

CORRINE FIRE



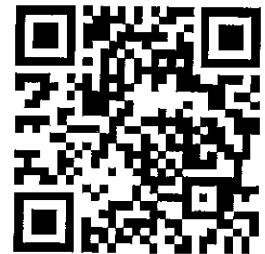
INCIDENT ACTION PLAN

JUNE 23, 2015 0700

TO

JUNE 26, 2015 0700

CA-MMU-011662



INCIDENT OBJECTIVES (ICS 202)

1. Incident Name: CORRINE INCIDENT CA-MMU-011662	2. Operational Period: Date From: 06/23/2015 Date To: 06/26/2015 Time From: 0700 hours Time To: 0700 hours
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3. Objective(s):
Management Objectives

- Provide for public and emergency personnel safety at all times
- Provide for timely and accurate release of incident information to the public, media, first responders and cooperators
- Protect and defend structures and improvements in the fire area
- Protect natural and cultural resources in the fire area
- Provide a process to manage emergency resources efficiently
- Ensure costs are minimized appropriately for values at risk
- Ensure coordination and communication with stakeholders and cooperating agencies

Control Objectives

- NORTH of: San Joaquin River
- SOUTH of: Road 200
- EAST of: Road 222
- WEST of: Road 235

4. General Weather Conditions:
 The next three days will be sunny, with temperatures between 97–100 degrees, and minimum humidity between 15–17%. Diurnal winds will be upslope/canyon 2-6 mph after 0900, with gust to 12-13 mph in the afternoon. Ridge winds will be southwest 2-6 mph increasing to 3-7 mph on Thursday, with gust 13-14 mph. The nighttime humidity should improve slightly over the next several nights.
Probability of Ignition: 90 – 100%

General Situational Awareness and Safety:

- MAINTAIN L.C.E.S. AT ALL TIMES. Safety zones and escape routes are mandatory
- Ensure all personnel maintain situational awareness
- Rolling material and steep terrain. Remember to maintain good footing
- Keep your hydration up by drinking water and electrolyte beverages. Avoid energy drinks
- Maintain good communications with your supervisors, adjacent forces and crew members
- Guard against complacency

5. Site Safety Plan Required? Yes No **Approved Site Safety Plan(s) Located at:**

6. Incident Action Plan (the items checked below are included in this Incident Action Plan):

<input checked="" type="checkbox"/>	ICS 203	<input type="checkbox"/>	ICS 220	<input checked="" type="checkbox"/>	Health Message	<input checked="" type="checkbox"/>	Supp. Repair Instr.
<input checked="" type="checkbox"/>	ICS 204	<input checked="" type="checkbox"/>	Incident Map	<input type="checkbox"/>	Finance Message	<input type="checkbox"/>	Facility/Base Map
<input checked="" type="checkbox"/>	ICS 205	<input checked="" type="checkbox"/>	Weather Forecast	<input checked="" type="checkbox"/>	Water Usage Report	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	ICS 206	<input checked="" type="checkbox"/>	Fire Behavior Forecast	<input type="checkbox"/>	Training Message	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	ICS 214	<input checked="" type="checkbox"/>	Safety Message	<input checked="" type="checkbox"/>	Demobilization Plan	<input type="checkbox"/>	

7. Prepared by: Name: Jeff Finney Position/Title RESL-T Signature:

8. Approved by Incident Commander: Name: M. Van Loben Sels Signature:

ICS 202	IAP Page _____	Date/Time: <u>06/21/2015 1800 hrs</u>
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ORGANIZATION ASSIGNMENT LIST (ICS 203)

1. Incident Name: CORRINE CA-MMU-011662		2. Operational Period: Date From: 06/23/2015 Time From: 0700		Date To: 06/26/2015 Time To: 0700	
3. Incident Commander(s) and Command Staff:			7. Operations Section:		
IC/UCs	Mike Van Loben Sels		Chief	Jeff McCarroll	
Deputy			Deputy		
Safety Officer	Rich Drozen		Staging Area		
Public Info. Officer			Branch I		
Liaison Officer			Branch Director		
Law Liaison			Deputy		
4. Agency/Organization Representatives:			Division/Group	A/D/L	Chris Trindade
Agency/Organization	Name		Division/Group	M/S/X	Joey Felix
CHP			Division/Group		
Cal OES			Division/Group		
MADERA COUNTY SO			Division/Group		
USFS			Branch II		
PG&E			Branch Director		
NO FORK RANCHERIA			Deputy		
5. Planning Section:			Division/Group		
Chief	Tom Shevenell		Division/Group		
Deputy			Division/Group		
Resources Unit	Leonel Plata		Division/Group		
Situation Unit			Division/Group		
Equipment Tech Spec.			Div/Grp		
Documentation Unit	Paul Saba		Branch Director		
DMOB Unit			Deputy		
GISS			Division/Group		
FBAN			Division/Group		
Training Tech. Spec.			SUPP. REPAIR GRP		
Logistics Section			Division/Group		Len Nielson
Chief	Rich Bohn		Division/Group		
Deputy			Air Operations Branch		
Support Branch			Air Ops Branch Dir.		
Supply Unit			Air Support Gp Sup.		
Facilities Unit			Helibase Mgr.		
Ground Support Unit			8. Finance/Administration Section:		
Ordering Manager			Chief	Rich Browne	
Crew Tech. Spec.			Deputy	Jack Franklin	
Service Branch			Time Unit	Allison McAdams	
Motel Tech Spec			Procurement Unit	Bob Counts	
Communications Unit			Comp/Claims Unit	Suzi Cain	
Medical Unit			Cost Unit	John Forsberg	
9. Prepared by: Name: Jeff Finney			Position/Title: RESL (T)		Signature: _____
ICS 203	IAP Page _____	Date/Time: 06/22/2015, 1700 hrs			



Fire Weather Outlook



FORECAST NO: 3

NAME OF FIRE: Corrine Fire

PREDICTION FOR: Tuesday-Thursday **SHIFT**

UNIT: MMU

SHIFT DATE: June 23-25, 2015

SIGNED: Mike Smith

TIME AND DATE

Incident Meteorologist

FORECAST ISSUED: 2000 June 21, 2015

WEATHER DISCUSSION: A small low pressure system moving into the Pacific Northwest will bring a continued slight moderation in weather on Tuesday as upper high pressure over the region is suppressed. The fire area should see slightly higher humidity Tuesday with a slight drop in daytime temperatures. Overnight humidity recovery should improve slightly as well. Daytime upper level winds will be out of the west but generally light so slope winds will be terrain generated with the west aspects of this fire having the strongest winds during the afternoon hours. Little change in the weather pattern is expected Wednesday with a significant warm up beginning on Thursday as high pressure rebuilds.

WEATHER OUTLOOK:

OUTLOOK FOR Tuesday: Sunny. Highs 93 to 97. Minimum humidity 13-17% after morning recovery of 43-48% lower elevations and 35% ridges. Ridge winds becoming southwest to west 2-6 mph after about 0900 with gusts to 13 mph in the afternoon. Slope winds becoming upslope to upcanyon after about 0900 2-6 mph with gusts up to around 12 mph in the afternoon.

OUTLOOK FOR Wednesday: Sunny. Highs 93 to 97. Minimum humidity 12-16% after morning recovery of 48-53% lower elevations and 40% ridges. Ridge winds becoming southwest to west 2-6 mph after about 0900 with gusts to 13 mph in the afternoon. Slope winds becoming upslope to upcanyon after about 0900 2-6 mph with gusts up to around 12 mph in the afternoon.

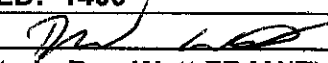
OUTLOOK FOR Thursday: Sunny. Highs 96 to 100. Minimum humidity 10-15% after morning recovery of 43-48% lower elevations and 35% ridges. Ridge winds becoming south to southwest 3-7 mph after about 0900 with gusts to 14 mph in the afternoon. Slope winds becoming upslope to upcanyon after about 0900 2-6 mph with gusts up to around 13 mph in the afternoon.

For updated spot forecasts from the Hanford National Weather Service office goto:

<http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=hnx>

Fire Weather Phone number_(559) 584-9505

FIRE BEHAVIOR FORECAST

FORECAST NUMBER: 3	TYPE OF FIRE: Wildfire
FIRE NAME: Corrine	OPERATIONAL PERIOD: 6/23-25/15 0700-0700
DATE ISSUED: 6/22/15	TIME ISSUED: 1400
UNIT: MMU – Madera Mariposa Merced Unit	SIGNED: 
	Typed/printed: Don Watt FBAN(T)

INPUTS

WEATHER SUMMARY:

The next three days will be sunny, with temperatures between 97–100 degrees, and minimum humidity between 15–17%. Diurnal winds will be upslope/canyon 2-6 mph after 0900, with gust to 12-13 mph in the afternoon. Ridge winds will be southwest 2-6 mph increasing to 3-7 mph on Thursday, with gust 13-14 mph. The nighttime humidity should improve slightly over the next several nights.

Probability of Ignition: 90 – 100%

OUTPUTS

FIRE BEHAVIOR

GENERAL:

The fuels in the area consist of a tall brush and oak/Gray Pine mix with a light grass understory, with several areas of the grass grazed to short sparse stubble. The area has a 30 percent or greater tree mortality of the pine species. The brush is curing 1 to 2 months faster with the persistent drought, the chamise is approximately 70% LFM and the Manzanita is approximately 80% LFM, both nearing the critical threshold. There is a component of down and hanging dead fuel from a snow storm in 2012. The Gray Pines in the area have been highly stressed from the drought, with some of the trees dropping all of the needles while others appear to be green and living but are dead and curing.

SPECIFIC:

The potential for fire growth will need to come from a start across the control line or a new start in the general area. The highest probability of an ember is coming from a tree with fire in the higher portions, being influenced by the wind. If a fire gets established across the control it will have moderate ROS, with flame length about 3 feet, except were wind or wind slope/ridges come into alignment flame lengths of 5-6 feet or greater in the grass. The lateral spread of the fire will be limited with the most fire growth being affected by the up/down canyon winds. The main fire spread will be in the bottom of the drainages and when the ridgetop and wind aligns. A fire in the grass and brush will produce short range spotting, long range spotting will develop from individual tree torching. The fire will be driven by the strong diurnal winds and will make significant runs in the canyon bottoms and were the wind and slope align.

AIR OPERATIONS:

There will be an inversion over the fire area until 1000, but should not affect air operations with the limited smoke production.

SAFETY

Watch for drought and fire stressed trees as they will have a higher potential to fail without notice.

SAFETY MESSAGE

INCIDENT NAME
Corrine

Date
Prepared:
06-22-15

Time
Prepared:
1430

OPERATIONAL PERIOD:
06/23/15-06/25/15

- **Increasing temperatures over the next few days! " Watch for signs of DEHYDRATION "**
- **"Steep terrain"**. Be mindful of your foot placement!
- **Driving"** Be courteous to others on the road while assigned to the incident and traveling home
- **"Communication"** Face to face is always the best form of communication.
- **"Stump Holes, Ash Pits, and Hazard Trees"** Maintain your situational awareness while working the interior of the fire.
- **"Hydration"** Drink water before, during and after shift! 3 waters to gatorade1 ratio.
- **"PPE"** Ensure to check all gear for operational readiness
- Brief your crews on all the components of the IAP.

**Ensure firefighters have good anchor points, escape routes, and safety zones.
Remember LCES.**

Lookout(s), Communication(s), Escape routes and Safety zone(s)

Prepared By:
Baraka Carter SOF1

Approved By (Safety Officer)



Corrine

CA-MMU-011662

Heat Illness Prevention

All Employees- Shall be responsible to maintain their level of awareness regarding heat illness prevention. This includes but not limited to: adequate hydration, acclimation, physical fitness, and the effect of personal protective and equipment on body heat. All employees will be trained to recognize early signs of heat related symptoms.

Hydration- Employees shall be provided access to portable water in sufficient quantities to prevent de-hydration and heat related illnesses.

Drop Point 2- Will have sufficient water available.

Equipment- All equipment will have bottle water and Gatorade available and it will be iced down every day.

Employees- Will be required to carry (2) canteens on their web-gear full of water at all times.

Employees- Are warned and educated on the consumption of energy drinks. They are encouraged to drink a balance ratio of water and Gatorade. We recommend a ratio of three waters to one Gatorade.

Physical Fitness- All employees will maintain effective productivity based upon the crews physical abilities.

Personal Protective Clothing- All employees will wear their Personal Protective Clothing (PPE) while engaged in fire line activities. Employees shall be allowed to loosen PPE when they are safely away from flames, or other hazards.

ASSIGNMENT LIST (ICS 204)

1. Incident Name: CORRINE CA-MMU-011662		2. Operational Period: Date From: 6/23/2015 Time From: 0700		3. Date To: 6/26/2015 Time To: 0700		
4. Operations Personnel:				Branch: Div/Group: Sup Repair Staging Area:		
Operations Section Chief: McCarroll, Jeff			<u>Contact Number</u>			
Branch Director: Division/Group Supervisor: Nielson, Len						
5. Resource Assigned:						
Resource Identifier	Leader	Number Persons	Contact (e.g., phone, pager, radio frequency, etc.)	Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information		
DOZ PVT E-14 Fisk	Anderson	1	None	DP2		
DOZ PVT E-15 Fisk	Wagnor	1	None	DP2		
DOZ PVT E-67 Neese	Neese, Dave	1	None	DP2		
EXC PVT E-153 K-Jam	Koontz, Chris	1	None	DP2		
EXC PVT E-152 Egan	Egan	1	None	DP2		
W/T PVT E-81 Hughes	Hughes	1	None	DP2		
W/T PVT E-37 Fisk	Fisk	1	None	DP2		
READ O-321	Stalter, Burt	1	None	DP2		
FOBS O-296	Gladwin, Ralph	1	None	DP2		
FOBS O-104	Janssen, David	1	None	DP 2		
6. Work Assignments: See Suppression Repair Plan						
7. Special Instructions:						
8. Communications (radio and/or phone contact numbers needed for this assignment):						
Function/Name		Primary Contact: indicate cell, pager, or radio (frequency/system/channel)				
Command - CDF CMD 4		Radio (151.4000 RX / 159.3750 TX / CH 103.5)				
CDF Tac 28		Radio (151.1825RX / 151.1825TX / CH 192.8)				
Medical CALCORD		Radio (156.0750 RX / 156.0750 TX / CH 156.7)				
Air to Ground -						
9. Prepared by:						
Name: Roger Noon		Position/Title: RESL		Signature:		
ICS 204		IAP Page _____		Date/Time: 6/22/2015 12:00		

INCIDENT RADIO COMMUNICATIONS PLAN

Incident Name
Corrine

Date/Time Prepared
6/22/2015 1200 hrs

Operational Period Date/Time
6/23/2015 to 6/25/2015

Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq	N or W	RX Tone/NAC	TX Freq	N or W	TX Tone/NAC	Mode A, D or M	Remarks
1	Command	CDF CMD 4	All Divisions	151.4000		103.5	159.3750		OST	A	Tone 3 Deadwood Mtn.
2	Command	NIFC CMD 2	Not assigned	168.1000			170.4500		Tone 3	A	Not Assigned
3	Command	MMU LOCAL	Initial Attack	151.4600		123.0	159.3900		OST	A	
4	Tactical	CDF Tac 13	Not assigned	151.3775		192.8	151.3775		192.8	A	Not Assigned
5	Tactical	CDF Tac 26	Not assigned	159.2925		192.8	159.2925		192.8	A	Not Assigned
6	Tactical	CDF Tac 27	Division A/D/L	159.3075		192.8	159.3075		192.8	A	
7	Tactical	CDF Tac 28	Supp. Repair	151.1825		192.8	151.1825		192.8	A	
8	Tactical	CDF Tac 29	Division M/S/X	151.3475		192.8	151.3475		192.8	A	
9	Tactical	VFIRE 24	Not assigned	154.2725		156.7	154.2725		156.7	A	Not Assigned
10	Tactical	VFIRE 25	Not assigned	154.2875		156.7	154.2875		156.7	A	Not Assigned
11											
12											
13											
14											
15	EMS	CALCORD	All Divisions	156.0750 N		156.7	156.0750 N		156.7		
16	Emergency	Air Guard	All Divisions	168.6250 N			168.6250 N		110.9 (1)		EMERGENCIES ONLY
17											
18											
19											
20	Emergency	Air Guard	All Divisions	168.6250 N			168.6250 N		110.9 (1)		EMERGENCIES ONLY

Prepared By (Communications Unit) *Tom Webb*
 Tom Webb COM1 IMT #1
 Incident Location: County Mariposa State-CA Latitude: N37°16'18.3" Longitude: W 119°32'59.9"

The convention calls for frequency lists to show four digits after the decimal place, followed by either an "N" or a "W", depending on whether the frequency is narrow or wide band. Mode refers to either "A" or "D" indicating analog or digital (e.g. Project 25) or "M" indicating mixed mode. All channels are shown as if programmed in a control station, mobile or portable radio. Repeater and base stations must be programmed with the Rx and Tx reversed.

MEDICAL PLAN (ICS 206)

1. Incident Name: CORRINE	2. Operational Period: Date From: 6/23/15 Time From: 07:00	Date To: 6/26/15 Time To: 07:00
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03. Medical Aid Stations:			
Name	Location	Contact Number(s)/Frequency	Paramedics on Site?
NONE			<input type="checkbox"/> Yes <input type="checkbox"/> No

4. Transportation (indicate air or ground):			
Ambulance Service	Location	Contact Number(s)/Frequency	Level of Service
SIERRA AMBULANCE	40755 WINDING WAY, OAKHURST	(559)600-7800 (DISPATCH)	xxx ALS <input type="checkbox"/> BLS
SKYLIFE (AIR AMBULANCE)	FRESNO AIRPORT	(559) 600-7800 (DISPATCH)	XX ALS <input type="checkbox"/> BLS

5. Hospitals:							
Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/ Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground			
ST AGNES MEDICAL	1303 EAST HERNDON AVE FRESNO N 36 44 14 / W 119 45 58	559-450-5607	10	45	NO	<input type="checkbox"/> No	XX Yes
KAISER FRESNO	7300 NORTH FRESNO ST FRESNO, CA	559-448-4500	NA	45	NO	<input type="checkbox"/> No	<input type="checkbox"/> No
COMMUNITY REGIONAL MEDICAL CTR	2823 FRESNO ST. FRESNO, CA N36 44 39 / W 119 47 07	559-442-2423	15	60	XX Yes Level: <u> 1 </u>	XX Yes	XX Yes
MADERA COMMUNITY HOSPITAL	1250 E. ALMOND MADERA, CA	559-675-5500	NA	60	NO	<input type="checkbox"/> No	<input type="checkbox"/> No

6. Special Medical Emergency Procedures:
LINE EMERGENCY:

Crew Supervisor to contact Division Supervisor with patient complaint/condition and location.

- Division Supervisor contacts:
 1. MMU ECC ON COMMAND CHANNEL
- Communications Unit contacts:
 1. Ground EMS resource on Fire Line
 2. Operations
 3. Safety
- Division Supervisor or designee will serve as point of contact and run medical emergency utilizing CALCORD for IWI and only for duration needed.
- Communication Unit will clear command channel for emergency traffic as needed and only for time needed.

Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.

INJURY REPORTING PROCEDURES

CHIEF COMPLAINT _____
 LOCATION OF PATIENT _____
 TRANSPORT REQUEST BY: AIR ___ GROUND ___
 DIVISION _____ CREW _____
 POINT OF PICKUP _____
 LAT _____ LONG _____
 IS EMT WITH THE PATIENT: YES ___ NO ___
 AGE _____
 SEX: MALE ___ FEMALE ___

ALL EMERGENCIES
 Secure the area and identify witnesses for later investigation. Keep an accurate log of events.

7. Prepared by (Medical Unit Leader): Name: JESSE WINNEN _____ Signature: _____	8. Approved by (Safety Officer): Name: Baraka Carter SOF1 _____ Signature: _____
ICS 206	IAP Page _____ Date/Time: 6/22/15 15:00



DEMOB

CORRINE INCIDENT
CA – MMU – 011662

3 DAY IAP

- In order to be deemed excess, supervisors must submit an ICS #213 to the Resources Unit.
- Demob will be located at Minarets High School until Tuesday, June 23rd till 2000 hrs.
- On Wednesday, June 24th Demob will be at the Coarsegold Fire Station from 0800-1700 hrs.

Corrine Fire

Fire Suppression Damage Repair Guidelines

Fire Line Rehab

Dozer fire lines will be treated by pulling and back blading berms and spreading slash back onto the fire line, re-contouring or out-sloping the surface to allow for drainage, and where necessary, placing water bars according to "The Five-D System for Effective Fire line Water bars." However it will be up to the discretion of the division to pull back slash onto the fire line to maintain fire line security.

Where fire control lines cross a drainage or ditch (wet or dry) loose soil and organic debris will be removed and the slope will be reshaped at least 15 feet on both sides and the channel restored to its natural condition. Removed soil and debris will be placed such that it will not roll or wash back into the channel. This work may require the use of an excavator and may have to be ordered to the fire incident.

The objective is to reduce soil erosion and visual impacts.

Water bar fire lines to slow and spread runoff before it can build up enough energy to erode soil and transport sediment. **Pull berms and re-spread cut slash** on to fire line footprint.

Spacing: These spacing distances should be used as a guide. Judgment should be used in locating water bars to minimize erosion potential. It may not be possible or necessary to place water bars in steep or rocky areas. Install water bars according to the "The Five-D System for Effective Fire line Water bars."

Roads

1. Existing dirt roads used for access will be graded and watered and brushed to forest standards.
2. Existing roads that were closed, but reopened for current incident use, will be improved by grading, watering and brushing to allow rehabilitation equipment access to fire line put on ridges. This may include repairing and/or replacing the original erosion control structures, cleaning and improving ditches and blocking the entrance to the roads. If needed, additional actions to prevent significant soil movement may be used at the recommendation of the Resource Advisor. These roads will be left open for the remainder of fire season and will be closed back up before the winter wet season.

Archaeological Sites

Any impacts to archaeological sites will be evaluated and mitigated on a case-by-case basis prior to rehabilitation activities. Incident Resource Advisors will identify control lines which contain archaeological sites that require further analysis or additional measures before repair work commences. Specific Avoidance Areas within the fire are marked with blue and black checker board flagging. These areas are to be avoided with ground-disturbing activities. Consult with the Resource Advisor prior to conducting activities in or adjacent to these areas.

Trash & un-needed flagging should be pulled, removed and disposed. Please leave safety flagging in place.

Turnouts created or widened by parking should be raked and obscured.

Helispots, Heliports, Safety Zones, Drop Points, And Other Clearings

All clearings constructed to support suppression activities will be returned as closely to pre-incident conditions as is possible. Pushed over brush and trees surrounding these areas will be piled. In some cases, barriers may be used in combination with the above techniques to prevent access for unauthorized OHV use.

The Five-D System for Effective Fire line Water bar

To make effective water bars on fire lines, just remember the 5-D System. The five D's are: **Distance, Diagonal, Divert, Discharge, and Dissipate.**

Most forest values depend on healthy soils; clean water, streams full of fish, diverse wildlife habitats, productive timberlands, beautiful places, and so on. Firefighters strive to protect our soils by suppressing the wildfires that can damage them.

Methods used to fight fires, especially fire lines, can cause erosion and soil degradation, and need to be treated to properly maintain forest values. Fire line surfaces usually cause runoff during heavy rainfall and snowmelt. Without water bars, excessive runoff will concentrate and cause rills and gullies to form. Effective water bars can prevent this from happening.

Distance: To be effective, water bars must break up drainage areas and runoff on the fire line so that there's not enough erosive energy available in runoff to erode the soil. To ensure that excess runoff cannot accumulate, water bars must be placed the proper distance apart, based on the slope of the fire line. This breaks up the area that accumulates runoff, keeping it small enough to prevent damage. Erosion potential depends on slope and a table is provided on the next page that gives the maximum distance between water bars, or between a water bar and the next upslope drainage break.

Diagonal: After deciding where you will put each water bar, the next decision is how to build them. An important principle in working with flowing water is: don't bully the flow, lead it. Water bars built directly across a fire line oppose the water's energy and tend to fail. Water bars built diagonal to the fire line lead the water off and work much better. A diagonal water bar has a gentle slope along its base that leads the water off. A simple rule is to add 5 to the slope of the road, in percent, and build the water bar at that many degrees from perpendicular. Or simpler yet, just build them at 30 degrees off perpendicular (see the illustration on the next page).

Divert: A good water bar will divert the water off the fire line. To do this the water bar must be sufficiently deep to handle all the flow for as long as it's needed. Excavation is much more effective than fill in making a durable and effective water bar (a ditch or a dip beats a dike).

Discharge: Another feature of a good water bar is that it will discharge the flow. A good water bar is not a dam -- it must have an open outlet.

Dissipate: Finally, a good water bar should dissipate the flow just below the outlet to exhaust its eroding power and cause it to filter into the soil. This may require placing slash, rock, or debris below the outlet, or fudging a bit on distance to take advantage of natural features that will dissipate the water's erosive energy.

So remember, when locating and building water bars, place them the right **distance** apart, at a **diagonal** to the fire line, so that they **divert**, then **discharge**, then **dissipate** the energy of the flowing water. Be sure to make them deep enough so they'll be durable.

Fire line slope %	Maximum Distance Apart (feet)
1-15	150-125
15-35	75-45
35-65	35-20
+65	15

Recommended spacing for water bars on fire lines based on Sierra National Forest Land and Resource Management Plan, 1992. Water bars should be no further apart than this, but they may be closer. When in doubt, put in more. From: UDSA-Forest Service, "Sale Administrator's Handbook"

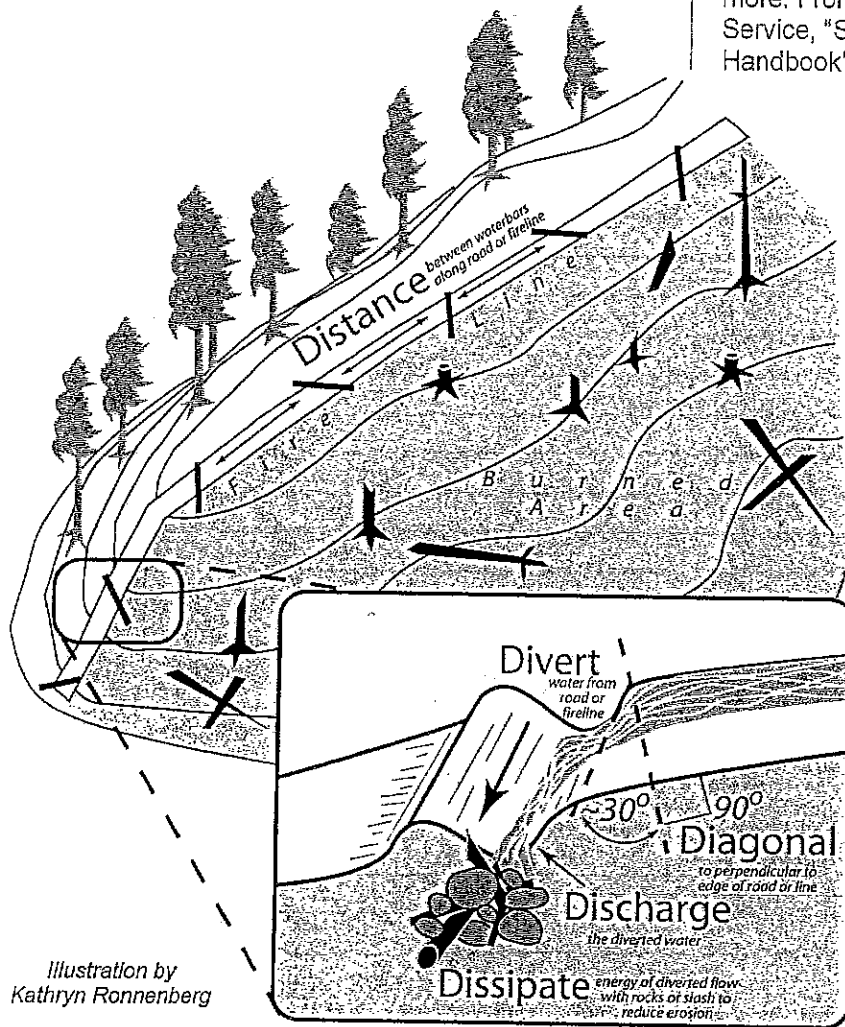


Illustration by Kathryn Ronnenberg

Reference: Hauge, C.J., M.J. Furniss and F.D. Euphrat. 1979. *Soil erosion in California's Coast Forest District*. California Geology. June, 1979



TRANSPORTATION MAP

CORRINE INC.
CA-MMU-011662
06/19/2015

- Branch
- Division Break
- Drop Point
- ICP
- CORRINE FIRE



