The CSERC Newsletter

Like a stone tossed into still water, knowledge about environmental issues can ripple outward far beyond its beginning point, and perhaps return in a wave of concern, active involvement, and greater awareness of nature in the mountains and foothills around us.

There are consequences from stocking trout for recreational sport

Trout fishing is a highly popular sport in the Sierra Nevada. It brings people into the outdoors and boosts rural economies. But many people, including fishermen, are not aware that historically nearly all Sierra Nevada lakes and all high elevation streams were naturally fishless. Fish are not native to those habitats.

Photo: National Park Service

In the second half of the 1800's, prospectors and high-country visitors to the mountains introduced trout that they brought with them from lower elevations. Fish stocking of both native and non-native trout has continued ever since. These days many lakes are regularly stocked by the California Department of Fish and Wildlife with a goal to bolster trout populations and fishing success. The practice is widely supported by rural communities that benefit from tourism and by Californians who enjoy fishing for trout and all the outdoor experiences they associate with fishing. Many fishing tournaments and other fish-focused venues are promoted based upon the widespread popularity of trout fishing in the region.

But there are measurable - and often negative – consequences that result from stocking fish at high numbers in natural habitat areas that were historically fishless. Some consequences are direct, while others are indirect.

Decades ago in Yosemite National Park, ecologists and wildlife biologists determined that planting trout in lakes cause negative effects for a number of vulnerable native wildlife species and also caused resource impacts due to the attraction of so many fishermen to stocked lakes. In 1991, Park officials negotiated with the California State Department of Fish and Game to end the stocking of fish in Yosemite. Prior to that halt of fish planting within the Park **from 1877 to 1990 a total of 33 million fish were documented to have been stocked in Yosemite Park's lakes.** *(To learn more about fish stocking and CSERC's position, see page 7.)*

Forest Service restarts its "paused" prescribed burn program after completing a nationwide review of the risks

At the end of May, U.S. Forest Service chief Randy Moore declared a 90-day nationwide "pause" in the agency's use of prescribed burning.

That halt was triggered by a destructive fire in New Mexico that burned more than 340,000 acres and destroyed hundreds of homes. It was caused by two USFS prescribed burns that blazed out of control due to high winds and dry conditions.

Chief Moore directed his agency to undertake a major review of not just the tragedy in New Mexico, but to look broadly at the prescribed fire program in the face of increasingly extreme drought and fire weather conditions that can result in possible escaped fires. **That 90-day review produced a strong emphasis on the continued need for the use of prescribed burning to reduce the build-up of fuels that stoke megafires.**

The report admitted: ***"We can never guarantee that prescribed fires won't escape because there are risks when we use this tool.*** *It's a trade-off we have to take seriously together with communities. The alternative is more large and destructive wildfires...."* The report noted: ***"On average, the Forest Service ignites about 4,500 prescribed fires each year, treating about 1.3 million acres across the National Forest System. Almost all prescribed fires—99.84%—go according to plan."***

The use of prescribed burning is especially important for the local Northern Yosemite region because in steep, difficult-to-access areas, managed fire is often the only treatment option to reduce decades of accumulated pine needles, branches, fallen logs, and other woody forest fuel.

The Prescribed Fire review resulted in seven new directives. Some aim to improve planning and communication. Others require documentation of conditions as well as requiring an agency administrator onsite for high-complexity burns. Instead of burn plans being approved for multiple days based on weather forecasts, now fire ignitions will only be authorized for 24-hour burn periods.

CSERC is grateful that prescribed burns are authorized again, but the new constraints may result in even fewer burn treatments getting done.

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CSERC is a 501(c)(3) non-profit organization working to protect the water, wildlife, and wild places of the Northern Yosemite region. CSERC relies entirely on grants and donations from people like you to do that critical mission.

Unlike the Forest Service, Yosemite Park allowed lightning fires to burn "naturally" - with guidance - over many weeks of hot, dry conditions

The Yosemite National Park photo at left was taken of the Rodgers Fire in late August as flames ebbed and flowed at various intensities across a high elevation area of the Park. The Rodgers Fire and a second large fire in the Park (the Red Fire) were both ignited by lightning.

For many years Park officials and fire management staff have used natural ignitions to get fire back into the ecosystem and to reduce the build-up of surface and ladder fuels that can feed high severity, uncontrollable wildfires. The Rodgers Fire and Red Fire met prescriptive criteria that enabled the Park to allow each fire to burn without aggressive suppression efforts.

The fires, however, did have fire crews actively monitor fire behavior and, at times, take steps to limit the fire spread in order to keep the fire edge away from popular recreational trails.

When mid-September rains soaked the region, both fires were drenched; and only scattered snags, down logs, or patches of fuels continued to burn or smolder. The size of the Rodgers Fire was estimated at 8,400 acres, and the Red Fire had reportedly burned just under 3,000 acres.

When CSERC staff assessed the results of similar "managed wildfires" that burned last year in Yosemite, we found the effects on forest habitat, recreation, and scenic values varied widely even within a single fire area. Much of the time the fires crept around, mostly consuming surface fuels. However, because such wildfires are allowed to burn during extremely dry summer conditions, hot fire runs at times killed most trees over extensive areas. For Park visitors, seeing so many dead trees is often disconcerting, especially when many trees killed by the managed wildfires are very large trees that were centuries old. The visual impacts and habitat effects are part of the trade-off of reducing the risk of even more severe, high-intensity fires.

Volunteer workday efforts in the national forest helped protect degraded areas and streams from off-road-vehicle impacts

Back at the start of the COVID-19 pandemic, the Forest Service halted all volunteer projects out of concern for public safety. Finally, this summer the Forest Service announced that we could begin organizing projects again. CSERC scheduled two workdays in August and another in September. At the first project site, we rebuilt a wood log barrier fence along Deer Creek to prevent off-road-vehicles from using unauthorized routes and driving down into the stream corridor.

For our second project, we spent a long, satisfying day widening the overgrown trail that leads to Chain Lakes in the Emigrant Wilderness. We also removed illegal fire rings and naturalized campsites that had been built too close to the water's edge (like the one shown below at right).

In early September, CSERC's most recent volunteer workday focused on blocking illegal off-road-vehicle use at three different sites along Trout Creek and the Clavey River. With guidance from Forest Service team leaders, CSERC staff and volunteers split into three different groups. We cut and moved trees, brush, fallen logs, and other natural debris to spread across the unauthorized routes – both to camouflage them and to physically block illegal access.

CSERC's goal is to significantly ramp up our volunteer program next spring and summer. We hope to see many of you at future workdays. If you'd like to be added to our volunteer list, please email Tatiana at: tatiana@cserc.org

Stanislaus Forest finally begins to implement forest treatments across the vast SERAL project area

Back in 2019, our CSERC newsletters began describing a massive “large landscape” forest project that was being planned and designed by local forest stakeholder interests – including our Center.

Now, after years of planning and many challenges, the giant SERAL forest treatment project has finally begun to be implemented. Most of the work this field season is focusing on the creation of linear fuelbreaks – areas where much of the surface and ladder fuels are removed and where widely spaced trees are left for scenic and wildlife values.

With lower amounts of flammable material, fuelbreaks enable fire crews to more effectively and safely fight wind-driven wildfires or, under cool weather conditions, to use the fuelbreaks as anchor points for lighting and managing planned prescribed burns.

Thousands of acres of fuelbreaks should be completed by the time snowstorms shut down fieldwork this fall. Fuelbreak treatments and other SERAL project treatments will ramp up again next spring.

CSERC partnered closely with the rest of the Yosemite Stanislaus Solutions (YSS) leadership team as we promoted the project, helped to gain funding, and worked to build public support for the various forest treatments.

Over the next few years, the selective thinning logging, biomass removal, broadcast burns, and fuelbreak treatments are all intended to greatly reduce the risk of high-severity wildfires that have become the new normal for forests in California and across the West. Tens of thousands of acres are planned for broadcast burning to consume some of the pine needles, branches, brush, and fallen logs that have built up on the forest floor for decades. Tens of thousands of acres of dense forests are planned for thinning logging treatments to provide broader openings in between trees in order to reduce the risk of crown fires wiping out forest stands.

Looking for ecologically sustainable ways to meet local housing needs

Tuolumne County doesn't have enough housing units to support the existing population. In 2018, a government study concluded that by 2024, Tuolumne County needs to add **640 housing units to meet demands - not only for home buyers, but even more for those seeking rentals.**

Constructing new housing projects can cause environmental impacts, but often there may be trade-offs. If the County lacks enough housing for the local workforce, then people working in the area may have to commute from distant areas such as Stockton or Modesto. That causes increased vehicle-generated greenhouse gas emissions (GHGs). In Tuolumne County, **transportation makes up over half of our GHG emissions**, as shown at right.

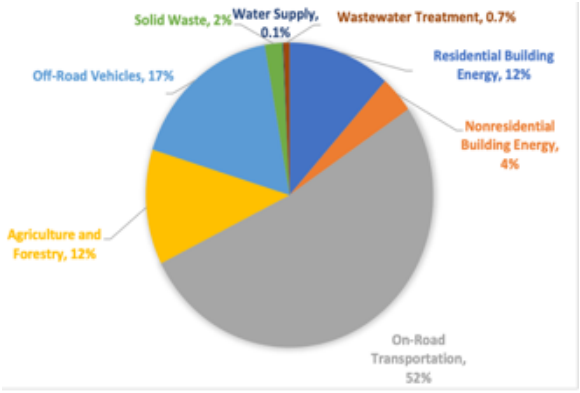

Figure 1 2019 Unincorporated Tuolumne County Community Greenhouse Gas Inventory

Our Center looks for ways to meet local housing needs, while still protecting the environment.

1) Convert existing vacant or under-utilized commercial buildings to residential buildings

The term "adaptive reuse" describes the strategy of transforming commercial spaces (that are sometimes unoccupied or abandoned) into residential buildings. This summer the owners of a Twain Harte business sought approval to transform part of their building into apartment units. CSERC testified in support of the project because the conversion was a good example of adaptive reuse – with no major new impacts.

2) Steer projects to previously degraded sites that won't cause new environmental disruption

Developing previously denuded sites is a low-impact way to add housing. CSERC worked closely with the developers of a site near Groveland known as the "the Scar." The site had been previously bulldozed, and the developers were willing to remediate the existing drainage and erosion problems to produce environmental benefits. They also went beyond county requirements to incorporate ecological features into the project.

3) Apply "smart growth" - Locate concentrated housing developments in areas close to amenities

Where sites are appropriate, developers can reduce the footprint of a project by designing compact development projects. Utilizing solar, green design features, and options for alternative transportation can all reduce GHG emissions, pollution, and sprawl. A new 80-unit apartment complex has been proposed for a site within walking distance of Columbia College. It would also have amenities like a community garden and walking trails. It could be an example of how low-impact development can fill the housing gap.

Due to the beauty and rural character of this region, it is understandable that there is a huge demand for more housing. Yosemite Park and the Forest Service consistently struggle to find sufficient housing for job applicants. Existing businesses have workers leave due to the lack of rentals. Working to identify new housing projects that cause the least environmental harm is one of the ways CSERC strives for balanced outcomes.

Planting hatchery fish may boost fishing success, but high numbers of planters can diminish the survival of native fish and other species

As noted on the cover page, there are numerous environmental consequences that come from planting fish in waters that were naturally fishless. Introduced trout have reduced the populations of native golden trout through hybridization. Stocked trout often prey on Sierra Nevada yellow-legged frogs and their tadpoles and eggs, contributing to their decline throughout the high elevations of the mountain range. Trout also can change the basic make-up of the region's aquatic ecosystems by feeding aggressively on macroinvertebrates.

Most of the lakes in the Sierra Nevada that have been regularly stocked with hatchery fish are on national forest lands, and a significant number are within designated Wilderness areas. Federal land management direction for Wilderness is specifically mandated to preserve an area's pristine, natural features and its wild characteristics. It has been argued (even by officials of federal agencies) that **artificially stocking Wilderness areas with hatchery fish may be a violation of The Wilderness Act.**

Of greater concern to CSERC are the negative effects that planting artificially raised hatchery fish causes for native fish and for other native aquatic species. For decades some fishing enthusiasts who value healthy, self-sustaining, and often-elusive native fish populations in lower elevations of the mountain range have aligned with other conservation advocates who oppose fish stocking due to the negative effects stocking causes for various aquatic species. On ecological grounds, CSERC rejects any need for fish-stocking within the roadless wild areas or Wilderness areas within our vast region.

CSERC also opposes the often-massive fish stocking of salmon in lower elevation rivers such as the Tuolumne River. Fish stocking is often done as a supposed trade-off for water agencies taking so much water that conditions are stressful or even lethal for various life stages of salmon and steelhead. When insufficient water is left in the river, water temperatures and water quality are often intolerable for salmon populations.

Our Center advocates for less stocking of hatchery-raised salmonids; and we call instead for river and floodplain restoration treatments and far higher, more natural minimum flows to be left in our region's major rivers to create healthier conditions so that salmon and steelhead can survive naturally and sustainably.

Results from CSERC's 2022 meadow monitoring

During this year's field season, as in years past, CSERC staff spent many days in the Stanislaus Forest - measuring the utilization of meadow vegetation by livestock and monitoring cattle impacts on sensitive meadow resources. We monitored "key" meadows deemed by the Forest Service to be representative of their surrounding allotments. Some individual livestock grazing allotments in the local national forest can be 25,000 acres or larger in size.

In one grazing allotment we found that numerous meadows were significantly overgrazed long before cattle were scheduled to be removed for the season. Some of those meadows had areas grazed down to bare dirt, and wetland/spring areas were trampled and degraded. CSERC staff contacted the Forest Service to report the violations. After visits to the identified sites, the USFS rangeland specialists agreed that the areas had already been grazed beyond allowable use levels. The permittee was formally asked to remove the cattle before further damage could be done. Yet despite what appeared to be the responsible action by the Forest Service, CSERC staff still found cattle grazing in that allotment's highly degraded meadows many weeks later.

The photos on the left side show early season meadow conditions before impacts caused by cattle, and on the right are comparison photos taken at the same spot in mid-August after significant livestock effects.

Serving as a watchdog can help hold the Forest Service accountable

National Forest land is supposed to be managed for the multi-use benefits of the American people. But good intentions by Forest staff and even by most grazing permittees often don't result in good livestock management on public lands. In the overall area of the Stanislaus Forest, there are relatively few meadows compared to the overwhelming amount of conifer forest and oak/brush habitat. Meadows with streams are especially important habitat for certain riparian bird species, as well as key habitat for forest amphibians.

National forest regulations provide general requirements that are intended to ensure that meadows are not overgrazed, that stream corridors are not pocked or trampled, and that fens and other special wetland features are fully protected. Unfortunately, USFS range management policies allow permittees to bring livestock onto public land without requiring any consistent, active livestock management. Cattle are allowed to drift to meadows with associated streams and to then linger (and concentrate livestock effects) in those areas.

Springs are often trampled and pocked by livestock (as shown at the site we monitored at right). Rare wetland areas called "fens" can take thousands of years to form unique peat-layered wetland features, but just a few days of concentrated impacts from the hooves of livestock can tear up the fens and begin the process of drying them out.

CSERC's meadow monitoring this year found numerous meadows that were in generally acceptable condition; but even where no significant damage was evident, the cumulative effects of livestock presence can cause compacted soils and a reduction in the diversity of plant species. When illegal off-road-vehicle use intrudes into heavily grazed meadows (as shown at left), soil compaction and impacts to meadow vegetation can be even worse.

Where are some of the best places in the region to see fall colors?

Now is the time for fall color enthusiasts to search out brilliant seasonal displays. Timing can be important, and those who seek out fall colors over a period of weeks can find success by traveling to different elevations. **Here are some of the best places to visit.**

SONORA PASS AND EBBETTS PASS

Both high mountain passes provide opportunities to not only see colorful aspens, but also to see various bushes and groundcovers that add colors. For Sonora Pass, those who make it to the crest may want to continue on over to the east side, for that is where the most expansive areas of aspen color displays are usually found.

EAGLE MEADOW AND BEYOND

The paved road fades to dirt and gravel before it reaches Eagle Meadow, and some won't want to proceed further east by driving across the creek just past the meadow. For those who do, however, colorful fall scenery can be found further east. As shown in the photo below, at Eagle Meadow many trees turn reddish hues rather than the golden colors found at most other sites.

BELL MEADOW IS CLOSE AND POPULAR

Just minutes from the Pinecrest area, Bell Meadow has a somewhat rough road that is best for high clearance vehicles. But at the main meadow trailhead parking area, the meadow features one of the region's largest single aspen stand. It is always worth a visit to wander through the golden grove before leaves fall.

Scenic beauty is often a reflection of a healthy ecosystem

The changing hues of leaves are triggered by shorter daylight hours and colder temperatures. Less sunlight causes chlorophyll in the leaves to break down, and the yellow and gold pigments that were in the leaves become visible. New red pigments may be formed that add to the vibrant colors in a leaf.

The emerging fall colors and the musty, damp smell of the autumn season can inspire us and hold our attention. Winter will arrive soon, and for our vast region a key question is whether we will get a normal or above average amount of rain and snow to help replenish water in depleted reservoirs, and to recharge streams and rivers, and deeply soak forest soils.

The weather is beyond our control. But how forests are managed, how much water is diverted from streams and rivers, and decisions on forest management actions are often directly affected by CSERC's persistent efforts.

Have you donated to CSERC this year?

Because we know that there are many deserving causes that can use your support, our staff strives to put in the extra effort to stretch member contributions to their fullest. We work hard so that each donation truly makes a difference.

We continue to invite you to partner with us.

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Donations can be mailed to:

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As summer fades, fall begins to creep in, despite dry conditions

Indian rhubarb is a plant that grows directly in forest streams, often stretching up to three feet in height. It's common in local rivers, and like many of the region's deciduous plants, it provides a brilliant colorful display when the leaves turn red or golden during the fall season.

Inside this newsletter we cover a range of current, timely topics such as updates on 2022 wildfires, the start of SERAL forest treatments, the debate over fish stocking in streams and rivers, and some photo articles about CSERC's monitoring efforts and our restoration workday projects done by staff and volunteers.

We also point out some of the best places for viewing colorful fall scenery across our vast local region. We hope this motivates you to get out and enjoy the beauty of the season.