

Fire Operations Best Management Practices

- Firefighter and public safety is the overriding priority on all fires, and the conservation, protection, and restoration of sage-grouse habitat is the highest natural resource objective.
- Compile district-level information into state-wide sage-grouse tool boxes. Tool boxes will contain maps, listing of resource advisors, contact information, local guidance, and other relevant information for each district, which will be aggregated into a state-wide document.
- Provide localized maps to dispatch offices and extended attack incident commanders for use in prioritizing wildfire suppression resources and designing suppression tactics.
- Assign a resource advisor with sage-grouse expertise, or who has access to sage-grouse expertise, to all extended attack fires in or near sage-grouse habitat areas. Prior to the fire season, provide training to sage-grouse resource advisors on wildfire suppression organization, objectives, tactics, and procedures to develop a cadre of qualified individuals.
- On critical fire weather days, pre-position additional fire suppression resources to optimize a quick and efficient response in sage-grouse habitat areas.
- As appropriate, utilize existing fuel breaks, such as roads or discrete changes in fuel type, as control lines in order to minimize fire spread.
- During periods of multiple fires, ensure line officers are involved in setting priorities.
- To the extent possible, locate wildfire suppression facilities (i.e., base camps, spike camps, drop points, staging areas, heli-bases, etc.) in areas where physical disturbance to sage-grouse habitat can be minimized. These include disturbed areas, grasslands, near roads/trails or in other areas where there is existing disturbance or minimal sagebrush cover.
- Power-wash all firefighting vehicles, to the extent possible, including engines, water tenders, personnel vehicles, and all-terrain vehicles (ATV) prior to deploying in or near sage-grouse habitat areas to minimize noxious weed spread.
- Minimize unnecessary cross-country vehicle travel during fire operations in sage-grouse habitat.
- Minimize burnout operations in key sage-grouse habitat areas by constructing direct fireline whenever safe and practical to do so.
- Utilize retardant, mechanized equipment, and other available resources to minimize burned acreage during initial attack.
- As safety allows, conduct mop-up where the black adjoins unburned islands, dog legs, or other habitat features to minimize sagebrush loss.
- Adequately document fire operation activities in sage-grouse habitat for potential follow-up coordination activities.

Fuels Management Best Management Practices

- Design fuels management projects in priority sage-grouse habitat to strategically and effectively reduce wildfire threats in the greatest area. This may require fuels treatments implemented in a more linear versus block design (Launchbaugh et al. 2007).
- Where applicable, design fuels treatment objective to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns that most benefit sage-grouse habitat.
- Provide training to fuels treatment personnel on sage-grouse biology, habitat requirements, and identification of areas utilized locally.
- Use prescribed fire prescriptions that minimize undesirable effects on vegetation or soils (e.g., minimize mortality of desirable perennial plant species and reduce risk of hydrophobicity).
- Ensure proposed sagebrush treatments are planned with interdisciplinary input from the BLM and/or state wildlife agency biologists and that treatment acreage is conservative in the context of surrounding sage-grouse seasonal habitats and landscape.
- Where appropriate, ensure that treatments are configured in a manner (e.g., strips) that promotes use by sage-grouse (see Connelly et al. 2000).
- Where applicable, incorporate roads and natural fuel breaks into fuel break design.
- Power-wash all vehicles and equipment involved in fuels management activities prior to entering the area to minimize the introduction of undesirable and/or invasive plant species.

Emergency Stabilization and Burned Area Rehabilitation (ES&R) Best Management Practices

- Prioritize native seed allocation for use in sage-grouse habitat in years when preferred native seed is in short supply. This may require reallocation of native seed from ES&R projects outside of priority sage-grouse habitat to those inside it. Use of native plant seeds for ES&R seedings is required based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, non-native seeds may be used as long as they meet sage-grouse habitat conservation objectives (Pyke 2011). Reestablishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, shall be the highest priority for rehabilitation efforts.
- Design post-emergency stabilization and rehabilitation management to ensure long-term persistence of seeded or pre-burn native plants. This may require temporary or long-term

changes in livestock grazing, wild horse and burro, and travel management, etc., to achieve and maintain the desired condition of emergency stabilization and rehabilitation projects to benefit sage-grouse (Eiswerth and Shonkwiler 2006).

- Consider potential changes in climate (Miller et al. 2011) when proposing post-fire seedings using native plants. Consider seed collections from the warmer component within a species' current range for selection of native seed. (Kramer and Havens 2009).

Local Unit Fire Program Conservation Efforts Related to Sage Grouse

Many local units with sage-grouse habitats have established protocols that address sage-grouse and fire suppression activities. Examples of these protocols are:

Preseason:

- Ensuring that resource management plans and fire management plans are current and include guidance for managing sage-grouse and sage-grouse habitat.
- Conducting informational meetings and workshops with federal, state, and local cooperators to share sage-grouse information such as the location of key habitat, standard operating procedures (SOP's) for suppression activities in habitat areas, rehabilitation guidelines in habitat areas, etc.
- Ensuring that suppression priorities include critical resources (i.e., sage-grouse, cultural resources, etc.), and use these priorities during periods of fire activity to prioritize incidents and assign resources.

Initial Attack:

- Ensuring that interagency fire managers update pre-planned responses within the dispatch zone to align the initial attack response with protection priorities and resource values.
- Encouraging dispatch center to utilize geographic information system (GIS) maps in WildCAD to determine if new starts are within sage-grouse habitat or in close proximity to other identified values or assets, and relay that information to responders.
- Briefing all local initial attack crews on the importance of identifying sage-grouse habitat during response and suppression, and the need to follow the sage-grouse suppression SOP's (include a form of text instruction and key habitat maps).
- Ensuring out-of-area resources (severity crews, overhead, etc.) receive a full briefing, which includes, among other things, the importance of identifying sage-grouse habitat during response and suppression, and the need to follow the sage-grouse suppression SOP's.

Extended Attack:

- Ensuring resource advisors (READs) are assigned to fires in the zone whenever fire suppression activities may affect resource values, including sage-grouse habitat.
- Ensuring READs are assigned to incidents as early as possible.
- Ensuring READs participate in annual READ workshops which address, among other things, sage-grouse concerns and SOP's.
- Ensuring READs have access to pre-built kits which include: hard copy and electronic resource information, GIS sage-grouse habitat data, fire suppression SOP's for sage-grouse, and rehabilitation guidelines.
- Ensuring sage-grouse issues are addressed throughout the WFDSS process (particularly in decision documents) and specified in delegations of authority to incident management teams (IMTs) and incident commanders.
- Ensuring READs are assigned to large incidents managed by an IMT for the duration of the incident. Ensure that per delegations of authority, READs are included in planning meetings, firefighter briefings, and provide input to the incident action plan.

Post-Incident:

- Ensuring READs complete a READ report upon demobilization of an incident. This report should summarize suppression actions, suppression damage, and damage caused by the fire itself. The READ report should provide preliminary recommendations for stabilization, rehabilitation, and restoration. This preliminary assessment and subsequent emergency stabilization and burned area rehabilitation plans should include impacts to sage-grouse habitat and recommendations for mitigation.