

Upper Mokelumne River Watershed Aspen Restoration Planning Project

April 24, 2024

**Presentation to the
ACCG Planning Work Group**

**Funding provided by Wildlife Conservation Board, Forest
Conservation Grant Program**



Purpose of Presentation

- Provide an update on the project since our June 23, 2023 PWG presentation.
- Solicit input related to potential concerns, issues or ideas.
- Make progress toward a definition of a treatable aspen stand.

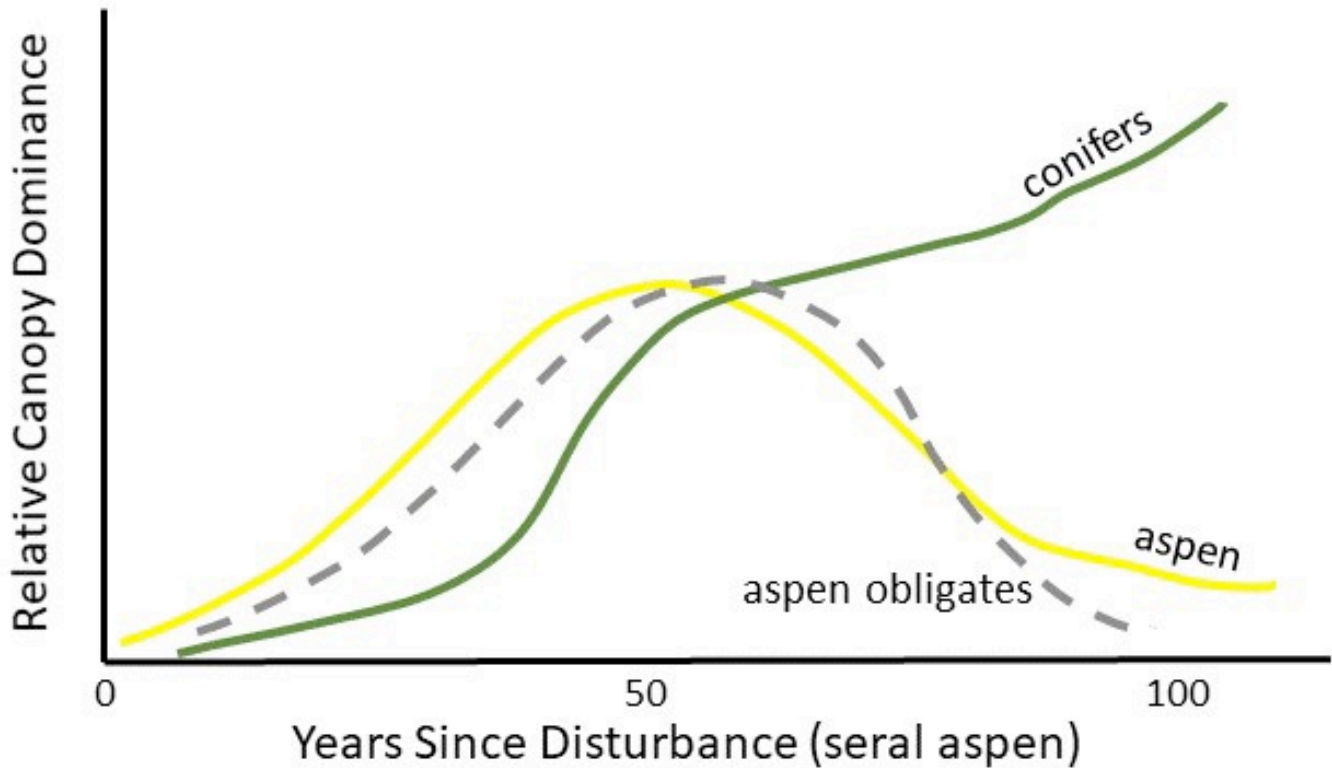


Aspen Ecology

- Aspen are second only to riparian forests in supporting the most biodiverse plant and animal assemblages.
- Species which are dependent on aspen will decline via loss of habitat if aspen forests diminish. In turn, obligate species will flourish in thriving aspen landscapes.
- Biodiversity is supported by dynamic, multi-aged, aspen mosaics at the landscape-scale. Such diverse, patchy, forest landscapes carry other benefits, such as fire resistance.



Threats to Aspen



Project Background & Need



H. Loffland

- Most of the stands in the upper watershed are unmapped, unassessed and threatened by conifer encroachment and wildfire risk.
- Only ~15 acres of aspen stands in the project area are cleared through the NEPA/CEQA, restricting restoration.
- A comprehensive aspen restoration plan and NEPA/CEQA clearance are needed.

Expected Outcomes

- Watershed-wide aspen delineation: GPS stand boundary mapping and condition assessments.
- NEPA/CEQA clearance on min. 300 acres creating a pipeline of shovel-ready projects.
- Baseline monitoring at a subset of stands identified as high priority for restoration.
- A framework for improving the remaining acreage, and for enhancing aspen stand health and sustainability across the watershed (for possible consideration in FPP Phase 2).



Scope of Work

- Aspen Inventory, Mapping and Assessment
 - Desktop assessment of known and predicted stand locations using local knowledge, available GIS data and expert verification.
 - Implement rapid assessment and field-map boundaries all stands encountered.
 - Incorporate results of assessment and mapping into ACCG SLAWG GIS mapping tool.
 - Coordinate with USFS and SYRCL.
- Baseline Monitoring
 - Conduct monitoring on subset of stands for aspen condition and for deer use, birds and bumble bee to document pre-restoration abundance.
- Restoration Prioritization and Design for 300 acres (minimum).
- Complete NEPA/CEQA for 300 acres (minimum).



Project Area Map

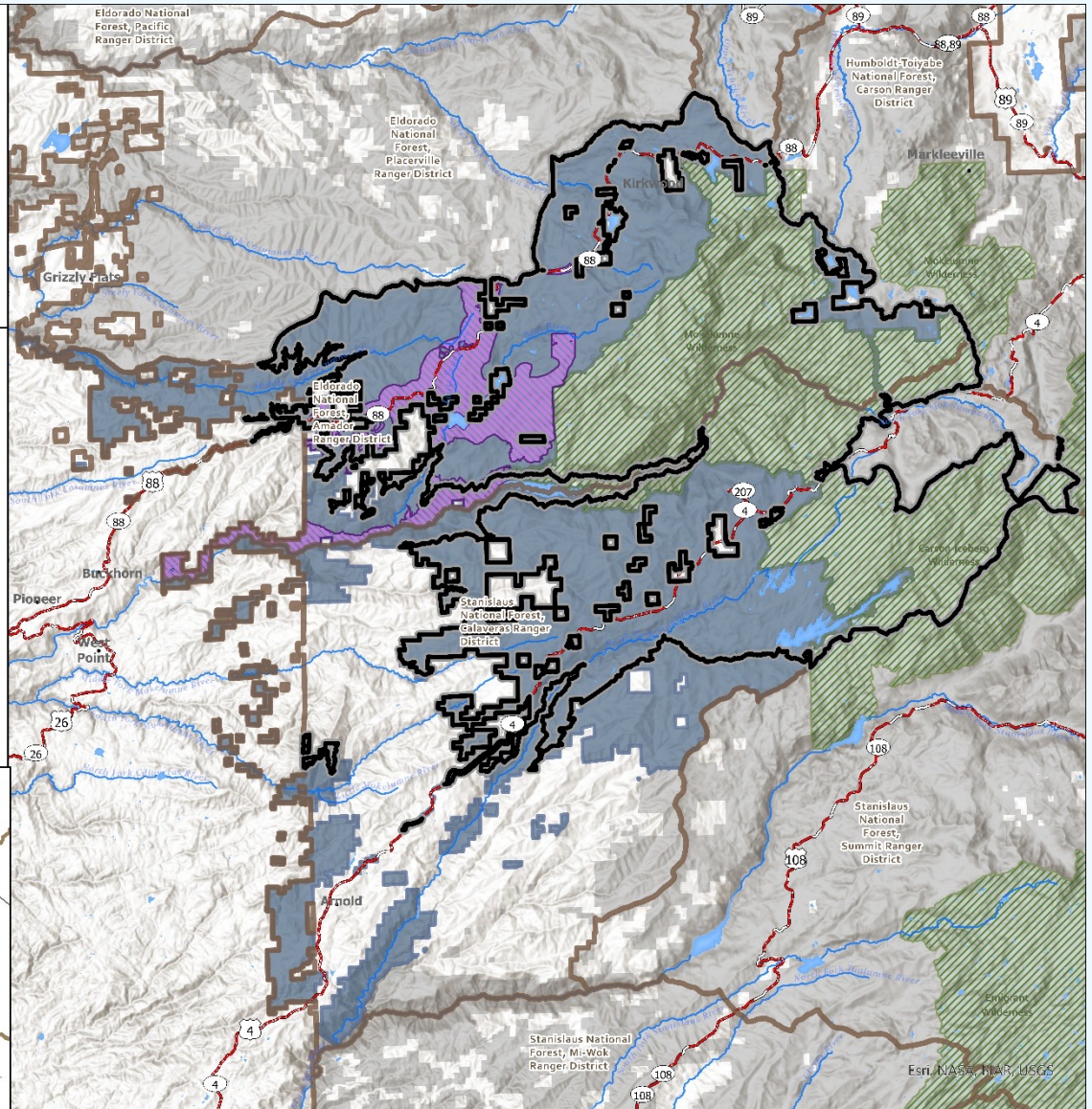
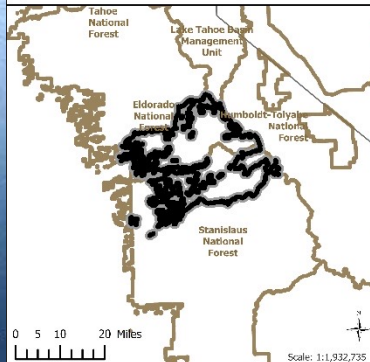
UMRWA WCB Upper Mokelumne Aspen Assessment & Restoration Project

Eldorado National Forest, Amador Ranger District & Stanislaus National Forest, Calaveras Ranger District



Legend

- Project Assessment Boundary
- FPP Phase 1 NEPA
- FPP Phase 2 Project Area
- Ranger District Boundaries
- Designated Wilderness
- USDA Forest Service



Mapping Method

- Individual stands were delineated and boundaries mapped using the stand definition that all aspen stems (any size class) within 100' of each other were a single stand.
- Mapped boundaries using tablet with Avenza Pro software or using GPS. One crew member walks the aspen boundary while the second travels ahead to look for additional stems.
- 49' is average distance rhizomes will travel underground to send up new suckers, 161' is maximum (Stener et al. 2018).
- 100' is most commonly cited distance for suckering (Baker 1925, Jones et al. 1985, Shepperd et al. 2006, Sankey 2008, Berrill et al. 2017).



Rapid Assessment Metrics

Conifer overtopping aspen?

>50% or <50%

Conifer encroachment in under and mid story

>50% or <50%

Aspen regeneration present?

High (>500 stems/ac)

Moderate (100-500s/ac)

Low (<100 stems/ac)

Browse intensity

Light, mod., intense

Size Class Abundance

III. Stand Condition Description:

1. Aspen Size Class Abundance Table:

Size	Absent (0)	Sparse (countable)	Frequent (not everywhere but not countable)	Abundant (Everywhere you look)
0-18 in height				
18-5ft high				
5 ft-2 in dbh				
2 - 11 in dbh				
>11 in dbh				
Snags				

a) Number of age classes (cohorts) present: single two multiple

Comments: _____

2. Conifer Size Class Abundance Table (*All conifer species*):

Size	Absent (0)	Sparse (countable)	Frequent (not everywhere but not countable)	Abundant (Everywhere you look)
Seedling: <1" dbh				
Sapling: 1-6" dbh				
Pole: 6-11" dbh				
Small tree: 11-24" dbh				
Med tree: 24-40" dbh				
Large tree: >40" dbh				
Snags: >15" dbh				

Comments: _____



Monitoring Protocol



30m x 2m belt transect (Lassen NF Protocol)

- Record size class of all aspen and conifer stems
- Max DBH in each 3m section
- Canopy closure
- # of aspen leaders browsed

1 or more transect per stand (200m spacing)



Map of Inventoried Stands

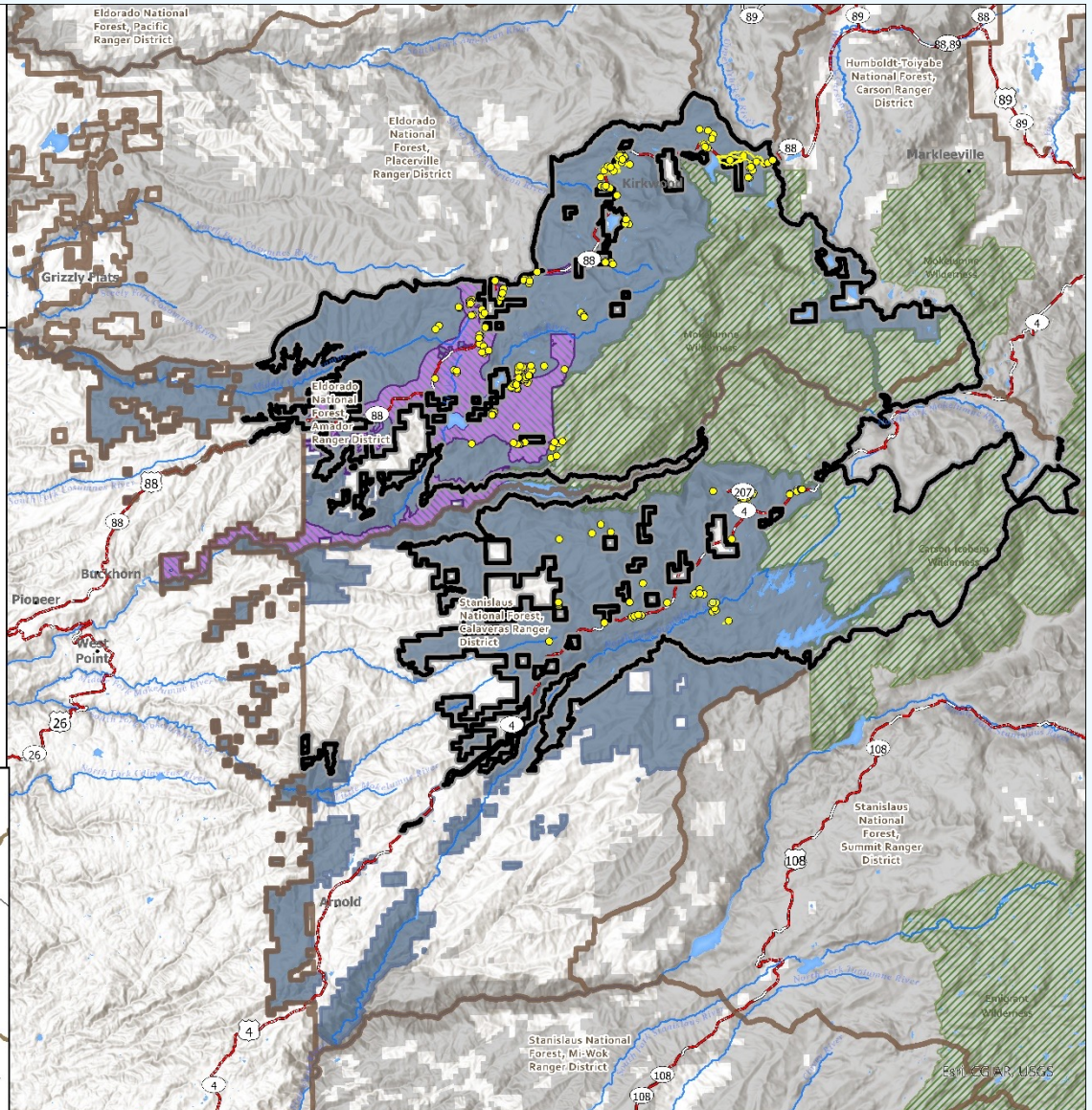
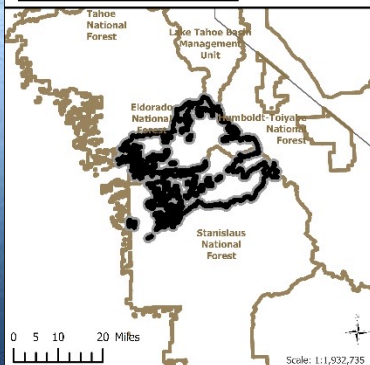
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Legend

- Field-delineated aspen stands
- Project Assessment Boundary
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Summary of Inventoried Stands

219 stands (861 acres)

- ENF, Amador RD: 146 stands (774 acres)
- STF, Calaveras RD: 73 stands (87 acres)

	Percent of stands (ENF)	Percent of stands (STF)
Designated Wilderness	3 %	--
Inventoried Roadless	20 %	16 %
CSO, Goshawk PACs	12 %	6 %
Caples Proposed Wilderness	5 %	--
All other stands	66 %	84 %



Representative Stand



- 3 aspen stems (green star), no regeneration
- Only one conifer “inside stand” (yellow check)
- If you only remove one conifer there is no appreciable difference on sunlight reaching forest floor
- Removal of buffer conifers adds sunlight to the stand footprint and area for stand to expand.

Representative Stand



Value of Using a Buffer Treatment



Post treatment example

- Vigorous regeneration from existing aspen due to light and reduced competition
- Space for aspen to expand (foreground and background)

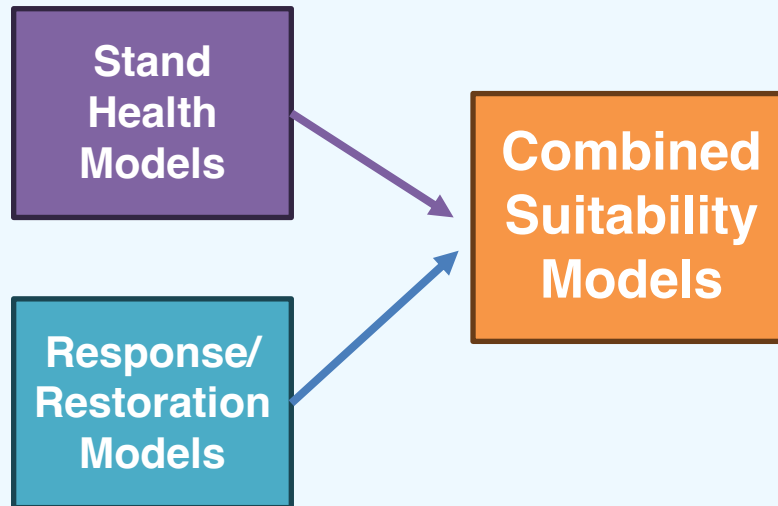


Buffer Cont'd

- Yellow = stand footprint
- Blue = 150' buffer
- A larger treatment buffer is needed to change growing conditions in very small stands than is needed in large stands.



Preliminary Decision Framework for Aspen Restoration: Stand Health & Stand Response/Restoration Suitability Models



Preliminary Decision Framework for Aspen Restoration: Stand Health & Stand Response/Restoration Suitability Models

Combined Suitability Models

- Weights: custom, based on SYRCL framework

Combined Model 1: Conifer Encroachment, All Meadows

- Stand Health Model 2 (0.4)
- Restoration Model 2 (0.6)

Combined Model 2: Conifer Encroachment, Sensitive Meadows

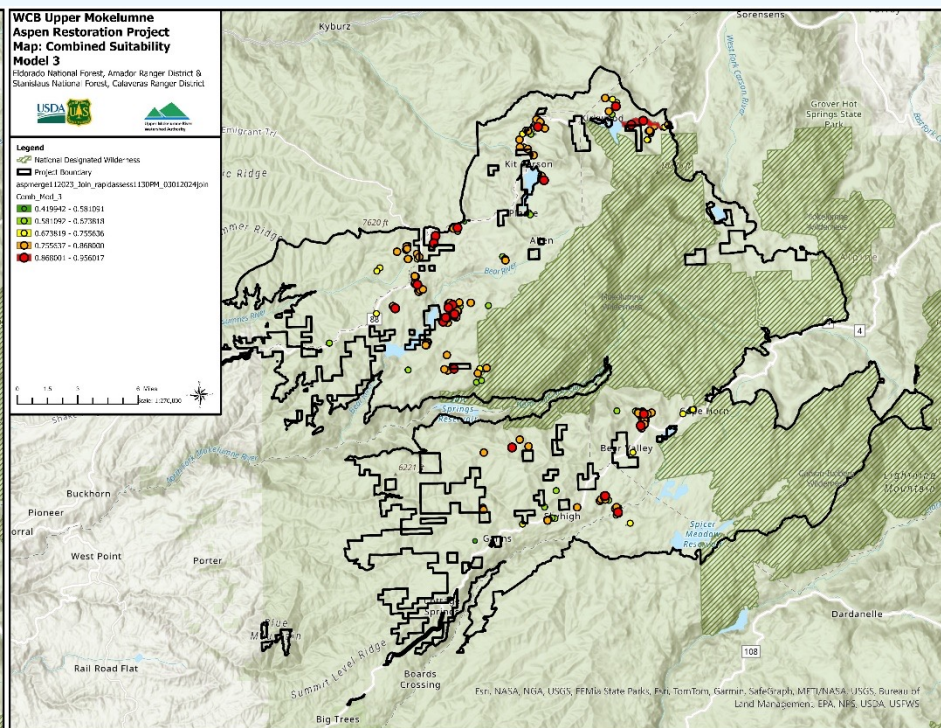
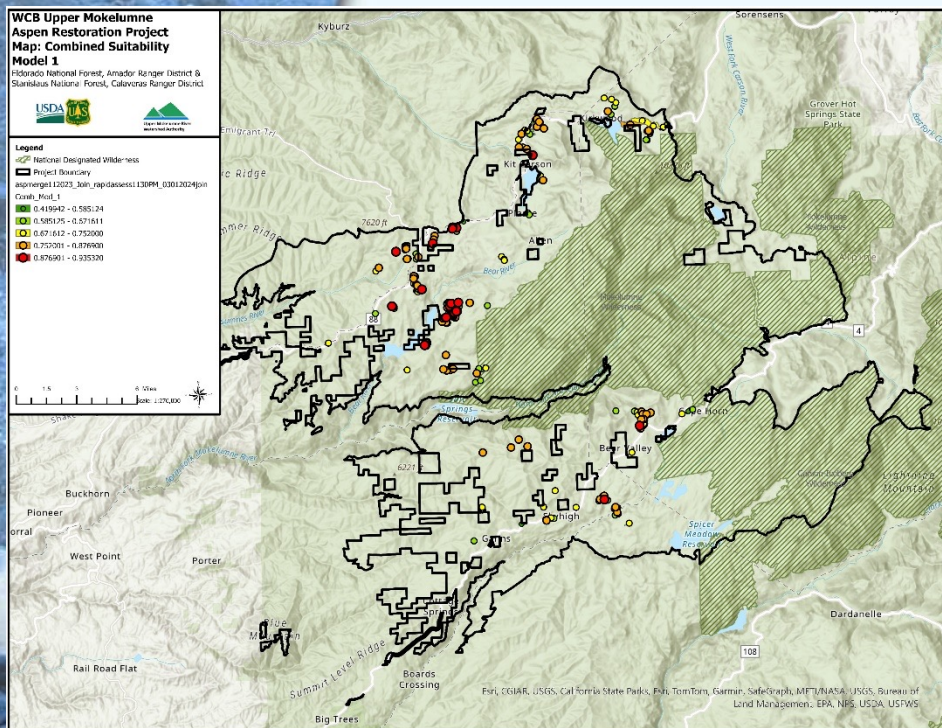
- Stand Health Model 2 (0.4)
- Restoration Model 3 (0.6)

Combined Model 3: Conifer Overtopping, All Meadows

- Stand Health Model 3 (0.4)
- Restoration Model 2 (0.6)

Combined Model 4: Conifer Overtopping, Sensitive Meadows

- Stand Health Model 3 (0.4)
- Restoration Model 3 (0.6)



Preliminary Project Areas

UMRWA WCB Upper Mokelumne Aspen Assessment & Restoration Project

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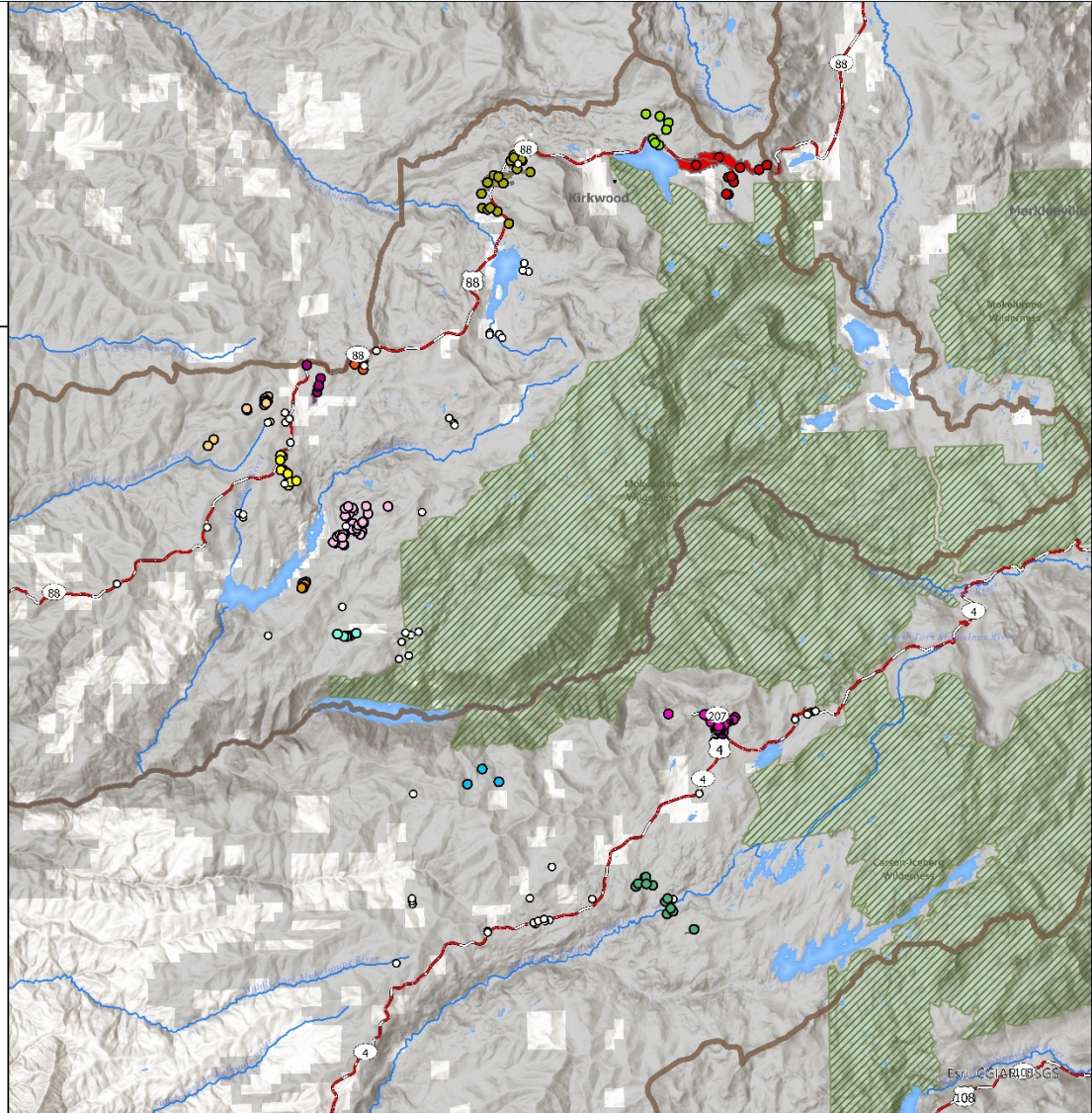


Legend

Preliminary Project Area

- Aspen_Project_1
- Aspen_Project_2
- Aspen_Project_3
- Aspen_Project_4
- Aspen_Project_5
- Aspen_Project_6
- Aspen_Project_7
- Aspen_Project_8
- Aspen_Project_9
- Aspen_Project_10
- Aspen_Project_11
- Aspen_Project_12
- Aspen_Project_13
- <all other values>

- Ranger District Boundaries
- Designated Wilderness
- USDA Forest Service



Preliminary Proposed Actions

- Cut and remove encroaching and overtopping conifers < 30" dbh and shrubs by hand and mechanically. Treatments may extend within 100' of outermost aspen stems on the north side and 150' on remaining sides (approx. 1-1½ times tree height or max. extent of lateral aspen roots).
- Girdle and leave standing select conifers \leq 30" dbh that cannot be hand cut in riparian exclusion zones or in areas where it is not practical or feasible to cut and remove conifers.
- Erect temporary fencing where browsing/grazing pressure is present on >50% of a stand or where there is only a single age class present.
- Prescribed fire in suitable stands where fire is occurring in adjacent conifer stands. Prescribed burning may only take place following mechanical or hand cutting, and after the restoration response has been assessed by the USFS.



Potential NEPA Approach

NEPA document will cover a min. of 300 acres of mapped aspen stands on the ENF/ARD. Mapped stands on STF/CRD are anticipated for consideration in Phase 2.

Potential 36 CFR Part 220.6 Categorical Exclusion (e)25 is under consideration.

- Forest and grassland management activities with a primary purpose of meeting restoration objectives or increasing resilience.



Estimated Timeline

TASK DESCRIPTION	TARGET DATE
Monitoring Work Group	March 8, 2023
General Meeting	June 21, 2023
Stand assessment and baseline monitoring	June – Oct 2023, June – Oct 2024
Prioritize stands for restoration, and complete Restoration Plan.	Nov 2023 – May 2024
Develop Preliminary Proposed Action/Purpose and Need and scoping package based on the Restoration Plan	May - June 2024
Planning Work Group (as-needed, estimate 3 presentations and monthly updates)	April - Nov 2024
Public Scoping (30 Days)/Issues Analysis	July 2024
Contract procurement for Wildlife Biologists, Botanists and Archaeologists to prepare the NEPA Project Record reports (concurrent with public scoping)	July - August 2024
ESA Compliance: USFWS Consultation (Biological Assessment/Letter of Concurrence)	July – Nov 2024
National Historic Preservation Act compliance/Section 106: Arch surveys	July – Nov 2024
Planning Work Group: Project Submission Form and request for letter of consensus support	September 2024
General Meeting: Request for letter of consensus support	October 2024
Final Decision Memo	November 2024
CEQA/NOE	January 2025
Grant Completion	March 2025



Questions for ACCG



1. What are the PWG's potential concerns, issues or ideas?
2. What is the definition of a "treatable stand," taking into consideration the available rapid assessment data?
3. And separate from this project but related, does the PWG want to form an aspen ad hoc for Phase 2?

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Thank you!



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Upper Mokelumne River
Watershed Authority