

2019 Klamath River Prescribed Fire Training Exchange (TRES)

Request to Implement Prescribed Burns During CALFIRE and GACC North Ops Burn Suspension

Issue: Ending regional blanket burn suspensions is one of the “low hanging fruit” opportunities for increasing the pace and scale of fuels treatments in CA, and we are exactly in one of those situations now. There is historic precedence for this. In 2015, CALFIRE Director Ken Pimlott allowed the Klamath TRES to burn during a regional burn suspension and over 300 acres were treated in two weeks in a series of night burns between Red Flag weather events, while wildfires raged in Sonoma County. How can we streamline and document the waiver/exception process for these regional burn suspensions so that burning can continue when and where appropriate based on local conditions and resources?

Background: The Klamath River Prescribed Fire Training Exchange (TRES) began on Monday, October 7, 2019, and is currently managing over 120 NWCG qualified firefighters from the US Forest Service, TNC, Karuk Tribe, Mid Klamath Watershed Council, and many other local, tribal, state and federal organizations. This training program is organized into a Type 3 Incident Management Team with three burn modules. Each burn module includes at least 22 firefighters, a burn boss and burn boss trainee, task force leader, squad bosses, two Type 6 engines, one Type 3 engine, one water tender and a contingency Type II dozer.

Due to past years when our burn permits were suspended due to CALFIRE resource drawdown, we provide our own contingency resources, and have developed relationships with the Six Rivers National Forest to provide additional contingency resources for each other during the Klamath TRES operational period from October 9-18. In addition to these resources, we have Lee Tarnay (USFS) assisting in smoke management (equivalent to a wildfire Air Resource Advisor), NOAA meteorologist Brad Charbonneau (equivalent to an incident meteorologist for a wildfire), CARB Smoke Management Program Lead Dar Mims, along with and a full Situations/GISS unit supporting our operations. All these resource represent a substantial investment in applying the Type 3 incident management model to Wildland Urban Interface prescribed fire, rather than just wildfire suppression, in the service of an increase in pace and scale.

Solutions: While we understand the optics of burning in a Red Flag period, this is a critical opportunity to demonstrate how we can safely increase the pace and scale of our efforts to secure our landscapes from wind-driven megafire events like the Camp and Santa Rosa fires with calculated risk management and messaging, and to stop the practice of deferring risk to future years. Specifically, here in the Klamath River corridor, over 50 air miles from where the nearest Red Flag warnings are predicted, we are on the low end of prescription for many of our units, sheltered as they are from ridgetop winds (please refer to supporting documentation below). We have identified ways to mitigate north east wind effects especially in these wet conditions, from past experiences including the 2015 Klamath TRES. This was a great success and aligned well with local knowledge and guidance received in working to revitalize indigenous management practices, principles and culturally relevant burn timing.

We are documenting current conditions on multiple potential private and public lands units in hopes that CALFIRE and the GACC will reconsider the extent of this burn suspension and allow Klamath TRES burns to proceed based on local weather conditions and resources. If we are approved to burn, we will adhere to our signed burn plans and burn permits that have been reviewed and signed by local jurisdictions, and stand down if we are not in prescription. The unfortunate reality is that we burn in prescription or we hope for the best during wildfire events in more extreme conditions. We are asking CALFIRE and GACC leadership to work with us to address this critical need to stop the practice of suspending prescribed burns based on regional weather and political concerns.

Efforts to increase pace and scale of fuel reduction through prescribed burning have been hampered by blanket burn bans for decades. Again, we find ourselves in a position where we will incur significant financial loss (~\$60,000 per day) every day burning is suspended. The Klamath River Prescribed Fire Training Exchange provides a unique opportunity to showcase innovative, technically-sound, pro-active measures to improve community wildfire resiliency. In a final attempt by our TREX team to resolve this issue in a timely manner, we are requesting the ability to proceed with burn operations when NWS forecasts and local burn indices dictate that weather conditions are within prescription for safe burning.

Respectfully,

/s/ Will Harling

Klamath TREX Agency Representative - Mid Klamath Watershed Council
will@mkwc.org

/s/ Mike Beasley

Klamath TREX FBAN
greenfire.mike@gmail.com

/s/ Bill Tripp

Klamath TREX Agency Representative - Karuk Tribe
btripp@karuk.us

/s/ Jeremy Bailey

Klamath TREX Agency Representative - The Nature Conservancy
jeremy_bailey@tnc.org

Quote from CALFIRE's "Community Wildfire Prevention & Mitigation Report" (45 Day Report):

Living sustainably in the fire-prone landscapes of California will require broad recognition of the inevitability of fire, which will in turn necessitate enhanced investment in and novel approaches to risk evaluation, fuel management, forest health, land use planning and community adaptation. As we move headlong through the 21st century, fire managers and landowners in California are challenged to effectively utilize available resources and tools to create resilient landscapes, reduce loss of life and property, and stem rising management costs, while enhancing our compatibility with the fire environment in which we live.

Appendix 1:

Fuels and Climate Data for Klamath TREX Units Sheltered from NE Wind Event

Red flag conditions often happen this time of year, but the Klamath Mountains have areas that are sheltered from regional wind events where burning conditions are ideal. The Klamath TREX has a wide variety of potential burn units on all aspects, with multiple fuel types and slope positions.

While Red Flag conditions exist for Central and Southern California, by no means is the entirety of the Northern California Region under similar condition. Late summer/early fall conditions throughout the Pacific Northwest have been unusually wet. The southern extreme of this anomaly (Figs. 1 & 2) extends throughout the Northern Klamath Mountains, with some stations in the area recording in excess of three inches of rain through the course of three distinct rain events, since mid-August. There are no current Fuels and Fire Behavior Advisories in effect for the Klamath Mountains (NC04).

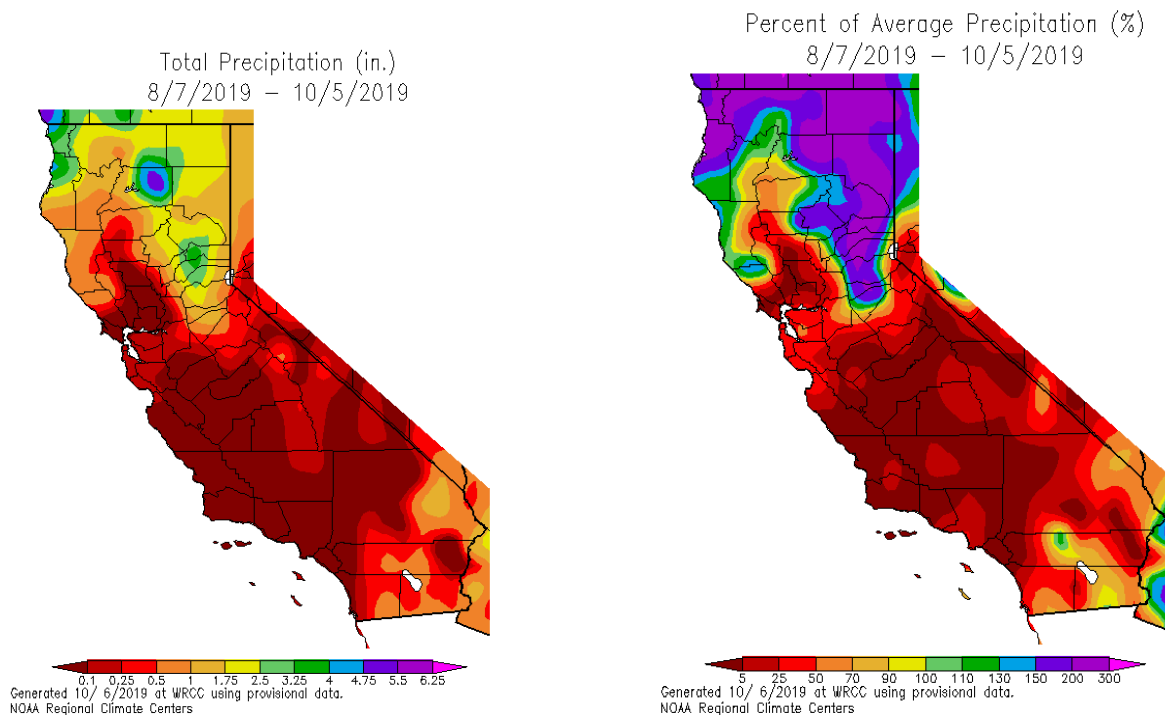


Fig. 1 & 2 record 2-3 inches of rain in the Klamath TREX area since August, which is a seasonal anomaly for California. Hence the 150 – 300% of normal precipitation for the late summer/early fall period. Currently, north/east aspects will hardly sustain fire. Similarly, shaded areas are not supporting fire spread.

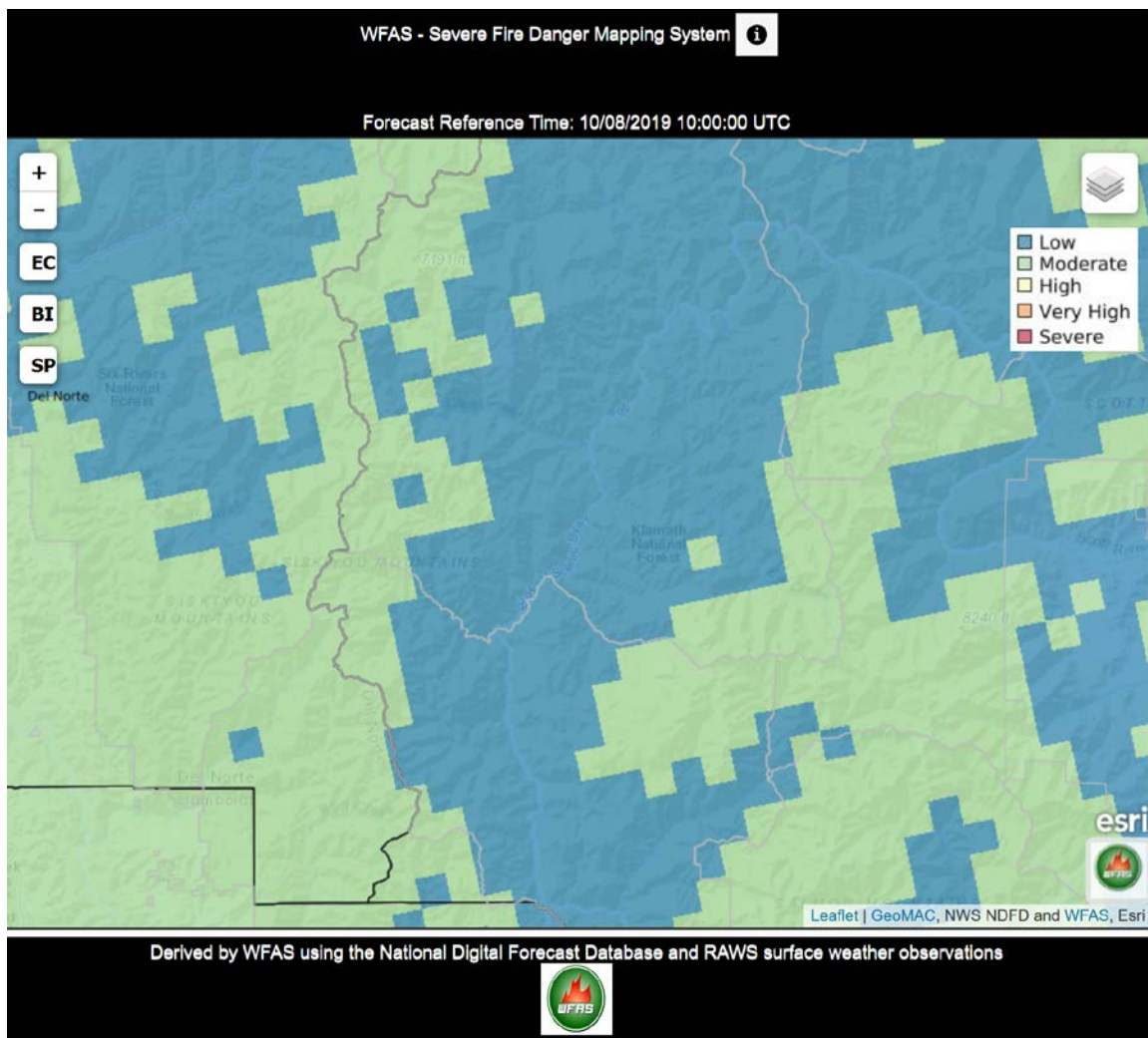


Fig. 3 Shows WFAS Fire Danger being low throughout the TREX area.

The entire Klamath River corridor from Orleans to Happy Camp, including all the low elevation sheltered burn units being considered for burning during TREX, are in Low Fire Danger according to the Wildland Fire Assessment System (WFAS) (Fig. 3)

Looking at National Fire Danger Rating System (NFDRS) Energy Release Component (ERC) data for the area shows ERCs running below average for this time of year (Fig. 4), and is in steep decline. Shortening day length and shading from terrain features makes recovery from late season precipitation particularly difficult, and it is clear that one more rain event will put the Northern Klamath Mountains out of prescription for burning this year.

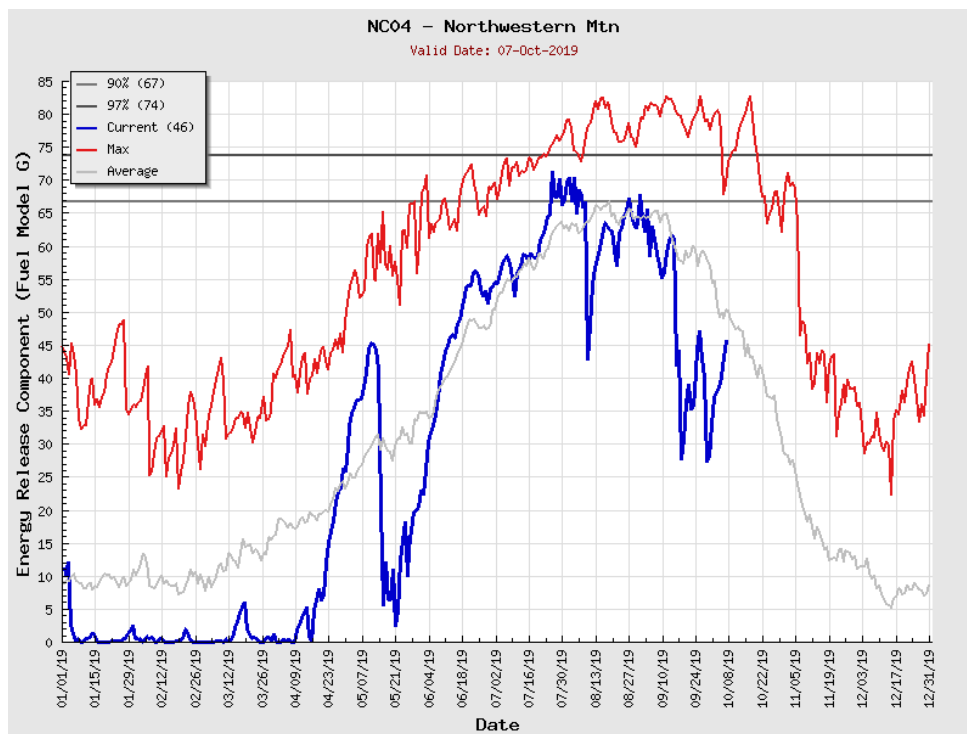


Fig. 4 Energy Release Component for Klamath Mountains showing three clear significant rain events, since August with conditions below normal for this period late in the season. The typical steep decline in ERC associated with decreasing day length (opportunity for drying) suggests only one more rain event to put the entire region out of prescription.

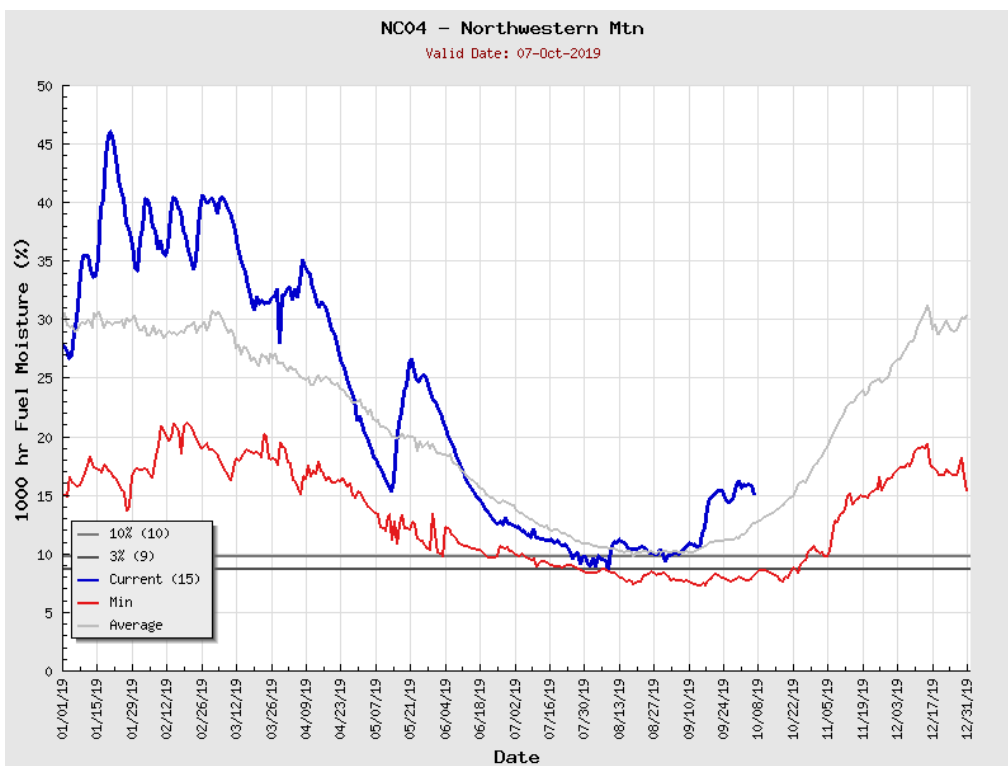


Fig. 5 1000-hr fuel moisture is considerably above average for this time of year.

1000-hr fuel moistures in the Klamath Mountains are considerably above average for this time of year (Fig. 5), as one would expect given the low ERCs, and supports the conclusion that the likelihood of crown fire initiation is much reduced, especially following the sharp rise after September 1st.

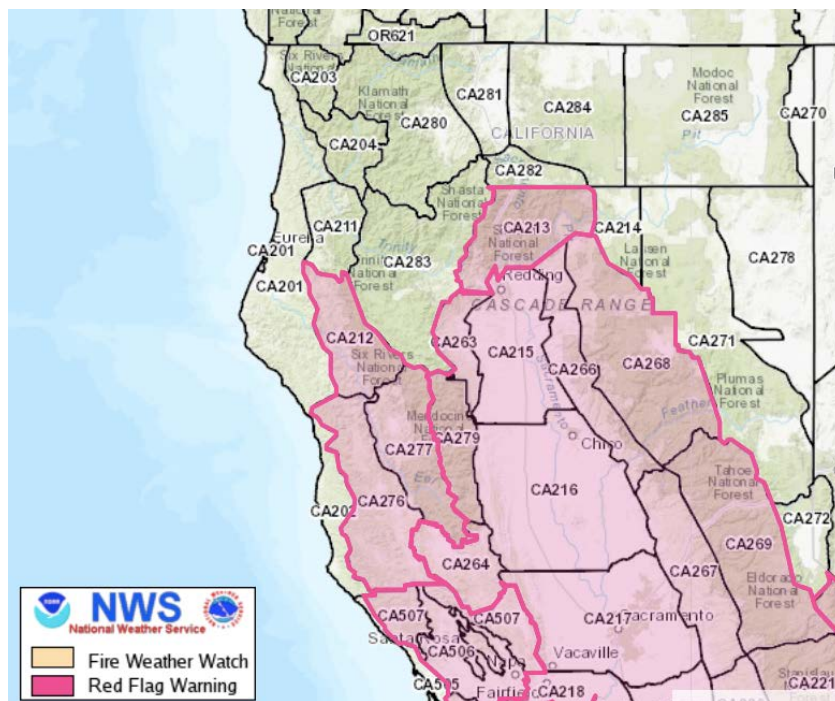


Fig. 6: Extent of fire weather watch in northern California in relation to the Klamath Mountains. No red flag conditions designated within 50+ air miles of project area.



North Ops 7-day Significant Fire Potential Outlook

Issued by North Ops Predictive Services, Redding CA

Published: Tuesday Oct 8, 2019 8:31 AM PDT

Predictive Service Area (PSA)	Mon 07 Oct	Tue 08 Oct	Wed 09 Oct	Thu 10 Oct	Fri 11 Oct	Sat 12 Oct	Sun 13 Oct	Mon 14 Oct
NC01 - North Coast	Green	Green	Yellow	Yellow	Yellow	Green	Green	Yellow
NC02 - Mid Coast To Mendocino	Yellow	Yellow	Orange W	Orange W	Orange W	Brown	Brown	Brown
NC03A - Bay Marine	Yellow	Yellow	Orange W	Orange W	Orange W	Yellow	Yellow	Yellow
NC03B - Diablo-Santa Cruz Mtns	Brown	Brown	Orange W	Orange W	Orange W	Brown	Brown	Brown
NC04 - Northwestern Mtn	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
NC05 - Sac Valley/Foothills	Brown	Brown	Orange W	Orange W	Orange W	Brown	Brown	Brown
NC06 - NE California	Green	Green	Yellow	Yellow	Yellow	Green	Green	Yellow
NC07 - Northern Sierras	Yellow	Yellow	Orange W	Orange W	Orange W	Yellow	Yellow	Brown
NC08 - Far Eastside	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Fig. 7: Current assessment of Predictive Services at North Ops is that forecast conditions do not warrant high-risk wind designations for Northwestern (Klamath) Mountains. Project area is not listed as 'Very Dry'.

Appendix 2: Site-Specific Klamath TREX Potential Burn Unit Information

The following maps show a few specific burn units (outlined in red) fully prepped with hoselays and firelines and ready for immediate treatment during TREX operations. In addition to their sheltered locations near drainage bottoms, these maps also illustrate nearby recent fire footprints (blue) and steep north-facing slopes (shades of green and blue) that effectively reduce resistance to control, if not acting as outright barriers to fire spread under these conditions. Our field observations on the units mapped below (scouted by NWCG-qualified RXB2 burn bosses) suggest only south-facing areas shown in shades of yellow currently have dry enough fuels to support sustained fire spread.

10-hr fuel moistures recorded today on-site, using fuel sticks that have been deployed for several days were quite high. Values from 10-16% were recorded up until 1400 hrs. on multiple units, dropping quickly to between 6-10% on the more exposed units by 1500 hrs. This is consistent with morning shading and a tight window opening for a few hours at the peak of the burn period. Only 1 of 4 sites assessed had a calculated unshaded fine dead fuel moisture below 7%, with the rest bottoming out at 11% throughout the day and actual (vs. calculated) 1-hr. fuel moistures are likely much higher.

Additional spot weather forecasts for these units demonstrate weather conditions allowable in our burn plans. A video showing fuel conditions unresponsive of fire spread in sheltered, shaded fuel beds surrounding TREX burn units may be found [here](#).

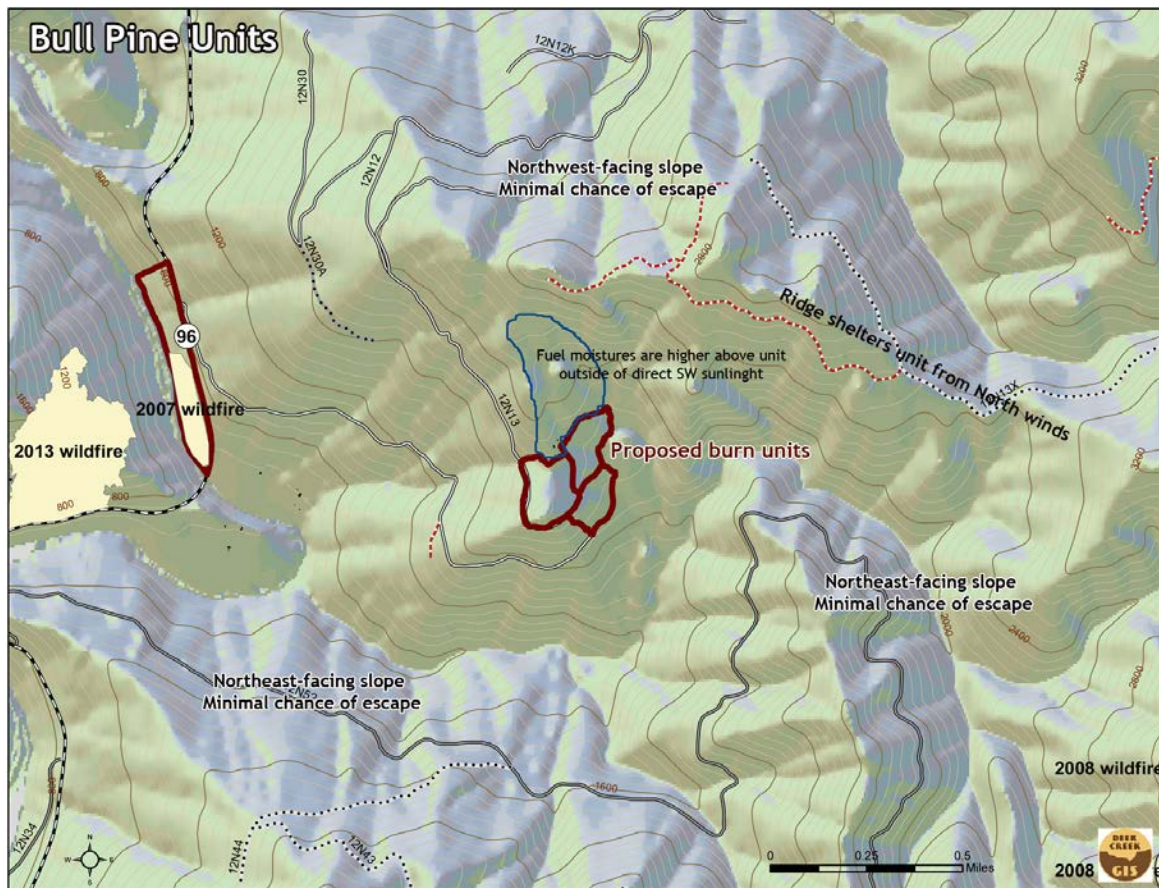


Figure 8. Potential private lands Klamath TREX burn units at Bull Pine showing slope and aspect.

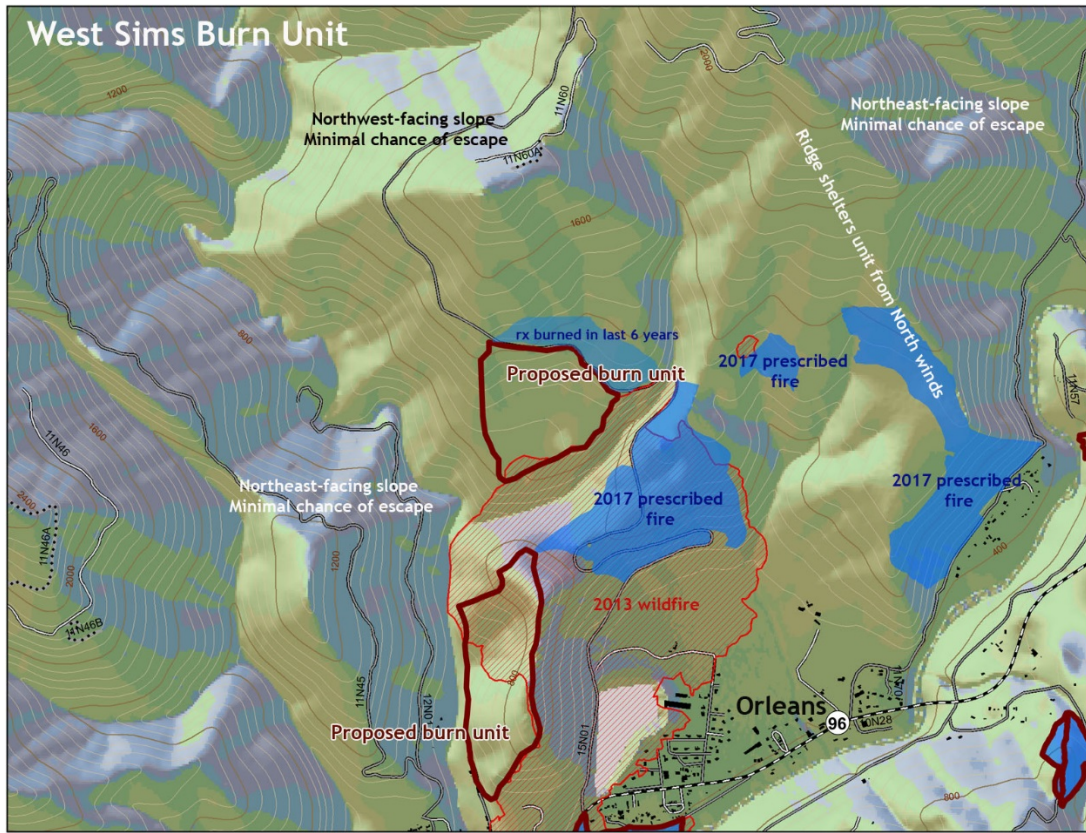


Figure 9. Potential private lands Klamath TREX burn units at West Sims showing slope and aspect and recent wildfire and prescribed fire activity.

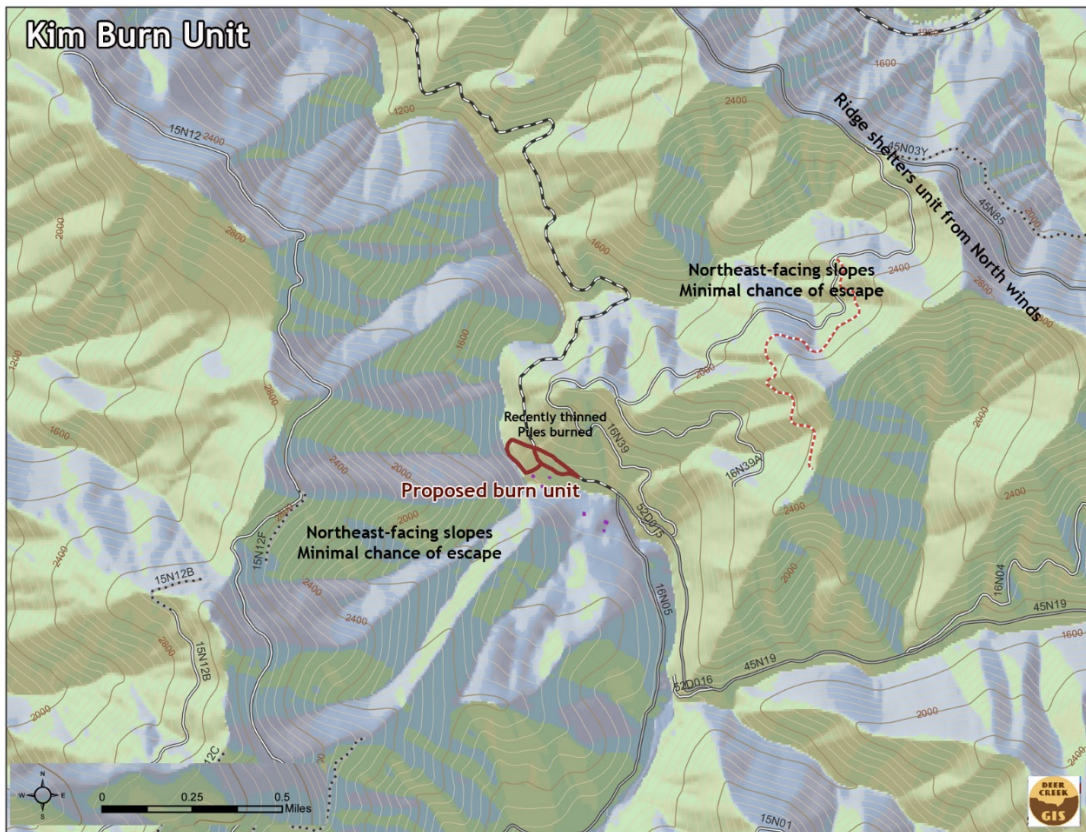


Figure 10. Private lands KTREX burn units at Kim Unit near Happy Camp showing slope and aspect.

SPOT WEATHER FORECASTS for SHELTERED 2019 KLAMATH TREX UNITS

FORECAST NO: 5

NAME OF BURN SITE: Bull Pine

UNIT: Klamath TREX

SHIFT DATE: 10/9, 10/10, 10/11/2019

SIGNED: Brad Charboneau - NWS Eureka

TIME AND DATE

FORECAST ISSUED: <1640 on 10/08/19>

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.DISCUSSION...

WIND

Strong northeast and east winds can be expected along the ridgetops and upper slopes Tuesday night through Thursday morning, particularly those with east and northeast exposure. Due to the fact that this particular site is located primarily on the middle portion of of a steep slope and on the south aspect, Bull Pine will likely remain sheltered from the strongest gusts through this period. As a result, winds here will likely be primarily upslope Wednesday, with occasional gusts to 20 mph in unsheltered areas during the middle and late afternoon. Winds will weaken substantially by Thursday afternoon, and this trend will continue through Friday.

TEMPERATURES

A dry cold front will continue to push through the area tonight, and this front will bring cooler temperatures Wednesday, with afternoon highs likely to only reach the upper 60s to near 70. Overnight lows Wednesday will also likely drop into the mid to upper 30s, and some patchy frost will be possible in protected areas. Temperatures will gradually warm each day Thursday and Friday but will remain near normal.

HUMIDITY and PRECIPITATION

Humidity will also be low Wednesday through Friday, with only moderate overnight recoveries in the valleys and poor recoveries in higher elevations. No precipitation is expected.

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.WEDNESDAY...

Sky/weather..... Sunny

CWR..... 0%

LAL..... 1

Max temperature..... 65 to 70 degrees

Min humidity..... 21 to 30 percent

Wind (20 ft)..... Easterly early, mixing with upslope winds in the afternoon.
6 to 11 mph, with occasional gusts to 20 mph.

Mixing height..... 4000 Feet

Transport winds..... Northeast at 25 mph

.WEDNESDAY NIGHT...

Sky/weather..... Clear

CWR..... 0%

LAL..... 1

Min temperature..... 35 to 39 degrees

Max humidity..... 40 to 50 percent

Wind (20 ft)..... East at 4 to 8 mph

Mixing height..... 500 Feet

Transport winds..... Northeast at 25 mph

.THURSDAY...

Sky/weather..... Sunny

CWR..... 0%

LAL..... 1

Max temperature..... 73 to 77 degrees

Min humidity..... 18 to 24 percent

Wind (20 ft)..... Easterly, mixing with upslope winds in the afternoon.

5 to 10 mph, with occasional gusts to 15 mph.
Mixing height..... 4500 Feet
Transport winds..... East at 15 mph
.THURSDAY NIGHT...
Sky/weather..... Partly Cloudy
CWR..... 0%
LAL..... 1
Min temperature..... 40 to 45 degrees
Max humidity..... 35 to 45 percent
Wind (20 ft)..... Downslope 1 to 5 mph
Mixing height..... 500 Feet
Transport winds..... Southeast at 10 mph

FORECAST NO: 1
NAME OF BURN SITE: Kim
UNIT: Klamath TREX
SHIFT DATE: 10/9, 10/10, 10/11/2019
SIGNED: Brad Charboneau - NWS Eureka
TIME AND DATE
FORECAST ISSUED: <1640 on 10/08/19>

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.DISCUSSION...

WIND

Strong northeast and east winds can be expected along the ridgetops and upper slopes Tuesday night through Thursday morning, particularly those with east and northeast exposure. The Kim burn site is located near the bottom of a deep, narrow valley and is surrounded by steep slopes, and as a result it will likely be sheltered from strongest winds at higher elevations. As a result, winds at the burn site will likely be primarily a mixture of northerly and upvalley winds Wednesday, with occasional gusts to 20 mph in unsheltered areas during the middle and late afternoon. Winds will weaken substantially by Thursday afternoon, and this will continue through Friday.

TEMPERATURES

A dry cold front will continue to push through the area tonight, and this front will bring cooler temperatures Wednesday with afternoon highs likely to only reach the low to mid 60s. Overnight lows Wednesday will also likely drop into the low mid 30s, and some patchy frost will be possible in protected areas in addition to a light freeze. Temperatures will gradually warm each day Thursday and Friday, but will remain near normal.

HUMIDITY and PRECIPITATION

Humidity will also be low Wednesday and Thursday, with only moderate overnight recoveries in the valley and poor recoveries in higher elevations. Wetting rain is not expected Wednesday or Thursday

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.WEDNESDAY...

Sky/weather..... Sunny
CWR..... 0%
LAL..... 1
Max temperature..... 60 to 65 degrees
Min humidity..... 24 to 30 percent
Wind (20 ft)..... North/upvalley at 7 to 11 mph, with occasional gusts to 20 mph.
Mixing height..... 3500 Feet
Transport winds..... Northeast at 20 mph
.WEDNESDAY NIGHT...
Sky/weather..... Clear

CWR..... 0%
LAL..... 1
Min temperature..... 32 to 36 degrees
Max humidity..... 45 to 55 percent
Wind (20 ft)..... southeast/downvalley at 4 to 8 mph
Mixing height..... 500 Feet
Transport winds..... East at 20 mph

.THURSDAY...

Sky/weather..... Sunny
CWR..... 0%
LAL..... 1
Max temperature..... 73 to 77 degrees
Min humidity..... 15 to 22 percent
Wind (20 ft)..... East/upslope at 5 to 10 mph, with occasional gusts to 15 mph in unsheltered areas.
Mixing height..... 5000 Feet
Transport winds..... East at 15 mph

.THURSDAY NIGHT...

Sky/weather..... Partly Cloudy
CWR..... 0%
LAL..... 1
Min temperature..... 38 to 43 degrees
Max humidity..... 40 to 50 percent
Wind (20 ft)..... Downslope 2 to 6 mph
Mixing height..... 500 Feet
Transport winds..... Southeast at 10 mph

FORECAST NO: 6

NAME OF BURN SITE: West Sims

UNIT: Klamath TREX

SHIFT DATE: 10/9, 10/10, 10/11/2019

SIGNED: Brad Charboneau - NWS Eureka

TIME AND DATE

FORECAST ISSUED: <1640 on 10/08/19>

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.DISCUSSION...

WIND

Strong northeast and east winds can be expected along the ridgetops and upper slopes Tuesday night through Thursday morning, particularly those with east and northeast exposure. Due to the steepness of the local terrain and the fact that this particular site is located on the south aspect of the lower slope, West Sims will likely remain sheltered from the strongest gusts through this period. As a result, winds here will likely be primarily upslope Wednesday, with occasional gusts to 20 mph in unsheltered areas during the middle and late afternoon. Winds will weaken substantially by Thursday afternoon, and this will continue through Friday.

TEMPERATURES

A dry cold front will continue to push through the area tonight, and this front will bring cooler temperatures Wednesday, with afternoon highs likely to only reach the mid to upper 60s. Overnight lows Wednesday will also likely drop into the mid to upper 30s, and some patchy frost will be possible in protected areas. Temperatures will gradually warm each day Thursday and Friday but will remain near normal.

HUMIDITY and PRECIPITATION

Humidity will also be low Wednesday through Friday, with only moderate overnight recoveries in the valleys and poor recoveries in higher elevations. No precipitation is expected.

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.WEDNESDAY...

Sky/weather..... Sunny
CWR..... 0%
LAL..... 1
Max temperature..... 64 to 69 degrees
Min humidity..... 22 to 30 percent
Wind (20 ft)..... East/upslope at 7 to 11 mph, with occasional gusts to 20 mph in unsheltered areas.
Mixing height..... 4000 Feet
Transport winds..... Northeast at 25 mph

.WEDNESDAY NIGHT...

Sky/weather..... Clear
CWR..... 0%
LAL..... 1
Min temperature..... 35 to 39 degrees
Max humidity..... 40 to 50 percent
Wind (20 ft)..... East at 5 to 10 mph
Mixing height..... 500 Feet
Transport winds..... Northeast at 25 mph

.THURSDAY...

Sky/weather..... Sunny
CWR..... 0%
LAL..... 1
Max temperature..... 73 to 77 degrees
Min humidity..... 18 to 24 percent
Wind (20 ft)..... East/upslope at 5 to 10 mph, with occasional gusts to 15 mph in unsheltered areas.
Mixing height..... 5000 Feet
Transport winds..... East at 15 mph

.THURSDAY NIGHT...

Sky/weather..... Partly Cloudy
CWR..... 0%
LAL..... 1
Min temperature..... 38 to 43 degrees
Max humidity..... 40 to 50 percent
Wind (20 ft)..... Downslope 2 to 6 mph
Mixing height..... 500 Feet
Transport winds..... Southeast at 10 mph