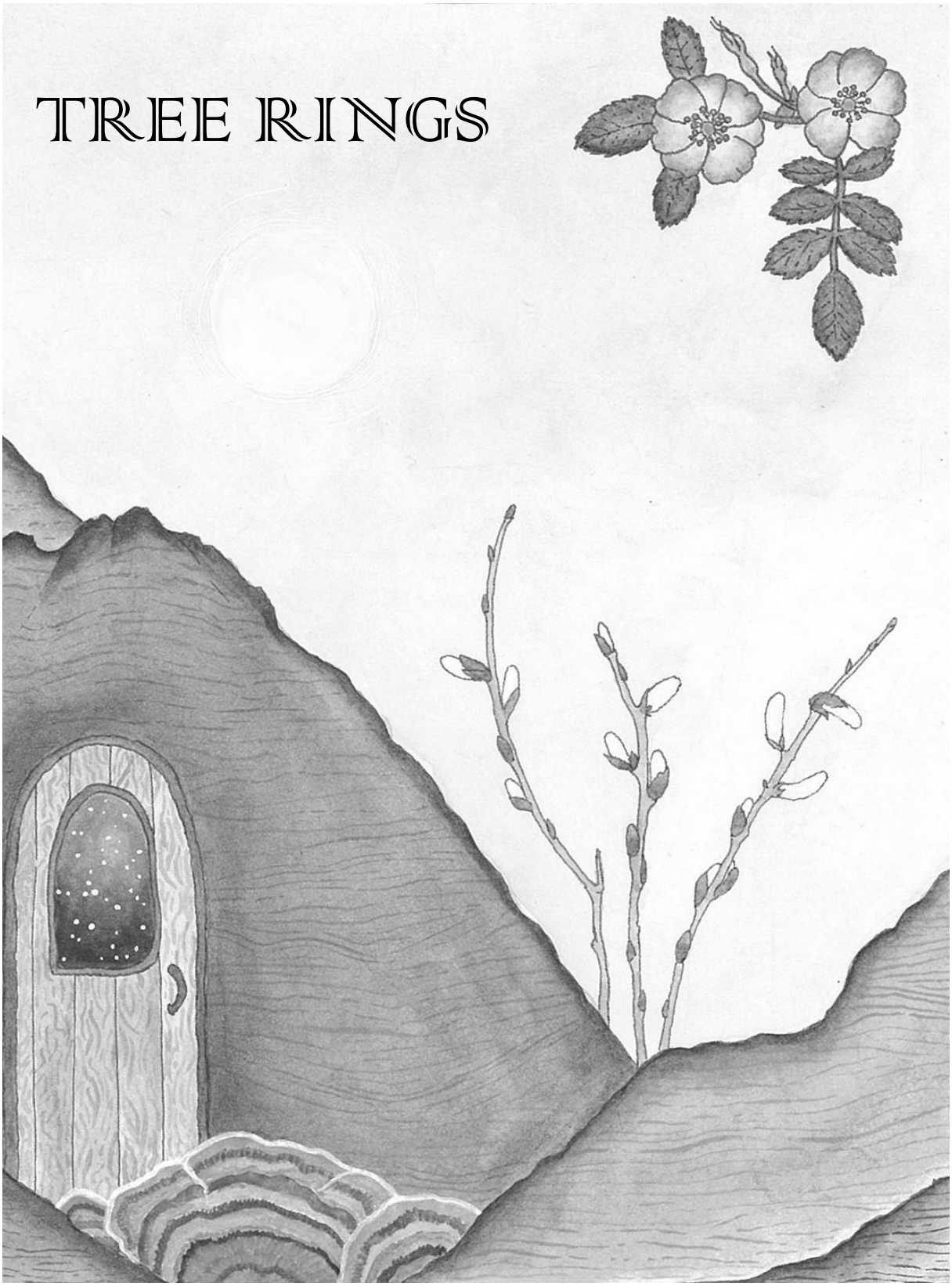
TREE RINGS



THE JOURNAL OF THE YUBA WATERSHED INSTITUTE

Number Twenty-Eight Summer 2017

THE YWI IS SEEKING NEW BOARD MEMBERS

The Yuba Watershed Institute is looking for a few talented and conscientious volunteer board members to help lead and strengthen our organization.

Board members are expected to contribute time, thoughtfulness, and leadership and to be passionate about forest management, biological diversity, and sustainable resource-use in the Yuba River Watershed.

We're working to build a diverse, interdisciplinary team and are looking for folks with experience in non-profit leadership and governance, accounting, event coordination, website management, education, networking, or fundraising; artists; youth; folks with forestry or natural resource backgrounds; farmers; women; activists; and/or creative thinkers. If you received this edition of Tree Rings out of the blue, it may be because you've been identified as one of these community members. For more information about the YWI, please visit http://yubawatershedinstitute.org. If you are interested in exploring this opportunity for service to the community, please send an email to info@yubawatershedistitute.org.

JOIN THE YUBA WATERSHED INSTITUTE TODAY!

The YWI welcomes new members and volunteers. We need your support and involvement. Members receive *Tree Rings* and discounts to YWI events and activities. While donations of any size are welcome, annual membership dues are:

$100 Forest Steward or Business Membership
$50 Families
$35 Individuals
$20 Low Income and Students

Become a member on-line at www.yubawatershedinstitute.org
or send your check, made payable to the YWI, to P.O. Box 2198
Nevada City, CA 95959.
All donations and dues are tax deductible.

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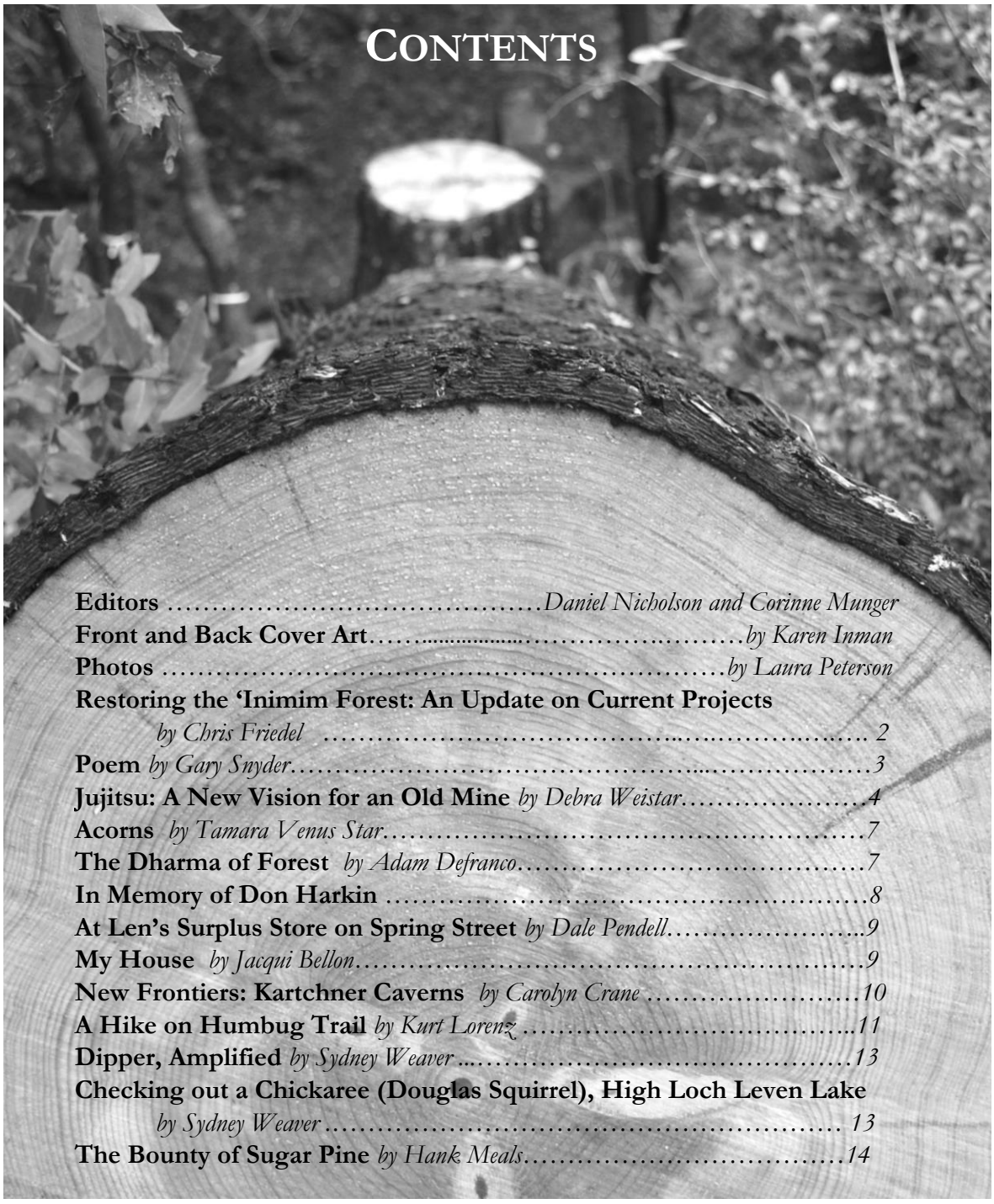


Tree Rings is published from time to time by the Yuba Watershed Institute, a 501(c)3 organization based on the San Juan Ridge in Nevada County, California. We welcome unsolicited articles, art, letters, and notes, which can be emailed to info@yubawatershedistitute.org.

RESTORING THE 'INIMIM FOREST: AN UPDATE ON CURRENT PROJECTS

Chris Friedel

Over the past 26 years, a cornerstone of the Yuba Watershed Institute's work has been its collaboration with the Bureau of Land Management in managing 1,800 acres of federal land on the San Juan Ridge. Named the 'Inimim Forest, after the Nisenan word for ponderosa pine, these lands consist of ten forested parcels interspersed with private holdings.

This year, the YWI will begin a process of updating the management plan for the 'Inimim Forest. The original management plan, released in 1995, was researched and written by a coalition of Ridge residents and was one of the first examples of a community-led planning process for federal lands in the United States. This plan called for a balance of selective logging and preservation of old-growth forest structure, but most of its recommendations were never implemented, as the shuttering of sawmills and consolidation of the timber markets in California made small-scale logging less profitable.

A new management plan is needed for the forest for a few different reasons. For one, the condition of the forest has changed in the last two decades. Trees have grown, saplings and understory plants have filled in former clearings, and invasive plants like Scotch broom have continued to spread. The combination of drought stress and bark beetle attack has killed many ponderosa pines, especially on the Shields Camp parcel, off Lake City Highway. Even more importantly, new research has revealed more about what the historical forests of the Sierra Nevada were like before the Gold Rush, and how 150 years of fire suppression has changed fundamental functions of the forest, such as a decreased resilience to wildfires and droughts.

A good starting place for the new plan will be a discussion of current forest conditions compared to desired conditions. Currently, the suppression of natural wildfires has led to a forest that is unnaturally dense and full of small trees that are intolerant of fire but tolerant of shade, like incense cedar and Douglas fir. The forest is relatively uniform, with a dense understory in many places. In these dense stands, trees compete for light and water, and are more susceptible to mortality from drought and beetles, or to a high-intensity wildfire.

In contrast, we now know that local forests were formerly dominated by trees like ponderosa pine, sugar pine, and black oak, which are all relatively tolerant of wildfire and drought. Ponderosas and sugar pines were more common and dominant on drier sites, and large patches of black oak were intermixed through the forest. Trees were spaced much farther apart, and there was a higher proportion of large, old trees. The movement of frequent fires through the landscape created a "mosaic" of vegetation conditions, densities, and structures. This alternating pattern of trees clumps, clearings, and shrub patches created botanical diversity, complex wildlife habitat, and made the forest much more resilient to drought and fire.

Just as humans played a role in creating the current forest conditions by suppressing natural wildfires, we can assist the forest towards these "desired" conditions through a combination of management approaches, including thinning, selective harvest, and prescribed fire. As the YWI works with many stakeholders to create a detailed strategy for restoring the 'Inimim Forest, we hope to also create many opportunities for volunteer stewardship, citizen science, and public education. We hope that by using the best available science, and continuing to focus on the protection of biological diversity and the maintenance of ecological function, the restoration of the 'Inimim Forest can serve as a model of best practices for forest fuel reduction projects throughout the Sierra Nevada.

For Tree Rings

Shoot an arrow into the
secret heart of the monster

I once said. But the World Trade
Towers had no secret
just another place that won't die.
No use shooting there,
Seek the *secret heart*.

27. X 03 – V · 2017

Gary Snyder

The longing for growth is not wrong. The nub of the problem now is how to flip over, as in jujitsu, the magnificent growth energy of modern civilization into a nonacquisitive search for deeper knowledge of self and nature. Self-nature. Mother Nature.
Gary Snyder, A Place in Space

JUJITSU: A NEW VISION FOR AN OLD MINE

Debra Weistar

We live in a complicated landscape. The Sierra Nevada in general, and the San Juan Ridge in particular, are at once ravaged, and breathtakingly beautiful. We live next to abandoned gold mines that conceal a toxic legacy we are only just beginning to uncover, within an interconnected river system that carries life-giving waters from the mountains to the sea. Destruction and creation, side by side.

The San Juan Ridge Mine is a prime example of a massive historic gold mine endowed with legal protections that stretch back 144 years to the General Mining Act of 1872; protections that favor corporate mining interests over the human and natural communities they operate within. These legal protections make it extremely hard – some might say impossible – for a community to assert its right to clean water, or unpolluted air, despite some of the strongest environmental laws in the world. But that didn't stop our determined community from doing all we could to keep the San Juan Ridge Mine from reopening when the owner applied for a use permit in early 2012. After a long and arduous campaign, on March 14, 2016 the Nevada County Planning Department officially closed the application. *That* application.

Like so many environmental victories, this one was tempered by the reality that the "win" was not a permanent solution. The owner of the mine could file a new application for a use permit, and we'd be right back where we started. It was, however, a welcome respite in which to strategize and envision a sustainable, long-term plan for the property. (For background information on the history of the mine and its impact on the Ridge community, go to www.sjrtaxpayers.org.) Within a month of the Planning Commission's decision, the San Juan Ridge Taxpayers Association (SJRTA) held a public meeting to begin the conversation to "think about and act upon a means to take this historic mine property out of consideration as a gold mine." Thus the new work began. We moved from opposition to opportunity; our search for "deeper knowledge of self and nature" focused on the same issue, with entirely different intent.

But where to start? The SJRTA started where they began: with the community. They created a survey to engage the Ridge community in a visioning process and received 160 responses. The results were tallied and the data compiled. Sol Henson, SJRTA president, would not have guessed some of the outcomes. "I was surprised at how many

Photo: Tom Weistar

Photo: Tom Weistar

people want some sort of economic development on the Ridge. People want to have better economic scenarios and choices. I think there are a lot of people that are just getting by, so they want to see our community flourish with economies that are not necessarily based on marijuana or gold."

The most popular use for the land was recreational - riding and bicycle trails, with 96% of respondents marking yes or ok in support. Next was a solar farm, with 95%. The least popular use was commercial cannabis with 48% yes or ok and 52% no. For the complete survey results, go to www.sjrtaxpayers.org.

Ridge citizens are known for their innovation and vision. Poets, artists, farmers, entrepreneurs, educators – we think big, and we're used to not letting obstacles stop us. But there are two realities to this scenario: the property is still owned by a mining corporation, and some sections of the property are contaminated from the hydraulic mining.

To learn about options to address the first reality, I spoke with Marty Coleman-Hunt, Executive Director of the Bear Yuba Land Trust (BYLT). The land trust sets aside land that the community determines is special, and permanently protects it from development, using a number of legal mechanisms. Marty lit up when I asked her about the San Juan Ridge Mine property. "It's a unique property because it is such a large landscape and it has been so degraded. The condition of the land has an impact on the rest of the land in the area. It's important that the neighbors are involved in defining how the land in their community should be managed for the benefit of everyone in their community." Marty went on to explain that a community organization or public entity could purchase the land outright, and the land trust could place a "conservation easement" on the property. That means that the land trust acquires the development rights for that property, including the mining/mineral development rights. The land trust then extinguishes the development rights deemed by the community to be ones that should be off the deed forever, no matter who the successive owners are. Not all of the development rights have to be extinguished; some can be retained to, for example, build housing on part of the property. That type of use can be determined by the land use plan that is desired by the community and/or the funders.

A second approach is for the land trust itself to acquire the property. The land then becomes a preserve owned by the land trust, and development rights are extinguished forever.

Marty further explained, "The land trust looks at everything: history, culture, natural resources on the property, sustainable ways to generate income, compatible uses – timber harvesting, grazing, recreation. We look at stewarding the property in a sustainable way. All is taken into consideration during this process."

The second reality is more sobering: the land is not just degraded, but contaminated. There is no such thing as an *un*contaminated historic hydraulic mine unless it's been cleaned up – and this one hasn't.

Elizabeth "Izzy" Martin, CEO of The Sierra Fund, has probably spent more time on the issue of reclaiming toxic legacy mines in the Sierra Nevada than anyone in the state.

According to Izzy, "All abandoned mines have physical hazards; there is no mine in the world that doesn't have physical hazards unless it has been fully remediated. So the first step, prior to deciding what one wants to do with the property, is to do a very thorough landscape evaluation, an 'inventory'."

Once an inventory is compiled for each parcel that makes up the property, then, as Izzy says, "You know what you have – in hazards and in opportunities." Everything is documented – the good as well as the bad. Once that information is collected, then remediation can begin.

Both Marty and Izzy were quick to point out that we can brainstorm and dream all day, but a fundamental question remains: Who is the "we" in this equation? Who ultimately decides what happens on this land?

To start that conversation, I met with Tim Farley, the new CEO of San Juan Mining Corporation. Farley had met with the SJRTA Board earlier in the year to discuss what our community could embrace (read: "not oppose") for use of the property. He is clearly intrigued by the rich cultural and artistic heritage the Ridge is (in part) known for. He seemed to recognize that the "gold" here on San Juan Ridge takes many forms and is not limited to Au-79*. We invited and challenged him to think differently about this land and about land "use", and to deliver a message from our community to his Board. More than once in our conversation he quoted the well-known idiom, "It's possible to do well by doing good." Whether or not we can collaboratively define what "doing good" means is yet to be seen, but I am optimistic.

I spoke with Izzy Martin before I met Tim Farley. I later reflected on something she said that didn't stand out to me until after my meeting with Tim. She said, "A smart entrepreneur who had access to capital could probably turn this into a profitable venture because there are those parts of the property that can be developed; there are opportunities to do interesting things out there."

Sol observed that many here want to see sustainable economic development. The CEO of a mining corporation our community fought against for decades also has an interest in compatible use. Talking about remediation, restoration, and sustainable economic development is a flip over (as in jujitsu) from the endless work to stop a threat to our water and quality of life.

We are at the beginning of a new conversation. No one knows where it will end up, but we do know where it starts. Here. On the Ridge. Home.

*Au-79: Symbol and atomic number of gold in the Periodic Table of Elements.

Debra Weistar lives a mile from the San Juan Ridge Mine. She and her husband, Tom, made the film Water for Gold, about the devastating effects of the mine, and the extraordinary community effort to keep it from reopening.

Photo: Laura Peterson

ACORNS

Tamara Venus Star

Acorns, acorns fall to the ground
Waiting for you to be found
Gather them up and store them year 'round
Black, yellow, green, gold and brown

Little caps on your crown
Mama's nipple earth seed and found
Oak tree, stoke me, thick bark you coax me
Acorns wait to be found

Break and crack
Bust and shuck
Red skins off a must

Pound and grind
Leach and prime
Acorn cake it's divine

Photo: Laura Peterson

Photo: Laura Peterson

THE DHARMA OF FOREST

Adam DeFranco

the dharma of forest
is simple
down mustang canyon

elk walk freely
under the blue sprawl sky
across the bardos
drenching body

could all creatures be enlightened
but us
forever adapting
nothing useless
maybe buddha was a wild thing
completely trusting
his mind totally vaporized

the red bird flowers of summer
are building the towers of resurrection
casting a spell of electric currents
so god enters

when the sky opens
a thousand years of wood and leaves
cast their soft leaf tongues
on your skin

the dharma of forest
is simple
like a monk
walking in the courtyard
of a zen mountain monastery

IN MEMORY OF DON HARKIN

Don Harkin, 1935-2016

Don Harkin, well-known forester, woodsman, and leader of numerous wildland tours of the Sierra mountains and foothills, died March 7, 2016, while feeding bread to the birds in the yard of his remote San Juan Ridge home. He was 80 years old.

Harkin was a founding board member of the Yuba Watershed Institute and was the leader of the YWI's 1992 'Inimim Forest Inventory, in the course of which he supervised nine young interns and taught them the basic precepts of forestry. The end product of Harkin's and the interns' work was a science-based portrait of the 'Inimim Forest lands. Under Harkin's tutelage, students described the density of the forest and its ecological components and quantified its timber volume. The 350 study plots they established that were spread across the forest's 1,800 acres will present future scientists with research opportunities.

Harkin's efforts had a profound impact on a number of the inventory interns. Some of Don's interns recently exchanged memories by email of the summer of 1992. Li Ezzell reflected on his "amazing knowledge of the forest and his willingness to share that with young people, with us. He was a good man." Li mentioned the names of other interns Caitlin Atkinson and Crystal Sevier. Erik Heaney remembered, "Those were two of the best summers of my life and I was planning to spend some overnights out at Sailor Basin this summer. He was one of my favorite people." Forest Hill, also very much affected by visits to Sailor Basin that summer, wrote, "I went back to Sailor Basin with various friends in the years shortly after those. One of those incredible, unique places of natural beauty. I look forward to my kids being old enough to make the trip. Hopefully, it'll still be as remote as it was then."

Donald William Harkin was born May 11, 1935 into an established ranching family with deep roots in eastern Montana. The eldest of four siblings, he worked on U.S. Forest Service trail crews and as a packer on horse strings bringing supplies to remote mountain locations. Early in the 1950s, Harkin enlisted in the U.S. Army, serving in Korea as a photographer. Upon discharge he attended the University of Montana at Missoula, graduating with majors in psychology, philosophy and forestry. He went on to receive his master's degree from Yale University's School of Forestry.

Don's subsequent employment included field research for the U.S. Forest Service and at the University of California, Berkeley; as an independent contractor with the U.S. Forest Service on tree planting and thinning operations; and as an instructor at Feather River College in Quincy, California. He affected the lives and thinking about the natural world of large numbers of adults and children of Nevada County and beyond through his extensive volunteer work leading Sierra Club and California Native Plant Society outings, and conducting projects and tours for the Yuba Watershed Institute.

Harkin followed his own passionate interests researching forest dynamics, laboriously extracting core samples from hundreds of trees to determine age and fire history of forest stands on the Ridge and throughout the Sierra. He was a vocal critic of wasteful and environmentally unsound forestry practices, was a noted commenter on complex forest plans and projects, and a fixture at public meetings and hearings on forest issues.

Although suffering a debilitating stroke in November, 2011, until his last days Harkin was an avid and voracious reader of scientific works, fiction, history, psychology and politics, maintaining a vast, eclectic library that was his main personal indulgence. He carried on a conversation with the text of everything he read, using a yellow marker to highlight an author's major insights, errors, and especially faults of critical thinking. A frugal, rugged individualist to the end, Don Harkin shared his intellectual life generously.

Don is survived by many friends in the Nevada County area and by his two brothers Robert of Florence, Montana, and Douglas of Lolo, Montana, and his sister Sharon, of Missoula, Montana.

AT LEN'S SURPLUS STORE ON SPRING STREET
Dale Pendell

Found two used saws
at Len's Surplus,
rust on the blades
but the handles sound.
Len wouldn't come down:
"That's a London Spring Steel"
which was why
I'd picked them.
A *very* foxy woman walked in,
high heels, a tight dress, swinging
her hips, right
out of a movie:
"Hiya Lenny, what's new?" Len
sat blushing, red
from neck to ears:
"Not the merchandise," he said.

I bought both saws.
One was even sharp.

MY HOUSE
Jacqui Bellon

One tree at a time,
twenty or thirty trunks,
cut, peeled & stacked,
all beetle kills.
We bought the lot for
a thousand dollars.
Squared some
for corner posts,
used the rest for beams.
Mortise and Tenon
simple & strong joints
made the ancient way.
Basic bones, a skeleton
fleshed out with
second hand windows,
concrete slab,
red tile floor,
steel roof over
incense cedar ceiling,
copper rooster weather vane
moaning in the night.
A sturdy house
facing East,
the rising sun,
the river's song below.

Photo: Laura Peterson

NEW FRONTIERS: KARTCHNER CAVERNS

Carolyn Crane

Cochise County, Arizona

Whenever I visit my mother in Abbey Country, I try to take her to someplace she's never been before. My mom is over 90 now, a world traveler who still lives alone with relative autonomy. She's buried a husband, son, and grandson. She is as wise as her years. There isn't a lot she hasn't seen. When my dad was alive, they traveled to many places near their southern Arizona home, so finding something new can be a challenge. Amazingly, she'd never been to Kartchner Caverns, a state park about 20 minutes from her house. I went there a few years ago with my husband and sons, so I already knew how indescribably special it is. Not even photographs can express the cavern's intricacy and majesty. I figured the walk would be too much for her, half a mile in dim light, so we borrowed a wheel chair at the front desk, hopped on the tram, and I wheeled her into the side of a very ordinary looking little mountain.

Cavers Gary Tenen and Randy Tufts discovered the caves in 1974 and kept them a secret so they wouldn't get trashed by idiotic people, and thank goodness they did. Ranger Dave, who led our tour, said that men walked on the moon before setting foot in this natural cathedral. Dave, who seems to be a reincarnation of Mark Twain (who himself was a big fan of stalactites and stalagmites) was quite solicitous toward my mom, making sure she could see clearly from her perch in the chair. Her enthusiasm got the better of her several times, and she practically leapt from her seat, holding the rail and staring at the unique and bizarre formations that always look more to me like beeswax than millennia of rock, water, and nature's chemistry.

Wheeling her up and down the ramps, looking down at her soft grey curls and delicate shoulders, I felt a different kind of love for her than I've ever felt for anyone. It is not exactly a direct inversion, when the child begins to care for the parent. It is a sort of poetic payback, a retributive act that is in its own way romantic and warm. Pete, Ranger Dave's assistant, kept a special eye on us, locking the chair for me when we stopped on inclines, offering his own brand of humor in his deep baritone. "What's the difference between a cave and a cavern? A cavern has a gift shop." Mom didn't miss one joke, one soda straw formation or trippy "bacon strip", or the deeply spiritual tone of the hidden world of Kartchner.

When Tenen and Tufts set out to keep their secret, they gave the caves the code name Xanadu. The most magnificent formation in the Throne Room they named Kubla Kahn. There are benches in front of this formation, and the tour ends here with a light show, complete with music. I sat next to her, she in the chair, I on the bench, in perfect silence. I thought of all the Masses she'd taken me to, then later dragged me to, all the Hail Marys and Memorares I recited with her throughout my childhood. Now, here we were in *my* church, and she got it.

Witnessing her enthusiasm for this gorgeous place filled me with pride. Once again I'd succeeded in showing her something new in her own back yard. She came into my room to tuck me in that night, and put her hand over her heart, holding it there, pressing gently. "Thank you so much," she said, "for showing me those caverns. We will always have that now." Our identical green eyes danced with each other a moment. All around us, we felt peace.

A HIKE ON THE HUMBUG TRAIL

Kurt Lorenz

In September a group of folks signed up for the annual South Yuba River Citizen's League (SYRCL) River Cleanup. I rounded up some locals to help and we converged on the Humbug Trail in Malakoff State Park to walk down two-plus miles to the South Fork of the Yuba. One of our party had kayaked the river there and discovered a series of abandoned "mining camps" and lots of junk to be removed.

The Humbug Trail is a lovely hike, enticingly mostly downhill to the river (the pain will come later) and follows Humbug Creek. When Malakoff was in the early stages of hydraulic mining in the 19th century the creek itself was the drain for the washed away mountainside. The creek belched all of that muck out into the South Fork. During spring floods, the dammed up waste piles washed out downriver and caused massive damage in the valley and all the way to the Bay Area. This is an old, well-known story. But what is less well known is that as the Malakoff pit became lower and lower, the gravity drain system wouldn't work, so a tunnel was driven through bedrock two miles to the river. Along the trail you will encounter swampy scary looking vertical shaft holes that went down to the tunnel. Some of them leak scummy iron-red water with oily iridescence.

Photo: Kurt Lorenz

Our group was setting out to collect and pile the campsite junk in places where the BLM had plans to fly it all out in short hops to the road with a helicopter, and we imagined the sling repeatedly groaning with the thousand or so pounds of heavy stuff we collected in a long day of work. Later I realized that the reason we got the heavy stuff was because the light weight material had long since just washed downriver. Ugh!

The junk sites were upriver from the mouth of Humbug Creek, and added an extra half-mile of climbing and scrambling around collecting and carrying all sorts of trash, from torn tent bits to chunks of old stoves. It was astonishing to think that it all was carried in there over the years. Somehow the miners forgot about "Pack it in, pack it out." Some late model tools and equipment had just been abandoned a few years back. The piles were built and a BLM ranger who showed up took GPS coordinates for every pile.

On the hike back out I quickly discovered that I had over-extended my energy reserves, and what seemed like a walk in the park turned into a very unpleasant hard slog back up the 900 feet elevation gain. I did a lot of hard breathing and a lot of muttering under my breath about getting old and out of shape. Most of my life I could just roll a hike like that for a nice fast walk and be chipper the whole way. It was quite unsettling to be dragging myself up that trail.

But now it is November and our team has learned that the BLM never did their part. Some of the piles we built have been partially washed away again by high water this very wet October, and now a few of us are back on the trail again to see what we can salvage and move to higher ground. I have told myself that if I feel it's too much I will politely resign my right to those piles and retreat.

The trail is much greener than in September, and late wildflowers and fungi are talking. Humbug Creek itself is humming a much wetter tune. The lovely falls over bedrock section is chugging and hissing, hard at work trying to remove granite, one molecule at a time. The abrasive sand and gravel once washed down here must have ground that rock quite a bit in its day.

Lo and behold, since we were here in September the Park has improved the trail at the disgusting red iron bacteria mud section and a bridge crosses it now with packed gravel on both ends. Even the most decayed dangerous fence protecting the hiker from one of the sunken shafts has been rebuilt. There are still places on this trail where a misstep might be your last, but by and large it's fairly benign, if somewhat strenuous. Everyone agrees that it has some very beautiful sections. It's well worth the effort.

Photo: Kurt Lorenz

Down at the river we turn east on the main river trail and discover thousands upon thousands of swarming ladybugs on tree trunks and down wood. The three main pile sites from last fall are in a section of river where the main trail goes way high on the north canyon side to avoid impassable rock formations below. Miners may have accessed sites from the south side, wading over. But we clamor down almost invisible disturbances in the duff, so steep that I have to grab at brush and branches going down to avoid sliding. One of these pile sites is in better shape, but the high water almost reached it in October, so we take turns lugging bags and heavy flotsam to an old campsite well above high water.

After a half-mile or so we find the remnants of some of our hard work in September. It's on a rock-bar in the middle of the river and most of what we piled there for the helicopter crew is now gone. Some tools and dead compressors, a small engine, broken shovels and other iron mystery junk remain. We reorganize it by leaving only the heaviest densest objects, and lug the rest to high ground nearby. Removal is not the goal now. Just trying to keep it all out of the river. The water is very cold and higher than in September.

At the middle site a lot of material has ended up in the river and some of it can be retrieved by our hero, Paul, wading in his dry suit. Some things we recognize from months ago are now on the bottom of deep pools, too deep to deal with now. We admire the trout swimming above them and just accept that there is only so much we can do.

A few particularly noxious items we actually drag and push back up that steep canyon wall to remove later back to the BLM pit toilet along the way back to Humbug Trail. We leave a pile there, but we don't know if that will help. It obviously doesn't get much maintenance.

Time has run out and it's a long way back uphill. Leaving on the high trail, Paul notes a small shack on the south bank, and what looks like active habitation. Perhaps it is accessible via the road to Missouri Bar and a logging road? No doubt this is the source of a lot of the abandoned junk we've been dealing with. I make a mental note to find out if it is on BLM lands, and if there is a way to get rid of it. Small groups like this do untold damage to the river, and fill it up with trash. It is very frustrating.

The good news is that this time I have no trouble hiking out and enjoy the conversation and stories as we walk. It may make a ridiculously small dent in the problem, but it feels good anyway.

DIPPER, AMPLIFIED

Sydney Weaver

My friend and I were hiking back up the Bowman Road, having run out of snow. We followed the canal overcrossing, passing the folks who live right at the corner, before the road drops off down into the river canyon. They were outside with their kids, everyone bundled up, around a campfire, which they appeared to be encouraging with the use of a snow blower—a snow blower used as a billows. The kids were really interested in us: two women with skis tucked under our arms, trudging up the pavement, snow in our boots. They were looking at us, and we at them.

Suddenly I heard and became absolutely entranced by the song of a Dipper. A loud Dipper. An *amplified* Dipper. My favorite little grey bird who lives on the river, inexplicably up here in the woods, the sound coming from near the fire pit. Like someone had a recording of it and was playing it as music. Which is something I would do. But certainly not these people—but perhaps maybe? I became convinced it was this—a recording of bird songs, now playing the Dipper track. Perhaps they had it going for their kids?

So I followed my ears and nose over there and asked, "Do you have a recording of a Dipper playing over there?"

"What's a Dipper?" replied a woman stuffed into a black snow suit.

"A bird that lives near here in the river. Do you hear that? That amplified birdsong?"

"Yeah, I hear a loud bird. I don't know if it's a Dipper. And it's not from us."

Not convinced, I had to stand there and listen with my head cocked awhile longer. Then I set out to find just where this bird song was coming from. The canal was the only close water, so I poked through the trees, hearing the call louder and louder. When I got to the edge of the canal, I had my answer. Under the overpass, the water was flowing through a cement tube, and that little bird was up inside on the ceiling, probably in a nest, just singing his little heart out. And thus being greatly amplified by the acoustics of a cement tube with water flowing through it. I couldn't see that bird, but I imagined him in there, singing away, thinking to himself, "Wow, I always sound so good in the shower."

CHECKING OUT A CHICKAREE (DOUGLAS SQUIRREL), HIGH LOCH LEVEN LAKE

Sydney Weaver

Until today I've not had the opportunity to check out a chickaree—to fully take one in and learn some things about them. Usually when I do see one, it is hollering a 5-alarm-chili warning call, and I feel chagrined standing there being berated for simply existing. So I just move on. But today, while crunching on my lunch, I heard another set of teeth crunching. Crunching and squeaking in a way that only rodents can. Slowly I stood up and peered around a tree, and there, on a downed log, just 10 feet away, was the most beautiful little bean of a squirrel I have yet come across. She had perfectly applied white eyeliner and caramel colored fur along her sides, with a darker racing stripe through the middle. And she was going at a pine cone with her full vigor. I could see her black whiskers trembling. She was methodical and thorough and part of her munching consisted of returning to the core of the pine cone and then gnashing down even harder—that was the squeaking I was hearing. Was she sharpening her teeth in between cracking open each pine nut? She also kept sucking the end every once in a while—was sap coming out of the bottom? She had deep black shiny eyes and a blank gaze of total absorption, completely focused on her meal and nothing else, including, it seemed, me.

After a while, I dared to shift position and to flick off the occasional gigantic black ant (which *do* bite, by the way, like a razor heated with a lighter—and they like bottom meat!). I was careful to move quietly lest I startle her and set off that dreaded alarm, which would mean I'd have to sheepishly pick up my things and slink away into the woods. But not a peep came from her, or even an acknowledgment of my presence. When she had completely, and I mean completely, finished off that pine cone, she hopped down and poked around beneath where she was feeding, perhaps looking for missed nuts. I would have been surprised if she had found any. I myself have finally given up hope when sifting through piles of squirrel pine cone debris, that I'll ever find a missed nut. Then she jumped back up on her perch, and decided to finally do something about me.

First the glaze pulled back from her eyes, then she gave me a good, solid, clear-eyed stare. She hopped up and down twice, then began scooting along the log, making her way toward me, craning her neck, looking me up and down, checking me out. She came around to my right side, and I panned my head to follow her, not moving any other muscles and resisting the urge to say something ridiculous like, "Oh you cute thing come on over here for a cuddle". And then, just like that, she seemed to have satisfied herself that I was "nothing" and climbed up a tree. From a distance, another chickaree called, a different sound than the alarm, and she answered back. This call, perhaps a territory marker, had only one phrase, and sounded like hiccups powered by a motor drive. Unlike the piercing, scolding, berating, endlessly repeating "You! You! You!" and accompanying "I'm gonna get you" fake-out pounces, that is the alarm call. I heard her leaping along the high branches, the other squirrel called again, she responded again, and that was that.

THE BOUNTY OF SUGAR PINE

Hank Meals

What brought you here? Many people today say it was the river, but I'm sure that forest trees were part of their decision. We take them for granted, but trees, whether we know it or not, provide spiritual support, habitat, shade and "forest products" to name but a few benefits. Sugar pine was once an abundant species in the neighborhood but that is no longer the case.

Bayard Taylor, renowned 19th century traveler, poet and literary critic, was riding on Washington Ridge, northeast of Nevada City where he noted an unbroken forest of "pillars two hundred feet high and six feet in diameter." He likened their splendor to a "grand natural cathedral." Taylor was awed: "No Doric column could surpass in beauty these stupendous shafts. They are the demigods of the vegetable world" (Taylor 1951). This was in the mid-1850s and Taylor was describing a forest dominated by sugar pines. Subsequent lumbering and silvicultural practices have since created a more "productive forest" on that ridge, one that favors faster growing ponderosa pine and Douglas fir.

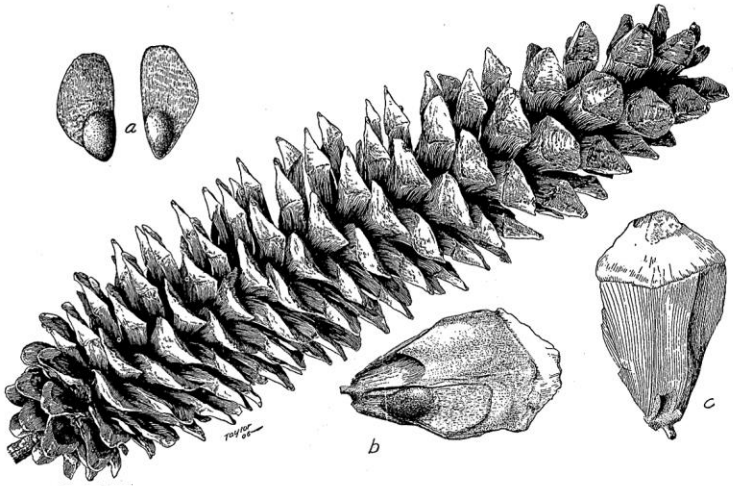
Sugar Pine is the largest pine in the mixed conifer forests of the Sierra Nevada. In the North-Central Sierra they are found at elevations between 2,500' to 7,500' where they reach heights of 175' to 200' with diameters of 36" to 60" and they can live from 300 to 500 years. Their cones, typically 10 to 20" in length, are the longest of any conifer with a mature cone producing an average of 150 seeds or nuts. The best nuts are found in the cones of the oldest trees. Intervals between heavy cone crops averaged four years (Kinloch, *et al*). Nuts from sugar pine, gray pine, and piñon pine are considered the best pine nuts in California.

Sugar pine seeds/nuts were a favorite and abundant food for the local Nisenan and Washoe – they made it their business to know the location of reliable seed producing trees. Traditional burning practices favored sugar pine regeneration. It is very resistant to low-to moderate-severity fires and has adapted a thick, fire-resistant bark and open canopy that retards aerial fire spread (Habeck 1992).

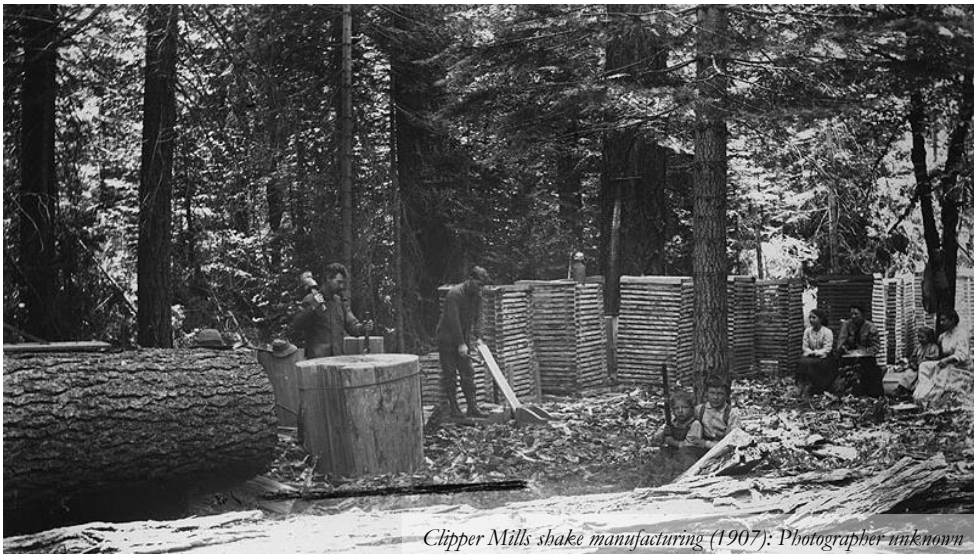
It's difficult to imagine how indigenous people were able to gather cones because branches begin in the upper third of the tree and the cones are located at the end of long, supple branches. The Nisenan climbed sugar pines "by hooking a young trimmed sapling over a lower limb" and the cones were pulled loose with a stick that had a projecting branch at the end (Beals 1933). Lizzie Enos, a Nisenan traditionalist, said that in the Sugar Pine Hill area, on the south side of the Bear River, men dislodged the cones by jumping up and down on branches (Duncan 1961). The Sierra Miwok propped a dead tree against the trunk or used a special climbing pole (Anderson 2005).

When the Nisenan and Washoe harvested sugar pine seeds they used traditional campsites that had been in use for generations. Ideally the site would have spring or stream near a knoll or meadow in a transitional zone where there were also berries, grass seeds, vegetable matter, tubers, medicines, and plants used in basket-weaving, etc.

In the Yuba River watershed there are hundreds, maybe thousands, of bedrock mortars in sugar pine habitat. Nut hunters would often camp at a favorable elevation, then search for the most productive trees. Archaeologist David Hunt applied GPS data and statistical analysis to the location of Nisenan and Washoe campsites in the watersheds of the Middle and South Forks of the American Rivers and determined that sugar pine nuts were collected at many locations and processed at numerous small bedrock mortar locations. In his opinion, sugar pines probably extended farther westward than they do now (Hunt 2000). This is substantiated by the observations of a U.S. Geological Survey (USGS) forester in 1902. "Old stumps of sugar pine standing among gray pine and oak, where not a sapling or seedling of the species is to be found, show a more extensive westward range within recent times" (Leiberg 1902).



Drawing from George B. Sudworth's "Forest Trees of the Pacific Slope" (1908)



Clipper Mills shake manufacturing (1907): Photographer unknown

Sugar pine nuts and acorns were very valuable because they could be stored. In the winter of 1849-1850 a group of vigilantes calling themselves the California Blades destroyed a group of Nisenan villages and camps on the divide between the Bear River and the North Fork of the American River. They claimed it was retribution for stealing horses and mules and boasted about destroying extensive caches of acorns and sugar pine nuts (Angel 1882).

While sugar pine nuts are small compared to acorns, they were valued for their taste and the extra effort required to get them was considered worth it (Farris 1993). Even the colonizers enjoyed the flavor of sugar pine nuts. An artist visiting the Nevada City area in 1854 remarked, "… they have a taste even sweeter than that of filbert" (Borthwick 1948).

The unique quality of sugar pine lumber caught the attention of miners, lumbermen, and builders. With few lower branches most of the wood is clear, or free from knotholes. Theodore Judah, who surveyed the Central Pacific Railroad route noted, "It is well known that the sugar pine of these lands often runs 125 feet high without a limb, and often measures eight feet at base – while a tree is seldom found measuring less than three and a one-half feet at base" (Judah 2004).

When the transcontinental railroad was completed in 1869 it opened additional markets and greatly accelerated the amount of lumbering. Now lumber could be easily transported to the east as well as to valley and coastal cities in California. Narrow gauge railroads were used extensively in the upper reaches of Deer Creek, on the Dutch Flat Divide and in the Truckee River basin. Typically lumbermen constructed mills in the best timber stands then constructed their narrow gauge railroads to connect with the standard gauge transcontinental railroad. Everything marketable was cut creating a two-and-a-half to three-mile circle of devastation with no seed trees remaining (Beesley 2004).

By the end of the 19th century the loss of trees and the resultant erosion was clearly detrimental to forest health and water quality. John Leiberg, a forester for the USGS, inventoried and reported on federal forest reserves including Yuba River country. He observed, "…where the cut is exhaustive a great change has taken place. Of the sugar pine in the region examined, the tree is losing ground at a rapid rate on all the areas logged, … the coming forest will contain only 2 or 3 percent at the most. The deficiency of sugar pine in the reforestation is due to one general cause, and that is wasteful and unscientific logging methods – everything capable of yielding immediate profit being cut, without the slightest provision for sparing a sufficient number of seed trees to restock the cut-over areas." (Leiberg 1902)

Bob Paine, a former Nevada City journalist, spent summers in the early 1920s with his uncle at the Hegarty Ranch, near Graniteville. He noticed that two Chinese men living on the property were engaged in manufacturing shakes from sugar pine. The shakes were dried and bundled then floated downstream in the Milton Ditch where they were stored on a landing downstream then

Photo: Hank Meals

transported to market by a wagon (Paine 1968). Shakes were split from a round of sugar pine, or sometimes cedar, by using a froe, which is a wedge-shaped blade with a handle that is hammered with a hardwood mallet. Dimensions vary, but in the Sierra Nevada roof shakes were typically 32" by 5". Shakes shingled the roofs, and were often the siding of historic structures. They were also used to make door and window sashes and crates.

Clear lumber sugar pine was in great demand in the historic period. Lumbermen despised shake makers, calling them "highgraders". When the U.S. Forest Service (USFS) was created in 1906, shakes were the most valuable forest product maintaining a market value well above dimensional lumber. "Shakes were produced only from the choicest sugar pines, and only from select portions of the bole – no more than 40 percent" (McKelvey & Johnson 1992). Swift Berry, a member of the USFS timber management staff wrote, "Since most of the shakes are made from the most valuable species, sugar pine, and only the best and straightest trees will rive, the shake-maker constantly lowered the value of the stand by skimming out the best trees" (Berry 1913).

Abuses of the mineral laws were common on the California national forests. From 1902 to 1918 lumber companies filed mining claims for no other purpose than to gain surface rights to the timberlands. The USFS contested a large number of these so called "sugar pine mining claims" which were particularly rampant in areas adjacent to railroad right-of-ways (Jackson1982). After World War II there was a period of "intensive management" on National Forests that included clear cuts and the cutting of old remote "decadent" trees made possible by increased road building followed by plantations and herbicide application. By 1960 the Multiple Use–Sustained Yield Act and in 1964 the Wilderness Act were the first in a series of environmental laws that sought to recreate a healthy forest ecology. Sugar pine is no longer logged in the Tahoe National Forest – even the most business-oriented foresters recognize the extent of the damage done.

Meanwhile we are learning that trees and other plants are connected with each other in numerous ways to promote the stability, or equanimity, of the greater community. Suzanne Simard, professor of forest ecology at the University of British Columbia's Department of Forest and Conservation Sciences, studies communications between plants through mycorrhizal networks from one plant to another, usually from a sufficient plant to a plant in need. Simard's research shows that biological science and indigenous knowledge share some common ground. "The science of plant communication and behavior is only scratching the surface of how Nature works, but what we are seeing is nothing short of amazing. This scientific understanding, suggestive of sentience in forests, resonates with indigenous wisdom, which calls for respect and learning from the hitherto unseen law of the forest, our teacher" (Simard 2015).

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Dear 'Inimim Friends,
There just might be something to this Shady Creek Corridor story.
These images, along with a number of foxes and a black tailed jack rabbit, were recorded in one 12 hour period below our house on the BLM Road.
A camera at another site on our land recorded just two deer during the whole week.

Along the Shady Creek Corridor, a bobcat.
Then two different bears. Different markings.
And finally, 22 minutes after a rare person walked by (only one recorded in the last several months), this cat.

Several of these animals, including the person, stopped and checked out a spot on the right side of these photos.

Long live this highway for wildlife.

–Robert Erickson

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