

MINIMUM IMPACT STRATEGIES AND TECHNIQUES (MIST)

Northwest Colorado Fire Management Plan

The following Minimum Impact Strategies and Techniques (MIST) are guidelines that are intended to significantly reduce the environmental impacts of incident management. Although they are referred to in "D" polygons (wilderness) they can be applied to a much broader land base.

To ensure these protection measures are properly applied to an incident the following recommendations are made:

- Consult a Wilderness Resource Advisor (WRA) on all Type IV fires. Assign a WRA to all Type I, II, and III fires.
- The Delegation of Authority to the Incident Commander will specify the assignment of a WRA. They are to be consulted on all strategies, tactical plans, camp locations, etc.
- The Delegation of Authority to the Incident Commander will include the use of MIST guidelines.
- Protecting the land using MIST guidelines is an Incident Objective.
- Use the WFSA/ WFIP to evaluate incident-related human impacts and degree of success in implementing MIST guidelines. Resource Advisors and/or wilderness personnel should provide input to these evaluations. Line Officer should incorporate this information into Performance Evaluations of incident management personnel.

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Medicine Bow-Routt National Forests

Following a fire, the effects of the fire may be evident but the impacts of any management actions taken should not be. Supervisors are responsible for ensuring that their subordinates implement these guidelines. **The safety of firefighters and the public is always Priority Number 1.**

Line Operations

- Use natural barriers, wet line or cold trail techniques, rather than constructing line. Consider burnout from natural barriers to minimize line construction.
- When constructed line is necessary, use the minimum width, depth and canopy clearance necessary to check fire spread, based on fire behavior. Locate line to minimize impacts. Consider use of fireline explosives for line construction.
- Do not put line construction debris in streams.
- Avoid building line straight up/down hill. This may alleviate the need for water bars.

Mop-up

- Cold trail whenever possible, rather than digging up, to detect hot areas.
- Roll or drag fuels into the interior and allow them to burn out, rather than mopping them up.
- Pull hot material away from the bases of trees, rather than felling them.

Saw Use

- Minimize the amount of cutting. Limb standing trees, rather than felling them. Locate line to go around downed logs, or move them, rather than bucking them. Roll logs over, rather than bucking them, when mopping up hotspots.
- Cut stumps low to the ground. Slope/angle saw cuts away from line of sight to minimize visual impacts. Rub dirt or ash on stumps and log ends to camouflage them. Do not crosshatch/etch.
- Flag snags, or post a lookout to watch them, rather than felling them, while personnel are working in the area. When safe, allow burning trees or snags to burn out and fall on their own.
- If trees must be felled inside the line, do not limb or buck them. Allow the fire to consume them.
- Consider use of explosives for snag mitigation.

Portable Pumps

- Use containment kits with all pumps to prevent fuel spills and water contamination.
- Exercise caution when using foaming agents to avoid water contamination.
- Naturalize pump sites when removing pumps. Remove structures used for backing up water flow.

Misc.

- Confine travel to existing trails or other hardened travel routes, if available.
- Use individual "cat holes" (6-8" deep, at least 200 feet from water) for disposal of human waste when away from camp.
- Report concentrations of non-incident related human refuse (trash/abandoned equipment caches, etc.) encountered to Resource Advisor for documentation and removal.

Air Operations

- Minimize the number of helispots. Use natural openings to avoid constructing or improving helispots and sling sites. Avoid designating or constructing helispots for logistical support only. Use longline/remote hook for delivery and retrieval of equipment and supplies. Naturalize helispots before abandoning. Consider use of explosives for site naturalization.
- When doing bucket drops, avoid the transfer of non-native fish species, diseases, etc. between dip sites. Avoid the transfer of water from one side of the Continental Divide to the other. Dip from the center of lakes/ponds.
- Limit the use of retardant. Use water drops (preferred) or foam instead. When foam or retardant use is appropriate, avoid dropping near surface water.

Rehabilitation

- Remove all signs of human activity. Rehabilitate all areas disturbed by management activities to as natural an appearance as possible.
- Ensure all equipment, supplies, trash, flagging, etc. are removed from lines, travel routes, camps, helispots, etc.
- Obliterate constructed lines by pulling material back onto them and scattering vegetative debris over them to blend them with surrounding natural landscape. Where needed, install water bars, as appropriate and ensure they are not covered over or blocked:

Line Grade (%)	Maximum Water Bar Spacing (feet)
6-9	400
10-14	200
15-24	100
25+	50

- Replace sections of logs that were cut out of the line.
- Avoid using rehabilitated lines as travel routes.
- Whenever soil has been newly exposed or compacted (camp areas, pump sites, travel routes, etc.), scarify them and naturalize with vegetative debris, rocks, etc.

Spike Camps and Camp Activities

Camps and other facilities will be located outside of wilderness whenever possible. Resource Advisor will be consulted prior to establishing spike camps. A Spike Camp Manager, knowledgeable in these Guidelines and **Leave No Trace** techniques, will be assigned to each spike camp. Spike camp managers will accompany the first personnel in to each camp to identify/lay out camp components and to assist with implementing these Guidelines.

For/at each camp:

- No more than two crews (one is preferable) and misc. overhead may utilize at one time. Discontinue use of camp if resource damage is occurring.
- Provide personnel the necessary equipment for staying warm and dry.
- Campsite must be selected and laid out carefully to minimize potential impacts. All campsite components will be located a minimum of 100 feet (200 feet preferred) from lakes, streams and Forest Development Trails. Select hardened areas (dry, rocky/sandy, previously-impacted, etc.), to avoid denuding areas of vegetative cover, and confine camp activities to them. If hardened areas are not available, select resilient ones, which will recover quickly. Kitchen, eating, sleeping, latrine, washing, etc. areas will be designated. Sleeping and other camp areas will be selected to avoid the need for trenching, excavating or removal of vegetation. Consider the use of breathable ground cloth (scrim) in high-traffic common areas, such as food preparation/service, washing, etc. areas. **Good campsites are found, not made.**
- Limit the use and number of campfires. Except in emergencies, no more than one campfire per camp is allowed. Existing fire rings will be used, if available. If not, fire pans or mound/pit fire techniques will be used, rather than building new rock fire rings. Campfires are not to be left without completely extinguishing them. Only wood and paper may be burned in fires - no leftover food, plastics or other materials. Use only dead and down wood and burn it down completely to ash. Ashes are to be scattered away from site when cool. If Fire Restrictions are in effect, campfires are not permitted.
- Chainsaws are to be used for activities directly related to fire suppression only, not for cutting firewood, making camp improvements, etc.
- To avoid wildlife conflicts, separate kitchen/food preparation area from main camp. All food is to be kept out of sleeping areas. Strain and dump wastewater from cooking/cleanup away from camp.
- Designate a common wash area for personnel. Select a site at least 200 feet from water. Wash water and biodegradable soap will be provided. Scatter wastewater on dry areas at least 200 feet from water. Soap, shampoo, other personal grooming chemicals

or wastewater must not get into lakes or streams. Washing in lakes or streams is not permitted.

- Designate a common latrine for disposal of human waste. Select a dry, screened site at least 200 feet from water. Bury used toilet paper in the latrine or pack it out. Discontinue use and cover over latrine when it is filled to within 6 inches of ground surface.
- Maintain a clean camp at all times. Police camp regularly for litter. Designate a garbage collection point. To avoid wildlife conflicts, garbage and leftover food are to be removed from camp daily.
- Naturalize all campsite areas and components before vacated.