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ON THE COVER



Photo by Sandra Boyd

Aaron and Mira Brinkman of Brinkman Family Ranching

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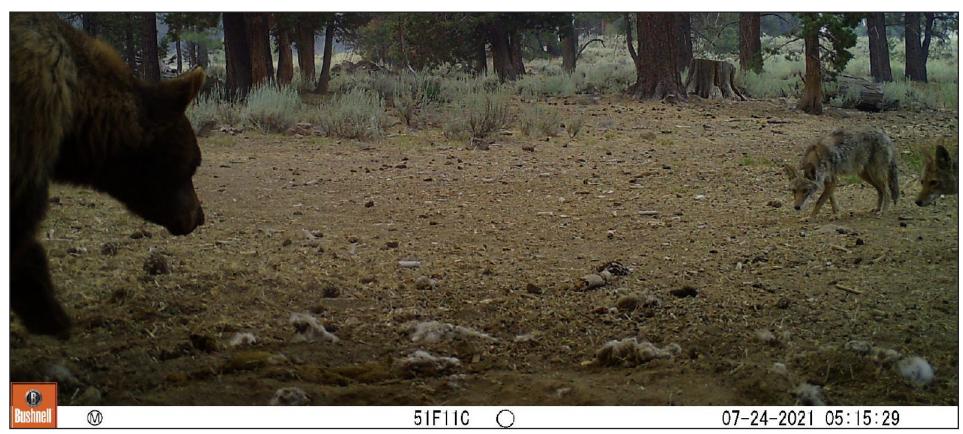


Photo by submitted by Dan Macon

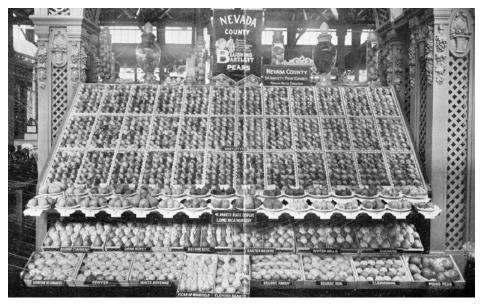
THE FIRST STUDENT AGRICULTURE CLUBS IN NEVADA COUNTY

By Maria E. Brower

alifornia's discovery of gold by John Marshall in 1848 changed the slow migration and settlement pattern in the West forever, bringing almost overnight an unpresented rush from the east and around the globe to the soon-to-become new state. Opportunities abounded in government, transportation, commerce, building trades and skills, service jobs and the need for professionals, like doctors and lawyers, in every new town and settlement, including what became Nevada County in 1851. From the beginning of the county's settlement, due to its abundant natural resources and fertile land, three main occupations would employ the majority of the labor. What kept the county prosperous for over a hundred years was due to mining, logging, and agriculture; of the three only agriculture has survived today county-wide and is currently on the upswing in Nevada County the last decade.

At a session of the Nevada County Teachers Institute that was held





In 1913, Nevada County's exhibit at the California Home Land Show and Home Industry Exhibition in San Francisco won first prize of the show and eight other first-place ribbons, two second-place ribbons, and one third-place ribbon. The booth was arranged and entered by the Grass Valley Chamber of Commerce. The Pergola was made of cedar logs and decorated with golden lights, leaves, and boxes of fruit and nuts. (Authors Collection)

in Grass Valley on April 13-19, 1913, Professor W.C. Hummel from the California State University (at Davis), Asst. Professor of Agriculture Education, stated that the future of agricultural opportunities was greater than any other line of work. Hummel went on to stress the importance of agriculture to the teachers he was addressing, and that a third of the population in the nation was currently engaged in agriculture.

The next year, two agriculture clubs were formed in Nevada County for high school boys. On April 3, 1914, B.C. Bryant from the State University of California visited Grass Valley High School and talked to the recently-formed Agriculture Club during first period to check on the progress they had made and to give the students some good suggestions that would be helpful to them. Principle J. S. Hennessy had received a letter from Mr. Bryant stating that he would again visit Grass Valley High School around the first of May to address the entire school on agriculture.

On February 27, Carl J. Williams and Albert Rinn from the University of California, representing the California Agriculture Club movement, came to address the high school boys on the subject of agriculture at both the Grass Valley and the Nevada City High Schools.



The purpose was to get the school boys of the community interested in growing products of local value and to conduct a competition, awarding prizes at the end of the season to the most successful boys. The University would furnish bulletins, publish rules for their contest, supply speakers for public occasions, and in various ways encourage the movement for the good of the locality and the State. At that first meeting held at Nevada City High School, 32 boys joined the club. Mr. Rinn discussed why boys were leaving family farms and ranches and how the organization of agriculture clubs was combating the movement. At the end of the presentation, the boys organized an agriculture club at their school. It was expected that the Chamber of Commerce, Parent Teacher Association, Board of Education, and similar organizations would give substantial help to this movement.

By May there was a chain of 80 agriculture clubs scatted throughout California that had been organized under the auspices of the students of the California College of Agriculture of the University of California. The plan was that every member of each club would grow a crop of his own profit in a contest with other members. This would benefit the boys to find out whether they were really interested in agriculture, and if it would be a profitable endeavor for them to undertake.

The requirements of the contest were that all the boys in the clubs that participated would do the work on the same basis as the real farming of their fathers. Each boy should have a large enough piece of land that he could undertake a commercial enterprise and the prizes would be awarded to the boy who made the most profit, not for the largest yield, keeping an accurate account of their work using a diary system. At the end of the season, each would be able to tell from their records the cost of each operation in the growth and care of their crops. Each boy would market his own crop in the way that seemed best to him.

The boys would be spurred on by a series of prizes, which the College of Agriculture was suggesting to be obtained from the local businessmen, as an inspiration to the boys to carry them through the year. The first prize was a trip to Washington, D.C., under the direction of the University authorities. Is was expected that there would be a sufficient number of boys sent from the communities so that there could be two special train cars for the group who would be away at least a month on the eastern trip. The boys would visit the large experiment stations, farms, ranches, stockyards, and packing houses across the country and spend several days in New York, Chicago, and New Orleans, and a whole week in Washington and vicinity where they would meet the President of the United States and the Secretary of Agriculture.

The second prize would be a trip to the Davis Farm School for all boys who successfully completed the year's work. This trip would only last for a couple of days but it would bring together in one group all the boys in the state who had "the push and the grit" for making it

through their crop growing season to completion. There would be additional prizes being offered in some communities, such as farming implements, books on agriculture, and other related items.

A misunderstanding among the members of the Agricultural Club at the high school caused confusion, and as a result several of the boys did not enter the contest for the Washington trip. The information given to them by the authorities of the university did not coincide with the schedule made by the judges. Instead of eleven boys submitting samples of their work for the previous few months, only seven entered the contest. The potato growers who were competing were Claude Dausse, Leon Hooper, Carl Hooper, W. H. Martin, and Dan Woods. There were two entries of chickens, one by Willie Mitchell and one by Leonard Crispin. The judges went on to judge the chickens and potatoes at the same time. The boy having the best showing in potatoes would be awarded the trip. For the potato contest, one of the judges emptied each bag of potatoes without looking at the name on the bag, each stack of potatoes was given a number from 1 to 5, and each number was given a percentage of points earned. It wasn't until the final scores were given and the highest number was compared to the lot of potatoes did the judges know who the winner was. The judges, W.B. Celio, Tom Sharp, and F.C. Longe decided to keep the name of the winner secret until the evening of the ball that was to be given by

the Nevada County Agricultural Extension Club. Their reason was that they thought that would generate more interest in raising money for the boy's trip if there was an uncertainty as to who the successful boy would be. There were also two boys who dropped out of the competition, as one of them had planted his potatoes too late.

The winner of the first prize a trip to Washington, D.C. in the potato growing contest was Harold Longe. Joseph Martin won second place for the trip to the State Farm School at Davis. Harold Longe was one of the first six students to join the Agriculture Club at his school. He made arrangements with his father for an eighth of an acre of good land to do the project. Harold said, "He knew the piece of land he chose to be the best on







The Nevada Joint Union High School District Board of Trustees and Superintendent

Congratulate the Nevada Union High Schools' Future Farmers of America and Agricultural Programs
– ON THEIR –



2022 NEVADA COUNTY FAIR RESULTS AND AWARDS



Nevada Union High School FFA HOME OF THE MINERS

Reef

Champion Bred and Fed-Victoria Herrera

Sheep:

Reserve FFA Champion Market Lamb- Adam Jones Best FFA Group of Market Lambs- Nevada Union

Market Goats:

Reserve Supreme Champion Market Goat- Kayla Whitman Reserve FFA Champion Market Goat- Kayla Whitman Champion Bred and Fed- Kayla Whitman Best FFA Group of Market Goats- Nevada Union

Swine:

Reserve Supreme Champion Market Hog- Meghan Garren FFA Champion Market Hog- Meghan Garren Supreme Champion Gilt- Meghan Garren Champion Grade Gilt- Meghan Garren Champion Registered Gilt- Meghan Garren Best FFA Group of Market Hogs- Nevada Union Best County Group of Market Hogs- Nevada Union

Dairy Goats:

Champion Senior LaMancha- Addie Angle Champion Junior LaMancha- Addie Angle

Showmanship-

Market Beef, First Place Novice- Lucas Mackey Market Goat, First Place Senior- Kayla Whitman Swine, First Place Senior- Meghan Garren

Master Showman- Kayla Whitman

Ag Mechanics:

Best of Show and Proud Tradition Award- Bradley Gribas





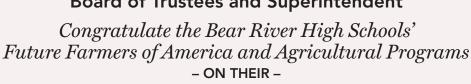


On behalf of all of our student recipients, we would like to thank the community for their ongoing support, participation, and incredible generosity shown during the Agriculture Mechanic's Project and Livestock Auctions.





The Nevada Joint Union High School District Board of Trustees and Superintendent





2022 NEVADA COUNTY FAIR RESULTS AND AWARDS

BR

Bear River High School FFA HOME OF THE BRUINS

Beef:

Reserve Supreme Champion- Arden Franks Best FFA Group of Steers- Bear River

Dairy Goats:

Bailey Ham Grand Champion AOPB Doe Champion FFA Dairy Showman and Best Doe In Show in the Youth Dairy Goat Show Grand Champion Oberhasli Doe Reserve Grand Champion Oberhasli Doe Best Doe in Show for the Open Show

Showmanship:

Dairy Cattle Showmanship- Connor McGehee

Ag Mechanics:

People's Choice Award- Mya Marsh







On behalf of all of our student recipients, we would like to thank the community for their ongoing support, participation, and incredible generosity shown during the Agriculture Mechanic's Project and Livestock Auctions.

the ranch." His yield on that eighth of an acre was 1,950 lbs. pounds of marketable potatoes, 210 lbs. pounds of second class potatoes or medium-sized ones, and 300 lbs. of third class, or scrubs, suitable only for stock feed. The 1,950 lbs. he sold at retail direct to a consumer for two cents per pound. Longe may have had to rope off some of the eighth of an acre down to one-tenth.

The story doesn't end here, because the next year the judges believed that there would be at least thirty active members in the Boys Agricultural Club. Although the boys made remarkable showings as to what could be done on one-tenth of an acre of land, some of the boys lost a great many points by disfiguring their potatoes by careless digging. Other potatoes showed that they had been raised in soil that had been too wet, and no precaution had been made to prevent the work of the wire worm. But all the mistakes that were made by the boys were only natural and excusable, for many farmers make even worse mistakes.

It was announced several years later on June 25,1919, that a six week course would be offered to train teachers of Arizona, Nevada, and California to teach agriculture at the University Farm under the direction of Professor F. H. Griffin of the College of Agriculture and

A HUNDRED YEARS LATER 2015 IN NEVADA COUNTY

Top Six Value Crops

- Cattle
- Pasture & Rangeland
- Timber Products
- Winegrapes
- Vegetable Crops
- Apiary and Honey

Source: Nevada County Crop Report, 2015.

University of California and Professor S. H. D. Dadisman of the University Farm. The courses that would be given were to meet the requirements of the Smith-Hughes Bill, giving Federal aid to properly qualified teachers, and it was expected that about 150 teachers of the three states would be enrolled. Reports show that difficulty had been experienced in securing properly qualified teachers of agriculture for high schools and agricultural clubs leaders for elementary schools. This new program for teachers would solve the problem.

MANURE EXCHANGE

This program matches local livestock owners who have excess manure on their property with gardeners in search of inexpensive (free!) local fertilizer.

The goal of this program is to help ranchers off-load excess manure that can't be managed on site and it's a great way to recycle natural resources.





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- Wildlife habitat enhancement
- Pest mitigation
- Erosion control issues
- Drainage issues





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INTRODUCING BLUEBIRD FARM



Photo by Malaika Bishop

An autumn bouquet of flowers form Bluebird Farm.

A Q&A with Malaika Bishop

fter serving as co-director of Sierra Harvest for many years supporting farmers and educating the community about healthy food, Malaika Bishop just launched her own farm business, Bluebird Farm. We caught up with her to see how it is going.

TELL US ABOUT YOUR FARM AND WHERE YOU ARE FARMING.

Bluebird farm focuses on greens and flowers. I have four part-time employees and we are growing a half acre of flowers up at the Jacobson Dude Ranch on Cement Hill Rd in Nevada City and one acre of lettuce and cutting greens at Woolman at Sierra Friends Center.

Woolman burned in the Jones Fire in 2020. We spent last season

working to rebuild and expand the farm site at Woolman and weren't able to get anything in the ground until late October, so this is really our first full growing season. There is still a lot of infrastructure to be built but we are making it work.

WHAT HAS BEEN MOST CHALLENGING ABOUT FARMING SO FAR?

Balancing the budget. In 20 years of running nonprofits I saw some challenging budgets, but those pale in comparison to balancing a first year farm budget. The good news is that August was the first month since last March that we made more than we spent. Looking forward to more

months like that!

WHAT HAS BEEN MOST REWARDING?

Growing and selling beautiful, delicious, high quality products. We have felt understaffed and overwhelmed most of the season, but also have been just thrilled at some of the amazing food and flowers we have grown. We have had a consistent supply of crisp sweet salad mix and lettuce all summer long, which is a feat in this heat!

I have also loved working hard with an amazing crew outdoors every day and seeing the transformation from a disaster zone to a beautiful working farm site.

WHY THE NAME BLUEBIRD FARM?

Many people remember our farm site up at Jacobson's fondly as

Bluebird from the days that Leo Chapman and Tim Van Wagner farmed there during the Living Lands Agrarian Network days when we had potlucks and contra dances with 100 people there. We are bringing back the name Bluebird and using it for the whole farm.

WHERE CAN PEOPLE GET YOUR PRODUCTS?

Our salad mix and flowers have been available at the Nevada City SPD, California Organics, and Natural Selection, but the season is winding down for flowers so look again next spring, starting with tulips! Also if you eat at places like Three Forks, Heartwood, and Communal Café, you are likely getting some of our produce in your meal.

Also, we are partnering with Tim of First Rain Farm and Leo of Chapman Family farm on a collaborative Community Supported Agriculture box. We provide about three items a week (usually the greens and herbs) and the other farmers provide the rest. We also have a flower share that people can join to get a weekly bouquet of flowers. The season is almost over but we hope to have both the weekly veggie and flower shares available again starting next spring.

We sell all of our lettuce (300-400 heads a week) to Interfaith Food Ministry, so if people receive groceries from there, they are likely getting our lettuce.



Photo by Maisie Ganz

The Bluebird Farm crew has jumped in with both feet.

WHAT ARE YOU MOST EXCITED ABOUT GROWING THIS SEASON?

Veggies! I have to say I am excited to geek out on growing straight beautiful rows of greens really efficiently. The lettuce mix we are growing is out of this world delicious. We are growing it using a paperpot transplanter. I was a skeptic at first, but am totally sold now because of how little time it takes us to plant out the lettuce with this method.

Flowers! It is so hard to pick one flower with over 120 varieties but because they will be here in the spring, I am going to go with tulips and ranunculus; they come at a time when there are hardly any other flowers and bring us all so much joy!

AFTER SO MANY YEARS DOING FARM EDUCATION, IS THERE ANY EDUCATION IN THE FUTURE OF BLUEBIRD?

Yes! We will be also partnering with Woolman on their programming as they get up and running bringing school groups from the Bay Area up to campus to learn about Social and Environmental Justice. There will be a food justice component on the farm that we are excitedly building curriculum for. Also participants of their summer camp will get to participate in farm activities in June and July. They are also hosting local school groups to do day-long field trips on campus. If you are interested in a field trip at Woolman please contact Morgan Street morgans@woolman.org.

NEVADA COUNTY **M** RANCHER



LIVESTOCK GUARDIAN DOGS AND WILDLIFE



Photo taken by a game camera in the Tahoe study site during the grazing season.

By Dr. Carolyn Whitesell, Human-Wildlife Interactions Advisor, UCCE San Mateo-San Francisco and Dan Macon, Livestock and Natural Resources Advisor, UCCE Placer-Nevada-Sutter-Yuba

iven the growing restrictions on lethal control of predators, ranchers are increasingly turning to nonlethal livestock protection tools, including livestock guardian dogs (LGDs), to protect livestock from predators. Despite this increased use, very little is known about direct and indirect interactions between LGDs and wildlife. Thanks to a small grant from the UC Sustainable Agriculture Research and Education Program (SAREP), we've recently expanded our work evaluating LGD behavior and interactions with carnivores and other wildlife species.

We conducted research in two study sites—1) grazing allotments in the Tahoe National Forest (Tahoe), where sheep were accompanied by a herder and grazed on open rangeland without fences and 2) annual rangeland west of Auburn (Auburn), where sheep were rotationally grazed within portable electric net fence. Within each study site, we classified areas as grazed or non-grazed, and placed game cameras within each area. Cameras collected data on wildlife before, during, and after the sheep and LGDs were in the grazing area. In addition, we fit GPS collars onto sheep and LGDs to track their movements.

What did we find? We recorded coyote, bear, and bobcat in the Tahoe grazing area and mountain lion, coyote, and bobcat in the Auburn grazing area. Despite the presence of these species, no sheep were lost to predators at either study site. In addition, we did not record any negative interactions between LGDs and recreationists or neighborhood residents. LGDs remained close to the sheep (within 0.25 miles) for at least 77% of the time. Across study sites, we found LGDs had a median distance to sheep of less than 100 yards.

We did not record any injured wildlife in the Tahoe site, despite recording fine scale overlap between LGDs, coyotes, and bears. In the Auburn site, however, we recorded one raccoon killed by an LGD and one lamb either stillborn or killed by an LGD. Those results demonstrate the potential negative aspects of using LGDs; however, as the same individual LGD was found with both the lamb and raccoon, this may be more reflective of variation in individual LGD behavior than LGDs in general. That individual LGD was three years old but this was the first time he was in with a lambing ewe—during the rest of the 2022 lambing



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season he was kept elsewhere. He may become more reliable with lambs as he matures, or he may never be trustworthy during lambing and should only be paired with adult sheep.

In the Tahoe study site, one adult sheep was lost to an unspecified illness, providing a unique opportunity to study the behavior of scavengers and the impacts of a carcass located less than 200 yards from sheep bedding grounds. We placed a game camera on the carcass for 8.5 days. Over that time period we recorded frequent visits by coyotes and livestock guardian dogs and two instances of a bear. We recorded fine-scale temporal overlap between LGDs and predators, with coyotes approaching the carcass merely 11 minutes after the camera recorded an LGD, and a bear and LGD recorded less than one minute apart. Despite this overlap and the carcass acting as an attractant for predators, no LGDs were injured and no additional sheep in the band were lost to any kind of mortality event (predation or otherwise).

A preliminary analysis of the GPS collar data from the Tahoe study site showed few instances when dogs were further than 500m from sheep during the day. One LGD remained within 400m of the sheep 77% of the time and ranged more than 400 m from the sheep primarily at night. The other LGD remained within 400m of the sheep 89% of the time and mainly ranged far from the sheep during the day. Thus overall, the potential for negative interactions between LGDs and recreationists out of sight of the herder was low.

For the Auburn study area, a preliminary analysis showed Elko the LGD remained within 400 m of the sheep 94% of the time and within 200 m 52% of the time. Interestingly, despite one study area having fences and the other being open rangeland, the LGDs had similar median distances to sheep (ranging from 59 to 79 m).

We are currently further analyzing the camera results and collecting data for another year. We hope the continuation of this research will work will help us better understand any potential differences in LGD impacts on wildlife between grazing systems. This information will have important implications for ranchers and land managers who are considering the use of LGDs. In addition, it will shed further light on the tradeoffs associated with reducing risk to livestock and reducing the need for lethal control of predators.



Photo submitted by Dan Macon

Dan fits a GPS collar onto one of his LGDs in the Auburn study site.



IF EWE CAN DREAM IT, EWE CAN DO IT

MEET BRINKMAN FAMILY RANCHING

By Amanda Thibodeau

magine starting a ranching operation from scratch without any experience. Think of all the things you would have to learn to succeed. Animal husbandry, irrigation, rotational grazing, paddock management...and those are just some of the big categories! Imagine you live in the city and don't have access to land, but you have a strong vision of wanting to raise animals responsibly and steward land. How would you go about making your dreams into reality?

Aaron and Mira Brinkman could give you a crash course in how to achieve this plan, and while they're at it, they would also be happy to sell you some pasture raised lamb! So, how did the Brinkmans turn their vision into the food on your plate? Shared resources of land and generational knowledge, along with strong business development and practical support from Sierra Harvest helped make their dreams come true. Those things, and of course, a strong dose of grit and good luck.

In May of 2021, Sierra Harvest's land match program connected Brinkman with Julie Fagan of Tierra Vida Ranch. The Land Match program connects farmers (and aspiring farmers) with landowners who are interested in having a farmer lease their land. After connecting through this program, Fagan and the Brinkmans shared goals with each other and created a mutually beneficial partnership. They wrote up a lease, proposed profit share, and closed the deal.

Brinkman's goal was to have a herd of sheep that were 100% grass fed. Coming into the project living in Sacramento with almost no experience working with livestock, Brinkman did have a background in irrigation and plant care and a "willingness to learn on the fly." Learning from Fagan's expertise helped Brinkman get his project going.

That fall, Brinkman got his first flock of 12 ewes and a guard llama. He worked with Fagan to graze 20 acres and, unsurprisingly, learned a lot in the process. "Everything that could go wrong did – I was completely starting from scratch," said Brinkman.

Fast forward to current day: Aaron and his wife Mira now run the business as partners. Together, they have moved on this ranching venture quickly and strategically. Within one year of reaching out to Sierra Harvest for a potential land match, they have leased a 40-acre property where they now live on-site and are running their animals. They were able to buy a herd with pregnant ewes from a retiring rancher, a llama to protect them in the pasture, and invested in mobile fencing and irrigation equipment for rotational grazing that contributes to the health of the animals as well as the land they are stewarding. Their first lambs were born in February and now they will be selling off their first shares of lamb to the public.



Photo by Sandra Boyd

Aaron and Mira Brinkman.

I wanted to see what ranching was really like, and the Land Match program made it possible to get started pretty quickly. Having that experience, I am now planning to expand the business. I wouldn't be where I am today with ranching if it wasn't for Sierra Harvest.

— Brinkman

"I wanted to see what ranching was really like, and the Land Match program made it possible to get started pretty quickly. Having that experience, I am now planning to expand the business. I wouldn't be where I am today with ranching if it wasn't for Sierra Harvest," said Brinkman.

IF YOU WOULD LIKE TO PURCHASE LAMB FROM THE BRINKMAN FAMILY RANCHING, YOU CAN FIND THEM ON FACEBOOK, OR CONTACT AARON DIRECTLY VIA EMAIL AT AARONBRINKMAN@GMAIL.COM . IF YOU'RE INTERESTED IN LEARNING MORE ABOUT SIERRA HARVEST'S LAND MATCH AND FARM INSTITUTE, VISIT SIERRAHARVEST.ORG/FARMERS/.



NEIGHBORS HELPING NEIGHBORS

BURNING ON THE LAND IN NEVADA COUNTY, YESTERDAY TO TODAY



Photo submitted by Jo Ann Fites-Kaufman

A recent Dipper Valley Ranch prescribed burn.

By Jo Ann Fites-Kaufman and Maddison Easley

here is renewed interest in prescribed burning as a valuable land management tool in Nevada County. Prescribed and cultural burns are taking place across many vegetation and land use types within the region. This article will highlight the historical use and benefits of prescribed fire on grazing lands in Nevada County.

Today, many ranches including the Reader Ranch and the Dipper Valley Ranch still burn regularly to improve and maintain forage, carrying on a traditional use of prescribed fire. Ranches throughout the county frequently conducted prescribed burns from long ago and

up until the '70s. For thousands of years, Native Americans practiced regular prescribed burning in the area for similar and other purposes, likewise favoring useful plants, reducing fire hazard, and enhancing food supplies. Here is a time capsule of prescribed fire on ranches in the county from controlled burning on ranches over the last 70 years.

Tom Browning described burning on their ranch on the San Juan Ridge in the 1970s. "Growing up, we would burn every two years. The Milhouse and Reader ranchers would come over and help, bring their

Continued to page 17

NEVADA COUNTY **RANCHER**



tools and dozers to build line, and the Browning Ranch would cook a big spread to feed all after. Then, the same or next year, we would go help them," Browning stated. "We burned to reduce unwanted brush and create more grazing land. The local CAL FIRE (CDF then) unit would also attend and take on liability for the burn."

Growing up, we would burn every two years. The Milhouse and Reader ranchers would come over and help, bring their tools and dozers to build line, and the Browning Ranch would cook a big spread to feed all after. Then, the same or next year, we would go help them.

— Browning

The Personeni family also burned 50 to 100 acres regularly on their ranch near Bitney Springs in the '50s and '60s. Like the Brownings, Phil Personeni said they also burned to improve grazing by controlling live oak and brush. Linda Miller (Personeni) said it was a "very community-oriented activity." They depended on their neighbors to help burn and put on a tremendous feed, with a potluck lunch. "They helped you, and you helped them," said Phil, who expressed that he enjoyed all the people helping.

When asked if he had been afraid, Phil answered that when you are 15 or 16, you aren't afraid of anything but also that everyone had tools and knew what to do. According to Phil, liability insurance was expensive and he doesn't know how they could manage now, with more neighbors and denser vegetation and fuels all around. In 1910, their grandfather, Andrea Personeni, bought the McKitrick Ranch off of Jones Bar Road. According to Tom Browning, now a local Deputy Fire Chief in the North San Juan Fire District, the grazed and/or mowed grasslands around the house and pond were vital to stopping the Pleasant Fire just last month.

Today, the Dipper Valley Ranch, part of the historic Arbogast Ranch, still burns to improve forage, accelerate nutrient cycling, reduce invasive species, enhance wildlife habitat, and manage wildfire risks. Maddison Easley grew up on the ranch, originally settled by her great-great-great-grandfather Jacob Peter Arbogast in 1863. Similar to generations prior, she helps her family burn different areas on the ranch. Similar to the Browning and Personeni families, portions of the property were regularly burned with cooperation from neighbors, CALFIRE, and family members. Small burns have continued through the decades. With the support of the Yuba Bear Burn Cooperative (YBBC), many community members, and neighboring Tim Van Wagner of First Rain Farm, several

prescribed burns of increasing size occurred this past spring. The YBBC funded nearly a dozen prescribed burn plans throughout the county, including one for the Dipper Valley Ranch. Having a burn plan enabled cooperation with CALFIRE during "shoulder season," more favorable for desired results, when burning is restricted, and permits are required.

Maddison worked at the University of California's Sierra Foothill Research and Extension Center in nearby Browns Valley. She described studies on the beneficial uses of prescribed burning on rangelands, from improved forage quality following fire, to enhanced nutrient cycling, invasive species reductions, and increased forbs and native vegetation by controlling the timing, intensity, and severity of fire. There and elsewhere, the studies of carefully applied burning demonstrate successful reduction of starthistle, medusahead, and barbed goatgrass. With drought, an increasingly long fire season, and magnified fire risk, these burns to control invasives are becoming more difficult due to the narrow window of time when fire is most effective at reducing noxious annuals, typically during early fire season. There is well-established research and observational knowledge on the role of prescribed burning on rangelands as an overall beneficial stewardship practice, improving wildlife habitat and native plant cover.

In California and other parts of the country, there is a growing formation of local prescribed burn associations (PBAs) to help private landowners conduct useful prescribed burns for varied purposes on their land. Based on an approach of "neighbors helping neighbors," ranchers were some of the original PBAs and in many parts of the state are leading the formation of many new ones. The Resource Conservation District of Nevada County is working to help ranchers get back to beneficial prescribed burning, or good fire, in these more challenging times of increased wildfire. This is in coordination with CAL FIRE, the Fire Safe Council, and the Yuba Bear Burn Cooperative, a local PBA formed to help all landowners practice good fire. The new Nevada County Office of Emergency Services Director, Craig Griesbach, understands the value of prescribed fire, having come from a ranch in Humboldt County where his family burns regularly to improve range and reduce fire hazard. We are fortunate to have someone in county leadership that understands the importance of beneficial burning as a land stewardship tool.

Jo Ann Fites-Kaufman is a new Resource Conservation District Board Member, adding her background in forest management, wildfire and prescribed fire to the board. She is retired from the US Forest Service and volunteers extensively in the community for Firewise Communities, her local North San Juan Fire Protection District, the Fire Safe Council, and serves on the newly formed Yuba Bear Burn Cooperative Steering Committee/Board.

Maddison Easley grew up in Nevada County on the Dipper Valley Ranch. Today, she works with ranchers and other landowners as a biologist for Point Blue and NRCS, helping restore and maintain working lands. She serves on the Yuba Bear Burn Cooperative Steering Committee/Board.

GROWING SOIL WITH MICROBES

By Keisha Wheeler

icrobiology plays one of the most critical roles in a plant's ability to uptake nutrients, defend itself from pests, increase drought resistance, grow deep roots, and create biomass, fruit, and seed. Plants and microorganisms work together to create living soil that has structure, water holding capacity, and fertility.

When land is repetitively tilled and chemically amended, we see a loss of soil structure. We watch topsoil blow away in the wind and wash away in the rain. These practices have decimated local micro-biological communities. Without the complete micro-biome in our agricultural lands, we have left our crops vulnerable.

Inorganic fertilizers, pesticides, fungicides, or nematicides will eliminate the target pest along with beneficial insects and microbe communities, leading to the degradation of the entire ecosystem. Crops are then left growing with shallow roots, very little nutrient value, and little way to protect themselves.

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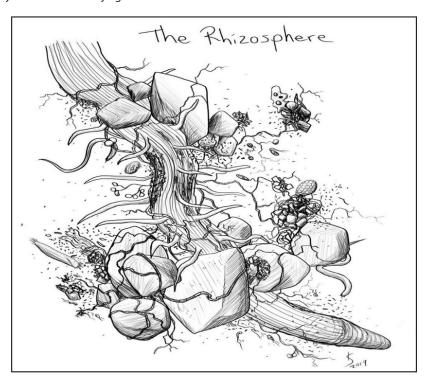
(530) 265-6911 505 Coyote Street • Suite B Nevada City, CA 95959 We can mimic natural growing systems to create an environment where plants and microbes can work together. When we have a healthy soil food web in place, we will see high microbial activity around the plant's root zone or the rhizosphere. We can observe this activity with microscopes and follow progress over time. These microbial partnerships enable the plant to take up nutrients from the sand, silt, and clay as it needs.

Simply put, plants use the sun's energy to create exudates (sugars, carbohydrates, and proteins) that are combined specifically to attract the microorganism it wishes to work with. The plant then uses these exudates as a form of barter with the microbes. Microbes bring in nitrogen, phosphorus, iron, molybdenum, and all the essential nutrients in a plant soluble form, and the plant, in turn, feeds the microbes precisely what they are after in exchange.



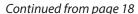
Photo submitted by Keisha Wheeler

Healthy soil means healthy agriculture.



This cycle will continue to promote plant-feeding microbes and microbe feeding plants. So, where do bacteria and fungi get all these nutrients? Everything that the plant needs is contained in the soil; sand, silt, clay, and organic materials. It only has to be unlocked.

How can we truly regenerate our soil and bring back the life that has been decimated?

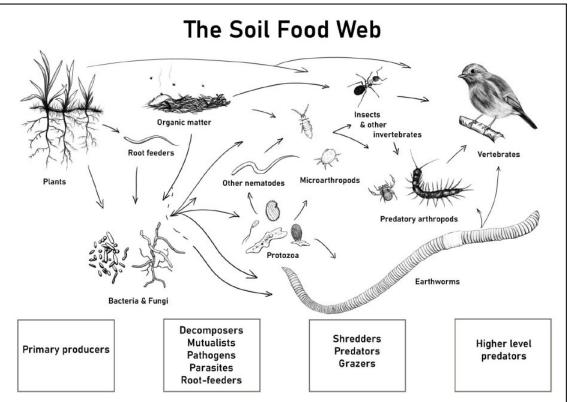


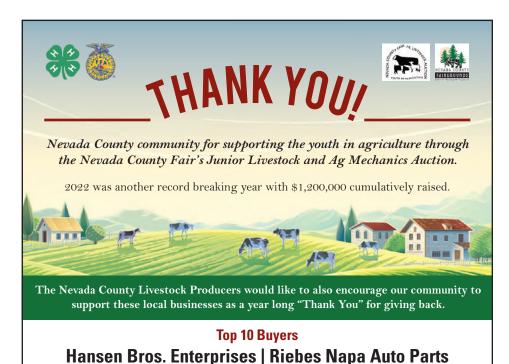
We can grow our own local microbes in compost that we make ourselves. Not all compost is created equally. The quality of what you end up with will depend on many factors like diversity of input materials, moisture management, turning at the correct time, and turning properly.

Most farms have everything needed on site to create a biologically diverse compost that will not only be a home for local microbes to grow, but a source of fertility made from what is typically considered waste. Composting is a fairly simple process once you have your recipe figured out and understand how and when to turn the pile. Let's look at a basic recipe and what goes into it.

- Woody material is the majority of the recipe at 50-60% of the total biomass. Wood chips, sticks, stems, straw, cardboard, or dried leaves all fall into this category. Avoid cedar, pine, or eucalyptus chips until they no longer have a smell, as they all produce antimicrobial compounds that can harm microorganisms.
- Green material will make up 20-30% of your ingredients. We like to use our greens fresh, but in Nevada County that's not always possible, so the next best thing is baled hay. If it is green enough to feed livestock it's green enough for a compost pile. If you have land covered in weeds you wouldn't normally bail up, it's a good chance to find a use for that biomass while cutting back the unwanted plants.
- Manure is what creates heat, which kills weed seeds and pathogens. It is only 10-15% of the total biomass and should be used as fresh as possible.
- Compost starter is the secret to quick success. Find someone local making compost that already has the microlife you are looking for inside. You can think of it as growing very tiny livestock. You will only need a small amount of this material relative to the size of the compost pile you are building.
- Water is necessary for all life on the planet and microbes are no exception to the rule. Compost should be moist at all times. Use a quick squeeze test; if water drips out it's too much, if the material is dry and crumbly it's too little. Finished compost should stick together in your hand when it's squeezed.

Biologically focused compost can be used to make liquid amendments that are sprayed out on pastures and crops or used as a solid input at the rate of one ton per acre. Liquid amendments are referred to as compost extract or compost tea and are an economical way to improve soil life over time. Most farmers already have the equipment necessary to implement these practices, which makes this a workable solution for the future health of our agricultural soil.





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GOOD NEIGH-BORS

COUPLE TAKES IN 11 EVACUATED PREGNANT HORSES

By Jennifer Nobles

hen this article published in The Union on September 14, 2022, the Mosquito Fire near Foresthill had consumed nearly 60,000 acres.

Many in surrounding communities have offered a helping hand to assist the evacuees — both human and animal — escape the fire and the imminent danger it presents.

Diana Gallo and her husband Michael have property on Lime Kiln Road, just outside of Grass Valley, and decided to do what they could to help the evacuees. For them, this came in the form of taking in 11 pregnant mares, all set to deliver in the spring.

"We live next to a woman whose daughter is into horses and they have horses and she is in an organization," said Gallo. "She called my husband and said, 'I know of a lady who has 30 mares in the Foresthill area and she needs them off the property. Can you help?"

Gallo ended up with 11 of the mares, the other 19 being allocated to other locations.

Leaning mainly on their faith and the idea that good neighbors help each other out, regardless of distance, Gallo and her husband agreed to take in what they thought at the time would be 30 horses in various stages of pregnancy. Gallo didn't feel pressured to take them in, but felt she couldn't just let the horses travel down an unknown path.

"I mean, what do you say?" said Gallo. "We've got the property, so of course. The alternative is to have these horses just die?

"I haven't had horses since the '90s, so it's a completely different thing

I haven't had horses since the '90s, so it's a completely different thing for me and that's OK. We went around and fixed our fences, and I got better chain for the gates. We're just trying to keep them pacified and feed them.

- Gallo

for me and that's OK. We went around and fixed our fences, and I got better chain for the gates. We're just trying to keep them pacified and feed them."

The cost of feeding them is proving to be a challenge. For one thing, the horses must adhere to a diet of alfalfa hay; other types of hay contain grasses and sugars that could cause a spontaneous abortion of the foal. Bales of hay run about \$24 per bale.

Gallo has never met the woman who owns the horses, but said that



Photo by Elias Funez

Diana Gallo of rural Grass Valley's Waterworks Ranch stands among 11 mares that were evacuated from the Mosquito Fire. She's opened up her and her husband's 5-acre property to help those who have evacuated due to the fire, but says she could need help providing alfalfa to keep them fed.



Photo by Elias Funez

The cost of feeding the horses is proving to be a challenge. For one thing, the horses must adhere to a diet of alfalfa hay.

she is glad to be able to be of assistance.

"We just wanted to get the horses out of the trailers and into the pasture," she said. "And make sure they had water and make sure they were safe. I didn't ask any questions."



DONATIONS

Due to the unpredictability of fire and the strapping of resources on all sides, Gallo is unsure of when the horses will be returned to their home pasture.

The owner of the horses has offered to provide money for the hay, but Gallo said: "I'm thinking, 'Lady, you have so much on your plate right now.' It's moving, but if the community wanted to donate, we wouldn't say no."



Photo by Elias Funez

Evacuated horses from the Mosquito Fire have been enjoying the 5-acre Waterworks Ranch in rural Grass Valley.

Green Acres Supply Company on Highway 49 sells the type of hay needed to nourish the mares and their unborn foals. Any donations should be made by contacting them and letting them know the funds are intended for hay going toward Gallo's efforts.

"I'd like them to give to the hay place, not to me," Gallo said. "My thought process is if and when (the horses' owner) comes and gets her horses, I will take the hay that's left to our fairgrounds and donate because they're hurtin' too."

Green Acres Hay Company is at 20110 Highway 49 in Grass Valley. It can be reached at 530-269-3429, or at greenacreshayco@gmail.com.



Photo by Elias Fune

The Gallos have received some donations, but will need alfalfa to feed to the Mosquito Fire horses.

GOLDEN EMPIRE GRANGE TURNS 60

By Beverly Glenn

he Grange is an organization that began in 1867, rising from the destruction of the Civil War to rural fields and farmland. The South's farms were in disrepair and farm animals were depleted. The transportation infrastructure lay in ruins, with little railroad service to move crops and animals to market as rails, bridges, and rail yards were destroyed.

An era began that encouraged farming families to band together on common ground to promote the well-being of the community and agriculture, and to rebuild farmlands, restore the railroad system, and establish a rural mail delivery system. Hence, the Grange organization was created. Today, the Grange has evolved into a community service organization throughout every state. Our history and legacy still supports a strong interest in agriculture, healthy communities, fun, and friendships — where new friends are made and old friends are cherished.

The Golden Empire Grange No. 806 was a dream of Walter and

Goldie LeRoy, with its conception in July 1962. It's located off LaBarr Meadows Road, a half-mile from the corner of McKnight Road.

This past July, the membership celebrated the Grange's 60-year birthday and recognized long-term members.

RECOGNITION

Jan McElwain was recognized for being a 60 year member. She is one of the founding members on the 1962 Articles of Incorporation document. And as the first secretary, she wrote the first check. She's been a member for 60 years. Don't believe it, just spend some time with her and she'll share stories of bringing her little girls to many events and how Grange president Walter LeRoy put her family up in the 1963 winter, which brought a lot of snow and they had no heat. One little girl was so sick the local doctor made a house call to the



McCoy home. That's how it is being a Grange member, everyone doing something for someone.

David Craigen was recognized for being the Grange's 911 one-man emergency response team for 30 years. He's been the Grange's building manager, rushing to the Grange for plumbing leaks, bathroom water overflows, lightning strikes that shut off the water, researched affordable repairs possibilities for our broken HAVC units, installed hot water tank, replaced plumbing, fixed dry rot, and was the building's watchdog security person. He did janitor duties and has worked for free since the pandemic broke out, he paid for many items out of his pocket including toilet paper and building repairs. He served as president for many years. The Grange's ongoing existence is due to David's support.

Bruce Lester was recognized for 30-plus years for his and the Bridge's support to the Grange. The Bridge club has been meeting at the Grange for 30-plus years. Bruce is a member of the American Contract Bridge League and American Bridge Teachers Association. His accomplishments include accredited master bridge instructor and director, achieved bridge life master status.

Over the past 20 years, the Bridge Club had anywhere from 15 to 18 tables (four at each table) playing Bridge five days a week — approximately 250 people weekly. Thank you Bruce and the Bridge Club for all that you've done keeping the Grange operating.

Sydney Hunt was recognized for her 20-plus year membership participation. She grew up in Middletown, Lake County, and started attending the Guenoc Grange No. 373 when she was about 5 years old, tagging along with her grandparents to meetings and afterwards enjoying the refreshments. Sydney's great aunt, uncle, and grandparents were farmers. and held offices in the Grange, so the Grange has been her home for a long time.

Her great aunt and uncle had lived on a section of land from the 1845 Mexican Land Grant, Rancho Guenoc.

Ballroom dancing brought Sydney to the Grass Valley Golden Empire Grange. When she walked in, she felt right at home. She became in charge of the Saturday night ballroom dances with live music and enjoyed singing with the musicians.

By 2003, Sydney was the president and her many accomplishments include coordinating the inside Grange paint job, rescuing the Grange through multiple break-ins, and an electrical smoke-out at their New Years' Eve party.

Dave Jappay was recognized for his 20-plus years membership participation. Dave spent many hours repairing the many needs of the Grange. He attended many ballroom dances. Every Saturday night, you could look over the dance floor and see Dave dancing. Dave has been a dedicated member showing up at meetings overseeing the many projects for over 20 years.

Lilo Koegler was recognized for her 20-plus years membership



Submitted photo

Bruce Lester and Dave Craigen. Lester was recognized for 30-plus years for his and the Bridge's support to the Grange, and Craigen was recognized for being the grange's 911 one-man emergency response team for 30 years.

participation. She ballroom danced to live music at the Grange for decades. She always had a smile and was friendly to everyone.

Mary Carrell was recognized for her 20-plus years of participation. Mary is a square dancer and for decades relayed the square dancers input about the Grange. She was the go-between for the improvements the square dancers paid for.

Mary always had a list of Grange improvements wanting to keep the Grange in tip-top shape. For example, if she saw any ceiling tiles drooping, she'd report it immediately to the membership monthly meeting. Mary developed a plan of action to purchase and display the United States flag, then at a later date, she coordinated the purchase of the California flag.

The Golden Empire Grange No. 806 renters include Nevada County Gem and Mineral Society, Goldancers Square Dance Club, Aces 'N Spaces Bridge Club, Jamie Hogan Country Dancing, Foothill Fusion Dance Club, Weber's Concealed Carry Certification Classes, Side Kick Line Dancing, Grass Valley 4-Wheelers Club, Karaoke by Steve & Sandy, Gold Country Horse Trails Council, DeSena Fire Safe Consulting and Training, plus one-time rentals for receptions, parties, or memorials. For more information ring 530-477-9586.







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