

DECISION MEMO

Thunderbug Thinning Project

USDA Forest Service, Intermountain Region, Uinta and Wasatch-Cache National Forest
Mountain View and Evanston Ranger District
Uinta County, Wyoming
(Sections 5, 6, 7, and 8, T12N, R115W, and Section 12, T12N, R116W, 6th P.M.)

I. DECISION TO BE IMPLEMENTED

A. Description of Decision

My decision is to remove insect-killed and infested lodgepole pine trees and thin remaining trees in the lower Gilbert Creek drainage near the Forest Boundary, about 17 miles south of Mountain View, Wyoming.

My decision includes:

1. Felling and removal of merchantable dead trees and thinning of green trees using a small commercial timber sale. An estimated average of 150 to 300 (dependent on average diameter) of the largest live trees per acre with the best crowns will be retained where beetles have not killed all of the trees in a patch. This will result in a basal area of remaining live trees of about 80 ft²/acre. The timber volume will be about 1 million board feet.
2. Tops and limbs will be removed with merchantable pieces or placed on skid trails and trampled by a log forwarding machine. Landing slash will be piled and burned.
3. The total area treated is estimated to be 240 acres.
4. Several short, temporary spur roads to log landings will be constructed. These will not exceed a combined total of ½ mile in length and log landings and spur roads will be scarified, seeded, and covered with woody debris following completion of use.
5. A buffer around a goshawk nest site will be maintained in accordance with the Conservation Strategy and Agreement for Management of Northern Goshawk Habitat in Utah (Jauregui et al 2006).
6. Timber harvest activities will not occur in units 7, 8 or 9 between March 1 and August 15th if the goshawk nest is active (Jauregui et al 2006).
7. No disturbance of goshawk nest activities will be allowed. Operations will be suspended or moved if the Timber Sale Contracting Officer, in consultation with the District Wildlife Biologist determines that they are disturbing nesting activity (Jauregui et al 2006).
8. At least 30 large dead trees per 10 acres will be retained.
9. No mechanized harvesting equipment will be allowed within 50 feet of a stream channel adjacent to unit 6 (Cowley 2006).
10. Potential effects on soil and water resources will be minimized by incorporating the following practices (USDA FS 1988.) into the project design (Condrat and Flood 2007):
 - Ground based activities would be restricted to dry or frozen ground conditions generally between June 15 and December 30. Operations outside of the specified conditions may only occur on a case-by-case basis following consultation with a qualified soils specialist.
 - Stay on designated skid trails.
 - Temporary roads would avoid wetlands.
 - Leave adequate amounts of slash to protect ground surface from erosion.
 - Locating the temporary harvest access roads to avoid steep slope areas adjacent to any ponded depressions.

- Obliteration of temporary access roads upon completion of their intended use. Incorporation of these practices into the project design will effectively limit the amount of detrimental soil disturbance that occurs as a result of activities proposed in this project. Post project soil quality will meet Guideline G4 of the WCNF revised forest plan.

11. Monitoring (Jauregui et al 2006):

- In the spring prior to operations determine if the nest is active. If an alternate nest is active, the timber sale Contracting Officer, in consultation with the District Wildlife Biologist, will re-evaluate timing and unit locations to prevent adverse effects on the nest area.
- Monitor the nest at the onset of harvest operations to determine if ongoing operations are affecting nesting behavior and again if operations change in a manner that might affect nesting behavior.

Literature cited is included in Appendix A. Appendix B contains a map displaying the locations where salvage and thinning treatment will take place. Soil and Water Conservation Practices identified in the Revised Wasatch-Cache Forest Plan will be followed during implementation of these treatments.

B. Purpose of Decision

The purpose and need for the Thunderbug Thinning project is to salvage beetle killed lodgepole pine and reduce susceptibility of remaining trees to future mountain pine beetle infestation by thinning from below, leaving a forest stand of the largest uninfested trees with the healthiest crowns.

Although the timber removed in this project will have relatively low value (dead sawtimber and post and pole material) it will be utilized by local industry and help to provide jobs in local communities.

Mountain pine beetle populations have developed in many lower elevation lodgepole pine stands over the last four years including those in the Thunderbug Thinning project (USDA FS 2007). The number of infested trees has increased substantially over the last three years. Many of the susceptible trees in the Thunderbug Thinning project area were infested during the summers of 2006 and 2007. It is uncertain that thinning remaining green trees will reduce the amount of mortality from mountain pine beetles during the current infestation since the infestation levels were high in 2007. However, thinning of remaining green trees will reduce density related mortality over time and may help to reduce mortality in a future beetle infestation, due to varying age and size classes of patches of lodgepole pine in the treatment units. Mountain pine beetle infestations have occurred on cycles of approximately 25 years on the north slope of the Uinta Mountains (Gibson 2007a). The last infestation was in the early 1980's.

There is current debate over the effectiveness of thinning strategies, and in fact some suggest (Hughes, Drever 2001) that in 100 years of experience in British Columbia a major outbreak has never been controlled by management intervention. Black in his unpublished 2005 (Black 2005) synthesis cites several sources (Muzika and Liebhold 2000, Wood et. al. 1985) that support the idea stated by Hughes and Drever that once major outbreaks reach landscape proportions, silvicultural control is not effective in reducing those populations. This proposal is not intended to control this current outbreak at any level, nor does it treat at the landscape level. However the spacing, structural stage and age class diversity created by this proposal will have a long term benefit both at the stand and landscape level by contributing to the overall heterogeneity of the larger landscape as well as the individual stands.

The area is variable with portions of the units containing relatively dense, small diameter lodgepole, while other portions are more open with somewhat larger diameter lodgepole and occasionally some aspen mixed in. Basal area for trees to be retained will be relatively constant at 80 ft²/acre. The general guidelines for residual basal area apply regardless of diameters.

Photo 1 below shows active beetles within one of the proposed treatment units. Removal of these infested trees will result in a small opening that will naturally regenerate to lodgepole pine seedlings. Photo 2 below shows a dense thicket of lodgepole pine typical of those found in the treatment units. Thinning of these trees will result in less density related mortality over time and may reduce susceptibility to future beetle infestation. Since the thinning will remove small diameter trees leaving the largest and best uninfested trees, very little of the timber removed from these thickets will be utilizable as sawlogs. The timber removed will, however, be utilizable for post and small pole products.

Photo 1: Pine Beetle Mortality



Photo 2: Dense Small Diameter Lodgepole Pine



The proposed treatment is a combination of salvaging the dead and infested trees and thinning in the green trees to reduce the density and improve the inter tree spacing. Silvicultural treatments where either basal area reductions or diameter limit cuts were used indicate tree mortality was significantly reduced (Cahill 1978, Cole et al. 1983, McGregor et al. 1987, Amman et al. 1988). McGregor et al. (1987) found that basal area reduction to either 80 or 100 square feet resulted in tree losses of 10 and 15 percent compared to 48 to 62 percent in the unthinned stands.

There are many research studies that discuss the effectiveness of thinning stands to reduce MPB caused tree mortality (Gibson 2007a). Geiszler and Gara (1978) emphasized the importance of tree spacing in switching of attacks from an attacked focus tree to a nearby tree. If the distance is too great, the infestation within the thinned stand will not continue. In a report to congress from Forest Health Protection in the Washington Office the Forest Service (USDA FS 2000), the authors stated that there is general consensus that susceptibility of trees to attack by bark beetles is related to tree vigor, stand environment, and stand attributes (i.e., age, size, and composition). These conditions are conducive to bark beetle population increases and studies conducted with mountain pine beetle in lodgepole and ponderosa pine indicate that thinning treatments (selective tree removal) modify the stand environment and eventually increase residual tree vigor. This preventive approach reduces stand susceptibility to attacks by mountain pine beetle. Fetting et al (2007) reviewed published research and recommended thinning in maturing lodgepole pine stands based on data relating mountain pine beetle outbreaks to stand age, density and diameter distributions.

Amman and Logan (1998) described effects of thinning on microclimate that in turn reduces mountain beetle infestation. Research conducted in Southern British Columbia conducted by the Canadian Forest

Service (Whitehead, 2002) concluded that “spacing opens a stand affecting stand and tree microclimate in ways that affect MPB during short-range dispersal and attack. Thinning lodgepole pine stands to a uniform 4 or 5 meter spacing creates the following beetle prevention effects:

Temperature and light

- Wider tree spacing (lower basal area) opens the stand allowing more solar energy into the attack zone raising both temperature and light intensity.
- MPB tend to land and initiate attack under lower temperatures and light intensities, typical of dense stands, but tend to keep seeking hosts at higher levels of light and temperature.
- The longer beetles fly, the higher their losses to predation and desiccation, and the lower their energy reserves when they locate a host.

Wind

- Wider spacing opens the stand to wind.
- MPB are slow fliers and are affected by high winds.
- Pheromone plumes that concentrate attacks may be dispersed by wind.

Tree vigor

- Wider spacing increases tree vigor.
- Vigorous trees are more successful at pitching out MPB.

Recent projects in similar stand conditions with similar spacing targets have shown that achieving this desired stand using mechanized logging equipment can be difficult without sustaining considerable damage to the residual stand. To avoid this damage a graduated spacing plan off of designated skid trails will be used. In this scenario the spacing adjacent to the skid trails is wider than the spacing in the middle between the skid trails. This will allow more room for the equipment operating off of the skid trails while still achieving the overall basal area and spacing for the residual stand.

For this project, we have chosen to use spacing guidelines. Trees will be selected to retain with a spacing of 13 to 16 ft. (4m – 5m). The stand will have a residual basal area of about 80 square feet per acre. The distance between trees and actual basal area will vary depending on the size of the trees and skid trail layout. However, the overall stand averages will be achieved.

Forest vegetation simulator (FVS) modeling (Gibson 2007a) shows that density related mortality is reduced by 88% as a result of the treatment.

Risk of bark beetle population expansion is lowered, as the stands susceptibility changes following treatment. Research shows (as referenced previously) that stands of lodgepole pine with basal areas near 80 – 100 square feet per acre and/or inter tree spacing in the 4 – 5 meter (13 – 16 feet) range experience less mortality than denser stands.

The project will reduce future heavy down woody fuel loading and reduce likelihood of crown fires if an ignition occurs. The mountain pine beetle plays a role in the dynamics of lodgepole pine ecosystems. By periodically invading stands and creating large amounts of fuels, which are eventually consumed by fire, creating favorable conditions for regeneration, the beetle has increased the probability that lodgepole pine will reoccupy the site at the expense of other species (USDA FS 1990). The mountain pine beetles’ strong preference for large trees gears heavy fuel buildup to a time when stands are mature or over mature. In some areas, this is when climax species are developing prominence in the understory and together with ground fuels present a high chance of crown fire (Brown 1973). Prescribed fire is difficult to ignite in lodgepole pine forests under most weather conditions and difficult to contain within

prescribed boundaries, especially if unexpected winds occur (Knight 1994). Recent experience with a 14,000 acre wildfire 15 miles to the southwest and the presence of private homes about 1 mile to the northeast (downwind of prevailing winds) with continuous forest in-between precludes allowing stand replacing fires in this area. Wildland fire use is not allowed in this area under the Wasatch-Cache National Forest Wildland Fire Use Plan (USDA FS 2005).

This treatment will not reduce the risk of an ignition. However, it will remove about 40 tons / acre of biomass that is either dead or likely to die from beetle infestation or density related mortality over the next 30 years and accumulate as down woody fuels. Heavy down woody fuels increase fire intensity and increase resistance to control of the fire. FVS simulations indicate that this treatment would increase the wind speed necessary for a crown fire to develop from 19 mph under current conditions to 30 mph after treatment (Gibson 2007a).

A Fire Regime Condition Class (FRCC) assessment (Corbin 2006) determined that using a weighted average of the two strata (conifer and aspen) an infrequent, mixed severity natural fire regime predominates in the Gilbert Creek Subwatershed. The subwatershed was calculated to have low departure (31% departure) from reference conditions, since current conditions are fairly similar to reference conditions for both seral stage distribution and fire frequency and severity. What departure exists is primarily due to the slight under-representation of early seral stands and the slight over-representation of mid and late seral closed stands. This project will change both mid seral closed (dense small diameter lodgepole) and late seral closed (larger diameter lodgepole with beetle infestation) to mid seral open and late seral open stands. There will be small patches of the late seral closed that will change to early seral where beetles have infested all of the trees in a patch. Departure from reference conditions will be slightly less following treatment.

The Thunderbug Thinning project will include thinning and salvage. Most of this treatment would be in the late seral and mid-seral closed canopy stands which are over-represented in this landscape. Thinning that creates late seral open stands will not reduce the departure from the natural fire regime, since these stands are slightly over-represented. Treatments that create early seral or mid-seral open stands will reduce the departure, since those classes are under-represented compared to reference conditions.

The project is within the Eastern Uintas Management Area as described in the 2003 Revised Forest Plan (USDA FS, 2003). The proposed units are located primarily within management prescription 5.1 – Maintaining/Restoring Forested Ecosystem Integrity, with some 6.1 – Maintaining/Restoring Non-Forested Ecosystem Integrity. These prescriptions allow timber harvest for purposes of maintaining or restoring forest ecosystem integrity. They are part of the Total Sale Program Quantity (TSPQ) which is comprised of the sum of timber harvest allowed from suited (Allowable Sale Quantity or ASQ) and non-suited forest land as defined on Page 3-340 of the Forest Plan FEIS (USDA FS 2003a). The desired future conditions for the 5.1 management area includes management “designed to reduce the likelihood of forest insect epidemics” (USDA FS 2003). The recreation opportunity spectrums (ROS) classes for this area are “Roaded Natural and Semi-primitive Motorized. The Landscape Character is “Developed Natural Appearing” and the Scenic Integrity Objective is “Moderate” under scenery management system (SMS). There is no “old forest” within the Thunderbug Thinning project treatment units (Gibson 2007a).

The Forest Plan states (P 4-9) that “Conifer Forests contain a variety of age classes and successional stages in varying patch sizes. Spruce and pine beetle infestations are kept at endemic levels through the use of a variety of management tools, including timber harvest, prescribed fire, and wildland fire use.”

An alternative to this treatment would be no treatment. Some effects of no treatment would be that there would be no risk of treatment affecting wildlife, fisheries, water quality, soil productivity, or amenity values. However, the dead trees would not be utilized and the remaining live trees would remain

susceptible to bark beetles in future beetle infestations. Down woody fuel loading would also increase as the dead trees fall and the stand would become more susceptible to high intensity fire in the event of an ignition. Interdisciplinary review of this project indicates that impacts from treatment on the multiple resources in the area would be very minor.

II. REASONS FOR CATEGORICALLY EXCLUDING THE DECISION

Decisions may be categorically excluded from documentation in an environmental impact statement or environmental assessment when they are within one of the categories identified by the U.S. Department of Agriculture in 7 CFR part 1b.3 or one of the categories identified by the Chief of the Forest Service in Forest Service Handbook (FSH) 1909.15 sections 31.1b or 31.2, and there are no extraordinary circumstances related to the decision that may result in a significant individual or cumulative effect on the quality of the human environment.

I have concluded that this decision is appropriately categorically excluded from documentation in an environmental impact statement or environmental assessment as it is a routine activity within a category of exclusion and there are no extraordinary circumstances related to the decision that may result in a significant individual or cumulative effect on the quality of the human environment. My conclusion is based on information presented in this document and the Project Record.

A. Category of Exclusion

The decision is within the category of exclusion 31.2(14), that includes “Commercial and non-commercial sanitation harvest of trees to control insects or disease not to exceed 250 acres, requiring no more than ½ mile of temporary road construction, including removal of infested/infected trees and adjacent live uninfested/uninfected trees as determined necessary to control the spread of insects or disease.” The decision is also within the category of exclusion 31.2(13), that includes “Salvage of dead and/or dying trees not to exceed 250 acres, requiring no more than ½ mile of temporary road construction.”

B. Relationship to Extraordinary Circumstances

1. Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species;

The Endangered Species Act requires that federal activities do not jeopardize the continued existence of any species federally listed or proposed as threatened or endangered, or result in adverse modification to such species’ designated critical habitat. Bald eagle, western yellow-billed cuckoo, black-footed ferret, and Canada lynx might occur within the area. As required by this Act, potential effects of this decision on listed species have been analyzed and documented in a Biological Assessment for wildlife (Jauregui 2006). It was determined that this decision “may affect, but is not likely to adversely affect” Canada lynx and bald eagle and has “no effect” on other listed or proposed species. The U.S. Fish and Wildlife Service has reviewed our findings, and concurred with them (USFWS 2006).

Forest Service Manual 2670 direction requires analysis of potential impacts to sensitive species, those species for which the Regional Forester has identified population viability is a concern. Potential effects of this decision on sensitive species have been analyzed and documented in Biological Evaluations for wildlife, plants and aquatic species (Jauregui et al 2006). Forest-wide monitoring data has been collected as a basis for the Forest Plan Monitoring Report (USDA FS 2008). This decision will have no impact on

the viability of any sensitive species, nor will they result in a trend toward Federal listing of any sensitive species found on the Wasatch-Cache National Forests.

2. Flood plains, wetlands, or municipal watersheds.

Floodplains: Executive Order 11988 is to avoid adverse impacts associated with the occupancy and modification of floodplains. Floodplains are defined by this order as, “. . . the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent [100-year recurrence] or greater chance of flooding in any one year.”

This decision will not affect floodplains (Condrat and Flood 2007).

Wetlands: Executive Order 11990 is to avoid adverse impacts associated with destruction or modification of wetlands. Wetlands are defined by this order as, “. . . areas inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.”

This decision does not include activities in floodplains or wetlands. This has been validated by site-review (Condrat and Flood 2007). This limited activity will not change the function of the wetlands.

To further ensure that wetlands-related impacts are minimized, Soil and Water Conservation Practices identified in the Revised Forest Plan, Appendix II are incorporated.

Municipal Watersheds: Municipal watersheds are managed under multiple use prescriptions in land and resource management plans.

Almost 60% of the watersheds on the Wasatch-Cache National Forest provide water for public drinking water needs (Wasatch Cache Forest Plan Revision FEIS page 3-24). The nature and scale of the activity should not have any subsurface effects to the watershed. This project was reviewed by the Forest Hydrologist and Forest Soil Scientist and no unusual requirements related to steep slopes or highly erosive soils were identified. To further ensure that soil-related impacts are minimized, Soil and Water Conservation Practices are incorporated.

3. Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas.

Wilderness:

This decision does not affect Wilderness. The project is not in or near Wilderness. Wilderness is identified on the Forest as Management Area 1.1, 1.2, and 1.3 (Forest Plan, Western Uintas Management Prescription Map). The project is located in Management Area 5.1. The closest Wilderness, High Uintas Wilderness Area, is 7 miles south of the project. This decision, with impacts limited to the immediate area of activity, will not affect the Wilderness Area.

Proposed Wilderness:

This decision does not affect Proposed Wilderness. The project is not in or near Proposed Wilderness. Proposed Wilderness is identified on the Forest as Management Area 1.5 (Forest Plan, Western Uintas

Management Prescription Map). The project is located in Management Area 5.1. The closest Proposed Wilderness is 9 miles southeast of the project. This decision, with impacts limited to the immediate area of activity, will not affect the Proposed Wilderness Area.

National Recreation Areas:

There are no National Recreation Areas on the Forest. This decision will not affect National Recreation Areas.

Wild and Scenic Rivers:

There are no designated Wild and Scenic Rivers on the Wasatch-Cache National Forest. This project is not within any areas eligible for designation (USDA FS 2007a).

4. Inventoried roadless areas.

This project is not near any inventoried roadless area (Forest Plan, Chapter 4 Eastern Uintas Management Prescription Map).

5. Research natural areas.

There are no Research Natural Areas in this part of the Wasatch-Cache National Forest (Plan FEIS, p.3-372). This decision does not affect Research Natural Areas.

6. American Indians and Alaska Native religious or cultural sites.

The Native American Graves Protection and Repatriation Act covers the discovery and protection of Native American human remains and objects that are excavated or discovered in federal lands. It encourages avoidance of archaeological sites that contain burials or portions of sites that contain graves through “in situ” preservation, but may encompass other actions to preserve these remains and items. This decision complies with the cited Act. A survey was conducted for Native American religious or cultural sites that may be affected by this decision. A ‘no properties affected’ determination was made. The Utah State Historic Preservation Office concurred with this finding (Utah SHPO 2006).

7. Archaeological sites, or historic properties or areas.

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effect of a project on any district, site, building, structure, or object that is included in, or eligible for inclusion in the National Register. Section 106 of the National Historic Preservation Act also requires federal agencies to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The Archaeological Resources Protection Act covers the discovery and protection of historic properties (prehistoric and historic) that are excavated or discovered in federal lands. It affords lawful protection of archaeological resources and sites that are on public and Indian lands. This decision complies with the cited Act. A survey was conducted for archaeological sites, and historic properties or areas that may be affected by this decision. A ‘no properties affected’ determination was made. The Utah State Historic Preservation Office concurred with this finding (Utah SHPO 2006).

8. Other extraordinary circumstances related to the project.

An interdisciplinary team reviewed this area on the ground and determined that there were no other extraordinary circumstances related to this project.

III. PUBLIC INVOLVEMENT

Direct mailings to primary interested parties were done on February 16, 2006 and July 26 2006 (2/14/2006 and 7/26/2006 Mail List and requests for comments in Project Record) . These scoping documents identified a need to salvage dead trees and thin remaining green trees in some units in the lower Gilbert Creek drainage. Comment letters from 4 organizations were received.

The following tribal governments have been contacted for their input:

- Ute Indian Tribe
- NW Band of the Shoshone Nation

The following state and local governments have been contacted for their input:

- Uinta County and Summit County
- States of Utah and Wyoming.
- Uinta County Fire Protection

The following agencies have been contacted for their input:

- Utah State Historic Preservation Office
- Utah Department of Wildlife Resources
- US Fish and Wildlife Service

The following potentially interested groups were sent letters requesting their input:

- High Uintas Preservation Council
- Utah Environmental Congress
- Wild Utah Project
- Frontiers of Freedom-People for the U.S.A.
- Back Country Horsemen
- W.N.T.C. Biodiversity Associates
- Biodiversity/Conservation Alliance
- Ayres and Baker Post and Pole
- South and Jones Lumber
- Western Wood Products

Comments related to the project included the following:

- Concern about cumulative road mileage.
- Concern about regulated vs unregulated harvest.
- Concerns about the adequacy of a Categorical Exclusion on this kind of project rather than an EA or EIS due to cumulative effects.
- Concerns about windthrow following thinning.
- Concerns about supporting research.
- Concerns about effectiveness of thinning during epidemic conditions.
- Global warming/climate/drought effects on beetle infestation with no benefit from logging.
- Concerns about fragmentation.
- Concerns about effects on threatened/endangered/sensitive species habitats, inventoried roadless areas, citizen proposed wilderness, wetlands, mollusks, amphibians, tall forbs, migratory birds, and archaeological sites.
- Concerns about effects on old growth.

- Concerns with project area boundary.
- Compliance with Forest Plan and Conservation Agreement direction for MIS and TES.
- How does the project move toward PFC and DFC.
- Advocacy for forest management through thinning from below.
- Concern for utilization of dead timber and small diameter trees.

Comments received were used to refine the project and analysis. Comments were also used to explore the possibility of extraordinary circumstances and potential effects to those resources as described in other portions of this document.

IV. FINDINGS REQUIRED BY AND/OR RELATED TO OTHER LAWS AND REGULATIONS

My decision will comply with all applicable laws and regulations. I have summarized some pertinent ones below.

Forest Plan Consistency (National Forest Management Act) - This Act requires the development of long-range land and resource management plans and requires that all projects and activities are consistent with the Forest Plan.

Early in 2007 a court ruling enjoined the Forest Service from implementing the 2005 planning rule. As a result, the Forest Service is operating under the 2000 rule's transition provisions and the 2004 interpretive rule. The 2008 Planning Rule under 36 CFR Part 219 was signed by Mark Rey, Undersecretary of Agriculture on April 9, 2008. However, it has not yet been published in the Federal Register.

I have reviewed the Wasatch-Cache National Forest Land and Resource Management Plan (Forest Plan). The actions in this project comply with the goals of the Forest Plan, the "Management Area Direction" and the "Forest-Wide Standards and Guidelines" (See Chapter 4 of the 2003 Forest Plan).

Trends for Management Indicator Species (MIS) are identified in the Management Indicator Species of the Wasatch-Cache National Forest report (USDA 2008). An MIS analysis for this project determined that this project would not have an effect on the population trend of snowshoe hares, beavers, goshawks or Colorado Cutthroat trout (Jauregui 2007)

Vegetation Manipulation (National Forest Management Act) – Proposed actions often carry out management prescriptions selected and scheduled during land and resource management plan development. This decision is consistent with the requirements for management prescriptions. The regulations found at 36 CFR 219.27 require that “Management prescriptions that involve vegetative manipulation of tree cover for any purpose shall” comply with the following seven requirements:

- Be best suited to the goals in the Forest Plan.

This project is consistent with Forest Plan prescription for Management Areas 5.1 and 6.1. Under Management Prescriptions on page 4-58 of the Forest Plan, “*Emphasis* as used in these Prescriptions is defined as focus or highlighting, not exclusive or “dominant” use. In the event of a conflict between uses, resolution will be based on the specific merits of the situation rather than assuming that the Prescription implies a “trumping” of one resource over another. The entire management Direction package for the area must be considered, not just the Prescription.”

- Assure that technology and knowledge exists to adequately restock lands within five years after final harvest when trees are cut to achieve timber production.

All of the harvesting is planned in areas that can be adequately restocked with 5 years. Treatments include salvage that will result in some small openings (expected to be less than ½ acre each) and thinning from below. The small openings resulting from salvage harvest are expected to regenerate naturally based on similar past treatments on similar soils with lodgepole pine cover types on the north slope of the Uinta Mountains. Natural regeneration of lodgepole pine on the North Slope is generally dense and rapid (less than 5 years) and planting is rarely necessary. (Gibson 2007a)

- Not to be chosen primarily because they give the greatest dollar return or the greatest output of timber (although these factors shall be considered).

The harvesting systems analyzed were not selected primarily because they would give greatest dollar return or the greatest unit output of timber. Ground based yarding is the only logging system widely available and in use on the Wasatch-Cache NF. This is due primarily to the generally gentle slopes where timber is managed on the Forest. The silvicultural systems analyzed for this project do not produce the maximum timber volume per acre. Thinning has a higher cost per unit of volume than other silvicultural systems such as clearcut, seed tree, or shelterwood systems since greater care must be taken in protecting leave trees and the volume per acre removed is less. (Gibson 2007a).

- Be chosen after considering potential effects on residual trees and adjacent stands.

The effects on residual trees and adjacent stands were considered in development of the Plan. The decision, including adherence to applicable Plan Standards and Guidelines, is designed to provide the desired effects of management practices on the resource values. This decision is consistent with the Plan and provides the desired effect on residual trees and adjacent stands.

- Be selected to avoid permanent impairment of site productivity and to ensure conservation of soil and water resources.

This decision avoids impairment of site productivity. The nature of the decision and use of Soil and Water Conservation Practices will protect soil and water resources (Condrat and Flood 2006).

- Be selected to provide the desired effects on water quality and quantity, wildlife and fish habitat, regeneration of desired tree species, forage production, recreation users, aesthetic values, and other resource yields.

The decision, including adherence to applicable Plan Standards and Guidelines, is designed to provide the desired effects of management practices on the resource values. This decision is consistent with the Plan and provides the desired effect on the above resources (Condrat and Flood 2007, Jauregui 2006, 2006a, 2007, Jauregui et al 2006, and Cowley 2006).

- Be practical in terms of transportation and harvesting requirements and total costs of preparation, logging, and administration.

The project area is adequately roaded, no new permanent roads are necessary to implement this decision. The treatment in this decision is appropriate to accomplish project objectives, and is economically practical.

Endangered Species Act - See Section II, Item B1 of this document.

Sensitive Species (Forest Service Manual 2670) - See Section II, Item B1 of this document.

Clean Water Act - This Act is to restore and maintain the integrity of waters. The Forest Service complies with this Act through the use of Soil and Water Conservation Practices. This decision incorporates Soil and Water Conservation Practices to ensure protection of soil and water resources.

The Migratory Bird Treaty Act and Executive Order 13186 of January 10, 2001. Based on information in the project file concerning migratory birds (Jauregui 2006a), my decision meets the intent of the Migratory Bird Treaty Act and Executive Order for the Conservation of Migratory Birds.

Wetlands (Executive Order 11990) - See Section II, Item B2 of this document.

Floodplains (Executive Order 11988) - See Section II, Item B2 of this document.

Clean Air Act - Under this Act areas of the country were designated as Class I, II, or III airsheds for Prevention of Significant Deterioration purposes. Impacts to air quality have been considered for this decision. National Forest lands in the State of Utah are classified as Class II attainment areas through application of the Clean Air Act. Forest Service burning activities associated with burning slash must comply with applicable federal, state and local standards for air quality, especially the standards of State of Utah, Division of Air Quality's Utah Smoke Management Plan. The Forest Service must coordinate slash burning with the state and burn when atmospheric conditions reduce potential risks of air quality degradation. A greater amount of additional human-caused air pollution may be added to these areas. Burning of landing slash piles would be done in accordance with State of Utah Air Quality guidelines and smoke management plans, and under conditions that would disperse smoke and minimize drift into nearby communities. Considering the short time of burning, the limited area, and burning only under appropriate conditions, the effects on air quality are expected to be minimal.

Federal Cave Resources Protection Act - This Act is to secure, protect, preserve, and maintain significant caves, to the extent practical. Site features and field review substantiate that no caves are in the area. No known cave resources will be affected by this decision. Subsequently identified caves will be protected.

National Historic Preservation Act - See Section II, Item B7 of this document.

Archaeological Resources Protection Act - See Section II, Item B7 of this document.

Native American Graves Protection and Repatriation Act - See Section II, Item B6 of this document.

Wild and Scenic Rivers Act - See Section II, Item B3 of this document.

Environmental Justice (Executive Order 12898) - This Order requires consideration of whether projects would disproportionately impact minority or low-income populations. This decision complies with this Act. Public involvement occurred for this project, the results of which I have considered in this decision-making. Public involvement did not identify any adversely impacted local minority or low-income populations. This decision is not expected to adversely impact minority or low-income populations.

National Environmental Policy Act - This Act requires public involvement and consideration of potential environmental effects. The entirety of documentation for this decision supports compliance with this Act.

V. ADMINISTRATIVE REVIEW OR APPEAL OPPORTUNITIES

Pursuant to *Earth Island Institute v. Ruthenbeck*, No. CIV F-03-6386 JKS (E.D. Cal., October 19, 2005), this decision is subject to appeal pursuant to Forest Service regulations at 36 CFR 215. Appeals must meet the content requirements of 36 CFR 215.14. Only individuals or organizations who submitted comments or otherwise expressed interest in the project during the comment period may appeal. Appeals must be postmarked or received by the Appeal Deciding Officer within 45 days of the publication of this notice in Uinta County Herald. This date is the exclusive means for calculating the time to file an appeal. Timeframe information from other sources should not be relied on. Incorporation of documents by reference is not allowed. The Appeal Deciding Officer is Brian Ferebee, Acting Forest Supervisor. Appeals must be sent to: Appeal Deciding Officer, Intermountain Region USFS, 324 25th Street, Ogden, Utah 84401; or by fax to 801-625-5277; or by email to: appeals-intermtn-regional-office@fs.fed.us. Emailed appeals must be submitted in rich text (rtf), Word (doc) or portable document format (pdf) and must include the project name in the subject line. Appeals may also be hand delivered to the above address, during regular business hours of 8:00 a.m. to 4:30 p.m. Monday through Friday.

VI. IMPLEMENTATION DATE

If no appeals are received, this decision may be implemented no sooner than five days following the close of the appeal-filing period. If an appeal is received, implementation may begin 15 days following the disposition of all appeals.

VII. CONTACT PERSON

For further information contact Larry Johnson, Timber Management Coordinator or Amy Barker, Environmental Coordinator at 1565 Highway 150, Suite A, Evanston, Wyoming 82930 or by phone at 307-789-3194.

VIII. SIGNATURE AND DATE

I have concluded that this decision may be categorically excluded from documentation in an environmental impact statement or environmental assessment, as it is within one of the categories identified by the Chief of the Forest Service in Forest Service Handbook 1909.15 section 31.2, and there are no extraordinary circumstances related to the decision that may result in a significant individual or cumulative environmental effect. In making this decision I have considered the best available science as the basis for this decision. My conclusion is based on a review of the project record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk. The project record contains specialist reports on vegetation, wildlife, fisheries, watershed, fire, and soils. These reports contain documentation of field visits to the project area and contain the specialist's assessment of conditions found on the project area. I consider these on-the-ground visits by knowledgeable resource specialists to be the application of the best available science along with the scientific methods they applied and the literature they reviewed.

/s/ Stephen M. Ryberg

4/11/08

Stephen M. Ryberg
District Ranger
Mountain View and Evanston Ranger District
Uinta and Wasatch Cache National Forest
Responsible Official

Date

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APPENDIX A

LITERATURE CITED

Thunderbug Thinning Project

Wasatch-Cache National Forest Evanston Ranger District

- Amman, G.D. and J.A. Logan. 1998. Silvicultural Control of Mountain Pine Beetle: Prescriptions and the Influence of Microclimate. *Amer. Entomol.* Fall 1998: 166-177.
- Amman, G.D., M.D. McGregor, R.F. Schmitz, and R.D. Oakes. 1988. Susceptibility of lodgepole pine to infestation by mountain pine beetles following partial cutting of stands. *Can. J. Forest Res.* 18: 688-695.
- Black, S.H. 2005. Logging to Control Insects: The Science and Myths Behind Managing Forest Insect "Pests." A Synthesis of Independently Reviewed Research. The Xerces Society for Invertebrate Conservation, Portland, OR.
- Brown, James K. 1973. Fire Cycles and Community Dynamics in Lodgepole Pine Forests. *In* Proceedings, Symposium on Management of Lodgepole Pine Ecosystems. Oct 9-11, 1973. p. 429-456. Washington State University, Pullman.
- Cahill, D.B. 1978. Cutting strategies as control measures of the mountain pine beetle in lodgepole pine in Colorado. pp. 188-191. *In* Berryman, A.A., G.D. Amman, and R.W. Stark [eds.], Theory and practice of mountain pine beetle management in lodgepole pine forests. Symposium Proceedings, 25-27 April 1978. University of Idaho Forest, Wildlife and Range Experiment Station, Moscow, ID.
- Cole, W.E., D.B. Cahill, and G.D. Lessard. 1983. Harvesting strategies for management of mountain pine beetle infestations in lodgepole pine: preliminary evaluation, East Long Creek demonstration area, Shoshone National Forest, Wyoming. USDA FS Res. Pap. INT-318.
- Condrat, Charlie and Paul Flood. 2007. Thunderbugs Thinning Project Soil and Water Resources Technical Report. Unpublished Report. Available in the project record.
- Corbin, Elizabeth. 2006. Lower Sage Creek and Thunderbugs Projects Fire Regime Condition Class Assessments. Unpublished Report. Available in the project record.
- Cowley, Paul. 2006. Specialist Report for Aquatic Species for the Thunderbug Salvage project. Unpublished Report. Available in the project record.
- Fettig, Christopher J., Kier D. Klepzig, Ronald F. Billings, A. Steven Munson, T. Evan, Jose F. Negro, John T. Nowak. 2007. The Effectiveness of Vegetation Management Practices for Prevention and Control of Bark Beetle Infestations in Coniferous Forests of the Western and Southern United States. *Forest Ecology and Management* 238 (2007) 24-53. Available online at: http://www.srs.fs.usda.gov/pubs/ja/ja_fettig002.pdf
- Geiszler, D.R., and R.I. Gara. 1978. Mountain pine beetle attack dynamics in lodgepole pine. pp. 182-187. *In* Berryman, A.A., G.D. Amman, and R.W. Stark [eds.], Theory and practice of mountain pine beetle management in lodgepole pine forests. Symposium Proceedings, 25-27 April 1978. University of Idaho Forest, Wildlife and Range Experiment Station, Moscow, ID.
- Gibson, Jim. 2007. Draft Silvicultural Prescription for Thunderbug Thinning Project. Unpublished Report. Available in the project record.
- Gibson, Jim. 2007a. Forested Vegetation and Silvicultural Specialist Report for Thunderbug Thinning Project. Unpublished Report. Available in the project record.
- Hughes, J. and R. Drever. 2001. Salvaging solutions: Science-based management of BC's pine beetle outbreak. David Suzuki Foundation, Forest Watch of British Columbia, Canadian Parks and Wilderness Society, Vancouver, B.C.

- Jauregui, Daniel. 2006. Biological Assessment of Listed and Proposed Species for the Thunderbugs project. Unpublished Report. Available in the project record.
- Jauregui, Daniel. 2006a. Migratory Bird Analysis for the Thunderbugs project. Unpublished Report. Available in the project record.
- Jauregui, Daniel, P. Cowley and M. Duncan. 2006. Biological Evaluation for Wildlife, Plants and Aquatic Species and Biological Assessment for Plants for the Thunderbugs project. Unpublished Report. Available in the project record.
- Jauregui, Daniel. 2007. Management Indicator Species Population trend affects analysis, Thunderbug Project. Unpublished Report. Available in the project record.
- Knight, Dennis H. 1994. Mountains and Plains, The Ecology of Wyoming Landscapes. Yale University Press.
- McGregor, Mark D., G.D. Amman, R.F. Schmitz, R.D. Oakes. 1987. Partial cutting lodgepole pine stands to reduce losses to the mountain pine beetle. *Can. J. For. Res.* **17**: 1234-1239.
- USDA FS. 1988. Forest Service Handbook 2509.22. Soil and Water Conservation Practices Handbook. Practices 14.04, 15.02, and 15.25. USDA Forest Service. May 1988.
- USDA FS. 1990. Silvics of North America. Burns, Russell M. and Barbara H. Honkala. Tech Eds. Ag Hbk 654. Page 310. USDA Forest Service, December 1990, Washington DC. 675 pp.
- USDA FS. 2000. Samman, Safiya; Logan, Jesse, tech. eds. 2000. Assessment and Response to Bark Beetle Outbreaks in the Rocky Mountain Area. Report to Congress from Forest Health Protection, Washington Office, Forest Service, U.S. Department of Agriculture. Gen. Tech. Rep. RMRS-GTR-62. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 46 p. Available online at: http://www.fs.fed.us/rm/pubs/rmrs_gtr62.pdf
- USDA FS. 2003. Wasatch-Cache Revised Forest Plan. Available in the project record and Wasatch-Cache NF Supervisor's Office and Mountain View Ranger District Office.
- USDA FS. 2003a. Wasatch-Cache Revised Forest Plan Final Environmental Impact Statement (FEIS). Available in the project record and Wasatch-Cache NF Supervisor's Office and Mountain View Ranger District Office.
- USDA FS. 2005 Wasatch-Cache National Forest Wildland Fire Use Plan 2005. Wasatch-Cache National Forest., 2005. Salt Lake City, Utah.
- USDA FS. 2007. Aerial Insect and Disease Detection Map for the North Slope of the Uinta Mountains for the Wasatch-Cache National Forest. Available in the project record.
- USDA FS. 2007a. Wild and Scenic Rivers Draft Environmental Impact Statement. Available at the Wasatch-Cache National Forest Supervisors Office, Salt Lake City, Utah.
- USDA FS. 2008. Management Indicator Species of the Wasatch-Cache National Forest, Version 2008-1. Salt Lake City, Utah.
- USFWS. 2006. USDI, Fish and Wildlife Service, Utah Field Office concurrence of June 26, 2006. Available in the project record.
- Utah State Historic Preservation Office (SHPO). 2006. SHPO concurrence 06-1066 of July 3, 2006. Available in the project record.
- Whitehead, Roger. 2002. Silviculture and the Mountain Pine Beetle. Natural Resources Canada, Canadian Forest Service website:
<http://www.pfc.cfs.nrcan.gc.ca/entomology/mpb/management/silviculture/prescription>

APPENDIX B

MAP

Thunderbug Thinning Project

**Wasatch-Cache National Forest
Evanston Ranger District**