Burney-Hat Creek Basins (CFLR014)
Lassen National Forest

1. "Basins Project" CFLRP Expenditures, Match, and Leveraged Funds

a. FY21 CFLN and Matching Funds Documentation

USFS Funding

Fund Source (CFLN Funds Expended)[1]	Total Funds Expended Fiscal Year 2021
CFLN1421	$490,715
CFLN1420	$57,912
TOTAL	$548,627

Fund Source (Forest Service Salary and Expense Match Expended)[2]	Total Funds Expended Fiscal Year 2021
NFSE21	$49,912
TOTAL	$49,912

Fund Source (Forest Service Discretionary Matching Funds)[3]	Total Funds Expended Fiscal Year 2021
CFHF	$380,000
TOTAL	$380,000

Partner Match Funding

[1] This amount should match the amount of CFLN dollars spent in the FMMI CFLRP expenditure report. Include prior year CFLN dollars expended in this Fiscal Year. CFLN funds can only be spent on NFS lands.
[2] This amount should match the amount of matching funds in the FMMI CFLRP expenditure report for Salary and Expenses. Staff time spent on CFLRP proposal implementation and monitoring may be counted as CFLRP match – see Program Funding Guidance for details.
[3] This amount should match the amount of matching funds in the FMMI CFLRP expenditure report, minus any partner funds contributed through agreements (such as NFEX, SPEX, WFEX, CMEX, and CWFS) which should be reported in the partner contribution table below. Per the Program Funding Guidance, federal dollars spent on non-NFS lands may be included if aligned with CFLRP proposal implementation within the landscape.

Fund Source[4] (Partner Match)	In-Kind Contribution or Funding Provided?	Total Estimate (Funds/Value)	Description of CFLRP activity	Location of activity/item
Fall River Resource Conservation District	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant:[5]	$2,331,538	Tamarack Fuel Break and Jackrabbit WUI Projects on SPI Lands. Shasta College Logging and Truck Driving Training Program	☐ National Forest System Lands ☒ Other lands within CFLRP landscape: *Sierra Pacific Industries*
Forestry Challenge	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$9,047	Forestry Education for High School Students	☒ National Forest System Lands ☒ Other lands within CFLRP landscape:
Great Basin Institute	☒ In-kind contribution ☒ Funding Budget Line Item, if relevant: [1]	$19,184 $14,135	Layout, Marking and Cruising on the North 49 and Dixie Fire Salvage Projects	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
Great Shasta Rail Trail	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$9,702	Trail maintenance using the California Conservation Corps	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
Sierra Nevada Conservancy	☐ In-kind contribution ☒ Funding Budget Line Item, if relevant: [1]	$100,000	Badger Restoration Project	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:

[4] Total partner in-kind contributions for implementation and monitoring of a CFLR project across all lands within the CFLRP landscape. For CFLRP projects under the CFLRP Common Monitoring Strategy, note that this table addresses the core CFLRP common monitoring strategy question, "If and to what extent has CFLRP investments attracted partner investments across the landscapes?"

[5] If funding from partner is captured in USFS database as NFEX, SPEX, WFEX, CMEX, or CWFS, please provide Budget Line Item here. See CFLRP FMMI expenditure report for reference.

Fund Source[4] (Partner Match)	In-Kind Contribution or Funding Provided?	Total Estimate (Funds/Value)	Description of CFLRP activity	Location of activity/item
Mule Deer Foundation	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$178,641	Manzanita Chutes Mastication, Roadrunner Stewardship Project	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
Pacific Crest Trail Association	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$5,839	Pacific Crest Trail	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
Sierra Buttes Trail Stewardship	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$24,413	Thousand Lakes Wilderness trails	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
Spring Rivers Foundation	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$70,000	4th, 5th and 6th grade outdoor education and reintroduction activities and project monitoring for the Rock Creek Meadow Restoration Project	☐ National Forest System Lands ☒ Other lands within CFLRP landscape:
Symbiotic Restoration Group	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$95,000	Intermountain Recreation Collaborative	☒ National Forest System Lands ☒ Other lands within CFLRP landscape:
United States Geological Survey	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$107,500	Publication of TIR data, hydrogeologic modeling, discharge measurements, water quality monitoring.	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:

Fund Source[4] (Partner Match)	In-Kind Contribution or Funding Provided?	Total Estimate (Funds/Value)	Description of CFLRP activity	Location of activity/item
University of California, Davis	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$9,500	Post-treatment monitoring	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
University of Nevada, Reno	☒ In-kind contribution ☐ Funding Budget Line Item, if relevant: [1]	$12,000	Analysis of data and preparation of results for publication.	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
Total	In-Kind Contribution		$2,871,864	
	Funding		$114,135	

Service work accomplishment through goods-for services funding within a stewardship contract (for contracts awarded in FY21).[6]	$0
Revenue generated through Good Neighbor Agreements	$0

b. (OPTIONAL) Describe additional leveraged funds in your landscape in FY 2021, if relevant.

Founded in 2009, the Burney-Hat Creek Community Forest and Watershed Group (BHCCFWG) is a community-based collaborative of citizens, businesses, organizations, governments, and landowners who share a vision for a sustainable future of our communities and the surrounding landscape. This collaborative land management effort is dedicated to improving social, environmental, and economic conditions in the Burney Creek and Hat Creek Watersheds. The collaborative footprint encompasses 364,250 acres of public, private, and tribal lands, as well as the communities of Burney, Cassel, Hat Creek, Johnson Park, and Old Station. Fifty-eight percent of this land is within the Lassen National Forest. Another 29 percent is owned by large private forestland owners, seven percent by Lassen Volcanic National Park, and four percent by large ranches.

In recent decades, local communities have experienced high rates of unemployment and increased risk of high-severity wildfires, issues the collaborative actively works to mitigate. The group's vision is

[6] Revised non-monetary credit limits should be the amount in contract's "Progress Report for Stewardship Credits, Integrated Resources Contracts or Agreements," the "Revised Non-Monetary Credit Limit," as of September 30. Additional information on the Progress Reports is available in CFLR Annual Report Instructions document. Revenue generated from GNA should only be reported for CFLRP match if the funds are intended to be spent within the CFLRP project area for work in line with the CFLRP project's proposed restoration strategies and in alignment with the CFLRP authorizing legislation.

to create:

- A fire-resilient forest ecosystem with sustainable populations of wildlife, fisheries, and habitat;
- Well-functioning and restored watersheds with good water quality;
- Well-protected cultural resources; and
- Appropriate recreational opportunities,

while also helping to support: (1) quality of life; (2) jobs for diverse community members; and (3) economic benefits in local communities. BHCCFWG receives federal support through the U.S. Forest Service's Collaborative Forested Landscape Restoration (CFLR) Program, which augments available local resources to advance landscape-scale fuels reduction, forest health, and ecological restoration projects through coordinated public-private efforts.

A summary of the activities of agency partners this last year that support overall project goals within the Basins CFLR Boundary is below.

California Department of Forestry and Fire (CAL FIRE)

No report

CalTrout

No report

Fall River RCD (FRRCD)

Photo 1- Shasta College Student John Klopfe

The Fall River RCD continued developing and advancing bioenergy facilities in the region. These are expected to provide an essential future outlet for federal and private forest health projects. The Hat Creek Bioenergy Facility has placed equipment orders and will begin construction during the winter of 2021/2022. This site is one of the leading candidates to be the first small-scale (e.g., 3-5 megawatt) facility built in California that qualified through the BioMAT Program. Two other sites of similar size also continue to make significant progress. One of these has secured their technology provider and financier, while the other is working to secure site control and agreements. Each of these proposed sites intends to utilize cutting-edge technology, combining gasification and traditional boilers, to create heat for electricity generation and biochar. The three facilities, if built, would require a total of nearly 90,000 BDT/year, corresponding to an average treatment acreage of 10,000 acres. Such facilities are essential to accommodate the increased pace and scale for which the agency is striving.

The Fall River RCD continued to helm the effort of the Burney Basin Fire Safe Council (FSC) in 2021. Of the original twenty-one priority projects identified three years ago, seventeen have secured funding or been completely implemented. The primary source of funding was through CAL FIRE. Regular meetings were held to revise the community wildlife prevention plan (CWPP), prioritize projects, and seek grant funds to implement them. The FRRCD also helped establish a new fire safe council in the Fall River Valley Region and continued to assist with a green waste program in

the Burney Area through their Department of Conservation (DOC) Watershed Coordinator Grant Program. This program funds a variety of tasks, including assisting the two California Climate Investment (CCI) Program funded forest health projects in the region.

The Burney-Hat Creek Forest Health Project, which was funded by CCI in 2019, advanced additional projects on both private and federal lands in FY21. Treatments for a large fuel break (Tamarack Fuel Break) continued, and a 3,000-acre WUI project (Jackrabbit THP) on private lands ($465,189) was completed to help protect Burney. On federal land, several hundred acres of site preparation was completed on the Bald and Eiler Reforestation Projects. Unfortunately, the Crossroads Project, another forest health and fuels treatment project that was collaboratively developed and bid for implementation, was stalled by the agency. It remains idle, and the Forest has yet to provide a path through which it can be implemented.

Shasta College, through Fall River RCD CCI Funds and other grants, continued to train and certify students for the forest and logging workforce. This is done through their innovative training program, which was designed to build capacity within the California forest products industry ($2,281,538.18)

Forestry Challenge: Forestry Education for High School Students

The Forestry Challenge is an academic event for high school students about technical forestry and current related topics. Participants spend four days in the forest learning about the ecology and management of the forested landscapes that provide communities with water, recreational opportunities, wood products, and wildlife habitat. Youth benefit by better understanding the relationship of the forested environment to their community, being introduced to natural resource management as a potential career option, and by undertaking a timely, rigorous critical thinking exercise that addresses current forestry topics, such as wildfire, insects, and forest health.

Photo 2 - Measuring Radial Growth, Shasta Forestry Challenge

Since the Forestry Challenge began in 2003, the program has expanded from one event to five throughout California. There are four sessions each fall, as well as a championship in the spring. At the 2021 Shasta Forestry Challenge (September 29–October 2), students conducted a forest inventory at Camp McCumber. They then used their data to recommend a treatment prescription to create a more firesafe landscape at the camp (while ensuring that the experience it provides is still forested). ($9,047)

Thanks to a grant through the Burney-Hat Creek Community Forest and Watershed Group, the Forestry Challenge now has 35 new Samsung Galaxy tablets ($5,000). Students at all events will use these to record their data during the focus topic fieldtrips. Not only will the students get hands-on experience using electronics for this purpose, but the data will also be much easier to assemble for their use that evening.

Visit the Forestry Challenge website for more information (http://www.forestrychallenge.org/).

Great Basin Institute

The Great Basin Institute and the U.S. Forest Service worked cooperatively to complete natural

resource management projects on the Lassen. These valuable experiences provided opportunities for GBI Personnel, which include AmeriCorps members, to gain first-hand knowledge about the operations of a federal land management agency. Forest vegetation management projects generally include both commercial and non-commercial removal of vegetation and3 prescribed burning. Treatment units require boundary mapping and layout, tree marking, flagging, painting, timber cruising (which includes diameter, height, and defect data), and stand reconnaissance to identify species composition, structure, and density. The Great Basin Institute hired a four-person timber sale prep crew, consisting of one crew lead and three crew members, to support the North 49 Forest Health Recovery, Whittington Forest Health Restoration, Plum Restoration, and Dixie Fire Salvage Projects. This work supports mutual goals of improving forest health, fire-resiliency, and ecological diversity. ($14,135 in kind; $19,184 direct funding)

Great Shasta Rail Trail

Under a challenge cost share agreement with the Lassen, a CCC crew cleared under both ends of the Lake Britton Trestle. This involved removing brush and small trees, as well as limbing larger trees to create a pseudo-shaded fuel break. Additional standard trail clearing was done along the trail on the Burney side to remove brush and limbs that impinged on the trailway. Due to COVID-19 isolation issues, the crew was small and unable to work for the entire scheduled time, so will be completed in FY22.

PG&E-owned lands on Cayton Creek were donated and transferred to forest and work began to incorporate approximately a half mile of the existing ROW into the current USFS Special Use Permit.

Humboldt State University (HSU)

An agreement is in place with HSU to conduct pre- and post- treatment monitoring of Baker cypress in the Whittington Project Area. Pre-treatment monitoring was completed in 2019 and 2020. No activities were completed (or funds expended) in 2021 due to impacts from the Dixie Fire and COVID-19. It is anticipated that HSU will complete their monitoring in 2022.

Lassen Volcanic National Park (LVNP)

No Report

McArthur-Burney Falls State Park

No report

Sierra Nevada Conservancy (SNC)

The Hat Creek Ranger District was awarded Sierra Nevada Conservancy Proposition I and Proposition 68 Grant Funds for the Badger Restoration Project. These will be used to fund an interdisciplinary team leader, a writer/editor, and a record manager. These are being contracted through Forest Service Enterprise, as the forest does not have the staff to fill these important positions ($100,000).

The goal of the project is to not only stabilize, but improve the ecological resilience of the landscape so that it can sustainably provide its services to humans and other organisms.

Since part of the Badger Area burned in the Dixie Fire, the project is being reworked to capture salvage and address any restoration needs that arose from the inferno.

Mule Deer Foundation (MDF)

Multiple Mule Deer Foundation (MDF) projects were planned and/or implemented in FY21. The group finalized the layout, mark, and cruise of the Bailey and Roadrunner Projects, with Jefferson Resources serving again as the primary contractor. Thompson Land Management was also hired to masticate 307 acres of the project. A California Climate Investment (CCI) grant funded all the work ($176,525), as well as project management and quality control ($2,116).

Pacific Gas and Electric (PG&E)

The Lake Britton Donation Case: The three parcels in question are now officially part of the Lassen National Forest. Planning for the land conveyances started after the 2002/2003 settlement of a PG&E bankruptcy. The non-profit Pacific Forest and Watershed Lands Stewardship Council was created to plan and oversee several programs, including the land disposal. The USA received parcels on many forests – some of which become part of an established wilderness, while others were selected to provide key access points to streams for recreationists. Overall, the idea was to preserve the use of the lands for the public, for recreation and other pursuits. To ensure that the lands are managed according to the intent of the settlement, the Forest Service signed a *Conservation Covenant*, to be overseen by the Sierra Nevada Conservancy. These parcels around Lake Britton, provide for excellent deer habitat, watershed protection, and a rails-to-trails opportunity among other attributes.

PG&E continues to remove drought-stricken and fire-killed trees, as well as fuels from their infrastructure in areas where tree mortality is high, including the Dixie Fire (No Cost Estimate).

Pacific Crest Trail Association (PCTA)

Despite the copious challenges presented by the COVID-19 Pandemic, Pacific Crest Trail Association volunteers contributed over 97 hours ($2,687) within the Basins Area in FY 2020. This included scouting, debris clearing, maintenance of trail tread and adjacent brush, and servicing the 550-gal potable water tank. They completed 8.8 miles of brush/tread work, thereby maintaining all 70 miles of the Pacific Crest Trail in the project area to standard. Additionally, representatives from the PCTA met with district staff on several occasions to collaborate on ways to enhance visitor experience, improve the trail's *wilderness character*, and further reduce trail maintenance costs ($5,839).

Sierra Buttes Trail Stewardship

They maintained trails within the Thousand Lakes Wilderness to standard ($24,413).

Sierra Institute for Community and Environment

The Sierra Institute completed the final Socioeconomic Monitoring Report for the Burney Hat Creek CFLRP in June 2021. In 2021, they worked closely with the CFLRP multiparty monitoring working group to prepare two draft reports, present preliminary findings to the group, solicit feedback, and incorporate comments into the final report. All funds allocated to this effort were expended in FY21. A total of 55 hours were dedicated to meetings and finalizing the report in 2021.

Sierra Pacific Industries (SPI)

SPI started work on two timber harvest plans (THPs) (Lost Hat THP and Logan THP) in the Old Station, Logan Lake, Wilcox Peak, Red Lake Mountain, Bear Wallow Butte, Sugarloaf, Lost Creek, and Hat Creek Areas. Consisting of: Commercial Thinning: 215 acres, Alternative Prescription (closest to a Clearcut) 1790 acres, Fuelbreak (including bordering Hwy 44/89) 323 acres. These projects included surfacing (rocking) 3.6 miles of road and improving six water holes (rocking/rehabilitation).

Spring Rivers Foundation

Photo 3 - Spring Rivers Foundation - Nature Totes

Under non-pandemic conditions, the Spring Rivers Foundation Outdoor Education Program provides annual fall field trips to Crystal Lake, Baum Lake, and Hat Creek for all the 4th, 5th, and 6th grade students and annual spring field trips to Sucker Springs for the Kindergarten, 1st, 2nd, and 3rd grade students at the Burney and Fall River Elementary Schools. Since in-person field trips have not been possible due to COVID-19 restrictions, the Spring Rivers education team launched their new *Field Trip in a Box* Program for the 2020-2021 school year ($10,000) and Fall 2021 ($10,000). This program provides teachers with easy-to-use outdoor-learning kits, complete with all the supplies needed for a fun and educational teacher-led field trip. In addition to the *Field Trip in a Box* bins, Nature Print Tote supplies were delivered to each school so that every student in 4th-6th grade can create a fall nature print art tote. Every kindergarten through 6th grade student at Burney and Fall River Elementary Schools, Fall River High School's biology students, and students from several Redding-area schools have been able to participate in this exciting program where they learn important concepts in science, writing, art, math, and local history during outdoor field experiences.

Spring Rivers Foundation, in conjunction with Spring Rivers Ecological Sciences LLC, continued habitat improvement and reintroduction activities and project monitoring for the Rock Creek Meadow Restoration Project ($50,000).

Symbiotic Restoration Group

Symbiotic Restoration Group (SRG) regularly participates in meetings as a voice for recreation and outreach strategies, as well as partnering with local agencies, resource conservation districts, and private consultants to drive forest health, watershed, and recreation projects forward. Currently, SRG is mostly engaged with stream and meadow restoration using beaver dam analogs (BDAs). In addition to hands-on field work, SRG is taking the lead on monitoring for CCI forest health projects; fulfilling the role of Watershed Coordinator for a Department of Conservation grant to promote fire safety and awareness in Burney, including the management of a green waste site and residential fuels reduction programs; managing the websites of the Fall River Resource Conservation District (FFRCD), Pit Resource Conservation District (PRCD), Burney Fire Protection District, and the Fall River Valley Fire Department, as well as facilitating the meetings, and guiding projects for the Intermountain Recreation Collaborative, with the help of Sierra Nevada Conservancy funds ($95,000). SRG is also assisting the FRRCD by developing a master recreation strategy for the region, in addition to maintaining 11 miles of the PCT from Baum Lake to Burney Falls, and maintaining a section of highway 299, from Four Corners to Cassel Road.

United States Geological Survey (USGS)

The USGS published thermal imagery and in-channel data for Hat Creek that they collected in cooperation with LNF in 2018 and the master's student working on the hydrogeologic monitoring of the Hat Creek Graben finished her work ($70,000). Additionally, water quality monitoring at Big

Spring and flow monitoring of Hat Creek near Old Station continued ($37,000).

University of California, Davis

An agreement is in place with UC Davis to conduct post-treatment effectiveness monitoring within the Basins CFLRP. In 2021, a two-person monitoring crew was hired through the university and supervised by the Sierra Cascade Assistant Province Ecologist. The crew completed post-treatment monitoring in the Plum, Whittington, and North 49 Project Areas.

The ecology crew spent a total of 4.5 weeks ($9,500) conducting CFLRP monitoring in FY21.

University of Nevada, Reno

Hydrologic monitoring and analyses of three different silvicultural treatments in the former Panner Timber Sale were brought to a close ($12,000). A manuscript is expected to be submitted to Frontiers in Forests and Global Change, Forest Hydrology within the next month.

University of Wisconsin, Madison

In 2021 the UW-Madison bioacoustics survey team deployed 36 autonomous recording units (ARUs) in and around 11 California spotted owl and northern goshawk PACs within the Badger Project Area. These units were deployed during the first week of June and were programmed to record continuously every night. The ARUs were collected after the first week of July for a total of 30-34 days of recordings for each ARU. Data processing has begun on all recordings and the processing is expected to be complete and shared with Forest Service staff in 2022.

USFS Pacific Northwest Research Station

The collaborative work with LNF and the University of Nevada, Reno to complete the data analysis and submit a manuscript to a professional journal continued. See the University of Nevada, Reno section for additional information.

USFS Pacific Southwest Research Station

An agreement was developed with PSW to continue data collection through 2021 and complete data analysis to assess the effect of different salvage and reforestation strategies on ground fuels, understory species, and the survival and growth of planted and naturally occurring seedlings. Data were not collected in 2021 due to impacts from the Dixie Fire and COVID-19. Forest Service ecologists continue to work closely with UC Davis and PSW to enter and analyze field data and design secondary treatments, which are scheduled for implementation in 2022. Please see the Washington State University section for additional work done by PSW.

Washington State University

Washington State University continued to collect information on upland habitat use by long-toed salamanders. To date, they have collected three years of pre-treatment data, as well as three years of post-treatment data in the Big Lake Restoration and Enhancement Project.

Washington State University contributed 1.5 months for field work, analysis, and writing and PSW contributed 1 month.

2. Please tell us about the CFLR project's progress to date in restoring a more fire-adapted ecosystem as described in the project proposal and how it has

contributed to wildfire risk reduction goals.

FY21 Activity Description (Agency performance measures)	Acres
Number of acres treated by prescribed fire	2,072
Number of acres treated by mechanical thinning	2,457
Number of acres of natural ignitions that are allowed to burn under strategies that result in desired conditions	0
Number of acres mitigated to reduce fire risk	4,529
total	9,058

Please provide a narrative overview of treatments completed in FY21, how was this area prioritized for treatment?

According to NOAA[7], in Water Year 2021, 93% of the Southwest and California were in drought, with 38% of that qualifying as *exceptional* (the highest level). The effects of this were plain to see throughout the Basins Area. Vegetation was under stress and at risk for loss to insects, water stress, and wildfire. Priorities for treatment were based on a combination of:

1. Funding,
2. NEPA sufficiency,
3. Proximity to the wildland urban interface (WUI),
4. Presence of critical wildlife habitat, and
5. Implementation difficulty.

The Basin's Project is entirely within high to very high wildland fire hazard areas. The majority of it is in fire regimes 1, 2 and 3, in condition class three.

Photo 4 - Treated and Underburned Stand Affected by the Dixie Fire. Plum Restoration Project

In FY21, the highest priorities were critical need areas for hazardous fuels reduction, projects in the wildland urban interface, and forest restoration. These projects include forest restoration within the North 49 Project Area near Old Station, continuing the work on a DFPZ in the Butte Creek Area, and treating previously untreated goshawk PACs within the Plum Restoration Project. Reducing fuels is essential for future fire suppression efforts and forest resilience.

Please tell us whether these treatments were in "high or very high wildfire hazard area from the "wildfire hazard potential map" (https://www.firelab.org/project/wildfire-hazard-potential)

The Basins Area is within the moderate to very high hazard range on the wildfire hazard potential

[7] Southwest and California Drought Status Update: May 2021, NOAA/NIDIS, https://www.drought.gov/documents/southwest-and-california-drought-status-update-may-2021.

map. FY21 projects were located in high to very high potential areas.

Were the treatments in proximity to a highly valued resource like a community, a WUI area, communications site, campground, etc.?

The Butte DFPZ is along a main route to Pole Creek Campground (Eagle Lake Ranger District) and Butte Lake Campground in Lassen National Park. The other treatments were in goshawk protected activity centers.

What did you learn about the interaction between treatment prioritization, scale, and cost reduction? What didn't work?

Northern California in 2021 entered its second year of drought, which was reflected in the level of many local lakes. Shasta Lake was at 47% capacity, its second lowest recorded level (next to 1977). Fuels (both live and dead) in the north state reached critical thresholds early in fire season. The Dixie Fire started in July in the Feather River Canyon and, by September, impacted many of the projects in the Basins Area.

Treatment units within the Butte Creek DFPZ were an outstanding success. 745 acres of the 1215-acre DFPZ burned during the fire. A portion of fire line had been held within the units and the timber stand had outstanding survival. The fire behavior dropped to the surface from a sustained crown fire. The majority of the untreated portions of the area were a complete loss. The money spent for the fuel reduction not only stopped the fire in that area, but saved thousands of acres of timberland, as well as northern goshawk and other wildlife habitat.

Thinned areas with recent prescribed fire had very good survival in the Plum and Eastside Project Areas. However, many units did not survive the extreme, wind driven frontal passage fire behavior. The Antelope Fire on the Klamath National Forest exhibited the same high severity effects from this wind event. Previous fires on the Hat Creek District (the Peterson Fire (2008), the Hat Creek Complex (2009), and the Bald Fire (2014)) demonstrated that a combination of thinning and prescribed burning on large landscape levels are beneficial for fire suppression, post-fire effects, and forest resiliency.

Please provide visuals if available

Photo 5 - Goshawk Resiliency Treatment affected by the Dixie Fire. Plum Restoration Project.

Photo 6 - Treated and Untreated Stands affected by the Dixie Fire, Plum Restoration Project

FY21 Expenditures

Category	Cost
Wildfire Preparedness[8]	$721,539
Wildfire Suppression[9]	(*) $22,007,754
Cost of Managing Fires for Resource Benefit	$0
Hazardous Fuels Treatment Costs (CFLN)	$325,209
Hazardous Fuels Treatment Costs (other BLIs)	$477,044
total	$23,531,546

*The cost of the portion of the Dixie Fire that burned into the Basins Project Area. This does not include the cost of repair and is based on a cost of $650/acre over 33,651 acres, which is based on the documented value the day the fire was declared contained.

How may the treatments that were implemented contribute to reducing fire costs?

In the 2021 Dixie Fire, many of the fuels projects within the CFLR area were essential to suppressing the fire. In these, the reduction in fuel loading lowered fire intensity and, with a combination of weather change, resulted in favorable conditions for fire suppression efforts with less mop-up. These areas were proven to be valuable to stopping the north end of the historic, million-acre Dixie Fire.

Have there been any assessments or reports conducted within your CFLRP landscape that provide information on cost reduction, cost avoidance, and/or other cost related data as it relates to fuels treatment and fires?

The repair and BAER work were incomplete as of Nov. 19, 2021. At that point, leadership decided to take a strategic pause due both to deteriorating weather and the coming holiday season. A fuels treatment effectiveness report and rapid-fire assessment have been started, but no reports have been completed. The current plan is for operations to recommence in January 2022.

Please include acres of fires contained and not contained by initial attack and acres of resource benefits achieved by unplanned ignitions within the landscape, and costs.

All initial attack fires within the Basin Project Area were successfully suppressed during that phase in FY21. The Dixie Fire that started on the Plumas National Forest did impact the Basin Project Area

[8] Include base salaries, training, and resource costs borne by the unit(s) that sponsors the CFLRP project. If costs are directly applicable to the project landscape, describe full costs. If costs are borne at the unit level(s), describe what proportions of the costs apply to the project landscape. This may be as simple as Total Costs X (Landscape Acres/Unit Acres).

[9] Include emergency fire suppression and BAER within the project landscape. Describe acres of fires contained and not contained by initial attack. Describe acres of resource benefits achieved by unplanned ignitions within the landscape. Where existing fuel treatments within the landscape are tested by wildfire, summary and reference the fuel treatment effectiveness report.

burning 33,651 acres.

If a wildfire interacted with a previously treated area within the CFLR boundary:

Each unit is required to complete and submit a standard fuels treatment effectiveness monitoring (FTEM) entry in the FTEM database (see FSM 5140) when a wildfire occurs within or enters into a fuel treatment area.

A Region 5 team is currently working on Fuels Treatment Effectiveness Monitoring, but the information is not available yet.

Please describe if/how partners or community members engaged in the planning or implementation of the relevant fuels treatment.

The Hat Creek/Old Station Fire Safe Council had engaged with the planning of the 2015 Old Station WUI Project. While the Dixie Fire did not directly impede on that project, the contingency operations did. Local tribes are engaged in project planning on all Hat Creek Ranger District projects.

Did treatments include coordinated efforts on other federal, tribal, state, private, etc. lands within or adjacent to the CFLR landscape?

The treatments that were impacted by the Dixie Fire involved National Forest System Lands.

What resource values were you and your partners concerned with protecting or enhancing? Did the treatments help to address these value concerns?

The collaborative places high importance on stand and forest resilience, wildlife enhancement, watershed protection, and cultural values at risk. CFLR fuels reduction projects did indeed help to local fire resilience.

Did the treatments do what you expected them to do? Did they have the intended effect on fire behavior or outcomes?

As a result of extended drought and extreme fire behavior, the Dixie Fire was extremely difficult to control. Project treatments were favorable to stopping the Northern portions of the fire. Under moderated fire behavior in less than the 90^{th} percentile weather conditions, the results of the work completed would be greater. In much of the project area, treatments reduced fire spread from active crown fire to manageable surface fire with good timber stand survival. In these areas the fire was able to be attacked directly using standard firefighting equipment.

What is your key takeaway from this event – what would you have done differently? What elements will you continue to apply in the future?

Thinning, fuels reduction, and prescribed burning are needed to treat current forest conditions. They improve forest health condition as well as the resiliency of watersheds, local communities, and other values at risk.

The Dixie Fire reenforced the lessons learned from the 2014 Bald Fire. Thinning and surface fuels reduction will reduce fire behavior. Future treatments need to have small openings to act as chimneys for the heat to vent out. Large areas of untreated fuels adjacent to fuel treatment areas

will impact treated areas. Thinning and surface fuels reduction needs to be on a landscape level in order to change fire behavior.

If a wildfire occurred within the CFLR landscape on an area planned for treatment but not yet treated:

The Dixie Fire burned approximately 33,651 acres of the Basins Project. Of this,

- 11,328 acres of this were within the Plum Project that were near implementation;
- 18,744 acres of the Badger Project were in the NEPA phase; and
- 3,578 acres, of the South Station Project Area were post-harvest, but several surface fuel treatments were being implemented.

3. What assumptions were used in generating the numbers and/or percentages you plugged into the TREAT tool?

Data for TREAT inputs were taken directly from TIM, PTSAR, FACTS, and Workplan.

Contract Funding Distributions[10]

Description	Project Percent
Equipment intensive work	0%
Labor-intensive work	0%
Material-intensive work	70%
Technical services	30%
Professional services	0%
Contracted Monitoring	0%
TOTAL	100%

Please provide a brief description of the local businesses that benefited from CFLRP related contracts and agreements, if known.

To the extent possible, given the limitations of the Forest Service contracting process, we have attempted to use local businesses to provide services for the project. Funds expended by our partners are more flexible in that they allow for a ten percent bid premium for local businesses. All service work was done by small businesses. Since workman's compensation insurance for labor intensive companies is substantially more expensive in California, contractors that perform those services mostly reside in Oregon.

[10] From the *Full Project Details* tab.

FY 2021 Modelled Jobs Supported/Maintained (CFLN and matching funding):

FY 2021 Jobs Supported/Maintained	Jobs (Direct) (Full & Part-time)	Jobs (Total) (Full & Part-time)	Labor Income (Direct)	Labor Income (Total)
Timber harvesting component	37	50	$2,074,528	$3,252,978
Forest/watershed restoration component	4	8	$166,917	$290,477
Mill processing component	22	56	$1,415,746	$911,546
Implementation and monitoring	4	4	$29,407	$34,675
Other project activities	0	0	$0	$0
TOTAL	68	118	$3,686,598	$4,489,677

4. Briefly describe community benefits that align with the CFLRP proposal and strategies socioeconomic goals. How has CFLR and related activities benefitted your community(ies) from a social and/or economic standpoint?

The Burney-Hat Creek Community Forest and Watershed Group (Collaborative) and Burney Basins Fire Safe Council (BBFSC) have completed multiple restoration projects on public, state, and private lands. These have been done to increase forest resilience, accelerate reforestation of severely burned stands, and reduce the risk of future catastrophic fire impacts to both communities and natural resources. Forest thinning through the diameter classes and other fuel treatments (e.g., mastication, prescribed fire) are being used to reduce forest biomass and surface fuels. This reduction helps to protect tree-based carbon stocks, improve growth rates and carbon uptake of residual trees, and minimize greenhouse gas released in the instance of wildfire.

In cooperation with many partners, we have obtained funding through California Climate Initiative and the Sierra Nevada Conservancy to implements these vital forest health projects.

Through the Collaborative Forest Landscape Restoration Program, the collaborative and the Forest Service have been able to accelerate, science-based ecosystem restoration projects on priority forest landscapes to:

- Encourage ecological, economic, and social sustainability;
- Leverage local resources with national and private resources;
- Facilitate the reduction of wildfire management costs, including through re-establishing natural fire regimes and reducing the risk of uncharacteristic wildfire;
- Demonstrate the degree to which various ecological restoration techniques achieve ecological and watershed health objectives; and
- Encourage utilization of forest restoration by-products to offset treatment costs, to benefit local rural economies, to and improve forest health.

The Bioenergy Cluster Project is a proposed plan to create 3 small scale community-based bioenergy facilities. The facilities would be less than 5MW in size and able to participate in renewable energy incentive programs. The project would sustainably harvest 90,000 bone dry tons of biomass per

year from both public and private land. https://www.fallriverRCD.org

The Eastern Shasta Recreation Plan. Together with the Sierra Nevada Conservancy and the Fall River Resource Conservation District, Symbiotic Restoration is facilitating the development of a recreation collaborative to advance local recreation projects. (http://Symbiotic Restoration/FallRiverMills,CA/Home)

Fire safe councils (FSC). Within the Basins Area, there are three FSCs: Burney, Hat Creek Valley, and Fall River Valley. Both Burney and Hat Creek have approved community wildfire protection plans (CWPP), and Fall River Valley's plan is expected to be completed before long. Burney FSC has been very successful in working together with the Fall River RCD to obtain grant funding for a variety of wildland urban interface projects (WUI). These include fuel breaks, strategic thinning projects, and a popular green waste program. A partnership between the Hat Creek FSC and USFS completed multiple fuel breaks around homes in addition to mapping homes within the wildland urban interface.

Shasta College. With funding from the Fall River RCD's CCI awards, as well as other grants, the college has continued to train and certify students for the forest and logging workforce. This is accomplished through an innovative training program that they designed specifically to build capacity within the California forest products industry. (http://shastacollege.edu/loggingops)

5. Based on your project monitoring plan, describe the multiparty monitoring process.

In 2021, the Sierra Institute for Community and Environment completed their evaluation of socioeconomic impacts of the Burney-Hat Creek Basins CFLR. They conducted interviews, workshops, a survey, and collected quantitative data over the course of 16 months to assess the status and trends of social and economic conditions within and surrounding the Basins Area. They used a prior stakeholder assessment, completed in 2010, as the baseline to determine the influence of the CFLRP on social and economic conditions. The Burney-Hat Creek Basins multiparty monitoring working group (MMWG) was engaged throughout the process to identify the analysis boundary, refine objectives, and ensure that local knowledge was incorporated into the assessment.

The socioeconomic monitoring process had several key findings and recommendations. Monitoring identified a link between CFLRP funding and treatments implemented on Forest Service lands, yet considerable private and non-Forest Service work was leveraged by the Burney-Hat Creek Community Forest and Watershed Group (the collaborative) and the CFLRP. Over time, the CFLRP has been successful at increasing the acreage of restoration treatments completed by doing this between private and public entities that are engaged in the collaborative. These relationships took years to build, but momentum has slowly grown, increasing the likelihood that treatments and related work will continue in the coming years, even after CFLRP funding ends. Building the capacity of partner organizations and investing in the local workforce are two key areas in which the CFLRP has benefited the local economy and communities and should be a continued focus in the future.

Ecological Monitoring

Both the pandemic and the Dixie Fire significantly impacted ecological monitoring efforts in 2021; however, key partnerships with universities and state agencies allowed us to address a subset of the key monitoring questions identified in the Multiparty Monitoring Plan (MMP). Their accomplishments, as well as those of other collaborators, are summarized below. The specific

monitoring question (MQ) identified in our monitoring strategy is also provided in parentheses. The link to our most current monitoring plan and results can be found at https://www.fallriverRCD.org/monitoring-reports.

Landscape scale monitoring: In an effort to support the CFLRP's efforts to strategically plan, implement, monitor, and communicate fuels reduction and forest restoration projects at the landscape scale, partners from 34 North and the Fall River RCD combined efforts to develop a web-based mapping and planning tool (https://burneyhatcreek.opennrm.org/). It provides multi-stakeholder access to over 175 regional and local datasets and has played a key role in the collaborative's planning efforts. This online platform also contains spatial outputs from landscape-scale assessments that were completed to address the questions identified in the new *Common Monitoring Strategy for the Collaborative Forest Landscape Restoration Program*. These include a Quantitative Wildfire Risk Assessment for the CFLRP as well as data from the Forest Service Terrestrial Conditions Assessment. This data platform is ongoing as part of a larger effort to increase project scale and cross-boundary collaboration.

Wildlife: To collect baseline data, Hat Creek RD wildlife biologists revisited previously occupied spotted owl and northern goshawk nest sites and conducted habitat surveys within the Badger Project Area and Sluice Box and Whittington Timber Sales. As a result of these efforts, three new nest sites were documented, and treatment activities were adjusted to avoid impacts.

To assess whether treatments within spotted owl protected activity centers (PACs) create, retain, or enhance key habitat features (MQ WL.1.1.), the University of Wisconsin-Madison bioacoustics survey team deployed 23 autonomous recording units (ARUs) within or on the edge of 11 California spotted owl and northern goshawk PACs within the Badger Project Area; 13 additional ARUs were deployed outside of PACs within the Badger Project Area. These units were deployed for 30–34 days and were programmed to record continuously every night. Data processing of these recordings has begun, with preliminary results expected in 2022.

To evaluate the effects of thinning treatments on key wildlife habitat features (MQ WL.1.1), the UC Davis ecology field crew re-measured 39 previously established field plots in spotted owl home range core areas (HRCAs). Plots were established prior to treatment in 2018 within the Whittington and North 49 Project Areas and were treated in 2020 and 2021. Data collection focused on wildlife-related habitat variables, such as tree size and density, overstory cover, density of large and small snags, and abundance of down logs.

Meadow restoration and aquatic resources: The Big Lake Meadow Restoration Project continues to provide an excellent opportunity to determine how meadow restoration treatments, such as thinning, affect wetland-associated plant species, meadow water availability, and important aquatic dependent species. Data collection in 2021 occurred two years after hand thinning treatments were implemented in and around the lake in 2019. Hydrologic data were collected in 2021 from four piezometers distributed throughout the project area (MQ EC1.3).

Partners from PSW and WSU continued to collect and analyze data to assess whether conifer thinning around Big Lake contributed to the maintenance and/or restoration of habitat for the southern long-toed salamander (*Ambystoma macrodactylum sigillatum*). Drift fences (n=96) were set up and monitored in control and treatment plots at the forest edge around the lake. Monitoring data collected in these plots, both prior to treatment (3 years) and following treatment (2 years), are currently being analyzed and will further refine our understanding of the impacts of treatments on upland dispersal of both adult and metamorphosed amphibians.

Hydrologic Resources: In 2021, the collaborative group of researchers led by the University of Nevada, Reno and the district disassembled and removed all the equipment from the Ashpan monitoring site situated in the southwestern portion of the CFLRP area. Continuous hydrologic monitoring data, which were collected between 2013-2019, are currently being used to assess the effects of different thinning treatments on soil moisture and snowpack (MQ HYD 1.1. and HYD 1.2.). All data are available online at the CUAHSI Water Data Services Portal (http://hiscentral.cuahsi.org/pub_network.aspx?n=5672). A professional manuscript is in the final stages of being prepared, as noted in the *Media Recap Section* of this Document.

Soils: In 2021, Lassen NF Staff completed the final report summarizing the results of monitoring post-fire salvage logging impacts on soil cover. In collaboration with the Forest Service Remote Sensing Applications Center (RSAC), forest personnel collected and analyzed over 300 digital photographs of the soil surface, taken along transects in 2016 and 2017, in areas that were salvage logged and left untreated (i.e., leave islands) following the 2014 Eiler Fire. The results of this monitoring suggest that post-fire logging can initially reduce plant cover; for example, plant cover measured one and two years after treatment averaged 34% and 59% respectively, in untreated areas and 13% and 39% in treated areas. Two years after treatment, these increases in vegetative cover, combined with coarse woody debris inputs (i.e., from breakage of limbs during salvage operations) and naturally high cover of rock, resulted in adequate soil cover (88% cover in the salvage units and 91% cover in the controls), greatly reducing the risk of erosion.

Botanical Resources: Baseline botanical surveys for noxious weeds and special status plant species (threatened, endangered, sensitive or special interest, including Baker cypress) were conducted on approximately 5,775 acres within the Backbone Project Area. Invasive plant treatments were completed and evaluated on 4.5 acres within the CFLRP.

In 2021, the UC Davis Ecology crew re-measured five (200 m^2) permanent monitoring plots established to evaluate sage brush steppe understory plant community response to juniper removal treatments. Plots were established prior to treatment in 2015 and treatments were completed in 2020 and 2021. Post-treatment data collection included understory plant species diversity and cover, as well as overstory juniper density and cover.

6. FY 2021 Agency Performance Measure Accomplishments

Performance Measure[11]	Units	Total Units Accomplished	Total Treatment Cost (contract)[12]
Acres of forest vegetation established FOR-VEG-EST	Acres	0.0	$0
Acres of forest vegetation improved FOR-VEG-IMP	Acres	174.0	*unavailable*
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acres	4.3	*unavailable*
Highest priority acres treated for invasive terrestrial and aquatic species on NFS lands INVSPE-TERR-FED-AC	Acres	0.0	$0

[11] Units accomplished should match the accomplishments recorded in the Databases of Record. For CFLRP projects under the CFLRP Common Monitoring Strategy, items marked with a * help to address the core CFLRP common monitoring strategy question, "Did CFLRP increase economic utilization of restoration byproducts?"

[12] Please include the costs associated with a contract to complete acres reported, if this level of detail is available, including partner funds.

Performance Measure[11]	Units	Total Units Accomplished	Total Treatment Cost (contract)[12]
Acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions. S&W-RSRC-IMP	Acres	0.0	$0
Acres of lake habitat restored or enhanced HBT-ENH-LAK	Acres	0.0	$0
Miles of stream habitat restored or enhanced HBT-ENH-STRM	Miles	0.0	$0
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres	0.0	$0
Acres of rangeland vegetation improved RG-VEG-IMP	Acres	0.0	$0
Miles of high clearance system roads receiving maintenance RD-HC-MAIN	Miles	0.2	*unavailable*
Miles of passenger car system roads receiving maintenance RD-PC-MAINT	Miles	158.6	*unavailable*
Miles of road decommissioned RD-DECOM	Miles	0.0	$0
Miles of passenger car system roads improved RD-PC-IMP	Miles	0.0	$0
Miles of high clearance system road improved RD-HC-IMP	Miles	0.0	$0
Road Storage[13]	Miles	0.0	$0
Number of stream crossings constructed or reconstructed to provide for aquatic organism passage STRM-CROS-MTG-STD	Num.	0.0	$0
Miles of system trail maintained to standard TL-MAINT-STD	Miles	0.0	$0
Miles of system trail improved to standard TL-IMP-STD	Miles	0.0	$0
Miles of property line marked/maintained to standard LND-BL-MRK-MAIN	Miles	0.0	$0
Acres of forestlands treated using timber sales TMBR-SALES-TRT-AC	Acres	938.0	*unavailable*
Volume of Timber Harvested TMBR-VOL-HVST	CCF	0.0	$0
Volume of timber sold TMBR-VOL-SLD	CCF	533.0	*unavailable*
Green tons from small diameter and low value trees removed from NFS lands and made available for bio-energy production BIO-NRG	Green Tons	230.0	*unavailable*

[13] While this isn't tracked in the USFS Agency database, please provide road storage miles completed if this work is in support of your CFLRP restoration strategy for tracking at the program level.

Performance Measure[11]	Units	Total Units Accomplished	Total Treatment Cost (contract)[12]
Acres of hazardous fuels treated outside the wildland/urban interface (WUI) to reduce the risk of catastrophic wildland fire FP-FUELS-NON-WUI	Acre	3,605	*unavailable*
Acres of wildland/urban interface (WUI) high priority hazardous fuels treated to reduce the risk of catastrophic wildland fire FP-FUELS-WUI	Acres	382.0	*unavailable*
Acres mitigated FP-FUELS-ALL-MIT-NFS	Acres	4,529	$0
Please also include the acres of prescribed fire accomplished	Acres	2,072	$0
(Optional) Other performance measure not listed above	--		
(Optional) Other performance measure not listed above	--		

7. The Washington Office (Enterprise Data Warehouse) will use spatial data provided in the databases of record to estimate a treatment footprint for each CFLRP project's review and verification.

Time Period	Footprint of Acres Treated[14]
FY 2021	4,816
Total (2011- 2021)	46,585

8. Describe any reasons that the FY 2021 annual report does not reflect your project proposal, previously reported planned accomplishments, or work plan.

Two timber projects were sold in FY21 but not awarded since the forest does not currently have a Resource Specialist to do this in Timber Information Manager (TIM).

Sale Sold but Unawarded	Volume (CCF)
Whittington MP Thin	28,825
Manzanita Chutes Stewardship	12,460
Total	41,285

Several Basins projects were affected by the 963,300-acre Dixie Fire. Additionally, both suppression repair and BAER implementation work will continue well into 2022. Approximately 33,651 acres of

[14] Without counting an acre of treatment on the land in more than one treatment category.

the Basins Project Area were burned in the incident.

Photo 7 – The Dixie Fire's flame front had just left the Badger Project Area and charged Old Station, California. ©Matthew Henderson, Henderson Fire Media. Used with permission.

As noted above, this included:

- 11,328 acres or 62% of the 18,253-acre Plum Restoration Project Area, with 81% of that being at moderate to high-severity. Within the Plum Project two timber sales had been prepared containing almost 4,000 acres of treatment were burned;
- 18,744 acres of the Badger Project that was in the NEPA phase or 51% of the project area; and
- 3,578 acres, of the South Station Project Area was in the post-harvest phase, with several surface fuel treatments are currently being implemented.

Currently mill capacity is very limited locally as result of the millions of acres that were burned and the associated salvage from private lands. There has been some interest in the Basin Area's salvage material, if we are able to get it out soon and harvesting operations can occur this winter.

The district is hoping to complete the following salvage sales in FY22:

Proposed Sale	Approx. Volume (CCF)
Dixie Decks	4,000
Highway 44 Hazard Decks	3,420
Plum North Salvage	18,000
Plum South Salvage	18,000
South Station Salvage	12,000

Total	55,420

FY 2021 Additional accomplishment narrative – If desired, please use this space to describe additional accomplishments the CFLRP project participants are proud of from FY21 not already described elsewhere in this report.

Planning

LNF and the collaborative are currently planning several projects, which are in different stages of development. These include:

Badger Restoration Project: The public scoping document for the Badger was published in February 2021 and received a high degree of public support. Its project area has been substantially impacted by the Dixie Fire, as stated above. The goal of the 40,000-acre project continues to be to implement forest health and hazardous fuels reduction activities, as well as to improve watershed condition, which together would increase landscape-level resilience to disturbance, including that from fire, insects, disease, and drought. Salvage of fire-affected trees will be assessed in the NEPA document. The timeline currently calls for this to be completed in the spring of 2022.

Backbone Project: Public scoping of the 7,600-acre Backbone Project will be complete this calendar year with a decision slated for mid-2022. It is being developed in partnership with the Fall River RCD, with a goal to implement forest health and hazardous fuels reduction activities, as well as improve watershed condition, in the landscape between the Latour State Forest and the Thousand Lake Wilderness Area. These activities would increase landscape-level resilience to disturbance, including that from fire, insects, disease, and drought.

Soldier Mountain Project: The Hat Creek Ranger District and the Fall River RCD are moving forward with the Soldier Mountain Wildland Urban Interface (WUI) Project. The primary purpose of the project is to reduce fuel levels and increase fire resiliency on 3,000 acres of National Forest System (NFS) Lands adjacent to the communities of Glenburn and Dana, in Shasta County, California. This project was strongly supported by the collaborative. The District and project partners have prioritized the Soldier Mountain WUI Project due to a combination of excessive fuel levels, proximity to residences and critical infrastructure, and frequency of public use. Forest fuel conditions in the project area support high severity wildfires and present a risk to emergency responders, the public, and forest resources.

Proposed treatments include thinning, mastication, machine piling, road improvements, and the use of prescribed fire. Reforestation of areas burned by the 2005 Brown Fire and restoration of meadow habitat along Soldier Creek were also approved.

2014 Hat Creek Fire Restoration Project: A DN/FONSI was signed for the 2014 Hat Creek Fire Restoration Project EA. The project will consist of site preparation activities, including the use of herbicides, to restore landscapes that burned in the 2014 Bald and Eiler Fires. This was necessary because of the rapidly decreasing survival rates of reforestation activities within the Bald and Eiler Footprints. The Forest Service continues to partner with the Fall River RCD to both plant and replant stands and to control noxious weeds.

Timber

Sales: In addition to salvage efforts on the Dixie Fire, four green timber sales are planned for FY22:

Planned Green Sales (FY22)	Volume (CCF)
Bailey (Cabin EA) Stewardship	10,754
Crossroads Stewardship	5,630
49er (North 49 EIS)	21,998
Thousand Springs Stewardship	9,322
Total	47,704

Service Contacts: In FY22, contracts will be awarded in the Eiler Fire, Plum, and North 49 Projects for a variety of work. This includes site preparation, tree planting, mastication, burn preparation, pre-commercial thinning, grapple piling, and meadow restoration.

Fire/Fuels

The Hat Creek Ranger District plans on implementing the following prescribed fire projects within the Basins Area. Please note that all accomplishments are dependent upon both weather and air quality.

Underburning: Within the Eastside Underburn Project, many stands have already had an entry with prescribed fire. Since the fall burn window was lost and grass greened up in the spring, opportunities for burning are limited. Nevertheless, the current plan is to underburn 500 acres.

Hand Piles: Within the Basins Area, 200-300 acres of hand piles exist, which were built as a part of various projects.

Dixie Fire Repair/BAER: Efforts to repair fire lines, roads, and watersheds affected by the Dixie Fire itself and suppression activities will continue throughout FY22.

Photo 8 - Plantation Thinning and Mastication, North 49 Forest Health Recovery Project

Photo 9 - Sage Flat Restoration, Plum Restoration Project

(*OPTIONAL*) FOR INTERNAL USE: The following responses are directed towards feedback on *internal* bottlenecks or issues that may impact your project. Please use this space to raise awareness on key internal issues, or opportunities to improve processes moving forward. Responses will be included in an internal document. What are the limiting factors to success

or more success of the CFLR? How can the National Forest and its collaborators operate in a more integrated and synergized way?

If the Forest Service is to stay relevant in the collaborative management of the Basins Area, the District and Forest need to be able to continue providing personnel, expertise, and financial resources for the united effort. Not only have new and novel approaches to a host of problems been developed, but momentum also continues to build in the collaborative as partners are growing into their roles.

No one in the collaborative is willing for this to be a plateau; everyone involved knows that this group is still capable of much more. Tantalizing new ideas and their attendant synergies are on the horizon. The trust—the excitement—that has been built ensures that the work will continue even though the original CFLR project is drawing to a close. We all agree; too much has been accomplished to allow it to fade. We love this landscape and our communities, and are all committed to them. This is our home.

11. Please include an up-to-date list of members of the collaborative if it has changed from previous years.

Last	First	Affiliation	Email	Subcommittees, etc.
Babcock	Kelly		kelly.babcock@dot.ca.gov	
Baker	Zalynn	Off. Emergency Services PRT	zbaker@pitrivertribe.org	
Bell	Dan	McArthur-Burney Falls SP	daniel.bell@parks.ca.gov	
Buckley	Steven	NPS	Steve_Buckley@nps.gov	Agenda Sub., Strategic Planning Sub.
Bumpass	Deb	USFS	deb.bumpus@usda.gov	
Carter	Alex	The McConnell Foundation	acarter@mcconnellfoundation.org	Strategic Planning Subcommittee
Coppoletta	Michelle	USFS	mcoppoletta@fs.fed.us	Monitoring Wrkng Grp, Strategic Plan.
Costello	Garrett	Fall River RCD	symbioticrestoration@gmail.com	Agenda Subcommittee
Curtis	Don	Hat Creek Firesafe Council	dfcurtis530@yahoo.com	
Danzuka	Orvie	Pit River Tribe	odanzuka@pitrivertribe.org	
Fullerton	Andrew	Sierra Pacific Industries	AFullerton@SPI-ind.com	
Gemmill	Mickey	Pit River Tribe	resistanceresistance@outlook.com	
Giacomini	Pam		pam@hatcreekgrown.com	Strategic Planning Subcommittee
Graves	Melinda	NRCS	Melinda.Graves@ca.usda.gov	
Hathaway	Abe	Burney Fire Dept.	c17@burneyfireems.org	
Heide	Frank	USFS	frank.heide@usda.gov	Strategic Planning Subcommittee
Hullquist	Tyler	CAL FIRE	tyler.hullquist@fire.ca.gov	
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Mayer	Greg	USFS	gmayer@fs.fed.us	Agenda Subcommittee
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Moghaddas	Jason	SIG	jmoghaddas@sig-gis.com	Strategic Planning Subcommittee
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Oldson	Sarah	Cascade Resource Cons. LLC	saraho@crcforestry.com	
Osti	Amye	34 North	Amye@34north.com	Strategic Planning Subcommittee
Palmieri	Brendan	34 North	brendan@34north.com	Strategic Planning Subcommittee
Potts	Tuli	Sierra Nevada Conservancy	Tuli.Potts@sierranevada.ca.gov	North Subregion Area Representative
Puterbaugh	Patricia	Lassen Forest Preservation	pmputerbaugh@yahoo.com	

Last	First	Affiliation	Email	Subcommittees, etc.
Revheim	Ryan	PG&E	RGRR@pge.com	
Richardson	Jim	NPS	jim_richardson@nps.gov	
Rickert	Mary	County Supervisor	mrickert@co.shasta.ca.us	
Rodgers	Kyle	Sierra Institute	krodgers@sierrainstitute.us	
Rowe	Benjamin	CAL FIRE	benjamin.ROWe@fire.ca.gov	
Sanches	Adrian	USFS	adrian.sanchez@usda.gov	
Sanders	Hilary	Sierra Institute		
Sloat	Todd	Fall River RCD	trsloat8@gmail.com	Agenda Sub., Strategic Planning Sub.
Stevenson	Sharmie	Fall River RCD	sharmie@frontiernet.net	
Taylor	Tami	USFS	tamera.taylor@usda.gov	
Wall	Robin	USFS	robin.k.wall@usda.gov	
Watson	Zoe	Sierra Institute	zwatson@sierrainstitute.us	
Wheelock	Shawn	USFS	swheelock@fs.fed.us	
White	Charles	Pit River Tribe	administrator@pitrivertribe.org	
Willmore	Skip	Consultant	willmore@frontiernet.net	
Wilson	Gary	Pit River Tribe	22gwilson@gmail.com	
Wolfin	Feather	Pit River Tribe	doahiwolfin@yahoo.com	
Wolfin	Gregory	Pit River Tribe	gwolfin@pitrivertribe.org	

Media Recap

News Release

A USGS California Water Science Center news release about the publication of "Airborne thermal infrared imagery and longitudinal stream temperature profiles, Hat Creek, California, August 2018" is located at: https://www.usgs.gov/news/airborne-thermal-infrared-imagery-and-longitudinal-stream-temperature-profiles-hat-creek.

Scientific Literature

Curtis, J.A., Torgersen, C.E., Diabat, M., Mejia, F.H., Marcelli, M.F., Burns, E.R., Wheelock, S.J., and Slotke, A. (2021). Airborne thermal infrared imagery and longitudinal stream temperature profiles, Hat Creek, California, August 2018: U.S. Geological Survey data release, https://doi.org/10.5066/P9DMJYT7.

Marcelli, M.F., Burns, E.R., Meigs, A, Muffler, L.J.P., Curtis, J.A. (2020). The effect of structure on groundwater and surface-water interactions in the volcanic aquifers of the Hat Creek Valley, California, USA, Geological Society of America Abstracts with Programs. Vol 52, No. 6, doi: 10.1130/abs/2020AM-358642 (*previously unreported*)

Marcelli, M.F., Burns, E.R., Meigs, A, Sweetkind, D.S. (2019) Implications of structural geology and volcanism for the regional hydrology in the Pit River Drainage Basin, Northern California, USA, Geological Society of America Abstracts with Programs. Vol. 51, No. 4, doi: 10.1130/abs/2019CD-329683 *(previously unreported)*

Hardage, K., Wheelock, S.J., Gaffney, R., O'Halloran, T., Serpa, B., Grant, G., Coppoletta, M., Tague, C., Staudacher, M., Tyler, S.W. (2022 – in final preparation). Hydrologic Response to Forest Density Management in a Coniferous Mediterranean Forest during Extremes of Precipitation, to be submitted to Frontiers in Forests and Global Change, Forest Hydrology.

Marcelli, M.F. (2020). The Effects of Structure and Volcanic Stratigraphy on Groundwater and Surface Water Flow: The Hat Creek Basin Case Study, California, USA. Master's Thesis, Oregon State University. Nov. 20, 2020. URL: https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/wm117w505.

Two additional scientific manuscripts for professional publication are currently being prepared.

(Optional) For CFLRP Projects in the final year of their initial 10-year funding plans: Please use this space to provide any key reflections on lessons learned and opportunities for improvement for CFLRP moving forward – this could be bullets, a few brief paragraphs, or links to reports you would like to share on this topic.

From the perspective of the Project Coordinator, the top-five items are:

1. Shared Stewardship: Our partners are collaborating, using the best available science and spending a lot of money, on projects. Therefore, they should be afforded some decision-making space. How we manage risk in order to increase pace and scale is the most important question. I think if we do not start to allow them this role, they are going to take their funds and personnel elsewhere. Furthermore, unlike the USFS, their contracting process permits a 10% premium for local businesses, which allows funds to be reinvested in the community.
2. Environmental Documents: The new guidelines state we are supposed to be able to produce an EA in a year and an EIS in two years. In reality, we do not even get close to this ideal and our projects keep burning while they are in the planning process (see above). NEPA was never designed to be a stumbling block. It was intended as a process to outline the existing and desired conditions and what actions are needed to reach desired conditions without causing significant impacts. This new reality, where we keep losing land before we can complete NEPA, and where we cannot treat in PACs, is a recipe for disaster.
3. Inherently Governmental: Is there room for adjustment in the Grants and Agreements (agreements), Valuation (appraisals) and Engineering (roads) process to move projects forward in a more efficient and expedient manner?
4. Agency Performance Measure Accomplishments: We need fewer databases to track accomplishments in order to have higher accuracy in the reporting phase.
5. Filling Critical Positions: As employees have been tending to change positions more often, the common practice of leaving positions unfilled has had a significant, adverse effect on both project consistency and completion.

Signatures:

Recommended by (Project Coordinator): _*/s/ Greg Mayer*

Approved by (Forest Supervisor): _____

Draft reviewed by (collaborative chair or representative): /s/ Todd Sloat