LANDSCAPE SCALE MONITORING

RIO CHAMA CFLRP

Forest Stewards Guild
putting the forest first

2-3-2
COHESIVE STRATEGY PARTNERSHIP

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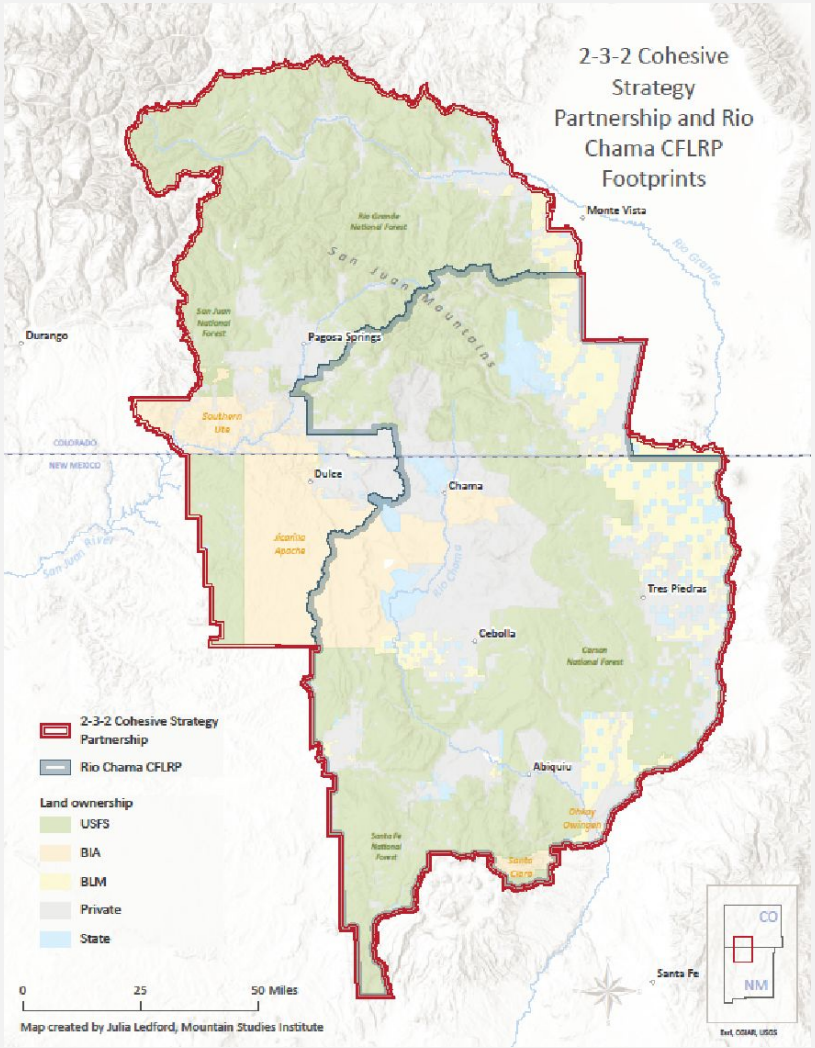
THE RIO CHAMA CFLRP



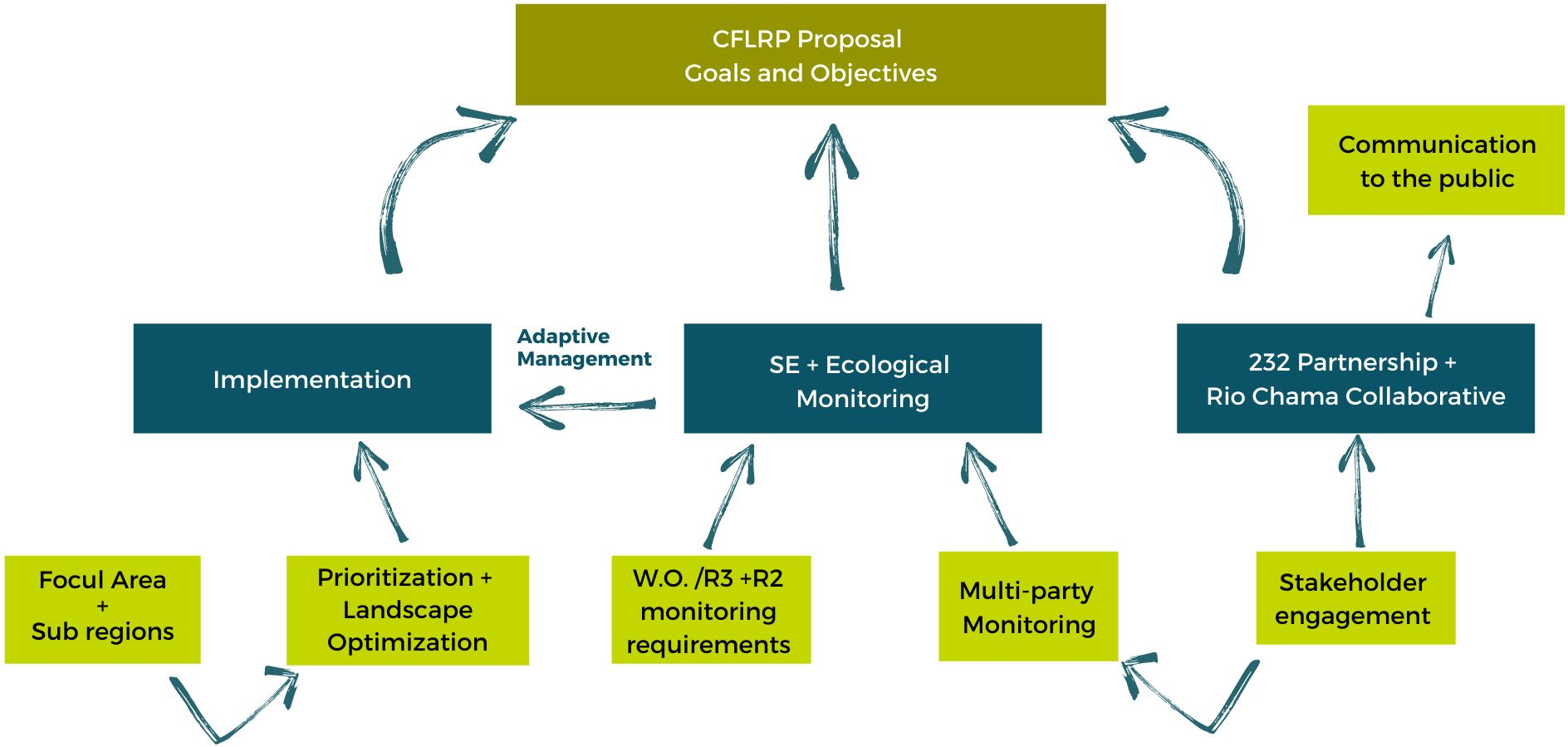
Project area, 3.8 million acres, includes four National Forests in Colorado and New Mexico.

Many collaborative partners

Project goals and objectives include:

- Reducing the risk of uncharacteristic wildfire;
- Increasing forest diversity and old growth characteristics;
- Conserving critical habitat and improving wildlife connectivity;
- Improving water quality and watershed function; and
- Mitigating climate change impacts.

STRUCTURE & PROCESS



2021

TRAM Mural Exercise

Funding from Four Forests

2-3-2 COHESIVE STRATEGY PARTNERSHIP

Crosswalk WO and Regional CMS

CROSSWALK ANALYSIS

	RC CFLRP Goals (from Proposal)	Implementation Strategy	Potential MPM Indicator	WO Question	WO Indicator	R3 draft	R2 Final	Rio Chama Monitoring Plan (includes WO, regions, and MPM)	CANF FP Monitoring Indicators	CANF DFC	SFNF FP Monitoring Indicators	RGNF FP Monitoring Indicators	SJNF FP Monitoring Indicators	
Ecological														
1	Reduce risk of uncharacteristic wildfire and restore natural fire regime.	1) Strategically placed commercial (over 25,000 acres) and non-commercial (over 8,000 acres) thinning and broadcast burning (almost 110,000 acres), 2) Improvement and regeneration harvests within mixed-conifer and aspen forests intended to recover forest product value, reduce overall fuel loading, and move landscape forest structure and composition toward conditions more resilient to climate change, insects, and disease.	IFTDSS2. Does MPM want to conduct anything more at the project level?	What is the reduction in fuel hazard based on our treatments?	1. Fire intensity (predicted flame lengths) from IFTDSS2. 2. Probability of crown fire based on Firesheds work. Generate FLAMMAP runs and then create patch size distribution of resulting probabilities of crown fire.	no answer	• RO: IFTDSS – regional lead will support CFLRP project. IFTDSS can now support burn probability outputs in place of a more intensive FLAMMAP run and would be best suited to be accomplished at the local level where treatment shapes and resulting fuel model/loading can be input. IFTDSS is very user friendly, interagency, collaborative, and designed to compare treatment alternatives with robust reports. That being said, we do not have anyone at the R2 RO level that is a current FLAMMAP user. Fire intensity alone may not be the best indicator as it focuses on environmental conditions that change. Risk reduction and tracking HVRA's should be considered when evaluating fuels treatments and associated risk at a local, regional, and national level (WUI expansion, housing density, proximity to WUI, risk transmission vectors, future WUI). Consider connecting a portion of this indicator to the SOCIAL/ECONOMIC Indicator with growing rural communities, WUI expansion, etc. This could be an indicator around net change in exposure/risk both here and in the fuels expansion indicator. Key Monitoring Question: Are we changing the net risk of fire to communities, water, habitat, etc. over time (risk reduced vs. increases in exposure)?	WO/R2/R3/MPM: IFTDSS2 and FLAMMAP runs	Acres of vegetation treatments; Acres of canopy loss in forested vegetation communities due to fire, drought, insects, or disease; Range of fire sizes, by ecological response unit; Percentage of acres burned by severity class, by ecological response unit; Vegetation composition, size class, and canopy cover; Acres of Mixed Conifer with Frequent Fire treated Acres of Ponderosa Pine Forest treated; Acres and location of insect and disease infestations and tree mortality		Acres of fuel and restoration treatments	Changes in fire regime condition class; Size and severity of fires >1,000 acres (net change in volume / Number of live vs dead trees); Number and acres of all fires; Acres / location of vegetation management in different forest types; Acres and location of fuel management and restoration treatments (mechanical and prescribed fire)	Trends in fire, insect and disease mortality;	
2	Mitigate climate change impacts, increase forest diversity and old growth characteristic.		Choose representative areas that serve as ground truth modeling. There could be representative areas for different forest types or different treatment types to conduct plot measurements including: Forest mensuration with tree density by size class including snags. Browns transects for downed logs. Analyzed data can show reduced fuel loads., improved Vegetation Condition Class (VCC) rating of the landscape and this "test area" can be used as an outward facing way to dessiminate information to the public and tell the story of the project.	What is the effect of the treatments on moving the Forest landscape toward a more sustainable condition that includes scale and intensity of historical disturbances?	1. Vegetation departure OR Missed fire cycle OR Fragmentation metric OR extrapolation from plots. This is the ecological departure metric. 2. Tally acres burned by wildfire and by prescribed burning annually. Report by fire regime and compare to what would be expected in the natural range of variation.	*indicators: 1) seral state diversity (size and cover), 2) fire regime (frequency and severity), 3) patch size, 4) large trees, and 5) FRCC (seral state diversity + fire regime); Project Role: Provide actual or modeled changes in vegetation structure and fire regime, summarized in spatial and/or tabular for comparison with desired conditions and calculation of departure (low, moderate, high), for the five indicators as an overall inference of ecosystem sustainability. Consult R3 Regional Analyst or Regional Ecologist for data, analysis tools, or additional capacity.; RO Role: Run departure analyses and provide output, and/or Obtain fire severity data from wildfires as needed. The Region, FIA, GTAC provide spatial and tabular information to assess these five indicators at a given snapshot. The Region and Forest specialists use ST-Sim and other models to project vegetation conditions and changes in fire regime.*	RO: • Regional office will provide support as needed. Key contacts are: Donna Shorrock, Vegetation Ecologist, Sarah Synowiec, Fire Ecologist and Hazard Fuels Management Specialist, and Stephanie Rebain, Vegetation Analyst. The RO does not regularly report on these metrics and may need assistance, at least initially, for direction on conducting the analyses and datasets to use.R2 has provided LTA and other ecological unit data to inform and assist with the TCA modeling. There is interest in seeing how TCA performs for the 3 metrics being tested before making a final decision on which metrics and data sources to use. • Beyond TCA products, R2 will plan to report on vegetation departure (perhaps using LANDFIRE). In terms of LANDFIRE data, the data refresh schedule is not set up to be informative at the needed temporal scale – the newest data released in 2020 is actually 2018 data. The LANDFIRE data does speak to Vegetation departure (Vegetation Condition Class - VCC) that could be used as a baseline for local subject matter experts to compare against their changed conditions https://landfire.gov/fireregime.php. LANDFIRE also details a method for determining the difference between current vegetation on a landscape and estimated historical conditions (Vegetation Departure – Vdep) however the time scale/data availability would still be of an issue when looking for validated data. https://landfire.gov/vdep.php • and #2 – FACTS (Rx fire), RAVG, MTBS… for wildfire and lit review for NRV (for internal use: will reference GMUG Terrestrial Assessment Table 16 – pg 44 as an example to follow); • Project: Provide information on treatments that alter forest structure to the Regional point of contact. Projects will keep data current and will take the lead on reporting. No definitive choice on which indicator.	WO/R2/R3: Vegetation departure (using LANDFIRE as per R2 stepdown) AND Tally acres burned by wildfire and by prescribed burning annually. Report by fire regime and compare to what would be expected in the natural range of variation. MPM: extrapolation by plots of a "test area" R3: ST Sim to project vegetation conditions and changes in fire regime.	Vegetation structure and composition; Treatment effectiveness as it relates to the Climate Change Vulnerability Assessment (USDA FS 2014); Tree planting and seeding success as it relates to Climate Change Vulnerability Assessment. [Departure] Is vegetation structure meeting or approaching desired conditions?		Vegetation species structure, density, and composition; Acres of insect and Disease infestations;	Percentage cover of different forest ecosystems; Percent of different structural classes in major forest ecosystems; Mortality: Number of snags per acre; net volume live vs dead; Regeneration: Number of saplings per acre; species composition of saplings in all ecosystem; CWD: (Same as for MQ); Extent of insect mortality	acres of natural regeneration; Trends in habitat structural stages; Species composition reports; Stand exams; Extent of insect and disease outbreaks; Vegetation monitoring; Tree line monitoring	
3	Improve fish and wildlife habitat and connectivity; conserve critical habitat to help recover threatened and endangered species	1) Decommission up to 40 miles of roads to reduce impacts of illegal motor vehicle use on water resources and sensitive wildlife habitats. 2) Maintain or increase relative abundance of large-diameter trees, snags, and downed logs through thinning and broadcast burning treatments. 3) Reduce spread of invasive and exotic plants through a combination manual, mechanical and herbicide reduction methods. The project will use established agreements with federal, state, and county partners to work with willing landowners to reduce invasive plants on intermixed private lands.	Determine site specific effects of restoration treatments on focal species habitat. Methods for this? Project specific monitoring on riparian habitats - what kind? (River Source/Rich Schrader indicated that he had capacity for this).	What are the specific effects of restoration treatments on focal species and species at risk habitat across the CFLR Project Area?	1. Acres treated to move towards desired condition (HRV/current departure) for focal species and species at risk. Panel lead by Regional wildlife ecologist and other Regional technical specialists as necessary to verify acres being treated are benefiting these species AND/OR 2. HSIs for focal species and species at risk identified through the Forest monitoring plan	no answer	• RO: Convene and track regional panel. R2 will use both indicators, (both indicators in R1, or does this mean #1 panel and #2 HSIs?) but would like to request the following revisions: 1. Amount of suitable habitat for priority species in the CFLRP project area. Panel lead by Regional and local wildlife specialists as necessary to establish metrics for habitat suitability and verify impacts of treatment on habitat for selected species. 2. Population status of focal species in response to treatments. Panel lead by Regional and local wildlife specialists as necessary to identify appropriate focal species. • Project: Provide current information on treatments. Provide wildlife biologist time to serve on the technical panel. Forest wildlife biologists will help determine priority species of interest and will be called upon, thereafter, as needed.	WO/R2: Acres treated to move towards desired condition (HRV/current departure) for focal species and species at risk. Amount of suitable habitat for priority species in the CFLRP project area. Panel lead by Regional and local wildlife specialists as necessary to establish metrics for habitat suitability and verify impacts of treatment on habitat for selected species. Population status of focal species in response to treatments. Panel lead by Regional and local wildlife specialists as necessary to identify appropriate focal species, AND HSIs for focal species and species at risk? MPM: Project specific monitoring on riparian habitats - what kind?	Number of water features maintained, improved, or installed; Acres of terrestrial habitat restored or enhanced; Focal Species presence; [Departure] Is vegetation structure meeting or approaching desired conditions to improve ecological for At-risk Species?		Vegetation species structure, density, and composition; Acres of terrestrial habitat restored or enhanced; range vegetation improved; Number of water features maintained, improved, or installed for wildlife benefit; Presence of endemic, at-risk, or appropriate indicator species Distribution of American beaver; Management activity impacts on abundance and distribution of focal species northern goshawks in upland forests. Management activity impacts on abundance and distribution of focal species juniper titmouse in piñon- juniper.	Landscape-level indicators: Acres/location impacted by disturbance and management actions (i.e., in lynx Analysis Units/lynx habitat); Distribution of old-forest/late- successional conditions. Fine-scale indicators: Number of live trees per acre 15-20, >20 in DBH (for all indicators, forestwide and in major types: aspen, spruce-fir, mixed conifer); Number of live and dead trees per acre; >15 inches DBH; Percentage with <40, 40–70, >70 percent live crown cover; Number of snags per acre 10–15, 15–20, >20-inch DBH; Number of pieces of coarse woody debris (CWD) per acre 5– 10, >15 inches DBH, and >15 feet long; volume of CWD per acre; Mortality – net volume and percentage of dead	Monitor status of focal species at the appropriate geographic scale. Indicators: Status of focal species (Abert's squirrel, American marten, hairy woodpecker, cutthroat trout) Number of acres of live ponderosa pine treated; Number of acres of live mature spruce-fir and cool-moist mixed conifer treated; Miles of stream habitat enhanced; Number of self- sustaining metapopulations of Colorado River cutthroat trout established; Number of threats to Colorado River cutthroat trout that are reduced or eliminated.	HSIs: https://www.fs.fed.us/rm
5			Number of new infestations successfully controlled. (This is outside FACTS.) - MPM Ground truthing in a	What is the trend in invasive species within the CFLRP project area?	1. Effective invasive acres treated from FACTS. Value of treatments pre-determined by risk assessment and EMDS expert panel model (provided). 2. Number of new infestations successfully controlled. (This is outside FACTS.)	no answer	• RO: Convene Regional risk assessment – We don't know what this is or what it entails, so reluctant to commit until we know more. How is effective defined? Can report number of acres treated; (change needed in FACTS: report on scouted and wetted acres (capability to describe density of pop distribution treated); unfamiliar with the EMDS model, so uncertain how to address; treatment success monitoring reported in FACTS (what was visited, amount of individuals found – so indicator 2 is in FACTS); curious to learn about NNIS and potential role in reporting. Are the EMDS expert panel model data provided by the WO or is the RO expected to provide? We do not have an Invasives position at the RO; assembling a panel and convening a regional risk assessment will likely be a challenge;We will determine process for addressing indicator #2	WO/R2: Effective invasive acres treated from FACTS MPM:	Acres of nonnative invasive inventoried; Acres of nonnative invasive treated		Acres of invasives treated; Acres of invasives inventoried; BAER report findings	Prevalence and extent of nonnative invasive species and noxious weeds; Acres noxious weeds treated	Acres of noxious weeds inventoried, treated, and monitored; Acres treated for Class A and Class B species; Distribution and spread maps of quagga mussel	

W.O. QUESTIONS AND INDICATORS

CFLRP Monitoring

Q1. What is the reduction in fuel hazard based on our treatments?

Q2. What is the effect of the treatments on moving the Forest landscape toward a more sustainable condition that includes scale and intensity of historical disturbances?

Q3. What are the specific effects of restoration treatments on focal species and species at risk habitat across the CFLR Project Area?

Q4. What is the status and trend of watershed conditions in the CFLR area, with a focus on the physical and biological conditions that support key soil, hydrologic and aquatic ecosystem processes?

Q5. What is the trend in invasive species within the CFLRP project area?

Q6. How has the social and economic context changed, if at all, from the beginning of CFLRP to the end?

Q7. How have CFLRP activities supported local jobs and labor income?

Q8. How do sales, contracts, and agreements associated with the CFLRP affect local communities?

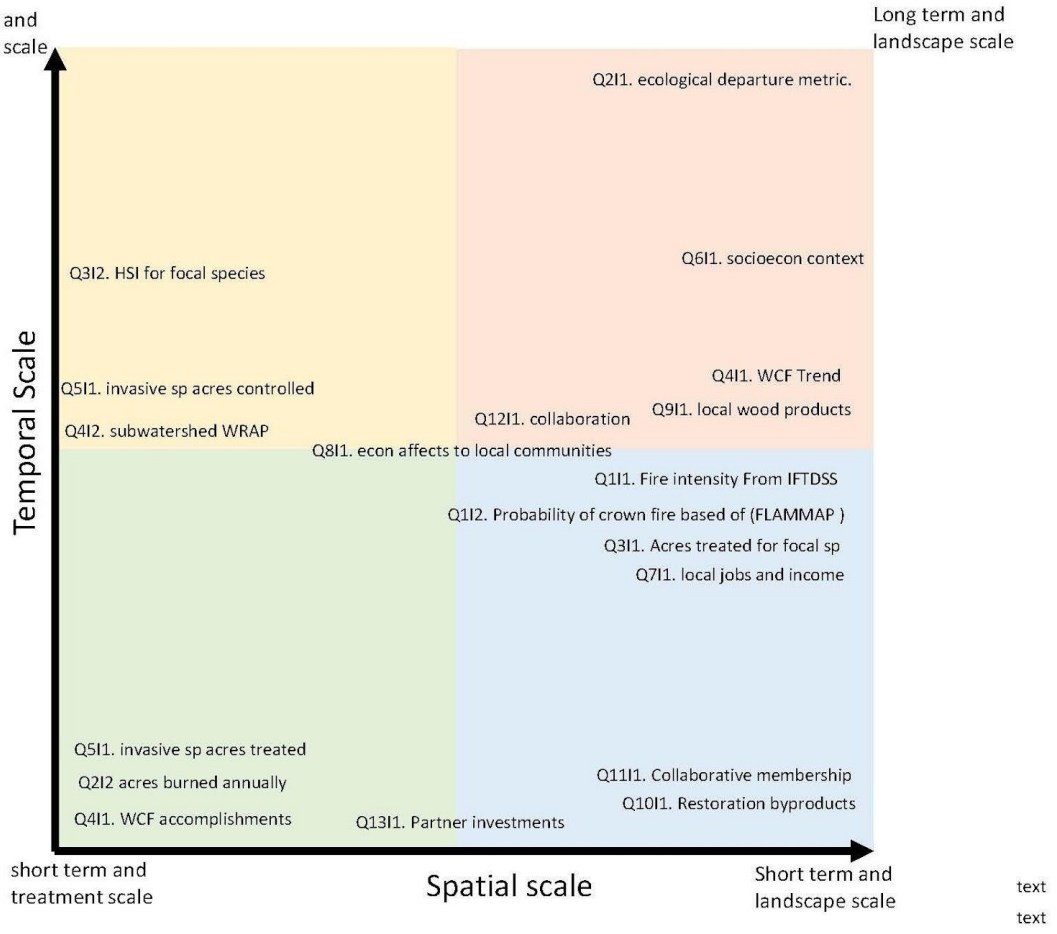
Q9. Did CFLRP maintain or increase the number and/or diversity of wood products that can be processed locally?

Q10. Did CFLRP increase economic utilization of restoration byproducts?

Q11. Who is involved in the collaborative and if/how does that change over time?

Q12. How well is CFLRP encouraging an effective and meaningful collaborative approach?

Q13. If and to what extent has CFLRP investments attracted partner investments across the landscapes?



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Multiparty Monitoring in the Rio Chama CFLRP Landscape

TRAM Committee input Dec. 1st, 2021

1

First, read the CFLRP goals in the middle of the circle and the related implementation activity from the CFLRP proposal. Then, read the Washington Office and related Region 2 & 3 stepdowns for required monitoring. Lastly, use the yellow sticky notes provided below to write a proposed multiparty monitoring activity.

2

Place the proposed MPM activity typed on a yellow sticky note into the pie chart where it correlates to a CFLRP goal. Initial your MPM yellow sticky notes.

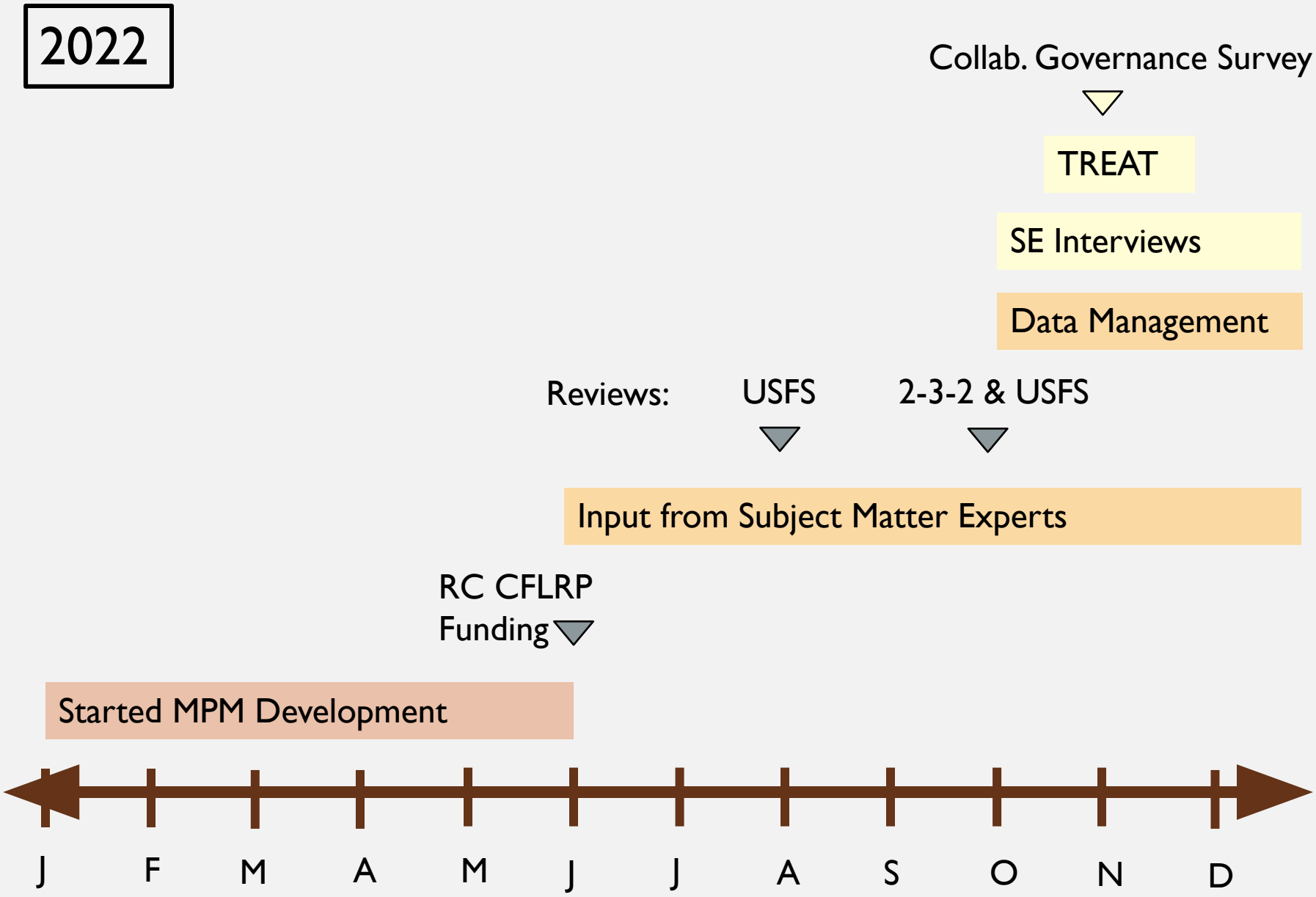
Proposed Multiparty Monitoring

Legend

Washington Office (WO) required monitoring	Region 2 (R2): Stepdown based on WO required monitoring	Region 3 (R3): Shared Stewardship Indicators (WO stepdown not yet defined)	Multiparty Monitoring (MPM) in addition to what is required

Acronyms defined:

CNF: Carson National Forest
ERU: Ecological Response Unit
FACTS: Forest Service Activity Tracking System
FLAMMAP: a fire behavior mapping and analysis program
FIA: Forest Inventory Analysis
FRCC: Fire Regime Condition Class
FSveg: Field Sampled Vegetation
HUC: Hydrologic Unit Code
HSI: Habitat Suitability Index
IFTDSS: Interagency Fuels Treatment Decision Support System
INREV: Existing Vegetation Mapping
LCMS: Landscape Change Monitoring System
MPM: multiparty monitoring
R2: USFS region two
R3: USFS region three
REV: Riparian Existing Vegetation
RGNF: Rio Grande National Forest
SJNF: San Juan National Forest
SNFN: Santa Fe National Forest
TEUI: Terrestrial Ecological Unit Inventory
TREAT: Treatments for Restoration Economic Analysis Tool
WCF: Watershed Condition Framework
WIT: Water Innovation Technologies
WO: Washington Office


2022
Collab. Governance Survey
TREAT
SE Interviews
Data Management
Reviews:
USFS
2-3-2 & USFS
Input from Subject Matter Experts
RC CFLRP
Funding
Started MPM Development
J
F
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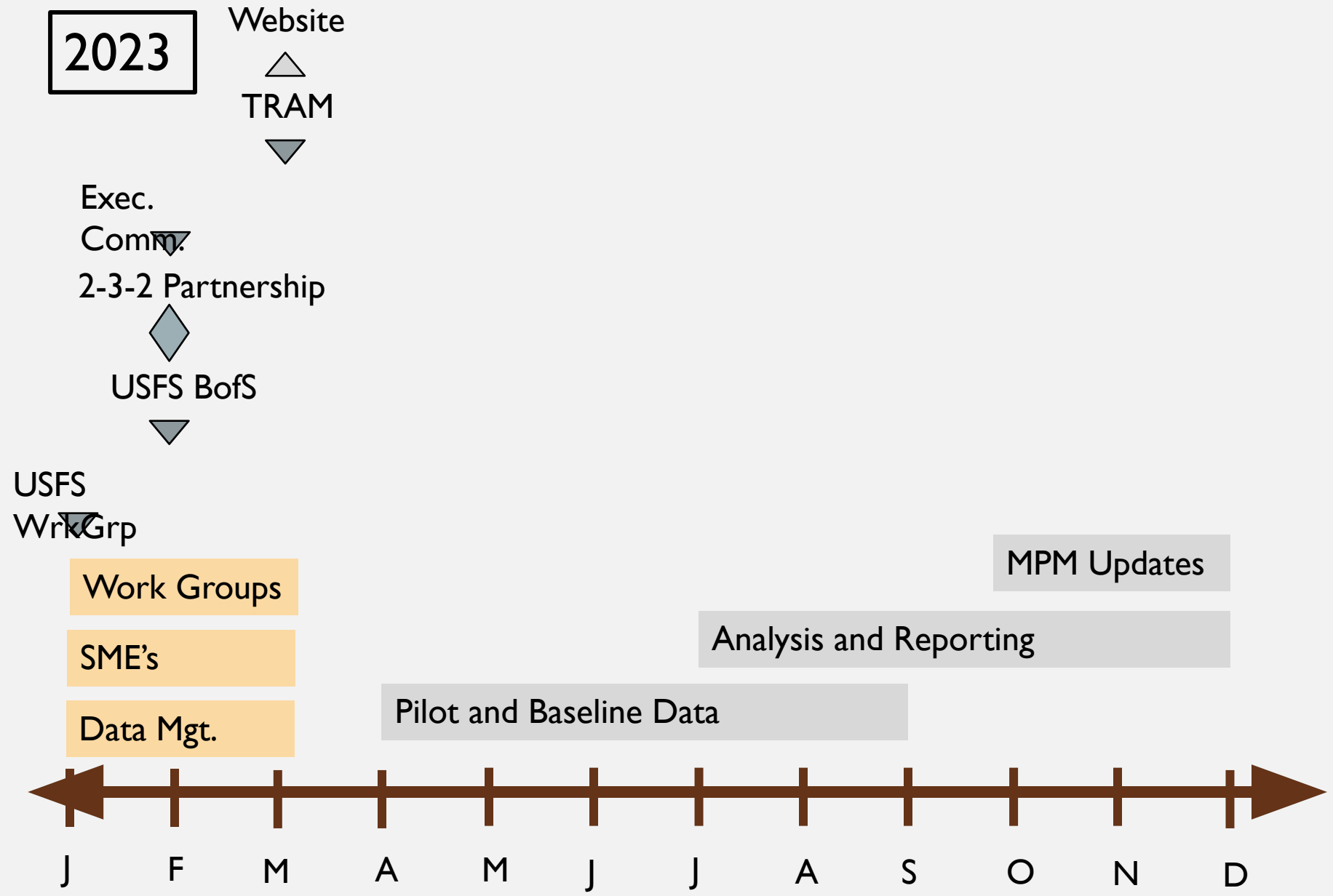
2023
Website
TRAM
Exec.
Comm.
2-3-2 Partnership
USFS BofS
USFS
WrkGrp
Work Groups
SME's
Data Mgt.
MPM Updates
Analysis and Reporting
Pilot and Baseline Data
J
F
M
A
M
J
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D

View the plan here:
https://232partnership.org/monitoring/