

Draft Plan Forest & Wildland Stewardship Interagency Tracking System

Provide written comments to the [Wildfire & Forest Resilience Task Force](#) by April 28, 2022

Introduction

This proposed development plan supports the need of the [California Wildfire and Forest Resilience Task Force](#) (Task Force) to report on the status of wildfire and forest resilience projects. It is being developed by the Task Force's Monitoring, Reporting, and Assessment (MRA) Work Group, in coordination with WFR Task Force stakeholders.

Background

Published in January 8, 2021, the [Wildfire and Forest Resilience Action Plan](#) is a comprehensive plan to reduce wildfire risk for vulnerable communities, improve the health of forests and wildlands, and accelerate action to combat climate change. The Task Force and the State's efforts going forward are guided by this action plan with an overall goal to increase the pace and scale of forest management and wildfire resilience efforts by 2025 and beyond.

Several documents established a target of the State of California and the USDA Forest Service each treating 500,000 acres per year.

- *California Forest Carbon Plan* and Executive Order B-52-18 (May 2018)
- *Agreement for Shared Stewardship of California's Forests and Rangelands* (August 2020)
- *Wildfire & Forest Resilience Action Plan* (January 2021)

In addition to these targets, the State has a variety of other policy goals for forest and wildland management. These goals create a clear need to collect data on the management of forests and other wildlands in order to support monitoring, assessment, and scientific research.

Goals

The MRA Work Group identified several goals in creating a system to report on the status of wildfire and forest resilience projects

- Provide transparency and accountability for State and Federal land management efforts toward the acreage targets stated in the *Forest Carbon Plan*, *Agreement for Shared Stewardship*, and other documents, including strategy documents created by the Task Force
- Provide data that can be used for planning, assessment, and science as part of the Forest Data Hub (Action Plan Deliverable 4.3).
 - Collect sufficient data to move beyond "acres treated" as the sole measure of effectiveness.
- Work in coordination with other reporting systems to limit reporting burden and increase efficiencies.

The expected product is a spatial database that can provide both summary information on statewide activity and GIS maps capable of showing local implementation, for use by policymakers, land managers, scientists, and the public.

Data Collection

The MRA Work Group proposes to develop the Forest & Wildland Stewardship Interagency Tracking System. Data in this system will be collected at three scales (see Appendix A), with different data attributes collected at each of these scales (see Appendix B). The system is intended to collect spatial data at all three scales, where those data are available.

-Project: Largest discrete unit used for planning and implementation purposes; may be comprised of one or more treatments. Some areas within the project may not receive treatment.

-Treatment: Land management practice employed to achieve one or more wildfire and forest resilience benefits within the project area. Comprised of one or more activities.

-Activity: Application of a spatially and temporally discrete land management prescription.

Implementation Strategy

Reporting is being implemented in phases (Figure 1). In all phases, data will be collected quarterly.

- Under Phase 1, the Forest & Wildland Stewardship Interagency Tracking System will utilize existing geospatial databases from the Department of Forestry and Fire Protection (CAL FIRE) and the United States Department of Agriculture Forest Service (USDA FS), including CalMAPPER and FACTS. The Task Force will request that other state and federal agencies submit tabular information and geospatial data, as available.
- For Phase 2, transfer of data from CAL FIRE and USDA FS databases will be automated. A contractor will build a web map application and bulk upload process that will enable other state and federal agencies to efficiently provide activity data.
- Phase 3 will expand automated data transfer to databases from smaller agencies to increase upload efficiency and increase accuracy. A contractor will create a mobile app with data collection capabilities. Reporting will expand beyond to include local governments, industrial timberland owners, and Tribes.

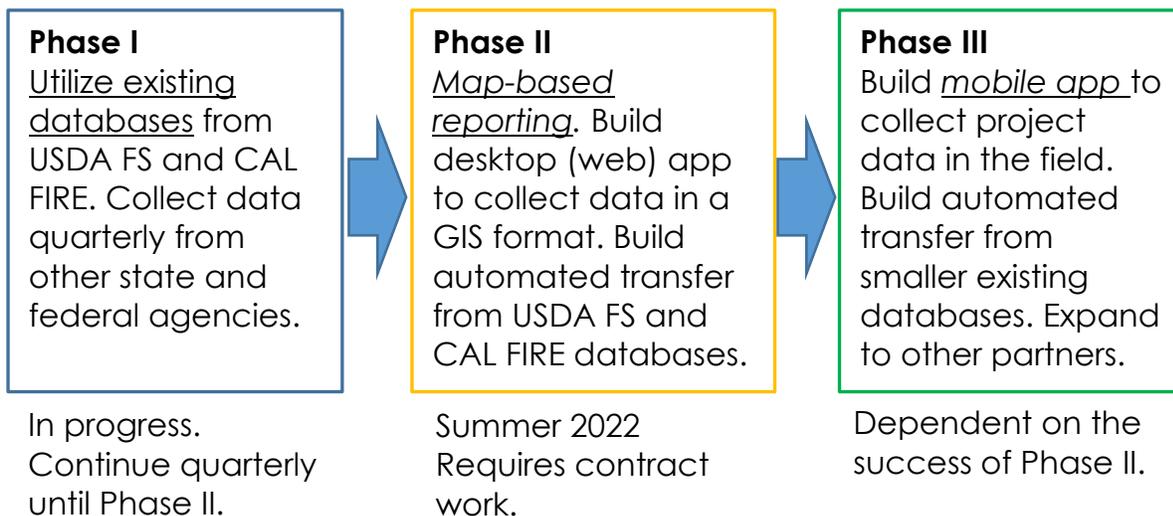


Figure 1: WFR TF report tool Phase 2 and Phase 3 Conceptual Diagram

Data quality control will be iterative. Data should be vetted by agency staff prior to submission. In phases 2 and 3, the application will include some quality control measures to ensure that submitted data are complete and use appropriate units. Once data are accepted into the application, they will be reviewed by Task Force members or contractors. Accepted and transformed data will be routed back to agency staff for review and approval prior to publication.

Appendix A – GIS Data Structure

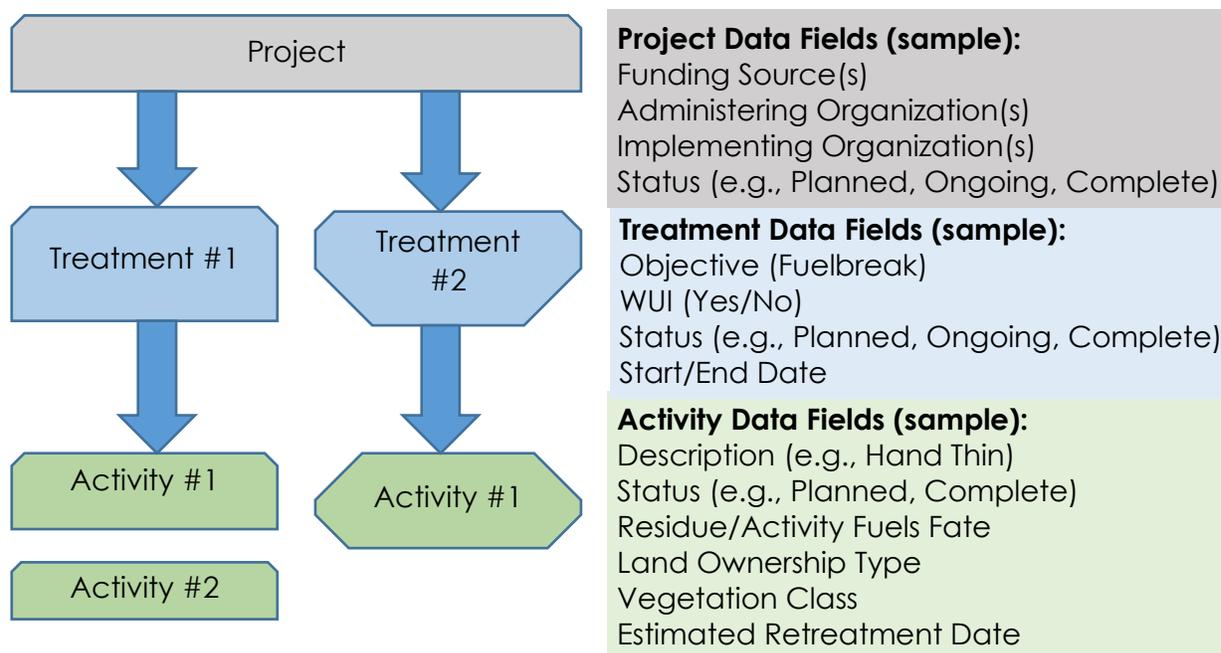


Figure 2: Spatial Data Structure

Appendix B – Data Dictionary

Table 1: Data Request Summary

List of attributes to be collected at each scale.

Table Name	Field Name	Field Type	Description	Options
Project	Funding_Source_Name	Text	The name(s) of budget funds supporting the project work reported.	Ex: State General Fund, CCI, etc.
Project	Funding_Org_Name	Text	The name(s) of the organization providing funding for the project.	Ex: USFS, CAL FIRE, Caltrans
Project	Administering_Org_Name	Text	The name(s) of the organization administering the funding.	Ex: USFS, CAL FIRE, Caltrans

Project	Implementing_Org_Name	Text	The name(s) of the organization implementing the funding by providing staff, volunteer, or contract labor.	Ex: USFS, Sonoma County, Butte FSC
Project	Project_Contact	Text	A contact name for the organization. Not specific to the treatment.	
Project	Project_Email	Text	A contact email for the organization. Not specific to the treatment.	
Project	Project_Name	Text	Common name for each project	
Project	Project_ID	Text or Integer	Unique identifier for each project	
Project	Project_Status	Text	Project status (planned, active, complete, cancelled)	
Project	Lat/Lon	Decimal Degrees. Use World Geodetic System (WGS) 1984.	Point location to represent the project on a map.	Ex: 38.353, -119.443

Treatment	TreatmentID	Text or Integer	A unique identifier for the treatment within a project (for that organization), usually a number or an alpha-numeric code, rather than a full name. Preferred that it does not include text that identifies which organization, in case that must be kept private.	
Treatment	Treatment_Name	Text	The name of the treatment.	
Treatment	County	Text	The primary County in which the treatment resides	
Treatment	WUI	Text	Defined via data layer	Yes/No
Treatment	Primary_Objective	Text	The primary goal of the treatment (see options).	Ex: Broadcast Burn, Fuel Reduction, Fuel Break, Road Way

Treatment	Secondary_Objective	Text	The secondary goal of the treatment (see options). Optional field.	Clearance Ex: Broadcast Burn, Fuel Reduction, Fuel Break, Road Way Clearance
Treatment	Tertiary_Objective	Text	The tertiary goal of the treatment (see options). Optional field.	Ex: Broadcast Burn, Fuel Reduction, Fuel Break, Road Way Clearance
Treatment	Treatment_Status	Text	Treatment status	Ex: Planned, Active, Complete, Cancelled
Treatment	Treatment_Start_Date	Date	Date the treatment started, usually the date of the first activity	
Treatment	Treatment_End_Date	Text	Date all treatment activities were completed.	
Treatment	Treatment Area (Acres)	Numeric	Area receiving treatment	
Activity	Activity_Id	Text or Integer	A unique identifier for the activity	
Activity	Activity_Name	Text	A name for this activity, if applicable	
Activity	Activity_Description	Text	The specific activities used to accomplish the primary objective	

Activity	Activity Unit of Measure	Text	The units used to measure and quantify the activity accomplished	acres, tons, each,
Activity	Activity Quantity	Numeric	The quantity of an activity that was completed	
Activity	Activity Status	Text	The current status of the treatment.	Planned, Active, Complete, Cancelled
Activity	Broad_Vegetation_Type	Text	Identify the broad vegetation type	Forest, Woodland, Shrubland, Grass, etc
Activity	Ownership_Group	Text	The general level of the agency or organization	Federal, State, Local, Private, Other
Activity	Residue Fate	Text	Identify the how the biomass residues (activity fuels) generated by the project were used or disposal method. (Accepts multi entries/fates)	Broadcast burn, pile burn, chipping, biochar, durable products, left on site, liquid fuels, bio-energy
Activity	Residue Fate Units	Text	Units used to quantify the amount of biomass residues (activity fuels) generated by the project utilized, if applicable.	
Activity	Residue Fate Quantity	Numeric	The amount of biomass residues (activity fuels) generated by the project utilized, removed	
Activity	LatestDate	Text or Date	The most recent date work was performed (if active or complete), or the date work is expected to begin (if planned).	MM/DD/YYYY.
Activity	Activity Area	Numeric	The acres of work actually performed for the relevant	

Activity	Estimated Retreatment Date	Date	quarter. May not be equal to the footprint acres of the shape. Approximate estimated date at which the activity will need to be performed again.
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Table 2: Project Status

List of entries and definitions for the project status field.

Status	Status Defined
Outyear	The project has been identified in publicly-available documents and is expected to go through regulatory analysis (NEPA/CEQA/THP or equivalent) in the next 3-10 years.
Proposed	The project has been documented in the Schedule of Proposed Actions, is in public scoping period, or is in the process of having environmental compliance documents prepared (NEPA, CEQA, THP, etc.).
Planned	Regulatory documents have been completed (NEPA, CEQA, THP) and/or funds have been obligated to the project.
Active	All documents complete, project is funded and work is occurring at the site.
Complete	All work required for the implementation of that activity has finished.
Cancelled	A planned project was stopped prior to implementation and will not be revisited with the formerly obligated funds.

Table 3: Objective

List of objectives and definitions for the treatment.

Objective	Objective Definition
Biomass Utilization	Work conducted in an area where the primary objectives are to utilize woody biomass for wood products, and/or generate energy through combustion or gasification, and/or utilize woody biomass to help develop markets for beneficial uses of the material
Burned Area Restoration	Work conducted in a recently burned area intended to promote recovery and ecological stability.
Carbon Storage	Work conducted to improve carbon storage in forests, shrubs and grasslands.
Cultural Burn	Application of fire to the environment predominantly to achieve cultural objectives.

Ecological Restoration	Work conducted to re-establish the composition, structure, pattern, integrity and ecological processes necessary to facilitate terrestrial and aquatic ecosystem sustainability, resilience, and health under current and future conditions.
Fire Prevention	Activities conducted to help educate the public about Fire Prevention. Includes CWPP, public education events, placement of prevention signs, and community meetings related to fire prevention.
Forest Pest Control	Work conducted to control the spread of active forest pest and diseases, typically used during active infestations such as Sudden Oak Death and Gold Spotted Oak Borer outbreaks.
Forestland Stewardship	Work conducted to encourage private and public investments in forestlands and resources within the state to ensure adequate future high-quality timber supplies, related employment, and other economic benefits, and to protect, maintain, and enhance the forest resource for the benefit of present and future generations.
Fuel Break	Work conducted to modify flammable vegetation to create defensible space in an attempt to reduce fire spread to structures and/or natural resources, and to provide a safer location to fight the fire. Fuel breaks are strategically placed along a ridge, valley bottom, access road, or around a subdivision
Habitat Restoration	Work conducted to improve or protect wildlife habitat
Land Protection	Protection of natural and working lands against conversion to development. Often through the establishment of easements, acquisitions, fee title, or other activities.
Mountain Meadow Restoration	Work conducted to restore mountain meadow lands.
Other Forest Management	Precommercial forest management treatment activities. Or work conducted in an area to improve stand structure or composition.
Other Fuels Reduction	Work conducted in an area where the primary objective is to reduce fuel loads. While this can be accomplished through Fuel Break and Broadcast Burn objectives, this should be used when Fuel Break and Broadcast Burning objectives are not being utilized
Prescribed Fire	Work conducted in an area where the primary objective is reducing fuel loads through broadcast burning and pile burning.
Recreation	Work conducted to improve or maintain recreation opportunities.
Reforestation	Work conducted to promote the reforestation of non or understocked forestland and areas burned by wildfire to

	increase carbon sequestration and rebuild natural habitats and ecosystems.
Riparian Restoration	Work conducted to improve riparian habitat or stream channel function.
Roadway Clearance	Work conducted along the right of way of fire roads, county roads, or highways for purposes of improved ingress and egress. This includes the removal of dead trees resulting from insect or drought. Right of Way Clearance is not done with the intent of stopping a fire at the location of work but instead focuses on ingress and egress enhancement
Utility Right of Way Clearance	Work conducted along the right of way of Electric Utility lines. This includes the removal of dead trees resulting from insect or drought. Right of Way Clearance is not done with the intent of stopping a fire at the location of work but instead focuses on keeping trees from hitting powerlines and/or high fuel loads from forming under powerlines.
Watershed Restoration	Work conducted in uplands and/or riparian areas to restore watershed function, including improvements in water quantity, water quality, habitat, and other ecological characteristics
Wetland Restoration	Work conducted in land that is covered or saturated by water for all or portions of a year (excluding mountain meadows and riparian areas), to improve ecosystem function, including water quality, habitat, and other ecological characteristics.

Table 4: Broad Vegetation Type

List of vegetation type classes and definitions.

Broad_Vegetation_Type	Vegetation Type Definition
Forest	Land exhibiting greater than or equal to 10% canopy cover comprised of live trees.
Grass/Herbaceous	Natural vegetation dominated by grass and/or other herbaceous vegetation. Woody vegetation (trees and shrubs) is infrequent and less than 10% canopy cover.
Shrublands and Chaparral	land exhibiting greater than or equal to 10% canopy cover comprised of shrubs or chapparral. These lands are dominated by woody plants but lack tree cover. Shrubs and chaparral area defined as woody plants that are less than 8 meters tall and usually have many stems arising at or near the base of the plant.

Sparse	Areas characterized primarily by low levels of natural vegetation, typically resulting from harsh growing conditions.
Wetland	Land that is covered or saturated by water for all or portions of a year, and do not fall within other categories. Includes vernal pools, mountain meadows, and peatlands.

Table 5: Activity Descriptions

List of vegetation management activities and associated definitions.

Activity Description	Activity Unit of Measure	Activity Definition
Aspen/Meadow/Wet Area Restoration	Acres	Harvest or other treatment within aspen stands (defined as a location with the presence of living aspen (<i>Populus tremuloides</i>)), meadows, and wet areas in order to restore, retain, or enhance these areas for ecological or range values, with a primary goal of successful regeneration of aspen and recruitment into larger size classes.
Broadcast Burn	Acres	Prescribed burning where fire is applied to the majority or entire area within a well-defined boundary for reduction of fuel hazard, as a resource management treatment, or both.
Chemical, Biological, or Physical Pest Control	Acres	Work to control spread of active forest and rangeland pests and/or diseases through the use of chemical or biological agents or physical mechanisms.
Clearcut	Acres	The removal of a stand in one harvest.
Commercial Thin	Acres	The removal of merchantable trees in a young-growth stand to maintain or increase average stand diameter of the residual crop trees, promote timber growth, to reduce tree density, and/or improve forest health. The residual stand consists primarily of healthy and vigorous dominant and codominant trees from the preharvest stand.

Conversion	Acres	The use of timber operations to transform timberland to a non-timber growing use where future timber operations will be prevented.
Dozer Line	Acres	The use of a bulldozer to clear vegetation on fuels reduction projects, along a prescribed fire perimeter, or to construct a fire line on a wildfire.
Easement	Acres	Protection of forest and rangelands lands against conversion to development through the establishment of easements, fee title, or other activities.
Group Selection Harvest	Acres	The harvest of small patches within a matrix of the mature forest in order to mimic the natural gap creation that takes place in old-growth stands, as defined in the California Forest Practice Rules.
Habitat Revegetation	Acres	Re-establishment of natural herbaceous vegetation or shrubs for the purpose of ecosystem restoration.
Herbicide Application	Acres	Application of chemical treatments to manipulate or control undesirable vegetation.
Land Acquisitions	Acres	Protection of forest and rangelands lands against conversion to development through land acquisition via fee title or other actions.
Mastication/Chaining	Acres	Mechanical shredding, grinding, chopping, or pulverizing of small trees, shrubs, and woody debris into smaller fragments that are left on the ground surface.
Mowing	Acres	Mechanical treatment to remove or reduce light vegetation. Ground Disturbance is low to none.
Oak Woodland Management	Acres	Timber harvest within certain deciduous oak woodlands, forests, and savannahs as necessary to restore or conserve the ecological, cultural, and economic values of these historically oak-dominated stands.

Piling	Acres	The creation of fuel heaps by mechanical or hand means.
Precommercial Thinning (Manual)	Acres	Primarily hand cutting non-merchantable trees with chainsaws or other tools to reduce tree density (stocking).
Precommercial Thinning (Mechanical)	Acres	Mechanically cutting non-merchantable trees with a feller-buncher or similar equipment to reduce tree density (stocking).
Prescribed Herbivory	Acres	The use of domestic livestock to accomplish specific and measurable vegetation management objectives. Those would include things like removing biomass (fine fuel loads), reducing populations of specific plant species, slowing the re-establishment of shrubs on burned or mechanically thinned sites, and improving plant community structure for wildlife habitat values
Wildfire Managed for Resource Benefit	Acres	Wildland fire acres burned following unplanned ignitions that are managed to achieve objectives such as ecosystem restoration or hazard reduction
Pruning	Acres	The removal, close to the branch collar or flush with stem, of side branches (live or dead) and/or multiple leaders from a standing live tree or shrub.
Rehabilitation of Understocked Area	Acres	Timber harvest for the purpose of restoring and enhancing the productivity of commercial timberlands which do not meet stocking standards prior to any timber operations.
Sanitation and Salvage Harvest	Acres	Sanitation is the harvest removal of insect attacked or diseased trees in order to maintain or improve the health of the stand. Salvage is the harvest removal of only those trees which are dead, dying, or deteriorating, because of damage from fire, wind, insects, disease, flood,

		or other injurious agent. Practices implemented as defined in the California Forest Practice Rules.
Seed Tree Removal Step	Acres	The removal of not more than 15 predominant trees per acre when the regeneration present exceeds minimum stocking requirements.
Seed Tree Seed Step	Acres	The removal of a stand in one harvest except for well distributed seed trees of desired species which are left singly or in groups to restock the harvested area.
Shelterwood Prep Step	Acres	Harvest intended to improve the crown development, seed production capacity and wind firmness of designated seed trees in a subsequent shelterwood harvest.
Shelterwood Removal Step	Acres	The removal of the protective overstory trees when a fully stocked stand of reproduction has become established following implementation of shelterwood seed step.
Shelterwood Seed Step	Acres	Harvest with the retention of seed trees that are of full crown, capable of seed production, and representative of the best phenotypes available in the preharvest stand.
Single Tree Selection	Acres	Removal of individual trees and small groups of trees throughout the stand to achieve or maintain a balanced uneven-aged stand structure.
Site Preparation for Planting, Seeding, or Natural Regeneration	Acres	Manipulation of a site to enhance the success of regeneration.
Stream Channel Improvement	Miles	Alteration of the stream channel for ecological benefit, including alteration of the channel path, placement of logs or rocks to pool water, or construction of wing dams to correct stream bank erosion,

Transition Harvest	Acres	The transition method may be used to develop an unevenaged stand from a stand that currently has an unbalanced irregular or evenaged structure. The transition method involves the removal of trees individually or in small groups from irregular or evenaged stands to create a balanced stand structure and to obtain natural reproduction, as defined in the California Forest Practice Rules.
Tree Planting	Acres	Re-establishment of forest cover following a natural disturbance (e.g., wildfire, insect outbreak, etc.) by planting seedlings and/or cuttings with or without site preparation.
Variable Retention Harvest	Acres	Harvesting based on the retention of structural elements or biological legacies (trees, snags, logs, etc.) from the pre-harvest stand for integration into the post-harvest stand to achieve various ecological, social and geomorphic objectives, as defined in the California Forest Practice Rules.
Wetland Restoration	Acres	Work not defined by other entries on the Activity list, conducted in land that is covered or saturated by water for all or portions of a year, to improve ecosystem function, including water quality, habitat, and other ecological characteristics.

Table 6: Residue/Activity Fuel Fate

List of potential fates for residues (activity fuels) created by vegetation management activities.

Residue (Activity Fuel) Fate	Residue (Activity Fuel) Fate Units	Residue (Activity Fuel) Fate Definition
Biochar or Other Pyrolysis	Acres	The thermal degradation of biomass in the absence of oxygen to produce biochar, bio-oil, or other by-product, either on-site where the residues were created or off-site.

Broadcast Burn	Acres	Prescribed burning where fire is applied to the majority or entire area within a well-defined boundary for reduction of fuel hazard, as a resource management treatment, or both.
Chipping	Acres	Use of machines to cut woody material into small fragments. Includes leaving on site or removing.
Durable Products	Acres	Used to create durable wood products (plywood, oriented strand board, dimensional lumber, etc.)
Landfill	Acres	Disposed of in a landfill
Left on Site	Acres	Residues left on site to decompose without further treatment, such as after mastication, chipping, or piling.
Liquid Fuels	Acres	Used to produce liquid fuel (ethanol, hydrogen, bio-diesel, etc.), either on-site where the residues were created or off-site.
Lop and Scatter	Acres	Hand method of cutting limbs and tops of felled trees into smaller pieces, and scattered across the site. Slash should be reduced to a depth of < 24"
No Residue/Not Applicable	Acres	No substantive residues (activity fuels) were created as a result of this activity.
Offsite Bioenergy	Acres	Used to generate energy at an offsite biomass energy facility (for combustion or gasification)
Pile Burning	Acres	Burning of piled material including hand and machine piles and decks.

Table 7: Wildland-Urban Interface Designation

Entries for the Wildland-Urban Interface (WUI) data attribute.

WUI (Yes/No)	WUI Definition
Yes	The geographical intersection of two disparate systems, wildland and structures. At this interface, structures and vegetation are close enough that a wildland fire could spread to structures or fire could spread from structures to ignite vegetation.
No	Non-Wildland Urban Interface

Table 8: Ownership Group

Land ownership types and definitions

Major Owner Type	Major Owner Definition
Federal	Owned by the United States government, including US Department of Agriculture, US Department of Interior, US Department of Defense, or other agencies.
State	Owned by the State of California, including Department of Parks and Recreation, Department of Fish & Wildlife, State Lands Commission, Department of Forestry & Fire Protection, Department of Transportation, or other agencies.
Local	Owned by municipal, county, special district, or joint powers authority.
Private - Non-Industrial	Owned by a company or individual(s) not operating a primary wood-processing plant.
Private - Industrial	Owned by a company or individual(s) operating a primary wood-processing plant.
NGO	Owned by a not-for profit, citizen's group that is organized on a local, national or international level to address issues in support of the public good.
Tribal	(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation; (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state; (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights- of-way running through the same; and (d) lands owned by Indian tribal governments, including those outside of the boundaries of (a), (b), or (c).