

ANNUAL REPORT

JACKSON DEMONSTRATION STATE FOREST

Mendocino County, California

2021 Calendar Year



**State of California
Department of Forestry and Fire Protection**

**Thom Porter, Director Jan-Dec
Mike Bradley, Region Chief Jan-Nov
George Morris III, Region Chief Nov-Dec
George Gonzalez, Mendocino Unit Chief Jan-Dec
Mike Powers, State Forest Manager Jan-July**

Administration

State Forest Staff

Manager:

Mike Powers (Forester III, retired July)

Silviculture/Timber:

Jason Serna (Forester II)
Julie Rhoads (Forester I, Jan-Aug)
Kirk O'Dwyer (Forester I)
Fred Postler (Forestry Asst. II)
Tori Norville (Forester I, Jan)
Jeremiah Steuterman (Forester I, Feb-Dec)
Daniel Samaniego (Forestry Asst. II, Sept-Dec)

Seasonal Forestry Aides:

Adam Baran Jan-Feb
Asher Budnik Jun-July
Dominic Daniels Jun-Dec
Devorah Eden Jun-Sept
Scott Kirby Jun-Oct
Ryan McGough Jun-Aug
Molly McSweeney Jun-Aug
Esteban Palacios Jun-Dec
Gissella Quiroga Aug-Dec

Research, Demonstration and Education:

Lynn Webb (Forester II, retired Dec)
Tori Norville (Forester I, Feb-Dec)
Jeremiah Steuterman (Forester I, Jan)
Edwin Diaz (Forestry Asst. II)

Administration, Recreation, Roads and Law Enforcement:

Robert Horvat (Forester II, retired Dec)
Erik Wahl (Forester I)
Peter Smith (Forestry Asst. II, LE Forest Patrol, Jan-Feb)

Biologist:

Robert Douglas (Senior Env. Scientist)

Clerical:

Joy Korstjens (Office Technician)
Debbie Lotten (Account Clerk, ½ time, retired Dec)

Protection:

Craig Dudley (LE Fire Prevention Specialist)

Geographic Information Systems:

Peter Rowland (Senior Env. Scientist)

Heavy Fire Equipment Operators, Road Maintenance:

Chris Williams (HFEO)
Kris Rorabaugh (HFEO)

Retired Annuitants:

John Griffen

ADMINISTRATION

There were many staff changes during the year. Robert Douglas accepted the Senior Environmental Scientist position (JDSF Wildlife Biologist) vacated by Tina Fabula upon her retirement. To broaden the experience of staff, Jeremiah Steuterman moved into the Timber Sale program and took charge of the reforestation/vegetation management work, and Tori Norville moved into the Research & Demonstration program, taking charge of public outreach work for the Forest.

Daniel Samaniego joined the Forest as a Forestry Assistant II within the Timber Sale Program. In February, Jeremiah Steuterman (For I) and Julie Rhoads (For I) both attended the Situation Unit Leader training in San Luis Obispo. Most JDSF staff attended the one-day Public Safety-First Aid/CPR recertification course. In May, Mike Powers attended a two-day Duty Chief training at North Operations in Redding. Forestry Assistant II Edwin Diaz successfully completed Company Officer at Lone. Most of the Forestry Aides for the 2021 season were slated to work the full TAU nine-month term, but less than half ended up being able to do so. Forester I Julie Rhoads accepted a position with Resource Management in August.

Multiple job vacancies exist, including three staff positions that were advertised and unfillable for most of the year: 1) Forester I in the Research & Demonstration program, 2) Forestry Assistant II Law Enforcement, and 3) Forester III Forest Manager. The Forest Manager Position was vacated by Mike Powers in July, and the vacancy has had 0 applicants, leading to a decision to soon re-advertise as a Forester II (TAU). Kevin Conway, State Forests Program Manager, fulfilled the function of Forest Manager when necessary. The State Forest front public office remained closed to the public due to COVID-19.

Mendocino Redwood Co. made a resolution payment to settle the inadvertent timber trespass onto JDSF lands in the Three Chop Ridge area that occurred in June 2020.

In March, JDSF conducted a broadcast burn with a portion of the Parlin 17 timber sale area tractor unit. The prescribed burn was a low intensity burn that covered about 50 acres. JDSF staff organized two field tours for the public and stakeholders of proposed projects under development; one tour visited the Little North Fork Big River project near the Mendocino Woodlands and the other tour visited the Caspar 500 and Mitchell Creek projects on the west side of the Forest. JDSF staff participated in a virtual town hall meeting on April 8th, and the questions asked during the meeting have been compiled into a Q&A posted on the webpage.

Also in the Spring, Forest Manager Mike Powers participated in a field tour of the Mitchell Creek and Caspar 500 THP areas with Mendocino County Supervisor Dan Gjerde. The tour was attended by JDSF staff and the local CALFIRE Battalion Chief. Powers also participated in a Government-to-Government consultation with the

Coyote Valley Band of Pomo Indians representatives. In the Summer, Forest staff provided a significant amount of cultural resource information and hosted two days of field visits for representatives of the Coyote Valley band of the Pomo Indians as part of the ongoing Government-to-Government consultation.

Locally, the second small wildfire of the year occurred on JDSF in August. Peter Rowland and Tori Norville supported the Bell Incident in the unit. Julie Rhoads, Peter Rowland, Jeremiah Steuterman, and Edwin Diaz were assigned to out of Unit incidents. HFEO Williams was assigned to cover Howard Forest.

Unit Chief George Gonzales approved the removal of Armor Security from the Road 500 gates. To address concerns of residents west of the gate in the Fern Creek Neighborhood about fire and the gates being locked, JDSF has issued over 100 gate keys to various personnel and six emergency response agencies. As an additional redundancy, JDSF also added a combination lock and may open the gates during critical fire weather events such as red flag warnings; in the event of an emergency, the gates will be opened for any needed vehicular access.

A petition signed by about 50 individuals was submitted to CAL FIRE and the Mendocino County Board of Supervisors requesting the closure of the informal shooting area off Road 408. The primary complaints were noise, fire hazard, and illegal dumping. Signs reminding users of the JDSF rules will be reposted, and options for periodically cleaning the illegally dumped material are being explored.

In the Fall, Erik Wahl was the only JDSF staff member available to attend the State Forest Managers meeting at Mountain Home DSF. Regarding Special Use Permits, the Coyote Valley Band of the Pomo Indians were issued a Special Use Permit for a Prayer Ceremony on October 17 at the Caspar Scales. The ceremony was held despite the wind and rain on the day of the event. A notice of unauthorized use of the forest was sent to Chad Swimmer (Mendocino Trail Stewards) for commercial filming without a Special Use Permit or permit from the California Film Commission, and a notice of unauthorized use of the forest was sent to Roo Harris for advertising a commercial mountain bike tour of the forest.

Three longtime employees retired in December, leaving their positions vacant: Robert Horvat, Forester II in Recreation and Roads, Debbie Lotten, Account Clerk II, and Lynn Webb, Forester II in Research and Development.

Jackson Demonstration State Forest Advisory Group (JAG)

2021 was a very active year for the JAG, with a total of four meetings being held. All meetings were held in accordance with applicable current COVID related health orders, and public comments on agenda items could be submitted via email in advance of the meeting in lieu of personal attendance. George Hollister is the residing Chair of the group with John Anderson as Assistant Chairperson. In

February, a poll for available dates for the 2021 Jackson Advisory Group meetings was sent to the JAG members. The members were asked to provide available dates for the usual spring meeting (April/May) and a fall meeting (September/October).

The spring JAG meeting was held on April 28 and 29. The JAG heard from about a dozen members of the public who attended the meeting and expressed public comments. The JAG reviewed two proposed timber management project areas (Old Berry THP and Boundary Creek THP), and an updated tour of Caspar 500 THP. Staff prepared responses to the public comments and posted them on the JDSF webpage. Later in the spring, Mike Powers and Kevin Conway held two interviews with interested JAG RPF members. One applicant (Chris Blencowe) was selected and was recommended to the BOF as an addition to the JAG membership. LTO member Mike Anderson resigned from the JAG in June.

A JAG meeting was held on August 3rd at the Fort Bragg Town Hall. The JAG was joined by Chief Reischman on behalf of the Director, and Chair Gilless on behalf of the Board of Forestry and Fire Protection, to review the public comment topics received through our recent outreach events. The meeting was interrupted by protestors speaking out of turn from the beginning. Chairperson Hollister struck a good balance between allowing the public time to speak while still moving through the agenda. JDSF staff covered their agenda items professionally despite the interruptions and heckling from some in the audience. At 8:00 PM protesters stood at the front of the room chanting “moratorium” and indicated their intention to disrupt the meeting. The JAG briefly recessed then reconvened just to adjourn the meeting. Remaining items were continued to their August 27th field tour.

The JAG field tour on August 27th met at Camp 20 for introductions and general administrative updates from JDSF staff. Next, the JAG reviewed the proposed Gulch 16 THP and found it in compliance with the management plan. The tour concluded with a review of the Water Gulch THP (1-12-036-MEN) and untreated stand from the 2008 Indian Springs Fire. The untreated stand area offers a demonstration opportunity to view what an area will look like a dozen years or more post-fire in the redwoods. The treatments proposed in the THP offer a demonstration of delayed post-fire harvest treatments and create a juxtaposition between treated and untreated units after the THP is completed.

A JAG meeting was held on November 16th, with the group again meeting at Camp 20 for introductions and general administrative updates from JDSF staff. Approximately 30 people gathered for the administrative portion of the morning, but only half that number proceeded to the tour portion of the meeting. Although stated on the agenda, the Lindquist Density Management Study area was unable to be visited due to unanticipated CALTRANS activity in the area. The JAG discussed JDSF outreach expansion, budgetary constraints, JAG membership, then Forest Management Plan (FMP) and Outreach subcommittees were created. The East Berry Field Tour included stops at the shaded fuel break mark, creek crossing with

skid trail in the creek/NSO no harvest area, and Shelterwood Seed Tree step from 1990's mark.

JAG membership as of 12/31/2021 (recruitment ongoing):

George Hollister (Chair)	Amy Wynn
John Anderson (Assistant Chair)	Chris Blencowe
Doug Albin	Charlie Schneider
Michael Jones	
Dan Stapleton, Assistant Executive Officer Board of Forestry and Fire Protection	

Timber Management and Minor Forests Products

Timber Harvest Plan Preparation

In March, NSO surveys were completed for the Parlin 17, Bear Gulch #2 and Red Tail THPs. NSO surveys continued for the Chamberlain Confluence, Caspar 500, Soda Gulch and other future THPs.

In August, the Boundary Creek THP was accepted for filing by Santa Rosa Review Team. PHI was scheduled on September 28th.

On November 17, 2021, CAL FIRE representatives meet with Coyote Valley Participants for a field meeting. The meeting was an opportunity for the Department to respond to tribal questions and concerns in the field, and also for the Department to learn about Coyote Valley's perspective and information needs.

Timber Sales/Active Timber Operations

Due to NSO breeding season restrictions, falling and yarding operations stopped on all active timber sales during the Winter. However, an amendment was approved that allowed loading and hauling of decked logs for the Parlin, Moe and Bear Gulch #2 Timber Sales. Approximately 50 loads were shipped in the first part of February.

The Caspar 500 Timber Sale was sold on December 19th to Willits Redwood Company. The winning bid for redwood was \$872.07. The price for Douglas-fir and whitewoods was \$40/MBF. The total value of the sale is \$2,815,662. There were three bidders for this timber sale. This is a two-year sale, and the contract was anticipated to be approved by May with operations beginning in June.

A tour was held for the Chamberlain TW Timber Sale on February 9th. A variety of mill representatives and LTOs attended the half day tour. A bid was scheduled for March 2nd, and was sold to H&M Logging Inc. The winning bid for redwood was

\$525. The price for Douglas-fir and whitewoods was \$61/MBF. The total value of the sale was \$608,170. There were two bidders for this timber sale. This is a two-year sale and the contract was anticipated to be approved by May with operations beginning in June.

A tour was held for the Soda Gulch Timber Sale on March 16th. A variety of mill representatives and LTOs attended the half day tour. The Soda Gulch Timber Sale was sold on April 8th to Mendocino Forest Products. The winning bid for redwood was \$295. The price for Douglas-fir and whitewoods was \$40/MBF. The total value of the sale was \$351,445. There was one bid for this timber sale. This is a two-year sale and the contract was anticipated to be approved by June with operations beginning in July.

The Soda Gulch Timber Sale was the final sale of the year. In total, JDSF sold four timber sales (Red Tail, Caspar 500, Chamberlain TW and Soda Gulch). Total volume sold was 14.5 MMBF with an estimated sale value of \$5.5 million.

Operations resumed on the Bear Gulch #2, Parlin and Moe Timber Sales in the Spring. On the Bear Gulch #2 Timber Sale all logging operations were completed except for the associated road work and lopping. Map point work and lopping were expected to be completed in the summer. In total, volume remove from the Bear Gulch #2 Timber Sale was 6.6 MMBF with a value of \$4.4 million.

Falling, yarding and hauling continued in Parlin and Moe Timber Sales in March.

A pre-ops meeting was held for the Red Tail Timber Sale on March 31st, with operation commencing upon contract approval from DGS.

In April, cable yarding operations resumed on the Camp 17 Timber Sale. The tractor logging was completed in 2020. All logging operations were expected to be completed by the end of June 2021.

The Red Tail TSA was approved by DGS in late April. Operations commenced upon approval. Tractor logging was completed in the East Unit and cable yarding in the East Unit was scheduled to start in late June.

All tractor and cable yarding were completed on the Parlin Timber Sale in April. A few log decks remained and were to be shipped to the mill in the coming weeks. Map Point work will be completed in the summer. The TSA required log delivery to the Parlin mill was also done in the month of April.

In June, all operations were completed on the Camp 17 Timber Sale. In total, approximately 1.9 MMBF was removed with a value of \$747,118.

Logging was completed on the Parlin and Bear Gulch #2 Timber Sales. Lopping and road work remained to be done but were expected to be finished by the end of the year.

Operations continued on the Red Tail Timber Sale. However, trespassers on multiple occasions created an unsafe work environment. Due to this situation, operations only occurred on an intermittent basis.

Operations on the Caspar 500 Timber Sale started in June. Due to trespassers invading the work area, falling was limited to three days. Because of the unsafe work environment caused by trespassers, CAL FIRE paused operations in Caspar 500 for an undisclosed time.

Chamberlain TW Timber Sale started operation in early July. Trespassers were an issue but had a minimal impact. Tractor logging was completed in Units C and D. Cable yarding was anticipated to start in August.

A pre-ops meeting was held for the Soda Gulch Timber Sale, with falling expected to start mid-August.

Operations in Red Tail Timber Sale and Caspar 500 remained paused during the month of August.

Timber falling starting in the Soda Gulch Timber Sale in early September. Tractor yarding and hauling were tentatively scheduled to begin by mid-September.

Yarding and hauling continued on the Moe Timber Sale. Timber falling was completed, with operations expected to be completed by the end of September.

Falling, yarding, hauling and road construction continued on the Chamberlain TW Timber Sale. Operations were scheduled to continue until the first significant rains.

Timber falling started in the Soda Gulch Timber Sale in early September. Tractor yarding and hauling were planned to begin by mid-September.

In October, all logging operations were completed on the Moe Timber Sale. The Moe Timber Sale generated approximately \$1.5 million in revenue with 4.6 MMBF harvest. Lopping and other TSA required work remained to be completed.

Operations on the Chamberlain TW Timber Sale potentially ended for the year during October. Wet road conditions forced the LTO to stop operations. For the year, approximately 1.2 MMBF was removed with a value of \$209,000. This is a two-year sale.

Operations on the Soda Gulch Timber Sale ended for the season in October. While logging, trespassers were able to slow down production. Approximately 200 MBF was harvested during the one month of operations.

Transmission Power Line Tree Removal Timber Sale started operations in August. Work on this timber sale should last until the summer of 2022. Due to wet weather conditions in November, logging equipment was removed from the Transmission Power Line Timber Sale. However, falling crews continued work within the project site.

Class I Sales (Minor Forest Products Sales)

Minor forest product sales include firewood, mushrooms, and other minor forest products. A total of 960 Class I minor forest product permits were issued in 2021. Firewood permit sales began on August 6th, with the wood area opening August 16th. The firewood was located in the 23 Gulch timber sale area, and only 75 permits were sold to ensure sufficient wood supply (2 cords per permit). All firewood permits were mailed with an educational handout regarding Sudden Oak Death.

Early heavy rain in October led to brisk mushroom permit sales, with 885 total permits issued in calendar year 2021, which equaled 112 more permits sold than the previous year. As in 2020, all permit sales were by mail only in 2021 due to COVID.

Class I Sales

Permit Type	# Permits				Volume Sold				Revenue			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
Personal Use Firewood	137	0	148	75	274 Cords	0	296 Cords	150 Cords	\$2,740	0	\$2,960	\$1,500
Mushroom ¹	875	820	623	885	NA	NA	NA	NA	\$17,500	\$16,400	\$12,440	\$17,660
Fern	0	0	0	0	0	0	0	0	0	0	0	0
Shrubbery	0	0	0	0	0	0	0	0	0	0	0	0
Roots/Stumps	0	0	0	0	0	0	0	0	0	0	0	0
Poles	0	0	0	0	0	0	0	0	0	0	0	0
Green Timber	0	0	2	0	0	0	59.9 2 MBF	0	0	0	\$38,464 ²	0
Cull Logs	0	0	0	0	0	0	0	0	0	0	0	0
Totals	1,012	820	773	960					\$20,240	\$16,400	\$53,864	\$19,160

¹ Separate Commercial and Personal use mushroom permits discontinued in 2015; implemented one mushroom permit process for all uses. Individual mushroom permit cost is \$20.00 each, and all are Commercial (i.e., mushrooms gathered can be sold/no longer daily limit of one gallon by volume).

²Green timber sale related to the Caltrans Highway 20 safety project.

Research and Demonstration Program

Caspar Experimental Watershed

Monitoring of the Caspar Third Experiment continued through the year. The flows within Caspar Creek were unprecedented and have never been this low in 60 years, including the second lowest recorded rainfall, with 1977 being the lowest on record. Many of the preliminary results from the Caspar Third Experiment were starting to be published this year:

1. A Field-Based Experiment on the Influence of Stand Density Reduction on Watershed Processes at the Caspar Creek Experimental Watershed in Northern California. (Salli Dymond et.al).
2. Dynamic Hillslope Soil Moisture in a Mediterranean Montane Watershed (Salli Dymond et. al.).
3. Effects of Streamside Buffers on Stream Temperatures Associated with Forest Management and Harvesting using DHSVM-DBM; South Fork Caspar Creek, California. (Julia Ridgeway and Christopher Surfleet)
4. Comparing headwater stream thermal sensitivity across two contrasting lithologies in Northern California. (Austin Wissler, Catalina Segura, and Kevin Bladon).
5. Understory Evapotranspiration Rates in a Coast Redwood Forest. (Shelby Kassuelke et. al.). (Published Jan 2022).

The delayed 2020 SWAMP protocol Bioassessment took place May 24- June 4. Pete Cafferata, Stacy Standish, Gwyndolyn Ozard, Roberta Lim, Ross Mathewson, and Michael Novak joined JDSF and PSW staff. This final sampling took place in a low rainfall year. The lab conducting the analysis of the water samples was on a slower timeline due to COVID, so results are delayed in publication.

The Caspar Annual meeting was held June 15 to 17th, with the first two days virtual with almost 50 people attending. The last day was held in the field with 39 people attending. The initial results of the third experiment were presented with publications to come. CGS, UC Extension, Trout Unlimited and Redwood Forest Foundation Staff attended as well as a growing cohort of PSW entry level professionals who studied with Dr. Dimond. Natalie Okun of HSU evaluated the Rich Hilton stream wood data set with interesting results. The field tour was briefly delayed by protestors at the kiosk site as participants exited the watershed.



Participants at North Fork Wier on the Caspar Annual Meeting Field Tour, June 17, 2021

Forestry Assistant II, Edwin Diaz, worked with the CCC crew to construct two new bridges within the Caspar Watershed and did maintenance work on many others. These bridges are vital to the access of many of the gauging sheds within the watershed. Caspar Experimental Watershed experienced some atypical vandalism that removed data sheets as well as water measurement equipment from one area. All of items were specialized, in contrast to other historic thefts.

In August, Pete Cafferata retired from CALFIRE. He was one of the key researchers of the Caspar Watershed as well as a JDSF Alumni. His knowledge, experience and expertise will be missed. The position has been filled by Drew Coe, who worked with Pete for years.

New Projects

The Redwood Sprout Composition Study, conducted by Dr. Pascal Berrill, started field work during the Summer to collect plot data pre-treatment. JDSF Staff members Forestry Assistant II Diaz and Forester I Jeremiah Steuterman spent a week with Vasquez Reforestation Crew in October implementing the chainsaw and brush control treatments to each of the plots and two more days of treatment were conducted in November. Dr. Berrill and his crew will gather post-treatment data Winter and Spring of 2022.

PHD candidate from UC Berkeley, Sasha Nikolaeva, utilized JDSF as part of her sampling range to study coast redwood genetics within the region. She collected samples from the Caspar and Chamberlain areas. This sampling was done to help create a fine scale seed zone for Coast Redwoods based on range wide distribution of species' genetic diversity and local adaptation. JDSF should see results Summer of 2022.

California Department of Fish and Wildlife (CDFW) conducted monitoring of bobcats with cameras, traps and fecal transects during the Fall months before the rains came in October. This is part of a Statewide Bobcat Population Monitoring Project. CDFW plans to return in the Spring of 2022 before producing the Statewide report in the Summer of 2022.

Dr. Pascal Berrill (Cal Poly Humboldt), Dr. Michael Jones (UC Extensions) and Dr. Robert York (UC Berkeley) accepted JDSF's call for a research project on Fire Fuels Mitigation within the Coast Redwoods in harvested stands. The project received GHG Grant funds for Phase 1 of the project in August. Phase 1 includes experimental design layout, and pre-treatment data collection. Forester I Tori Norville worked on finding appropriate sites for the project in the Fall of 2021 and sites were picked in February of 2022. The project scope changed after the first round of site visits when JDSF staff could not guarantee that Timber Harvest Plans would be completed in a timeframe that met with the research and grant funding timeline due to the current public scrutiny and hold-up in the THP review process of JDSF THPs. It was agreed by all parties involved to choose sites that were 6-10 years post-harvest to avoid potential hang-ups with proposed THPs. The experimental design layout and CEQA process is planned for 2022 with treatments starting in 2023 and prescribed burning of the sites in 2024.

Ongoing Projects

Peter Rowland worked on migrating JDSF GIS data into ESRI's Enterprise Geodatabase system (eGIS) throughout the year. This creates a central data library for the Demonstration State Forests spatial data that can be viewed/edited anywhere with an internet connection (if the user has the appropriate permissions). Additionally, eGIS provides multi-user workflows and data management tools not otherwise available and makes the use of mobile field apps more streamlined. JDSF's spatial data is being migrated first, and once it goes through testing the other state forests will follow. Though the associated workload will not benefit current projects, it does provide an opportunity to review old data. Though the current GIS data is in theory backed up, in practice there have been problems.

Dr. Pascal Berrill's GHG Dry Forest Restoration Study had a lot of work done this year after being delayed for a few years due to the Chamberlin Confluence THP operations. Forester II Lynn Webb and Forestry Assistant II Diaz reinstalled the plot corners post-harvest in January and discovered the LTO missed a few marked trees and still needed to complete the removal of the non-merchantable material. After the LTO completed the work during the summer, JDSF staff finished reinstalling the missing plot corners and flagging the plot boundaries for easier location for the planting crew scheduled for Winter of 2022.

In January of 2021, Peter Rowland and Edwin Diaz relocated and used the high-quality GPS to map the South Fork Caspar Lindquist PCT. The steep slopes and

heavy cover challenge the accuracy of even this device. The 2021 re-measurement was completed by the Forestry Aide crew. It was deemed that after the 2021 re-measurement, no further measurements would be required as it was becoming increasingly difficult to re-measure as the young trees continue to grow. The trail network in the study area was assessed by Lynn Webb, Erik Wahl, and members of the Mendocino Coast Cyclists (MCC) to modify the research trail, now named the Lindquist Loops, so that it can provide feasible uphill travel for cyclists. Erik Wahl has provided direction and guidelines for the MCC and will help put informational signs along the trail to inform recreationalists about what they are traveling through.

The GHG grant funded Takachar project came onsite and began field testing in October of 2021. They had to evaluate variations in the age of the biomass material and the size of the chipper that would be needed. In November, the project received the international Earthshot Prize. This technology was originally created for rural farms in India and is now being tried for forestry applications. The equipment was packed up and returned to the lab during the winter to make adjustments based on their tests. The team will return in the Spring of 2022 for more tests and demonstrations to the public.

The re-measure of the North Fork Caspar PCT plots began with Peter Rowland and Forester II Webb using the high-quality GPS to map the corners. The re-measure was not to be conducted in 2021, but the goal was to create modern maps for the long-term project. Re-measurement of the plots will take place in 2022.

Dr. Lisa Bentley's crew from Sonoma State University did another round of field work on JDSF this summer for continuation on their terrestrial LiDAR and biomass study. While the project continues, a Master's Thesis on a component of the study was produced in June of 2021. Data analysis is continuing for further publication.

Master of Science in Biology Thesis: Using Terrestrial laser scanning to evaluate non-destructive aboveground biomass allometries in diverse Northern California forest. Paris Krause. 2021. Sonoma State University.

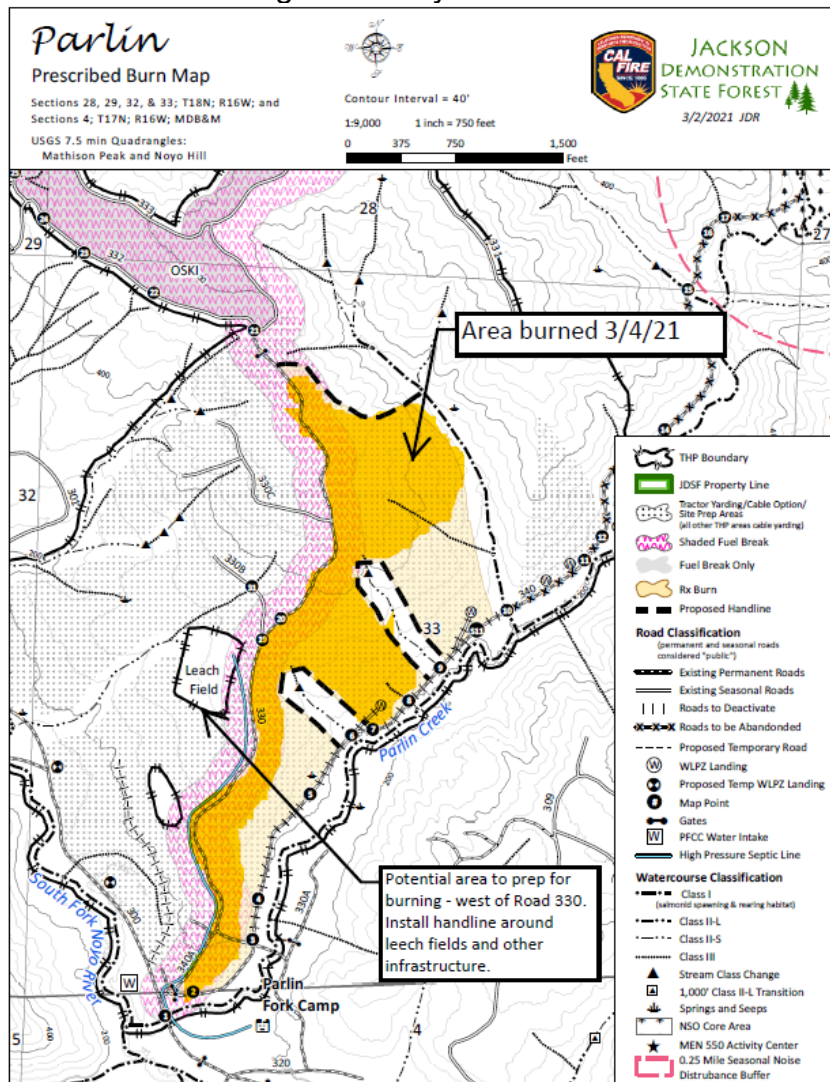
GHG Returning Redwoods project has transitioned from being a research project to a demonstration with the publication of the project's results. Each landowner with a replicate will continue to maintain the plots for individual site long-term results to answer questions about afforestation of converted grasslands in California.

Morrison, W.M., Armstrong, A.D., Webb, L.A. *et al.* Performance and genetic analysis of coast redwood cultivars for afforestation of converted grassland in California. *New Forests* 53, 1–16 (2022). <https://doi.org/10.1007/s11056-021-09841-6>

Demonstrations

Parlin 17 THP demonstrations got underway in 2021 with the prescribed burning of approximately 50 acres of a 70-acre unit in March. The burn occurred a few hours

before the last seasonal storm came in, which caused RH values to rise and made consumption hard. This was the first prescribed burn on JDSF in a very long time and was successful in getting everyone more comfortable with Forest Burning. Lessons learned from this burn included the need for more fine fuels on the ground to help carry the fire further into the unit, skid trails were effective at stopping the fire spread in these conditions, and that high humidity levels do not help in redwood forests. These lessons are being applied to the next unit (across the road – see map below) that will be burned either Fall of 2022 or Spring of 2023 depending on crew availability and weather conditions. The delay in burning the larger second unit was to accommodate more leaf litter on the ground to carry the fire and to allow a pilot study to the GHG Fire Fuels Mitigation study to be conducted.



The Parlin 17 Prescribed Burn Pilot Study is being conducted by Dr. Michael Jones from UC Extensions. The study is looking at the fuel loading before and after prescribed burning post-harvest. He has been establishing plots throughout the fall and will revisit to obtain correct fuel data pre-burn. This information will inform local

landowners who wish to utilize prescribed burns on their properties as well as help tailor the GHG Fire Fuels Mitigation methodology. JDSF staff assisted with plot measurements in November and December.

Darci Mahoney's turkey tail and tanoak demonstration in 23 Gulch continued. Her crew did a measurement at the end of 2021 and found that after almost 2 years, fruiting bodies were observed. A final report should be available to JDSF in 2022.

JDSF staff collected measurements of the Eucalyptus and turkey tail demonstration within the Caspar Watershed in December of 2021 after almost two years of inoculation. Only one stump showed signs of any turkey tail fruiting bodies and many of the stump sprouts were vigorously sprouting with impressive growth (see picture). Descriptive statistics and further monitoring will occur in 2022 and eventually will be combined with other Eucalyptus management techniques done on JDSF in an information handout for the website.



Tours and Events

On April 8th, JDSF held an online Townhall meeting to discuss the management of JDSF, projects, research and collaborations that occur on the Forest. While this was not the optimal way to interface with the public, it was beneficial in allowing public from outside the community to participate. Participants were allowed to ask questions via the chat function and in order to give sound and knowledgeable answers, they were answered after the meeting and distributed to the participants via email as well as being posted on the website.

In April and May, JDSF staff held a few Tours for the Little North Fork Big River, Mitchell Creek, and Caspar 500 THPs. These were small and held for a select group of people to introduce the ideas and get feedback from this type of event from the public. A shift in priorities and lack of staff time prohibited further small tours such as these to occur.

In response to the demonstrations and trespassing at Caspar 500 THP, JDSF, with help from the MEU Unit and PIOs from around the State, put on three Community Expression Events. These events were to allow the public to interact with CALFIRE, ask questions, get information, and express their thoughts, concerns and reactions in a way that was safe and respectful for everyone. Each event was 2-4 hours and were at the following locations:

1. Camp 20 – June 26, 2021
2. Woodlands Fire Station (Mendocino) – June 28, 2021
3. Willits High School (Willits) – June 29, 2021

The questions and comments received from these events were posted on the website and answered through various means such as social media posts, short videos created by PIOs and staff, or through the various handouts that are now available on the JDSF website.

Toward the end of the year, JDSF was able to hold more tours as COVID restrictions eased. On September 25, 2021, CLFA and JDSF staff (Norville and Webb) hosted a Saturday event for natural resource professionals and students to hike and discuss different topics. The tour locations were the Parlin 17 prescribed burn and the Whiskey Springs – Multi-cohort silvicultural study. Discussions included talks by Dr. Michael Jones from UC Extensions, and Dr. Pascal Berrill, on how to reintroduce fire to the landscape and density management of coast redwoods. The event had about 45 participants from Humboldt to Sonoma Counties.

In October, JDSF hosted students from the HSU and UC Berkeley silviculture classes. The HSU class visited the Whiskey Springs – Multi-cohort silvicultural study and then the Jug Handle ecological staircase on State Parks. The UC Berkeley class toured the Caspar Watershed and other sites around JDSF. Norville and Webb assisted with the tours. The Mushroom foray that occurred on November 20th and 21st included participants from UC Davis, San Francisco State, UC Berkeley, Stanford, CSU East Bay, CSU Chico, and UC Riverside. Forester II Lynn Webb and Senior Environmental Scientist Robert Douglas worked with the organizers, and 247 species were identified over the course of the weekend.

Outreach

In February of 2021, Forester I Tori Norville started as the Outreach Forester for JDSF. During the year, she worked on creating many of the handouts and materials for the tours, events, and JAG meetings; as well as answering the public comment questions from the different events. Many of these were modified to be on the website including:

1. CALTrees Guide (How to look up more THP info)
2. Forestry Definitions Glossary
3. THP handouts
4. Town Hall Q&A

5. Ticks and Lyme Disease
6. Poison Oak
7. Sudden Oak Death (SOD)
8. JDSF and Carbon
9. How Much Does JDSF Harvest
10. JDSF Role in Climate Change within the Redwood Region
11. All the JAG material

In March of 2021, JDSF started a social media presence through Facebook and Instagram. The posts focus on education (species ID, SOD, recreation rules), dissemination of research on the forest, bringing forward the different aspects of modern-day forestry (planting, harvesting, fuels reduction, etc.), and as another avenue for announcing events and meeting (JAG, tours).

The JDSF website was re-vamped during the summer and has allowed the staff to organize the materials better. ADA compliance has been a struggle as no one in the office has been officially trained – just learning through trial and error to gain compliance. The website has been getting updates monthly with new material since Summer. In an attempt to make the THP process more transparent to the public, JDSF has started putting information about THPs in review under the Timber Harvest tab of the website (example: Boundary Creek).

Reforestation

Contracting: JDSF currently has a contract with Vasquez Reforestation to provide reforestation and timber stand improvement services to JDSF through 2022. Jeremiah Steuterman is assigned as the contract administrator.



The JDSF UTV has been essential for transporting seedlings on closed seasonal roads during planting season.

Planting:

The Unit A variable retention (VR) in the Wondercrossing THP, along with the clearcut and VR units in the 23 Gulch THP were planted in February of 2021. Planting stock was a mix of MRC redwood clones and woodsrun seedlings purchased from Mendocino Redwood Company (MRC).

Timber Stand Improvement:

Pre-commercial thinning began this year at the Water Gulch THP. This was a group selection harvest plan logged in 2013 and 2014. Work on this project will continue into 2022.

Site Preparation:

Vegetation control treatments were completed in the research blocks in the 23 Gulch THP area. These

research blocks are associated with the Redwood Sprout Competition research project with research partner Professor Berrill of Humboldt State University. This study will carefully quantify the effects of various levels of control of competing vegetation on the growth and vigor of regenerating redwood stump sprouts and seedlings.



Genetic material collected from JDSF in the greenhouse. Clones from other landowners can be seen with white placards in the background. for planting at testing sites in 2023.

Tree Improvement:

JDSF continues participation in the Redwood Tree Improvement Cooperative (RWTIC) which is hosted by the Northwest Tree Improvement Cooperative (NWTIC). The Goal of the RWTIC is a genetic base of regional redwood growing stock to be made available to cooperative members and eventually the public.

The genetic material collected in 2020 was cloned in the lab at Sequoia Orchids and Redwoods and is now in Phase I testing in their greenhouse in Fortuna. Superior trees will be selected from this batch

JDSF also coordinated with staff from the LA Moran Reforestation Center for the relabeling of trees from the Kuser Collection stored at the UC Davis Nursery. The Kuser collection is one of the earliest collections of redwood genetic material for ex-situ plantings, with ongoing provenance trials in New Zealand and Germany. These trees were then transported to the Green Diamond Nursery, and from there were planted at test sites on Cascade Timber property in Oregon.

Invasive Weed Management

JDSF also has a contract with Vasquez Reforestation for invasive weed management services through 2022. JDSF conducts invasive weed treatments targeting recent timber harvest areas, road improvements, and roadside mastication. During 2021, JDSF completed 26 miles of treatment targeting French broom and jubatagrass.

Planting, Site Preparation & Precommercial Thinning 2021

Year	Activity	Harvest Plan	Acres	Detail
Feb 2021	Planting	Wondercrossing	9	117 TPA
Feb 2021	Planting	23 Gulch	26	154 TPA
Oct 2021	TSI - PCT	Water Gulch	2.5	
Nov 2021	Site Prep	23 Gulch	6	Associated with research project

Jackson Demonstration State Forest Research and Demonstration
Research Project Title
The Caspar Creek Watersheds Experiment Three (EX III)
(EX III) Plant-soil-water Dynamics Study
(EX III) SWAMP - Bioassessment Study
(EX III) Distributed-Hydrology-Soil-Vegetation Model (DHSVM)
(EX III) Throughfall Interception Study
Bedload Sonic
Juvenile Salmonid Population and habitat survey, South Fork Creek
Water temperature data across JDSF - MWAT evaluation
Whiskey Springs - Multi-age Silviculture Establishment & Regeneration
Railroad Gulch Uneven Age Silviculture
SF Caspar Precommercial Thinning
NF Caspar Precommercial Thinning O'Hara
FACE Wood Decomposition Experiment
Greenhouse Gas Grant: Dry Forest Restoration Study
Greenhouse Gas Grant: UC Berkeley/Takachar
Hardwood Management Redwood Regeneration Study
Bat Communities on DSF across Seral Stages and Silvicultural Rx
Bats as indicators of climate change & redwood forest management
Barred Owl
Terrestrial Lidar Fuels and Stand Structure
Greenhouse Gas Grant: Fire Fuels Mitigation
Redwood Genetics
CDFW - Statewide Bobcat Population Assessment
Parlin 17 Rx pre/post burn effects on fuel loading and residual stand
Demonstration Project Title
Berry gulch THP Gorse Management Demonstration
Road 80 THP Gorse Management Demonstration
Astragalus Road 330 Invasive Weed Demonstration
(EX III) Caspar Gap Silviculture Demonstration
Park Gulch Hardwood Management and Reforestation
Water Gulch Hardwood Management and Reforestation
Road 200 Returning Redwoods Cultivar Study
Tanoak Turkey Tail inoculation
Eucalyptus Turkey Tail inoculation
Pleiades
MASUM
Parlin 17 Rx burn (March 2021)

**For a complete list of all research and demonstration projects on JDSF, please see the website, under the Research Tab.*

Recreation Program

Campgrounds

All JDSF campgrounds remained closed at the beginning of the year with the latest stay at home order; typically, campgrounds are opened for the camping season around Memorial Day. Preparations began to open JDSF campgrounds on May 20th. JDSF purchased a new riding lawnmower (48" Husqvarna) to maintain the large fields in campgrounds and day use areas, as well as the Woodlands Fire Station and the Forest Learning Center.

In the Summer, there were several attempts to pilfer deposited camping fees within the iron rangers at the Camp 1, Dunlap, and Big River campgrounds. Both "hockey-puck" locks were successfully removed at the Big River and Camp 1 campgrounds and an estimated \$1,000-1,500 stolen. New re-keyed locks were ordered for replacement. Camp 1 campgrounds and Road 350 were closed after the 4th of July weekend due to the start of falling operations within the Redtail THP.

Campgrounds and seasonal roads were closed on October 18th. Prior to closing campgrounds, three sites within the Dunlap Campground were occupied without payment. After several attempts by LE, the campers moved out. Due to this, as well as a lack of staff, JDSF decided to not allow winter camping within the Big River campsite.

Trails

During the winter, Mendocino Coasts Cyclists (MCC) continued to hold once-a-month trail maintenance days, weather permitted. Hiking trails and day use areas were open and used moderately. To allow access for recreationists around the Caspar 500 timber sale, JDSF staff started development of an approximately 0.8-mile bypass trail. The trail will improve recreation opportunities and access for demonstration of the planned Jughandle THP. JDSF committed to perform the trail work, and a staff workday was scheduled for February 25th to begin trail construction. In March, Erik Wahl, Julie Rhoads, Edwin Diaz, Fred Postler, and a few volunteers spent approximately 40 hours continuing work on the Caspar Bypass Trail. Much of the laborious work included uprooting stobs of cut brush and piling cut vegetation in densely vegetated areas. On May 12th, the Caspar Bypass Trail was opened for public use. Vasquez Reforestation put in 16 hours with a 6-person crew to lop and scatter dead and down debris and build approximately 850 feet of trail to complete the work.

In February, the MCC were granted permission to improve existing, and flag new, trail routes within the Lindquist Pre-Commercial Thinning (PCT) study area. The study was established in 1961, when trails were constructed to access study blocks. Most of these trails were maintained only prior to tours, except for a segment located

between a mainline ridge and Road 600. Work includes improving existing and minor trail rerouting to establish preferred gradients. In addition, the MCC was granted permission to flag an approximate 0.8-mile route to connect another existing trail and County Road 409. The last measurement for the Lindquist PCT study is planned for summer 2021. This project is expected to be popular with mountain bikers and hikers. In March, the categorical exemption was approved for the Lindquist Trail project, including the construction of four (4) re-routes and new multi-use trail. Throughout the Summer, work by the Mendocino Coast Cyclists on the Lindquist Loop trail project continued. The lower re-route has been completed, including the replacement of a 10-foot pedestrian bridge. Progress has been slow, and attendance of volunteers has been low.

JDSF staff continued to work on the Caspar Bypass trail. Most of the vegetation had been removed and approximately 80% of the trail surface had been established by late Winter. On February 25th, JDSF and PSW staff worked on the new trail (see pic below). The intent was for this trail to become official upon completion.



Many trees fell across JDSF trails during the winter period, several in remote locations. Erik Wahl and a member of the MCC used the clubs e-bikes (with trailers) to access remote trees for bucking. The MCC uses e-bikes for trail maintenance only.

In the Spring, Erik Wahl and Mendocino Coast Cyclist member Marc Jensen began construction of a 50” wide x 19-foot-long pedestrian bridge crossing of a Class III

watercourse, located at the bottom of the Forest History Trail. This was 1 of 3 bridge replacement projects performed in the last year. The bridge shown below replaces a narrow “user-built” bridge. The new bridge is constructed of con-heart redwood with abutments installed away from the top of stream banks. A handrail will be installed by end of May.



Mushroom Gathering

Mushroom permits were being sold at a normal rate at the beginning of the year, then slowed down as is expected with little rain/end of the mushrooming season. In September, the sale of mushroom permits increased due to rainfall. The big storm near the end of October increased permit sales and it looked like it was going to be a great year for mushrooms, but unfortunately, the weather did not cooperate.

Covid 19

Several events that normally take place annually on JDSF, such as the Mendocino 50k Ultra-marathon held in April and the Mycological Society of San Francisco (MSSF) mushroom foray in November, did not occur in 2021 due to COVID 19. The JDSF office in Fort Bragg remained closed, but all permits were available by mail.

Recreation Task Force

On September 7th, JDSF conducted a meeting with the Recreation Task Force (RTF). The meeting was open to the public and held at JDSF’s back garage. Four (4) members of the public attended, and two (2) RTF members were absent. Discussions included recreation program updates, campground/road/trail closures, impacts to recreation from ongoing timber harvesting activities and road abandonment. Notable closures included the Camp 1 campgrounds due to the active Red Trail THP and trails within the Caspar 500 THP. The Road 110 Abandonment Project has been completed, where a bypass is planned to connect a route to existing roads used by equestrians. Robert Horvat shared the proposal to convert the

“Roundhouse” campsite into a horse camp. As a follow-up on prior requests to address unofficial trails, Erik Wahl presented a PowerPoint addressing trail work updates, current and planned trail projects and need assessment. Impacts to official trails within active and future THP’s was also discussed. For reference, the presentation included a prop of JDSF’s recently developed 24” X 36” JDSF Recreation and Area Closure Map (link on JDSF website). The intent was to update the RTF on recent trail work activities and with JDSF being the lead on establishing objectives for future planning, including assessing adoption or abandonment of unofficial trails and take note of any request for new trail development. Further direction to the RTF will be provided by JDSF, along with meeting minutes and scheduling field trips for future on site meetings. Absent RTF members were updated in October.

General

Peter Rowland completed drafts of E-sized georeferenced maps, with the intent to inform the public of recreation areas and current closure areas, including active timber harvest operations, road work, etc. Four maps are under development, an overview map at 1:36,000 illustrating JDSF forest wide and three maps at 1:18,000 scale, generally illustrating the SW, NW and East portions of JDSF. These maps will be revised biannually, quarterly, or as needed.

During the Summer, routes were approved for special use events, including the Ibis Migration and North American Trail Riding Conference (NATRC). The Ibis Migration is a mountain biking event, staged out of the Mendocino Woodlands State Park and the NATRC is a horse-riding event, generally following roads within the Chamberlain and James Creek area. Applicants for these events worked cooperatively around road and area closures associated with active timber sales, including the Chamberlain Confluence, Soda Gulch, and Caspar 500 THP’s.

A \$22,000+ glue-laminated pedestrian/equestrian bridge was ordered and was expected to be available in September. Per the Caspar 500 timber sale contract, this bridge was to be provided by JDSF to be cable yarded into position by the PURCHASER at the Blue Gum Creek crossing. This work was part of adopting the abandonment of Road 669 as a multi-use trail.

Personal firewood permits (2 cords) went on sale in August; due to COVID, permits were for sale by mail only, as they were last year. An additional firewood cutting area along Road 322 was opened to the permit holders in September. All areas had sparse wood available for cutting. The firewood cutting area closed October 4th. A total of 75 permits were sold to ensure sufficient supply of wood for permit holders.

In October, a request to technical services was submitted for the development of an ADA compliant wooden outhouse design. This design will be used for inclusion within a service contract to replace outhouses within campground areas. Staff is also

working on another request for installation of a concrete restroom at the “Scales” site (Road 500/600 intersection).

Wildlife and Botanical Resources

eDNA Amphibian Study

A two-year study examining amphibian distribution using environmental DNA (eDNA) analysis of stream water samples concluded with the submission of a final report by Marshall and Caren Goldberg. This is the first systematic survey of stream-dwelling amphibians across JDSF and will provide the basis for future visual-encounter surveys at these sampling locations and eventually a re-analysis of distribution using the eDNA technique for monitoring trends over time.

Water samples were collected at 154 locations across JDSF, representing a combination of Class 1 non-headwater streams and Class 2 headwater streams. Screening of water samples for specific amphibian species varied based on stream location and habitat type, but coverage of sites was designed to be well-distributed across the forest. Six species were targeted in this study ranging from a generalist to a range of habitat specialists. The percentage of species detected at sites sampled from 2019 and 2020 were ranked highest to lowest: coastal giant salamander (*Dicamptodon tenebrosus*)—97%, coastal tailed frog (*Ascaphus truei*)—43%, foothill yellow-legged frog (*Rana boylei*)—17%, red-bellied newt (*Taricha rivularis*)—11%, northern red-legged frog (*Rana aurora*)—2%, and southern torrent (=seep) salamander (*Rhyacotriton variegatus*)—2%. All, except the coastal giant salamander, are species of special concern in California.

Northern Spotted Owl and Marbled Murrelet Surveys

Mike Stephens conducted northern spotted owl (*Strix occidentalis caurina*) and marbled murrelet (*Brachyramphus marmoratus*) surveys on JDSF in 2021. This was his second year of a two-year contract. Mike’s crew nocturnally surveyed 316 unique stations multiple times totaling 1550 station surveys across the state forest. During these surveys there were a total of 230 nocturnal detections, ranked as follows: barred owl—91, northern saw-whet owl—87, western screech-owl—25, northern spotted-owl—15, northern pygmy-owl—7, barn owl—4, and unknown—1. Thirty-three daytime site visits and/or follow-up surveys, were conducted at 15 known NSO territories and yielded 5 detections. Of these, 3 detections were attributed to the only pair of northern spotted owls found on JDSF in 2021 (MEN0658), another detection was associated with a single NSO found at territory MEN0639, and the fifth detection was a barred owl. The above surveys covered 15 current and/or future THPs, 6 of which had amendments submitted to Forest Practice, which were reviewed and approved for operations in 2021.

During 2021, a total of 64 surveys were conducted for marbled murrelet habitat areas associated with thirteen THPs. Mike Stephens and his crew conducted 50 of these surveys while Robert Douglas conducted 14 to ensure surveys would not fall behind in meeting protocol timing requirements. The challenge was engaging with CDFW in conducting multiple habitat assessment and station placement consultations prior to the survey season commencing. Robert realized immediately upon arriving at JDSF on February 16th that consultations with CDFW needed to occur—and be approved—before surveys could start. Like previous years, no murrelets were detected in any habitat areas on JDSF.

Marbled murrelet surveys have been increasing on JDSF for the past several years. This increase is associated with forest stand developmental stage across JDSF, which in many areas is attaining limb sizes and stand structure consistent with CDFW's concept of potential murrelet habitat. Based on this observation, marbled murrelet surveys will likely be required for numerous projects (e.g., THPs, restoration, road upgrades, fuel reduction, etc.) in the future. A potential solution to mitigate the increasing number of audio-visual surveys required on per project basis may be the development of landscape-level monitoring program where automated recording units (ARUs) are placed throughout JDSF annually to determine if marbled murrelets are utilizing areas of habitat. The use of ARUs has increased for numerous wildlife studies over the past decade and JDSF should explore this option as it would be equally applicable to privately managed forestlands as well.

Barred Owl Research

Graduate students from the Peery Lab at the University of Wisconsin-Madison completed fieldwork for one project and initiated a second project. Whitney Watson, Master's student, finished her second field season of following the reproductive cycles of barred owls on JDSF in order to GPS-tag fledglings to examine patterns of juvenile dispersal. In 2021, Whitney and her crew tagged 23 juvenile barred owls throughout Mendocino County. Eleven juveniles from 6 territories were tagged on JDSF. To date, approximately 6 juvenile birds are still being actively tracked, while 7 have stopped sending signals, and 10 appear to be deceased at this time. None of the birds that are still active originated from JDSF. Preliminary results show that juvenile barred owls may disperse into a wide variety of habitats and travel great distances compared to spotted owls. One juvenile bird dispersed to the edge of the Central Valley before turning around and another dispersed to chaparral habitat in Lake County.

Danny Hofstadter, also working in the Peery Lab, initiated his PhD research in late 2021 focusing on barred owl diet and occupancy patterns in Mendocino County. A focus of his research involves the lethal removal of barred owls to collect the digestive tracts for genetic identification of prey. In addition, barred owl carcasses are being utilized for a variety of research purposes including population genetics, toxicant analysis (liver), stable isotopes (feathers), parasites (eyes), as well as

museum skins and skeletons. During 2020 and 2021, Danny conducted many surveys for Whitney's juvenile dispersal project, and had identified at least 15 pairs of barred owls on JDSF. Starting in November 2021, Robert Douglas chaperoned Danny on JDSF as he initiated the removal project. Currently, 24 barred owls have been removed from 15 territories (10 pairs, 4 singles, 2 absent) on JDSF. And an additional 7 birds have been removed on State Park property immediately adjacent to JDSF at the Woodlands.

Stream Monitoring

In 2021, we deployed 33 stream temperature probes across JDSF at annual monitoring locations. Despite the drought conditions, all of the temperature probes except one remained submerged in water at the end of the season. However, many of the probes remained in pools that became visibly disconnected from surface flow as a result of low water conditions. In several instances, temperature profiles indicated some pools were maintained by ground water exchange. Mean Weekly Average Temperatures (MWAT) exhibited a linear trend of increasing temperature at locations further from the coast. The overall average MWAT for all 33 locations was 15.39 °C (std = 1.09) with a minimum MWAT of 13.78 °C at SF Hare Creek and a maximum MWAT of 17.79 °C at NF Big River water drafting site at Camp 20. Without any significant rain in late 2021 and early 2022, stream monitoring conditions will be very challenging for the summer stress period in 2022.

Botanical Surveys

Botanical surveys were conducted by two contractors, the Mendocino County Resource Conservation District (MCRCD) and Klamath Wildlife Resources (KWR), for six timber harvest plans. Heather Morrison, working for the MCRCD, completed surveys and final reports for Mitchell Creek, LNF Big River, and Boundary Creek. No new threatened, rare, or sensitive plants were located during these surveys. However, previous existing rare plant populations on JDSF associated with these projects were verified. Unfortunately, JDSF had to terminate the botanical contract with KWR because the final report failed to meet a professional standard of work. The California Department of Fish and Wildlife also determined that the report was inconsistent with the recommended survey protocol and failed to demonstrate that significant adverse impacts to sensitive plants or plant communities would be avoided. As a result, the projects delegated to KWR in 2021 will be rework in 2022.

In September, both Lynn Webb and Robert Douglas conducted Humboldt milkvetch population monitoring along the Roads 330, 334, and 336 as part of JDSF's 2006 Road Maintenance agreement with CDFW. Most of the populations were still present in areas that were previously documented. Because the Parlin 17 THP occurred along these roads, we expect to see additional recruitment of milkvetch in areas where the road was graded.

Roads Program

Roadside Mastication

JDSF HFEO's were busy in January performing equipment maintenance and began masticating Road 560, maintaining roads as weather permitted and inspecting roads during storms for any damage. Mastication of roads continued through March, clearing Roads 511, 560, 561 and 722. Other roads inspected include 345, 360 and 705.

Contract Road Projects

Technical Services reviewed a proposed 2-year contract and scheduled a pre-bid tour on April 22nd for the Road 100 Upgrade Project, including the replacement of culvert watercourse crossings, ditch relief culverts and other improvements along approximately 3.0 miles of road. This project covers all map points along Roads 100 and 130 within the approved James Creek THP. The Road 100 Upgrade Project contract received an acceptable minimum bid in the amount of \$288,640.80 + 10% contingency. The project includes the replacement of 10 culvert watercourse crossings and 13 ditch relief culverts along a mid-slope road within the approved James Creek THP. Costs of materials rose significantly since the start of the year.

As of June, the Road 100 Upgrade Project contract was not yet signed by DGS. Culverts were purchased and staged at the Chamberlain Creek Camp. Greenwood Aggregates was awarded this 2-year contract and expected to complete a portion of the project in 2021, finishing in 2022. The Road 200 North Upgrade Project was approved and scheduled to begin by contractor Anderson Logging.

In August, the Road 100 Upgrade Project contract finally arrived but alas too late as the contractor had scheduled other work. The work will be completed in 2022. The Road 200 North Upgrade Project was delayed due to not getting culverts delivered, and so a contract amendment was submitted to extend the contract to 2022.

State Forest HFEO Work

In January, the HFEO's demolished the concrete floor in the auto-shop at Parlin Fork Camp and then poured and finished a new floor to support new equipment lifts. In February and March, JDSF HFEO's continued performing equipment maintenance on the dozer tender and backhoe. The backhoe was transported to Peterson CAT for 1000-hour maintenance. JDSF HFEO's have performed preparation work on a recently acquired new transport. All maintenance work on the heavy equipment has been completed and it is ready for the work season. They also replaced aged redwood vehicle barriers at Camp 20 with 2-ton riprap and prepared areas for a proposed leach field at the Forest Learning Center.

In the Spring, HFEO's removed two vehicles within the Hare Creek area, near Simpson Lane. One of the vehicles was removed near a perineal stream, requiring the use of the excavator for extraction. Permission from the City of Fort Bragg was granted to access through their property. The other vehicle location was associated with large amounts of trash and an encampment, just north of Simpson Lane. Trash was removed off site, the encampment removed, and riprap placed along Simpson Lane to prevent further trespass. LE was able to determine ownership of each vehicle. Each owner was notified to arrange for pickup of abandoned vehicles. Vehicles have been trespassing onto JDSF within the vicinity of Road 421. HFEO's have blocked illegal trespass routes with a combination of riprap and tank traps. In addition, improvements to drainage of Roads 421 and 420 were performed.

HFEO's and the Parlin Fork mechanic are constructing a new gate to be established on JDSF Road 500, just east of intersection with Road 600. This gate will be used to block Road 500 to vehicle access during timber operations within the Caspar 500 timber sale. Filling in potholes along Road 500 began late April. JDSF HFEO's have blocked illegal access between Road 421 and the nearby ownership boundary and improved blockage of the Road 420 gate, at the intersection of Road 400. In conjunction with blocking illegal access, improvements to drainage were performed along Roads 420 and 421.

Potholes were repaired along a 2-mile stretch of Road 500, between Road 600 and 520. HFEO's have repaired two, and installed one, metal gate along Road 500. Repaired gates required replacement of the bell and sleeves. The new gate was installed just east of Road 600 and large 4-ton riprap placed on each side. HFEO's removed one vehicle with the dozer from Hare Creek, just south of Road 410A. The abandoned vehicle accessed Hare Creek along a steep skid trail. Waterbars and large berms were installed to improve drainage and discourage further trespass.

During the month of June, JDSF HFEO's cleared vegetation adjacent to a private ownership behind the Woodlands Fire Station to reduce fuels and provide access for removal of several hazard trees. Hazard trees were scheduled for removal by a contractor with a bucket truck. HFEO's also bucked and moved a large deck of Douglas-fir cull logs located on a spur road within the Caspar South timber sale area, near the junction of Road 408 and 700. These logs were used to block selected areas accessible by vehicle and turnouts along Road 408 and 409. HFEO's assisted Edwin Diaz in the construction of a generator pad at the Forest Learning Center.

During July, HFEO's continued working on the abandonment of Road 110. This project involves the removal of 3 large Class II and 2 Class III watercourse crossings, ditch relief culverts, and ripping and outsloping road segments. The project began in 2019, excavating 2 large Class II's. The remaining Class II and 2 Class III's were excavated in July. Remaining work included draining, ripping and outsloping

segments of road prism with the dozer. A combination of JDSF HFEO and dozer staffing patterns halted work.



Large Class II In-Stream excavation, Road 110

In August, hazard trees were felled on JDSF along an adjacent property line by a contractor. There was a fair amount of clean-up and piling to do before burning season. HFEO's completed the abandonment of Road 110. This project suffered normal summer delays of fire assignments, staffing patterns, and vacations. During September, JDSF HFEO's began work on 13 map points along Road 100 and 130, all within the approved James Creek THP. Most of the work involved improvement to existing ditch relief culverts and installation of rolling dips. Concern lay with completing these tasks before rain creating overland flow, considering the MEU unit held HFEO's on duty to cover stations. Remaining map point work constitutes part of the awarded Road 100 Upgrade contract.

In October, JDSF HFEO's completed work at 13 map points along Road 100 and 130, all within the approved James Creek THP. HFEO's began moving equipment from Chamberlain Creek to Parlin Creek Camp. Construction of a pad is planned for parking equipment. HFEO's will continue to use the office at Chamberlain Camp.

Bridge Replacement Projects

HFEO's removed the Park Gulch bridge on Road 200 on May 20th. The new bridge began installation on the 21st, by contractor Wylatti Resource Management, with installation taking approximately 3-4 weeks. This contractor installed all the other bridge replacements in the last few years and is quite familiar with the project.



Park Gulch bridge construction



Total cost of the bridge, including improvements to abutments and replacement of superstructure, was \$279,069.92. Bridge construction was completed mid-June. Considering Chamberlain Creek Camp is no longer populated with inmates, residents of the San Francisco Boys and Girls and Camp Noyo could pass through during bridge replacement.

Planning Work

In January, work continued with State Parks and Mendocino County Resource Conservation District planning the upgrade to Road 720 to make it the primary access for Mendocino Woodlands State Park.

On August 19, Robert Horvat and Erik Wahl attended an onsite technical advisory meeting lead by the Mendocino Land Trust to discuss the “Chamberlain Creek Coho Passage Design Project”. This project involves a rusting large diameter culvert crossing Road 250. Attendees included CDFW and PWA. Site characterization, including a topographic and biological survey, will be conducted in the future.

Restoration

2021 saw the California Conservation Corps (CCC), Mendocino Land Trust (MLT), Trout Unlimited (TU) and Blencowe Watershed Management all perform restoration work on the Forest.

In early 2021, the CCC started the scoping that would last into the summer for future habitat improvement work in West Chamberlain Creek, and in Brandon Gulch and Bear Gulch in cooperation with the MLT. MLT, which has completed numerous restoration projects on JDSF, started botanical and archaeological surveys in April along Bear Gulch in preparation for their Habitat Improvement project funded by California Department of Fish & Wildlife Fisheries Restoration Grant Program. The CCC planned to implement LWD projects within Bear Gulch during the summer, but in August this project got delayed until Summer 2022. During October, the CCC completed restoration work along James Creek and moved out.

In April, TU started their third project on JDSF when they commenced botanical and archaeological surveys along Hare Creek in the Spring in preparation for their Habitat Improvement project funded by California Department of Fish & Wildlife Fisheries Restoration Grant Program.

Blencowe Watershed Management began a Habitat Improvement project in Hare Creek funded by the California Department of Fish & Wildlife Fisheries Restoration Grant Program during the Summer. In August, Blencowe Watershed Management completed the year’s habitat improvement project in Hare Creek, although they are still in need of cull logs that are at least 24” in diameter and 30’ long and mostly sound, to complete more work next year. JDSF staff is working with Blencowe Watershed Management and timber purchasers to see if the cull logs can be obtained on nearby timber sales.

Annual Financial Summary

2021 Revenues			2021 Expenses	
	Calendar Year	Fiscal Year (FY21 Estimated)		Fiscal Year (FY21 Estimated)
Class III Timber Sales	\$ 3,351,654.75	\$ 1,600,000	Personnel	\$ 2,880,816
Class I Sales	\$ 19,160		Operating	\$ 1,204,000
Camping Fees	\$ 37,475			
Special Use Permits	\$ 2,200			
Road Use Fees	\$ 13,118			
Total Revenue	\$ 3,423,607	\$ 1,600,000	Total Expenses	\$ 4,084,816

Taxes

Yield taxes (from Class III sales only): \$ 121,191.61

Estimated yield taxes returned to Mendocino County (80%): \$ 96,953.29

In-Lieu property taxes paid to Mendocino County: \$ 126,282

Estimated total taxes to Mendocino County: \$ 247,473

Incident Response

EMPLOYEE	INCIDENT #	NAME	ASSIGNMENT	DATES	Total hours	Days
NORVILLE	CAMEU010482	BELL	RESL	8/14-8/18	71	4
NORVILLE	CAENF024030	CALDOR	THSP	9/8-9/17	193	10
NORVILLE	CAAEU027585	AEU CALDOR SUPPORT	THSP	9/18-9/22	113	5
ROWLAND	CACDF000097	FEB COVID VACCINATION	GISS	3/3-3/18	151	16
ROWLAND	CAMEU010482	BELL	GISS	8/14-8/15	20	2
ROWLAND	CASHF001187	MONUMENT	GISS	8/17-9/5	204	20
ROWLAND	CAENF024584	CALDOR EMPLOYEE SUP	GISS	9/6-9/17	112	12
ROWLAND	CAAEU027585	AEU CALDOR SUPPORT	GISS	9/18-9/24	76	7
SAMANIEGO	CAENF024030	CALDOR	THSP	9/7-9/17	182	11
STEUTERMAN	CAENF024030	CALDOR	FOBS	8/18-9/11	587	25
POSTLER	CAENF024030	CALDOR	GISS	9/4-9/17	234	14
DIAZ	CABTU00009205	DIXIE	THSP	9/02-9/24	552	23
RHOADS	CASHF001187	MONUMENT	FOBS	8/19-9/1	242	14
WAHL	CAENF024030	CALDOR	FRRS	9/7-9/18	263	8
WAHL	CAAEU027585	AEU CALDOR SUPPORT	FRRS	9/18-9/24	153	7
					3,153	178

JDSF staff time committed to overhead fire assignments in 2021 has totaled 178 days. That commitment is equivalent to about 6 months of full-time work.