CFLRP Project Name (CFLR#): Dinkey CFLR007
National Forest(s):

1. Executive Summary

Briefly summarize the top ecological, social, and economic accomplishments your CFLRP project participants are most proud of from FY23 and any key monitoring results. This is a space for key take-home points (< 500 words). On the High Sierra District, we were able to provide more funding to remove fuels from the projects where it is in overabundance. We also accomplished pile burning in the landings so that when we begin the 2024 field season we will continue with logging operations.

2. Funding

CFLRP and Forest Service Match Expenditures

Fund Source: CFLN and/or CFIX Funds Expended	Total Funds Expended in Fiscal Year 2023
CFIX CFLN23 TOTAL	$ 322,432 $ 1,481,384 **$ 1,803,816**

This amount should match the amount of CFLN/CFIX 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.

Fund Source: Forest Service Salary and Expense Match Expended	Total Funds Expended in Fiscal Year 2023
NSCF0723 TOTAL	$ 30,000 $30,000*

*These fund sources did not match the amount of matching funds in the FMMI CFLRP expenditure report for Salary and Expenses. The official FMMI total was $0. Staff time spent on CFLRP proposal implementation and monitoring may be counted. When employees were working within the CFLR boundary they were given this code as a match. as CFLRP match – see Program Funding Guidance.

Fund Source: Forest Service Discretionary Matching Funds	Total Funds Expended in Fiscal Year 2023
	$0

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 as match if aligned with CFLRP proposal implementation.

Partner Match Contributions[1]

Fund Source: Partner Match	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY23	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
Dinkey Collaborative Members	☒ In-kind contribution ☐ Funding	$60,000	Collaborative members attended fieldtrips to observe the work completed.	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
National Forest Foundation	☐ In-kind contribution ☒ Funding	$29,000	Setting up coordination with contractors for work in Grade Mdw and Barnes south	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
Big Sandy Rancheria workforce	☒ In-kind contribution ☐ Funding	$27,000	Tribal members did meadow restoration at Grade Mdw which is in the collab. boundary	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:

Total In-Kind Contributions: $87,000
Total Funding: $29,000

Total partner in-kind contributions for implementation and monitoring of a CFLR project across all lands within the CFLRP landscape.

Goods for Services Match

Service work accomplishment through goods-for services funding within a stewardship contract (for contracts awarded in FY23)	Totals
Total revised non-monetary credit limit for contracts awarded in FY23	$0
Revenue generated through Good Neighbor Agreements	**Totals**
	$

"Revised non-monetary credit limit" should be the amount in the "Progress Report for Stewardship Credits, Integrated Resources Contracts or Agreements" as of September 30. Additional information on the Progress Reports available in CFLR Annual Report Instructions. "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 proposal and work plan.

[1] Addresses Core Monitoring Question #13

3. Activities on the Ground

FY 2023 Agency Performance Measure Accomplishments[2] - Units accomplished should match the accomplishments recorded in the Databases of Record. Please note any discrepancies.

Core Restoration Treatments	Agency Performance Measure	NFS Acres	Non-NFS Acres	Total Acres
Hazardous Fuels Reduction (acres) in the Wildland Urban Interface	FP-FUELS-WUI (reported in FACTS)[3]	112	0	0
Hazardous Fuels Reduction (acres) in the Wildland Urban Interface - COMPLETED	FP-FUELS-WUI-CMPLT (reported in FACTS)[4]	218	0	220
Hazardous Fuels Reduction (acres) outside the Wildland Urban Interface	FP-FUELS-NON-WUI (reported in FACTS) [3]	0	0	0
Hazardous Fuels Reduction (acres) outside the Wildland Urban Interface - COMPLETED	FP-FUELS-NON-WUI-CMPLT (reported in FACTS) [4]	220	0	218
Wildfire Risk Mitigation Outcomes - Acres treated to mitigate wildfire risk	FP-FUELS-ALL-MIT-NFS (reported in FACTS – *NOTE: this performance measure will not show up in the CFLRP gPAS report, please report totals directly from FACTS*)	170	0	117
Prescribed Fire (acres)	Activity component of FP-FUELS-ALL (reported in FACTS - *NOTE: this performance measure will not show up in the CFLRP gPAS report, please report totals directly from FACTS*)	557	0	557
Invasive Species Treatments (acres) - Noxious weeds and invasive plants	INVPLT-NXWD-FED-AC (reported in FACTS)[3]	15	0	15
Invasive Species Treatments (acres) - Noxious weeds and invasive plants - COMPLETED	INVPLT-NXWD-FED-AC-CMPLT (reported in FACTS)[4]	0	0	0
Invasive Species Treatments (acres) - Terrestrial and aquatic species	INVSPE-TERR-FED-AC (reported in FACTS)[35]	0	0	0
Invasive Species Treatments (acres) - Terrestrial and aquatic species - COMPLETED	INVSPE-TERR-FED-AC- CMPLT (reported in FACTS)[46]	0	0	0
Road Decommissioning (Unauthorized Road) (miles)	RD-DECOM-NON-SYS (Roads reporting)	0	0	0

[2] This question helps track progress towards the CFLRP projects lifetime goals outlined in your CFLRP Proposal & Work Plan. Adapt table as needed.

[3] For service contracts, the date accomplished is the date of contract award. For Force Account, the date accomplished is the date the work is completed

[4] New Agency measure reported in FACTS when completed

[3] For service contracts, the date accomplished is the date of contract award. For Force Account, the date accomplished is the date the work is completed

[4] New Agency measure reported in FACTS when completed

Core Restoration Treatments	Agency Performance Measure	NFS Acres	Non-NFS Acres	Total Acres
Road Decommissioning (National Forest System Road) (miles)	RD-DECOM-SYS (Roads reporting)	0	0	0
Road Improvement (High Clearance) (miles)	RD-HC-IMP-MI (Roads reporting)	0	0	0
Road Improvement (Passenger Car System) (miles)	RD-PC-IMP-MI (Roads reporting)	0	0	0
Road Maintenance (High Clearance) (miles)	RD-HC-MAINT-MI (Roads reporting)	8.45	0	0
Road Maintenance (Passenger Car System) (miles)	RD-PC-MAINT-MI (Roads reporting)	0	0	0
Trail Improvement (miles)	TL-IMP-STD (Trails reporting)	0	0	0
Trail Maintenance (miles)	TL-MAINT-STD (Trails reporting)	0	0	0
Wildlife Habitat Restoration (acres)	HBT-ENH-TERR (reported in WIT)	0	0	0
Stream Crossings Mitigated (i.e. AOPs) (number)	STRM-CROS-MITG-STD (reported in WIT)	0	0	0
Stream Habitat Enhanced (miles)	HBT-ENH-STRM (reported in WIT)	0	0	0
Lake Habitat Enhanced (acres)	HBT-ENH-LAK (reported in WIT)	0	0	0
Water or Soil Resources Protected, Maintained, or Improved (acres)	S&W-RSRC-IMP (reported in WIT)	0	0	0
Stand Improvement (acres)	FOR-VEG-IMP (reported in FACTS)	547	0	547
Reforestation and revegetation (acres)	FOR-VEG-EST (reported in FACTS)	31	0	31
Forests treated using timber sales (acres)	TMBR-SALES-TRT-AC (reported in FACTS)	327	0	327
Rangeland Vegetation Improvement (acres)	RG-VEG-IMP (reported in FACTS)	0	0	0

- **Is there any background or context you would like to provide regarding the information reported in the table above?**

The information above is accurate from the reports that were pulled from the FACTS database. The work accomplished further enhances opportunities to protect the wildland urban interface as well as forest structure that currently remains on the district. A large portion of the area in the collaborative boundary was not burned in the 2020 Creek fire; therefore, we want to act on protecting the remaining green forest.

Reflecting on treatments implemented in FY23, if/how has your CFLRP project aligned with other efforts to accomplish work at landscape scales?

After numerous consecutive years of dealing with Forest-Level emergencies year after year, the Sierra NF staff has finally had a break in this trend where we were able to develop a forward-looking, Forest-Scale restorative plan. In this effort, we have developed a 5-year prioritized vegetation program of work, centered around landscape-scale restoration in response to numerous fires, tree mortality and storm damage. At the heart of this effort, literally and figuratively, is the Dinkey CFLRP landscape. The Dinkey footprint has indeed been impacted by the disasters mentioned, and as such, is a core component of our restorative efforts. Figuratively speaking, we are tremendously fortunate to have the assembly of individuals and organizations in the Collaborative that we do – it's essentially an all-star list of stakeholders whose

expertise and knowledge we leverage not just for the Dinkey footprint, but as a part of our overall Forest restorative effort as well.

4. Restoring Fire-Adapted Landscapes and Reducing Hazardous Fuels

Narrative Overview of Treatments Completed in FY23 to restore fire-adapted landscapes and reduce hazardous fuels, including data on whether your project has expanded the pace and/or scale of treatments over time, and if so, how you've accomplished that – what were the key enabling factors?

Please also consider the narrative language included at the end of Section "3" for this response. Continuing from the thoughts provided in that section, the Sierra NF overall has indeed increased its pace and scale, by an order of magnitude and then some, in terms of projects being executed on the Forest. We have aggressively sought multiple funding opportunities, to the point where our annual appropriated funds now make up perhaps only 25% of our overall program of work. Stated a bit more directly, we are currently executing three times above and beyond what we are annually funded to produce. This is a possibility, as a result of the implementation of a new Business Model on the Forest, allowing us to leverage our limited staff time to the maximum extent possible by way of contracts, and partnerships of all types and sizes. This dramatic increase was driven out of necessity, as we are in a very high-stakes race to get landscape-level restoration implemented on the Forest, before nature resets what the Sierra NF could be in the future; which in large part, would be an almost unrecognizable brush field. It is particularly noteworthy that this is all being accomplished outside of the USFS focus on WCS designated landscapes; of which the Sierra NF is currently not one.

Also important to note at a more focused scale, the areas for burning were prioritized for treatment based on where we have ordered trees and need to prepare for the 2024 planting season. We also needed to burn where they were going to need landings for next year's logging operations. We have three projects that will be ongoing in 2024.

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

We did not have wildfire within the collaborative boundary in 2023.

FY23 Wildfire/Hazardous Fuels Expenditures

Category	$
FY23 Wildfire Preparedness*	$167,000
FY23 Wildfire Suppression**	0
FY23 Hazardous Fuels Treatment Costs (CFLN, CFIX)	0
FY23 Hazardous Fuels Treatment Costs (other BLIs)	0

* 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).

** Include emergency fire suppression and BAER within the project landscape.

How may the treatments that were implemented contribute to reducing fire costs? If you have seen a reduction in fire suppression costs over time, please include that here. (If not relevant for this year, note "N/A")

The costs calculated above were derived from taking into account the prescribed fire acres listed in Section 3 (557 acres) and multiplying it at $300/acre. This gave a total of $167,000. There were no emergency fire suppression activities within the CFLR boundary for 2023.

5. Additional Ecological Goals

Narrative Overview of <u>Treatments Completed in FY23</u> to achieve ecological goals outlined in your CFLRP proposal and work plan. This may include, and isn't limited to, activities related to habitat enhancement, invasives, and watershed condition.

The overall strategy for the Dinkey CFLR areas is to implement restoration treatments that are collaboratively developed to achieve multiple goals: reduce hazardous fuels, retain, and promote large tree and denning/nesting structures needed by Pacific fisher and California spotted owl, promote stand and landscape heterogeneity, and provide sufficient natural regeneration of shade-intolerant species for the creation of future fire-adapted forests. A major goal of this restoration strategy is to provide current and future habitat for sensitive wildlife species by fostering ecosystem resilience, resistance, and adaptation to future wildfires and accelerated climate change impacts. This has been accomplished with the projects listed below.

Exchequer

Exchequer Meadow Restoration Beaver Dam Analog:

The installation of about 45 BDAs in three small stream channels located in the middle and southern sections of Exchequer meadow occurred in September 2023 as a start to the Exchequer Meadow Restoration Project. Project related materials were collected directly in the meadow (i.e. trees along the streambanks, sod) and were used to create dams that will collect sediment and fill pools naturally to start the process of raising the water table back to historic levels. Improvements to the water table were noticed immediately during installation in some areas of the meadow. Water flow was also able to be reestablished to historic channels and are expected to create additional areas in the meadows of YT breeding habitat. Trees were also felled in strategic locations to assist with diverting cattle away from these sensitive restoration areas and help and break up current issues with water flow in these trails. Follow up BDA restoration will occur in 2024. Mechanical removal of trees in and around the perimeter of the meadow has not occurred to date.

- Operations continued doing roadside hazard and unit timber thinning and biomass treatment. To date this season, we've thinned 313 acres (26,445.23 tons), biomassed 210 acres, and treated 3.9 miles of roadside hazard. We added 1,000 tons of cull log removal to the contract, using $5,544 of CFLR funding.

Swanson

- Operations continued doing salvage removal in Creek fire areas and treatments in green units along Dinkey Creek Rd. To date this season, we've thinned salvaged/343 acres (3,065.3 CCF), biomass 145 acres, treated 3.5 miles of roadside hazard, 94.16 acres of WUI treatment, 128.9 acres of site prep, and removed 1,000 tons of cull logs. Modifications to add cull log removal and WUI treatments used $1,646,503 of CFLR funding.

Cow

- Operations were completed this season. We thinned 211 acres (1,202.99 CCF) and machine piled 242 acres. Modifications to add machine piling of log slash used $44,462.74 in CFLR funding

Overall Wildlife information

- The district wildlife staff surveyed approximately 2230 acres within the CFLR boundary.

6. Socioeconomic Goals

Narrative overview of activities completed in FY23 to achieve socioeconomic goals outlined in your CFLRP proposal and work plan.

Examples may include activities related to community wildfire protection, contribution to the local recreation/tourism economy, volunteer and outreach opportunities, job training, expanding market access, public input and involvement, cultural heritage, subsistence uses, etc.

We are building partnerships with National Forest Foundation, Sierra Resource Conservation District and Yosemite, Sequoia Resource Conservation District (local resource conservation districts). With these partnerships it will in turn build capacity across the Forest to help with analysis and implementation of projects. The projects will complete restoration and support local businesses.
We are also working with Big Sandy Rancheria (a Federally recognized tribe) to develop the local workforce and support the tribes and expand capacity to complete restoration. The Rancheria staff worked in Grade meadow to help with meadow restoration as stated above.

Results from the Treatment for Restoration Economic Analysis Toolkit (TREAT). For guidance, training, and resources, see materials on Restoration Economics SharePoint.[7] After submitting your data entry form to the Forest Service Washington Office Economist Team, they will provide the analysis results needed to respond to the following prompts.

Percent of funding that stayed within the local impact area: _65__%

Contract Funding Distributions Table ("Full Project Details" Tab):

Description	Project Percent
Equipment intensive work	50%
Labor-intensive work	50%
Material-intensive work	0%
Technical services	0%
Professional services	0%
Contracted Monitoring	0%
TOTALS:	100%

Modelled Jobs Supported/Maintained (CFLRP and matching funding):

Jobs Supported/Maintained in FY 2023	Direct Jobs (Full & Part-Time)	Total Jobs (Full & Part-Time)	Direct Labor Income	Total Labor Income
Timber harvesting component	2	4	135,006	170,132
Forest and watershed restoration component	6	11	439,680	771,616
Mill processing component	2	4	136,271	257,473

[7] Addresses Core Monitoring Question #7

Jobs Supported/Maintained in FY 2023	Direct Jobs (Full & Part-Time)	Total Jobs (Full & Part-Time)	Direct Labor Income	Total Labor Income
Implementation and monitoring	6	8	300,779	374,863
Other Project Activities (commercial firewood and contracted monitoring	0	0	1,620	4,823
TOTALS:	16	26	1,013,356	1,578,906

- **Were there any assumptions you needed to make in your TREAT data entry you would like to note here? To what extent do the TREAT results align with your observations or other monitoring on the ground**?
  There are no assumptions needed to describe as seen in the TREAT data.

Please provide a brief description of the local businesses that benefited from CFLRP related contracts and agreements, including characteristics such as tribally-owned firms, veteran-owned firms, women-owned firms, minority-owned firms, and business size.[8] For resources, see materials here (external Box folder).
The Terra Bella mill is the local timber industry where logs are taken. They are designated as a small business. We are also building capacity working with the federally recognized tribe, Big Sandy Rancheria. They have been doing meadow restoration within a few of the projects as described and listed above.

- 7. Wood Products Utilization

Timber & Biomass Volume Table[9]

Performance Measure	Unit of measure	Total Units Accomplished
Volume of Timber Harvested TMBR-VOL-HVST	CCF	
Volume of timber sold TMBR-VOL-SLD	CCF	1,188
Green tons from small diameter and low value trees removed from NFS lands and made available for bio-energy production BIO-NRG	Green tons	Exchequer shipped 526 tons Swanson shipped 1010 tons (0 reported)

- Reviewing the data above, do you have additional data sources or description to add in terms of wood product utilization (for example, work on non-National Forest System lands not included in the table)? There are no other additional data sources for wood product utilization.

8. Collaboration

Please include an up-to-date list of the core members of your collaborative if it has changed from your proposal/work plan or last annual report (if it has not changed, note below).[10] For detailed guidance and resources, see materials here. Please document changes using the template from the CFLRP proposal and upload to Box. Briefly summarize and describe changes below.
Our core members of the collaborative have not changed since last year's annual report.

[8] Addresses Core Monitoring Question #8
[9] Addresses Core Monitoring Question #10
[10] Addresses Core Monitoring Question #11

9. Monitoring Process

Briefly describe your current status in terms of developing, refining, implementing, and/or reevaluating your CFLRP monitoring plan and multiparty monitoring process.

We are currently developing a monitoring working group. We have a new monitoring coordinator on Forest and currently developing a monitoring working group with the collaborative members.

10. Conclusion

Describe any reasons that the FY 2023 annual report does not reflect your proposal or work plan. Are there expected changes to your FY 2023 plans you would like to highlight?

Due to the unprecedented 2022/23 winter, the unprecedented damage it caused ($80+million just to roads and facilities, not including the landscape) and the extended duration in which it took place, our field access was significantly delayed, and in turn the time we had to perform essential field, survey and contract (treatment) work. In spite of these setbacks, our overall accomplishments, both within the Dinkey CFLRP and forest-wide, were indeed at a dramatically increased pace and scale.

Signatures

Recommended by (Project Coordinator(s)): /s/Kim Sorini-Wilson

Approved by (Forest Supervisor(s)): /s/ Dean A. Gould

Draft reviewed by (collaborative representative): /s/Susan Britting

Core Monitoring Question 1:

“What is the reduction in fuel hazard based on our treatments?”

Indicators:

1. Fire intensity (predicted flame lengths) from IFTDSS (Interagency Fuel Treatment Decision Support System)
2. Crown fire activity class from IFTDSS summarized to watersheds (HUC10).

CFLRP Project Name: Dinkey Creek Collaborative
Fiscal Year: 2023
Point of contact(s) completing template: Travis Sowards

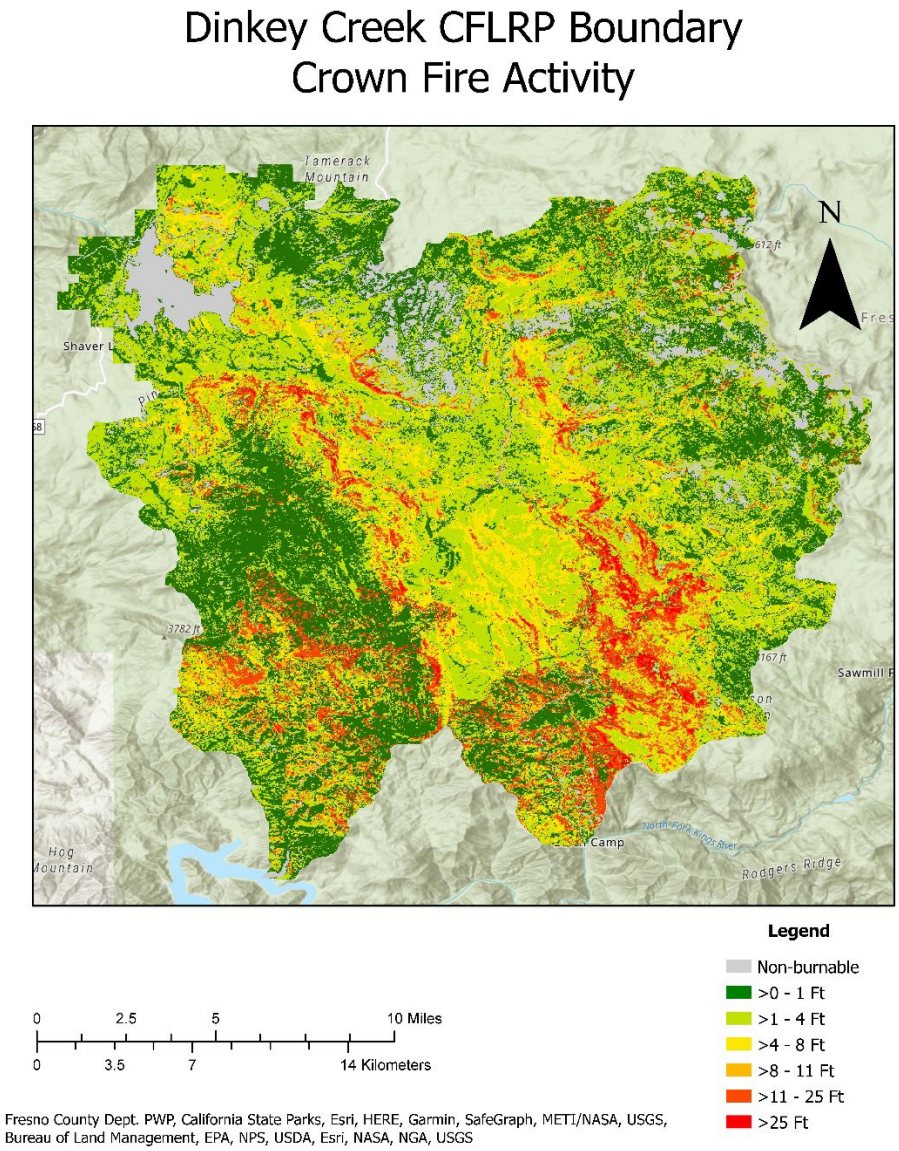


Table 1. Fire intensity (predicted flame lengths) from IFTDSS

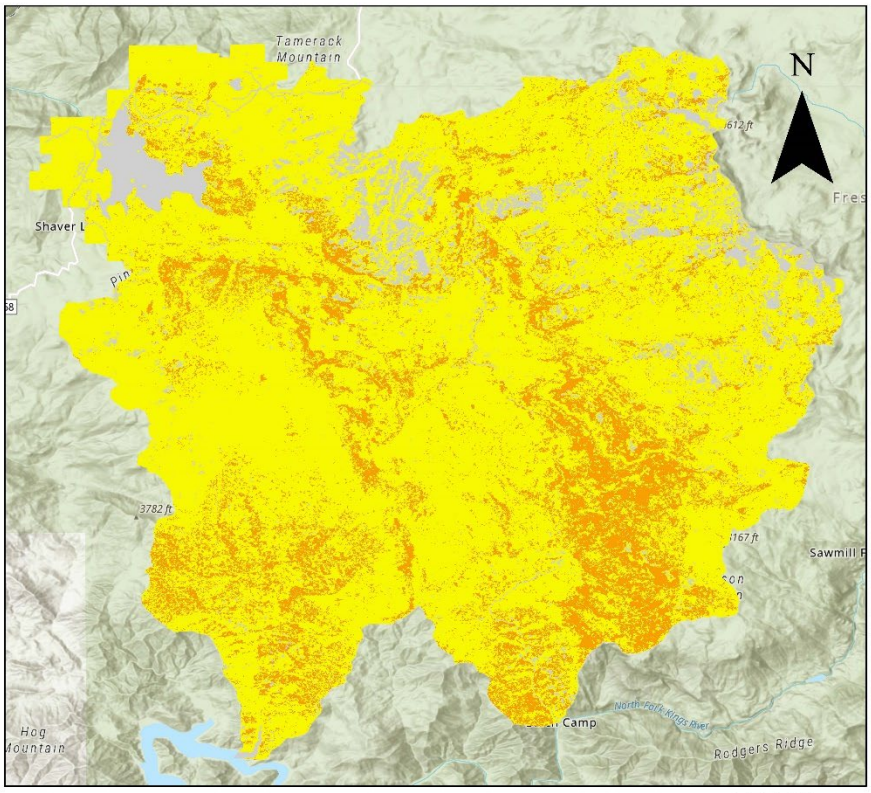
Data source(s): IFTDSS, LandFire, FACTS

IFTDSS Auto-97th percentile flame length output	*Non-burnable*	*0 – 1ft. flame lengths*	*1 - 4 ft. flame lengths*	*>4 - 8 ft. flame lengths*	*>8 - 11 ft. flame lengths*	*>11 - 25 ft. flame lengths*	*>25 ft. flame lengths*
Initial landscape model (Baseline under CMS)			105,656 ac. 68% of landscape	18,975 ac. 12% of landscape	6,258 ac. 4% of landscape	10,604 ac. 7% of landscape	1,790 ac. 1% of landscape
Landscape model 2 (Second year of CMS)	6,406 ac. 8% of landscape	22,618 ac. 27% of landscape	32,919 ac. 39% of landscape	11,309 ac. 13% of landscape	3,355 ac. 4% of landscape	6,537 ac. 8% of landscape	1,669 ac. 2% of landscape

Treatments planned and in operation during FY23 may not be reflected in this data. Per the FY23 CFLRP Annual Report the major projects (Exchequer, Swanson and Cow) saw 867 acres of thinning/salvage, 2,000 tons of cull logs removal and 355 acres bio massed. Prescribed fire records show 590 acres completed within the DLRP boundary FY2023.

The Exchequer project encompassing around 17,000 acres and wholly located within the DLRP was analyzed 2016 using the Forest Vegetation Simulator. With baselines of no action opposed to project completion, the outputs showed substantial decreases in flame lengths and fire severity. These outputs demonstrate that treatments within the DLRP, once completed, will result in shifting the general landscape area toward desired conditions of lower flame lengths and lesser fire severity.

Dinkey Creek CFLRP Boundary
Crown Fire Activity



Legend

- No Fire
- Surface
- Passive
- Active

0 2.5 5 10 Miles

0 3.5 7 14 Kilometers

Fresno County Dept. PWP, California State Parks, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, Esri, CGIAR, USGS

Table 2. Crown fire activity from IFTDSS
Data source(s): IFTDSS, LandFire, FACTS

IFTDSS Auto-97th CFA, by watershed	Watershed Name	Unburnable	Surface Fire	Passive Crown Fire	Active Crown Fire	Crown Fire (combined)
Initial landscape model (Baseline under CMS) (*2020*)	North Fork - Kings River	*74*	*215*	*43*	*0*	*43*
Initial landscape model (Baseline under CMS) (*2020*)	Pine Flat Reservoir - Kings River	*783*	*36875*	*8960*	*1*	*8961*
Initial landscape model (Baseline under CMS) (*2020*)	Dinkey Creek	*6336*	*62933*	*15212*	*1*	*15213*
Initial landscape model (Baseline under CMS) (*2020*)	Big Creek	*101*	*2312*	*38*	*0*	*38*
Initial landscape model (Baseline under CMS) (*2020*)	Stevenson Creek - San Joanquin River	*3410*	*15322*	*1369*	*0*	*1369*
Landscape model 2 (Second year of CMS) (2022)	North Fork - Kings River	74	215	43	0	43
Landscape model 2 (Second year of CMS) (2022)	Pine Flat Reservoir - Kings River	779	36993	8847	0	8847
Landscape model 2 (Second year of CMS) (2022)	Dinkey Creek	6331	62659	15493	0	15493
Landscape model 2 (Second year of CMS) (2022)	Big Creek	101	2316	34	0	34
Landscape model 2 (Second year of CMS) (2022)	Stevenson Creek - San Joanquin River	3412	15198	1490	0	1490

Recent fuel reduction, hazard fuel removal, and dead and downed log removal projects should lead to an indication of fire severity (crown fire matrix or any other and subsequently be reflected in a downward shift in crown fire activity and severity. However, trees are still succumbing to drought and beetle mortality, albeit at a rate that has slowed from the previous decade. These standing snags are feeding an increase in dead and downed woody material which may be contributing to these data not exhibiting a decrease in flame lengths or fire severity.

Core Monitoring Question 5:
"What is the trend in invasive species within the CFLRP project area?"

Indicators:

1. Invasive acres treated from FACTS (USDA Forest Service Agency database).
2. Number of new infestations successfully controlled (this is outside FACTS.)
3. Trend in invasives within the CFLRP project area as documented on field plots. Although it involves new field data collection, there is a strong preference for this option, as it will provide the most valuable trend data.

CFLRP Project Name: Dinkey
Fiscal Year: 2023
Point of contact(s) completing template: Kate Ludwig, Assistant Forest Botanist, Sierra NF

In 2023, a select number of priority projects were monitored for the presence of noxious weeds. Limited time and resources restricted the number of occurrences re-visited, however, existing occurrences of noxious weeds within or in the vicinity of priority projects were visited and/or treated. Noxious weed surveys in 2023 focused on the Gigantea project area, and the footprint of the Exchequer Meadow Restoration initiative. One additional noxious weed survey was conducted to target an existing occurrence with a high risk of spreading.

Results and trends

Gigantea was top priority for HSRD surveys and given the scope of the project and anticipated activities (i.e., significant ground disturbance), it was imperative to survey and treat populations of noxious weeds. In addition to standard floristic surveys, targeted surveys along roadways and meadows were conducted to search for new occurrences. Botany technicians discovered nine new occurrences of bull thistle (*Cirsium vulgare*), resulting in a total of 2.67 monitored acres. All occurrences were treated except the largest totaling 2.59 acres, in which all individuals had already set seed. This untreated occurrence will need to be visited and addressed prior to project implementation.

Noxious weed surveys at Exchequer Meadow were completed as part of floristic surveys for the Exchequer Meadow Restoration initiative. Botany technicians re-surveyed one known occurrence of bull thistle and successfully eradicated all plants. Future surveys will be necessary to re-treat as needed.

One targeted noxious weed survey was completed at Ross Crossing to re-map a known population of Spanish broom (*Spartium junceum*). Botany technicians cumulatively surveyed 14.94 acres and counted roughly 5,000 mature individuals. This occurrence is particularly concerning due to the ability of this species to reproduce and spread rapidly, and the difficulty to eradicate once established. These robust shrubs can reach 10 feet tall, and removal of mature shrubs can be achieved using a weed wrench. A weed wrench will ensure that all roots are pulled out, thereby reducing the probability of resprouting. Herbicide application following mechanical removal increases the efficacy of treatment, however, there is not currently a NEPA document authorizing the utilization of herbicides on this part of the Forest. This population needs to be prioritized and addressed as soon as possible; it would be an excellent candidate for treatment and monitoring efforts as part of the Dinkey Collaborative agreement.

All high-priority invasive non-native plants known to occur within the CFLR boundary and associated treatment data for priority invasive species within FY23 (plants, animals, terrestrial, aquatic) are summarized in Table 1. A complete summary of all noxious weed occurrences visited during 2023 surveys within the Dinkey CFLR boundary can be found in Table 2. Field monitoring for the 2023 field season was from opportunistic surveys (i.e., not plot-based) associated with priority project surveys (see "Project" column in Table 2.). Data presented in Tables 1. and 2. were pulled from the ArcGIS Online (AGOL) invasives layer.

Invasive plant surveys in 2023 recorded an increase in the number of known bull thistle occurrences in the Gigantea Project Area. However, assumptions cannot be made regarding trends in abundance or frequency due to a lack of historical data and the opportunistic nature of surveys. At Exchequer Meadow, a reduction in the abundance of bull thistle was observed when compared to data generated by 2022 surveys. When compared with previous years' monitoring, the Spanish broom population at Ross Crossing increased by roughly 500 individuals, but no new populations were discovered. Only one of the nine new occurrences of bull thistle was particularly sizeable (> one acre) and should be targeted for future surveys. High tree mortality in the Sierras has overall increased the probability of noxious weeds spreading over large areas due to an increase in sunlight availability in the understory.

Thoughts on Future Monitoring and Ideas for Improvement

In summary, project areas that had known weed occurrences either held steady or increased in size, but there are limitations on assumptions that can be made from year-to-year observations. A plot-based approach would reveal specific trends in the abundance and frequency of invasive species in the forest, however, the SNF Botany Program does not have established monitoring plots within the CFLR boundary to track these phenomena. The population of Spanish broom at Ross Crossing is of particular concern and is an excellent candidate population for treatment and pre- and post-treatment monitoring. For baseline data collection (i.e., pre-treatment monitoring), a dedicated team of 2 technicians is necessary to establish transects for line intercept monitoring, and then subsequent collection of percent cover and abundance data. This species is particularly robust, and a population this size will require a team of 5-10 technicians to treat using weed wrenches. Post-treatment monitoring and subsequent manual treatment could be completed by members of the SNF Botany Crew.

Known occurrences of invasive species will likely continue to increase in size and/or density until specific treatment plans can be implemented. A NEPA document authorizing the application of herbicide across the Dinkey CFLR boundary would greatly benefit the SNF and allow us to address large, well-established populations, such as the Spanish broom. Additionally, large increases in new populations of known weeds are likely to occur in areas with high tree mortality and burned areas over the foreseeable future. Satellite populations have been and will continue to be controlled but with the perceived foreseeable and significant expansion of these populations, it will not be enough at the current levels of staffing to impact this potential increase in a meaningful way. The intent of the SNF Botany Program moving forward is to conduct noxious weed monitoring within the Dinkey CFLR targeting projects that have not been monitored recently or require re-survey for future project implementation.

Table 1. High-priority invasive non-native plants known to occur within the CFLR boundary and associated treatment data for priority invasive species within FY23 (plants, animals, terrestrial, aquatic).

Common Name	Treatment Action	Acres Treated[1]	Acres Monitored	Avg. Efficacy	Acres Restored[2]	Response of Desirable Species[3]
BULL THISTLE	Manual removal	0.16	2.79	35	0.16	NA
FOXGLOVE	None					
HIMALAYAN BLACKBERRY	None					
ITALIAN THISTLE	None					
LENS-PODDED HOARY CRESS	None					
NORTH AFRICA GRASS	None					
SPANISH BROOM	None	None	14.94	NA	NA	NA
KLAMATHWEED (ST. JOHNSWORT)	None					
WOOLLY MULLEIN	None					
YELLOW STARTHISTLE	**None**					
Totals/Avgs		0.16	17.73	35	0.16	

[1] "Treated" is defined as prevented, controlled or eradicated.

[2] Agency performance accomplishment code INVPLT-INVSPE-REST-FED-AC, which is calculated in FACTS.

[3] "Desirable Species" includes everything that is not an undesirable species or bare ground. If the response of desired species was not monitored, write N/A.

References:

CODE	PERCENT EFFICACY	RATING	DESCRIPTION
0	0	No effect	No effect can be detected on the target species population
03	1-5	Failure	Little to no effect can be detected on the target species population.
15	6-25	Poor	Treatment killed less than a quarter of the target species population.
35	26-50	Marginal	Less than half of the target species population was controlled
65	51-75	Fair	Over half of the target species population was controlled.
85	76-90	Good	Treatment was successful in killing most of the target species population
95	91-99	Excellent	Over 90% of the target species population has been killed with the treatment.
100	100	Complete	Not a single individual of the target species population was found after a complete survey of the site. Infestation was eradicated on the site.

"Percent Efficacy" is standardized for the FS databases. Users are expected to document the level of control in the TESP-IS application at the activity level (for all invasive species treatment activities no matter what taxa is being treated or which treatment type is employed).

Table 2. Summary of all noxious weed occurrences visited during 2023 surveys within the Dinkey CFLR boundary.

Occurrence #	Date Discovered	Date Visited in 2023	Latin Binomial	Common Name	Acres	Plant Count	Treated	Number Treated	Project
new	7/19/2023	7/19/2023	Cirsium vulgare	bull thistle	0.00733492	1	Yes	1	Gigantea
new	7/19/2023	7/19/2023	Cirsium vulgare	bull thistle	0.001498464	1	Yes	1	Gigantea
new	7/18/2023	7/18/2023	Cirsium vulgare	bull thistle	0.000671906	1	Yes	1	Gigantea
new	8/9/2023	8/9/2023	Cirsium vulgare	bull thistle	0.013843783	1	Yes	1	Gigantea
new	8/9/2023	8/9/2023	Cirsium vulgare	bull thistle	0.013843783	1	Yes	1	Gigantea
new	8/9/2023	8/9/2023	Cirsium vulgare	bull thistle	0.00220134	1	Yes	1	Gigantea
new	8/28/2023	8/28/2023	Cirsium vulgare	bull thistle	0.029156	50	Yes	50	Gigantea
CIVU-652	6/14/2022	9/6/2023	Cirsium vulgare	bull thistle	0.039497292	0	No	0	Exchequer Meadow Restoration
CIVU-652	6/14/2022	9/12/2023	Cirsium vulgare	bull thistle	0.039497292	5	Yes	5	Exchequer Meadow Restoration
CIVU-652	6/14/2022	9/12/2023	Cirsium vulgare	bull thistle	0.039497292	1	Yes	1	Exchequer Meadow Restoration
new	10/5/2023	10/5/2023	Cirsium vulgare	bull thistle	2.592738	5000	No	0	Gigantea
new	10/5/2023	10/5/2023	Cirsium vulgare	bull thistle	0.009537	6	Yes	6	Gigantea
SPJU2-058	6/25/2021	8/28/2023	Spartium junceum	Spanish broom	3.110273887	1000	No	0	Noxious Weed Resurvey
SPJU2-054	6/25/2021	8/28/2023	Spartium junceum	Spanish broom	0.180713765	100	No	0	Noxious Weed Resurvey
SPJU2-057	6/25/2021	8/28/2023	Spartium junceum	Spanish broom	0.015558399	5	No	0	Noxious Weed Resurvey
SPJU2-059	6/25/2021	8/28/2023	Spartium junceum	Spanish broom	2.105906304	250	No	0	Noxious Weed Resurvey
SPJU2-061	6/25/2021	8/28/2023	Spartium junceum	Spanish broom	0.637725219	150	No	0	Noxious Weed Resurvey
SPJU2-055	6/25/2021	8/28/2023	Spartium junceum	Spanish broom	4.528034059	2000	No	0	Noxious Weed Resurvey
SPJU2-056	6/25/2021	8/28/2023	Spartium junceum	Spanish broom	0.050169429	1	No	0	Noxious Weed Resurvey
SPJU2-060	6/25/2021	8/28/2023	Spartium junceum	Spanish broom	4.307228319	1500	No	0	Noxious Weed Resurvey
					17.72492645			**68**	