

Alder Creek, Christensen Creek & Trail Creek Fires

FIRE SUPPRESSION REPAIR PLAN

Beaverhead-Deerlodge National Forest (FS)
Bitterroot National Forest (FS)
Salmon-Challis National Forest (FS)
Butte Field Office, Bureau of Land Management (BLM)
Dillon Field Office, Bureau of Land Management (BLM)
Montana DNRC (State Land)
Idaho Department of Lands

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The assigned Incident Management Team (IMT) is responsible for suppression damage repair. Suppression repair activities should commence immediately after repair plan distribution. Minimum Impact Suppression Tactics (MIST) will be used where possible. The IMT will ensure all suppression repair activities are completed before demobilization, or will transfer them to the new IMT in the Transition Plan. Suppression repair activities will be included in daily Incident Action Plans after the repair plan is finalized.

The intent of this repair plan is to mitigate the effects of fire suppression activities. Resource Advisors (READs) developed this plan in cooperation with the IMT and appropriate BLM, DNRC, and FS representatives. Suppression repair on private land will occur to the standard of this plan, with landowner’s permission, and with landowners present if possible. Agency representatives will monitor and inspect all repair efforts. **Refer to the Suppression Repair Plan Map for current repair status and site-specific repair guidance.**

Suppression damage requiring repair that is not described in this plan will be discussed with READ’s or local resources and affected agency administrator.

The following work is prioritized and approved across all land ownerships:

1. Dozer Lines

- Dozer line will be reviewed by an archeologist prior to repair, except on private land. Site visits may be needed prior to repair and additional mitigation features may be required.
- Return soil from berms and piles.
 - Use heavy equipment where possible to redistribute large berms while re-contouring to original slope. Hand crews can be used to spread slash, topsoil and sod, and seed.
 - Consider using dozers to repair dozer lines in open timber stands and grasslands.
 - A track mounted excavator with thumb is recommended for areas with dense forest canopy.
- Provide adequate drainage by constructing water bars and reduce erosion by increasing roughness.
 - Water bar spacing:

Dozer Line Slope	Water Bar Spacing
0-10%	Every 200 ft
10-20%	Every 150 ft
20-30%	Every 80 ft
30-40%	Every 50 ft
>40%	Every 30 ft

- Water bars should follow natural slope breaks and minimize drainage downslope of burned areas. Utilize natural rolls and dips wherever possible.
- Water bars should be oriented across the line approximately 30-45 degrees from horizontal and drain away from burned area if possible. Water should drain onto stable sites.
- If water bars can’t be constructed without causing undue damage, continuously roughen line by hand raking. Soil surface protection on slopes <15% may not be necessary if slash is available.
- Use an excavator to pull large logs over the line. In areas with light tree density dozers can be used. Strive to achieve at least 65% ground cover to prevent soil movement.
- Scatter branches, wood, rock, or other material to naturalize fire line and further retard soil movement. Scattered material should be randomly placed at least every 5 ft along the line.

- In grassy areas where no material is available, line repair should include: pulling back the berm, returning piled soil, constructing water bars, and scattering rocks to minimize perceptibility.
- Seed the dozer lines only if absolutely necessary – consult local READ/range and weed resources for appropriate seed sources.
- Agencies will continue to monitor and treat dozer line for noxious weeds.
- Where dozer lines are visible from or crossroads, slash, debris, or boulders should be used to prevent motorized access. Visually obscure the dozer lines so they are not readily apparent to motorists.
- Where dozer lines are located adjacent to existing open roads/routes, it will be important to completely decommission existing dozer line to ensure they are not visually inviting to unauthorized use. This may include complete scarification, slash scattering, and physical barrier placement (such as large logs/tree/rocks to restrict unauthorized access. This decommissioning should be completed for all dozer line that is visible from an existing road/route.

2. Water Course Crossings

- Channels should be returned to a natural gradient.
- Recontour disturbed banks to match the dimension of adjacent undisturbed banks.
- Stabilize disturbed banks with slash or coconut mat/log, and reseed if deemed necessary.
- Clean all drainage structures including catch basins, culvert outlets, ditches, and outlet ditches that were affected by suppression activities.

3. Timber Strike Team Lines

- Skid trails with little residual cover or plants should be covered with slash to reduce soil movement
- Landing sites should be covered with slash to reduce soil movement but allowing revegetation. Slash should be dispersed in a discontinuous pattern of variable depth, not exceeding 18 inches. At sites where the amount of slash would impede revegetation, piles should be made for burning. Ensure these locations are recorded to future repair.
- Where possible large logs should be placed throughout the landing sites, access routes, and well used skid trails to reduce off road travel from motor vehicles. Trees damaged by logging activities or surrounding snags may be used.
- Landing sites and decking sites should be monitored for weeds and herbicides and adjuvants made available to the land agency for weed spraying.
- Once logs are decked, management will be determined by relevant agency and District.
- Roads should be bladed along haul routes.
- Culverts, borrow ditches, and other drainage features should be cleaned of slash and debris. Where skid trails cross, recontouring may be needed.
 - If culverts were collapsed or damaged, they will need to be replaced.

4. Hand Lines

- Pull berms, topsoil, and organic material back onto the handline.
- Provide adequate drainage by constructing water bars and reduce erosion by increasing roughness.
 - See dozer section for water bar spacing specifications.
 - Water bars should follow natural slope breaks and minimize drainage downslope of burned areas. Utilize natural rolls and dips wherever possible.

- Water bars should be oriented across the line approximately 30-45 degrees from horizontal and drain away from burned area if possible. Water should drain onto stable sites.
- Scatter branches, wood, rock, or other material to naturalize fire line and further retard soil movement. Scattered material should be randomly placed at least every 5 ft along the line. Strive to achieve at least a 65% ground cover to prevent soil movement.
- In grassy areas where no material is available, line repair should include: pulling back the berm, returning piled soil, constructing water bars, and scattering rocks to minimize perceptibility.
- Handlines adjacent to, intersecting, or within sight distance of existing roads/routes should be fully obliterated to discourage unauthorized use.

5. Fuel Breaks

- Lop and scatter or redistribute felled trees and brush in area where cutting occurred.
- High stumps (height greater than diameter) in major viewing areas along roads should be flush cut . Disperse any large piles of stump ends.
- Minimize visual impacts in heavily traveled corridors (system trails and campsites).
 - Remove newly cut tree boles that are visible.
 - Drag other highly visible woody debris from suppression into timbered areas and disperse.

6. Drop points, helispots, spike camps, safety zones, weed washes, Land Use Agreements etc.

- Map locations of parking areas, pull off sites, and landing zones and send to READs.
- As crews demobilize, assure that campsites, helibases/helispots, drop points, safety zones, and staging areas are clean and naturalized.
- Remove all temporary facilities.
- Continue to monitor and spray disturbed sites. Provide the appropriate agencies with herbicides and adjuvants.
- Light scarification or ripping may be needed to reduce soil compaction.
- Obscure unwanted trails/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. If clearing was done for tent sites, return loose rocks or downed logs. Leave no trace of suppression activities. Pick up garbage including microtrash (cigarette butts, wrappers, paper etc.)
- Check all tent sites and travel routes for littler. Pack out all flagging, litter, orange peels, nut shells, etc.
- If campfire rings were constructed clean out all trash and scatter rocks upon departure. Cover the impacted fire scar with soil duff and debris to blend with surrounding cover.
- Stumps should be flush cut. Naturalize spot disturbance by pulling back cut trees and branches, replacing down logs, woody debris, and displaced rocks. Pull all flagging, trash, signs, oil etc.
- Assess heavily disturbed sites, such as safety zones, for seeding needs and seed if absolutely necessary for successful revegetation

7. Fences, Disturbed Improvements, Recreation Sites

- Repair cut and damaged fencing, gates etc.
- Trail and road signs or posts that were damaged or removed by suppression activities should be replaced.
- Trees and logs around recreation cabins should be cut into 16" lengths and stacked for firewood.

8. Road Stabilization and Closure

- Original road closures that were opened for fire suppression actions should be reconstructed. This includes road closure berms, tank traps, etc.
- In areas where tracks were made around gates or other barriers, fencing, boulders, or additional materials may be needed to close route.
- Water bar all roads behind road closure berms that were opened for fire suppression actions. Depending on natural slope breaks and drainage opportunities, water bar spacing should be approximately every 200 ft.
- Berms on downslope side of the roads (which developed during grading) should be pulled back onto the road surface.
- Heavily used roads should be restored to their previous condition utilizing road graders or other equipment.
- Replace or repair any infrastructure (e.g., culverts, cattleguards, fences, etc.) crushed or damaged as a result of fire suppression activities. Haul out any debris resulting from replacement or removal of facility and coordinate disposal with appropriate landowner.

9. Water Drafting

- Restore all water sources used during the course of the fire to pre-suppression condition.
- Remove all dams, or crossings that were constructed during suppression.
- Restore streambed to previous condition. Remove fill dirt while minimizing dirt washing into streams. Remove any devices to pool water.
- Drafting sites and areas altered to access water should be restored to pre-suppression condition.
 - Check for and repair ruts that may have formed

10. Check Line

- Pull berms back in, install water bars and cover with debris following hand line guidelines.

11. Structures

- Remove all wrap and staples from structures.
- Remove all hose line, pumps, fuel, sprinkler equipment

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Appendix A:
Suppression Repair Plan Map

Appendix B:
Specific Repair Needs by Fire

1. Trail Creek Fire

- **Big Hole National Battlefield**
 - Repair actions on the battlefield may only occur after approval from the battlefield. Methods of repairs and timing will need to be discussed and approved.
 - An Archeologist must be on site during all repair activities.
- **Continental Divide Trail and National Recreation Trails**
 - All suppression activities that are adjacent or within sight distance of the Continental Divide Trail (CDT) shall be rehabilitated following CDT visual objectives. The Continental Divide National Scenic Trail (CDT) Vegetation Management – Best Practices document have informed the repair standards in this section. Refer to the Repair Map Repair comments for site specific repair guidance. Repair actions should be implemented to conserve and enhance the desired scenic character of the CDT corridor, considering the scenic integrity of the trail while aiming to replicate the natural range of variation found in the area.
 - Mastication should not be used for repair; hand crews are preferred.
 - Low stump all trees using horizontal cuts and any trees under 3' that were damaged.
 - Reestablish Richardson Creek Trail 3104 and May Creek National Recreation Trail (NRT) 3114 Trails and Trailheads / junction with FS Road 081/CDT.
 - Dig new trail tread linking to trails as they leave fuel break.
 - Leave small ~20' X 30' parking/turnaround areas at trailheads/CDT 081 junctions.
 - Where additional parking spots have formed at trail heads of pull-offs intersecting the trails, scarify parking, spots and if needed cover with slash and debris to prevent use.
 - Boulders, logs, slash, or fencing can be used to discourage motorized use on trails. Obstacles should be placed at most 24 inches apart. Specific sites for off road travel repair are listed below. Check Repair Map notes for specific preferences on materials and additional sites.
 - The Anderson Mountain Safety Zone (45.619751 N, 113.910314 W)
 - Crone Gulch Road (54.579675 N, 113.936070)
 - Dozer line where it intersects Anderson Creek drainage
 - Dozer line off the Gibbonsville Road
 - Dozer intersection of 080 road
 - Dozer line where it starts near Morgan Jones Lake and meets the CDT
 - Big Hole Pass and locations where two tracks have formed from suppression travel
 - On CDT where UTV use has occurred, use excavator or hand crew to scarify one of two tracks to discourage future two-track motorized use (larger than authorized dirt bikes/motorcycles. Have excavator with thumb or hand crew drag some material into that track until the end/ past CDT 'single track' takes off
 - Where handlines intersect or old trail was reopened for line, use hand crew to obliterate the trail by bringing back in soil, and camouflaging using debris such as cut logs, stumps, and debris.

- Disperse all cut logs 50' - 100' from the CDT trail in random patterns with cut ends facing away, if possible. Disperse other debris at minimum 25 feet away.
- Trail drainage features should be cleared of debris and re-established if needed.
- If burn piles are built, try to build at least 100 feet from the trail, at a minimum 50 feet from the trail utilizing visual screening where possible.
 - If residual material from burn piles exists after burning, disperse.

Appendix C:

Forest Specific Seed Mixes