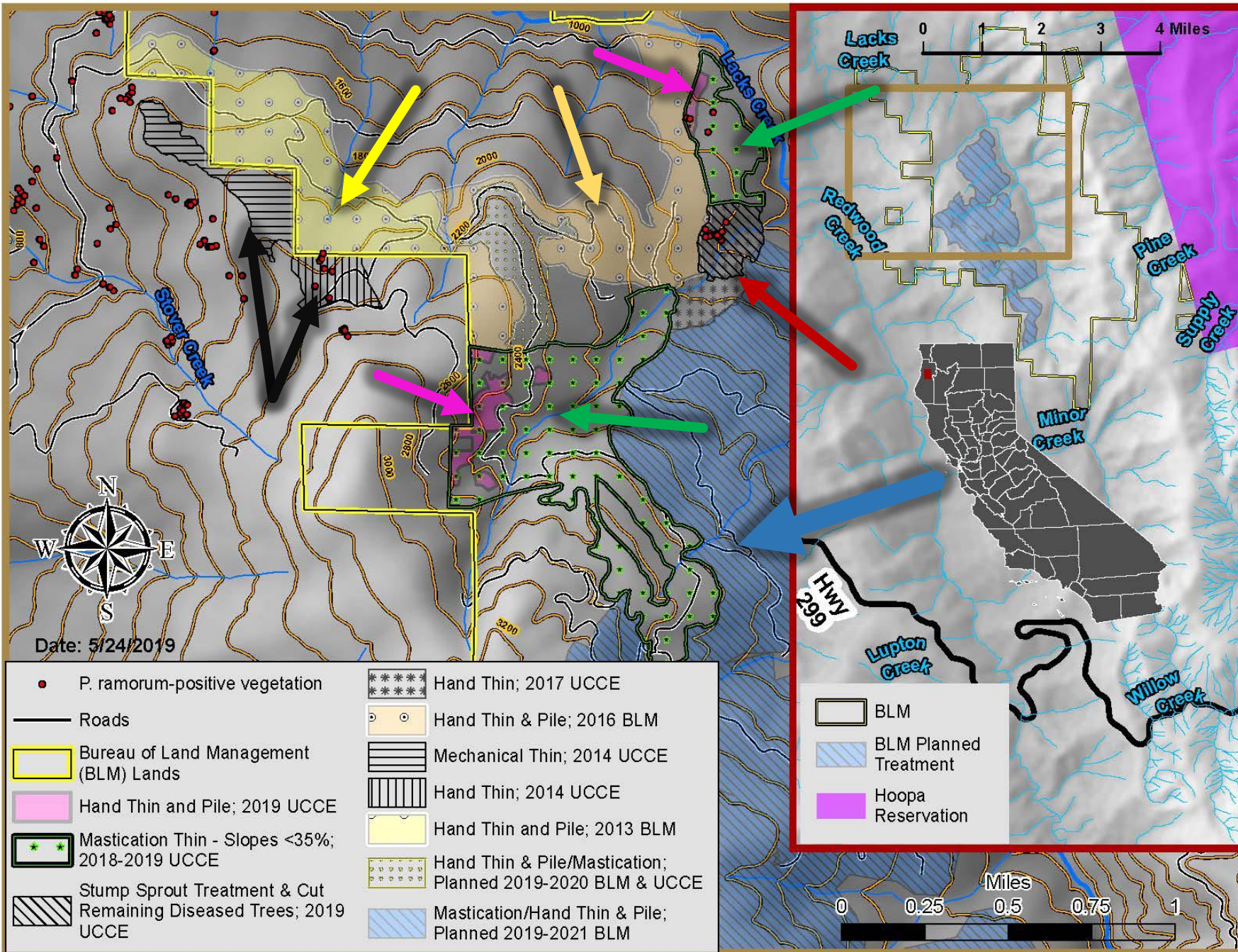


Adaptive Management at Lacks Creek: New Treatments for a New America

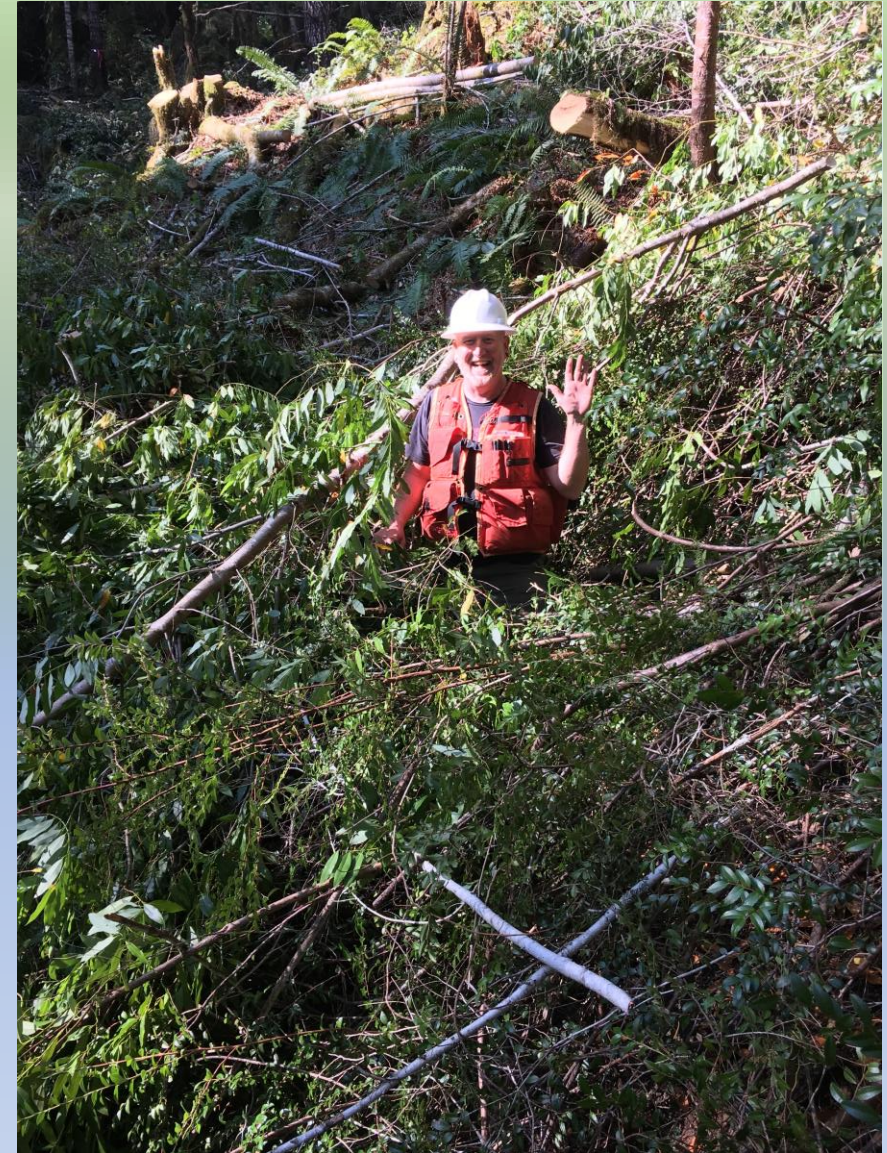


The Saga Continues...

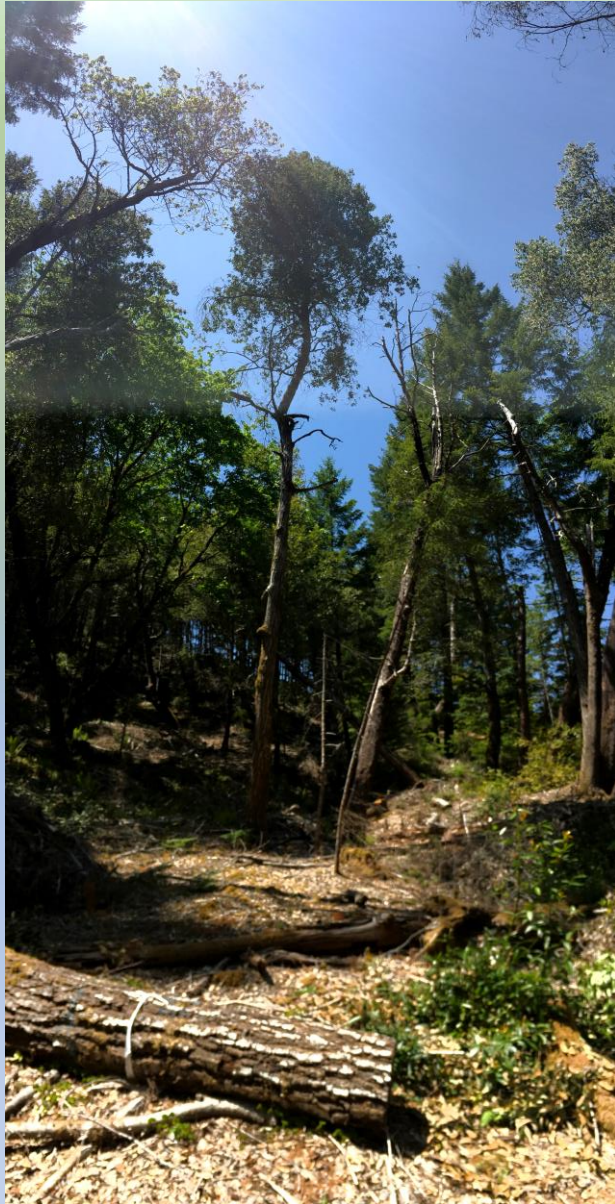
- BLM started ahead-of-disease thinning 2013
- UCCE followed nearby in 2014, also with heavier thinning in a newly-found infestation
- BLM thins more 2016
- UCCE thins new infestation and adjacent 2017
- UCCE thins by mastication 2018-2019
- UCCE thins 2019
- BLM plans 2019-2021



2017: A Chink in the Elbow Armor



Maintaining Fagaceae Presence



Map 4. Treatment Units Aerial Imagery

— Roads

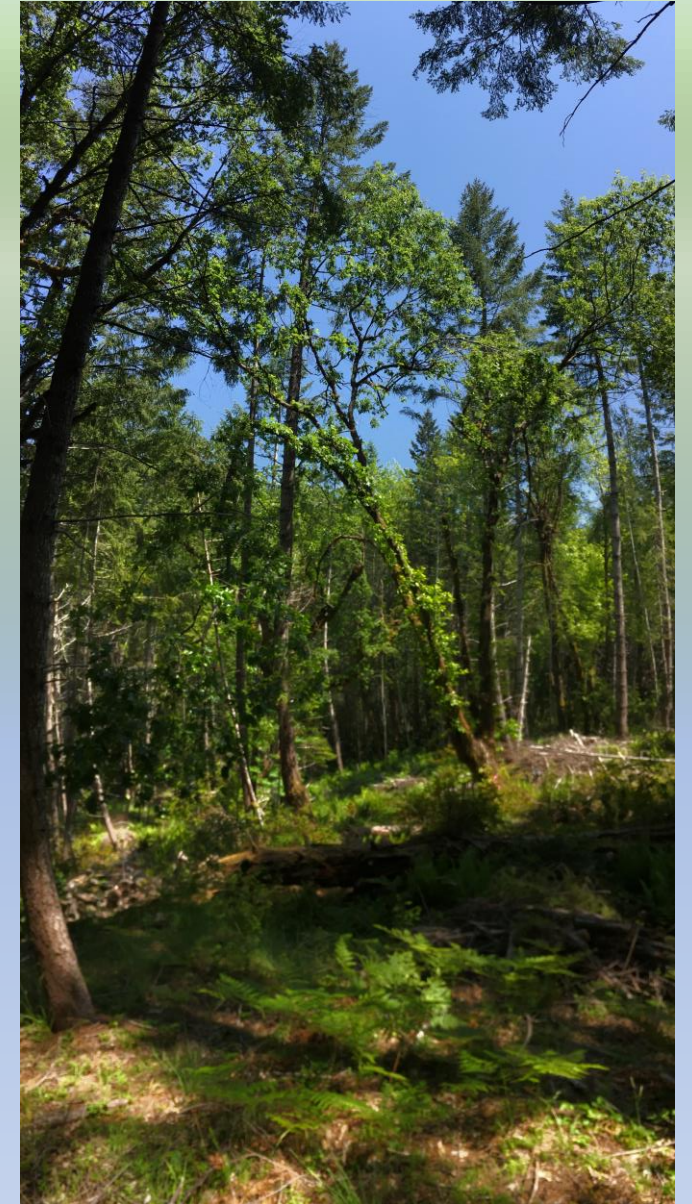
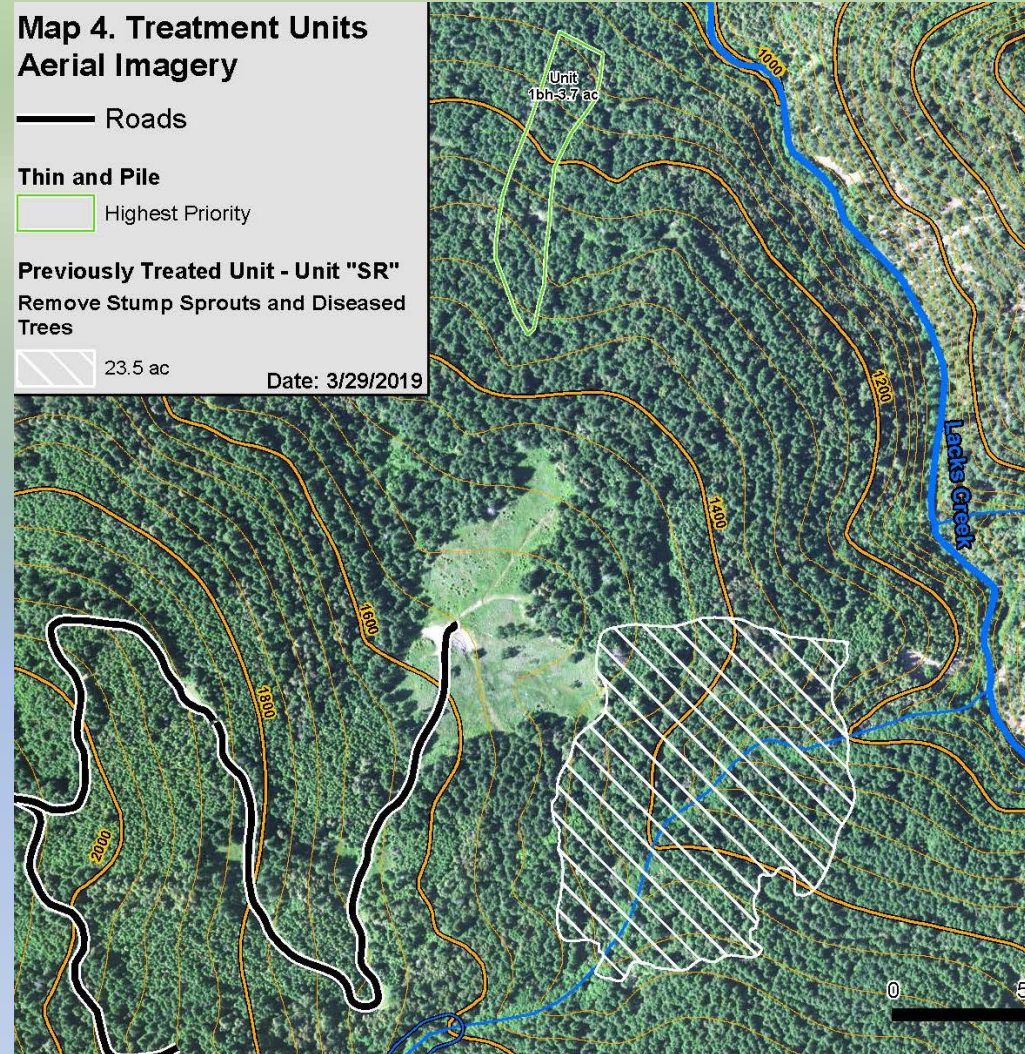
Thin and Pile

□ Highest Priority

Previously Treated Unit - Unit "SR"
Remove Stump Sprouts and Diseased
Trees

▨ 23.5 ac

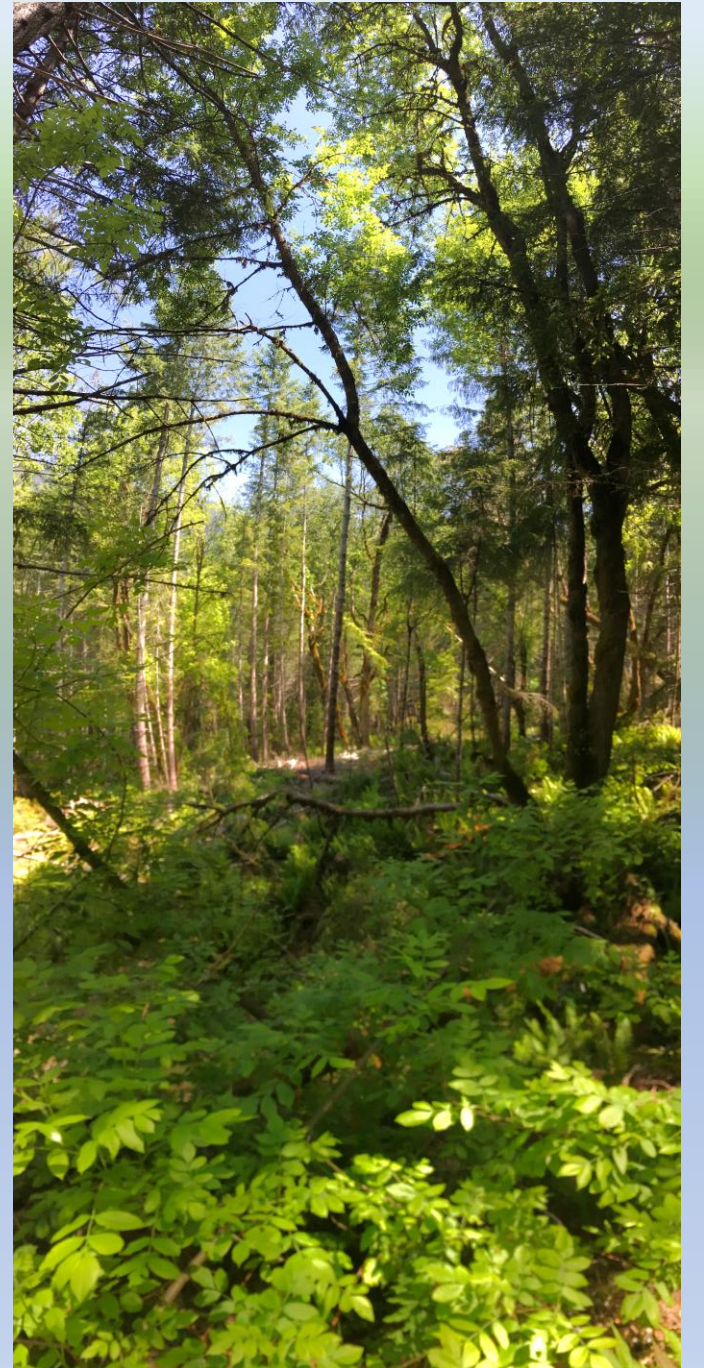
Date: 3/29/2019



Flyette Prairie

- Formerly restored by BLM (removal of encroaching conifers)
- Burn plans?
- Elk habitat





Loss of Deciduous Oaks



2019 Follow-up in 2017 Tx Footprint



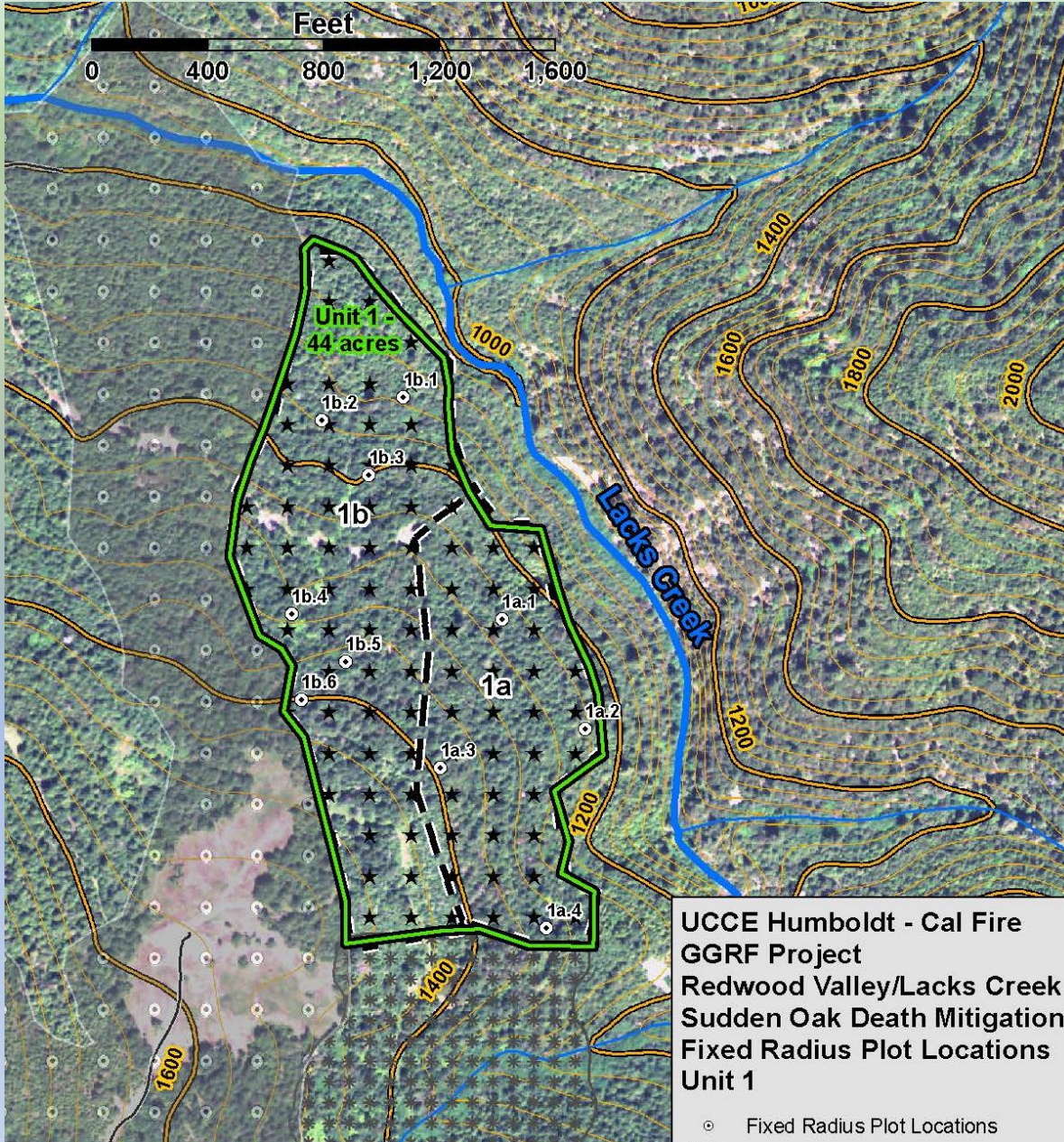
2018 Plots Measured



- ~60 variable radius plots
 - Some for initial carbon forecasting (more intensive)
 - Some for stand typing
- ~50 fixed radius plots
 - Protocol similar to UC Davis Rizzo Lab
 - Compatible with analysis of Cobb et al. plots in BLM Tx
 - Fuels transects
 - 10 plots in untreated areas amongst treated



Stand Measurements



Stems Per Acre

Subunit	Approx. Acres	Douglas-fir DBH Class								Total
		4" to <8"	8" to <12"	12" to <16"	16" to <20"	20" to <24"	24 to <30"	30" to <40"	≥40"	
1a	17	56	46	26	10	16	2	0	0	232
1b	27	55	67	48	23	8	7	1	0	218
3a	45	8	0	0	0	0	0	0	2	83
3b	7	0	0	0	0	0	8	0	0	8
3c	16	13	5	0	0	0	0	0	0	19
4a	11	44	16	4	4	0	0	0	0	69
4b	1.5	0	0	0	0	0	4	0	0	4
4c	9	73	12	0	0	0	0	0	4	218
6	32	45	18	5	2	0	0	2	0	71
8	28	16	16	0	0	0	8	0	0	40

Fall 2018 Mastication Commences



140 acres contracted for mastication

- Slopes <35%
- Thin to average of 150 trees per acre >4" DBH
 - Tanoak, bay laurel, Douglas-fir
- Retention of smaller stems of non-vectoring hosts







Before & After



Before & After



Before & After









Where Bay Laurel Was Abundant, Patchy Structure Left





Mastication Pros and Cons

PRO

- Cheaper...for now
- No piles left to burn
- Gets rid of thick brush
 - Much easier to walk through after treatment for monitoring; more accessible for timber
- Smaller crew = easier communication
- Can take out multiple stems of hardwoods branched well above breast height
- Results in more variable spatial structure; greater patchiness

CON

- Difficult to predict treatable area
 - Skips in complex terrain
- Thick woody fuel bed limits ability to apply broadcast underburn
- Insensitive to shrub and herb layers
- Tricky around ephemeral watercourses; soil impacts
- Fuel intensive
- Slower production rate

Cutting Residual Bays in Infested Unit 2019

- ~4 acres was inaccessible by masticator
- Bay laurel were cut, lopped & scattered
- Tanoak thinned where present
- *P. ramorum* in canopies of felled bay trees
 - ~50 m away from previously known



Some infection may remain

Equipment Cleaning and Sanitation



Equipment Cleaning and Sanitation



Equipment Cleaning and Sanitation



Trials to commence next week at infested site in southern Humboldt County

- Manual cleaning or heavy-duty air compressor
 - Post-cleaning sanitation with peracetic acid/peroxide solution
- Powerwasher
 - Cold, high pressure
 - Hot, lower pressure (more residue likely)
- Test for *P. ramorum* by baiting pre- and post-cleaning samples with Rhodie baits



Thank You



Arcata BLM: Dan Wooden, Chris Heppe, Alex Miyagishima, Courtney Boyd, Sharyl Kinnear-Ferris

Cal Fire: Tadashi Moody, Jason Butcher, Tom Smith, Chris Lee

