

Why should I care if my rangeland soils have pore space?



Drew Mather drew.mather@ca.usda.gov Hollister Field Office (831)637-4360 x105





Natural Resources Conservation Service (NRCS)

Since 1935

Non-Regulatory

Confidential

Field Office Locations Throughout the U.S.
and its Territories

Conservation District Partnership

Helping People Help the Land



Farm Bill Incentive Programs

Environmental Quality Incentive Program (EQIP)

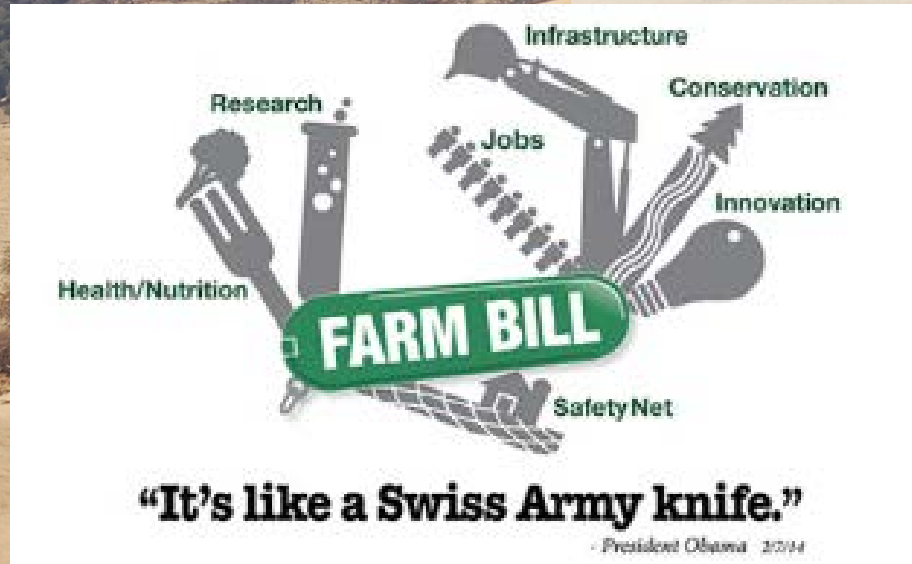
EQIP Organic Initiative

Conservation Stewardship

On-Farm Energy Programs

Conservation Easement Programs

Others





Natural Resources Conservation Service (NRCS)

- NRCS Services
 - Soil Survey
 - Technical Assistance
 - Farm Bill Programs
 - Emergency Assistance
 - Conservation Partnership Efforts
 - Information & Outreach











Dictionary

resilient

adjective | re·sil·ient | \ri-'zil-yənt\

SAVE



POPULARITY



 Cite!

 Share

 G+1

 Tweet

: able to become strong, healthy, or successful again after something bad happens

: able to return to an original shape after being pulled, stretched, pressed, bent, etc.









© Reuters



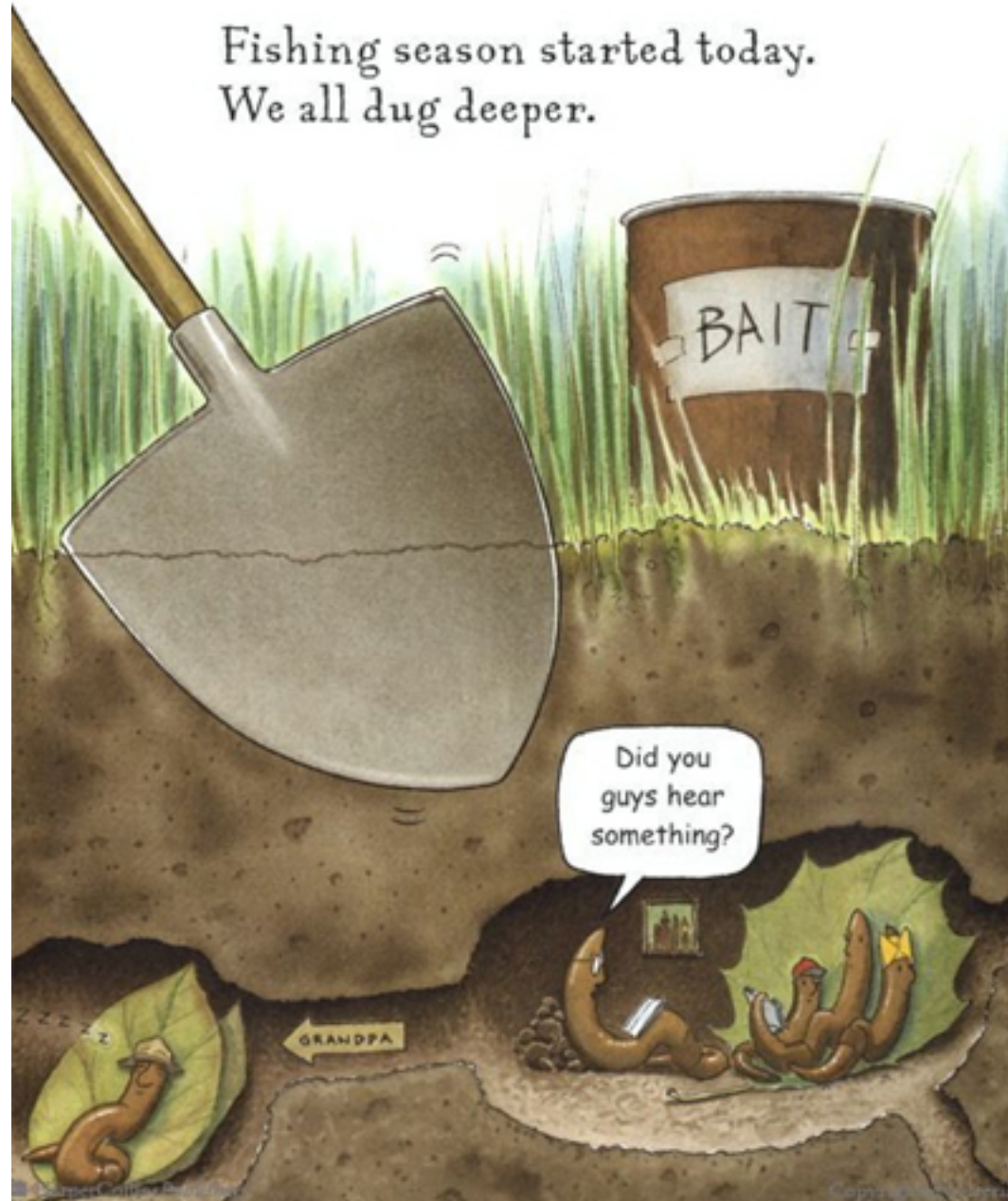
IT



THEY

APRIL 4

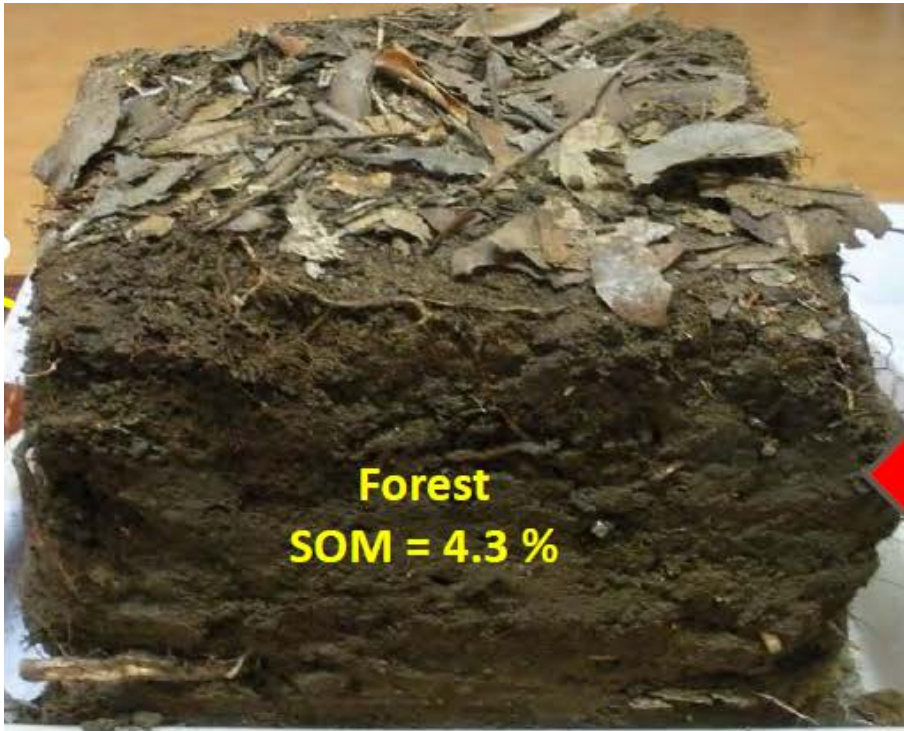
Fishing season started today.
We all dug deeper.



IT

THEY





20 cm

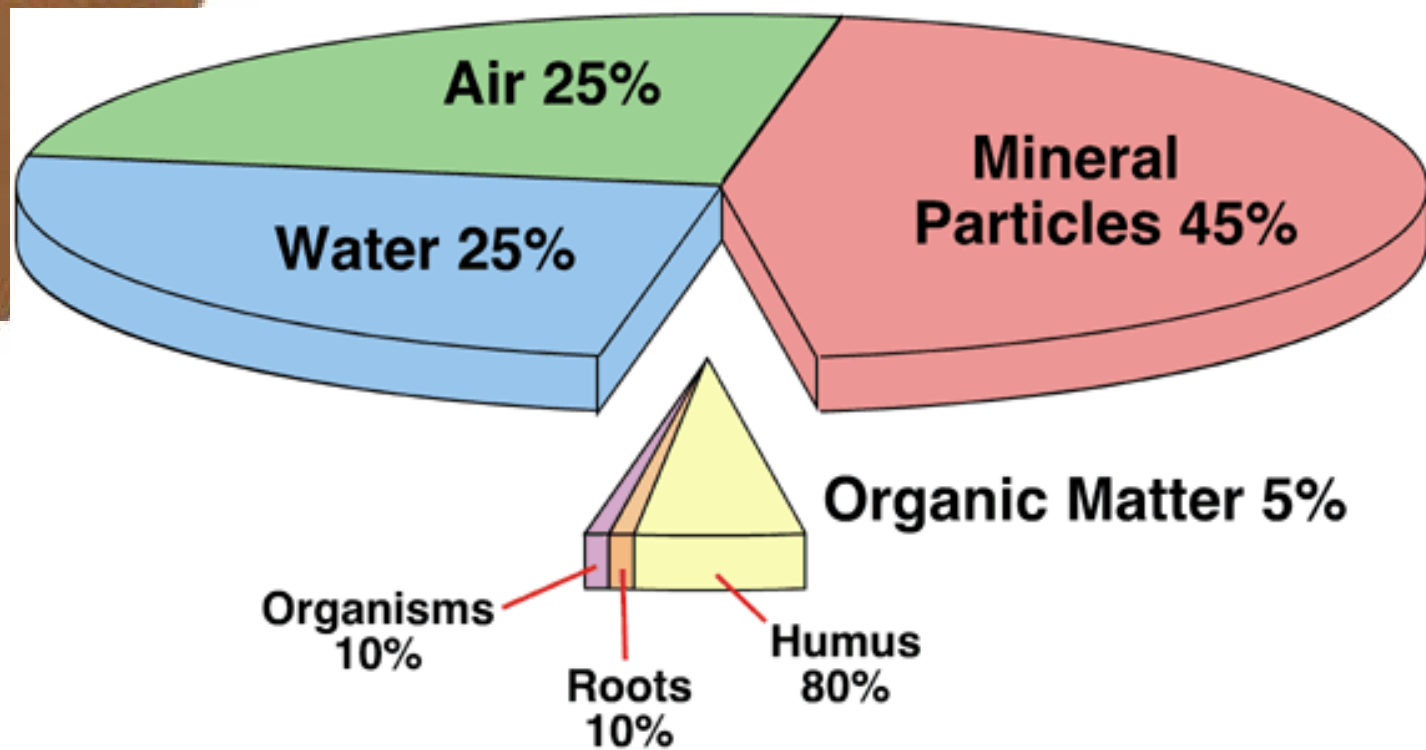


soil is

made of about **45%** minerals

25% water

5% organic matter **25%** air





Healthy soil has amazing water-retention capacity.

Every **1%** increase in organic matter results in as much as **25,000** gal of available soil water per acre.

per foot of soil.





All of the soil microbes in
1 ac/ft of soil weigh
more than **2 COWS**





One teaspoon of healthy soil contains

**100 million-
1 billion** individual
bacteria



All of the soil microbes in
1 ac/ft of soil weigh
more than **2 cows**

Earthworm populations consume

2 tons of dry matter per acre per
year, partly digesting and
mixing it with soil





ELSEVIER

Contents lists available at [ScienceDirect](#)

Soil Biology & Biochemistry

journal homepage: www.elsevier.com/locate/soilbio



Impacts of organic matter amendments on carbon and nitrogen dynamics in grassland soils



Rebecca Ryals^{a,*,1}, Michael Kaiser^{b,2}, Margaret S. Torn^c, Asmeret Asefaw Berhe^b,
Whendee L. Silver^a

^a University of California, Berkeley, Department of Environmental Science, Policy, and Management, 137 Mulford Hall #3114, Berkeley, CA 94720, USA

^b University of California, Merced, School of Natural Sciences, 4225 N Hospital Rd, Atwater, CA 95301, USA

^c Lawrence Berkeley National Laboratory, Earth Sciences Division, 1 Cyclotron Rd, Berkeley, CA 94720, USA

Just a half-inch “dusting” of compost could sequester almost 1,000 pounds of carbon dioxide, per acre, per year.

Soil moisture improved and plants thrived more, both of which helped draw additional carbon dioxide into the soil.

Effects could last for decades.

With approximately 38 million acres of grasslands in California, even if only five percent of that land was managed to store more carbon dioxide, it could offset the CO₂ emissions from 6 million cars.

Four years after application, 90 percent of the compost's carbon was still in the soil.

Most of the carbon *didn't* come from the compost, it came from the atmosphere.

The compost, it turned out, was a catalyst for a virtuous cycle.

Further, the computer models the team developed indicated carbon levels would remain high for 30 to 100 years due to that single application of compost.

A well-managed 1,500 acre grazed grassland in California can expect to sequester an additional 6,600 metric tons of CO₂ over three years following a single ½-inch application of compost
(Ryals *et al*, 2014)

Conservation Plan:

A conservation plan includes all practices, regardless of the program's financial assistance, that a producer or landowner has agreed to adopt for the agricultural operation and/or associated agricultural lands.

Interested applicants are encouraged to request conservation planning and technical assistance from a local NRCS field office.

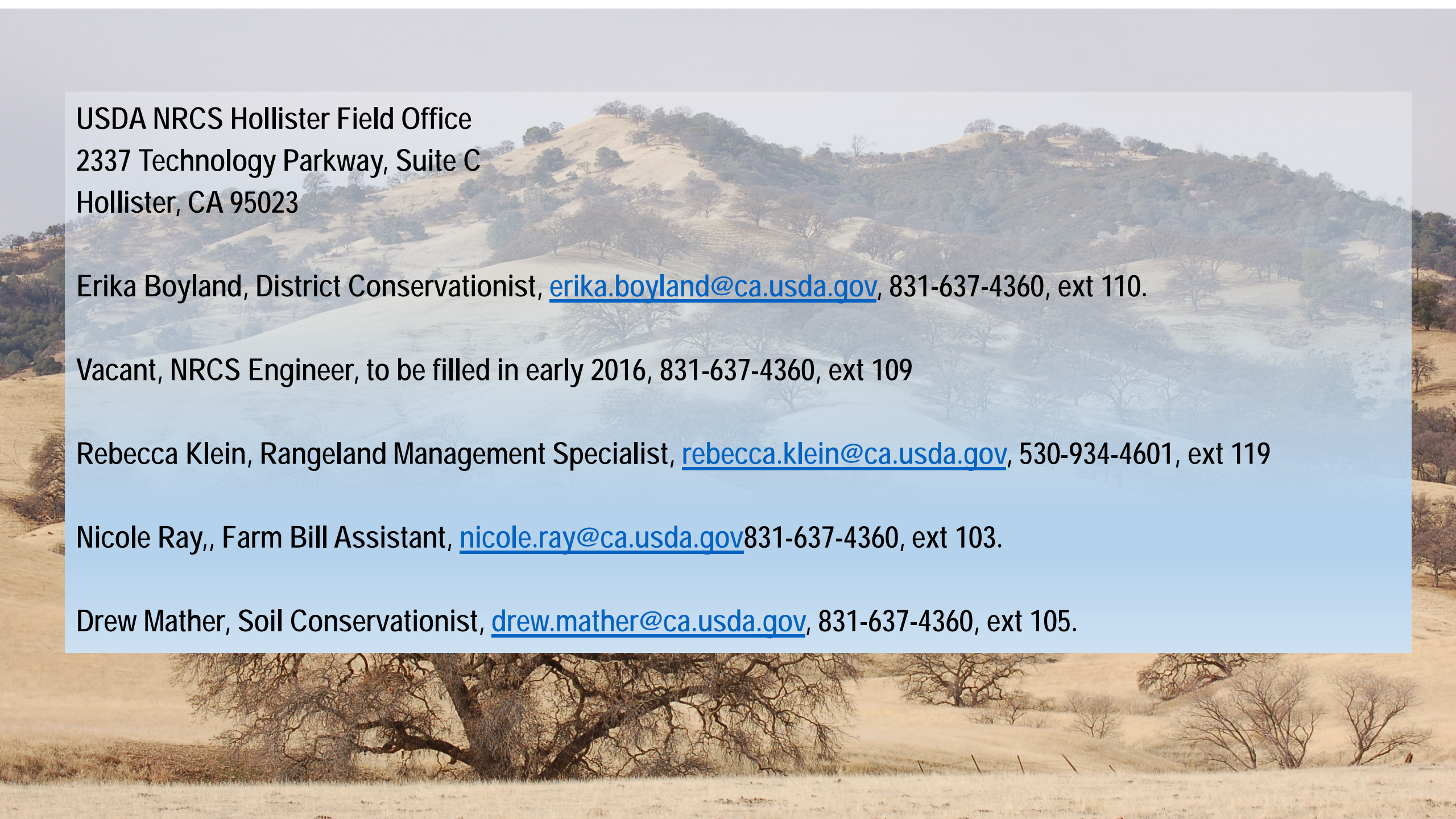
Environmental Quality Incentives Program:

The purpose of the Environmental Quality Incentives Program (EQIP) is to promote agricultural production, forest management, and environmental quality as compatible goals; to optimize environmental benefits; and to help farmers and ranchers meet Federal, State, Tribal, and local environmental regulations.

In order to be considered eligible for EQIP the applicant must have a vested interest in production agricultural or non-industrial private forest land and meet other program eligibility requirements.

Ranking

- **Competitively ranked**
- **Priority given to applicants with largest conservation impact**
- **2015-2016 Deadlines are:**
 - **December 18, 2015, February 19, 2016, April 15, 2016, & June 17, 2016**
 - **Must establish eligibility BEFORE these dates**



USDA NRCS Hollister Field Office
2337 Technology Parkway, Suite C
Hollister, CA 95023

Erika Boyland, District Conservationist, erika.boyland@ca.usda.gov, 831-637-4360, ext 110.

Vacant, NRCS Engineer, to be filled in early 2016, 831-637-4360, ext 109

Rebecca Klein, Rangeland Management Specialist, rebecca.klein@ca.usda.gov, 530-934-4601, ext 119

Nicole Ray,, Farm Bill Assistant, nicole.ray@ca.usda.gov831-637-4360, ext 103.

Drew Mather, Soil Conservationist, drew.mather@ca.usda.gov, 831-637-4360, ext 105.