

Lazy Incident

INCIDENT ACTION PLAN

September 8, 2007

0600 - 2000

Before you attempt to beat the odds,
be sure you could survive the odds beating you!

Situational

Awareness

For

Everyone

- ✓ Smoke inversions may obscure visibility of hazards above Buck Creek.
- ✓ Hydration: Drink plenty of fluids and preposition water for re-supply needs

CA - SHF - 001912

P5DZP9

Northern California Incident Management Team 1

Incident Objectives	1. Incident Name LAZY	2. Date Prepared 09/07/07	3. Time Prepared 1800
4. Operational Period 09/08/07 Saturday Day Shift 0600 - 2000			
5. General Control Objectives for the incident (include alternatives) <ul style="list-style-type: none"> * Provide for firefighter and public safety utilizing the risk management process. * Confine fire south and west of Lazyman ridge trail. * Confine fire north of the Yolla Bolly divide. * Confine fire west of Harvey ridge. * Confine fire east of the crest divide. 			
6. Weather Forecast for Period See Spt Weather forecast.			
7. General Safety Message			
8. Attachments (mark if attached)			
<input checked="" type="checkbox"/> Organization List - ICS 203 <input checked="" type="checkbox"/> Div. Assignment Lists - ICS 204 <input checked="" type="checkbox"/> Communications Plan - ICS205 <input checked="" type="checkbox"/> Medical Plan - ICS 206 <input type="checkbox"/> Air Operations Summary - ICS 220	<input checked="" type="checkbox"/> Incident Map <input checked="" type="checkbox"/> Safety Message <input type="checkbox"/> Traffic Plan <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
9. Prepared by (Planning Section Chief) Valery Lambeth	10. Approved by (Incident Commander) Kent Swartzlander		

ORGANIZATION ASSIGNMENT LIST		9. Operations Section	
1. Incident Name LAZY		Chief	PETE DUNCAN
2. Date Prepared 09/07/07		3. Time Prepared 1800	Planning OPS ALEC LANE (t)
4. Operational Period 09/08/07 Saturday Day Shift 0600 - 2000		a. Branch I - Division/Groups	
Position		Name	
5. Incident Commander and Staff		Branch Director	
Incident Commander	KENT SWARTZLANDER	Deputy	
Deputy	TOM CAVES	Division/Group A	JEFF BARNHART
Safety Officer	MICHELE TANZI	Division/Group B	DAVID PEREIRA
Information Officer	YVONNE JONES	Division/Group Y	CHRIS STEVENS
Liaison Officer		Division/Group Z	MIKE CAMPBELL
		Division/Group	
6. Agency Representative		b. Branch II - Division/Groups	
Agency	Name	Branch Director	
SHF	DONNA HARMON	Deputy	
MNF	EDUARDO OLMEDO	Division/Group	
		Division/Group	
		Division/Group	
		Division/Group	
		Division/Group	
7. Planning Section		c. Branch III - Division/Groups	
Chief	VALERY LAMBETH	Branch Director	
Deputy		Deputy	
Resources Unit	GARY DEBOI / RITA MUSTATIA	Division/Group	
Situation Unit	CHRIS WIKEEN	Division/Group	
Documentation Unit	GARY DEBOI	Division/Group	
Demobilization Unit		Division/Group	
Fire Behavior Analyst		Division/Group	
Human Resource Specialist		d. Air Operations Branch	
Training Specialist		Air Operations Branch Director	ERICH SCHWAB
GIS Specialist	KYLE FELKER	Helibase Manager	
Computer Specialist	JONNA COOPER	Air Attack Supervisor	SCOTT WHITMIRE
IMET	RYAN WALBRUN	Air Support Supervisor	
		Helicopter Coordinator	
		Air Tanker Coordinator	
8. Logistics Section		10. Finance Section	
Chief	MIKE JELLISON	Chief	LOIS CHARLTON
Deputy	PAUL MONTGOMERY	Deputy	
Supply Unit / Ordering	TOM CHARLTON / MONA LAKE	Time Unit	SISSIE ANZORA
Facilities Unit	JEFF HUHTALA / FRANK DELCARLO	Procurement Unit	PJ VILHAUER
Ground Support Unit	JOHN CAMACHO / HARRY ZABEL	Compensation/Claims Unit	DEBORAH MCINTOSH (t)
Communications Unit	KEN EARLE	Cost Unit	ADELE HENDERSON
Medical Unit	KEN KUMPE	Prepared by (Resource Unit Leader)	
Security Unit		GARY DEBOI	
Food Unit	JAY WESTLAKE		

Division Assignment List	1. Branch	2. Division/Group
		A

3. Incident Name LAZY	4. Operational Period 09/08/07 Saturday Day Shift 0600 - 2000
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5. Operations Personnel

Operations Chief	PETE DUNCAN	Division/Group Supervisor	JEFF BARNHART
Operations Chief		Air Attack Supervisor	
Branch Director		Safety Officer	MICHELE TANZI

6. Resources Assigned this Period

Strike Team/Task Force/ Resource Designator	Leader	Num of Pers.	Trans. Y/N	Drop Off PT./Time	Pick Up PT./Time

7. Control Operations

Patrol Status

8. Special Instructions

9. Division/Group Communications Summary

Function	Frequency - RX	Frequency - TX	Tone	System	Channel	System	Channel
NIFC Command 4	166.6125N	168.4000N		NIRSC	1		
NIFC Tac 1	168.0500N	168.0500N		NIRSC	4		
Contingency Command	169.1750N	169.9750N	2,5	NIRSC	3		
Air to Ground	166.6875N	166.6875N		NIRSC	8		

Prepared by (Resource Unit Leader) Gary R. Deboi	Approved by (Planning Section Chief) Valery Lambeth	Date Prepared 09/07/07	Time Prepared 1900
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Division Assignment List		1. Branch		2. Division/Group			
3. Incident Name LAZY		4. Operational Period 09/08/07 Saturday Day Shift 0600 - 2000					
5. Operations Personnel							
Operations Chief		PETE DUNCAN		Division/Group Supervisor		DAVID PEREIRA	
Operations Chief				Air Attack Supervisor			
Branch Director				Safety Officer		MICHELE TANZI	
6. Resources Assigned this Period							
Strike Team/Task Force/ Resource Designator	Leader	Num of Pers.	Trans. Y/N	Drop Off PT./Time	Pick Up PT./Time		
ELDORADO IHC	WILL HARRIS	20	N	Spike			
FIRESTORM 1	JOSH HILLER	19	N	Spike			
EMTP	NICK GABBARD	1	N	Spike			
EMTP	T.J. QUARDROS	1	N	Spike			
7. Control Operations							
Mop-up 300 feet where safe to do so.							
Fall hazard trees as needed.							
8. Special Instructions							
Implement MIST tactics where appropriate including spike and sleeping areas.							
Backhaul excess equipment and garbage, pull flagging, waterbar lines, repair trail where needed.							
Eldorado to fly out of H1 at 1700.							
Share EMTs with Division Y.							
9. Division/Group Communications Summary							
Function	Frequency - RX	Frequency - TX	Tone	System	Channel	System	Channel
NIFC Command 4	166.6125N	168.4000N		NIRSC	1		
Tactical Div/Group	168.6000N	168.6000N		NIRSC	5		
Contingency Command	169.1750N	166.9750N	2,5	NIRSC	3		
Air to Ground	166.6875N	166.6875N		NIRSC	8		
Prepared by (Resource Unit Leader)		Approved by (Planning Section Chief)			Date Prepared		Time Prepared
Gary R. Deboi		Valery Lambeth			09/07/07		1915

Division Assignment List	1. Branch	2. Division/Group Z
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3. Incident Name LAZY	4. Operational Period 09/08/07 Saturday Day Shift 0600 - 2000
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5. Operations Personnel

Operations Chief	PETE DUNCAN	Division/Group Supervisor	MIKE CAMPBELL
Operations Chief		Air Attack Supervisor	
Branch Director		Safety Officer	MICHELE TANZI

6. Resources Assigned this Period
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Strike Team/Task Force/ Resource Designator	Leader	Num of Pers.	Trans. Y/N	Drop Off PT./Time	Pick Up PT./Time

7. Control Operations Patrol Status.
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8. Special Instructions

9. Division/Group Communications Summary

Function	Frequency - RX	Frequency - TX	Tone	System	Channel	System	Channel
NIFC Command 4	166.6125N	168.4000N		NIRSC	1		
R5 Tac 4	173.9125N	173.9125N		NIRSC	6		
Contingency Command	169.1750N	169.9750N	2,5	NIRSC	3		
Air to Ground	166.6875N	166.6875N		NIRSC			

Prepared by (Resource Unit Leader) Gary R. Deboi	Approved by (Planning Section Chief) Valery Lambeth	Date Prepared 09/07/07	Time Prepared 1915
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Fire Weather Forecast

FORECAST NO: 4

NAME OF FIRE: Lazy Fire

PREDICTION FOR: Day Shift 0600-2000

UNIT: CA-SHF

SHIFT DATE: 9/8/07

SIGNED: Ryan Walbrun

TIME AND DATE

Incident Meteorologist

FORECAST ISSUED: 2000 9/7/07

WEATHER DISCUSSION: High pressure will continue across Northern California through the weekend. Expect slightly warmer and drier conditions compared to Friday. Ridgetop winds will continue to be light from the East with light slope winds this afternoon. The benign pattern is favorable for thermal belts so expect mild nights with only moderate RH recovery. The local morning inversion should break by 10 am.

WEATHER FORECAST TODAY:

...Continued Warm and Dry with Light Winds...

WEATHER: Sunny.

TEMPERATURES: 77 (6000 feet) 90 (4500 feet)...1-3 degrees warmer.

HUMIDITY: 18-24% (6000 feet) 25-30% (4500 feet)...slightly drier.

20 FT WINDS:

RIDGETOP – East 4-8 mph.

SLOPE/VALLEY – Upslope 3-6 mph.

STABILITY/INVERSION: Mid-slope inversion until mid-morning. Airmass remains stable.

TONIGHTS FORECAST: East Ridgetop winds 5 mph. Light wind in the drainages. RH Recovery 45-60%. Otherwise clear with overnight lows 58-64.

OUTLOOK FOR SUNDAY: Continued warm and dry with highs in the upper 70s to upper 80s with afternoon RH 18-28%. Ridgetop winds will continue to be light from the East through the day, however Easterly ridgetop winds are expected to increase by Sunday evening through Monday morning.

EXTRA INFORMATION: Please continue to radio in your weather observations to Communications!!!

Fire Behavior indices for the Mendocino Pass RAWS located at 5420 feet 18 miles south of the fire:

Burning Index this afternoon of 49 which correlates to 5 foot flame lengths.
Energy Release Component (ERC) of 62.

Sunrise: 6:43 am
Sunset: 7:29 pm

INCIDENT RADIO COMMUNICATIONS PLAN				1. INCIDENT NAME LAZY	2. DATE / TIME PREPARED 09/07/07 2100	3. OPERATIONAL PERIOD 09/08/07 DAY
4. BASIC RADIO CHANNEL UTILIZATION						
SYSTEM / CACHE	CHANNEL	FUNCTION	FREQUENCY		ASSIGNMENT	REMARKS
NIRSC	1	NIFC COMMAND 4	Rx	166.6125 N	COMMAND NORTH	
			Tx	168.4000 N		
NIRSC	2	NIFC COMMAND 5	Rx	167.1000 N	COMMAND SOUTH	
			Tx	169.7500 N		
NIRSC	3	MNF COMMAND	Rx	169.1750 N	CONTINGENCY COMMAND	TONES 2,5
			Tx	169.9750 N		
NIRSC	4	NIFC TAC 1	Rx	168.0500 N	DIVISION ALPHA	
			Tx	168.0500 N		
NIRSC	5	NIFC TAC 3	Rx	168.6000 N	DIVISION BRAVO	
			Tx	168.6000 N		
NIRSC	6	R5 TAC 4	Rx	173.9125 N	DIVISION ZULU	
			Tx	173.9125 N		
NIRSC	7	R5 TAC 5	Rx	173.9625 N	DIVISION YANKEE	
			Tx	173.9625 N		
NIRSC	8	AIR TO GROUND	Rx	166.6875 N	AIR TO GROUND	
			Tx	166.6875 N		
NIRSC	13	CALCORD	Rx	156.0750 W	MEDIVAC	FOR MEDICAL EMERGENCY ONLY
			Tx	156.0750 W		
NIRSC	14	AIRGUARD	Rx	168.6250 N	EMERGENCY AIR	FOR EMERGENCY USE ONLY
			Tx	168.6250 N		
NIRSC	15	NWS	Rx	162.4000 N	NWS	NWS
			Tx	000.0000 N		
NIRSC	16	AIRGUARD	Rx	168.6250 N	EMERGENCY AIR	FOR EMERGENCY USE ONLY
			Tx	168.6250 N		
ICS 205 9/86 NFES 1330	5. PREPARED BY: (COMMUNICATIONS UNIT) <i>KEN EARLE COMMUNICATIONS UNIT LEADER (T)</i>					

LAZY PHONE LIST

FIRE POSITION	PHONE NUMBER (LL)	CELL PHONE	FAX NUMBER
INCIDENT COMMANDER	530-833-5361	530-261-0162	
OPERATIONS/PLANS	530-833-5370	530-261-0354	
MEDICAL	530 833-5516		
PLANS		530-261-0373	
LOGISTICS CHIEF		530-261-0852	
ORDERING	530-833-5323	530-261-0378	
ORDERING	530-833-5356	530-261-0859	530-833-5328
GROUND SUPPORT	530-833-5514	530-261-0862	
COMMUNICATIONS	530-833-5380	208-691-5165	
SAFETY OFFICER		530-261-0364	
COMP/CLAIMS	530-833-5381	530-261-0378	
SITUATION UNIT	530-833-5370	530-261-0371	
RESOURCES UNIT	530-833-5889	530-261-0370	
FINANCE UNIT	530-833-5391	530-918-9881	530-833-5510
INFORMATION (PIO)	530-833-5369 O/S		
DEMOB UNIT	530-833-5889		530-833-5510
SAFETY	530-833-5309		
EXPANDED DISPATCH	530-247-1245		530-244-0291

9/7/2007

AIR OPERATIONS SUMMARY

PREPARED BY: Scott Whitmire

PREPARED DATE/TIME: 9/7@2000

1. INCIDENT NAME: Lazy	2. OPERATIONAL PERIOD DATE: 9/8/2007 START TIME: 0730 END TIME: 1930 SUNRISE: 0638 SUNSET: 1938
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3. REMARKS (Safety Notes, Hazards, Air Operations Special Equipment,, etc.): Watch For Wires at East side of Helibase Helispot One, (H-1): 40 05.330 122 57.379 Paskenta Helibase: 39 53.14 122 32.76	4. MEDEVAC A/C: H-212AH Mercy Air	5. TFR: Radius: ____ 10 NM Altitude: ____ 10800 ____ = MSL Centerpoint: Lat: 40 04.30 Long: 123 00.50
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6. PERSONNEL	Phone	7. FREQUENCIES	AM	FM	8. FIXED-WING	# Avail / Type/ Make-Model / FAA N# / Base(s)
AOBD: Erich Schwab	530-517-2026	AIR/AIR FW:		166.275	Airtankers	Order through ATGS
ATGS: Paul Thorton (AA14) Stan Kubota (AA507)		AIR/AIR RW:	122.575		Leadplanes	
HLCO:		AIR/GROUND:		166.6875	Base FAX #:	
ASGS: Scott Whitmire	916-717-6615	COMMAND:	See communication plan		ATGS Aircraft	AA-14 AA-507
HEBM: Patrick Kearn		COMMAND RPT	Rx:	Tx:	Other	
ATB MGR:		DECK FREQ:				
		TOLC FREQ:				

9. HELICOPTERS (Use Additional Sheets As Necessary)

FAA N#	TY	MAKE/MODEL	BASE	AVAIL	START	REMARKS	FAA N#	TY	MAKE/MODEL	BASE	AVAIL	START	REMARKS
H-512	2	B-212	PHB	0700	0730								
212AH	2	B-212	PHB	0700	0730								
212SJ	2	B-212	PHB	0700	0730								
7CP	3	B-206L3	PHB	0700	0730								

10. TASK/MISSION/ASSIGNMENT (Type/Function includes: Air Tactical, Retardant, Recon, Personnel Transport, Water Dropping, S&R, etc.)

TYPE/FUNCTION	NAME OF PERSONNEL OR CARGO (if applic) OR INSTRUCTIONS FOR TACTICAL AIRCRAFT	MISSION START	FLY FROM	FLY TO
Water drops	As needed	0800		
Cargo	Support Lazy fire	0800		
Cargo	Support Sugarloaf fire	0900		
Recon	As requested			
Troop transport	5 People from Covelo Airport to Wright Fire (Lat/Long) 40 04.2 X 123 00.5, then later to Butte fire	0900 at Covelo		
Backhaul	Retrieve nets, backhaul from all fires	As needed		
Troop transport	Two crews off Lazy Fire in the afternoon			

MEDICAL PLAN	1. Incident Name Lazy Fire	2. Date Prepared. September 7, 2007	3. Time Prepared 1800 hrs	4. Operational Period 0600 - 2000 September 8, 2007							
	5. Incident Medical Aid Station										
Medical Aid Stations		Location			Paramedics Yes No						
ICP- Frontline Medical		ICP- Paskenta Community Center			X						
H1 Lazyman Ridge (section 23) Type 2 capable		N 40° 05.330' x W 122° 57.379' Elevation 6000'									
H2 Lazyman Ridge (section line 24/13) **One way helispot...Don't use under North wind component. Type 2 capable		N 40° 05.59' x W 122° 56.29' Elevation 6000'									
Buck Helispot (section 25) Type 2 capable		N 40° 04.553' x W 122° 56.624' Elevation 4300'									
6. Transportation											
AIR Ambulance Services											
Name		Address		Phone		Paramedics Yes No					
REACH (night capable)		Redding, CA		530-226-2400 ECC Direct		X					
ENLOE Flight Care		Chico Ca.		530-226-2400 ECC Direct		X					
CHP (hoist capable with 165' line and to 450 total lbs. Short Haul and Long Line capable)		Redding, CA		530-226-2400 ECC Direct		X					
B. Incident Ambulances											
Name		Location				Paramedics Yes No					
St Elizabeth Ambulance		Red Bluff or Corning, CA.				X					
7. Hospitals											
Name		Address		Travel Time Air Ground		Phone		Helipad Yes No		Burn Center Yes No	
Mercy Medical Level 2 Trauma Center		2175 Rosaline Ave, Redding N 40° 34.29' / W 122° 23.67'		30 min 2.0 hr		(530) 225-6000 (800) 597-9571		X			
Enloe Medical Center		1531 Esplanada Dr, Chico Ca.		30 min 2.0 hr		(530)332-7300		x			
UC Davis Burn Center		2315 Stockton Blvd, Sacramento N 38° 33.17' / W 121° 27.05'		2.5 hrs		(916) 734-3636 (916) 734-3790		X		X	
8. Medical Emergency Procedures											
Notify Incident Communications on command channel. Declare a medical emergency advising your location and situation. The closest Division Supervisor will respond to the location to take control, direct necessary actions, coordinate appropriate care and patient transportation. Secure the area and identify witnesses for later investigation. Keep an accurate log of events.											
Prepared by (Medical Unit Leader) Ken Kumpe, MEDL						10. Reviewed by (Safety Officer) Michele Tanzi, SOF2					

Injury or Incident Communications Protocol

Notify the Communications Unit (ICP) on Command Channel

If a minor injury or incident, state that so a false sense of urgency is not produced

Provide the following information - Do not transmit the injured persons name

Location _____

Situation _____

Any special equipment required _____

Number of injured _____ Type of injuries _____

Immediate transport required: Yes No Best method: Ambulance Helicopter Vehicle

Closest pick up point (DP, Helispot) _____

Air Transportation Triage

	Air Ambulance –Immediate need	Air Shuttle to Paskenta Med Unit for non urgent transport
Mechanism	Stuck by tree Fall of 10' or more Snake bite with pain and swelling Insect bite with shortness of breath Signs of heat stroke (hot, dry, disoriented) Burn Injury greater than 1% body area	Cut or laceration smaller than 3" with bleeding controlled Minor bites and Stings Minor burns Walking wounded
Area Injured	Significant Blunt or Penetrating Trauma to Eye, Head, Neck, Chest, Abdomen or pelvis. Any Arm or Leg fracture	Minor blunt trauma Minor penetrating trauma Extremity sprains and strains
Symptoms	Disoriented Shortness of Breath Weak or absent radial pulse Pale, cold and sweating	

Radio procedures for Communications Unit at ICP

1. Clear the Command or other appropriate channel for Emergency traffic
2. Communications unit will notify the DIVS, OSC, SOF, Med Unit Leader and IC.
IC will notify PSC, LSC and PLAN OPS if declaring "Incident with-in an Incident."
3. Notify Air OPS is air transport is requested

Patient Information:

PATIENT #1

Age _____ Gender _____ Agency/Position _____

LOC _____ Vital Signs _____

Injury _____

Weight _____ Medical History/Allergies _____

PATIENT #2

Age _____ Gender _____ Agency/Position _____

LOC _____ Vital Signs _____

Injury _____

Weight _____ Medical History/Allergies _____

PATIENT #3

Age _____ Gender _____ Agency/Position _____

LOC _____ Vital Signs _____

Injury _____

Weight _____ Medical History/Allergies _____

PATIENT #4

Age _____ Gender _____ Agency/Position _____

LOC _____ Vital Signs _____

Injury _____

Weight _____ Medical History/Allergies _____

Lazy Incident Risk Analysis (215a)

Div.	LCES Analysis of Tactical Applications (Hazardous Actions or Conditions)	LCES Mitigations/Warnings/Remedies
All	Hydration	Drink plenty of fluids during and after shift. Pre-position water for re-supply needs. Order more to be slung in to keep ahead of demand.
Y	Hazard Trees above Buck Creek	Identify, Flag, Communicate to adjoining forces, and mitigate if safe to do so. Limit exposure. Use qualified fallers
All	Escape Routes to Safety Zones	Re-evaluate Trigger Points with Operations and Division Supervisors and make them known to all!
All	Steep terrain and Rolling material and snags falling across firelines	Watch out for rolling material from snags on steep terrain igniting fuels below, or across Buck Creek. Keep eyes in the green. Stay alert and watch your footing. LCES are in place!
All	Cliffs	Give yourself room for recovery. Ensure your footing. Stay away if possible.
All	Bees	2 EMT-P's on DIV B. If stung or bit, reactions could become extreme within minutes. Evaluate and notify Division Supervisor immediately!
All	Difficult terrain and conditions for providing for emergency medical needs.	Review Med Plan before the need arises. Review Remote Injury Protocol before need arises. 2 EMT-P out on Fireline * CHP has hoist capable helicopter *
Y	Inversions in Buck Creek	Obscuring visibility of hazards above Buck Creek. Post lookouts, re-assess escape routes and trigger points.

Incident Name: Lazy

Date & Time Prepared: September 7, 2007 @ 1945 hours

Operational Period: September 8, 2007 from 0600-2000

Prepared By: Michele Tanzi, SOF2

CA-SHF-001912

Shasta-Trinity National Forest



HAZARD MITIGATION THROUGH RISK MANAGEMENT

“Risk management doesn’t get in the way of doing the mission – it is the way we do the mission.” The Risk Management Process assists in ensuring that critical factors and risks of the fireline work environment are considered during decision making. Good risk management utilizes a five-step process:

● Step 1—Situational Awareness:

- Obtain information.
- Scout the fire.
- Identify hazards—those likely to result in a negative impact.
- Consider all aspects of current and future situations.
- Consider known historical problem areas (Apply information from the Fire Danger Pocket Card.).
- Recognize the need for action.
- Demonstrate ongoing awareness of fire assignment status.
- Note deviations.
- Attempt to determine why discrepancies exist with information before proceeding.

● Step 2—Hazard Assessment:

- Assess hazards to determine risks (e.g., fire behavior, snags, unburned fuels, work/rest).
- Use the Look Up, Down, and Around; and the Tactical Watch Outs (both located in the Incident Response Pocket Guide) to identify high-risk tactical hazards.
- Assess the impact of each hazard in terms of potential loss, cost, and mission/operational degradation based on probability and severity (probability—how likely an event will occur; severity—consequences if the event occurs). Keep in mind that increased exposure time increases probability.

● Step 3—Hazard Control:

- Determine the best approach to mitigate or control the risk from the hazards assessed.
- Establish controls (e.g., anchor point, LCES, utilize downhill checklist, limit exposure time).
- As control measures are developed, reevaluate each risk until it is reduced to a level where benefits outweigh potential costs.

The 5-D System for Effective Waterbars

When locating and building waterbars, place them the right **distance** apart, at a **diagonal** to the fireline, 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, and that soil does **not block** the water bar outlet.

Recommended spacing for waterbars on firelines.

Fireline slope %	Maximum Distance Apart (feet)
1 – 5	200
6 – 20	125
21 – 40	60
41 – 60	40
>60	25

Waterbars should be at least 2 pulaski widths wide and 12-24 inches high.

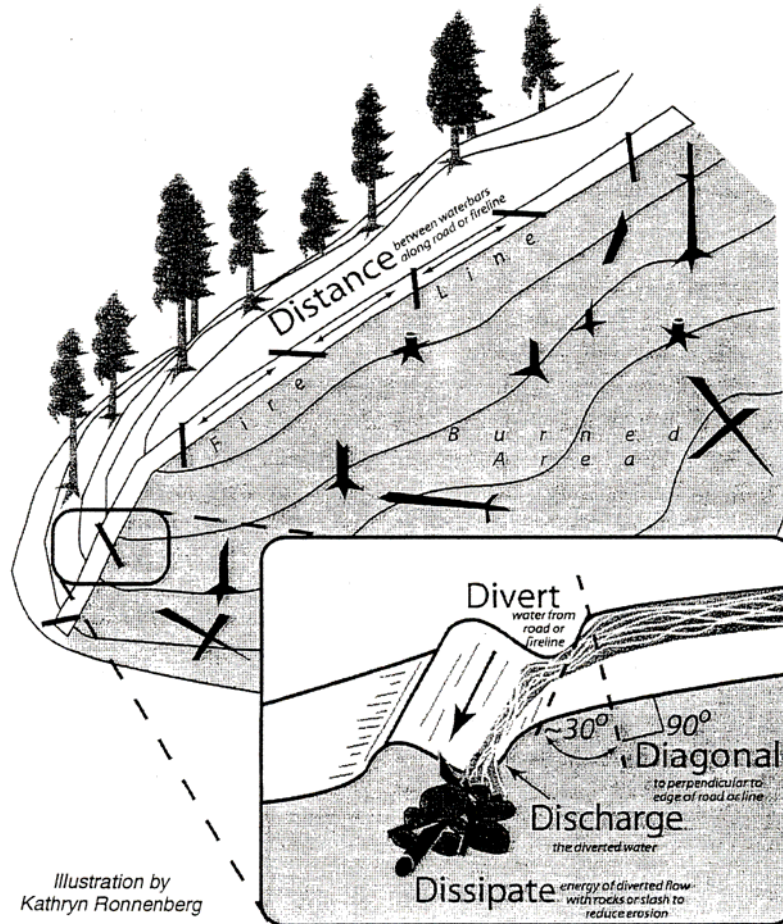


Illustration by
Kathryn Ronnenberg