IAP READ one-liners

- 1. With fire suppression keep rehab and restoration in mind.
- 2. Don't put your sewer water in your drinking water.
- 3. Let's not be the vectors of noxious weed transportation
- 4. A fed bear is a dead bear. Western Montana has Grizzly bears just about everywhere. Clean camp is critical at drop points, helispots, spike camps, and base camp. Need to be free of garbage.
- 5. Wilderness: Use MIST tactics when you can, go light on the land, but still be effective.
- 6. If constructing line with a bull dozer, life the blade at least 50 feet from the creek before crossing, and consider using a hand land in the riparian area.
- 7. Ridges are the highways of the mountains. Watch out for culturally modified trees, rock cairns, old trails, and other man-made features, these are finite resources that we are losing quickly on the landscape.
- 8. When in doubt, ask.
- 9. Stop noxious weeds in their path.
- 10. Bull trout are a sensitive fish species that spawn in the fall. Retardant misapplications could kill an entire population that live only in the stream you are working in, please be careful with retardant and report immediately if a misapplication occurs.

US Forest Service - Northern Region Lolo National Forest

RESOURCE ADVISOR (READ) FIELD GUIDE Updated 06/19/19



Photo by Ann Hadlow-2016 Copper King

CONTENTS:

- * READ Roles & Responsibilities
- * **READ Safety Precautions**
- * Resource Specialist Contact Information
- * LNF Wildfire Suppression Guidelines
- * LNF Aquatic Invasive Species Prevention Strategy
- * LNF Noxious Weed Management Protocol
- * LNF Bear Safety & Food Storage Protocol
- * LNF Wildfire Activities in Wilderness Areas
- * LNF Retardant & Foam Use / Misapplication Report
- * LNF Mop-Up Standards
- * LNF Fire Suppression Repair
- * LNF Fire Suppression Repair Field Data Collection
- * IAP Quotes

ROLES & RESPONSIBILITIES of the <u>RESOURCE ADVISOR</u>

I. Resource Advisor Position within the Incident Organization:

Resource Advisor is appointed by the Agency Administrator. At inbriefing, meet with Line Officer / Agency Administrator and clearly identify fire progression points at which you will get back together and review goals and objectives.

READ *reports to* the Agency Administrator and acts *as a liaison* between Agency Administrator, the Incident Commander (IC), resource specialist (s) and affected parties during:

• Extended Attack Fires

- * Larger Incidents
- Fire Suppression RepairBurn Area Emergency Response
- * Prescribe Fires
- Burn Area Emergency Resp

II. Role of the READ

Assists in the development in the WFDSS. Participates in any revisions to decision-support documents. Becomes familiar with incident objectives and management requirements as outlined in WFDSS decision. Understands the letter of intent and Delegation of Authority signed by the line officer.

Communicates concerns to the Agency Administrator who, in turn, communicates them to the Incident Management Team.

Identifies areas of concern (environmental, social, political) throughout the incident as it becomes increasingly complex and works with local specialists for support and guidance.

Understand and steward various implementation, assessment, and reporting requirements, guides, and protocols.

May provide costs associated with risk, as well as costs of mitigation or repair of suppression efforts.

Ensures that planned mitigation measures are carried out. Assists in developing short & long term natural resource and cultural repair plans.

Provides repair planning/assessment/coordination along with Incident Management Team (IMT) in fire suppression repair efforts.

READ is used in the document, but a **REAF** is a **READ** that can go to the fireline without an escort, may utilize this book as well.

SUMMARY COMMENTS:

INSPECTION ITEMS FOR REPAIR OF ROADS

<u>Objective</u> Repair roads utilized during suppression to pre-fire conditions.

OPEN PUBLIC ACCESS ROAD Road ≇_____

 $\hfill\square$ Existing native bed roads graded. If grading creates berms, the berms are removed

- □ Altered drainage systems repaired
- □ If "rocked" prior to use, alteration was repaired
- □ Rolling Dips reconstructed and inside ditches cleaned
- Culverts inspected, free of debris, and functional
- □ Culverts replaced if made unserviceable

CLOSED or STORED ROAD

- □ Return to pre-fire conditions where possible
- Close public access by placing boulders/barriers

NATIVE BED ROADWAY USED AS CONTROL POINT

- Dispersed unburned slash away from roadside
- Dispersed burned material into the black
- □ Scatter large material boneyards away from roadside
- Low-cut stumps to less than 12" visible from roadway
- □ Repair sites adjacent to roadway damaged by suppression

NOTES:

RESOURCE ADVISOR—SAFETY

Communicate with the Incident Management Team.

Get an Overhead Order # (O-#) and CHECK IN with IMT PLANS Section—Carry Red Card!!

Make sure you are listed (with contact information) in the Incident Action Plan (IAP).

CHECK IN AND OUT DAILY WITH YOUR IC/BRANCH/DIVISION SUPERVISOR !!!

Carry a map, radio, communication plan, IRPG, and a daily IAP at all times.

Establish communication with Branch or Division Supervisor and working equipment/crews.

Know the Incident within an Incident Action Plan and the Medical Action/Evacuation Plan.

Wear Fireline PPE at All Times

Unless the fire has been determined "controlled"—carry a firefighting tool & fire shelter at all times when on the fire line. There is no fitness requirement for a READ. If you don't have another qualification requiring at least a "Light" walk test, your visit to the fireline will have to be escorted by a single resource boss or IC designee.

Follow 10 Standard Fire Orders
Be AWARE of 18 Situations that Shout Watch Out

Always use LCES (Lookouts, Communications, Escape Routes and Safety Zones)

REMEMBER: You are here to <u>advise IMT</u> and prevent fire suppression activities from doing more damage than the fire (think speed dating relationships)

Forest Wide Resources

Lolo Lead READ	Shane Hendrickson	406-544-7216
	Carl Anderson	406-531-9379
Lolo Lead BAER	Ann Hadlow (Soils)	970-420-8463
Hydrology	Dustin Walters	406-329-3765
	Deana Delwire (EZ)	406-529-9947
	Kris Richardson	541-619-4583
Soils	Claire Campbell	865-696-8475
Engineer	Dustin Baker	208-520-7542
GIS Forest Coordinator	Erin Heiselmann	406-329-3744
	Nat Johnson	406-329-3720
Tree Improvement	Scott Palmer	406-493-2083
Missoula Dispatch		406-829-7070

West Zone Resource Specialist Information

D5 = Plains Thompson Falls RD D7 = Superior RD

Resource	Name	Cell Phone #
Engineering	Jared Koskola	406-826-4354
	Mike Frawley	406-491-7592
Timber	Mike Mueller	406-240-6974
	Cody Feasel	406-802-4329
Weeds	Carly Aniballi (D7)	406-241-6822
	Mike Mueller (D5)	406-240-6974
Recreation	Heather Berman	406-210-5287
Fisheries	Josh Schultz	715-303-8256
Wildlife	Dave Wrobleski	406-203-8947
Archaeology	Erika Karuzas	406-370-2564
Superior DR	Carole Johnson	406-531-1132
Plains DR	Erin Carey	406-249-2938
Silviculture	Carly Aniballi (d7)	406-241-6822
	Phil Collier (D5)	406-826-4353

INSPECTION ITEMS FOR REPAIR OF ROADS

Objective

Repair roads utilized during suppression to pre-fire conditions.

OPEN PUBLIC ACCESS ROAD Road #_____

 $\hfill\square$ Existing native bed roads graded. If grading creates berms, the berms are removed

- □ Altered drainage systems repaired
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CLOSED or STORED ROAD

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Dispersed unburned slash away from roadside

- Dispersed burned material into the black
- □ Scatter large material boneyards away from roadside
- Low-cut stumps to less than 12" visible from roadway
- □ Repair sites adjacent to roadway damaged by suppression

NOTES:

INSPECTION ITEMS FOR REPAIR OF DOZER LINES

Objective: repair dozer line to hydrologically neutral, pulling or back-blading berms, spreading slash or green forest debris back onto the line, and re-contouring to allow for drainage. An excavator with thumb and bucket is the preferred tool for dozer line repair.

Date: _____ DIVISION:

- Entrance and exit camouflaged at road/trail junctions
- OHV access blocked
- Berms pulled and slash dispersed
- □ Water bar minimum depth of 12" or 18" if powdered

□ Ridgetop dozer lines use alternating water bars to keep water from concentrating on one side

- Dozer lines that cross wet or dry stream channels: repaired streambank to prevent further erosion and fully repair the first 100' of dozer lines from stream channel edge
- Other describe in Notes NOTES:

Date: DIVISION:

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- □ OHV access blocked
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Other - describe in Notes П NOTES:

East Zone Resource Specialists Information

Seeley Lake RD (D6), Missoula RD (D3) and Ninemile RD (D4)

Resource	Name	Cell Phone #
Engineering	Brian Story	406-529-8534
	Kathy Marks	406-690-8500
	Calli Hunt	406-274-7232
Timber	Seth Romoki	406-491-8392
	Josh Angert	406-241-9579
Weeds Botany	Karen Stockman	406-241-1380
Recreation	Katie Knotek (D3)	406-329-3962
	Laura Johnson – Beaudroux (D4)	406-626-5404
	Matt Walters (D6)	406-677-3924
	Carl Anderson (D3)	406-531-9379
Fisheries	Shane Hendrickson	406-544-7216
Wildlife	Scott Tomson	406-880-0724
Archaeology	Syd Bacon	406-728-5388
Missoula DR	Jennifer Hensiek	406-529-8159
Ninemile DR	Eric Tomasik	406-210-0909
Seeley Lake DR	Quinn Carver	406-677-4158

District Front desk phone numbers

Missoula RD (D3)	406-329-3814
Ninemile RD (D4)	406-626-5201
Plains Thompson Falls (D5)	406-826-3821
Seeley Lake RD (D6)	406-677-2233
Superior RD (D7)	406-822-4233

2019 Tips on the Lolo NF

1. Lolo NF recently is under strict scrutiny with the use of Retardant. *Review with Air Ops retardant avoidant zones.* (pg30)

2. Sanders County has a large number of noxious weeds that are not found anywhere else on the Forest, please have all vehicles inspected and washed prior to being dispatched into the fire.

3. Prevent water contamination, think the Clark Fork is your **sewer** water and any other tributary is your *drinking water*, do not cross contaminate.

Overall, as a READ continually think about:

What can we do to return the "action" back to a natural state when we are done?

Is there a way to be successful while minimizing rehab efforts?

Do we need to build that fireline to be successful?

Always keep rehab in mind with suppression....

More detailed information can be found at:

http://www.umt.edu/sell/fire/

Left hand side, click on "Forms" tab, then Resource_Advisor_Guide, then Guiding_Documents

INSPECTION ITEMS FOR REPAIR OF HAND LINES AND TRAILS

REAF should walk the hand lines and trails used during fire suppression and inspect the repair work to pre-suppression conditions.

INCIDENT:_____

Date: _____ DIVISION:

INSPECTION ITEMS

- Re-establish tread width on system trails
- □ Repair or re-establish existing drainage features
- D Placement of displaced native material (soil and duff)
- □ Lop and scatter spread of forest debris between water bars
- Diliteration of short cuts, braided trails, or parallel trail heads
- □ Restored visual quality
- Constructed barriers from native material to stop shortcutting
- □ Other describe in Notes

NOTES:

Date: _____

DIVISION:

INSPECTION ITEMS

- □ Re-establish tread width on system trails
- □ Repair or re-establish existing drainage features
- □ Placement of displaced native material (soil and duff)
- Lop and scatter spread of forest debris between water bars
- Obliteration of short cuts, braided trails, or parallel trail heads
- $\hfill\square$ Restored visual quality
- Constructed barriers from native material to stop shortcutting
- $\hfill\square$ Other describe in Notes

NOTES:

REPAIR Continued...



Seed Mixture:

WILDFIRE SUPPRESSION GUIDELINES



Resource Protection

In this section, Lolo Resource Advisors are informed on the direction given to incoming Incident Management Teams from Type3 through Type 1 Incidents.

Fire Management Strategies

The goal is to safely manage a wildfire using environmentally sensitive methods. Meet with the Agency Administrator and clearly identify fire progression points at which you will get back together and review goals and objectives.

- Fire-related suppression activities can have a **detrimental effect** on the character of the Forest including wildland area, Wilderness, watershed, stream, wildlife, soils, vegetation communities, heritage resources, and social impacts. These negative effects on wildland resources should be **considered in developing** fire suppression *strategies*.
- Fire managers and suppression forces should give preference to methods and equipment that have the least adverse environmental effects.
- If unfamiliar with an area, the READ should contact local specialists to gain an understanding of general resource issues and any specific or sensitive concerns.

Noxious Weed containment

• In all aspects of fighting fire, **prevent noxious weed spread** by prevention at fire camps, helibase operations, vehicular traffic,

Backcountry/Unroaded/Wilderness/Limited access areas

• Cut trees flush with the ground and cover the stump with dirt as you build your line. Limb one side of the downed tree so the butt is not sticking up in the air (a tree in contact with the ground will decompose faster).

Fire Camps

• Locate camps within Wilderness or Wilderness Study Areas only as a last resort.

Line Construction (Best Practices- other options available)

- Build line you feel confident you can hold and safely patrol.
- Map all **proposed** and **built** fireline by type (hand, heavy equipment, explosive). Provide map at the end of every shift to Plans Unit. If possible, use Collector to track fire suppression activities.
- Select the method/equipment that is has the lightest impact and is appropriate for the job. Use in the following priority:
 - 1. Natural barriers
 - 2. Hand line or fireline explosives
 - 3. Excavator
 - 4. Skidgens
 - 5. Feller Buncher/Clippers
 - 6. Dozers
 - 7. Logging should be the last option
- Fire line shall be a minimum of <u>50 feet from streams</u> and 100 <u>feet from</u> <u>high priority streams</u> to protect riparian areas. *Contact Fish Biologist*
- Minimize disturbance to riparian vegetation, large woody debris and riparian filters.
- Allow the fire to burn to existing roads, natural barriers, stream channels, and constructed line. Base width upon current and predicted fire behavior. Consider integrity of visually sensitive areas.
- Ensure fire crews protect natural / cultural resources.

Actions to Avoid with Line Construction

- 1. Do not determine type of line construction based solely on available excess equipment or that might have been ordered. If possible, use effective equipment that can operate with the least impact.
- 2. Building mechanical fireline down a streambed, defined draw or riparian area.
- 3. Cutting riparian vegetation unless it is scouted and cuts are aligned **perpendicularly** to the system channel (i.e. not aligned parallel).
- 4. Cleaning-out of large woody debris from streams or cut riparian logs into short rounds.
- 5. Building fireline close to and parallel to an existing road, trail or natural fuel break.
- 6. Constructing wide lines as fuels decrease or the line is crossing natural barriers.
- 7. Allowing crews to carve initials in trees or practice felling or bucking, especially green trees.
- 8. Do not bull doze over single track recreation trails.

Fire Suppression Repair -Field Data Collection Sheet (make multiple copies for each Division as needed)

INCIDENT:_____

Date:

DIVISION:

Ensure IMT has/is mapping all disturbance types such that repair can also be tracked.

ORIGINAL AREA CONDITION

- Undisturbed Native Vegetation
- $\hfill\square$ Managed Forestland
- □ Walking Trail
- □ Motorized Use Trail
- □ Seasonal 4WD Road/Trail
- □ Unsealed Road
- □ Sealed Road
- □ Grazed/Agriculture Lands
- □ Creek/River
- $\hfill\square$ Other describe in Notes

TYPE of DISTURBANCE

- New dozer line in previously undisturbed area.
- Dozer line adjacent to existing road or trail.
- Existing road / trail brushed up or widened.
- Existing road/trail compacted and drainage impacted by normal travel.
- □ Complex of Dozer lines in a small area.
- □ Scraped off grass across cleared / pasture area.
- □ New helipad / helibase constructed.
- □ Other—describe in Notes.

OTHER DISTURBANCE

- □ Structure Wrapping
- □ Other—describe in notes
- □ Hand line Constructed
- □ Safety Zone Constructed
- Fencing damaged
 Staging/parking are
 - Staging/parking area constructed.

Helispots, Helibases

- Avoid locating helibases within 200 feet of water.
- If possible, do not cut trees to create new helispots.
- Consider use of explosives to naturalize stump and ends of snags cut during improvement if a platform is built or an area is cleared for landing.
- Special care should be taken to flush-cut stumps and roll short cut logs off hillside. Naturalize helispot disturbance by pulling back cut trees and branches, replacing down logs, woody debris, and displaced rocks. Pull all flagging, trash, signs, oil, and fuel, etc.
- Repair of helispots will be done on a case-by-case basis by the Resource Advisor.

Revegetation (Suppression Repair Only)

- Only seed areas that are devoid of adequate duff, native soils, and have exposed bare mineral soils greater the 1/4 acre. Use Lolo NF seed mixes and current seeding guidelines; this will be included in the Suppression Repair Plan. Avoid using species substitutions.
- Utilize native transplants whenever possible. Use excavators w/ thumb to move clumps of native shrubs and trees and/or to scatter duff material from adjacent areas.
- Use only Blue Tag/weed-free seed.
- Use only certified weed-free or weed seed -free straw for erosion control.
- Consider mechanical/aerial seeding of dozer line and mechanically cleared areas when appropriate.
- Retain enough crews or the proper equipment to accomplish revegetation. Avoid the assumption that BAER will do revegetation of suppression activities.

Mechanical Line

- *Scout all mechanical* equipment line locations prior to line location. Avoid letting operators build line without specific direction from the heavy equipment boss (HEQB).
- Carefully scout and **select creek crossings** where there are gentle and/ or hardened banks. Always lift the blade when crossing (connect with handline). If crossing location is soft, lay 6-8" diameter trees in the stream and drive (walk) equipment across them. Avoid allowing a dozer to run up or down a creek channel or cross a channel with very soft banks.
- Only build mechanical (dozer or excavator) line when you are going to assign crews to hold and patrol it. Avoid building mechanical line and leave un-patrolled when fire is near.
- Cut only to expose bare mineral soil (2-4 inches).
- If using a bull dozer, only build the line as wide as it needs to be <u>effective</u>.
 Do not use Dozers to repair of dozer lines (exception for safety zones)
- Limit use on side slopes and steep ground
- Minimize damage to structures, fences, reference posts, marked research plots and other structural improvements. If it is not possible to avoid fences, cut the wire; do not tear down with equipment.
- Tracked equipment has limited traction on rocky ground.

Fueling machinery

- Handle, store and dispense fuel, lubricants and other chemicals at least 50' away from a drainageway.
- Use approved containers for fuel, lubricant and chemicals.
- Properly store and discard all empty containers.
- Avoid refueling on a bridge or within 50' of a drainageway.
- Avoid leaving any hazardous materials on-site after the incident.

Excavators with blade and "thumbs' are the preferred mechanical equipment of choice.

 \Rightarrow Use for line construction and repair of all ground disturbances

Sheltered Fuel Break (logging equipment)

- Take photos/document prior road conditions.
- Road cutslopes, ditches, running surface are often heavily damaged during sheltered fuel break operations
- Do not allow skidding across stream channels.
- Identify harvest prescription and retention of large trees (16 in. +) and favor leaving Larch and Ponderosa Pine.
- Generally not more than a chain (66 ft) deep.
- Rutting of soils is of high concern
- Help identify adequate landing and slash disposals sites

Helicopter Operations

- Ask the local Ranger District if weed-free helibases and helispots have been identified.
- Use existing natural landing sites when available.
- When possible, locate helispots outside Wilderness or Wilderness Study Areas.
- Avoid helispot locations that are wet or may have sensitive or desired vegetation (i.e., white bark pine).
- Consider flight paths into and out of helispots to avoid flying over live water and riparian areas.
- Review the *Lolo NF Misapplication guidelines*, ask how they are going to record where they used *retardant.* (page 30)
- Noxious Weed Concerns: See Noxious Weed Management Section for suggestions
 - Check helibases and helispots for noxious weeds before using the site. Use only weed-free sites or mitigate prior to use.
 - Minimize weed spread at helibases by incorporating weed prevention and containment practices such as mowing, flagging or fencing weed patches, designating weed-free travel routes.
 - Provide weed inspection briefings for helibase staff and post weed identification posters.
 - Inspect, and if necessary, clean contract fuel and support vehicles before and after each incident when travelling off-road or through weed infestations.
 - Inspect and remove weed seed and plant parts from all cargo nets.

Water/Diversion/Pumps

- Always use 1/4" screened intakes (prevent little bull trout from getting sucked into the tanks and tenders.)
- Avoid diverting water at high rates or dewatering that can significantly reduce instream flow. Avoid complete drawdown of a water dip source.
- Use gravity socks for stream sources and fold-a-tanks for out-of-stream storage to minimize impacts to streams and aquatic resources. Avoid disturbance of stream bed gravel.
- Have spill kits, extra containment pads and tarps with all pumps. Avoid the use of pumps or storage of fuel next to a water source without fuel spill containment pads.
 - ENSURE spill containment pad and kit is properly installed.
- Store fuel and oils on containment pads away from the water's edge. Avoid refueling pumps right next to, or over, live water.
- Record location of aerial water dip sites used.
- Return site to pre-use conditions, including rehabilitation of any streambank trampling or revegetation needs.
- Do not leave **culvert inlets** blocked by debris.

Fire Camps, Spike Camps, other Camp Related Activities

- Locations for campsites will be discussed with the District Ranger and resource advisor to minimize potential resource damage.
- Look for areas that have durable surfaces such as mineral soil, forest duff, hardened clay or gravel surfaces. Select an area on rock for kitchens, gathering areas, and tent sites. Do not clear vegetation or dig trenches to create bedding sites.
- Do not build rock campfire rings. If possible dig a pit or a mound fire. If a ring already exists in the camping area, please clean out all trash and scatter rocks upon departure. Cover the impacted fire scar with soil, duff and debris to blend with surrounding cover.
- Use the main trail or fire line for travel when possible. Avoid creating numerous trails for travel between camps and cook area or traveling outside the fire line.
- Minimize the potential for human/bear interactions by adhering to the current Food Storage Order.
- Bears and mountain lions are prevalent throughout the Lolo National Forest. A clean camp is important. Pack out all trash and used batteries. This includes used fusees. Check all tent sites and travel routes for litter. Repair all campfire areas. Pack out flagging, litter, orange peels, peanut shells, etc.
- Cigarette butts and candy wrappers need to be packed out with garbage.
- Practice good sanitation; dig 'catholes' when possible when out on the line and away from camp. Catholes should be 6 inches deep. If in a camp longer than five days and the camp is serviced by a helicopter, fly in portable backcountry latrines and fly out human waste as necessary.
- Toilet paper needs to be thoroughly burned in a designated spot (in the black), buried in a cat-hole or packed out.
- Do not break down fragile stream banks at water sources or make numerous trails through riparian areas. For drinking water, use a filter or treat water with iodine. If water is hauled in by cubies, make sure you use this water and ensure the containers are hauled out.
- In spike camps, carry water and bathe away from lakes and streams. Do not introduce soap, shampoo, or other grooming chemicals into waterways.
- Obscure unwanted trails or campsites with native materials. Cover with organic material, break up straight lines, and create natural looking patterns. Camouflage campsites with brush, duff, rocks and other native materials. At tent sites, if any clearing was done, return loose rocks or downed logs to site. Leave no trace of suppression activities.

Water Bars on Dozer Lines

- Water bars are a final means to erosions control. They are to be used only after all other measures of erosion control have been depleted. These should include adequate slash cover and/or berm/duff layer being pulled back over the line.
- Utilize logs and trees as water bars prior to constructing out dirt
- Actual location of waterbars should take advantage of natural slope breaks, and minimize drainage on downslope burned areas. Utilize natural rolls and dips wherever possible.
- Waterbars should be constructed approximately 30-45 degrees from horizontal and away from the burned area if possible. Waterbars should be opened on the downhill side to allow water to flow freely off the line.

Dozer Lines and Stream Crossings

All efforts should be made to avoid disturbance of natural stream banks when constructing dozer line. If stream banks are disturbed they should be reconstructed and rehabilitated by:

- Returning stream channels to a natural gradient and re-establishing full bank discharge capacity.
 - ⇒Re-establish streambank shape and vegetation condition. Transplant mats of vegetation with excavator in necessary.
 - \Rightarrow Re-establish streams width and depth.
- Providing debris barriers (slash) to ensure that water cannot flow down the fireline into the stream during periods of runoff.

•

Invasive Aquatic Species See IAS Section for more information and mitigation measures pg 14

- Do not cross contaminate between native water resources, streams, lakes, rivers.
- When possible *install portable tanks* to draft and reduce contamination with heavy equipment and helicopter operations.

Sensitive Species

• Consult Resource Specialist for critical nesting, spawning, or habitat concerns. Avoid the assumption that additional areas of concern will not be found during the incident. (*Fish, Wildlife and Botany*)

Snags

- *Avoid felling snags* that are not a safety hazard or the falling of which will have little or no benefit to suppression efforts.
- *Flag and leave snags* that are a potential hazard but are neither close to the line *nor pose a safety risk*.
- Avoid felling snags that are well beyond mop-up distances.
- Avoid snagging in riparian areas, but if you have to, directionally fall snags toward the channel with no more than 50% of the tree length within the active channel.
- Consult READ to minimize snag felling. Utilize the Lolo NF risk assessment and snag retention criteria.

Low Impact Practices to be used on the Lolo National Forest

- Hike and travel on existing trails.
- Build the lightest line you can and consider how you will repair the line to pre-fire condition as you build it.
- Bury all fecal matter and TP at least 6" deep and 200' from water, travel routes and occupied areas. Use commercial portable toilets when possible.
- Pack out all your litter and any other litter you find at all times.
- Isolate and use a part of the wildfire to keep warm or cook. Use stoves or portable heaters. If you have to build a warming or cooking fire, use pit or mound fires only.
- Camp on hardened sites with rocky or sandy soils, use openings within heavy timber at least 200' from water. Try to avoid camps in Wilderness.
- Store food in camps in a bear resistant manner or keep attended in camp.
- Use cold-trail, wet line or a combination when appropriate.
- Minimize the fireline standard where firelines connect with roads and trails.
- Minimize bucking and cutting of trees and the number of cut surfaces resulting in 'rounds' or logs.

Heritage/Cultural Protection

- The READ will consult with Archeologist for location of types of sites that may limit suppression tactics.
- Locate fireline and ground disturbing activities away from newly-found or previously identified cultural/historical sites. This distance will be site dependent on type and terrain.

Repair of Ground Disturbance (mechanical line, safety zones, etc)

- Return the site to pre-disturbance conditions, or as near as possible.
- If necessary, decompact soils (usually with the teeth of an excavator).
- Pull duff and slash/logs back over site.
 - Slash depth and coverage should mimic surrounding landscape or be 1 to 3 feet deep.
 - Slash should be of a mixture of fine (limbs and needles) and course (logs) woodv debris.
 - Slash maybe deeper and/or heavier if it is also being used as a traffic deterrent.
 - Slash should cover the opened corridor and not just the dozer or excavator line.
- Consider grass seeding only when adequate duff and soil was not retained.
- Water bar only when infiltration can not be successfully reestablished.
- If waterbars are needed, the preference it to use logs in their construction.

Repair Roads (see page 45 for repair needs) Contact Engineers for future plans

- Repair roads to their pre-disturbance conditions, or as near as possible
- Non-System roads should be scarified, slashed, and water bared.
- Open-System roads should have cut and fill slopes reshaped, ditches cleaned and reshaped, and running surfaced reshaped (insloped or outsloped), and surface and ditch drainage (dips, opentops, ditch relief) reestablished.
- Gated-System roads should have cut and fill slopes reshaped, ditches cleaned and reshaped, and running surfaced reshaped (insloped or outsloped), and surface and ditch drainage (dips, opentops, ditch relief) reestablished. If the previous the pre-fire condition was a "grown in" road then pull all slash back on surface and/or construct water bars at described spacing. Contact Engineer to see if road will be used in Salvage efforts.

Stream Crossings and/or Pump Sites

- Reestablish streambank shape and vegetative condition (transplanting maybe necessary)
- Reestablish stream width and depth.
- Remove any log structures used for bridges or log culverts. Contact hydrologist or fish biologist for help.

Water Bars: 5-D System

DISTANCE: Water bars must break up the distance or length that water can run unimpeded on the fire line. This will reduce the energy that the flowing water has to cause erosion on the line.

DIAGONAL: Don't bully the flow, lead it. Water bars built diagonally to the fireline lead the water off. A simple rule is to add 5 to the slope and build a water bar at that many degrees from perpendicular.

DIVERT: Water bar must be sufficiently deep enough to handle all the flow for as long as it's needed. Excavation is more effective than fill; "a ditch or a dip beats a dike."

DISCHARGE: Water should be diverted to flow off the line. A good water bar should have an open outlet.

DISSIPATE: Good water bars should dissipate the flow just below the

96

41-60.

outlet to exhaust its eroding power and cause it to

Fireline slope Maximum Distance Apart (feet) 1-6. 300 7-0 200 10-14. 150 15 - 2090 21-40. .50

25

Recommended spacing waterbars on firelines Materbars should be no furthe apart than this, but they may be closer. When in doubt, put in more. From: UDSA-Forest Service, "Sale Administrator" Handhóok

filter into the soil. This may require placing slash, rock. or debris below the outlet.



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

**Provide any KNOWN CULTURAL SITE LOCATIONS to IMT **

Hand Line

Objective of Repair Plan: Repair of hand lines and forest trails utilized during fire suppression to pre-fire conditions.

- Return dugout soil /duff to fire line where practical and obliterate any berms created during suppression.
- Pull brush and logs (burned and unburned) over the line to visually blend the edge of the fire with the surrounding landscape.
- Within Wilderness and Recreations sites disguise visible ends of logs cut along fire line, trails and helispots with dirt, charcoal, rocks, and brush.
- Limit ground disturbance to the degree possible and limit tool scarring.
- Return burned and partially burned fuels to their natural arrangement, wherever possible.
- Make an effort to minimize visual impacts from heavily traveled corridors (system trails and campsites). For heavily used trails and designated or dispersed campsites, remove newly cut tree boles that are visible. Drag other highly visible woody debris created during the suppression effort into timbered areas and disperse. Tree boles that are too large to move should be slant-cut. If desired, chop the surface with an ax or Pulaski to make it jagged and rough.
- To attain a more natural appearance, leave tops of felled trees attached.

Dozerlines

Dozers, and/or feller-bunchers should only be utilized on slopes less than 35%. Do not use these types of machinery on slopes greater than 35% or in riparian areas. Dozer line excavation should only be to the depth to exposed bare mineral soil (2-4 inches). Retention of topsoil will greatly enhance rehabilitation success. Limit the depth and width of dozer line construction to that necessary to stop fire spread. If possible, tip the blade on dozers to dig the minimum width needed. Avoid using dozers within 300 feet of live streams.

Use excavators with thumbs to pull berms back over the line and re-contour to natural landscape. Pull slash, logs and debris across line to help minimize erosion and off-road use. Slash should be spread across the entire "opening" and consist of fine and coarse woody debris to a depth of 1-3 feet. Slash may need to be back hauled to meet this objective, particularly, where trees where skidded offsite.

Repair Notes:

Lolo National Forest <u>A</u>quatic <u>I</u>nvasive <u>Species</u> Prevention Strategy *update 12/2016 referencing <u>2016 NWCG AIS Guide</u>*

PROBLEM

Aquatic Invasive Species (AIS) are a serious problem throughout North America. State, federal, and private organizations in Montana developed the Montana AIS Management Plan 2002. The following prevention strategy complies with 2016 NWCG AIS Guide.

AIS are most likely to be transported via firefighting equipment that contacts or conveys untreated water, such as portable pumps (including floatable pumps), portable tanks, helicopter buckets, and internal tanks of fire engines, water tenders, helicopters, and fixed wing aircraft. Residual water left in incompletely drained tanks in equipment moved between fire incidents can harbor AIS. Quagga mussel larvae are able to survive for days in residual water contained within undrained boats. However, BMPs targeting drafting procedures greatly reduce AIS risk from residual tank water.

LNF AIS mitigation strategies are not intended as a roadblock to emergency fire suppression action when life or property is threatened. Firefighter and aviation safety always takes precedence over AIS strategies. Coordinate the following with the Logistics Section Chief

A. Mobilization/Demobilization & Decontamination if Found

- Upon initial arrival to an incident on the LNF and prior to use, equipment (local resources may be exempt) that will have contact with a water source will be washed by one of the following methods:
 - 1. Ensure water handling equipment is free of mud/plants and dry to the touch, or
 - 2, Use pressure washers (hot water >140* F preferred), or
 - 3. Disinfect draft hose and foot valves with chemical if exposure to AIS is known.
- A final visual inspection for any mud or aquatic plants will complete the inspection process. If plants or mud are detected, then repeat the process until the bucket is free of plants or mud.
- Inform all resources regarding known locations of waterbodies associated with the incident that are potential draft or bucket sites in which it is known there are infestations of AIS.
- Prior to water-handling equipment leaving the incident (local resources may be exempt), equipment should be washed in the same manner as specified above.
- For additional clarity and information, contact the local Fisheries Biologist.
- Cleaning should be done a minimum of 300 ft. away from any body of water or in a manner that will prevent contaminated water from reaching surface water, riparian, and wetland areas.

- Helispot locations.
- Locations of remote spike camps; include # days and # personnel that occupied the site.
- Constructed safety zone locations.
- Aquatic Invasive Species mitigation measures taken, evaluation of success of said mitigation
- See Aviation Reporting Requests (Forest FAO, 2014) ie. Aerial Retardant Avoidance Reporting, if needed ; helicopter operations within Wilderness, etc.
- Structure Protection Actions—wrapping operations (where were they implemented and have they been removed?) and foaming operations (were structures foamed?).
- Locations of temporary communication repeaters.
- Location of disturbed improvements—cut fences, burned bridges, road/bridges/trails damaged by equipment, closed roads that were opened for fire management activities, etc.

Overall Repair Objectives

- 1. Reduce or eliminate erosion and sedimentation that could result from fire suppression activities such as fire lines, reopened roads, and localized disturbed areas such as fire camps and helispots.
- 2. Eliminate unwanted travel routes that may have been created by reopening roads and/or the construction of mechanical and hand lines.
- 3. Where consistent with watershed protection measures, reduce the effects of fire suppression on the recreational setting and aesthetics by eliminating or minimizing the visual impact of the fire lines. Consider utilizing MIST guidelines on all federal lands.
- 4. (*If applicable*) Suppression efforts within designated Wilderness, Wilderness study areas or research natural areas should be consistent with Minimum Impact Suppression Tactics (MIST). Please keep these points in mind, as they will aid these special management areas in recovering more quickly from fire suppression impacts. MIST guidelines (included in this field guide) should be given to the Incident Management Team.

Fire Suppression Repair Responsibility

Fire Suppression Repair is the responsibility of the Incident Management Team (IMT) assigned to the fire. The READworks for the agency administrator and has an advisory role with the IMT. Repair should start as soon as the areas are "released" by the overhead team.

Coordination or authorization for repair actions should be outlined in the Wildland Fire Decision Support Document (WFDSS) for the fire incident. Specifically, the WFDSS should outline the coordination that will take place between the overhead team and the agency representative. For example, the WFDSS should include a list of repair items for which the district ranger (or appointed representative) allows the overhead team to make decisions, and a list of repair items for which the district ranger (or appointed representative, such as the READ) will make the decisions and provide approval.

THE RESOURCE ADVISOR WILL COORDINATE/DRAFT THE FIRE SUPPRESSION REPAIR PLAN FOR THE IMT. The READ will coordinate with the IC, Plans Section Chief and Division Supervisor throughout the fire incident.

The IMT Plans Section Chief should track an inventory of ground disturbance from fire suppression activities with help from the Resource Advisor assigned to the incident. The information is helpful if a unit is going through a fire decision review, lawsuit, or repair effort. Many managers use this information for trend analysis, safety sessions, cost summaries and environmental review of effects to other resources. During long term fire events in which IMTs rotate in and out, much of this information is lost in the transfer process.

The following is a suggested list of information needed from the IMT, in regards to documentation of fire suppression activities used during large fire events:

- Locations of retardant dropped by large air tankers, seats, and helicopters and type of retardant used.
- Locations of any portable retardant bases that were mobilized.
- Location where foams and gels were used (ground or aerial)
- Locations of water pumping operations.
- Locations of general fuel spills by ground-based equipment (if any).
- Location of ground-disturbing actions: dozer lines, hand lines, FLE, fuel break construction, etc.

- When aircraft is demobilized from an incident, the process will be repeated to ensure no AIS species are transported to a new incident or another location.
- Documentation of cleaning will be issued by the helicopter manager to the helicopter pilot stating the bucket was cleaned.
- An exemption to the washing requirement can be granted if documentation is presented to verify the visiting equipment was treated prior to arrival on the LNF.
- To decontaminate ground equipment before moving to a new water source dry the foot valve and draft hose or use hot water (>=140*F) on surface for 5-10 seconds. Use same process for aviation assets' buckets and accessible internal tanks.
- Thorough drying alone can be effective. Consider carrying spare, clean, dry draft hoses and foot valves to switch out when moving to a new water sources.

B. Chemical Disinfectants

Note: Chemical disinfectants, though effective, can be hazardous, corrosive, and difficult to dispose. However, when other decontamination methods, such as hot water or drying, are not options, chemicals can be used for small gear items ONLY (e.g. foot valves, draft hoses, or screens).

Concentrations of Solution for Effective Mitigation of Known AIS Exposure

Engines and Tenders: All internal and external surfaces of the drafting hose with foot valve can be decontaminated by coiling and submerging in in a bucket filled with disinfectant.

Volume of tap water	Volume of <i>Super</i> HDQ®	Volume of Green Solutions High Dilu- tion256®	Regular Clorox ® Bleach (6% Sodium hypo- chlorite)	Soak Time	Spray Time
l gallon water	1/2 oz	1/2 oz	9 oz.	10 min	5 sec. let stand 10 min. Rinse.
1 gallon water	1 Tbsp.	1 Tbsp.	1 1/8 cup	10 min	5 sec. let stand 10 min. Rinse.

Aviation: Chemicals such as bleach and quaternary ammonium (Quat) compounds do not meet corrosion requirements for aluminum and shall not be used on aircraft

Disposal: Dispose cleaning solution over open land or on roadways where there is no potential for entry into waterways, storm drains, or sensitive habitats. Quat chemicals are rapidly neutralized by soil. Contact the facility before disposing large quantities into municipal sewer systems.

Safety: Wear PPE including unlined rubber gloves and splash goggles. Have eyewash and clean water available on-site to treat accidental exposure. See MSDS for additional information.

C. <u>During Suppression Operations — Ground</u>

- During Suppression Operations, known *AIS* sites should be avoided as a first precautionary measure. Private ponds will be considered suspect unless tested.
- When possible, fill engines from a municipal hydrant, a water tender, or from a pump assigned to a single drafting source. When filling, avoid overflow into the water source. Drain portable pumps before moving to new sites.
- When spraying water to suppress a fire, avoid application of untreated water into local water bodies (ponds, lakes, rivers, streams, wetlands, seeps, or springs), especially if the hose water came from a different watershed.
- To prevent leakage and to maintain the prime, be sure that foot valves are screwed snugly onto drafting hoses and that the system is not leaking. Prime with water from the drafting source rather than water from the engine tank. Elevate foot valves from the bottom of the waterbody using a shovel, hard hat, or bucket. When priming with a bucket, make sure it is dry.
- **Don't leave** draft hose full with foot valve engaged and submerged in the water source when not pumping.
- Use a pumpkin and a Mark III pump to draft from a water source to have water tenders and equipment draft from pumpkin and not directly from water source.

D. <u>During Suppression Operations — Aviation</u>

- If an AIS-infected dip site is used to provide suppressant to the fire via aerial delivery, the equipment contacting the water will be cleaned and inspected before moving to a new dip site.
- <u>If using AIS-contaminated waters</u>, aerial drops will occur at a minimum of 50 feet away from any live body of water.
- Avoid dipping or scooping water from multiple water sources within the same operational period to minimize cross-contamination of water sources.
- If possible, use water dipped from the same drainage that it will be dropped in. This can be accomplished by setting up heli-wells filled from small streams.
- Use deeper (blue) water whenever possible. Avoid areas of mud and plants.
- Switch out a contaminated helicopter bucket with a clean bucket before moving to a new water source. Alternating used buckets with spare (clean) buckets can save time and increase efficiency, as the first bucket can be decontaminated while the second bucket is being used.
- Helicopter snorkels do not need to be primed, with either source or water tank, so there is no residual tank water entering a water source during drafting operations. However, snorkels and foot valves that encounter untreated water must be decontaminated between drainages. Make sure foot valves don't leak and are elevated above the bottom of the waterbody for sediment-fee operation.

*For up-to-date information from Montana FWP regarding AIS, go to: <u>http://fwp.mt.gov/fishAndWildlife/species/ais/speciesId/default.html</u> USDA-Forest Service - Northern Region Lolo National Forest

FIRE SUPPRESSION REPAIR



Spruce Fire 2014

Fire suppression related repair work and associated costs are charged to the fire incident (P-code), and usually performed utilizing fire suppression resources (equipment, handcrews). These guidelines were taken from the 2015 Wildfire Guidelines for Resource Protection on the Lolo National Forest.

The intent of suppression repair is to return resources to the state they were in prior to suppression action, not necessarily their desired state.

These guidelines are not for BAER (Burned Area Emergency Response), which requires a BAER analysis and incident specific funding authorization (FSH 2509.13 and FS 2500-8).

INCIDENT-SPECIFIC MOP-UP STANDARDS

Notes:

NOXIOUS WEED MANAGEMENT PROTOCOL

***IN NO CASE SHALL ADHERENCE TO THIS PROTOCOL DELAY CRITICAL INCIDENT RESPONSES

Coordinate The Following with the Logistics Section Chief $\underline{Purpose}$

Adoption of a common set of guidelines for the selection and use of invasive weed-free operation sites on larger fires and other incidents. A shared stewardship approach to site selection among county, state, tribal and federal agencies in the pilot area in Montana will more effectively prevent the import, export and local spread of new and already-present high priority invasive weed species, and will speed up the on-site camp/base establishment process for incident teams.

ICP – Public land management agencies with lead responsibilities for Type 1, 2, and 3 incidents should ensure that sites are weed-free or mitigations take place before equipment and personnel occupy the site. Sites should be identified preseason. All properties listed should have: lat/long, acreage size, property address, as well as owner's name, address, and contact phone number.

In situations where a pre-identified site is not available, a READ should be assigned to coordinate with incident logistics leads and lead agency's weed specialist.

Local fire management should determine minimum-sized ICP and helibase.

Weed-free sites that are used should be monitored for weed populations after the incident, and treatment recommendations to maintain weed-free status

Water drafting spots – Most are government owned and should be weed free, if privately owned we can use the same Level system.

Helicopter dipping areas - The map should show presence or absence of invasive aquatic species, and dipping should be avoided at sites with aquatic invasive species present. Montana Fish, Wildlife & Parks has information on which water bodies have documented aquatic invasive species present.

NOTES:

NOXIOUS WEED MANAGEMENT PROTOCOL

<u>Vehicle and equipment washing to prevent the spread of noxious</u> weeds is required on fire incidents in Forest Service Region One

We strive to take a proactive approach to noxious weed management when managing any fire incident on the Lolo National Forest.

Mitigation and preventative measures are as follows (not all-inclusive):

<u>Recommend washing of all vehicles at check-in. If a</u> formal wash station has not been setup for the fire incident — use local commercial carwash operations that provide under-carriage washing or a district engine to wash incoming vehicles.

** Recommend all equipment (pickups, engines, dozers, skidders, skidgines, excavators, ATVs, etc.) be pressure washed with warm to hot water before being utilized on the fire and upon before demob.

** Equipment recommended to be cleaned at check-in and prior to the inspection that occurs at Ground Support or at pre-incident Sign-Up.

** Inspect all fire-going ground vehicles regularly to assure that **undercarriages and grill works** are kept weed seedfree. All vehicles sent off Forest for fire assistance must be cleaned before they leave or return to their home unit.

Provide GIS information showing known weed populations within the fire area or directly adjacent to the fire area.

Assess current weed infestation when locating ICP, Camps, Drop Points, Spike Camps, and Staging Areas.

<u>AVOID</u> when possible, placing the ICP or highly used base camps (including aviation base camps) or staging areas in known weed patches. Determine the appropriate weed spread mitigation for each situation. Coordinate with the <u>Local Resource Specialist</u> to provide noxious weed identification, awareness, and prevention briefings to incident personnel.

MOP-UP STANDARDS

These Mop-up Standards are to be implemented on large fire incidents on the Lolo National Forest. The standards are will be graduated based upon the risk to values to be protected.

Objective

Extinguish all hot spots that may pose a threat to containment lines, until those lines can reasonably be expected to hold under foreseeable weather conditions.

Standards

- * Mop up standards will be evaluated upon the threat to the wildlandinterface, roaded and roadless areas, structures and inholdings within the Wilderness areas, and public safety.
- * Mop up standards will also be based on the time of year, current and predicted fire weather, fire behavior and fuel conditions, topography, and resource availability. The assigned Line Officer will specify, on a caseby-case basis, the fire perimeter to be mopped-up and designated distance into the fire area.

Guidelines

* Utilize minimum impact concepts in all mop-up operations, maintaining Wilderness characteristics and values where applicable

* Analyze snag felling needs based upon firefighter safety concerns and the threat to the containment lines. To mitigate snag hazards during mop-up:

- (1) isolate areas to reduce re-burn potential
- (2) minimize or limit the number of firefighting personnel in hazard areas
- (3) delineate exclusion zones
- * Mop-up to eliminate the potential for the fire to escape the containment lines. 100% mop-up of smokes that do not pose a threat of escape is not necessary and exposes firefighting personnel to unnecessary hazards.
- * Avoid unnecessary pilot and firefighter exposure by specifically identifying heli-mop operations in the IAP and during operational period briefings. These operations should be utilized on a limited basis.

RETARDANT MISAPPLICATION REPORTING SHEET (cont.)

Number of Drops in Avoidance Area:

Approximate Size (length * width) of fire chemical application in

Avoidance Area: _____

Approximate *#* of Gallons Dropped in Avoidance Area: _____

Stream Information: Length of stream segment hit ____, Wetted Width of Stream, ____, Wetted Depth ____, Ave. Velocity ____ft/s Stream Flow (W x D x V) ____CFS

Fire Chemical Coverage in Avoidance Area:

Notified FWS? _____

Notified NOAA?

Notified DEQ? _____

Notified Owner?

Observed Environmental Effects (fish kill?):

Comment if Chemical Coverage is 'other'

Comment if Notified DEQ or 'other'_____

Reporting Person: _____

Unit: _____Email: _____Phone:_____

Identified by:

Unit: _____Email: _____Phone: _____

Resource Advisor:

Unit: _____Email: _____Phone: _____

Maps, photos, or supplemental reports can be attached using the upload function within the online reporting tool @ fs.fed.us/fire/retardant

• <u>Avoid infestations of noxious weeds during fireline construction</u> <u>by hand or dozer where feasible</u>. Mineral soil exposure during fire line construction should be to the minimum necessary for containment or control.

If it is determined that future weed mitigation (i.e. spraying) is needed, and caused by suppression actions, request "S-#" before the visiting IMT leaves and before Burn Area Emergency Response (BAER) work begins.

• <u>Coordinate with the BAER Team</u> to ensure that follow up weed monitoring occurs within the Incident and the Suppression Response Team to ensure that monitoring occurs at equipment wash sites, ICP, Camps, Staging Areas, Drop Points, Helibase and Helispots.

<u>When the Suppression Response Team recommends seeding</u> <u>disturbed areas, ensure that the purchased seed is certified as</u> <u>noxious weed-free.</u> If straw is utilized for repair, it should also be certified as weed-free or weed-seed free.

Resource Advisors are available for additional weed awareness, prevention briefings, and species identification.

Contact Missoula Interagency Dispatch Center for local weed washing station vendors (406) 829-7070

WEED WASHER REQUIREMENTS ON THE LOLO NF	<u>RETARDANT MISAPPLICA</u> Document online @ <u>http</u>
What is required for weed washing to reduce weeds on the Lolo NF? Vehicle and equipment washing to prevent the spread of noxious weeds is <u>required</u> (FSM R1 Supp 2081.2 Effective 5/14/01) on fires in USDA Forest Service Region One	Report misapplications ONLY immediately after occurrence area.
How do you comply with the vehicle weed-washing requirement? To comply with the weed prevention requirements on the Lolo NF you should, at a minimum:	Incident Number (<i>ex: MT-LNF-C</i> Incident Name:
Inspect all fire going ground vehicles regularly to assure that undercar- riages and grill works are kept weed seed free. All vehicles sent off Forest for fire assistance must be cleaned before they leave or return to their home.	Lat. / Long Agency:Area/Region:
Inspect, and if necessary clean aircraft , contract fuel and support vehi- cles before and after each incident when traveling off road or through weed infestations.	Sub Unit/District:
First and foremost, remember that the intention and expectation is <i>not</i> that we will stop the spread of all weeds but to:	Misapplication Type (Circle):
<u>Raise awareness</u> of the weed issue among fire personnel.	Is this part of 5% assessment of fi
So <i>don't worry</i> if your weed washing system isn't 100% effective, do the best you can, but do <i>something</i> . There are several devices teams use to comply:	Avoidance Area Description Waterway Buffer Zone (30
 Some R1 Teams have developed their own drive over undercarriage weed seed washers. Some contractors have mobile vehicle undercarriage washers, but these 	Dry Intermittent Stream (
 In camp you can dedicate an engine to undercarriage washing. A mobile power washer can be purchased or rented. 	Aquatic TEPCS (FS Only) Cultural Resources (FS Or
How do you decide between weed-washing options?	Description of wildland fue
The best option, if available is the use a local commercial car or truck washing facility. They need to know your objectives (to re- move mud/weeds from the undercarriage and vehicle vs. a pretty rig)	Open Light Fuels
so they can adapt their system/procedure accordingly. If possible, have them turn up the pressure on the undercarriage component of their op-	Open Timber/Grass
eration but not so hard as to damage undercarriage	<i>Heavy Timber/Closec</i>

TION REPORTING SHEET (Form 1) ://www.fs.fed.us/fire/retardant

on National Forest System Lands of as soon as it is safe to enter the

021):_____

____ Misapp. Date/Time : _____

Unit/Forest:

____ Size of Fire: _____

Tanker SEAT Helicopter

Exception Accidental

ires less than 300 acres? Yes No

n (circle all that apply):

00' or larger) Waterway

(mapped avoidance area – FS Only)

Terrestrial TEPCS habitat (FS Only)

nly) Sacred Site (FS Only)

l at the site (circle all that apply):

Open Light Fuels	Brush
Open Timber/Grass	Timber/Brush
Heavy Timber/Closed Canopy	Slash

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<u>Figure 1.</u> Flow Chart of Misapplication Scenarios, Responsibilities, and Actions (condensed from USFS, 2016 pg. 40-41)

Misapplication Incident (Page 2)

Non-FS Land/ Interagency (scenrio c - NOT WITHIN FS ESA Action Area)

1. FS involvement

- 2. FS Report Form 1
- 3. FS determine if w/in ESA Action Area
- 4. Not w/in FS ESA Action Area

5. No FS responsibility. Other agency responsibility per applicable state/other statures

- Private Land (scenario d)
- No FS involvement
- No FS responsbility
- FS Involvement
- FS Report Form 1
- FS determine if w/in FS ESA Action Area

Case 1:

- Not in Action Area
- No FS responsibility

Case 2:

- Within Action Area
- Scenario b.

3rd Choice: If you can't use a commercial facility, another option is to hire a Mobile Equipment Washing System. This type of unit typically: Utilizes hand-held wands that are high pressure and high volume, Has a mechanical underbody washer, Has a wastewater containment system, May have a filtering system, Accommodates water/mud disposal, and Is relatively expensive. Last Choice: If you are unable to acquire any of the above, then you will have to acquire the necessary equipment and personnel to set up your minimum specifications vehicle washer at the fire camp or on the main road into your fire. The minimum specifications for a facility are: Portable Power Washers (2) with one wand for each washer. - These will be High Pressure (2000 pounds per square inch) and High Volume (4 gallons per minute per wand) class. Also, two people to operate the washers. Water Tender (1). Wildland or Structural Engine. Temporary wash pad consisting of ³/₄ inch washed rock/gravel (10 yds). Helpful Hints: Having two washers will help keep your wash time down to about 5 minutes or less per vehicle. The temporary wash pad should consist of a layer/surface of gravel is to allow mud, water and plant parts to fall between the gravel. Then when the vehicle drives away, it does not pick up mud/weeds you just washed off it or any previous vehicle For any non-contained option you must NOT use heated water, and you cannot use any soap or chemical in the wash water. If you do, then you have to comply with other Federal regulations because you may be removing oils, grease and other petroleum product on to the site.

Remember that this isn't a *car wash*. Direct washing to: Wheel wells Hubcaps Undercarriage Grill Inside front and rear bumpers Suspension Skid Plates Radiator trays (lift hood to access) Behind License Plates Any flat undercarriage shelves or surfaces Be finished with a visual inspection of the under carriage and physical removal of any plant parts found.

BEAR SAFETY and FOOD STORAGE PROTOCOL

Grizzlies and black bears are very large omnivores at the top of the food chain, and their actions can be unpredictable. Firefighters assigned incidents on the Lolo NF need to be aware that you share this landscape with the grizzly and black bear, and understand basic procedures which are expected to be followed to protect you and the bear from each other. Appropriate equipment and briefings should be supplied by local district offices during an incident to make sure all camp and fireline activities comply with these regulations. Preventative measures and basic protocols are as follows (not all inclusive).

Main Fire Camps, ICP, and Helicopter/Aviation Bases

- If possible ICP and fire camps should be located in areas free of, and well away from, cover that may allow bears to approach undetected.
- During daytime hours, attractants, including human, pet and livestock food (except baled or cubed hay without additives) and garbage shall be attended or stored in a bear -resistant manner when unattended.
- Prepare bear safety and awareness message for morning briefings and shift plans. In addition, information regarding food storage regulations should be posted in visible locations throughout the area.
- Cooking and eating facilities must be located at least 100 yards from sleeping areas.
- Food storage should be in the same area as cooking and eating facilities. Store all food, coolers, toiletries and cosmetics, soda, energy drinks, tobacco, or other attractants inside hard-sided vehicles, metal cages, or other hard-sided secure structures when they are not being used. These items may not be stored in the sleeping areas, in open truck beds, or in otherwise unsecured locations.
- Garbage must be collected daily at sundown and either transported off the forest or stored in a hard-sided vehicle or other approved container. Bear-proof garbage cans are recommended for daily collection.

<u>Figure 1.</u> Flow Chart of Misapplication Scenarios, Responsibilities, and Actions (condensed from USFS, 2016 pg. 40-41)

Misapplication Incident (Page 1)



NOTES:

BEAR SAFETY and FOOD STORAGE PROTOCOL (Page 2)

- During nighttime hours, in <u>front county</u> areas, attractants must be stored in a "bear resistant manner" unless it is being prepared for eating, consumed, transported, or prepared for acceptable storage.
- During nighttime hours, in <u>limited back country</u> areas only, attractants may be attended rather than stored in a bear resistant manner. However, it is strongly recommended that attractants be stored in a bear-resistant manner.
- Where feasible and supplies are available, use approved bear portable electric fencing to secure food and other attractants

Drop Points

- Acceptable storage must be in a hard-sided vehicle, hung 10 feet high and 4 feet from any supporting branch, or in an IGBC approved bear-proof container. Possible methods of securing bear attractants at drop points include trucks with camper tops, hard-sided utility or horse trailers, 55 gallon drums with locking snap rings, steel job boxes, individual bear-proof backpacking containers, or similar.
- Where feasible and supplies are available, use approved bear portable electric fencing to secure food and other attractants
- All food items or liquids except water must be acceptably stored while unattended at drop points.

Spike Camps

- If possible spike camps should be located in areas free of, and well away from, cover that may allow bears to approach undetected.
- Cooking areas in spike camps should be located at least 100 yards from sleeping areas.
- Bear attractants must be acceptably stored near the cooking area, either by hanging at least 10 feet high and 4 feet from any supporting limbs, or in a heli-portable bear-proof container such as a 55 gallon drum with locking snap ring, steel job box, bearproof horse pannier, or similar.
- Where feasible and supplies are available, use approved bear portable electric fencing to secure food and other attractants.

<u>Fireline</u>

 There should be regular safety briefings and/or alerts for all personnel heading to the fireline.

All waste should be collected and transported off of the fireline !!!!

Reporting Bear Sightings and/or Encounters

The Resource Advisor must be IMMEDIATELY NOTIFIED of all bear sightings or encounters.

Bear Pepper Spray Issuance/Training: Carrying bear spray requires a training session as per FSM 6700 on hazardous materials. The Resource Advisor will coordinate training with Safety Officer.

• Recommended Number of Bear Spray Canisters with holsters, as well as containers to be used when transporting bear spray within vehicles or aviation resources:

1-2 bear spray canister & transport container per 5-person crew

4 canisters & transport containers per 20-person crew

1 canister & transport container per single resource overhead roles working on the fireline

• Bear spray should be checked out of Supply Unit at time of check-in and returned at Demob.

*At this time R1 employees are authorized to use 2 bear spray products; Counter Assault 15oz container, or UDAP 15oz or 9oz container.

**Vendor for Bear Pepper Spray, chest or belt holsters, and Transport Carriers UDAP Pepper Spray 800-232-7941 (or 866-BEAR-911) PO Box 4872, Butte, MT 59702

MISAPPLICATION- QUICK REFERENCE GUIDE for REAFs (3)

The READ must perform these tasks when a misapplication occurs (or assure that a local specialist is assigned and engaged): (Continued)

- 3. Interagency Wildland Fire Aerial Fire Retardant Misapplication Reporting
 - The IC or FMO that will ensure appropriate reporting is completed and that the REAF is notified. However, the REAF is also responsible for reporting and monitoring (USFS 2016 pg. 39 and 29, respectively). Ultimately the REAF, IC, and/or FMO should clearly communicate roles and expectations. Navigate to "Fire and Aviation Management US Forest Service". Under "Interagency Wildland Fire Chemicals Policy and Guidance", select "Aerial Application of Fire Retardant" then find "Retardant Home" (top of the page) and the forms (e.g. "2016 Wildland Misapplication Reporting Forms")(note: system is controlled through USDA eAuthentication, or access through: www.fs.fed.us/fire/retardant/forms/wfcmr_field_forms.pdf).
- <u>FORM 1: Responsible Agency. Complete for each misapplication with</u> <u>USFS involvement</u>. Conducted by any field-going personnel with transfer of information to the Wildland Fire Chemical Misapplication Reporting Tool at http://www.fs.fed.us/fire/retardant/. Provide to District Ranger and appropriate local specialist as well.
- <u>FORM 2: FS Only. Aquatic Site Assessment.</u> Required completion when in Action Area (see above). Any field personnel can complete the form; however, data in the form requires a site assessment conducted by qualified personnel. Attach and upload with Form 1. Provide to District Ranger and appropriate local specialist.
- FORM 3: FS Only. Terrestrial Site Assessment. No reporting necessary for wildlife; no species of concern for Lolo NF(USFWS, 2011)
- FORM 4: Responsible Agency. Foam, Gel, or Ground-Based (non-aerial)

IMPLEMENTATION GUIDE (USFS, 2016): Provides all details and printable forms

- Appendix B- Reporting and Monitoring
- Appendix D-Summary of Fire Ops and READ Responsibilities
- Appendix E- For Biologists; Template for Re-Initiation; Useful if "take" is determined through site assessment and monitoring
- Appendix G-Additional Reporting Tools and Retardant Coverage Images; very useful for site assessments
- 4. Conduct necessary follow-up monitoring after initial site investigation
- 5. Once site assessments are complete, assure that results and subsequent actions are addressed according to designated responsibilities and authorities (USFS, 2016; scenarios pgs. 40 and 41; also, see Figure 1 on next page)
- 6. Implement restrictions to the area as necessary and assure appropriate mitigation measures, remediation, restoration and/or recovery actions are employed. Consult specialist, FMO, or other personnel for assistance.

MISAPPLICATION- QUICK REFERENCE GUIDE for READs (2)

The READ must perform these tasks when a misapplication occurs (or assure that a local specialist is assigned and engaged):

- 1. <u>Notify Immediately</u>: Notify the misapplication incident to Incident Commander and FMO, Administrative Officer, and appropriate resource specialist (local biologist, hydrologist, and/or archeologist) immediately.
- 2. <u>Action Area Determination and Resource Responsibilities</u>: If misapplication is within an Action Area (see above), assign your local specialist to immediately complete site assessment and assure reporting is fulfilled.
 - Fisheries Reporting and Monitoring: <u>assessment of impacts should</u> <u>begin within 24 hours of notification</u>, or as soon as it's safe to enter the area. Monitoring should extend a minimum downstream distance of 6.2 miles with results <u>notified to FWS within 48 hours</u> (USFWS, 2011; Terms and Conditions and USFS, 2016).
 - Cultural Resource Reporting and Monitoring: <u>If a retardant drop is defined as a misapplication</u> (see above for cultural resources), the site condition will be assessed by a qualified archaeologist and reported to the appropriate consulting parties (USFS, 2016, pg. 43 and 62). Wildlife: No species of concern for Lolo NF (USFWS, 2011)

3. <u>Interagency Wildland Fire Aerial Fire Retardant Misapplication Reporting</u>

- The IC or FMO that will ensure appropriate reporting is completed and that the REAF is notified. However, the REAF is also responsible for reporting and monitoring (USFS 2016 pg. 39 and 29, respectively). Ultimately the REAF, IC, and/or FMO should clearly communicate roles and expectations.
- Navigate to "Fire and Aviation Management US Forest Service". Under "Interagency Wildland Fire Chemicals Policy and Guidance", select "Aerial Application of Fire Retardant" then find "Retardant Home" (top of the page) and the forms (e.g. "2016 Wildland Misapplication Reporting Forms") (note: system is controlled through USDA eAuthentication, or access through: www.fs.fed.us/fire/retardant/forms/wfcmr_field_forms.pdf).

Wildland Fire Activities in Wilderness Areas

The following guidelines and approvals should be implemented consistently with existing policies and guidance in the following Wilderness areas: Scapegoat Wilderness, Bob Marshall Addition, Welcome Creek Wilderness, and the Rattlesnake Wilderness.

Use of motorized equipment and mechanical transport in Wilderness is strictly limited by the 1964 Wilderness Act, Forest Service Policy, and the Lolo National Forest Land and Resource Management Plan (LRMP). Line Officers with delegated authority may approve use for emergencies where the situation involves an inescapable urgency and temporary need for speed beyond primitive means. Convenience is not an appropriate justification.

Use of motorized equipment and mechanical transport in Wilderness is strictly limited by the 1964 Wilderness Act, Forest Service Policy, and the Lolo National Forest Land and Resource Management Plan (LRMP). Line Officers with delegated authority may approve use for emergencies where the situation involves an inescapable urgency and temporary need for speed beyond primitive means. Convenience is not an appropriate justification.

For the Lolo National Forest, the following line officers have delegated authority to approve use of motorized and mechanized equipment in Wilderness:

Line Officer Jennifer Hensiek Eric Tomasik Erin Carey Quinn Carver Carole Johnson Chris James Position District Ranger District Ranger District Ranger District Ranger Implementation Staff Officer

Delegated By Position

Carolyn UptonForest SupervisorCarolyn UptonForest Supervisor

At the discretion of the IC and District Duty Officer, the following activities are pre-approved for the Lolo National Forest when:

- The activity is necessary and consistent with the selected course of action for managing the wildfire, and
- Using primitive means instead of mechanized would have higher risk to personnel, and
- Use will be consistent with Minimum Impact Suppression Tactics (MIST) {found in the "Incident Response Pocket Guide}

Helicopter use for rappelling, helitack, and longline operations is authorized in locations where helispot construction or tree felling is not required. Helispot construction for **medical evacuations** (only) is authorized.

Fixed wing aircraft use is authorized for detection, smoke jumping, cargo dropping, and surveillance.

<u>Fire Camps</u> for 15 persons or less are authorized. Selection of camp location is to be based on minimizing impact to Wilderness values, recommend consultation with a resource advisor/Wilderness Manager.

<u>Chainsaw use</u> is authorized to fell hazard trees or buck logs believed to contain fire that cannot safely be extinguished by other means, and mitigates fire spread.

The following activities require site-specific line officer approval:

- Helicopter landings
- Aerial delivery of retardant or foam
- Mechanized pump use
- Heavy equipment use for fire suppression requires Regional Forester approval—ONLY

A READ(preferably with Wilderness training) will be assigned for wildfires that escape initial attack or are managed for multiple resource objectives.

Activities not specifically listed require documented approval from the appropriate line officer. To request line officer approval, the IC and the District Duty Officer (DDO) should agree that the activity is necessary and appropriate.

The DDO will request approval with the District Ranger and notify the IC and dispatch if approval is granted.

The Forest Duty Officer or District Ranger will request approval from the Forest Supervisor, if required, and notify the DDO and dispatch if approval is granted.

MISAPPLICATION- QUICK REFERENCE GUIDE FOR READs

Review the "Implementation Guide for Aerial Application of Fire Retardant" and understand how it applies to READ actions and responsibilities, including, but not limited to:

<u>Avoidance Area Maps</u>: Assure that aerial suppression leads have an avoidance area map and are communicating details and expectations to the pilots. Assure that all pertinent cultural resources to be avoided are identified as well.

IC and Aerial Supervision - Remember and Remind: "The only exception to using aerial application of fire retardant on NFS lands into a waterway, 300' buffer on either side of a waterway (may be larger in certain areas, refer to maps) or a mapped avoidance area on Forest Service fires is: for protection of human life and public safety only." Assure that Chapter 12 of the Red Book is understood and engaged by all assigned. (USFS, 2016)

Action Area: Assure reporting and other requirements are fulfilled as defined.

Fisheries and wildlife: "Includes all NFS lands, and lands outside to account for indirect effects to species and critical habitat from factors, such as drift onto adjacent lands and transport in waterways downstream. Action areas where species occurrences or critical habitats occur adjacent to or in close proximity to NFS lands and retardant and could affect species and habitats are addressed on a case by case basis." Consult your Administrative Officer and local wildlife or fisheries biologist for direction (USFWS, 2011).

Cultural Resources: Report misapplication. An incident is only considered a reportable misapplication when it occurs on a "previously identified resource". If the cultural resource was not identified prior to the application, then it is not a 'misapplication' and is considered as suppression damages. (USFS 2016, pg. 43)

Specialist Contact and Support: Know or seek out your local biologist, hydrologist, or archeologist. Be prepared to contact them should a misapplication occur and understand that you will likely lead or line out the misapplication reporting requirements.

Multiple READs per Incident: Both the outgoing and incoming REAF should understand the misapplication incident details, then transfer responsibilities to the incoming READ. Before the fire assignment is complete, the REAF should assure that requirements are achieved, or are being fulfilled by the local specialist (local specialist: this time is appropriately charged to the fire p-code, which may extend into the following fiscal year, for which a new p-code is necessary).

<u>Multiple jurisdictions</u>: If the fire incident is managed by multiple parties and transitions, all responsibilities apply to the existing USFS REAF, unless other specific agreements exist and are agreed upon by the Forest Service Administrative Officer with specific direction to transfer responsibilities (See Figure 1).

RETARDANT or FOAM USE NEAR STREAMS/RIPARIAN AREAS

National Forest System lands*

The aerial application of fire retardant is allowed for fighting fires. <u>Aerially</u> delivered fire retardant should not be applied to any mapped avoidance area, waterway or buffer. The only exception to using aerially-applied fire retardant in avoidance areas is for the protection of human life and public safety. The IC is the decision-maker.

Information concerning the use of and reporting of Aerial Application of Fire Retardant is available at : http://www.fs.fed.us/fire/retardant/index.html

Documents to be familiar with are:

- **Misapplication Quick Reference Guide** Overview of Responsibilities on the Lolo National Forest
- Flow Chart of Misapplication Scenarios, Responsibilities, and Actions (condensed from USFS, 2016 pg. 40-41)
- USDA Forest Service, 2016. Implementation Guide for Aerial Application of Fire Retardant. FS Fire and Aviation Management. Washington, D. C.
- USDI Fish & Wildlife Service, 2011. Effects to Listed Species from USFS Aerial Application of Fire Retardant on NFS Lands.

As soon as possible establish communications with Air Operations to ensure avoidance zones are clearly understood. These avoidance zones apply to all aerially delivered chemicals. When possible, use only water as a suppressant in riparian areas or areas in close proximity to perennial or intermittent stream courses.

Batch Plants and/or Retardant Dip Site Operations

Incoming/outgoing aerial retardant operations can affect an area 100 yards (or 300 ft.) from a dip site. Often producing a pink bullseye effect surrounding the dip site.

- Help Air Operations locate Mobile Retardant Batch plants and dip sites greater than 300 feet from live water or definable stream channels.
- MRBs required a large amount of water, assure the water source can adequately handle the volume needed while protecting the aquatic resources. Also, ensure that pump intakes are adequately screened and equipped with functional foot valves.
- Watch incoming and outgoing flight paths to determine any retardant wash or spill that needs to be mitigated. Occasionally, buckets will develop leaks and need repair.

* Misapplication responsibilities may apply to Non-FS land

Wildland Fire Activities in Wilderness Areas (cont.)

Dispatch will document the approval. Below is a list of questions to consider when requesting approval.

- 1. What motorized/mechanized tool is being requested (chainsaw, pump, etc.)
- 2. What task(s) will the tool be used for?
- 3. Is the requested tool the minimum tool that can safely accomplish the task?
- 4. Will the use of motorized/mechanized tools actually reduce longer term impacts to Wilderness (and users)? For example: a portable pump used for one day of mop up rather than four days of dry mop up.

Was the Resource Advisor/Wilderness Manager consulted?

NOTES:

Wilderness Mechanized Transport/Motorized Equipment Use Authorization Records EMERGENCY AUTHORIZATION

Authorization Name:		
Authorization Type: _	(Date:
Authorizing Official (Ti	(LOV next page) tle):	
Requesting Official (Cir	ccle: <i>internal</i> or	external)
If " <i>external</i> ," External O	Official's Name:	
emarks:		
Actual Use (Starting Da	te):(Ending	Date):
Wilderness Name	<u>Equipment Type</u> (LOV next page)	<u>Use Category</u> (LOV next page)
Recorded By:	Tit	le:
Recorded By: Work Unit:	Tit Dat	le:

EMERGENCY AUTHORIZATION

(LOV- List of Values)

Emergency Authorization Sub-Type: Fire Law Enforcement Other Natural Disaster **Removal Of Deceased Persons** Search and Rescue **Equipment Type:** Air compressor Air Tanker All Terrain Vehicle Battery Powered Tool Bicycle Brush cutters Chainsaw **Concrete Equipment** Fixed Wing Aircraft **Float Plane** Generator **Heavy Equipment** Helicopter Leaf blower Mist blower Motorcycle Motorized watercraft **Portable Pump** Power auger Rock Drill Snow Machines Truck Wheelbarrow Wheeled Litter Winch, Motorized Use category: No Equipment Used One piece, One day Multiple pieces, One day One piece, Multiple days Multiple pieces, Multiple days

NOTE

The values listed above for Equipment Types represent the current national standard data set. If you need a value that is missing, please either write it in the appropriate field if you are using a hard-copy form, or include it in the Remarks field if you are using the electronic version. Your Wilderness Data Steward will then request the value be added in Infra-WILD by submitting a BASE ticket in time for the upward reporting in the fall.