

KFOI Radio - Shasta Environmental Alliance Program Aug. 24, 2018

David Ledger: Good afternoon. My name is David Ledger, reporting today on KFOI Radio's Shasta Environmental Alliance program. Shasta Environmental Alliance, or SEA, is a nonprofit organization which has 14 supporting groups. You can see our website at ecoshasta.org and we have a Facebook page that is almost ready to be launched.

Climate Change Addendum: Carbon Math & Solar Infrastructure

David Ledger: Now, last week I talked about climate change and solar energy, and I have a couple additions to that program.

First, we reported last week that within one year, Shasta College will have added solar panels and shaded parking to its east parking lot covering 652 parking spaces. And this will provide parking shade and 50% of the college's electricity needs. And with the addition of the solar panels they already have on campus, they will have 80% of their electrical needs supplied by the solar panels and this means a savings of \$350,000 a year plus there will be no CO2 emissions.

Now last week it was brought to my attention that I did a little bit of funny math when I was comparing a 15 mile per gallon gas guzzling vehicle to a 45 mile per gallon economical vehicle, both driving 12,000 miles a year. The fuel efficient 45 mile per gallon vehicle would burn 6,000 lbs of CO2 in one year, or three tons. That would be the approximate amount of CO2 stored in three trees 24 inches in diameter. The gas guzzling vehicle would be burning 18,000 lbs of CO2 per year, and that would be the amount of CO2 that is stored in nine trees 24 inches in diameter.

So if you do the math, there are about 253,000,000 cars and trucks in the United States and over 1 billion in the world. So that is the equivalent of burning 3 billion to 9 billion large trees every year. That is trees 24 inches in diameter, and those trees will take 50 to 150 years to grow to a 24 inch diameter size depending on the species, water, nutrients, climate, etcetera. So if you plant 9 billion trees in one year, it will take—let's use an average 100 years—to grow to the size to fix the carbon of all of those vehicles driven in just one year, and they're only driven 12,000 miles.

Now you have to add into this, there are many trucks, semis, that only get 5 to 6 miles per gallon and they may be driven 100,000 miles a year. So, you know, it's going to take billions of trees to make up all of the carbon dioxide that we have been—which is a greenhouse gas—that we have been emitting into the atmosphere. So when you can, carpool, walk, bike, drive electric vehicles, or just get an economical car.

Wildfire Ecology & Timber Harvest Analysis

David Ledger: Now I'd like to talk about "healthy forests." I mentioned a bit about that last time. And with the recent Carr Fire and Mendocino Complex of fires, we are hearing

more about healthy forests. And I have that in quotes because this is often a euphemism of logging companies in a demand that they be allowed to cut more trees in our national forests.

It's generally accepted among environmentalists, foresters, and fire experts that forests in the western United States are under serious threat from fires due to extensive fire suppression efforts starting in 1910 and accelerating in the 1940s with the Smokey the Bear campaign, a part of which was very good, but during that time fires were immediately put out when they started. Now mixed in with that is global warming in the northern hemisphere, which is making forests drier, and rising temperatures make them more susceptible to hotter and larger fires. It took until about 1980 before the US Forest Service seriously recognized that allowing forest fires to burn can return the forest to its natural state.

Currently, the US Forest Service has a memorandum of understanding between it and many other groups to increase the use of controlled burns and letting some fires continue to burn, except for those that are near people or buildings and during extremely hot and dry times of the year. And the groups that are signing on to this policy include:

- Sierra Forest Legacy
- The California Department of Forestry and Fire Protection (Cal Fire)
- The State of California
- Sierra Nevada Conservancy
- The Nature Conservancy
- The National Park Service, Pacific Region
- The Wilderness Society
- The Sierra Club
- The Center for Biological Diversity

And they are still getting signatories to this so that we can get a healthy forest through the natural process of burning.

Now I'd like to give you some ideas of why logging companies are so adamant about other public land quote, unquote, by using some figures compiled by Merrily Woodhouse of Battle Creek Alliance—and that is a group located in Manton that is advocating for protecting the Battle Creek watershed and other areas around here from irresponsible logging. Merrily combined these figures on logging of private timberlands from Cal Fire, and they only refer to privately owned lands, not state and federal land. Now these are based on timber harvest plans that are submitted to Cal Fire over a 20-year period covering 1997 to 2016. The figures refer to both clear-cut and selective-cut logging.

County	Percentage of Private Timberland Logged (1997–2016)	Total Acres Logged vs. Total Private Acres
Tehama County	58%	<i>Data subset within broader regional trends</i>
Shasta County	52%	428,000 acres out of 832,000 acres
Siskiyou County	46%	383,000 acres out of 836,000 acres
Trinity County	30%	<i>Data subset within broader regional trends</i>

Now keep in mind that if the land is selectively logged, they can go back every 20 years and just cut out let's say 1/3 of the crop and then go back in there. So it's not like completely clear-cut, but there is a lot of clear-cutting being done. And if you Google Earth Shingletown and look around the greater area, you're going to see a quilt patchwork of cuts because that seems to be the major process that is being used for logging in that area, and Sierra Pacific is one of the major companies that is using that process, which is completely legal.

The problem with this is after they clear-cut it, they just plant a few species of trees—and of course those are going to be timber trees that are suitable for lumber—and then they have to spray the area with herbicides to keep down competing shrubs and native oaks. So what happens is you have lost a habitat. Get the picture that some timber companies are looking for other prime land that has been properly managed to get logs from, and that is timber from our nation's forests. Our national forests are set up to protect habitat, the environment, for recreation, and for timber. It's set up so we can have timber. Unfortunately, these logging companies, when they see an opening such as these fires, they want to go in there and clear-cut or just what's called thinning—get a lot of nice trees out of there. And even if you just do truly selectively cut, you're going to be putting in roads which damages the land by causing a lot of erosion and sedimentation in the streams.

Botany Report: Sulphur Creek Brodiaea (*Brodiaea matsonii*)

David Ledger: Now I'd like to just kind of switch subjects for a little bit and go to Sulphur Creek Brodiaea. Some of you may not know this, but we have a rare plant in Redding that grows in only one place in the world, and that is in the floodplain and stream bed of Sulphur Creek right here in Redding.

This plant was discovered in 1993 by Gary Matson. He was a Redding botanist, now deceased. He was unable to identify this plant, but he gave the specimen to a well-known botanist who was Dean Taylor, and he also couldn't identify it, and so he kept it

growing in a pot. Some years later he gave it to Robert Preston, who's a specialist in Brodiaeas, who eventually determined through morphology—that is plant shape, color, and where it grows—and especially through DNA analysis that this was a new, undescribed species. And it was officially named in 2010 and accepted by the scientific community. The scientific name is *Brodiaea matsonii* or *Brodiaea matsonii*, named in honor of Gary Matson.

The plant grows only in a little over a one-mile section of Sulphur Creek. It is threatened by real estate development, small placer mining, off-road vehicles, stream diversions, mowing damn sections of the stream, and herbicides. After the Carr Fire, sedimentation is going to be a little bit of a problem, but it does not look to be a serious threat.

Early this summer, a few people from SEA and members of the Shasta Chapter of the California Native Plant Society conducted a population survey of the plant and found that there are many more than originally thought. About 5,200 plants were counted. However, this plant reproduces by cormlets, and those are a little bit like onion bulbs. They're little bulbs that grow off of the parent plant, and so they're genetically the same as the parent plant. There's not any genetic diversity between the parent and the cormlet. Because it only grows in one area, it has a limited genetic diversity, and it is an endangered species.

If it grew in other areas, the threat would not be as great, but it only grows in a short section of the stream. Let's say there was a toxic herbicide spill in the stream during winter and all of that herbicide flows downstream. That would just about wipe out the whole population. That is why SEA and CNPS will be submitting a petition to the California Department of Fish and Wildlife to have the plant listed as endangered. In conservation biology, a species is considered endangered if it has fewer than 3,000 individuals. Because much of its reproduction is by cormlets, it may have less than 3,000 genetically different individuals. That, combined with many threats to its existence, especially increasing urbanization, means it needs to be protected. It takes two years from the time a petition is submitted before it is accepted or rejected.

Upcoming Community Events & Announcements

Rise for Climate, Jobs and Justice

- **Date/Time:** Saturday, September 8, 2018 from 2:00 PM to 2:30 PM (*Note: explicit local timing constraint mentioned*)
- **Location:** First United Methodist Church (1825 East Street, Redding)
- **Details:** Local portion of a worldwide day of action. Features a 10-minute climate change PowerPoint presentation by Channel 12 Meteorologist Chris Cooper and music by Greg Lawson. Attendees can sign a climate action petition currently hosted at wintuaudubon.org.

David Ledger: Now other events: North State Rise for Climate. Rise for Climate, Jobs and Justice is the worldwide day of action about climate change on September 8th.

Citizens around the world will be demanding their local, regional, and national governments more proactively work to fight climate change. And in Redding, various individuals from a number of groups are planning an event on Saturday, September 8th at the First United Methodist Church at 1825 East Street from 2:00 to 2:30 PM. They will have a forum of speakers, including Channel 12's meteorologist Chris Cooper, and music by Greg Lawson. The meteorologist will be presenting about a 10-minute PowerPoint about climate change. And the Redding group will have a petition which is currently on the Wintu Audubon's website, which is wintuadubon.org, and you can sign it online or you can sign it at this event.

Wintu Audubon Beginner Field Trip

- **Date/Time:** Saturday, September 1st at 9:00 AM
- **Location:** Meet at the boat ramp parking lot next to the Sheraton Hotel at Turtle Bay.
- **Details:** Oriented toward beginners; loaner binoculars are provided.

David Ledger: Now a few other events in town are, one would be a field trip by Wintu Audubon, and those are held on the first Saturday of each month. And this will be Saturday, September 1st. This field trip starts at 9:00 and it is a good one. It's usually oriented towards beginners, so if you want to learn something about birds, this would be a good place to start. You meet at the boat ramp parking lot next to the Sheraton Hotel at Turtle Bay and they do provide binoculars if you don't have any.

CNPS Field Trip: Kings Creek Falls

- **Date/Time:** Saturday (Upcoming) at 7:30 AM
- **Location:** Meet near Chase Bank at the Mount Shasta Mall for carpooling to Lassen Volcanic National Park.
- **Details:** A 5-to-6-mile high-altitude hike. Contact leader John Springer at 917-0567.

David Ledger: Another field trip coming up is one by the Shasta Group of the California Native Plant Society, and that is Kings Creek Falls in Lassen Park. This will be a five to six-mile hike at high altitude, and if you want to go on that, the public is welcome. You can meet at the Mount Shasta Mall near Chase Bank at 7:30 AM for carpooling. For more information call John Springer at 917-0567 for info.

CNPS Field Trip: East Weaver Creek

- **Date/Time:** Saturday (Upcoming) at 8:00 AM
- **Location:** Meet near Chase Bank at the Mount Shasta Mall for carpooling to Weaverville.
- **Details:** A 3-mile accessible hike for all physical abilities. Contact leader John Springer at 917-0567.

David Ledger: Another field trip by the same group, Shasta Chapter of the California Native Plant Society, is an East Weaver Creek field trip in Weaverville—or it's actually just a little bit outside of Weaverville. And on this one, they will meet at the Mount Shasta Mall near Chase Bank at 8:00 AM and carpool to Weaverville. For more information, call John Springer at 917-0567 for more information. And that field trip, I should mention, will be about a three-mile field trip, so it's for all levels of physical ability.

I want to say one other thing: KFOI is a nonprofit radio station and they need donations. If you go to their website at kfoiradio.org, they do have a button where you can donate \$25, \$50, or \$100, and this will help this locally grown Redding radio station grow. Thank you very much.