SOIL AND WATER CONSERVATION SOCIETY

RUNOFF

CALIFORNIA-NEVADA CHAPTER SWCS –SPRING 2016

PRESIDENT'S MESSAGE – JOE WILLIAMS

Greetings California-Nevada Chapter SWCS members,

I wanted to take this opportunity to give you the results of a recent California-Nevada SWCS Chapter poll. The poll was conducted by the Chapter Executive Council with the intent to get a better understanding of what you, our members, want to see for the future direction of the Chapter and how we plan future activities.

Results:

Total responses: 27

Employer/ organization category breakdown: 30% Federal Government. 26% Retired. 15% Academic. 15% Consulting. 4% Non-profit. 4% State Government. 7% Unknown.

SWCS membership ranged from one to 35 years with an average of 15 years. Respondents are members of 36 other organizations. The most common was the Soil Science Society of America, followed by the American Society of Agronomy.

A rough average time to retirement is about nine years. Only 11% are early to mid-career professionals.

There is a slightly higher expectation of technical development compared to interpersonal development. As far as how well the Chapter delivers on both these expectations, both received lower scores indicating that we have a bit of room to improve. Of the individual interest topics identified, 13 were related to water and 12 were related to soil. Other topics of interest include: Production issues/ innovation, Policy development, Land use, General sustainability/ conservation, Geology/ geomorphology, and Climate change.

On a scale of 1-3, each potential chapter activity ranked relatively close. Informational workshops and technical trainings were at the top with 2.5, field trips and informal meetings were in the middle with 2.4, and Professional Certifications were at the bottom with 2.3. Several comments were received describing the types of trainings, networking, or social gatherings that would be of interest.

82% of the people who responded feel that a Facebook presence would be beneficial. The other platforms got much less support: LinkedIn 41%, Twitter 23%, Instagram and Google+ both at 9%.

The top four selections for social media content were news articles, new research, trainings/ webinars, and Society meeting info with 83%, 75%, 67%, and 58%, respectively. Not surprisingly, job postings and scholarship info weren't at the top considering the low representation by students/ professors.

Several suggestions for improving membership were posed. By far, the most common comment was related to making better connections with the academic community.

Based on the results of this poll, the Executive Council will now focus on improving those critical areas identified as needing improvement and move forward with an updated strategic plan.

Many thanks go to **Director John McCann** for working on the poll questions and analyzing the results. We also want to thank all those members who took the time to participate in the poll. John is the US Forest Service Forest Hydrologist for the Humboldt-Toiyabe National Forest in Nevada

NEW CHAPTER MEMBERS

We extend a **GREAT BIG WELCOME** to eight new members who recently joined our California-Nevada Chapter SWCS. We have **98 members** as of June 21, 2016.

Chester Bush	– Fresno	**Elektra Mathews-Novelli**	– Arcata
Liberty Galvin	_ Davis	**Joseph May**	_ Battle Mtn, NV
Michael Harding	_ San Diego	**Hudson Minshew**	_ Davis
Kay Joy Barge	_ Salinas	**Roger Tompkins**	_ Visalia

SCHOLARSHIP COMMITTEE ANNOUNCES FINALIST

Chapter Scholarship Chair **Tina Vander Hoek** is pleased to announce that **Aldo Garcia** of Fresno State has been recommended for this year's CA-NV Chapter SWCS Scholarship award. President **Joe Williams** and Past President **Rob Roy** assisted in making this recommendation.

Tina also thanks all the applicants for their interest and dedication to their community and natural resource conservation. Four applications were received by the deadline. The students who applied attend Cal Poly San Luis Obispo, Cal Poly Pomona, and Fresno State. The $1,000 scholarship will be awarded at our Annual Conference in September.

CHAPTER ELECTION RESULTS

Thirty-two Chapter members returned their ballots. **Erika Boyland** was re- elected as Secretary. Directors **Austin Avwunudiogba, Phil Hogan,** and **Zahangir Kabir** were re-elected as Executive Council Directors**.** Directors and the Secretary serve for two years. The ballots were counted by President **Joe Williams** and Director **Zahangir Kabir.**

CHAPTER ANNUAL CONFERENCE TO BE HELD IN SEPTEMBER

President Elect **Ladi Asgill** has announced that this year's conference will be held in September and include a technical tour. Details of topics, date(s), and location are still being worked on. The timing is a departure from our usual spring/summer conference, but because of tight schedules and summer vacations. Ladi believes a fall conference will allow more planning time and attract larger attendance.

Proposed topics up for discussion include:

1. Healthy soils initiative
2. Wildfire impacted ranches and forest lands

A chapter discussion will be scheduled by President **Joe Williams** for July 19th to kick off the conference planning. Contact **Ladi** at lasgill@suscon.org and join the annual conference planning committee. Express your preference for where to hold it. Help select the date for the conference. Work with the committee to select a theme and organize the agenda that includes technology training, installation of officers and awards presentations. Help find speakers and sponsors. Practice your publicity skills.

71ST SWCS INTERNATIONAL ANNUAL CONFERENCE

Galt House Hotel • Louisville, Kentucky July 24-27, 2016

Theme: Great River Landscapes

As in the past, at least two Chapter members are expected to attend this annual conference that will feature three special interest areas of focus: Conservation Systems in the Riparian Corridor; Water Quality Trading: The Good, the Bad, and the Ugly; and Protecting Water Quality at the Multi-State Scale as well as nine general topic areas including Adaptive Management of Conservation Efforts; Conservation Economics and Policy; Conservation Models, Tools, and Technologies; Conservation in Nontraditional Agriculture; Conservation Policy and Program Design; Outreach, Education, and Community Engagement; Social Sciences Informing Conservation; Soil Health Resources, Indicators, Assessment, and Management; and Water Resource Assessment and Management.

More details are available at www.swcs.org/16ac.

THE REGIONAL CONSERVATION PARTNERSHIP PROGRAM

According to the March 2016 Conservogram, the USDA and its partners will direct up to $720 million towards 84 conservation projects in the Nation through the Regional Conservation Partnership Program (RCPP).

The Regional Conservation Partnership Program gives local organizations opportunities to design and deliver solutions that benefit natural resources where they live and work. Below are the projects in California that were awarded RCPP funding for FY16.

North Coast Oak Woodland Conservation Project

Proposed NRCS Investment: $2.6 million (State)

Lead Partner: University of California Cooperative Extension; Number of Partners: 9

Throughout the Pacific Northwest, the loss of deciduous oak woodlands has become a critical conservation concern, resulting in associated losses of wildlife habitat, range values, cultural uses, biodiversity and other ecosystem services. This project would provide much-needed cohesion to efforts at a regional scale, complementing significant contributions by local organizations and landowners and providing a venue for shared development of related skills and expertise, best management practices and strategic vision among the many stakeholders working on this issue. Project objectives include increasing habitat continuity and the quantity and quality of food and shelter for wildlife; restoring structural integrity of oak woodland habitats and reducing wildfire risks; increasing the vigor and productivity of oak stands and associated plant communities; and increasing forage and shelter for livestock.

Salton Sea Agricultural Wetlands Habitat Program

Proposed NRCS Investment: $7.5 million (National)

Lead Partner: Salton Sea Authority; Number of Partners: 6

This project will help producers and partners improve Salton Sea water quality, improve Imperial and Coachella valley air quality and restore habitat and wetlands. The Salton Sea is a shallow, saline, terminal lake sustained by agricultural discharge principally from the Imperial Valley. The lake provides significant habitat for birds, with an estimated 400 species relying upon the lake, as well as habitat for several state- and federally-listed species. Over the last two decades, Imperial Irrigation District (IID) became a party to agreements, which provide for conservation measures to generate 408,000 AFY (acre feet per year) of water for transfer out of the Imperial Valley for Southern California urban users.

Because the lake is sustained largely by agricultural discharges, absent mitigation and restoration, the parties recognized that these transfers would have unacceptable environmental impacts, particularly to the Salton Sea. IID committed to provide mitigation water for 15 years, while California committed to remaining mitigation and restoration. The first restoration projects are ready for implementation.

This project targets conservation assistance to improve the water quality of IID agricultural drains, the New River and the Alamo River, which together will provide the inflows to sustain these first habitat and air quality restoration projects. By improving the quality of these inflows, this project will fill a pivotal niche in these important Salton Sea restoration projects and will help assure the success of a critical ag-to-urban water transfer.

Sierra Valley CPP

Proposed NRCS Investment: $9.9 million (CCA)

Lead Partner: Feather River Land Trust; Number of Partners: 3

The Sierra Valley Conservation Partnership Project (SVCPP) is a collaborative initiative to conserve high quality wildlife habitat and address water quality and groundwater management challenges in Sierra Valley, the largest wetland and mountain meadow complex in the Feather River system and an ecologically rich sub-region of the Bay Delta. Sierra Valley supports the greatest diversity and abundance of birds in the Sierra Nevada and provides breeding habitat for more than 17 rare or threatened bird species.

Sierra Valley is also a ""priority"" groundwater basin for California supplying drinking water to over 1.6 million Californians each year. The SVCPP will create a formal working partnership between NRCS and one of the most successful landscape-scale conservation initiatives underway in California today, enabling NRCS to leverage its resources to achieve results completely unimaginable absent the partnership. The SVCPP will bring significant new financial and human resources to the table, more than doubling NRCS's investment and enabling NRCS better serve the resource conservation needs of landowners in this critical upper watershed of the California Bay Delta CCA.

Continued on next page.

SONEC Working Wet Meadows Initiative

Proposed NRCS Investment: $2.6 million (National)

Lead Partner: Intermountain West Joint Venture; Number of Partners: 12

Participating State(s): California & Oregon (lead state)

The Southern Oregon-Northeastern California (SONEC) region is one of the most important areas for migratory waterbirds in North America, supporting approximately 70% of the Pacific Flyway's wetland-dependent migratory bird population (>six million birds). These birds are attracted to SONEC because of the food resources provided by privately owned, flood-irrigated wet meadow habitats on working ranchlands within historic floodplains. However, these habitats are increasingly threatened by changing irrigation practices, aging water conveyance infrastructure and fragmentation. To address at risk species habitat, water quantity and drought resource concerns, this project will strategically utilize Farm Bill programs and partner contributions to conserve nearly 25,000 acres of wet meadow habitats and improve the resiliency of working ranchlands to drought. Specifically, the project will improve the sustainability of wet meadows for migratory birds by: enhancing infrastructure and improving the efficiency of flood-irrigation on critical wet meadows; acquiring conservation easements to remove fragmentation risk; and enhancing important foraging habitat for wetland-dependent migratory birds.

Sonoma County Venture Conservation

Proposed NRCS Investment: $8.0 million (National)
Lead Partner: Sonoma County Agricultural Preservation and Open Space District; Number of Partners: 15

Due to severe drought in California, protection of agricultural lands and ecosystems for climate and drought resiliency is a high priority for partners in Sonoma County, California. This project is focused on four resource concerns: insufficient water, water quality degradation, soil quality degradation and inadequate habitat for fish and wildlife. The strategy for drought and climate resiliency involves using cutting edge science – such as LIDAR, downscaled climate modeling, atmospheric river modeling, habitat and species mapping and countywide GIS based spatial decision support systems – to inform our conservation vision, conservation plans and effectiveness monitoring. The project will leverage funds for natural resource enhancements utilizing practices, which avoid the need for regulatory requirements and increase regulatory certainty for landowners. Conservation activities will focus: on layering multiple practices in key riparian corridors, groundwater basins and floodplains in Sonoma County; acquiring easements; developing landowner plans; and implementing riparian corridor restoration, water conservation measures and floodplain enhancements to achieve sustainable water quality and quantity, soil health and functional ecosystems. Sonoma County sits at the nexus of the rapidly urbanizing San Francisco Bay Area and the rural North Coast of California. Conserving the rural heritage, agricultural economy and natural ecosystems is increasingly challenging given the pressure to convert natural and working lands to residential development, and conversion of these landscapes will only exacerbate impacts from drought and climate change.

Yurok Traditional Landscape Management Plan

Proposed NRCS Investment: $2.2 million (State)

Lead Partner: Yurok Tribe; Number of Partners: 4

Located in northern coastal California, the Yurok Reservation starts near the confluence of the Trinity and Klamath rivers and follows the Klamath River until it empties into the Pacific Ocean. The Yurok Tribe is proposing a unique land management model that will combine existing management documents into a culturally based, comprehensive, overarching guidance document with the goal of widespread sub-basin restoration. The basis of the model will combine cultural resource priorities, forest management plans, Aquatic Habitat Conservation Plans, carbon sequestration goals and watershed restoration plans into a tool to restore the health of forested lands, increase carbon production, improve long term air quality and create habitat for aquatic and terrestrial populations that rely on habitats within this sub-basin. Plan development, training and the implementation of traditional strategies will result in greater species diversity, improvement to aquatic and terrestrial habitats and lessen the risk to the region of catastrophic fire events.

INVEST IN SOIL TO REDUCE GREENHOUSE GAS EMISSIONS

By KAT TAYLOR (printed in the Viewpoints Section of The Sacramento Bee on June 12, 2016)

Let's talk dirt. We need a new conversation on soils, the foundation of our agricultural heritage. This discussion should include their current condition, their historic role and their promise to ensure the survival of humans and the planet. Since the dawn of crop cultivation, we have used soil to secure our future, rarely acknowledging that it is a living thing prone to overuse and continually needing care and nourishment.

Our limited knowledge about the collective impact of agriculture on the complex web of life, exacerbated by financial and political interests, has created a sense of complacency. We tend to think of soil as an indestructible and infinite resource. But as a small ranch owner who raises grass-fed beef, I can assure you that it is not.

Only recently did we begin to base large-scale agriculture practices on the realization that the land is a living system that grows our food and keeps ecological systems in balance. President Franklin D. Roosevelt's soils conservation legislation in the 1940s was one of the first shifts to a more holistic view. Today, California has an opportunity to carry that vision forward.

Gov. Jerry Brown's proposed Healthy Soils Initiative, which is part of the cap-and-trade spending package, is a landmark program aimed at increasing the soil's organic matter in California's agricultural lands. This will help with water retention, soil stability and nutrient use efficiency all while reducing greenhouse gas emissions.

Healthy Soils is one component in the state's Greenhouse Gas Reduction Fund, which if adopted by the Legislature could invest nearly $3 billion to projects to advance the state's path to a low-carbon future. By law, these funds must be used for activities that reduce greenhouse gas emissions while also providing other benefits to California communities. Our natural and working lands are a critical part of that equation.

Most Californians are well aware of the assets that natural and working landscapes provide: healthy food, clean water, wildlife habitat and outdoor recreation opportunities. Not as visible are the benefits that help stabilize our changing climate.

Protecting natural and agricultural landscapes from urban conversion reduces harmful emissions in multiple ways, and climate-smart ranching practices lower pollution and draw down greenhouse gases into soils and plants.

California's conifer forests store, on average, hundreds of tons of carbon per acre while providing habitat, preserving open space and sustaining rural jobs. Restoration of the state's wetlands provides significant greenhouse gas reductions while providing water storage, flood control and habitat for much of California's diverse wildlife. And in California cities, urban forests and green infrastructure can sequester carbon, reduce energy use and provide access to nature in highly populated and disadvantaged communities.

Fortunes have been made in the past by damaging industrial agriculture methods. These have created ecological dead zones, human health problems from chemical and pesticide impacts, and excess carbon in our atmosphere. These outdated practices will not help us to grow a clean economy, nor will they grow healthy food that can help reduce now-common maladies. Urban green spaces not only clean our air and water, they are the only climate tools that actually remove greenhouse gases from the atmosphere. California cannot reach its climate goals without them.

Investments like those proposed by Healthy Soils will support practices that build topsoil, sequester carbon, abate drought and grow nutrient-rich food critical to our health and prosperity. We just need the political will and adequate funding; nature will do the rest.

Kat Taylor is co-owner of TomKat Ranch in San Mateo County, and co-founder of Beneficial State Bank with her husband, Tom Steyer, a business leader and philanthropist. Contact her at *reachout@tomeatranch.org*

THE DROUGHT SOLUTION THAT'S UNDER OUR FEET

Excerpts from an article by Padma Nagappan in Water Deeply published June 6, 2016
By KQED-TV Public Media for Northern California

Now in the fifth year of an epic drought, Californians have explored ways to save water and wring it out of typical and atypical sources. The search has spanned the gamut from funding research, investing in expensive solutions like desalination plants, toying with the idea of recycling wastewater, imposing water-use restrictions, letting lawns go dry and experimenting with irrigation efficiency techniques for the crops that feed the country.

Thirsty crops, a burgeoning population and below-average precipitation have also led to seriously overdrawn groundwater sources that took a very long time to fill up. The state's agricultural industry, which grows more than 250 crops, has also been vilified for its heavy water use.

But is the Golden State missing a solution that could offer a high payout — a solution that's right under its feet? Healthy soil that's rich in organic matter has an ability to retain water that surpasses much more expensive solutions to the drought, yet not many people are aware of its potential to reduce farm water use.

"Name something that doesn't come from the soil?" asked **Tony Rolfe**, a California state soil scientist with the Natural Resources Conservation Service (NRCS), a U.S. Department of Agriculture agency. "It's not just food, but also your clothes that come from cotton, construction and homes that rely on wood, even oxygen because you need soil to grow the plants that take in carbon dioxide and give out oxygen."

Soil has been overlooked because it's underfoot, but he and other soil scientists around the world have been trying to bring it into the limelight, and highlight how better soil management can help reduce the water we use. Just a spoonful of healthy soil rich in organic carbon will have billions of microbes that help plants thrive. These microorganisms need water, for which the soil forms a dark, rich organic matter called humus that emerges from decayed plant and animal matter — and humus acts as a sponge, helping the soil retain moisture.

Know Your Soil, Help Save Water

"Knowing what soil you have is important. Once you know, you can manage it better in a drought," Rolfe said, explaining that the NRCS maps all the soils across the U.S — something it's been doing for 100 years – and this information is available online. There's also a smartphone app that anyone can use to get an instant snapshot of the soil they're standing over anywhere in the country." The payoff that healthy soil offers is huge — both in terms of water savings and climate change.

"If you increase soil organic matter by 1 percent, you can save 25,000 gallons [95,000 liters] of water per acre from being used, so you're less dependent on other sources of water," Rolfe said. "And the more you can store organic carbon in the soil, the less carbon dioxide is released, which also helps with climate and carbon sequestration."

Current tillage practices are a legacy practice from the 1950s, but overtilling depletes the organic matter, which hurts the microorganisms and leads to the soil acting as a sieve instead of a sponge. "We thought the best method was to go out and till," Rolfe said. "We didn't realize that we were hurting the soil ecosystem." Similarly, many farmers may not recognize the benefits of leaving in crop residue, which acts as a surface shade for the soil and helps soil microbes thrive.

Easier Said Than Done

"It's not rocket science, right?" laughed Rolfe. "But it's not easy to put into practice, because in California we have 300-plus crops compared to three or four in the Midwest, so there are barriers for farmers to change the way they do things. Changing soil management practices is a risk that many may be reluctant to take, given the ramifications, he explained.

"I feel for the farmers because while it sounds simple, it's not," Rolfe said. "It's like a diet – you think it's simple going in but it's not that easy to stick with it. It's like a paradigm shift, you have to change your management systems and we're used to doing things the way we've always done it."

A big risk that worries growers is yields dropping while they transition to healthier soil practices. Transitions can take three to five years to happen, making it an economic risk. Non-beneficial pests may increase during this period, and farmers may realize they need to invest in new equipment for minimum tillage and seeding, both of which can add to their financial burden.

CUBA IMPLEMENTS SOIL IMPROVEMENT AND CONSERVATION PROGRAM

Havana, May 26, 2016 (Prensa Latina)

Cuba is currently implementing a soil improvement program the main priorities of which are to prevent erosion, acidity, alkalinity, salinity and low fertility.

"The implementation of this project includes the use of additions to the soil to correct pH imbalances in the most affected areas, with special attention to the use of industrial minerals such as soil improvers: calcium carbonate, dolomite, phosphoric and zeolites," **Dagoberto Rodriguez**, director of Soils and Fertilizers at the Ministry of Agriculture, said.

Rodriguez, who was speaking at a workshop on soils that concludes today at the Conference Center in Havana said that the project also includes the execution of tests and measures in high pH areas. At present, 71.23 percent of the country's agricultural land is being affected by erosion, and of that figure, 43 percent is classified as being moderately or strongly affected. Salinity, that is, the average of salts affecting the properties of the soil and the development of crops, damages 15 percent of the land, in other words, about one million hectares.

"Technical training in conservation and the improvement of the soils are among the new programs that could be funded by the state to counteract that situation," Rodriguez said. Prior to the closing ceremony, more than 130 participants among them specialists, managers, leading producers and decision makers, will conduct a field visit to the National Soil Polygon, in the Havana municipality of Guanabacoa.

The president of the Organized Committee and general director of the Soil Research Institute, **Luis Gomez**, stressed yesterday at the opening ceremony of the forum that this resource is not given enough attention, despite its importance for ecosystems and the economy worldwide.

The representative of the UN Food and Agricultural Organization, **Theodor Friedrich**, attending the event, gave a lecture entitled 'Sustainable management of soil: The challenge of producing foods under the effects of climate change'.

NEW TOOL TO CALCULATE COVER CROP COSTS

Before you plant a cover crop, you naturally need to know what it's going to cost before you do. As the cliché goes, there's an app for that. Well, more technically speaking, it's a spreadsheet. Developed by USDA's Natural Resources Conservation Service (NRCS). The free **Cover Crop Economic Decision Support Tool** helps farmers and others determine the immediate costs and benefits of cover crops on their operation.

The tool offers a partial budget analysis that focuses only on operational changes farmers make – actual costs and benefits farmers see when they add in cover crops. It focuses on benefits and costs that can easily be expressed in dollars. It is a user-friendly economic assessment tool to assess the costs and benefits of incorporating cover crops into a crop rotation. The tool assesses both the short term and long term expected costs and benefits. Results are presented in two ways, showing immediate short-term net benefits and long term net benefits. The long term benefits assess the impact of improved soil health with continued use of cover crops.

The tool measures factors such as seed/establishment costs, erosion reductions, grazing opportunities, soil fertility levels, nutrient credits and more. It depends upon user supplied values. Where users are unsure of exact variables, they can use the tool to run "what-if" scenarios to compare various short- and long-term benefits of adding cover crops.

It is hoped that answers to some of the big economic questions will help more farmers give this conservation option a try. NRCS believes cover crops can actually pay off.

The tool displays results both numerically and graphically. It is available to download at: http://1.usa.gov/225TjyR

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CHAPTER EXECUTIVE COUNCIL

CHECKOUT THE CA-NV CHAPTER SWCS WEBSITE

www.caswcs.org

PLEASE SUBMIT PHOTOS, NEWS ITEMS, AND FEATURE ARTICLES TO THE EDITOR FOR THE

SUMMER ISSUE OF RUNOFF

BY AUGUST 26

RUNOFF is the official California-Nevada Chapter SWCS newsletter.

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RUNOFF reserves the right to edit all submissions.

HUGH HAMMOND BENNETT

"Productive land is neither limitless nor inexhaustible.

Land must be expertly cared for if it is to be maintained in a productive state.

Productive land must assume an ever more prominent position in the thinking of the people and their leaders.

Since society as a whole depends on the produce of the land for its present and future existence, society as a whole must share in the responsibility and costs of maintaining land in a productive state.

We have found there is no blanket, short-cut method for getting the conservation job done. There is no quick and easy way out.

The principle of using combinations of coordinated skills or techniques of sound agriculture is part of the basic concept of permanent soil conservation—or modern soil conservation as it is sometimes called.

Ours was a new type of program in which success depended on making use of all available and effective measures of control, singly or in combination, as needed in order to establish durable conservation on all the land.

Every additional gallon of water that can be stored in the soil through the use of conservation measures means one gallon less contributed to flood flows. We cannot depend on windshield surveys and office planning to carry out a job of the complexity and magnitude of safeguarding our farmland and controlling floods.

As a nation we will conserve our productive land and use it prudently only if there is sustained public demand for such a course of action".

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The above quotes are from: Hugh Hammond Bennett. *The Hugh Bennett Lectures.* Raleigh, North Carolina: The Agricultural Foundation, Inc., North Carolina State College, June 1959.

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