

Chapter – 14

Emergency Stabilization (ES) and Burned Area Rehabilitation (BAR) Programs

Introduction

Policy

The DOI Departmental Manual 620 DM, Chapter 3, *Interagency Burned Area Emergency Response Guidebook*, *DOI Burned Area Rehabilitation Guidebook* and *Indian Affairs Manual (IAM) Part 90*, provides policy for managing emergency stabilization, rehabilitation, and restoration on Indian Trust lands following wildfires. ES and BAR treatments and activities are an integral part of wildfire incidents but are planned, programmed, and funded separately.

The objectives of post wildland fire programs, which include the ES and BAR programs, are as follows:

Emergency Stabilization (ES) Program

The purpose of ES is to determine the need for, and to prescribe and implement, emergency treatments to minimize threats to life and property and to stabilize and prevent further unacceptable degradation to natural and cultural resources from the effects of a wildfire. Allow natural recovery in situations where no post-fire emergency exists or where practical, effective treatments are not feasible.

An ES response is a situation where prompt action is necessary to evaluate and address actual and potential post-fire impacts to human life, property, and critical cultural and natural resources.

The ES plans will specify only those emergency treatments to be carried out within one year of the containment date of a wildfire. The Agencies and/or Tribes will develop and implement cost-effective emergency stabilization plans to prevent or mitigate harmful impacts to affected resources on lands within the wildfire perimeter or potential impact area downstream from the burned areas in accordance with approved land management plans and applicable policies, standards, and all relevant federal, state, and local laws and regulations.

Burned Area Rehabilitation (BAR) Program

The purpose of BAR is to evaluate actual and potential long-term post-fire impacts to critical cultural and natural resources and identify those areas unlikely to recover naturally from severe wildfire damage and to develop and implement cost effective plans.

The BAR plan will specify non-emergency treatments which meet approved land management plans to be carried out within three years of containment of a wildfire. The Agency/Tribes will develop and implement cost-effective BAR plans to establish historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with approved land management plans. If that is infeasible, then to restore or establish a healthy and stable ecosystem in which native species are well represented.

Protection priorities are human life, safety, property and unique or critical/biological/cultural resources. If it becomes necessary to prioritize between property and unique or critical biological/cultural resources, this will be done based on relative values to be protected, commensurate with wildfire rehabilitation cost. All ES and BAR plan actions must reflect these priorities.

The Agency Superintendent or Agency Administrator is responsible to direct and coordinate all management operations including developing and implementing ES and BAR treatments/activities.

Documentation, Guidelines and References

- Department Manual Part 620, Chapter 1 & 3.
- Department Manual 516 Part 6, Appendix 4.
- Indian Affairs Manual Part 90.
- 25 CFR Section 163.28.
- *Interagency Burned Area Emergency Response Guidebook.*
- *DOI Interagency Burned Area Rehabilitation Guidebook.*
- *Burned Area Emergency Response Team Standard Operations Guide.*
- *Interagency Incident Business Management Handbook.*

Emergency Stabilization (ES) and Burned Area Rehabilitation (BAR) Plans

Activities and treatments in ES and BAR plans will be consistent with approved land management plans.

Each plan must contain:

- A description of each treatment or activity;
- A discussion demonstrating how the specifications are consistent and compatible with approved land use plans, and how the proposed treatments and activities are related to damage or changes caused by the wildfire;
- An explanation of how a treatment or activity is reasonable and cost effective relative to the severity of the burn and submit a cost-risk analysis;
- Provisions for monitoring and evaluation of treatments and activities (including criteria for measuring a successful treatment or activity) and techniques, a procedure for collecting, archiving, and disseminating results and criteria for determining failure of a treatment or activity; and
- Clear delineation of funding and responsibilities for implementation, operation, maintenance, monitoring, and evaluation throughout the entire life of the project.

Approvals

The Agency Superintendent may approve plans up to \$250,000.

The Regional Director may approve plans up to \$500,000.

Plans obligating more than \$500,000 will be approved by the BIA Director, Branch of Wildland Fire Management.

National and Tri-Regional BAER Coordinators will review all plans for technical compliance with ES and BAR policy.

Funding

All ES and BAR funding requests must come from the Agency Superintendent to the Regional Director.

Emergency Stabilization (ES)

Funding for ES treatments/activities is provided under emergency fire management funding authorities.

All wildland fire funded personnel (except hazard fuels) will fund their base 8 hours from their base funding when working on wildfire suppression activity damage or ES activities.

All non-fire funded and hazard fuels personnel may charge their base 8 hours to emergency stabilization accounts when performing those work activities.

Emergency Equipment Rental Agreements can be used on ES projects because of emergency activity.

Fire and non-fire funded personnel overtime hours will be charged to the ES (92320) sub-activity account.

AD personnel can be used on ES projects, not to exceed 90 calendar days.

Burned Area Rehabilitation (BAR)

BAR treatments and activities are provided under the wildland fire management funding authorities (92B00 sub-activity account).

All participants may fund their base 8 hours from BAR. BAR is a non-emergency activity. It is an unpredictable amount of unplanned work; however, careful planning should eliminate any need for overtime. If overtime is needed, overtime hours can be charged to BAR.

AD personnel cannot be used on BAR projects.

EERA's cannot be used on BAR projects because BAR activities are not an emergency activity.

For further information on overtime, hazard pay, and other personnel funding issues see *Interagency Incident Business Management Handbook*.

Time Frames

The initial ES plan must be submitted within seven (7) calendar days after the date of containment of the wildfire. If additional time is needed, extensions may be negotiated with those having approval authority. A written justification will be submitted addressing the key issues of the emergency. ES funds will be available one (1) year from containment of the wildfire. ES funds may also be used to repair or replace approved ES treatments for up to three (3) years following containment where failure to do so would imperil watersheds or loss of downstream values and for monitoring.

The submittal of BAR plans often depends on the environment/landscape of the fire and the complexity; therefore when practical, initial submission of the BAR plan should be submitted no later than the end of the first fiscal year in order to be considered for funding in the next fiscal year. However, the time frame for funding is three (3) years from the date of the containment of the wildfire.

Burned Area Emergency Response (BAER) Coordinators**National BAER Coordinator**

Each lead federal firefighting agency has designated a National BAER Program Coordinator. The BAER Coordinator functions under the direction of the Fire Directors and work as an interagency group called IBAER. The National BAER coordinators conduct business as defined in the National BAER Coordinators Agreement.

The BAER interagency group coordinates the following:

- Program issues;
- Implementation;
- Training;
- Oversight;
- Sharing of information;
- Evaluation;
- Support, manage, and conduct overall performance review and evaluation for national BAER teams;

- Maintain and update the *Interagency Burned Area Emergency Response Guidebook* and *DOI Interagency Burned Area Rehabilitation Guidebook*;
- Develop and incorporate within the guide a common cost-effectiveness analysis for evaluating proposed actions and standard project accomplishment analysis for evaluating actions and a standard project accomplishment report format; and
- Develop a mechanism for achieving and broadly disseminating the results of monitoring treatment effectiveness.

Tri-Regional BAER Coordinator

The Tri-Regional BAER Coordinator serves the Southwest, Western, and Navajo Regions. The Tri-Regional Coordinator has the same responsibilities as the National BAER coordinator for program guidance and oversight for these three Regions, but is not meant to replace the roles of the Regional Coordinators. The Regional Coordinator will review all ES and BAR plans, amendments, and reports before the Regions submit documents to the BIA-NIFC office. The Tri-Regional BAER Coordinator may work at the national level as directed by BIA-NIFC.

Regional Coordinators

Provide oversight and direction for the Regional BAER programs and are responsible for the following:

- Responding to requests for ES and BAR teams in a timely fashion; and
- Assisting Agencies/Tribes in resolving ES and BAR issues and the implementation of on-going projects.

Coordinating all ES and BAR projects as follows:

- Participates in the selection of contractors as necessary;
- Insures the contract specifications are carried out;
- Insures appropriate monitoring as per emergency stabilization and rehabilitation plan; and
- Insures all safety requirements are met.

Assist the BIA National and Tri-Regional BAER coordinators in setting priorities.

Advise the Agency Superintendents, Tribes, and others of the status of on-going projects.

Prepare and submit amendments to existing ES and BAR plans through proper channels.

Attend the closeout meeting between Regional/National BAER teams and the host unit.

Participate in the formulation of emergency stabilization and BAR plans to ensure compliance with policy and operational procedures as follows:

- Function as a BAER team leader or member, if so qualified;
- Function as a BAER Implementation leader when requested;
- Evaluate proposed treatments on technical merit;
- Function as a liaison for interagency projects;
- Ensure NEPA compliance;
- Assure ES and BAR treatments are ecologically sound and are supported by approved land management and/or fire management plans; and
- Ensure preparation of ES and BAR plans meet policy time frames.

Assist and provide oversight to project (implementation) team leaders as follows:

- Ensure projects are administered and managed effectively and completely;
- Ensure that ES and BAR treatment effectiveness is monitored, evaluated, and documents, with recommendations given; and
- Train BAER Implementation Leaders and contractors as to organizational and policy procedures.

Maintains a budget tracking and accomplishment reporting system as follows:

- Request additional funding for amendments, upon review for compliance with policy and technical merit;
- Monitor all official expenditure reports to insure funds are properly accounted for and no costs overruns occur;
- Reconcile budget items within FBMS;
- Insures all ES and BAR treatments/ activities are fully documented and reported in the approved format and within established time frames;
- Regions will submit consolidated carryover requests by Region by September 15 of each fiscal year, to the Director, Branch of Wildfire Management; and
- Regions will submit the status report on uncompleted projects by September 15 of each fiscal year, to the Director, Branch of Wildfire Management.

Implementation Leader

On long term complex post-wildfire treatments, the BAER/BAR plan may recommend an Implementation Leader to carry out the project. This position should be dedicated to this project unless an Agency/Tribe experiences more than one fire and needs assistance to track projects for multiple fires and submits a written justification. For the moderate to low complexity treatments on moderate to small fires, the Agency or Tribe should identify an Implementation Leader to implement the plan(s).

The Implementation Leader is responsible for:

- Logistics for implementation;
- Organizing established position descriptions;
- Communications and dispatch;
- Air operations;
- Contract specifications;

- Ordering and logistics;
- Field Oversight;
- Coordination with agency structural implementation;
- Contract inspection;
- Budgeting and accounting;
- Reports and record keeping;
- Liaison with other federal and state agencies;
- Public information; and
- Project Safety.

Emergency Stabilization/Burned Area Rehabilitation Process

To initiate an ES and/or BAR project, the following process is recommended:

- ***Perform a Preliminary Complexity Analysis of the post-fire effects.***

An initial preliminary assessment team consisting of a Team Leader, Regional BAER Coordinator and/or other resource specialists will meet with the local Agency administrator for an in-briefing. The Pre-assessment group may also brief with local resource specialists and Incident Management personnel to determine initial values at risk and resources potentially affected.

- ***Assemble the ES/BAR Planning Team***

Team size and make-up will vary dependent on the wildfire size, values to be protected, time frames, and jurisdictions involved.

- ***Review Resource and Fire Data***

Review the local unit fire, land, and resource management plans. Additionally, wildfire suppression operational plans, resource advisor reports, and the WFDSS provide valuable information concerning the relative values the field unit places on individual resources. Review other relevant resource and fire information.

- ***Begin Assessment of Post-Fire Effects***

Burned area assessments determine what realistic and cost effective ES/BAR treatments are necessary. After the preliminary information has been reviewed and assembled, the planning team conducts one or more field inspections of the burned area to assess values at risk as a result of the wildfire. Aerial and ground assessments must be coordinated with the Incident Management Team. Values at risk may include human life, property, natural resources, historic properties, threatened and endangered species, potential for exotic invasive, soil stability and productivity, and Native American or other cultural values. Once identified, values at risk should be evaluated for appropriate post-wildfire action. These evaluations may require coordination with local specialists and appropriate models should be used and referenced.

- ***Develop an ES and/or BAR Plan***

The plan(s) may include:

- Agency review and approvals;
- Summary wildfire narrative and activities and treatments needed;
- Fire location and background information;
- Type of plan (e.g., initial submission, or amendment);
- Values at risk;
- Values to be protected and their location;
- ES/BAR objectives;
- Planning team organization and membership;
- Activity and treatment specifications;
- ES/Bar funding needs;
- Consultations made by the planning team;
- Burn area assessments;

- Environmental compliance documentation;
 - Explanation of treatments with respect to values at risk;
 - Maps, photo documentation, supporting documents, etc.; and
 - Monitoring objectives and procedures/protocols.
- ***Select an Implementation Leader.***

It is critically important to select and assign an Implementation Leader early in the process to coordinate post-fire measures. The agency administrator should assign an implementation leader to ensure all plan treatments and activities are completed on time and according to specification.

- ***Implement ES and BAR Plan Treatment Specifications.***

Treatments must be properly installed and functioning before damaging storms or other events that may jeopardize life, property or resource values that need protection.

- ***Monitor and Assess the Treatments/Activities Specifications Implemented.***

Treatment effectiveness monitoring is vital to evaluate whether installed treatments are functioning as planned. Monitoring intensity should be commensurate with the complexity of the treatments and the risk associated with the hazard.

- ***Submit Monitoring, Annual, and Final Accomplishment Reports.***

Monitoring information and results can be synthesized in a stand-alone monitoring report or can be included in the annual and final accomplishment reports. An Annual Accomplishment Report is due at the end of each fiscal year that is funded. At the completion of the funding cycle (three years from fire containment date) a Final Accomplishment Report will be due to the approval authority. See Section "Monitoring and Evaluation" for detailed information.

Emergency Stabilization (ES)

Planned actions should stabilize and prevent unacceptable degradation to natural and cultural resources, minimize threats to life or property resulting from the effects of a fire, or repair/replace/construct physical improvements necessary to prevent degradation of land or resources.

Cultural Resources

Allowable Actions

Site Stabilization and Protection

- Determining whether known historic resources may be further degraded (e.g., site inspection record). Incidental discovery of cultural resource sites should be noted and may be protected.
- Patrolling, camouflaging, or burying significant heritage sites are appropriate actions when necessary to prevent a critical loss of heritage site value when looting potential is high. Patrolling should be considered only where there are no other effective alternatives.

National Historic Preservation Act (1966) Section 106 Compliance

- ES treatments that disturb the soil surface are reviewed for potential effects on significant cultural resources. The appropriate agency cultural resource specialist should become involved in treatment planning as early as possible.
- Treatments with no adverse effect can be undertaken after appropriate consultation with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO).

Prohibited Actions

- Systematic inventories or surveys;
- Assessments of the cultural resource damage caused by the fire;
- Site and data recovery, cataloging, and other programmatic administrative actions;
- Heritage site restoration; and
- Wildfire suppression activity damage repair.

Non-Native Invasive Control

Allowable Actions

- Assessments to determine the need for treatment where there are known infestations, possibility of new infestation due to management actions, or suspected contaminated equipment use areas;
- Treatments to prevent detrimental invasion (not present on the site) by non-native invasive species;
- Treatment of invasive plants introduced or aggravated by the wildfire. The treatment objective when the population is aggravated is to maintain the invasion at no more than pre-wildfire conditions; and
- Treatments to prevent permanent impairment of designated Critical Habitat for Federal and State listed, proposed or candidate threatened and endangered species.

Prohibited Actions

- Systematic inventories of burned areas;
- Treatments designed to achieve historic conditions or conditions described in an approved land management plan, but did not exist before the fire; and
- Treatments beyond one year post wildfire containment.

Revegetation

Revegetation is an appropriate treatment if seeding or planting of vegetation is prescribed to be effective within Departmental policy; and stabilizes the site and minimizes water or wind erosion; reduces the invasion of non-native invasive plants, or prevents critical habitat for federal listed threatened or endangered species from being more impaired than if nothing was done. The use of pesticides must be identified in an existing approved management plan with proper NEPA documentation. Use of native species is preferred, non-native seed may be used when allowed in agency policy. All seed will be tested for purity and germination to meet contract specifications and should be tested for weed seed by an independent seed testing organization.

Allowable Actions

- Exclusion of livestock, wild horses or burros may be critical for the recovery of burned vegetation or establishment and maintenance of new seedlings.
- Treatments to protect public health and safety are appropriate under ES:
 - Infrastructure (signs, gates, fence, guardrail, etc.);
 - HAZMAT – To secure, but not to remove hazardous materials;
 - EWS (Early Warning System) – must be a coordinated effort between federal, state, and local agencies and include an evacuation plan;
 - Emergency Road Repair/Maintenance;
 - Public use closure;
 - A burned area assessment should identify post-fire threats to Federal and Tribal listed or proposed threatened and endangered species and what, if any, cost effective stabilization measures can be implemented to prevent further post-fire condition degradation; and
 - Those emergency stabilization treatments necessary to protect life, property, and watershed values (soil productivity and water quantity).

Prohibited Actions

- Forest stabilization, reforestation, rehabilitation etc. are not appropriate use of emergency stabilization funding; and
- Timber salvage is not authorized with emergency stabilization funding.

Burned Area Rehabilitation (BAR)

Allowable Actions

- Repair or improve lands unlikely to recover naturally from wildfire damage by emulating historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with existing land management plans;
- Chemical, manual, and mechanical removal of invasive species, and planting of native and non-native species, consistent with 620DM3.8F, restore or establish a healthy, stable ecosystem even if this ecosystem cannot fully emulate historical or pre-fire conditions;
- Tree planting to re-establish burned habitat, re-establish native tree species lost in fire, prevent establishment of invasive plants, and regenerating Indian trust commercial timberland as prescribed by a certified silviculturalist as unlikely to regenerate within ten years following the fire; and
- Repair or replace wildfire damage to minor operating facilities (e.g., campgrounds, interpretive signs and exhibits, shade shelters, fences, wildlife guzzlers, etc.).

Prohibited Actions

Rehabilitation may not include the planning or replacement of major infrastructure, such as visitor centers, residential structures, administration offices, work centers and similar facilities. Rehabilitation does not include the construction of new facilities that did not exist before the fire, except for temporary and minor facilities necessary to implement burned area rehabilitation efforts.

BAER Teams

National Teams

The DOI has two National BAER Teams. The National BAER coordinators provide coordination and oversight for the teams. The teams are available for complex, multi-jurisdictional wildfires. Mobilization and demobilization of the teams are found in the *National Interagency Mobilization Guide*. The National BAER Teams have SOP's for team operations. The National Teams may take trainees on assignments to assist Regional/Agency/Tribal personnel develop the skills needed to meet the Regional and/or local needs or to become a member of a national/regional/local team.

Regional/Local Teams

Regions will develop regional and/or local BAER teams to meet their needs. These teams will assume the workload for the moderate to low complexity emergency stabilization projects. A regional team may consist of personnel from the region, agency, Tribal, and/or other federal agencies. The regional/local BAER teams will follow the same SOP as the national BAER teams.

Training

National BAER Coordinators will develop and sponsor interagency training courses for resource advisors, BAER team leaders and members, and implementation leaders.

Process for Requesting Funds

Project Funding Process

The Regions/Agencies will use the BIA ES and BAR Request forms to request ES and/or BAR funding. Regions/Agencies will send this form to the BIA-NIFC office to establish new ES and BAR projects or modify existing projects via a project amendment. This form should be completed immediately for ES treatments that need to be implemented before an ES plan is approved. This funding will be incorporated into the ES plan and the approving level will be the value of the project at the time of submittal. All requests for funding should have a breakout of the ES or BAR funds on the funding request form.

The ES funds identified for a project will be available up to one year from containment of the wildfire. Emergency stabilization funding may also be used to repair or replace approved ES treatments for up to three years following fire containment where failure to do so would impair watershed functionality or result in serious loss of downstream values and for monitoring. However, ES funding cannot be used to continue seeding, plantings, and invasive plant treatments beyond one year.

BAR projects are competitively funded among all four DOI bureaus. Funding is limited so there is no guarantee that BAR treatments/activities will be funded.

BAR funds can only be provided three years from containment of the wildfire. Plans that request multi-year funding are not guaranteed funding each year. Funds will be given out on a yearly breakout as specified in the BAR plan and approved by the national BAER coordinators.

The national DOI BAER coordinators will prioritize BAR treatments/activities to be funded based on the data in the NFPORS. Therefore, all BAR plans must be entered into NFPORS to be eligible for funding. The national DOI BAER Coordinators will meet at the beginning of a fiscal year to prioritize and select BAR treatments/activities. Funding will be awarded to selected projects soon after a budget is appropriated. In order to be considered for funding during the initial round of distributions at the beginning of a fiscal year, BAR treatments/activities must be entered into NFPORS by September 30th of each year. The national DOI BAER coordinators will periodically review and distribute BAR funds as long as funds are available. The approval of a BAR plan does not guarantee treatments/activities will be funded. If funding is not available, the treatment/activity will be on the list for funding in the following fiscal years until the project is funded or has expired.

Out year rehabilitation funds are not made available without formal requests and approved accomplishment reports. The funds identified for a project will be three years from containment of the wildfire. Funds will be distributed on a yearly breakout as specified in the rehabilitation plan and approved by the national office.

Implementation Phase

The Agency Superintendent is responsible for implementing the ES and/or BAR project(s). The implementation phase for emergency stabilization activities may begin before the rehab plan is complete for those pre-approved activities identified in the *Interagency Burned Area Emergency Response Guidebook* and *DOI Interagency Burn Area Rehabilitation Guidebook*. If this occurs, these pre-approved activities must be identified in the plan. After a plan is approved and funded, the Agency/Tribe should begin the implementation of the plan. The Agency/Tribe should identify an implementation leader to carry out the plan. This is essential to insure the specifications are completed as identified in the plan.

Program Account Structure

- ES program and BAR program accounting codes are in Chapter 13, Appendix 13-1.
- When the BIA-NIFC office receives a project request for funding from the Regions, the National BAER coordinator will request the BIA-NIFC Fire Budget Officer to establish accounts with an Incident Fire Code for ES and BAR projects.

- After ES treatments/activities are approved at the national level, the Director, Branch of Wildland Fire Management will send a memorandum of approval to the regional office.
- After BAR treatments/activities are approved at the national level, the BIA National BAER Coordinator will submit the request for BAR funds. The BIA-NIFC Budget Officer will prepare the funding distribution documents to be signed by the Deputy Director, Trust Services and then the Director, Branch of Wildland Fire Management will send a memorandum of approval to the Regional office.

Monitoring and Evaluation

Responsibility

Regions, agencies, and Tribes will monitor ES and BAR projects to assess if proposed treatments were properly implemented, if actual treatments were effective, and if additional treatments or maintenance are needed to make the project successful.

Accomplishment Report Requirements

- Monitoring and evaluation of post fire treatments are critical for understanding and improving such treatments. The collection and dissemination of this information is an integral part of all post fire treatments. All ES and BAR treatments/activities for each project must be entered into NFPORS after each plan is approved. Completed treatments/activities must be entered into NFPORS within 30 days of completion.
- An initial accomplishment report is required at the end of the fiscal year the project was initiated. A yearly or second accomplishment report is required at the end of the second fiscal year. A final accomplishment report is required at the end of the third year funding of a project. Failure to submit final accomplishment reports will curtail future BAR funding for the agency/Tribe.
- ES and BAR accounts are closed September 30th and accounts are not opened until accomplishment reports are submitted and approved by the appropriate approving line officer. Regions should submit carryover requests for ES and BAR projects to the BIA-NIFC office by September 15th of each year.
- The format for the accomplishment reports can be found in the *Interagency Burned Area Emergency Guidebook* and *DOI Interagency Burned Area Rehabilitation Guidebook*. Reports should include pictures of before and after ES and BAR treatments.

Information Sharing

National BAER Coordinator's Responsibility

The national BAER coordinators are responsible for sharing and disseminating information. This is accomplished through a national BAER website at: http://www.nifc.gov/BAER/Page/NIFC_BAER.htm with a link at the bottom of the page to the DOI ES & BAR website <http://fire.r9.fws.gov/ifcc/esr/home.htm>. These websites are maintained by the national BAER coordinators.

Website

This website may include, but is not limited to:

- ES and BAR Plans;
- ES and BAR Final Accomplishment Reports;
- List of national BAER Coordinators;
- *Interagency Burned Area Emergency Response Guidebook* (ES);
- *DOI Interagency Burned Area Rehabilitation Guidebook* (BAR);
- National BAER Teams and members;
- National BAER Team Standard of Operations and Qualifications;
- BAER Training courses;
- National Coordinators Charter;
- Other BAER documents (Council of Environmental Quality);
- BAER Technology; and
- Links.

Operational Guidelines for Aquatic Invasive Species

In order to prevent the spread of aquatic invasive species, it is important that fire personnel not only recognize the threat aquatic invasive species pose to ecological integrity, but how our fire operations and resulting actions can influence their spread. Each local land management unit may have specific guidelines related to aquatic invasive species. Therefore, it is recommended that you consult established local jurisdictional guidelines for minimizing the spread of aquatic invasive species and for equipment cleaning guidance specific to those prevalent areas and associated species. To minimize the potential transmission of aquatic invasive species, it is recommended that you:

- Consult with local biologists, Resource Advisors (READ) and fire personnel for known aquatic invasive species locations in the area and avoid them when possible;
- Avoid entering (driving through) water bodies or saturated areas whenever possible;
- Avoid transferring water between drainages or between unconnected waters within the same drainage when possible;
- Use the smallest screen possible that does not negatively impact operations and avoid sucking organic and bottom substrate material into water intakes when drafting from a natural water body;
- Avoid obtaining water from multiple sources during a single operational period when possible; and
- Remove all visible plant parts, soil and other materials from external surfaces of gear and equipment after an operational period. If possible, power-wash all accessible surfaces with clean, hot water (ideally > 140° F) in an area designated by a local READ.

Noxious Weed Prevention

To reduce the transport, introduction, and establishment of noxious weeds or other invasive species on the landscape due to fire suppression activities, all fire suppression and support vehicles, tools, and machinery should be cleaned at a designated area prior to arriving and leaving the incident.

Onsite fire equipment should be used to thoroughly clean the undercarriage, fender wells, tires, radiator, and exterior of the vehicle. Firefighter personnel should clean personal equipment, boots, clothing etc., of weed or other invasive species materials, including visible plant parts, soil, and other materials as identified by the fire resource advisor. The cleaning area should also be clearly marked to identify the area for post fire control treatments, as needed.

Ensure that seed mixes, mulch, and/or straw wattles contain no Federal, State, or Tribal designated noxious weeds by using seed mixes, mulches or straw wattles that have been examined by a laboratory or have current weed free certification from a state seed laboratory or equivalent qualified testing agent.

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