



# RUNOFF

## CALIFORNIA-NEVADA CHAPTER SWCS – SUMMER 2014



### PRESIDENT'S MESSAGE – Rob Roy

During the planning phases for our 2014 annual meeting, recent cutbacks on travel budgets for NRCS employees weighed heavily on my mind to the point where I was reluctant to commit the Chapter's resources to a meeting site where we would have to guarantee occupancy for a minimum number of rooms. This commitment can cost the Chapter a good deal of money as it did at Bass Lake a few years ago when fewer people showed up to rent rooms. The parent SWCS lost a good deal of money in Reno due to low attendance at the 2013 International Conference and this translated to less revenue for our Chapter. While NRCS is not the only group we want to attend our meetings, they have historically been a large part of the attendance at our conferences. Consequently, when the suggestion was made to hold our conference via video teleconference, I felt this to be a prudent idea.

The idea of a video teleconference meeting did however present some challenges to someone such as myself who is not comfortable with relying on technology. However, the Chapter Executive Council and I accepted the challenge and we forged ahead with an annual conference held via video and broadcast to distant locations in Nevada and California. In spite of my reservations about technology, everything worked remarkably well and we brought meeting technology into the 21<sup>st</sup> century. Details about the conference are written up on the next page but I felt it necessary to explain the reasoning for this course of action.

I wish more of you had been able to attend our field tour that was held on the second day. The issue of subsidence was, for me, a particularly interesting topic. Many of us hear only occasionally about subsidence when the television news reports on it – usually in relation to the drought. The farmers and residents on the west side of the San Joaquin Valley live with subsidence every day and have dealt with it for many years.

Overdrafting of aquifers is one of the major causes of subsidence in this part of California, and as ground-water pumping increases, land subsidence also will increase. In many aquifers, ground water is pumped from pore spaces between grains of sand and gravel. If an aquifer has beds of clay or silt within or next to it, the lowered water pressure in the sand and gravel causes slow drainage of water from the clay and silt beds. The reduced water pressure is a loss of support for the clay and silt beds. Because these beds are compressible, they compact (become thinner), and the effects are seen as a lowering of the land surface. The lowering of land surface elevation from this process is permanent.

I am writing these thoughts on subsidence as I sit in my home-away-from-home in west central Florida surrounded by lakes, alligators, and sinkholes. Out back behind the old family home is a sinkhole that I have been watching since the early seventies. Back in 1973, when I first set eyes on this sinkhole, it was about 25 feet deep with a circular opening at the top that was about 60 feet in diameter. Over the last 40 years, I have watched one side of the sinkhole settle and widen to an oval shape with the length of this opening now about 130 feet from one side to the other. This subsidence of the ground next to the sinkhole is proceeding in a direction leading it directly toward the back of our home. It is now approaching the back patio area and a small shed which are just starting to tilt a bit.

We are fairly certain that this sinkhole in our back yard is of the type known as a "subsidence" sinkhole rather than the more newsworthy "collapse" sinkhole that we hear about on the news. Subsidence sinkholes form where the overburden is thin and only a veneer of sediments is present overlying the limestone. Gradually subsiding sinkholes commonly form where slow dissolution takes place, mostly along joints in the limestone. These sinkholes tend to form naturally and are not greatly affected by human activities. If you want to learn more about this type of subsidence, research Karst topography in central Florida.

So, while subsidence is not unique to California and Nevada, the causes are dramatically different and, ironically, related to precipitation. The slow dissolution of limestone is caused by rainfall which in Florida occurs in much greater quantity than in California. The rainfall total for the part of Florida where my sinkhole exists was 7 inches for just the month of July. In California, our rainfall for the 2013-2014 winter season was, well, much less than that. Hence the need to continue pumping from the aquifer to keep our crops alive and the likelihood of increased subsidence.

## CHAPTER'S FIRST VTC ANNUAL CONFERENCE HELD JUNE 17-18

This is the first time our Chapter broadcast the Annual Conference out to four Video Teleconference (VTC) sites in California and three sites in Nevada on June 17, 2014 reaching a total of 27 participants. Speakers made their presentations at the NRCS Area Office in Fresno and were Video Teleconferenced to VTC sites at the NRCS Service Center in **Bakersfield**, NRCS Area Office in **Salinas**, NRCS Plant Materials Center in **Lockeford**, NRCS California State Office in **Davis**, NRCS Nevada State Office in **Reno** and to the NRCS Service Centers in **Fallon** and **Las Vegas**. Video Teleconferencing allowed questions and discussion between locations and made attendance feasible in light of declining travel and training budgets.

CA-NV Chapter SWCS President **Rob Roy** welcomed all the participants and served as moderator.

SWCS Executive Director **Jim Gulliford** phoned in from Iowa and gave us a national view with his **Soil and Water Conservation Society Update** after thanking our Chapter for hosting the 2013 National Conference in Reno. He announced that there will be a special issue of the Journal of Soil and Water Conservation on climate change, special sections in the Journal on cover crops, water quality, biomass production impacts on soil quality and to expect more position papers.

California Department of Water Resources Engineering geologist **Dane Mathis** presented **Ground water resources in the Central Valley of California – the impact of drought**. He told us that the 2003 DWR Bulletin 118 is being updated thru 2013 and 2014 is the third driest year in California after 1931 and 1977. There are 515 groundwater (GW) basins in the state that are required to have a GW Management Plan. GW levels in the San Joaquin Valley have been dropping about 2.1 feet per year. He asked us to read a copy of the **California Water Action Plan** [http://resources.ca.gov/california\\_water\\_action\\_plan/docs/Final\\_California\\_Water\\_Action\\_Plan.pdf](http://resources.ca.gov/california_water_action_plan/docs/Final_California_Water_Action_Plan.pdf)

California Department of Water Resources Engineering geologist **Mike McKenzie** explained the **California Statewide Groundwater Elevation Monitoring (CASGEM) program**. It was started in 2009 to collect all the well logs in each of the 515 GW Basins and make an on-line well information database. You can find it at: [www.water.ca.gov/groundwater/casgem](http://www.water.ca.gov/groundwater/casgem) You can email Mike at: [Charles.mckenzie@water.ca.gov](mailto:Charles.mckenzie@water.ca.gov)

SWCS Washington DC Representative **John Peterson** called in from North Carolina to report that he spends 2 days per week on Capitol Hill following bills that would impact soil and water conservation programs at the state and federal levels. The hot topic now is the proposed change to the Clean Water Act Section 404 by EPA and the US Army Corp of Engineers that would redefine “**Navigable Waters of the United States**”. The comment period has been extended another 90 days.

Kings River Conservation District Deputy General Manager **Steve Stadler** gave us a **local perspective on ground water supplies and subsidence**. They do active well surveys and found that surveys done in the Spring provide better data. They estimate the annual overdraft has been 120,000 acre feet per year during the period 1963 to 2009 and the subsidence rate has been 6 inches every 4 years. They use recharge basins to store river runoff. You can email him at: [sstabler@krcd.org](mailto:sstabler@krcd.org)

USDA NRCS Soil Scientist **Doug Merkler** stationed at Las Vegas contributed his video-taped presentation on **Ground water withdrawals and subsidence in Nevada**.

USDA NRCS Soil Conservationist **Rebecca Elwood** stationed at Fresno explained the **Mechanisms of Subsidence in Western San Joaquin Valley**. She reviewed why some aquifers maintain their capacity even when over pumped and other types of aquifers lose capacity and collapse with the resulting subsidence problems. Land Subsidence in the San Joaquin Valley has been called the "Greatest Alteration of the Land's Surface by Man."

This was a perfect overview for the field trip/tour on Day 2 – June 18.

The Chapter Annual Business Meeting was called to order by Chapter President **Rob Roy** at 4 pm. The program included Installation of Officers, Scholarship Award and Chapter Awards.

**NOTE:** Our Chapter Annual Conference/Workshop theme was right on the money. The Sunday July 27, 2014 issue of *The Sacramento Bee* has an article titled “[No refills once soil layers sink](#)” on page A3 by **Mark Grossi** with *The Fresno Bee* that focuses on the costly consequences of land subsidence from over pumping groundwater in parts of the San Joaquin Valley. This article is similar to his story titled “[New report warns: No groundwater refills after underground layers collapse](#)” published in *The Fresno Bee* on July 25, 2014 and you can read it at <http://www.fresnobee.com/2014/07/25/4040983/new-report-warns-no-groundwater.html>

**Day 2 FIELD TRIP/TOUR – Wednesday, June 18, 2014**

**Kerry Arroues**, NRCS Earth Team Soil Scientist, introduced topics to the 12 participants as the tour traveled south in the San Joaquin Valley to Hanford in Kings County and then west toward the Arroyo Passajero alluvial fan to view sedimentation near the California Aqueduct. A second stop allowed the group to observe construction work to raise levees and aqueduct inlets in response to this sedimentation by the Arroyo Passajero canyon. After a relaxing lunch at the Cardella Winery, the tour traveled north into Fresno County to sites related to salinity and high water table issues, view areas of extensive shallow subsidence, and visited a geological source area for high selenium west of I-5 near Panoche Creek. The final stop of the tour was at the San Luis Drain with a discussion of the history of water challenges in this area.

Photos by Chapter Executive Council Director **Phil Hogan**.



Retired USDA NRCS Soil Scientist **Kerry Arroues** gave a short presentation on the tour of the formation of soils in the Valley.



Abandoned service station on W. Panoche Road in western Fresno County. The service station had sunk partly into the ground as a result of land subsidence due to over-pumping of groundwater.



**Nathan Cardella**, Winemaker for Cardella Winery, explains to tour group how his agricultural operation works. Located at "ground-zero" in the land subsidence area, the winery must struggle to survive by pumping groundwater that may not be a renewable resource during a severe drought.



A young orchard planted along the banks of Panoche Creek in western Fresno County. In the third year of a severe drought, will there be enough water to irrigate these new trees?



Retired NRCS Soil Scientist **Kerry Arroues** stands at a utility pole on W. Panoche Road near Mendota. This is believed to be the same site where the infamous photo was taken by USGS in the 1970's showing over 50 feet of subsidence since the 1920's.



A portion of the abandoned San Luis Drain in western Fresno County due to land subsidence.



## CHAPTER OFFICERS INSTALLED FOR 2014-2015

Part of the Chapter Annual Business Meeting in Fresno on June 17 was the installation of the following newly elected officers by Installing Official Chapter President Rob Roy:

**Joe Williams** from Visalia as President-Elect for one year and then becomes our Chapter President for two years;

**Erika Boyland** from Bakersfield as Chapter Secretary for a two year term; plus

**Austin Avwunudiogba** from Turlock, **Phil Hogan** from Sacramento, and **Zahangir Kabir** from Davis as Executive Council Directors for two years.



Chapter Secretary Joe Williams, on left, is congratulated by Chapter President Rob Roy at the Annual Meeting in Fresno for being elected as the new President-Elect.



Chapter Executive Council Director Austin Avwunudiogba, on right, is congratulated on his reelection by Chapter President Rob Roy at the Annual Meeting in Fresno.

## CHAPTER SCHOLARSHIP AND AWARDS PRESENTED AT ANNUAL MEETING



Armando Guzman, on right, is congratulated by Chapter President Rob Roy in Fresno at the Annual Business Meeting as the 2014 winner of the \$1,000 Chapter Scholarship

Chapter President **Rob Roy** announced that the Outstanding Service Award of Merit went to member **Mark Steffek** for his service to our Chapter during his term as the SWCS Western Region Representative.

Chapter Executive Council Director **Wendy Rash** presented **Walt Bunter** with an Outstanding Service Award at the Davis VTC site on the first day of the Annual Conference/Workshop in recognition of his contributions as the Chapter Newsletter Editor and Publisher

The Chapter Scholarship Committee chaired by Chapter Executive Council Director **Tina Vander Hoek** processed four applications from college students this year. Tina would welcome more members to join the committee and help judge the 2015 applications. Contact her at:

[Tina.Vanderhoef@ca.usda.gov](mailto:Tina.Vanderhoef@ca.usda.gov)

## 2014 CALIFORNIA-NEVADA CHAPTER SWCS SCHOLARSHIP WINNER

**Armando Guzman** is in his 4th year at Fresno State majoring in Plant Science. Activities include: Fresno State Plant Science Club, Secretary Fall of 2013, where he was involved with planning several events and took part in the club’s crop project. He said club activity contributed to involvement with the Valley Farm Exhibit at the Chaffee Zoo; the Boys and Girls Club of Tulare, and the United Cerebral Palsy of Central California.



He is currently employed by the Wilbur Ellis Company at their Helm, CA branch as a field scout.

Awards – President’s List: Fall 2011, Fall 2012, and Spring 2013; Dean’s List: Spring 2012 attending Fresno State.

One of Armando’s instructors describes him as not only demonstrating to be an excellent student but also showing a keen interest in different topics related to agriculture and natural resources. He also stated that Armando has mechanical experience, communicates well, is punctual, energetic, a hard worker, and willing to help others with ideas and actions. He has been involved in several research projects at Fresno State.

Another of his instructors, also a Plant Science Club faculty advisor, ranks Armando’s performance as among the top 5% in the last six years of classes he has taught. He described Armando as an exemplary student who is very eager to learn, makes sure he understands the material being taught, and seems to be interested in pursuing a graduate degree. He also stated Armando was a very motivated person and has a good volunteer record.

Armando’s goal after graduation is to become a pest control advisor. He stated that he was “looking forward to providing farmers with solutions and strategies to meet the world’s increased demand for food in a manner which promotes the conservation of natural resources”.

### MEMBERSHIP

We have **114 members** as of July 14, 2014. Remember to RENEW your membership before the due date. Please consider helping on the Membership Committee. Contact President-Elect Joe Williams at: [Joe.Williams@ca.usda.gov](mailto:Joe.Williams@ca.usda.gov)

### MISSION STATEMENT

The Chapter is a multidisciplinary scientific and educational organization dedicated to natural resource enhancement through an ethic which recognizes the interdependence of human communities and natural systems. The Chapter achieves its mission through its members using mutual cooperation and understanding to create opportunities for improving soil and water conservation in California and Nevada.

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**CHECKOUT THE CA-NV CHAPTER SWCS WEBSITE**  
**[www.caswcs.org](http://www.caswcs.org)**

Consider being our webmaster. Contact the Editor.

## **KLAMATH BASIN EWP PROJECT FOR WIND EROSION CONTROL**

Based in part on a USDA NRCS DAVIS, CA news release dated June 12, 2014.

Minimal snowpack and rainfall during the 2014 winter resulted in reduced water deliveries to the irrigation districts in the Klamath Basin. This prevented the planting of normal crops in already tilled fields. USDA's Natural Resources Conservation Service (NRCS) estimated that approximately 6,500 acres of farmland that did not have alternative water sources would need to be treated to prevent wind erosion and wind-blown dust hazards. This estimate was later increased to 10,000 acres.

Technical assistance was provided by NRCS and funding was provided by the agency's Emergency Watershed Protection (EWP) program. The Lava Beds-Butte Valley Resource Conservation District (RCD) in Tulelake served as the required sponsor for the emergency project. EWP provided \$882,500 towards the \$1.15 million cost, and \$267,500 came from local sources.

The signup period ran from April 13 to May 15 and resulted in 41 contracts covering 8,836 acres. Klamath farmers had just ten days from the time of signup to get a cover crop planted and certified. All of the acres were planted before the end of May 2014. **Cover crop choices were barley, oats, triticale, or wheat planted with a no-till drill or standard drill at a seeding rate of at least 80 pound per acre.** Wheat was used on 22 contracts, barley on 12, triticale on 3, oats on 2, and a three way mix was used on 2 contracts. Fields may be harvested for grain or hayed as long as the soils are protected from wind erosion. **The cover crop and/or stubble will remain in place until April 1, 2015. The minimum stubble height requirement is four (4) inches.**

**"Our goal was to get a cover crop on key dust-producing areas of the Basin," said John George, NRCS district conservationist in Tulelake. "Because of irrigation water cutbacks, we were relying to some extent on residual soil moisture to get this protective layer of vegetation up and going. It's key to get the seeding in before the window of opportunity closes," he said.**

**"We were happy to be in the right place at the right time to sponsor this work," said Lava Beds-Butte Valley RCD Chairman Mike Byrne.** "The reason that farmers here are still irrigating at all is the assistance they received from NRCS for irrigation improvements after the water shut off in 2001," Byrne added. "Farmers and ranchers are using and managing water much more efficiently. The amount of snow pack and lake water available in the 2013 and 2014 irrigation seasons was less than the amount available in 2001, when most irrigation was curtailed. The Klamath Project was able to provide full season irrigation in 2013, and water savings due to conservation practices implemented by farmers is a major reason full delivery occurred."

"We have had two drought-related EWP agreements in California so far this year," said acting NRCS State Conservation Engineer **Dan Johnson**. "Both of these are for dust control. One is in Madera County, and one is in the Klamath area."

Although California received \$25 million for drought assistance to farmers through NRCS's Environmental Quality Incentives Program (EQIP) earlier this year, the work in the Klamath Basin was done through the EWP program due to urgency of the situation and the threat to lives and property from blowing dust. EWP funding is available for all private properties, not just agricultural land. EWP is implemented immediately and there isn't a competitive ranking process.

## **NEW SOIL HEALTH VIDEO POSTED BY NRCS CALIFORNIA**

**"Cover Crops and Water Infiltration of Soil"** is a 4 and a half minute YouTube video featuring **Russ Lester** at his Dixon Ridge Farms organic walnut orchard in Winters. Go to <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/soils/health/> Click on **"soil health THEATER"**. Next click on **"Profiles in Soil Health"**. Select the video featuring **Russ Lester** talking about his clover, vetch, and wild oats cover crop improving water infiltration and providing beneficial insects.

## USDA ROLLS OUT STRONG NEW PARTNERED CONSERVATION PROGRAM

Based on a USDA NRCS California News Release on May 27, 2014

Agriculture Secretary **Tom Vilsack** announced a new era in American conservation efforts with an historic focus on public-private partnership. The USDA Natural Resources Conservation Service (NRCS) **Regional Conservation Partnership Program (RCPP)**, created in the 2014 Farm Bill, will fund a number of conservation activities across California - **with special funding available for California's Bay-Delta watershed.**

"This is an entirely new approach to conservation," said Vilsack. "We're giving private companies, local communities, and other non-government partners a way to invest in what are essentially clean water start-up operations. By establishing new public-private partnerships, we can have an impact that's well beyond what the Federal government could accomplish on its own. These efforts keep our land resilient and water clean, and promote tremendous economic growth in agriculture, construction, tourism and outdoor recreation, and other industries."

**The RCPP will competitively award funds to conservation projects designed by local partners specifically for their region.** Eligible partners include private companies, universities, non-profit organizations, local and tribal governments and others joining with agricultural and conservation organizations and producers to invest money, manpower and materials to their proposed initiatives. Through RCPP, partners propose conservation projects to improve soil health, water quality and water use efficiency, wildlife habitat, and other related natural resources on private lands. USDA's \$1.2 billion in funding over the life of the five-year program can leverage an additional \$1.2 billion from partners for a total of \$2.4 billion for conservation.

## NRCS CALIFORNIA LAUNCHES AIR QUALITY CHIPPING INITIATIVE

Based on a USDA NRCS California News Release on April 29, 2014

The USDA Natural Resources Conservation Service (NRCS) in California will assist farmers to chip woody debris in fallowed orchards and vineyards impacted by California's ongoing drought. The conservation benefits associated with this practice **include controlling erosion and protecting air quality.**

"NRCS is committed to helping farmers and ranchers manage the impacts of California's drought," said **Carlos Suarez**, NRCS California state conservationist. "This initiative builds upon the \$25 million we have already invested this fiscal year to apply on-farm water conservation measures across the state."

The **California Air Quality Chipping Initiative**, through NRCS's **Environmental Quality Incentives Program (EQIP)**, will assist agricultural producers in **chipping woody debris from removed orchards or vineyards that are no longer being irrigated due to the extreme drought conditions.** These crops are located in areas where surface water deliveries are severely curtailed or suspended and no other sources of water are available for continued irrigation.

Chipping the woody debris in lieu of burning will avoid smoke emissions created from agricultural burning, reducing ozone precursors and particulate matter emissions, and reducing smoke impacts downwind. Applying the chipped debris to the fallowed orchard or vineyard land stabilizes the surface area to limit fugitive dust emissions due to wind erosion and helps improve soil health by increasing soil carbon, organic matter and water retention. The wood chips may also be hauled away to a nearby composting facility or to a biomass-fueled power plant where the chips are consumed as renewable fuel for producing electricity.

This past February, **President Obama** and Agriculture Secretary **Tom Vilsack** announced a combined \$25 million to help agricultural operators use agricultural water more efficiently, stabilize fallowed cropland, and protect their agricultural livelihoods for the future. NRCS California is in the process of notifying those applicants if they have been approved for funds to implement the conservation practices they applied for.



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**CHAPTER CAP FOR \$10 DONATION**

The caps are stored in Davis at the USDA building and you can pick it up there or have it delivered by contacting Walt Bunter at [wbunter@pacbell.net](mailto:wbunter@pacbell.net)

Send your \$10 donation check made payable to CALIFORNIA-NEVADA CHAPTER SWCS to Treasurer **Tom Esgate**, 18888 Meadowlark Court, Penn Valley, CA 95946- 9681

**CHAPTER EXECUTIVE COUNCIL**

- Rob Roy, President**
- Joe Williams, President-Elect**
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**RUNOFF** is the official California-Nevada Chapter SWCS newsletter.

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**Walt Bunter** – [wbunter@pacbell.net](mailto:wbunter@pacbell.net)

Please submit articles via email to the Editor.  
RUNOFF reserves the right to edit all submissions.

**Out of the long list of nature's gifts to man, none is perhaps so utterly essential to human life as soil.**

**National action may be led and aided by government, but the soil must be conserved ultimately by those who till the land and live by its products.**

**In this democracy, national action to conserve soil must be generated by these millions of land users. If they are active and willing participants in such a movement, it will endure; otherwise it will fail.**

**National conservation action must spring from people on the land, and to a large extent, be advanced by them as individuals, with the help of government.”**

**Hugh Hammond Bennett**

These quotes are from: Hugh Hammond Bennett. *Soil Conservation*. New York: McGraw-Hill Book Company, Inc., 1939.

**YOUR PHOTOS ARE WANTED  
FOR THE CA-NV CHAPTER SWCS  
WEBSITE**

**[www.caswcs.org](http://www.caswcs.org)**

PLEASE SUBMIT  
PHOTOS,  
NEWS ITEMS, AND  
FEATURE ARTICLES  
TO THE EDITOR FOR THE  
FALL ISSUE OF RUNOFF

**BY SEPTEMBER 23**

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There are 98 locally led Resource Conservation Districts (RCDs) in California. More information is available on the California Association of Resource Conservation Districts (CARCD) website

at:

**[www.carcd.org](http://www.carcd.org)**