasted resources bound for the landfill. Currently, some 12 million tons of compostable or mulchable organic waste is sent to California landfills annually, where it generates methane and other public health threats that must be managed or mitigated. The Healthy Soils initiative presents an opportunity to return those organic materials back to the soil, where they can serve as a resource for California's critical agricultural economy.

### Soil Health and California Agriculture

California leads the nation in agricultural production in terms of both value and crop diversity. California's 76,400 farms and ranches generated more than \$47 billion in revenue in 2015 according to preliminary data from USDA, which further generates approximately \$100 billion



California Environmental Protection Agency  
**Air Resources Board**



# ACTIONS FOR THE HEALTHY SOILS INITIATIVE

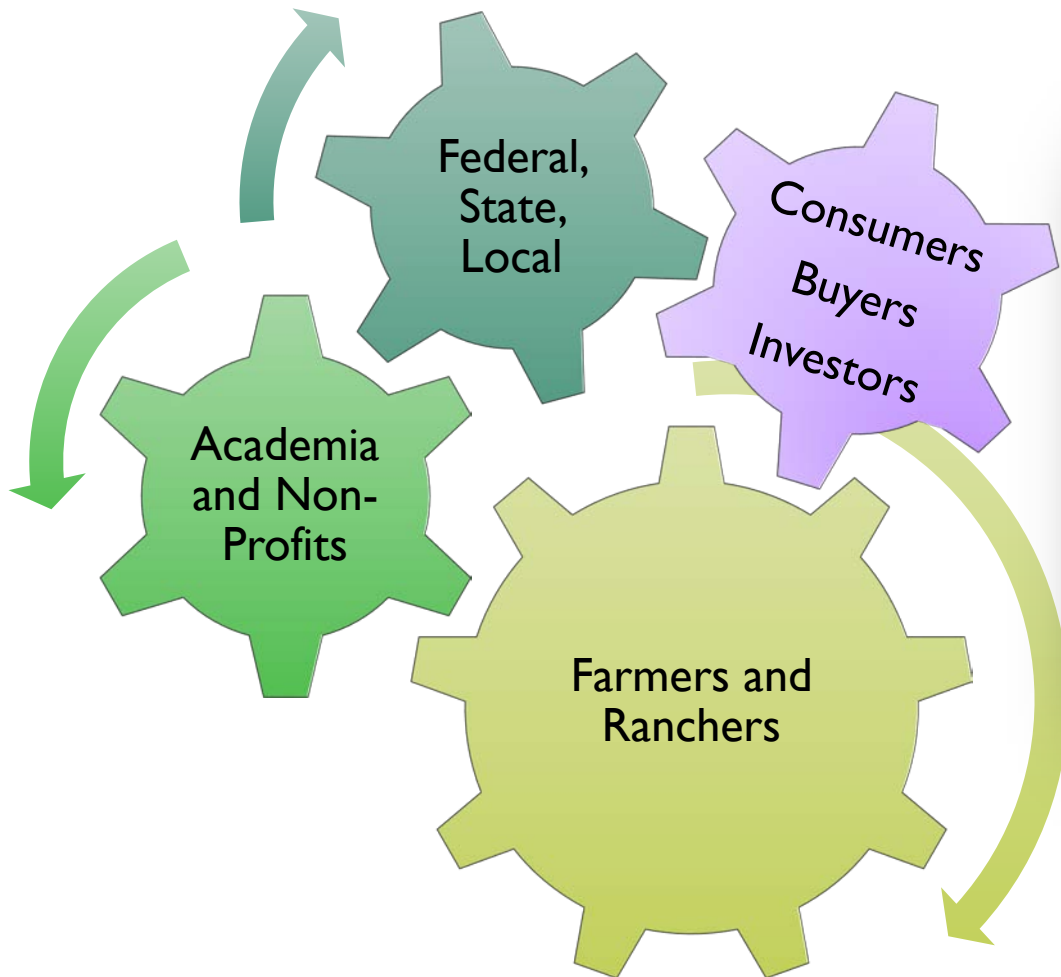
1. Protect and restore soil organic matter in California's soil
  - Set goals for building soil organic matter
2. Identify sustainable and integrated financing opportunities
  - To incentivize voluntary on-farm management practices
  - 7.5 million for FY 2016-18 (SB 859)
3. Provide for research, education and technical support
4. Increase governmental efficiencies to enhance soil health on public and private lands
5. Promote interagency coordination and collaboration

# HEALTHY SOILS PROGRAM



- **Objective:** To build soil carbon and reduce agricultural GHG emissions through incentives.
- **\$7.5 million** in the FY 2016-17 budget from the Greenhouse Gas Reduction Fund to develop and administer:
  - Incentives Program - \$3.75m
  - Demonstration Projects - \$3m

# PARTNERSHIPS FOR SOIL HEALTH





# WALKER CREEK A PARTNERSHIP SUCCESS STORY

**Problem:** Exceedances of chlorpyrifos in 2007 and 2009 in Walker Creek, Glenn County.

**Solution:**

- Outreach
- Survey
- Funded Voluntary Conservation Practices
- Educate

*Colusa Glenn Subwatershed Program*

**IRRIGATED LANDS REGULATORY PROGRAM: Success Stories!**

*Chlorpyrifos and Ceriodaphnia Toxicity Exceedances in Walker Creek Eliminated*

*Water quality in Walker Creek, a small waterway in Glenn County, California, is monitored to satisfy requirements of the Central Valley Water Board's Waste Discharge Requirements for Growers within the Sacramento River Watershed that are Members of a Third-party Group (Order R5-2014-0030-R1). Between August 2007 and July 2009, exceedances of the water quality objectives for chlorpyrifos and toxicity to Ceriodaphnia dubia triggered the implementation of a management plan to reduce constituent concentrations to acceptable levels. Actions taken by the Colusa Glenn Subwatershed Program (who monitors the waterway), Sacramento Valley Water Quality Coalition (the Third-party Group representing growers in the drainage), and growers to address the exceedances were successful and, in January 2014, completion of the management plan was approved by the Central Valley Water Board's Executive Officer.*

**Problem**  
Exceedances of the water quality objective for chlorpyrifos occurred in August and September 2007 and July 2009 in Walker Creek. Significant toxicity to *Ceriodaphnia dubia* coincided with the September 2007 chlorpyrifos exceedance. The August 2007 and December 2009 samples were not toxic to *Ceriodaphnia*.

**Resources Conservation Service (NRCS).**  
The management plan outlined several actions that would be taken to address the exceedances. These actions included:

- Outreach to growers and stakeholders to inform them that exceedances had occurred and increase awareness of the requirements of the Irrigated Lands Regulatory Program (ILRP).
- Survey growers to determine what management practices were in use.
- Use grant funding awarded through the NRCS Agricultural Water Enhancement Program and Bay-Delta Initiative to fund the implementation of additional management practices.



“This program demonstrates the effectiveness of intensive outreach coupled with management practice implementation to protect water quality in watersheds with irrigated agriculture.”  
- Pamela Creedon, Executive Officer of the Central Valley Water Board

# QUESTIONS?



[www.cdfa.ca.gov/oefi/healthysoils/](http://www.cdfa.ca.gov/oefi/healthysoils/)