

Overview of the USFS Burned Area Emergency Response Program

BAER

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Primary BAER Objectives

- Identify post-wildfire threats to **human life and safety, property and critical natural or cultural resources**
- Take **immediate actions** to manage unacceptable risks

Rapid Assessment of Burned Area

Burned Area Conditions



Values at Risk

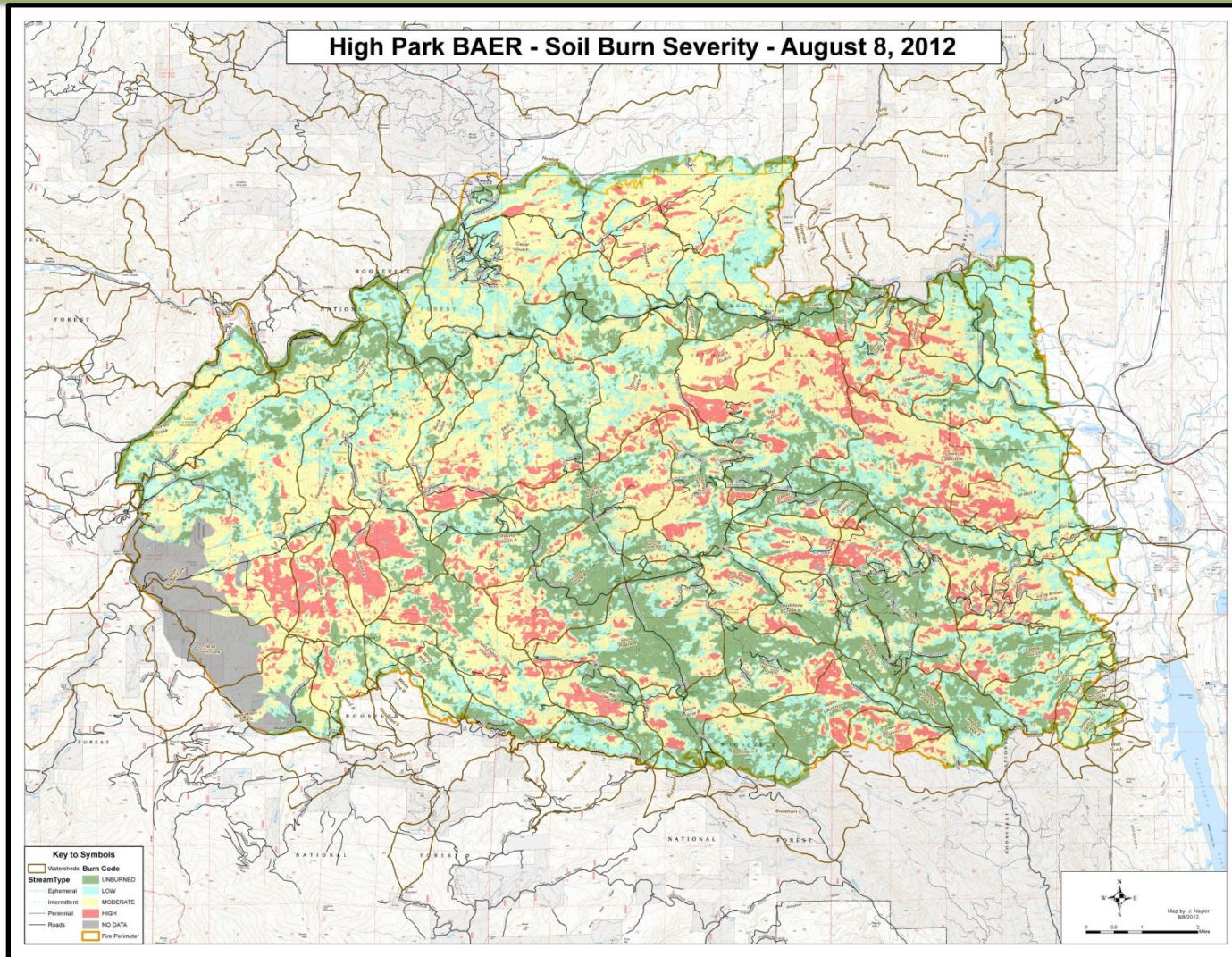


Risk Assessment



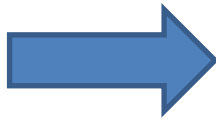
Treatment Recommendations

Soil Burn Severity



SBS Mapping Tools and Methods

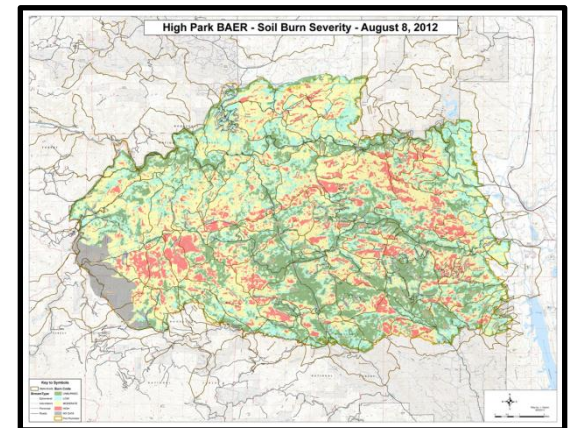
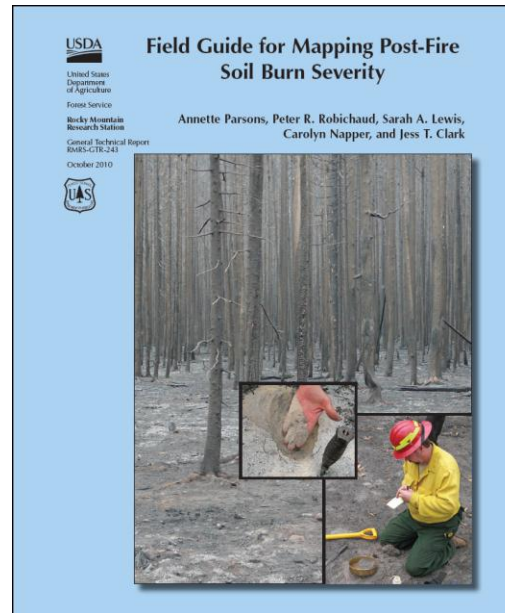
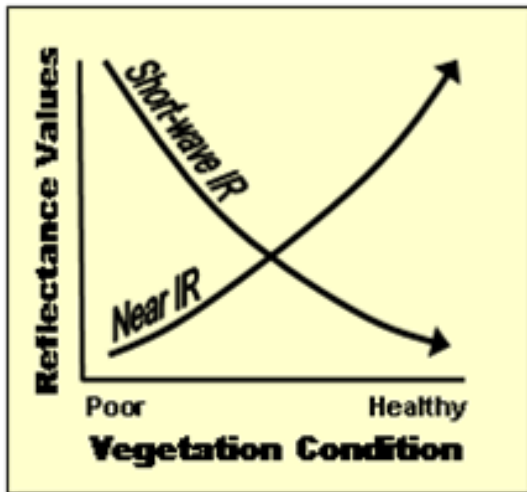
Satellite
Imagery



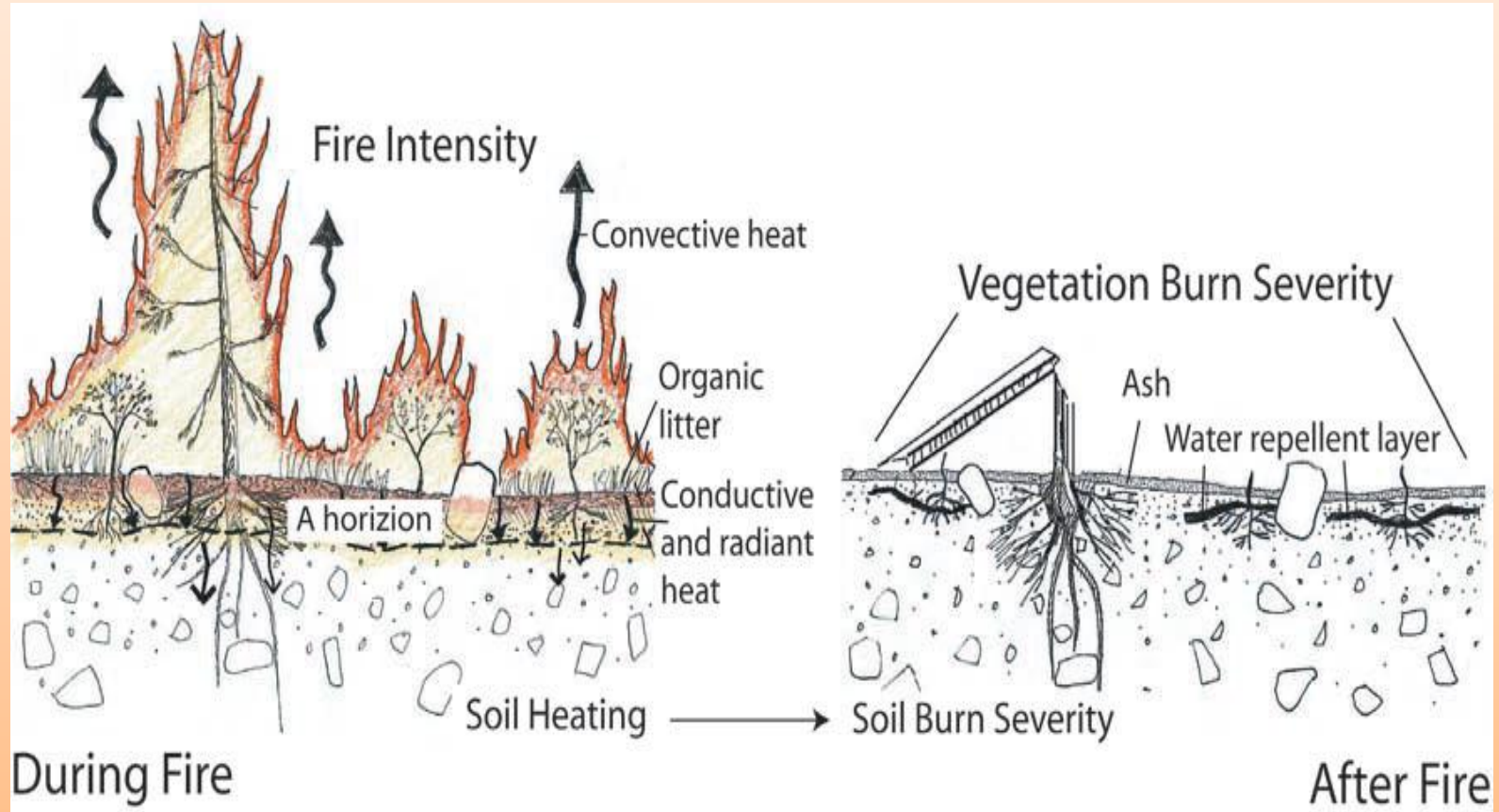
Field
Work



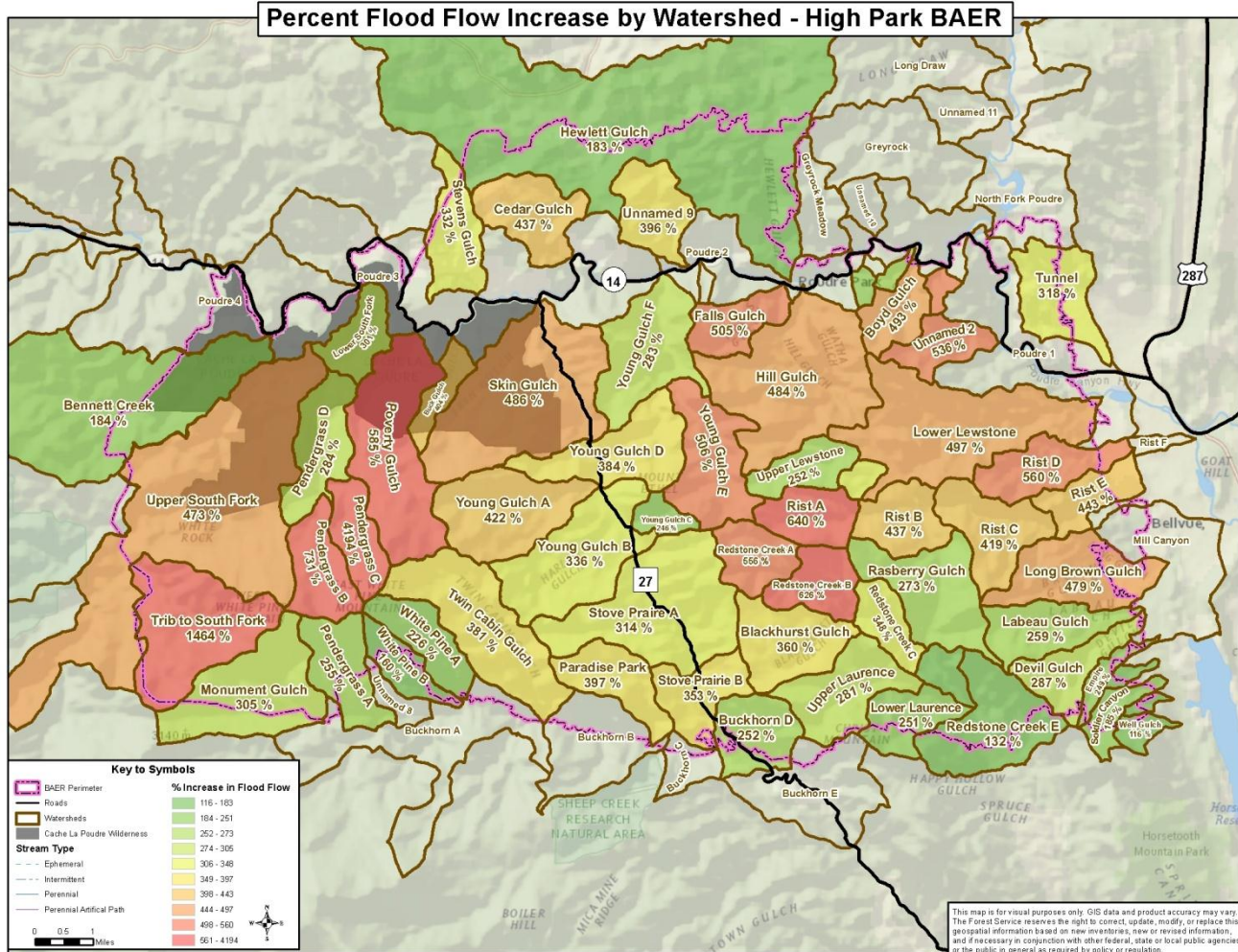
Final SBS Map



Soil Burn Severity vs. Vegetation Burn Severity



High Park Sub-Watersheds







Hydrologic Modeling

Wildcat: NRCS Curve Number Adjusted for Burned Conditions

Strengths and Limitations

Additional Modeling Needs

BAER Values at Risk

	CRITICAL VALUES
	HUMAN LIFE AND SAFETY
	Human life and safety on or in close proximity to burned NFS lands.
	PROPERTY
	Buildings, water systems, utility systems, road and trail prisms, dams, wells or other significant investments on or in close proximity to the burned NFS lands.
	NATURAL RESOURCES
	Water used for municipal, domestic, hydropower, or agricultural supply or waters with special state or federal designations on or in close proximity to the burned NFS lands.
	Soil productivity and hydrologic function on burned NFS lands.
	Critical habitat or suitable occupied habitat for federally listed threatened or endangered terrestrial, aquatic animal or plant species on or in close proximity to the burned NFS lands.
	Native or naturalized communities on NFS lands where invasive species or noxious weeds are absent or present in only minor amounts.
	CULTURAL AND HERITAGE RESOURCES
	Cultural resources on NFS lands which are listed on or potentially eligible for the National Register of Historic Places.

BAER Risk Assessment

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	RISK		
Very Likely	Very High	Very High	Low
Likely	Very High	High	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

Human Life and Safety, Property

Flooding, Debris Flow, Sediment

High to Very High Risk

- Homes, Property, Water Diversion Infrastructure**
- Roads, Trails, Users**
- Recreational Facilities, Users**

Poudre Park



Roads



Water Storage/Delivery



Natural Resources -Water

Flooding, Debris Flow, Sedimentation



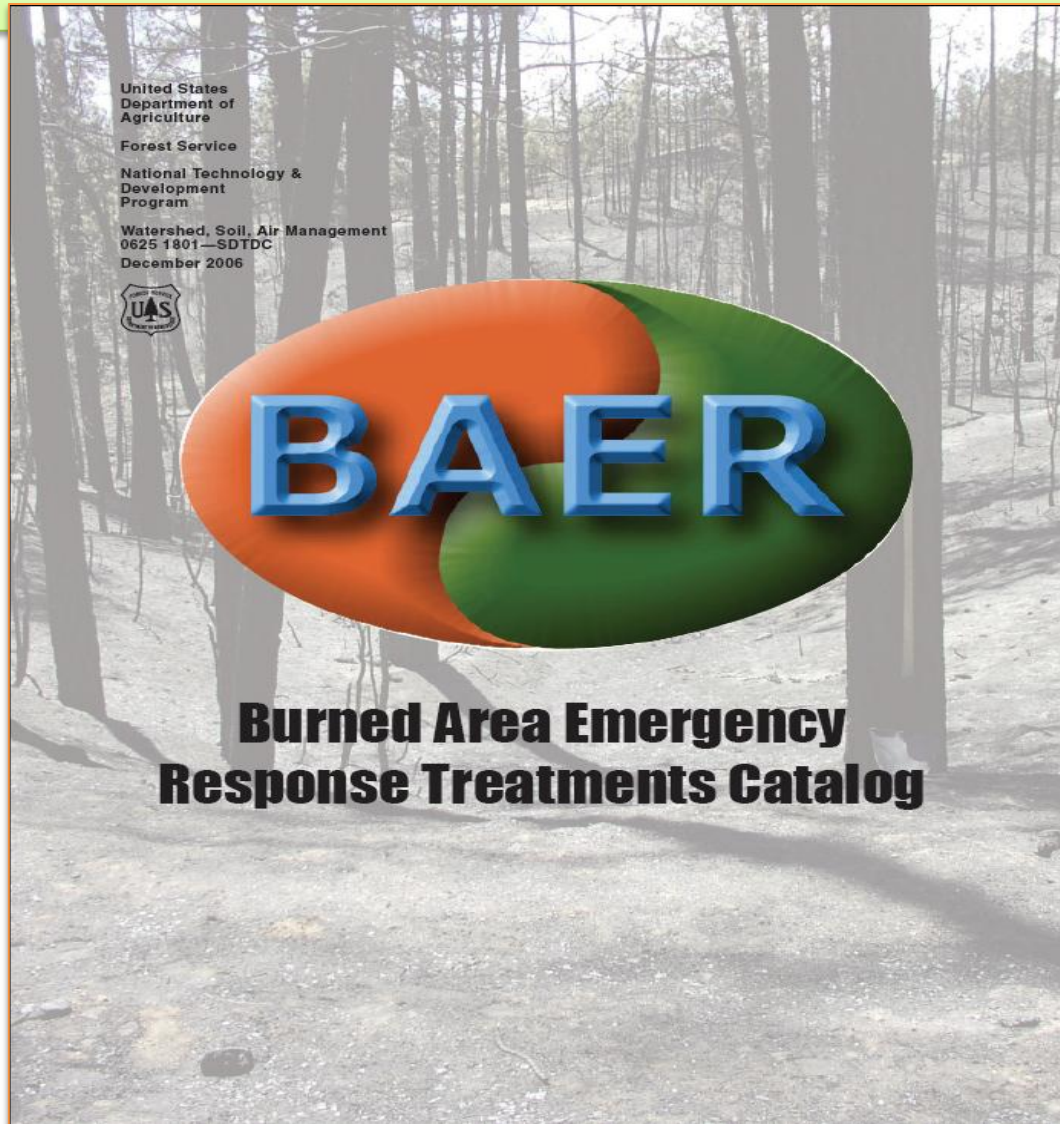
Recovery of Native Vegetation

Establishment or Expansion of Noxious Weeds

High Risk

- Leafy spurge
- Yellow Toadflax

Treatment Recommendations



Land Treatments

Mulching Objectives

- **Replace Ground Cover**
- **Apply Treatments before Damaging Rainfall/Runoff Events**

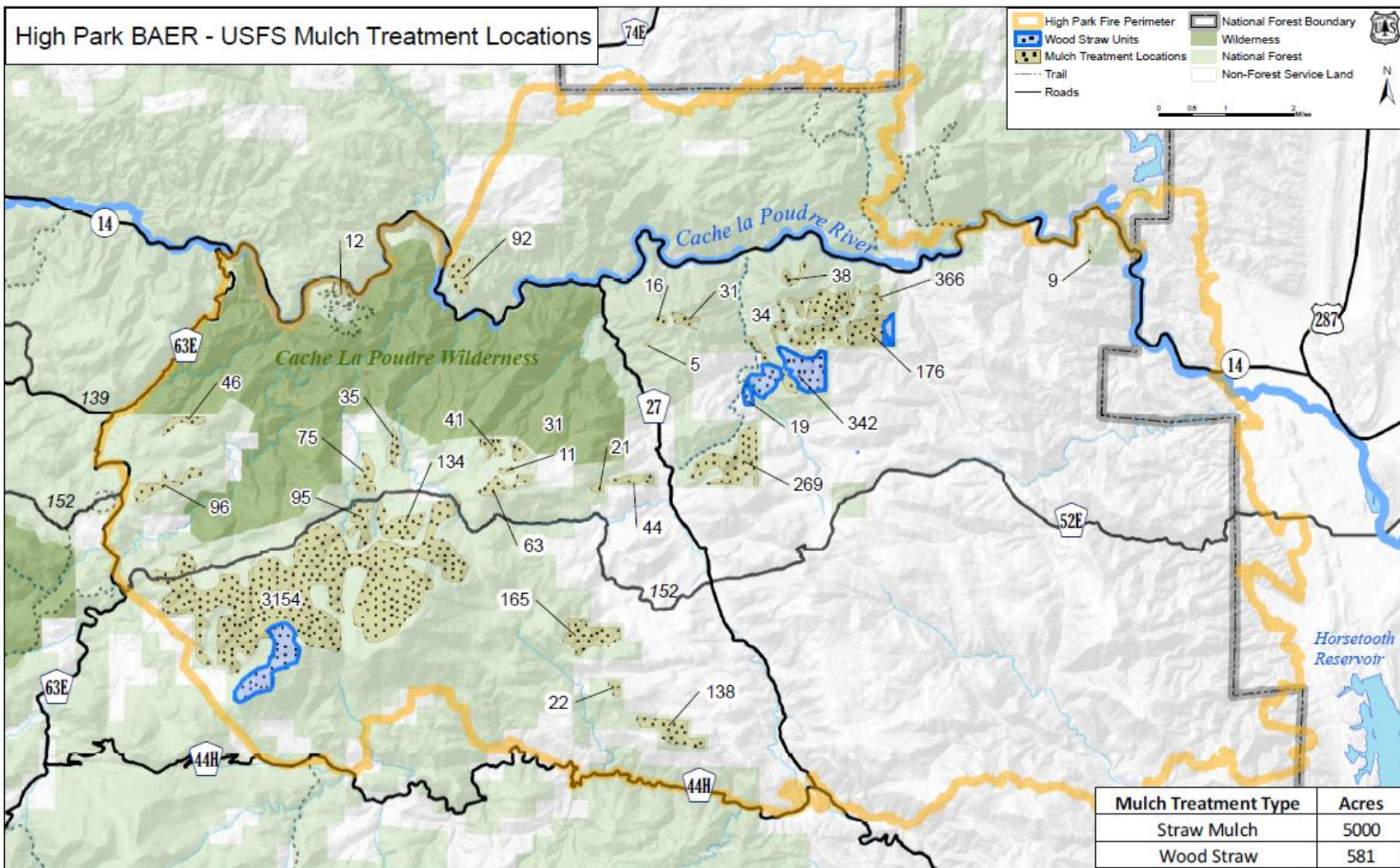
Mulching Polygon Criteria

- **20 to 60 percent slopes**
- **Moderate and High Soil Burn Severity**
- **Loss of Forest Floor/Protective Ground Cover**
- **Connected to VAR(s)**

Aerial Mulching



Aerial Mulch Treatments



Map by A.Cowd Naylor 6/1/2012 This map is for visual purposes only. GIS data and product accuracy may vary. The Forest Service reserves the right to correct, update, modify, or replace this geospatial information based on new inventories, new or revised information, and if necessary in conjunction with other federal, state or local public agencies or the public in general as required by policy or regulation.

Channel Treatment Examples

Sediment Basin



Steel Debris Rack



Channel Treatment Examples

Straw Bale Check Dam



Wood Debris Structure



Natural Recovery Treatment

- The BAER Team should always consider **NATURAL RECOVERY**
- Don't just **DO** something...**STAND** there!

Road and Trail Treatment Examples

Debris Removal



Existing Drainage Problem



Road and Trail Treatments

Debris Removal



Protection and Safety Examples



- Signs
- Dissemination of information to employees/public through other methods
- Area closures

Protection and Safety Examples



- **Barricades**
- **Gates**
- **Area Closures**



Multi-Agency BAER Team



Skills Represented on the BAER Team

Team Leadership, Hydrology, Soil Science, Engineering, Recreation, Botany & Noxious Weeds, Wildlife & Fisheries, Archeology, GIS, Public Information, Liaison

Team Should Match the Size/Severity of the Incident and VARs

BAER Team – Expanded

Don't Work in a Vacuum!

Coordinate, Collaborate and Communicate with other Affected Organizations or Communities

- NRCS (EWP)
- BLM and NPS
- County (particularly OEM, Transportation, Parks and Open Space)
- State (Depts. of Forestry, Transportation)
- National Weather Service
- Affected Water Providers
- Media
- Public (community meetings, outreach)
- USFS (will generally provide additional assistance on watershed condition assessment for multi-jurisdictional fires which include NFS lands)

Collaboration and Communication

Phases

- Pre-Season
- Assessment (VARs and Risk, Info. Releases)
- Implementation
- Monitoring

Custom Design Collaboration – No “One Size Fits All”

- Create Win-Win Situations

USFS BAER Timeframes

- Conduct BAER Assessment within **1 week** of containment of fire.
- Implement BAER stabilization measures expeditiously and no later than **1 year** after containment of the fire
- Maintain, repair, or replace emergency treatments for up to **3 years** from containment of the fire

Transition: BAER Planning to Implementation

- ***Implementation***
- ***Monitor Treatment Effectiveness and Natural Recovery***
- ***Repair & Maintain---Up to 3 Years***
- ***Continue to Coordinate with Other Agencies, Partners, Affected Parties and Research Community***

Questions/Comments?

**Please hold questions and comments until
after next presentation.....**

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