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Spruce Beetle Epidemic and Aspen Decline Management Response

Final Record of Decision



Forest Service

Grand Mesa, Uncompahgre,
and Gunnison National Forests

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SPRUCE BEETLE EPIDEMIC AND ASPEN DECLINE MANAGEMENT RESPONSE

Draft Record of Decision

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Abstract: Due to the ongoing spruce beetle epidemic and Sudden Aspen Decline on the GMUG National Forests, the Grand Mesa, Uncompahgre and Gunnison (GMUG) National Forests propose the Spruce Beetle Epidemic and Aspen Decline Management Response (SBEADMR) to adaptively implement commercial and noncommercial vegetation management actions, informed by the 2011 Western Bark Beetle Strategy and guided by the GMUG National Forest Land and Resource Management Plan (LRMP), the National Cohesive Wildland Fire Management Strategy, and other national-level policy and guidance. The Final Environmental Impact Statement analyzes the effects of two action alternatives designed to address the purpose and need. A no action alternative was also analyzed. The area considered in the selected alternative encompasses approximately 207,600 acres in spruce, aspen, and spruce-aspen cover types throughout the GMUG National Forests. Project acres are distributed throughout Mesa, Delta, Gunnison, Hinsdale, Saguache, Ouray, San Miguel and Montrose counties.

BACKGROUND

Over the course of only a decade on the Grand Mesa, Uncompahgre and Gunnison (GMUG) National Forests, approximately 223,000 acres of spruce have been affected by spruce beetle and 229,000 acres of aspen by Sudden Aspen Decline (SAD). Affected acres constitute approximately one third of each of these cover types on the GMUG.

Furthermore, these disturbances are occurring in the context of a changing climate. Over the past 100 years, Southwestern Colorado temperatures have increased, and modeled climate projections for the region include warmer and longer frost-free summers, snowline moving up in elevation, earlier snowmelt, and consequently, a longer fire season.

Predicted warming may likely increase spruce beetle outbreaks in the future. Higher summer temperatures can foster spruce beetle outbreaks by allowing beetles to reproduce every year rather than every two years. Anticipated more frequent drought conditions make stands more vulnerable to insect and disease. Furthermore, climate change could lead to larger fires and possibly fire with more high-severity area than in previous decades. Though research to-date confirms that spruce-fir wildfire severity, including extent and frequency, is driven by climate, wildfire behavior in recently dead spruce-fir and areas with heavy fuel loadings can create more unpredictable fire behavior that is more hazardous to manage. Although fire regimes in spruce have not been affected as much by fire suppression from the past century as those in lower elevation, more xeric vegetation types (Sibold et al. 2006), comparisons of historic photos to present conditions do suggest changes in stand condition that would lead to higher-severity fires. Stands were more open, with much more diversity of sizes and ages; small openings were much more frequent. On a multi-stand or landscape scale in spruce/fir, there is more continuity of older age classes, or juxtaposition of older age classes against other older age classes, due to a decrease in fire disturbance on the landscape over the past century.

Spruce beetle and SAD are not new to our landscapes, although scientists are still determining the extent to which these current epidemics differ - and why - from historic patterns of insect and disease. Existing and projected environmental conditions support the need to develop and apply an adaptive management approach to address these forest health issues.

The GMUG forest managers have developed the Spruce Beetle Epidemic and Aspen Decline Management Response (SBEADMR) alternatives with the help of the public, partners, scientists and resource specialists to treat priority areas impacted by - and likely to be impacted by - insects and diseases in spruce and aspen forested ecotypes over the next decade.

A Final Environmental Impact Statement (FEIS) analyzing alternatives for the Spruce Beetle Epidemic and Aspen Decline Management Response (SBEADMR) on the Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG) is available for public review in the GMUG Supervisors' Office in Delta, Colorado and online at <http://www.fs.usda.gov/project/?project=42387>.

SCOPE AND SCALE OF ACTIONS

My decision is based on the SBEADMR FEIS. I have reviewed the project record and other documents prepared for public involvement in order to inform my decision. My decision is bound by existing laws, regulations, and policies, and previous strategic planning decisions that have set the parameters for how these lands can and should be managed.

In addition, the range of selected actions reflects the ability of the Forest to conduct these treatments based on likely funding and human resources that will be available for implementation. There are approximately 740,000 acres of spruce-fir, and 720,000 acres of aspen cover types on the GMUG. SBEADMR is focused on select stands affected by the spruce beetle epidemic and sudden aspen decline, including those that are considered threatened or at high risk. The area covered by this project includes seven percent of the spruce-fir, aspen, and spruce-aspen cover types on GMUG lands. Designated Wilderness Areas, Roadless Areas, or special area designations (Research Natural Areas, Botanical Areas, etc.), totaling approximately 725,000 acres of these cover types are excluded from consideration for treatments. Based on anticipated capacity to implement, this project will treat a maximum of 120,000 acres (up to 60,000 acres each of commercial and noncommercial treatments) over the next eight to twelve years. The annual program of work is dependent upon the level of allocated funding. Increased funding could result in an accelerated implementation timeline, but the total maximum acreage would remain the same. Treatment acres are distributed throughout Mesa, Delta, Gunnison, Hinsdale, Saguache, Ouray, San Miguel and Montrose counties.

PURPOSE & NEED

The purpose of the SBEADMR is to reduce the safety threats of falling, dead trees and of managing wildfires on the landscape (safety); improve the resiliency of stands at-risk of insect and disease (resiliency); and to treat affected stands via recovery of salvageable timber and subsequent re-establishment of desired forest conditions (recovery). Given the substantial mortality of spruce-fir and aspen forests on the GMUG over the past decade, the need for the project is to manage forest vegetation to bring current and foreseeable conditions closer to desired conditions on landscapes available for active management. On these landscapes, vegetation management would be used to help sustain or promote potential natural vegetation types. Desired conditions include a balance of habitat structural stages, tree species composition, and seral stage distributions that are appropriate for each vegetation type across the geographic areas of the GMUG. Furthermore, in the context of a changing climate conducive to more frequent and extensive wildfires in high elevation-forests, irrespective of tree condition¹, desired conditions for fire and fuels management include more locations from which firefighters can safely and effectively manage fires for values at risk and/or resource benefit.

¹ Agee, J. K. (2007). The severe weather wildfire – Too hot to handle? *Northwest Science* 71(1); Westerling, A.L., Hildalgo, H.G., Cayan, D.R. & Sweatnam, T.W. (2006). Warming and earlier spring increase Western U.S. forest wildfire activity. *Science*, 313 940-943.

The following goals elaborate on the stated purpose:

Public Safety

1. Remove hazard trees near roads, utility corridors, communication sites, dispersed recreation sites, developed campgrounds and other recreation sites, and within ski areas both within and outside the wildland urban interface (WUI).
2. Increase the extent of defensible space around values at risk.
3. Provide safer locations from which firefighters can initiate fire management actions.

Resiliency

1. Increase the forest's ability to respond to multiple and interacting stresses, including climate change, insect attack, drought or disease.
 - a. In healthier spruce-fir stands, promote regeneration and create multiple age classes of trees.
 - b. Where the beetle populations are endemic, minimize the spread of bark beetle from infected stands to neighboring healthy stands.
 - c. Promote aspen regeneration via coppice cutting and prescribed burns in live stands, with emphasis on those affected by Sudden Aspen Decline.

Recovery

1. Provide commercial forest products to local dependent industries at a level commensurate with the GMUG Land and Resource Management Plan (LRMP) direction and in harmony with other Plan goals (1983 GMUG LRMP, as amended, p. III-3).
2. Subsequent to salvage, treat fuels, prepare sites, and re-establish and maintain forest cover via replanting where seed sources are lacking.

The purpose and need is adapted from the 2011 Western Bark Beetle Strategy and furthers goals identified within the National Cohesive Wildland Fire Management Strategy².

DECISION

Based on the analysis of the purpose and need for action, the issues, the LRMP as amended, current policies and regulations, the analysis of alternatives contained in the FEIS, and public comments received, I have decided to implement Alternative 2.

Alternative 2 encompasses approximately 207,615 acres of potential treatment throughout the GMUG National Forests. A total of 190,014 of these acres are identified and analyzed as Priority Treatment Areas (PTAs), 17,388 acres are for potential hazard tree treatments outside of PTAs, and 213 acres are for potential new road disturbance outside of PTAs. Both PTAs and potential hazard tree treatments are located in spruce, aspen, and aspen-mix cover types. Of the PTA

² USDA Forest Service. (2011). *Western bark beetle strategy: Human safety, recovery and resiliency*. Retrieved from: <http://www.fs.fed.us/publications/bark-beetle/bark-beetle-strategy-appendices.pdf>; USDA & USDI. National Cohesive Wildland Fire Management Strategy website. Accessed online 6 May 2015. <http://www.forestsandrangelands.gov/strategy/>.

acres, approximately 59 percent (112,768 acres) are identified as commercially suitable timber acres, and 41 percent (77,246 acres) are identified for noncommercial treatment.

Although the PTAs are mapped with our best available data, there are nonetheless discrepancies and errors in the existing data. During implementation, actual treatment boundaries may vary and may include areas adjacent to mapped PTAs.

Within the PTAs and hazard tree acreage identified, I am approving a maximum of 60,000 acres of commercial treatment and a maximum of 60,000 acres of noncommercial treatment, for a total of 120,000 maximum treated acres. The SBEADMR PTAs comprise more area than the total acres I am approving for treatment so that the Forest has more flexibility to implement the SBEADMR adaptively in response to evolving on-the-ground conditions over the life of the project.

The potential treatment acres I am approving are distributed as follows throughout the GMUG’s six Geographic Areas:

Table 1. Summary of Decision Acres by Geographic Area

Geographic Area	Outside PTAs		Commercial PTA & Treatment Type					Noncommercial PTA & Tx Type			TOTALS by GA
	Hazard Trees	New Roads	Combination	Resiliency	Salvage	Adapted Future Action - All Salvage	Total Commercial PTA	Burn & Mechanical	Mechanical Only	Total Noncomm PTA	
Grand Mesa	1,075	19	8,808	6,163	486	15,457	15,457	14,548	830	15,378	31,929
Gunnison Basin North	3,696	49	6,897	6,663	1,825	15,385	15,385	21,560	0	21,560	40,691
Gunnison Basin South	4,794	44	11,334	4,419	12,061	27,815	27,815	7,954	0	7,954	40,607
North Fork Valley	2,258	25	3,356	5,025	544	8,925	8,925	7,176	864	8,039	19,247
San Juans	2,023	42	7,773	2,595	1,830	12,198	12,198	348	0	348	14,611
Uncompahgre Plateau	3,542	34	14,997	17,634	357	32,988	32,988	23,966	0	23,966	60,531
TREATMENT TOTALS	17,388	213	53,166	42,499	17,103	112,768	112,768	75,552	1,694	77,246	207,615

My decision also includes the following Adaptive Implementation components, as described in the FEIS:

- Triggers for Adaptive Implementation – In response to public comments, decision-making triggers from the Draft EIS are explicitly identified in the Final EIS. *FEIS, Chapter 2.*
- The Silvicultural Prescription Matrix identifies how different stands in different conditions will be treated to achieve management objectives. Detailed silvicultural prescriptions will be completed by a certified silviculturist by comparing current versus desired vegetative conditions. *FEIS, Appendix A.*

- Design features will be applied to treatments to minimize or avoid undesirable impacts to resources including, but not limited to, vegetation, soils, water, wildlife, recreation and cultural resources. The appropriate design features would be applied when surveys or management activities indicate a need to do so and are approved by the District Ranger. Implementation and monitoring of the appropriate design features is required. *FEIS, Appendix B.*
- The Pre-Treatment Checklist will document that all required surveys and compliance checks for an individual treatment have been completed. The checklist will also identify design features that would be applied to a particular treatment. For example, the presence of a Northern goshawk nest in a treatment area would trigger the avoidance/protective measures as specified in the design features of the FEIS. As such, the checklist would assure treatments are implemented consistent with the FEIS. The checklist will also be used to confirm compliance with the Forest Plan. *FEIS, Appendix C.*
- The Annual Interdisciplinary Team (IDT) & Management Review is a monitoring method that will provide documentation that treatments are implemented as planned. The IDT review, combined with monitoring results and Science Team input, will provide feedback to forest managers about how to best design and implement future treatments in the treatment area. The results of this monitoring, in conjunction with best available science, will identify relevant improvements to procedures or exemplary practices to benefit future treatments authorized by the SBEADMR Record of Decision. *FEIS, Appendix D.*
- The Public Engagement in Adaptive Implementation Framework outlines the implementation and public participation opportunities throughout the life of the SBEADMR project. The primary goal is to provide ongoing opportunities for the public to identify concerns, to participate in monitoring, and to identify potential solutions. The framework also addresses ongoing efforts to share and integrate updated scientific information. *FEIS, Appendix E.*

RATIONALE FOR MY DECISION

As I considered the alternatives and their effects, I heavily weighed the need for our response to be adaptive to changing forest conditions. One-third of spruce and aspen on the GMUG is currently affected by insect and disease; mortality varies, but especially in the southern portion of the GMUG, spruce mortality approaches 100 percent. Prior to the SBEADMR planning process, the Gunnison District completed an Environmental Assessment for resiliency treatments (La Garita EA, 2013). When the District started their planning process, spruce stands within the project area were alive and suitable for resiliency cuts. When they neared the end of their planning process, the stands were dead and only suitable for salvage. These rapidly changing conditions clearly outpaced our conventional planning and decision-making approach of

individually considering each treatment. Furthermore, in order to efficiently plan and implement such projects, we certainly needed to modify our analysis approach such that we considered different treatments for different stand conditions that could occur; the effects of salvaging a mostly dead stand are different from the effects of group selection within a mostly green stand. To account for continually changing stand conditions in the FEIS, we considered appropriate treatments and effects given existing spruce conditions as well as potential treatments in a full-mortality scenario.

Because more acres were considered for potential treatment in Alternative 2, the Forest has more flexibility to implement the SBEADMR adaptively in response to evolving on-the-ground conditions over the life of the project. For example, because aerial survey data on spruce beetle mortality lags at least one year, we have no doubt prioritized areas that may have a small window of time for treatment. Priority spruce stands that are currently dead may only be commercially salvageable for approximately half of the SBEADMR implementation timeframe. In the case of aspen, some prioritized stands may currently exceed 50 percent overstory mortality or may exceed 50 percent overstory mortality before we can treat them; after this threshold, other objectives, such as retaining aspen in the WUI as a natural fuel break, must weigh in to warrant attempting regeneration treatments. Given this, it is reasonable to expect that some stands in our PTAs will become infeasible for treatment during the implementation timeframe of SBEADMR due to economic or environmental conditions. By considering more acres than we will actually treat, we have more opportunity to adapt and implement treatments to highest priority conditions. To maximize the efficiency of our efforts to-date, it is prudent to select Alternative 2.

While I considered Alternative 3 to be responsive to public requests for a public safety-only alternative, analysis indicated that the beneficial effects from concentrating treatments in the WUI were minimal. Best available science indicates that multiple locations for strategic fire management inside and outside the WUI are needed for safety and fire management objectives in the event of severe wildfire in spruce-fir on the GMUG.

Some members of the public are concerned that my decision will interfere with natural successional processes. I have acknowledged the environmental trade-offs of my decision, and by design, the project will affect ongoing successional processes in the acreages we treat. Yet in accordance with the Multiple-Use Sustained Yield Act of 1960, the Organic Act of 1897, the National Forest Management Act of 1976, and many other laws and policies, the Forest Service is directed to *actively* manage the National Forest System lands where appropriate and feasible to do so. In the context of landscape-scale change, I am confident that our limited active management capacity needs to be targeted to those priority areas where multiple management objectives can be achieved at the human (infrastructure), stand- and/or watershed-scale.

PUBLIC PARTICIPATION

Working with stakeholders and incorporating their ideas and comments has been crucial to making this decision. Those who have participated in the SBEADMR planning process know

well that Forest personnel and stakeholders have invested an exhaustive amount of time and effort in public participation for this planning process. As described below, preliminary discussions with the public in 2012 and 2013 led to our initial proposed action in the Notice of Intent on July 31, 2013. The proposal was provided to the public and other agencies for comment during scoping, August 2, 2013, to September 1, 2013. Over the following two and a half years, the Forest participated in a variety of public meetings, field trips, and workshops regarding SBEADMR. The time and effort we have committed to a thorough public participation process is evidenced not only by the number of public meetings but also in the quality of our revised proposal, analysis, and implementation process. I discuss primary results of this involvement below, but a more thorough documentation of the public participation is noted in the FEIS, Chapter 1, Public Participation.

In addition to more specific, conventional issues the public raised during the planning process, I have highlighted three project aspects in which public involvement has most influenced our work.

Meaningful Communication

In several initial meetings and conversations with the public throughout 2012 and into 2013, we heard strong concerns regarding the scale of the spruce beetle epidemic and the dying aspen stands. The public understood the magnitude of these landscape changes, and generally they wanted the Forest Service to do what it could to address them. There was support for big, bold action. The 2011 Western Bark Beetle Strategy provided tangible social, economic, and ecological goals and objectives that could be accomplished with active management during and after a beetle epidemic. This context was the springboard for our initial SBEADMR scoping letter which embodied a straightforward proposal that reflected hours of public meetings and conversations throughout our communities.

As is often the case with natural resource management, the case for active management is complex and controversial. Some members of the public questioned what SBEADMR proposed to do and why. To those new to the conversation around the spruce beetle epidemic, the proposal seemed too large and too flexible in scope and scale. Simple terminology in the goals and objectives, without more detailed, supporting context, seemed to obscure the multi-faceted intent of the project. “Recovery treatments” in dead forest stands implied pure ecological restoration to some, while to others it implied management for economic benefit. In SBEADMR and the Western Bark Beetle Strategy, the term explicitly means management for both economic and ecological objectives, as can be expected from a multiple-use agency with a mandate to actively manage forests. “Treatments” - although a generalized term for any kind of active vegetation management - in the context of diseased forests, understandably connotes intent to “treat the disease”. Supporters of management want us to “treat/stop” the disease, and others point out that we cannot; the scale is too vast, and the nature of the beetle activity so wide-ranging, that the Forest cannot “stop” the epidemic.

These examples illustrated the continued need to establish (and then maintain) a shared understanding of terms so that the project’s intent would be more clear. For both those

supporting and opposing a management response, shared understanding would enable better public participation in the planning process. Clarity would bring more trust. We continued forward in drafting the alternatives with this in mind. In subsequent public meetings in 2014, concerns were expressed that for large-scale projects such as SBEADMR, we needed to slow down and create opportunities for shared learning about the issues at hand.

We agreed and opted to sponsor a comprehensive science workshop in the fall of 2014. The non-profit Public Lands Partnership convened scientists from throughout the region to participate in a number of panels. Panel members discussed a wide range of issues related to spruce and aspen forests – both throughout history and in the context of projected climate change. Our SBEADMR IDT spent the next several months incorporating workshop summaries into their analysis, ensuring that the project was based on the best available science, associated project impacts were analyzed according to the best available science, and that conflicting views were considered.

Public participants at the science workshop identified interest in continuing to meet and build upon the shared learning, and to dialogue with the Forest Service about the project intent and implementation components. The “Working Group” met several times throughout the following year and significantly contributed to collaborative learning. As the Forest engaged in more detailed SBEADMR analysis, the Working Group provided a forum for IDT members to answer technical questions with increasing clarity and specificity. As the Forest Service IDT honed their understanding of the issues at hand in the project, and participants in the Working Group continued to request it, we maintained an evolving shared understanding.

The risk of wildfire in spruce beetle stands is an excellent example of one such issue. In the scoping letter, our purpose and need included...”to reduce the safety threat...of large-scale wildfires.” This messaging implied a connection between dead spruce-fir and the risk of large-scale wildfires, a connection that is, of course, complex. The science workshop panelists presented that to date, research across different vegetation types illustrates that beetle-killed trees do not burn more frequently. However, the rate that wildfire spreads appears to be higher, the possibility for spotting is initially higher, and the behavior is less predictable. More unpredictable fire behavior poses consequences for our wildland firefighters and our wildfire management choices. Finally, our IDT analysis added further details to the issue of fire risk in beetle-affected stands. We incorporated and communicated a more sophisticated understanding in the purpose and need for the Final EIS, and a clearer more realistic approach to what we can accomplish with active management:

...in the context of a changing climate conducive to more frequent and extensive wildfires in forests at high elevation irrespective of tree condition...desired conditions for fire and fuels management include more locations across the landscape from which firefighters can safely and effectively manage or suppress fires for values at risk and/or resource benefit (FEIS, page 22).

Our planning process has underscored how important it is that we, as public land stewards communicate meaningfully - as clearly and accurately as possible, acknowledging uncertainties

and also the limits of what the agency can affect. For those tracking the evolution of SBEADMR, I am confident that we demonstrated a commitment to this value throughout the planning process, the EIS, and will continue to do so throughout our implementation.

Focus

With initial support for broad aggressive action, the Draft EIS (DEIS) proposed action featured a set of potential treatments totaling 120,000 acres, of both commercial and noncommercial activities, to be conducted within opportunity areas totaling more than 700,000 GMUG acres of the spruce-fir and aspen cover types outside of Wilderness and Colorado Roadless Areas and other administrative designations. This was a very large area to analyze for potential treatment, despite a total treatment cap of 120,000 acres. We created a solid framework for treatment implementation, including a robust set of design features, compliance and effectiveness monitoring, and continued public participation. In addition, we established a partnership with Colorado State University and the Rocky Mountain Research Station to ensure a high degree of scientific input throughout. Nevertheless, many members of the public advocated for multiple additional, smaller-scale, more-detailed National Environmental Policy Act (NEPA) analyses, and/or more focus in the SBEADMR analysis.

We responded to public comment on the DEIS by investing in a multi-month process to develop Priority Treatment Areas (PTAs) from the original broader opportunity areas. Using ideas from stakeholders, these PTAs were developed in partnership with the SBEADMR Science Team through a landscape-scale GIS analysis. After refining the original area to approximately one-half the extent of DEIS opportunity areas, we incorporated our specialists' working knowledge of the ground to fine-tune and validate the PTAs based on real-world conditions. For commercial treatments, this resulted in a change from the original 164,000-278,000 acres (varies by alternative) of potential commercial treatment areas analyzed to the final subset of 46,000-113,000 acres analyzed as PTAs. For noncommercial treatments, this resulted in a change from the original 101,000-132,000 acres of potential noncommercial treatment areas analyzed to the final subset of 56,000-77,000 acres analyzed as PTAs. The ratio of acres analyzed to total acres treated now ranges from a maximum of one: two in Alternative 2 to one: one in Alternative 3. This effort enabled more thorough, quantitative upfront effects analysis and disclosure in the FEIS.

With refined PTAs, we were then able to respond to an associated public concern regarding the location of proposed new road construction. By mapping a proposed road system for SBEADMR implementation, we were also able to more thoroughly, quantitatively analyze and disclose effects in our environmental analysis. For Alternative 2, this resulted in a change from the original maximum of 320 miles of road construction proposed (both temporary and designed) to the final proposal of a maximum of 178 miles of new road construction. For Alternative 3, the total proposed road construction remained the same at 80 miles.

This change has excluded some viable and worthwhile treatment areas from this decision. As conditions, priorities, and operational variables change over time, some areas outside of PTAs may become a higher priority to treat. In such cases, we will need to conduct additional

environmental analysis and public participation processes, then make new project decisions with the most appropriate available analysis instrument (CE, EA, EIS).

Implementation Process

The GMUG National Forests have a history of extensive collaborative/participatory work with our public, most recently with the Collaborative Forest Landscape Restoration Partnership (CFLRP) on the Uncompahgre Plateau. Many members of the public pointed to our CFLRP “model” of public participation as one that could well serve SBEADMR, with key differences. There was support for an annual stakeholder meeting to review progress and planned activities, and for annual treatment site visits to identify more specific implementation concerns and review monitoring results. Some participants indicated this framework would limit the opportunity for the wider, non-local public to engage and influence implementation, and would require local stakeholders to be available for such annual events.

We heard these concerns and have responded by including an additional, specific step in Appendix E: a public notice and comment period for individual SBEADMR treatments. Publication of the updated treatment list, status of implementation activities, refined treatment plans and maps will provide a broad audience of public participants an opportunity to stay informed of and comment on treatment implementation priorities, on-the-ground treatment design, and monitoring activities. This will be an additional opportunity benefiting those participants who are not available to participate in field trips and meetings. The review and comment period will run for 30 calendar days. Comments will be considered by the implementation teams and responsible official and used to adjust treatment plans and to further resolve issues, as warranted. These comments will also assist GMUG staff in determining the adequacy of the original SBEADMR effects analysis and of the original project components for each successive set of treatments.

Issues & Additional Comments

Aside from the areas described above, the public identified a number of additional issues and concerns that were considered throughout the planning process. The planning process identified the following issues:

1. Roads can cause myriad effects, including habitat fragmentation, sediment input into streams and riparian areas, decreased water quality, and detrimental effects to soils, vegetation, and wildlife, as well as possibly serving as vectors for increased occurrences of invasive or noxious weeds and non-native plant species. Construction of new roads should be reduced or avoided.
2. Spruce resiliency treatments may not be effective at reducing the spread of insect and disease and may actually exacerbate the problem by decreasing the wind firmness of the stand. Existing and potential regeneration would also be impacted by resiliency treatments.
3. Aspen decline is a natural successional process and should not be actively managed. Unaffected aspen stands should not be actively managed.

4. Utilization of commercially valuable dead and dying timber should be maximized over a larger area, with consideration of impacts to local economics and reforestation efforts.
5. Treatment areas should be limited to those needed to improve public safety.

Regarding the issue of road impacts, the DEIS analysis disclosed impacts of the potential new road construction, and the FEIS discloses more specific impacts based on the likely locations of potential new construction. During implementation, FS staff will confirm the precise location and extent of new temporary road construction. Though we anticipate minor construction layout corrections during implementation, maximum construction and decommissioning will remain within the bounds analyzed in the Final EIS. In response to public concerns regarding the potential impacts of retaining a portion of new construction as permanent system roads, all of the road construction for SBEADMR will be decommissioned within five years of the close of the associated timber sale. The FEIS analysis disclosed that while impacts from road construction will undoubtedly occur during SBEADMR implementation, such impacts should be of short-term duration. Furthermore, the proposed road system for SBEADMR implementation includes a number of existing, non-system routes. Reconstructing these for temporary project use reduces the need for new construction.

The IDT considered the issue regarding the efficacy of spruce resiliency treatments. Bark beetle epidemics cannot be prevented or halted. Resiliency treatments are not intended to accomplish complete *resistance* or immunization to a stand. They are intended to actively promote age class, structural, and even tree species diversity across landscapes, and to better enable stands to retain structure and function in the long-term, despite environmental stressors. Resulting wind firmness and impacts to regeneration are addressed in this decision through the design features in the FEIS, Appendix B.

Regarding the need to treat Sudden Aspen Decline versus allow a natural process to play out, a decade of SBEADMR implementation can only expect to treat less than 10 percent of the aspen cover type on the GMUG (60,000 acres of the 720,000 acres of aspen). Therefore, the vast majority of the landscape would continue to be dominated by natural processes. Stimulating a younger age class of aspen will produce more resilience to future drought and diseases such as SAD, and a higher likelihood of stands being maintained into the future. Maintenance of aspen in the WUI is desirable because it is naturally more fire-resistant than other types of vegetation.

Regarding maximizing the utilization of dead and dying timber, the size of the analysis area did not directly lead to projected higher timber harvest volumes. At the onset of this project, the scope for salvage harvest was limited to those acres identified as suitable for timber production. The primary reason for this is that the Forest has a limited capacity of personnel and funding to implement these activities. Efforts should be focused on areas where reforestation and timber production can be best assured. Salvage only management would maximize timber yields in the near-term, and this was analyzed in the Draft EIS as Alternative 4. However, this alternative did not meet the purpose and need to also conduct resiliency treatments, which inherently yield lower timber volumes than salvage treatments.

Finally, the IDT considered the issue that only safety-related treatments should be implemented, with incidental economic and/or ecological objectives. This was considered in Alternative 3 by limiting the potential treatment area to the wildland urban interface. In the comments on the Draft EIS, I heard further clarification from members of the public that safety treatments should only be conducted within defensible space of infrastructure, or up to 1000 feet. Others wanted only hazard tree treatments, and then only within a buffer of one-tree height from infrastructure. While these are critical areas to address hazard trees and immediate fire hazards, limiting treatments to such a small area would not adequately address the identified need for improved public safety. This rationale is further discussed in the FEIS, Chapter 2, Alternatives Considered but Dismissed from Detailed Analysis.

During the comment period, the public expressed concerns about the potential adverse effects of SBEADMR on existing and future spruce regeneration, on soils from compaction and pile burn scars, and on habitat effectiveness for big game. Some questioned the need for treatments in aspen with a conifer component and noted that grazing could impact aspen regeneration. The public expressed concerns about the potential overlap of SBEADMR with the Continental Divide National Scenic Trail and the limitations of analyzing economic impacts over a very broad, 22-county area. With respect to lynx, the public expressed concern regarding impacts to the habitat of its prey – snowshoe hare and red squirrel; to habitat connectivity; to denning habitat. Others expressed concern about the stringency of project design features to minimize impacts to lynx. The IDT carefully considered these concerns in the Response to Public Comments (FEIS Appendix H) and have, in some cases, added to their analyses in the FEIS to ensure these potential effects have been adequately explored, considered and disclosed. Some comments resulted in the addition and/or clarification of project design features.

Some expressed procedural concerns that the Forest Service, by considering the same maximum amount of treatment for each action alternative, had not considered a reasonable range of alternatives in the Draft EIS, and that the Forest Service was proposing an action that could exceed its Allowable Sale Quantity (ASQ) for timber. Regarding the range of alternatives, an adequate range of alternatives is not merely established by varying the measurable quantity of the action, but also by varying – as the action alternatives did – the objectives and locations of such actions. Regarding the ASQ, as provided for in the National Forest Management Act, Section 13, Limitations on Timber Removal, Subsection b, “Nothing in subsection (a) of this section shall prohibit the Secretary from salvage or sanitation harvesting of timber stands which are substantially damaged by fire, windthrow, or other catastrophe, or which are in imminent danger from insect or disease attack. The Secretary may either substitute such timber for timber that would otherwise be sold under the plan or, if not feasible, sell such timber over and above the plan volume.” Both of these concerns are addressed in Appendix H, Response to Comments.

Several were concerned about the adequacy of impacts analysis as required by NEPA given uncertain treatment locations. As a result, as discussed above, the IDT and Science Team identified a more narrow set of Priority Treatment Areas, as well as likely locations for the associated road system. This was one of the main areas of public influence on the project’s evolution, as noted above. The public also raised concerns about the lack of decision-making

triggers for adaptive management during implementation. As a result, the IDT worked to make such triggers from the DEIS more structured and explicit (See the FEIS, Chapter 2). The public expressed support for the Forest Service to establish a formal stakeholder collaborative to assist the Forest Service with adaptive implementation. While the Forest cannot commit to creating a Federal Advisory Committee due to time and funding it takes to establish one and implement one, a robust process for continued public participation in implementation is outlined in detail in Appendix E. As noted above, Appendix E was heavily influenced by the public.

BALANCE BETWEEN ACTION & IMPACTS

My decision takes into consideration the balance between action and associated resource impacts. Among other impacts analyzed in the FEIS, my decision will authorize commercial timber harvest along and in the vicinity of approximately 15 miles of the Continental Divide National Scenic Trail (CDNST). Implementation of the agency preferred alternative would not foreclose future reroute options/prejudice the ability to reroute the CDNST to a desirable location. The existing Recreation Opportunity Spectrum (ROS) setting in *all* treatment areas will be maintained, as the proposed construction and decommissioning of temporary roads for administrative use does not permit public motorized use nor additions to the Forest road system. Furthermore, scenic resources would not be permanently impacted.

As noted in the FEIS, there will be short-term impacts from the proposed treatments on scenic resources both along the CDNST, along reasonably foreseeable reroutes, and in areas that *may* be considered for reroutes in the future, such as reroutes along the Divide from the Tank 7 cutoff area. Although we cannot speculate where all future reroutes may be located and, therefore, cannot *currently* apply design features specific to the CDNST and its reasonably foreseeable reroutes in such undetermined locations, other design features will have the effect of minimizing the impacts to scenic resources in such areas. For example, due to required design features to protect lynx habitat, impacts to the forest understory must be minimized; the effect on scenic quality is comparable to components of a design feature to protect scenic resources (SVR-5). In the long-term, the removal of the dead forest overstory may improve scenic resources over current conditions, initially with more open vistas and aspen regrowth and eventually via a release of conifer regeneration. During the course of the SBEADMR project implementation, if additional potential reroutes are identified for consideration in agency planning documents (projects noticed or being scoped), the design features specific to the CDNST and its reasonably foreseeable reroutes would be applied to such potential reroutes.

I have also considered the project's impacts to Canada lynx. The FEIS analysis concluded that in most cases, the project's maximum treatments will not exceed Forest-wide and Lynx Analysis Unit (LAU) disturbance caps. However, in accordance with the Southern Rockies Lynx Amendment (SRLA) and identified in our Decision-Making Triggers (FEIS Chapter 2), we will continue to annually track SBEADMR implementation and report it to the U.S. Fish & Wildlife Service. The FEIS concluded that in the high-spruce mortality scenario, were we to salvage all identified spruce acres, more than 15 percent of two LAUs would be converted to a stand initiation structural stage over a ten-year period (SRLA Standard Veg S2). These are the Alpine LAU in the San Juan Geographic Area and Spring Creek LAU in the Uncompahgre Plateau

Geographic Area. When we considered our proposed treatments in combination with past, present, and foreseeable management actions, as well as past wildfire and other natural disturbances, there are two LAU in which treatment of all identified acres - were we to treat all - would exceed the SRLA Standard Veg S1. While retaining the flexibility to complete actual treatment acres from within the larger analyzed area, the analysis of maximum potential impacts to lynx habitat underscored the importance of our tracking mechanisms to demonstrate continued compliance with the SRLA throughout implementation.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The CEQ regulations (40 CFR 1505.2(b)) require that the ROD identify the alternative(s) that could be considered environmentally preferable. When considered within the geographic scope of the analysis, the No Action Alternative is the environmentally preferable alternative, as the No Action Alternative would result in the least amount of environmental impacts. While the No Action Alternative is the environmentally preferred alternative, my Selected Alternative adopts all practical means to avoid or minimize environmental effects to National Forest System lands (40 CFR 1505.2(c)).

OTHER ALTERNATIVES CONSIDERED

In addition to the selected alternative, I considered two other alternatives in detail, which are discussed below. A more detailed comparison of these alternatives can be found in the FEIS on pages 60-63, 67-72. I also considered four additional alternatives but eliminated them from detailed study. A discussion of these alternatives can be found in the FEIS on pages 64-67.

Alternative 1 – No Action

Under the No Action Alternative, current management plans would continue to guide management of the project area. The No Action Alternative assumes that no implementation of the proposed action or the other action alternative would take place within the project area. This alternative represents no attempt to actively respond to the issues, purpose and need for action, or concerns identified during public scoping for this project. There would be no effort to modify existing conditions, unless authorized by other decisions. Other management actions including vegetation management projects are authorized and would likely continue to be authorized within the project area and timeframes analyzed in this EIS. These other projects would proceed under separate NEPA analyses.

Alternative 3 – Wildland Urban Interface Focus

Alternative 3 shifted the geographic extent of treatments exclusively to 1) the wildland urban interface (WUI) and 2) outside the WUI, proximal to additional human infrastructure. All treatment types and methods would remain the same as in Alternative 2, but would be limited to the identified geographic extent. Alternative 3 analyzed 127,023 acres for treatment. 102,159 of these acres are identified and analyzed as Priority Treatment Areas (PTAs), 24,695 acres as potential hazard tree treatments outside of PTAs, and 169 acres are for potential new road

disturbance outside of PTAs. Of the PTA acres, approximately 45 percent (45,967) are identified as commercially suitable timber acres, and 55 percent (56,192) are identified for noncommercial treatment. Both noncommercial and commercial PTAs in Alternative 3 total less than 60,000 acres, so treatments of hazard trees may or may not make up the difference. Depending on the extent of hazard trees within the identified roadside corridors over the life of the project, fewer total acres may be treated in Alternative 3, ranging from ~46,000-60,000 acres commercially to 56,192-60,000 acres non-commercially.

LEGAL & REGULATORY COMPLIANCE

Forest Plan Consistency

This decision is consistent with the Grand Mesa, Uncompahgre, and Gunnison National Forests Land and Resource Management Plan (1983, as amended).

Findings Required by Other Laws & Regulations

National Environmental Policy Act (NEPA)

NEPA requires that Federal agencies prepare detailed statements on proposed actions that significantly affect the quality of the human environment to provide decision makers with a detailed accounting of the likely environmental effects of a proposed action prior to its adoption, and to inform the public of, and allow comment on, such effects. For this project, resource specialists have compiled and utilized information relevant to the effects of the alternatives. All DEIS substantive comments that have been summarized and responded to in Appendix H of the FEIS.

I find that the environmental analysis and public involvement process complies with each of the major elements of the requirements set forth by the Council for Environmental Quality for implementing NEPA (40 CFR 1500-1508).

National Forest Management Act (NFMA)

The National Forest Management Act (16 U.S.C. 1604) and the Multiple-Use Sustained-Yield Act of 1960 (16 U.S.C. 528–531) give direction to National Forests to develop National Forest Land and Resource Management Plans that (A) ensure consideration of the economic and environmental aspects of various systems of renewable resource management, including the related systems of silviculture and protection of forest resources, to provide for outdoor recreation (including wilderness), range, timber, watershed, wildlife, and fish; (B) provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives, and for steps to be taken to preserve the diversity of tree species. As set forth by these Acts, the GMUG LRMP, as amended, sets specific standards and guidelines which are to be followed during project-level planning and implementation. By the inclusion of design features as part of my decision to minimize or eliminate environmental effects from this project, as well as the inclusion of standards and

guidelines from the GMUG LRMP, as amended, to design this project, I have determined this project complies with this Act.

Endangered Species Act (ESA) of 1973

The Endangered Species Act (ESA) (16 USC 1531 et seq.) requires that any action authorized by a Federal agency does not result in a determination of likely to jeopardize the continued existence of a threatened or endangered species, or result in the destruction or adverse modification of the critical habitat of such species.

A Biological Assessment (BA) was completed for all threatened, endangered and proposed species and Critical Habitat known or suspected to occur in the project area. These species include North American wolverine, Canada lynx, Gunnison sage-grouse, and Greenback cutthroat trout. The BA concluded the agency preferred alternative will not jeopardize the wolverine since habitat is considered unoccupied and the Fish and Wildlife Service withdrew the proposed Rule in 2014 to list a Distinct Population Segment (DPS) occurring in the contiguous U.S. as threatened. The Preferred Alternative may affect, but is not likely to adversely affect Gunnison sage-grouse and greenback cutthroat trout. Critical Habitat for Gunnison sage-grouse will not be adversely modified. Management actions are likely to adversely affect Canada lynx.

The USDI Fish and Wildlife Service (FWS) issued a Biological Opinion (BO) in response to the BA on June 2, 2016 (reference: BO # ES/LK-6-CO-08-F-024-GJ016). The BO concurred with the findings of the BA. The BO also tiered to the BO issued for the Southern Rockies Lynx Amendment (SRLA) in 2008 (reference: BO # ES/LK-6-CO-08-F-024 GJ) and concluded that the agency preferred action falls within the framework of the SRLA and therefore no additional effects leading to take of lynx will occur. Reporting to FWS will occur annually to document compliance of the SRLA.

Clean Water Act (CWA), Executive Order 11990-Wetlands, Executive Order 11988 - Floodplains

The watershed and soils analysis concludes that there will likely be some minor, short-term, localized adverse effects to water quality from selected alternative activities. Design features, including soil and water conservation practices (FEIS, Appendix B), will minimize or mitigate most adverse effects to water quality or riparian areas at the site-specific or localized scale. The selected alternative protects floodplains and water quality adjacent to wetlands and is consistent with executive order direction

Clean Air Act of 1970 (CAA)

The CAA provides for the protection and enhancement of the nation's air resources. No exceedance of the federal and state ambient air quality standards is expected to result from any of the alternatives (FEIS Chapter 3 Air Quality Section). Planned Ignition Fire permits will be obtained from the Colorado Department of Public Health and the Environment (CDPHE) prior to conducting prescribed burns. Fire managers are required to burn only when authorized by the CDPHE and must meet numerous smoke permit requirements including estimates of smoke production, mitigation measures, notification of the public and CDPHE, ignition timing,

ventilation objectives (mixing heights and transport winds), smoke contingency planning and implementation of best management practices. Burning may not occur when an ozone alert is in effect for the area of the burn. For these reasons, I find that this project complies with the CAA.

National Historic Preservation Act (NHPA) of 1966

Section 106 requires federal agencies to consider the potential effects of a Preferred Alternative on historic, architectural, or archaeological resources that are eligible for inclusion on the National Register of Historic Places and to afford the President's Advisory Council on Historic Preservation an opportunity to comment. Section 110 requires federal agencies to identify, evaluate, inventory, and protect National Register of Historic Places resources on properties they control. Potential impacts to archaeological and historic resources were evaluated in compliance with Section 106.

In accordance with the 2015 Regional Programmatic Agreement for Bark Beetle, Hazardous Fuel and Tree Reduction Programs with Amendments (PA), a cultural resource identification effort was conducted for the Area of Potential Effect by a professional archaeologist. The goal was to identify cultural resources at risk of adverse effects from the proposed actions. No direct effects to cultural resources with archaeological values are anticipated from implementation of my decision. Specific protection and management measures derived from the PA would be applied to archaeological sites as project design features (FEIS Appendix B). With the application of the prescribed design features, the proposed treatments will have no direct or indirect effects on cultural resources. Furthermore, under the S.106 Notification consultation with the Colorado State Historic Preservation Officer, SBEADMR will have no adverse effect on historic properties.

Because of the design features and the project's compliance with the PA, I find my decision would be in compliance with historic preservation law, policy and regulation (FEIS Chapter 3 Cultural Resources Section).

Environmental Justice and Civil Rights

Executive order 12898 Executive Order 12898 on environmental justice requires federal agencies to identify and address any disproportionately high and adverse human health or environmental effects on minority and low income populations. The socioeconomic analysis (FEIS, Chapter 3) confirmed that the actions proposed in the ROD do not discriminate or disproportionately affect minority or low income populations.

ADMINISTRATIVE REVIEW – SUMMARY OF OBJECTION PROCESS

The proposed decision was subject to a pre-decisional objection process pursuant to 36 CFR 218, Subparts A and B. The public filed eight objections during the objection filing period (February 5, 2016 - March 21, 2016). During the subsequent objection response period, the reviewing officer met with those objectors who requested meetings. The reviewing officer, upon reviewing the objections and the project record, provided direction to the deciding official in response letters dated May 5, 2016. Based on the reviewing officer's responses, four of the eight objectors formally withdrew their objections. The reviewing officer confirmed that the project did not

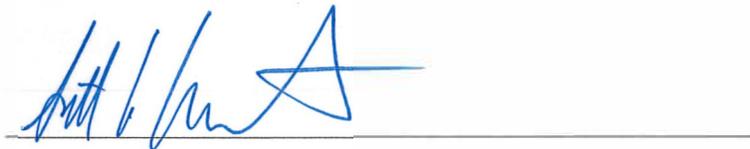
violate law, regulation, or policy, but instructed the deciding officer to: better clarify specific aspects of the proposed action, the effects analysis, design features, and implementation process; to document additional effects; to incorporate an additional design feature. Per these instructions, clarifications, corrections, and additions are provided in the Final EIS and Final ROD.

IMPLEMENTATION DATE

Per the requirements of 40 CFR 1506.10, the decision may be signed and implemented 30 days after the Federal Register Notice of Availability of the EIS is published. The Notice of Availability of the SBEADMR FEIS was published in the *Federal Register* on June 3, 2016.

CONTACT

This document, the FEIS, maps, the objection process record, and implementation documents may be downloaded from the web at <http://www.fs.usda.gov/project/?project=42387>. If you need copies of documents in another format or for additional information concerning this decision, please contact: Samantha Staley, Forest Planner, GMUG National Forests, samanthajstaley@fs.fed.us or (970) 874-6666.



Scott G. Armentrout
Forest Supervisor
Grand Mesa, Uncompahgre, & Gunnison National Forests

July 5, 2016
Date