DECISION NOTICE (DN) & FINDING OF NO SIGNIFICANT IMPACT (FONSI)

JACOB-RYAN VEGETATION MANAGEMENT PROJECT

U.S.D.A. FOREST SERVICE – KAIBAB NATIONAL FOREST

NORTH KAIBAB RANGER DISTRICT - COCONINO COUNTY, ARIZONA

Townships 38 & 39 North; Ranges 1 & 2 East,
Gila and Salt River Baseline and Meridian

INTRODUCTION

This Decision Notice (DN) documents my decision to implement Alternative 1 for Jacob Ryan Vegetation Management Project and the reasons for my decision. I reached this decision after careful consideration of the alternatives analyzed in the Environmental Assessment (EA) and comments from the public and other agencies. The responses to public and other agency comments on the preliminary EA are in Appendix D-1 "*Consideration of Public Comments*" to the EA. The EA provides additional analysis, clarification, and updated information based on preliminary EA comments from the public and other agencies.

BACKGROUND

The background of this project is summarized in Chapter 1 of the EA (EA, p.1, first paragraph). The Proposed Action is to thin groups of ponderosa pine, regenerate groups of ponderosa pine, and conduct prescribed burning operations in thinned areas and some un-thinned areas. The purpose and need for action, in summary, is driven by the *Kaibab National Forest Land and Resource Management Plan* (Forest Plan) 1988 as amended, which provides management direction to improve habitat for northern goshawks and their prey species. The thinning, group regeneration, and prescribed burning treatments will also improve the health of treated forest stands by reducing insect epidemic risks and tree disease levels. These treatments will also reduce the risk of destructive crown fires in the project area. For further details regarding location of the proposed action and this project, the project's purpose and need, the decision to be made, and scoping issues, please refer to the EA, Chapter 1, pages 1-19.

ALTERNATIVES CONSIDERED

The project Interdisciplinary Team (IDT) used scoping comments on the initial proposed action, which were received from the public, tribal governments, State and other Federal agencies, to identify important issues and develop alternatives to the proposed action. These comments were carefully reviewed and considered (EA, sections 1.7 to 1.9, & 2.4). One important issue concerned "soils exhibiting unsatisfactory or impaired conditions" within Ecological Map Unit 9, led to developing the Modified Proposed Action (EA, section 2.1). Additionally, a modification was made that adjusted treatment ranges for stand density index (SDI)[1] and basal area (BA)[2] to a

[1] **Stand density index** is a measure of the number of trees per acre, with those trees being a specific diameter (i.e., 10-inches) at breast height and a specific basal area (i.e., 0.545 square ft /tree). It may also be defined as the degree of crowding within stocked areas, using various growing space ratios based on crown length or diameter, tree height or diameter, and spacing.

[2] **Basal area** defines the area of a given section of land (usually an acre) that is occupied by the cross-section of tree trunks and stems at their base.

more conservative range (heavier stand stocking) than presented in the original proposed action that was scoped.

Besides Alternative 1 (the Modified Proposed Action), two other alternatives were studied in detail in the EA; Alternative 2– the No Action Alternative (EA, section 2.2), and Alternative 3 – the 16-Inch Diameter Cutting Limit Alternative (EA, section 2.3). Alternative 3 is responsive to public comments expressing concern that the proposed action does not adequately protect large or old trees, which some consider to be trees greater than 16-inches diameter at breast height (DBH). Five (5) other Alternatives considered (raised from scoping comments) but eliminated from detailed study are discussed in section 2.4 of the EA.

DECISION

After careful consideration of the effects of the alternatives analyzed in the EA, public and other agency comments, and management direction in the Kaibab National Forest Land and Resource Management Plan (Forest Plan) 1988 as amended, I have decided to implement Alternative 1 – the Modified Proposed Action (EA, section 2.1).

DECISION RATIONALE

I believe the actions in my decision represent a reasonable and balanced set of forest vegetation management activities in the Jacob Ryan project area. In summary, I believe Alternative 1 does the best job of implementing Forest Plan direction, improving forest health, and reducing the risk of severe wildfires, while minimizing impacts to soils, wildlife and other resources.

I will now discuss my rationale in more detail with consideration for the alternatives progress toward desired conditions in the Forest Plan and meeting the purpose and need for action, the effects of the alternatives, and addressing specific concerns about this project raised by some EA commenters.

- ***Forest Health***

  A healthy forest is ecologically sustainable, resilient in response to disturbances such as insects, disease, drought and fire, and able to maintain its species and habitat. Please refer to the EA for a more complete definition of forest health (EA, *Terms and Definitions*, p. *xii*). Improving forest health objectives within the Jacob Ryan project area is primarily achieved through meeting northern goshawk habitat conditions within the ponderosa pine type forest, as identified in the Forest Plan. Some of these objectives, as they relate to forest health, are also described under the Goshawk habitat section below.

  For both action alternatives, there is little difference between treatments within the even-aged stratum in goshawk habitat (EA, pp. 36-40). However, there is a notable difference between the Action alternatives in the uneven-aged stratum; Table 4 of the EA provides a comparison of Alternatives within the uneven-aged stratum (EA, p. 24). Of the alternatives considered, Alternative 1 comes closest to achieving desired conditions for stand density index (SDI), basal area (BA) and mortality (EA, section 2.7.1). It is important for treatments to fall within these desired ranges to meet Purpose and Need goals of improved forest health, reduced fire risk and fuel loads, and improved northern goshawk habitat. The No Action Alternative makes no improvements to desired conditions and conditions would actually worsen as time goes on, while Alternative 3's results are intermediate between No Action and Alternative 1.

Stand Density: While Alternative 1 succeeds in lowering SDI to the desired level in the uneven-aged stands, SDI under Alternative 3 never reaches or achieves the desired level, even right after treatment. Alternative 3, would thin from below up to 16 inches DBH. This treatment would not bring SDI or basal area within desired ranges at any time during the next 20 years. These dense stand conditions increase the risk of bark beetle epidemic and crown fires (EA, section 2.7.1, pp. 40-46, 83-84, & Figure 6).

Post-treatment density under Alternative 1 meets the desired basal area and SDI ranges for Goshawk foraging areas (FAs) and post-fledgling family area (PFAs). Alternative 2 would not make any progress toward the desired stand density ranges. Alternative 3 makes some progress, but falls short of meeting the desired basal area and SDI ranges in both FAs and PFA, so leaves the stands overstocked and subject to more stressors. (EA, Section 2.7 – *Comparison of Alternatives*). The reduced stand density in Alternative 1 results in several important advantages compared to the other alternatives; less competition for resources (i.e., water and nutrients) among remaining trees, increased resilience to drought, stress, insect attack and disease, increased understory plant diversity, and reduced risk of crown fire (EA, Section 2.7.1; & EA pp. 38-42, & 59-66)

Treatment Longevity: I also considered the longevity of treatment effectiveness in arriving at my decision. Modeled conditions after 20 years indicates that stand conditions will grow out of desired ranges in goshawk FA's and PFA's, under both action alternatives. This is expected, as the treatments we do now will allow for improved tree and stand growth. However, the degree of density beyond desired condition is different between the alternatives, with Alternative 1 treatments resulting in a much less dense condition at 20 years when compared to Alternative 3, which equates to less competition for resources (i.e., nutrients and water) among the remaining trees (EA, pp. 24 -Table 4, 27, 43, 45- Table 8, 101 & 112). Both alternatives would require additional treatments 20 years out, to retain conditions within the desired ranges of stand density. The stand progression and development allowed by Alternative 1 shows a longer period of treatment effectiveness than Alternative 3. The reduced stand densities resulting from Alternative 1 treatments would create healthier forest conditions that are more resilient to insects, disease, and other stressors like drought over a longer period of time than Alternative 3.

Dwarf Mistletoe Treatment: Both action Alternatives would remove dwarf mistletoe infected trees. However, in its efforts to reduce the infection sources, Alternative 1's treatment would not be limited to trees less than 16-inches DBH. The treatments under Alternative 1 would isolate infected trees in some areas in order to provide wildlife habitat. In other infected areas sanitation cutting would remove mistletoe infected trees where they pose an infection threat to healthy smaller trees in their vicinity [See EA Section 1.3.2.1, Proposed Actions 1(c), 3(c), & 5(e), pp. 7-8; & EA Section 2.7.1 – Forest Health, p.26]. The treatment emphasis is not on eradicating dwarf mistletoe, as I recognize that some level of dwarf mistletoe is natural in the environment and can contribute toward wildlife habitat and future snags. Considering this, some treatments will be to isolate and retain larger, mature, dwarf mistletoe infected trees by removing smaller trees in the surrounding understory that are already infected. Under Alternative 1, there will be individual instances where removal of an infected tree (greater than 16-inches DBH) is preferred in order to protect existing desirable uninfected regeneration. Additionally, there may be instances where a group of mistletoe infected trees

would be removed to create a regeneration opening (less than 1 acre). Under these conditions, both removal of mistletoe infected trees and creating regeneration openings would be the objective. The "No Action" Alternative and Alternative 3 would allow for continued infestation and spread of dwarf mistletoe infection in otherwise healthy regeneration (EA, pp. 26 & 39). This is especially problematic in the even-aged strata, where some of the residual seed trees are infected with dwarf mistletoe and threaten uninfected regeneration.

Diameter Cutting Limit: Alternative 3 includes a 16 inch DBH limit for any trees to be harvested in the Project. This is in response to issues raised by some parties about harvesting "large" trees, and what I perceive to be a legacy of mistrust resulting from the past when dominant large trees were commonly harvested in the Southwest because they were slow growing, represented imminent mortality, and also for their economic value. That approach to forest management is no longer taken on the North Kaibab District (nor the Kaibab National Forest). The Jacob Ryan project is not primarily about generating timber volume and revenue, (although I consider the question "who pays?" to be a very important consideration); it is primarily about providing for healthy and sustainable forest habitat conditions and restoring forest conditions that are resilient to fire (EA, section 1.4.2). Contrary to the claims of some critics, we will not be targeting the removal of large trees. While the project does focus on thinning smaller trees, I did not opt to impose the arbitrary diameter cutting limit that Alternative 3 would require. As with any rule arbitrarily imposed, we can expect to encounter good reasons that are exceptions to the rule. When we make decisions about what trees should remain and which should be removed, we consider many characteristics of each tree. While the vast majority of the trees harvested in the Project will be 16 inches DBH or less [EA, pp. 14 – Table 1(b), & section 3.2.1], we know that there are trees greater than 16 inches DBH that need to be removed because they: are suppressed; are crowding out a larger more vigorous tree or an oak that provides valuable biological diversity; have a low live crown ratio and are weak, have been attacked by bark beetles or are severely infested with dwarf mistletoe; are part of a group that's surplus to the desired age class distribution of our uneven-aged forest and can provide a growing site for establishment of a new age class, or; open up space between crowns reducing the risk of running crown fire, etc. For all of these reasons and the science-based determinations that we make when we look at each tree, I am not willing to impose the arbitrary cap.

There is, however, a diameter limit included in Alternative 1 that is not arbitrary; trees greater that 12 inches in northern goshawk nest stands will not be removed [EA, p.7 - action 1(a)] in order to meet the denser canopy cover requirements for nesting goshawks, as directed by the Kaibab Forest Plan.

- ***Fire and Fuels Reduction:***

Reduction of hazardous fuels is a key element of the purpose and need for this project (EA, sections 1.4.1, 1.4.2 & 1.4.3) and one of the reasons that I have selected Alternative 1 over the No action (Alternative 2) and Alternative 3.

Openings: As mentioned under "Forest Health" above, group selection treatments in the action alternatives will create relatively small openings for pine regeneration. These openings create breaks in an otherwise continuous canopy. These openings, in combination

with the extensive thinning reduce fire severity by providing areas where the fire will transition from the canopy to surface fire, inhibiting active crown fire from consuming the canopy across the landscape (EA, pp. 59-63). The selected alternative will create 724 acres of openings (average size less than 1 acre) throughout the 26,000 acre project area, versus only 145 acres of openings in the uneven aged strata under Alternative 3. I consider this and the associated reduced risk of crown fire (both passive and active), as another benefit of Alternative 1 compared to Alternative 3.

Modeling: Fire and fuels hazard modeling showed relatively little difference between the two action alternatives (EA, sections 2.7.3 & 3.3.2). This is due in part because some of the models used for analysis (such as FlamMap) display fire behavior characteristics, such as potential for crown fire activity, using one set of wind and fuel moisture conditions across the landscape, as if the entire landscape were burning at the same time (EA, Appendix B). Increased fire behavior from spotting, falling snags or rolling debris are not captured. It does not capture the accelerating active crown fire activity that would occur in more continuous canopy cover conditions on a windy day with spotting ahead of the fire from blown embers. Crown fire originating from untreated areas surrounding the project area creates additional unaccounted for risk.

Under both action alternatives the increased distance from the ground surface to the base of tree crowns found post-treatment inhibits fires burning in surface fuels from transitioning into crown fire. Thinning and/or prescribed fire treatments under both action alternatives would raise crown base heights, decrease crown bulk density and decrease canopy continuity. This would substantially reduce active crown fire risk in the project area. The combination of thinning and prescribed fire would enhance stand structure and return characteristic low to moderate intensity fire to more of a fire adapted ecosystem, increasing opportunities in the future to allow wildfires to perform their natural role as a disturbance factor.

As described above, the fire and fuel hazard models used for this project have limitations in anticipating certain fire conditions. I believe that there will be a lower likelihood of crown fire, or lethal fire effects to trees, with Alternative 1 when compared to Alternative 3. This is attributable to the lower stand density, decreased crown bulk density and increased small group regeneration cutting in Alternative 1, both of which result in more space between tree crowns, and therefore an added margin of crown fire risk reduction. I base this conclusion on experience of fire management and forestry professionals and what they have witnessed on many wildland fires within the southwest (EA, section 1.4.1 “Why here?” and section 1.4.2 “Why Now?”); it is intuitive that heavier stocked stands are more prone to lethal scorch and tree mortality from fire than lighter stocked stands.

Potential Costs: There is a substantial difference between the action alternatives and the No Action alternative in terms of reducing future potential for undesirable, uncharacteristic, high-severity wildfire in this project area. With the No Action alternative, the risk of stand-replacing fire remains high. The cost of suppressing such a large fire is realistically expected to be many millions of dollars (EA, section 3.2.10 – Economics), which is a potential cost burden the government and taxpayers would have to cover.

There are also ecological costs associated with high severity fire effects. For instance, the time necessary to regenerate and grow the area back to desired conditions, including the large old trees that are part of the desired condition, would be a century or longer.

- ***Goshawk habitat:***

Forest Plan Direction: I considered Forest Plan standards and guidelines for managing and improving goshawk habitat in making my decision. The area within the Jacob-Ryan project boundary is considered goshawk habitat in its entirety, either as nest stands, FA's or PFA's. The balanced diversity of age and size classes across the landscape with uneven-aged structure is a major goal of the Forest Plan's guidance to provide quality habitat for northern goshawks and their prey. Under Alternative 1, proposed thinning and group regeneration cutting provides progress towards desired VSS percent distribution, retention of various canopy cover levels in VSS 4-6, the retention of live reserve trees in openings (depending on size of opening), snags, downed logs and woody debris throughout the ponderosa pine forest type. In contrast, Alternative 3 does not progress towards desired VSS percent distribution (except for a 1% change in VSS 1 and 4 classes) and uneven aged forest structure. [EA, Tables 4 & 5(a); & Sections 2.7.1 and 2.7.4 – Forest Health and Northern Goshawk Habitat, respectively)]. Forest Plan standards and guidelines for canopy cover, snags, logs and down woody debris (Forest Plan p. 29) would be met under either action alternative.

Vegetative Structural Stage (VSS) Diversity: The Kaibab Forest Plan provides guidance for vegetation management to provide habitat for northern goshawks and their prey. These habitat considerations are the basis for the Forest Plan's VSS acreage distribution for uneven-aged stratum (i.e., 10, 10, 20, 20, 20, 20 % distribution by age class between VSS 1-6 respectively) both within FAs and PFAs (See EA, p. 24 - Table 4). The Forest Plan allows for variance from these desired distributions by +/- 3% (Forest Plan p. 29). Another guiding principle is to apply a group selection silviculture system and progress toward uneven-aged conditions. (Forest Plan, pp. 40-46).

Alternative 1, post treatment, either meets or moves towards these desired conditions in all VSS classes (EA, Tables 4 & 8). However, Alternative 3, post treatment, trends away from desired conditions in all VSS classes except for a 1% improvement within VSS 1 and 4 (see EA Table 4). In VSS 1, 3, and 5 the variances are greater than the 3% margin for goshawk habitat allowed for in the Forest Plan. Another significant difference between the selected alternative and Alternative 3 is its use of a diameter cutting limit. The application of a diameter cutting limit would prevent regeneration of any VSS 5-6 groups and part of VSS 4 (i.e., trees between 16 to 18 inches diameter), thereby eliminating most VSS 1 recruitment [except for that which comes from VSS 2, 3, and some 4 (i.e., from 12 inches up to 16 inches)] and putting the forest in the project area on a trajectory toward an even-aged structure of overly dense large trees. These effects become more pronounced 20 years into the future, where VSS 2 decreases to 1% versus the desired condition of 10% per the Forest Plan (see EA Table 4). Under the No Action Alternative, VSS classes do not trend away from or outside desired conditions (other than a drop in VSS 2 and an increase in VSS 5 and 6 classes).

Alternative 3 results in forest VSS distributions outside those allowed for in the Forest Plan, moves forest structure towards even aged forest conditions and therefore offers less

improvement to habitat for goshawks and their prey species. For these reasons, Alternative 3 does not meet the purpose and need for action and is inconsistent with Forest Plan direction.

Canopy Cover and VSS Measurement: Concerns were expressed by some EA commenters that the Forest Service is using a redefinition of the Forest Plan goshawk habitat standards and guidelines to measure canopy cover. They claim that analysis of canopy cover at the group level (versus stand level) is not consistent with the Forest Plan; and that the Forest Service uses the *Implementation and Interpretation of Management Recommendation for the Northern Goshawk*, Version 3.0, August, 2009 (KNF I&I) (PR-3) which amounts to new Forest Plan direction.

There has been no re-definition of the Forest Plan in quantifying the analysis for VSS percent distribution or canopy cover. The Forest Plan does not provide specific direction on analysis of VSS and canopy cover at the stand or group level. (See Forest Plan, pp. 29-30). Rather, it describes desired percent distribution of VSS forest, and canopy cover requirements for VSS 4–6 forest groups, and the required scales of analysis. The EA includes an analysis at the three required scales that most accurately describes the desired conditions for the Jacob Ryan project, thus meeting the intent of the Forest Plan.

The KNF I&I project record (PR-3) provides information that can be used by vegetation specialists that correlate ranges of SDI and basal area with canopy cover. Basal Area/SDI can easily be applied in the field and is the most operationally feasible way to ensure desired canopy cover levels are being met on the ground. Direct measurement of canopy cover is difficult to do operationally. There is no mandate to use the KNF I&I; it is not a Forest Plan document and does not add to or change any of the direction in the Forest Plan. However, because the KNF I&I was developed using data and conditions specific to the Kaibab NF, and because of the improved operational feasibility described above, it is useful for practitioners. For more in depth explanation and response to these concerns, please refer to EA, Appendix D–1, *Consideration of Comments*, and PR-53).

Regardless, under both Alternative 1 and Alternative 3, analysis in the EA shows that canopy cover would be retained as required by the Forest Plan in VSS 4-6 groups existing within the uneven-aged strata (EA, pp. 8-9, 28, 37, 42, 89, 92-93, & 112-113).

Forest Arrangement: A major component of desirable northern goshawk habitat, and the habitat for its key prey species, is the “grouped” spatial arrangement of the ponderosa pine forest. This arrangement is particularly important to provide interlocking crowns for squirrels, which are an important prey species for goshawks. This project is designed to develop and maintain that arrangement. Alternative 1 creates more of the desired grouped spatial arrangement of residual trees in the project area compared to Alternative 3. The grouped arrangement within the project area is enhanced under Alternative 1 by creating 724 acres of relatively small regeneration openings between groups which will improve forest health, as well as age and size class distribution. The average size of openings will be less than one acre. By comparison, Alternative 3's diameter limit prevents creating any more than about 145 acres of openings, with none of that coming from VSS 5-6 groups, leading to a more even-aged structure with overly dense, large trees in the future at increased risk of stand replacing crown fire. This is clearly at odds with Forest Plan management direction regarding forest structure and northern goshawk habitat, and other issues, such as

management of mistletoe infected trees, beetle infestations, and tolerance to drought and other stressors.

Under Alternative 1, the grouped spatial arrangement is also enhanced by the ability to selectively remove trees larger than 16 inches in diameter that better defines and separates groups. Alternative 3 limits our ability to achieve this desired group and clump arrangement due to the diameter cap.

- ***Old Growth:***

The Forest Plan standard calls for the allocation consisting of landscape percentages meeting old growth conditions and not specific acres. The standard for old growth in the Forest Plan (FP, pp. 32-34) is to manage for 20% of each cover type in old growth conditions. The applicable scale at which this standard applies (i.e., 20% of each forested Ecosystem Management Area), is one scale above and one scale below the EMA. The scales of analysis for JR are the Project area (one scale below), the Ad-hoc analysis area (EMA equivalent), and GA 13 (one scale above). The required percentage of old growth across the landscape is currently met at all three scales of analysis in the EA [i.e., within the Jacob-Ryan project area (21%), the ad-hoc analysis area (24%) and GA 13 (21%) as discussed in the EA. pp. 50-53].

The Forest Plan desired range for VSS 5 and 6 combined within the uneven-aged strata is between 34 to 46%. Under Alternative 1, VSS 5 and 6 (combined) increase from 40% following treatment, to 46% in 20 years, then to 51% in 40 years. Under Alternative 3, VSS 5 and 6 combined increase from 49% following treatment, to 55% in 20 years, then to 57% in 40 years [EA, table 5(a)]. Old Growth as defined by the Forest Plan is not defined only by VSS class, it also includes other associated characteristics such as tree age, downed woody material, snags etc. (See Forest Plan pages 32-34, and table 15 for old growth standard and guidelines and characteristics). It is not solely defined by presence of large diameter trees.

I anticipate that some critics of my decision may mischaracterize this project with claims that it will significantly reduce old growth habitat. The effects on old growth habitat associated with my decision to implement Alternative 1 are disclosed in the EA (EA, pp. 28-29, & 50-53). Alternative 1 would reduce old growth by up to 105 acres within the 26,916 acre JR project area. This equates to approximately 0.4 % change in old growth allocation. Based on this reduction, the percentage of old growth within VSS 5-6 groups may drop from 21.1 to 20.7 %, within the JR project area. This reduction would be even less measurable, when evaluating the potential impact at the mid-scale and upper scales of analysis (for instance 105 acres of the 16,300 acres equates to approximately 0.15% reduction at the ad-hoc level, and 105 acres of 52,440 acres equates to approximately 0.04% reduction at the GA level.). The regeneration of these 105 acres of dispersed old growth to VSS 1 helps balance VSS classes in an effort to increase habitat diversity per the KNF Forest Plan.

With the “No Action” Alternative and Alternative 3 there would be no direct effect to old growth. However, there are other long term risks to forest health and loss of old growth associated with the “No Action” and Alternative 3 as described below.

The Forest Plan also states that in allocating old growth and making decisions about old growth management, that decisions are made using appropriate information about risks to sustain old growth function at appropriate scales, due to natural and human-caused events

(Forest Plan p.33). Eighty percent of old growth (considered de-facto old growth) occurs within goshawk nest stand areas. Although treatment within nest stands is similar between the action alternatives, there is a notable difference in treatment outside the nest areas. Alternative 3 leaves the forest outside these old growth areas in a more dense condition. As discussed previously and disclosed in the EA, these dense stand conditions leave the forest more prone to risk from crown fire, disease, drought and other forest health stressors than Alternative 1. Under Alternative 3, these dense forest conditions place existing old growth at greater risk of stand replacing fire and insect epidemic than Alternative 1. Due to these factors, I conclude that the preservation and sustainability of old growth is best achieved under Alternative 1.

- ***Harvest Volumes and Associated Economic Considerations:***

  My decision will provide more economic and employment benefits in the Arizona Strip and southern Utah than the other alternatives I considered. Alternative 1 will help pay for more of the implementation costs associated with needed vegetation improvement work such as pre-commercial thinning, piling, and fireline construction, which has benefits to taxpayers.

  Total acres to be treated are the same under each of the action alternatives; implementing Alternative 3 would cost almost as much as implementing Alternative 1, because both alternatives include similarly large acreages of pre-commercial thinning which is expensive work. Since trees larger than16 inches DBH are excluded from mechanical thinning under Alternative 3, Alternative 1 would harvest more volume. The increased volume of timber in Alternative 1 helps offset implementation costs, which is an important consideration during tough economic times and federal budget constraints. (EA, section 2.7.2). There is an opportunity to use stewardship contracting during project implementation, which allows for exchanging goods (timber value) for services (such as pre-commercial thinning).

Best Management Practices, Mitigation Measures, and Monitoring:

The Purpose and Need for the JR project (EA, Section 1.4.3, pp. 13-16) is based on desired conditions per standards, guidelines, goals, and/or recommendations of the Forest Plan and northern goshawk guidelines. Both of the action Alternatives would be required to follow mitigation measures, specific conservation measures, design specifications and best management practices (EA, Appendices C-1 & C-2), which I am adopting with this decision. I am confident that these practices will adequately prevent or minimize adverse effects because we have used them successfully in the past and many are State recognized best management practices for protecting soil and water quality. I believe these measures represent all practicable means to avoid or minimize environmental harm from the selected alternative. I believe based on the analysis in the EA and the required mitigation and monitoring that potential harm to the environment will be avoided.

Best Available Science:

My conclusion in selecting Alternative 1 is also based on a review of the record that shows a thorough analysis using the best available science, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk. The EA used the best available science from scientists and research organizations like Richard Reynolds with Rocky Mountain Research Station and Wallace Covington with Northern

Arizona University's Ecological Restoration Institute (ERI), and many others listed in the EA (EA, Chapter 5 – References), who are authorities in the fields of northern goshawk habitat and ponderosa pine restoration. For each resource in the EA, the IDT members reviewed in detail science upon which this analysis is based and other science that has been brought to their attention. Where scientific certainty is lacking some local professional experience was also applied. For members of the public who commented on this project and provided references in the form of peer reviewed and other journal articles have been considered and addressed in the project record (PR-26) and Appendix D to the EA.

PUBLIC INVOLVEMENT

This action was originally listed as a proposal on the Kaibab National Forest Schedule of Proposed Actions 3rd Quarter of calendar year 2010, and updated periodically during the analysis. Public involvement was a key component in the planning and decision making process (see Sections 1.7 to 1.9 of the EA). Public comment was received during the scoping process and the formal 30-day comment period in response to the EA for Comment. The IDT considered and responded to comments in various ways throughout the NEPA process, including refining alternatives, adding or modifying mitigation and monitoring measures, responding to issues and enhancing the analysis, and making modifications to the proposed action, as needed. Appendix D of the EA contains the comments received during the 30-day comment period and documents the Forest Service's consideration of those comments. (Also see Intensity factor number 4 – Controversy, below.)

Consultations and discussions with the Kaibab Paiute Tribe, Hopi Nation, and Navajo Nation have been ongoing during project planning. I am not aware of any significant tribal concerns.

I want to thank the individuals, organizations and agencies that participated and provided comments for this analysis (EA, Chapter 4 & Appendix D). The input was valuable in helping me arrive at an informed decision.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

I have reviewed the environmental effects described in the EA and evaluated whether the alternative I have selected constitutes a significant effect on the quality of the human environment or whether the environmental impacts would be significant based on their context and intensity as defined by the National Environmental Policy Act (NEPA) using the criteria in the implementing regulations (40 CFR 1508.27). I have determined that an environmental impact statement (EIS) will not be prepared.

I have determined that the implementation of the Selected Alternative will not result in any anticipated effects that exceed the level at which a significant effect on the human, biological, or physical environment in terms of context or intensity would occur. Both beneficial and adverse effects have been considered. Beneficial effects have not been used to balance, mask, or off-set adverse effects because there are no significant adverse effects. The adverse effects from the Selected Alternative are expected to be minor and are relatively short in duration. The effects are not highly uncertain and do not involve unique and unknown risks. The action will not, in relation with other actions, cause cumulatively significant impacts.

Context:
Context is the scale of aspect; the EA considers the effects of this project on multiple resources at multiple scales of analysis (EA, Chapters 2 & 3) and fully discloses them. The Jacob-Ryan Project is a site specific or local project and by itself would not cause any significant adverse effects nationally, regionally, or at the statewide level. Both short-term and long-term effects of the project have been considered, including cumulative effects that are limited to only a portion of the Kaibab Plateau on the North Kaibab Ranger District (EA, pp. 53-58, & Chapter 3).

Intensity:
The following discussion is organized around the ten (10) intensity factors, which refers to severity of impact; the intensity of effects considered is in terms of the following:

1) Environmental Effects (Beneficial & Adverse)

   Consideration of the intensity of environmental effects is not biased by beneficial effects of the action. For this project there are "no known" significant irreversible resource commitments or irretrievable losses of timber production, recreation opportunities, wildlife habitats, or soil productivity. Environmental effects of this project that may be both beneficial and adverse are discussed in Chapter 3 (Environmental Consequences) of the EA and on pages 112-113. Key subtopics of that discussion included canopy cover, effects on northern goshawk nest stands, and VSS distribution. I concur with what the EA says about this factor and therefore find that: 1) the EA evaluated adverse effects of this project separately from beneficial effects, to determine whether such adverse effects would have been significant in their own right, and no such effects were found to be Significant; 2) in no cases did the analysis in the EA use beneficial effects to offset the potential significance of any adverse effect; and 3) the EA did not use any long term beneficial effects to offset the potential significance of any short term adverse effects.

2) Effects on Public Health and Safety

   Possible effects of this project on public health and safety are discussed in Chapter 3 of the EA and on page 113. Key points of that discussion include: 1) some roads may be temporarily closed during project implementation as a public safety measure; 2) other projects considered within the cumulative effects analysis area that are or may be initiated to increase public health and safety; the ADOT and Forest Service hazard tree removal projects along Highways 67 and 89A and along FS secondary roads removed trees burned in the Warm Fire that were potentially hazardous to vehicular traffic; these projects have increased public safety along the public highways and forest roads; 3) the Plateau Facility Fire Protection Project is designed to provide fire protection for sites and facilities to help protect life and property and increase public safety, with 833 treated acres within the boundaries of Jacob-Ryan and a total of 1,593 acres within the ad-hoc analysis area. The key conclusion of this discussion is that this project will not cause any significant effects on public health and safety. I think that conclusion is supported by the EA, and I therefore make the same finding.

3) Unique Characteristics of the Geographic Area

   The degree to which this project could affect unique characteristics of the geographic area is discussed in Chapter 3 of the EA and on page 113. Key points of that discussion include: 1) ecologically critical areas such as park lands, prime farmlands, wetlands, wild and scenic

rivers, etc. do not exist in the project area; 2) cultural resources have been surveyed and recorded within and adjacent to proposed treatment areas and will be avoided during implementation of any ground disturbing activities; 3) design criteria for this project meet the cultural resources site protection standards in the programmatic agreement between the U.S. Forest Service Region 3 and the Arizona State Historic Preservation Office and comply with best management practices. The conclusion of this discussion is that this project would not cause any adverse effects on unique characteristics of the geographic area. I think that conclusion is supported by the EA, and therefore I make the same finding.

4) Controversy

The degree to which the effects of this project are likely to be highly controversial is discussed in Chapter 3 of the EA, and on pages 113-114. Key points of that include: 1) trees 16 inches and larger (up to 30 inches) are not rare on the north Kaibab Plateau compared to historical conditions, as suggested in Scoping input; 2) Scoping input which said that the North Kaibab Ranger District is deficient in mature forest structure (VSS 5 and 6), and that this project would reduce that further is refuted by the EA's analysis and conclusion that this project would maintain 20% or more ponderosa pine old growth not only at the applicable mid-scale of analysis, but also at the smaller project scale and the large scale of Geographic Area 13. (note: approximately 52,440 acres of old growth currently exists within GA 13, which is 21 % of the large geographic area); and 3) Scoping input which argued that this project will cause effects cumulative with the Warm Fire suppression event is refuted by the Scoping Comment Summary and the Scales of Analysis section of the EA, near the beginning of Chapter 3, which point out that the vegetation type, elevation and seed zones of the Warm Fire suppression area all differ from the JR project area, which explains why a reasonable analysis area for cumulative effects for Vegetation and Fuels does not include most of the Warm Fire suppression area. This section of the EA states that all comments received during scoping were considered in the Scoping Comment Summary (2010, PR-26), as support for the conclusion that no scientific or factual evidence has been uncovered to indicate that the environmental effects of this project as proposed would be different from the effects analyzed and disclosed in this EA. This conclusion remains valid based on consideration of all public comments received during the 30-day comment period (EA, Appendix D).

Throughout both Scoping and the later 30-day public comment period, members of the public have brought additional scientific information to our attention as being relevant to this project and in opposition to science on which we were relying. In Chapter 3 of the EA, and in the specialist and other key reports prepared as part of the project record, interdisciplinary team members considered other scientific information and its applicability to the treatments proposed and the conditions that exist within the Jacob-Ryan project area, or whether it was truly in opposition to the science we used. For these reasons I find that the effects of this project are not highly controversial.

5) Uncertainty

The degree to which the effects of the project are highly uncertain or involve unique or unknown risk is discussed in Chapter 3 of EA, and pages 114-115. That discussion mentioned other projects with similarities to this project, which have been planned and

implemented on this district, including Fracas, Dry Park, and shelterwood seed-step treatments done in the 1980s. This section of the EA supports the conclusions that the effects of this project are not uncertain, they do not involve unique or unknown risks, the actions described in the EA have been used before on this district, and we have a long history of implementing these activities on this Forest. I therefore find that the effects of this project are not highly uncertain, nor do they involve unique or unknown risks.

6) Precedent

The degree to which this action may establish a precedent is discussed in the EA on page 115. That discussion noted that while Scoping suggested that this project include removal of encroaching conifers in meadow and aspen habitat, this project does not include meadow and aspen habitat; so removal of encroaching conifers in meadow and aspen habitat is not connected to or dependent on the Jacob-Ryan project. Future projects that are proposed outside of but near JR will be analyzed on their own merits, separately from JR. Neither Scoping nor public comment for this project raised any disputes pertaining to the appropriate Scope of this project, connectedness of other actions, or reasonably foreseeable future actions other than those considered (EA, sections 1.7 to 1.9, pp. 11, 53-58, 75-86, & 115; and Appendix D, & PR-26). The EA supports the conclusion that this project would not establish a precedent, and for that reason I hereby make that same finding.

7) Cumulative Effects

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts is discussed in the EA in Chapter 3 and on page 115. That discussion properly incorporates by reference specialist reports for Soils and Watershed, Vegetation, Fire & Fuels, Heritage Resources, the Biological Evaluation – Wildlife report, etc., to support the conclusions that the cumulative impacts of this project would not be significant, and proposed treatments are not related to other actions, that when combined, would have significant impacts. I believe the EA supports those conclusions and hereby make the same findings.

8) Sites or Properties on or eligible for the National Register of Historic Places

The degree to which this project might affect such sites or properties is discussed in section 3.2.8 of the EA and on page 116. That discussion provides adequate support for the conclusion that Alternative 1 would have no adverse effect on National Register-eligible districts, highways, or structures. In my judgment, the EA fully supports this conclusion, so I hereby make the same finding. Potential archeological, cultural, and historic sites were inventoried within the JR project area in 2008; State Historic Preservation Office clearance was received on June 30, 2008.

9) Threatened, Endangered, and Sensitive Species (TES)

The degree to which this project might affect a threatened or endangered species or its habitat that has been determined to be critical is discussed in section 3.2.4 of the EA and on page 116. That discussion notes that no Threatened and/or Endangered (T&E) species are present in the project area. Region 3 Forest Service sensitive species are analyzed under the Biological Evaluation (BE) Specialist Report and EA. The conclusion is that this action would not adversely affect any T&E species or habitat that has been determined to be critical

under the Endangered Species act of 1973, or any Forest Service sensitive species. I think the EA supports that conclusion, and for that reason I hereby make that same finding.

10) Compliance with Federal, State, or local laws, or for Environmental Protection

Whether this action would violate any law or other requirement for protection of the environment is discussed in the EA on pages 116-117. Key subtopics in that discussion included Forest Plan and NFMA consistency, coordination of proposed prescribed burning with Arizona Department of Environmental Quality, and this project's full compliance with the Clean Air Act requirements and the various sections of the Clean Water Act. During the interdisciplinary analysis and evaluation, resource specialist referenced laws, rule, and regulations, executive orders, as applicable. These laws included, but were not limited to the following:

National Forest Management Act of 1976: The National forest Management Act requires the Secretary of Agriculture to specify "guidelines for land management plans developed to achieve the goals of the Program, which 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-used objectives" [16 USC1604 (g) (3) (B)]. All alternatives were developed in compliance with NFMA and the Kaibab Land and Resource Management Plan, (1988) as amended. The Forest Plan contains guidance for the design of vegetation treatments to improve habitats for management indicator species (MIS), including provisions for diversity, old-growth, habitat components (i.e. snags and logs), and a range of vegetation successional stages. The Wildlife Specialist Report and Chapter 3 of the EA evaluate the effects to MIS in light of current research, habitat availability, and existing population data (Section 3.2.4.3 "Management Indicator Species," EA pp. 92-95).

National Environmental Policy Act of 1969: The Forest Service procedures for implementing NEPA are codified in 36 CFR, part 220. These establish procedural and content requirements for environmental analysis and documentation of Forest Service proposals. The EA for the Jacob-Ryan project was prepared in full compliance with NEPA and related, applicable regulations.

Federal Water Pollution Control Act 1977 (Clean Water Act): Alternative 1 conforms to the Clean Water Act as amended (1982). This act establishes a non-degradation policy for all federally proposed projects. Through the use of best management practices, Alternative 1 meets the standards agreed to in an MOU between the State of Arizona and U.S. Department of Agriculture Forest Service Southwestern Region (1990). Additionally, the project is distant enough from 303(d) listed water bodies to not affect any listed streams. Executive Orders 11990 (Wetlands Management) and 11998 (Floodplain Management) would be met as there are no affected flood plains or wetlands within or directly adjacent to the project area.

The Endangered Species Act of 1973 as amended (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq., ESA)**:** There are no Threatened and/or Endangered (T&E) species present in the project area. Possible effects to federally listed wildlife species were analyzed in the Biological Evaluation Specialist Report (2010-PR31). The action will not adversely affect any T&E species or habitat that has been determined to be critical under the ESA. Also refer to bullet number 9 – titled "Threatened, Endangered, and Sensitive Species," under "Intensity" above.

Migratory Bird Treaty Act: Executive Order 13186 was enacted to ensure federal agencies protect migratory birds through project design that limits adverse impacts to migratory bird resources and assures that migratory bird species receive consideration in the decision-making process. Executive Order 13186 also tasks federal agencies to identify unintentional take of migratory bird species during land management actions. Four species in the project area have been identified: northern goshawks, olive sided flycatchers, Cordilleran flycatchers, and purple martins. The northern goshawk is considered in detail in the sensitive species report of the EA (Section 3.2.4.4 "Migratory Birds," EA pp. 96-97). Effects to olive sided flycatchers, Cordilleran flycatchers, and purple martins are considered minor short term effects, and would not result in a measurable negative effect to bird populations (EA, p. 97). The same section of the EA discloses that other potential effects to migratory bird populations are expected to be low to non-existent, dependent upon the timing of project activities with nesting seasons.

Grand Canyon Game Preserve: The Jacob-Ryan project is located within the Grand Canyon Game Preserve, which was established by proclamation by President Theodore Roosevelt on November 28, 1906 to protect game species and their habitat. The Kaibab Forest Plan states "Cooperate with the Arizona Game and Fish Department to achieve management goals and objectives specified in the Arizona Wildlife and Fisheries Comprehensive Plan, and in carrying out the cooperative agreement for the management of the Grand Canyon National Game Preserve." The Forest Service and Arizona Game and Fish Department agreed to allow hunting on lands managed by the District; the management activities in the Jacob-Ryan Project are designed to maintain huntable populations of game animals and continue to provide breeding places for those species (EA, Section 3.2.4.5 "Specially Designated Areas," EA, p 97).

Kaibab Squirrel National Natural Landmark (NNL): In 1965, 278,459 acres of ponderosa pine forest within the Kaibab National Forest and Grand Canyon National Park were designated as the Kaibab Squirrel National Natural Landmark (NNL). NNLs are designated by the Secretary of Interior and represent unique examples of ecological and geological features that comprise our nation's natural history. The NNL designation is not a land withdrawal and does not direct or prohibit any activity. The Forest Service and the U.S. Department of Interior - National Park Service agree that activities in the Jacob-Ryan Project are designed to have little or no negative effect to significant NNL resources, nor is the project in opposition to the purpose of NNL designation. But that the resources of the Kaibab Squirrel Area NNL have the potential to benefit from management activities proposed to improve the overall forest conditions. (EA, Section 3.2.4.5 "Specially Designated Areas," EA, p 96). Additionally, the NKRD is actively involved with the NNL program regarding status of the squirrel habitat and current management benefitting the Kaibab Squirrel.

National Historic Preservation Act of 1966, as amended: Section 106 requirements for survey and evaluation have been met for all undertakings listed under this proposed action. Also refer to bullet number 8 – titled "Sites or Properties on or eligible for the National Register of Historic Places," under "Intensity" above.

Clean Air Act of 1970 as amended: Protect and enhance air quality while ensuring the protection of public health and welfare. Alternative 1 is designed to meet the National Ambient Air Quality standards through avoidance of practices that degrade air quality below

health and visibility standards. Burning would be done only after receiving approval from the Arizona Department of Environmental Quality (ADEQ) that burning can proceed. ADEQ is the regulatory agency for air quality (including smoke) in Arizona.

Applicable laws and regulations were considered in the EA and resource specialist reports. The Selected Alternative is also consistent with the 1988 Land Management Plan for the Kaibab National Forest, as amended. Best Management Practices (BMPs) will be implemented to avoid or mitigate any potential effects concerning soils and erosion control, and water quality. I find the Selected Alternative and BMPs are consistent with applicable federal, state, and local laws and requirements for the protection of the environment and with agency policy and direction.

Administrative Review (Appeal) Opportunities

This decision is subject to appeal pursuant to regulations at 36 CFR 215. Those who provided comments during the comment period are eligible to appeal the decision under the regulations. The appeal must be filed (regular mail, fax, email, hand-delivery, express delivery or messenger service) with the appropriate Appeal Deciding Officer. Submit appeals to:

Michael R. Williams, Forest Supervisor
USDA Forest Service - Kaibab National Forest
ATTN: Jacob-Ryan Vegetation Management Project
800 South Sixth Street
Williams, Arizona 86046
Fax: 928-635-8208
E-Mail: *appeals-southwestern-kaibab@fs.fed.us*

If hand delivered, the appeal must be received at the above address during business hours (Monday-Friday 8:00 a.m. to 4:30 p.m. MDT) excluding holidays. Electronic appeals must be submitted in a format such as an e-mail message, plain text (.txt), rich text format (.rtf), Adobe (.pdf), or Word (.doc). The appeal must have an identifiable name attached to it. Verification of identity will be required. A scanned signature may serve as verification on electronic appeals.

Appeals, including attachments, must be in writing, fully consistent with 36 CFR 215.14, and filed (postmarked) within 45 days following the date this notice is published in the *Arizona Daily Sun* (Flagstaff, Arizona). This publication date is the exclusive means for calculating the time to file an appeal. When using the electronic mailbox, you will receive an automated reply if the message is received. If you do not receive this automated reply, it is the responsibility of the appellant to ensure the appeal is received by the deadline. Those wishing to appeal this decision should not rely upon dates or timeframes provided by any other source.

Individuals or organizations who submitted comments during the comment period specified at 215.6 may appeal this decision.

Expected Implementation Date

If no appeals are filed within the 45-day time period, implementation of the decision may occur after five (5) business days have lapsed, from the close of the appeal-review filing period established in the Notice of Decision in the *Arizona Daily Sun*. When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

Project implementation will begin in 2012. This is a multi-year project, thus it will take several years to complete all treatments to be implemented in the project.

CONTACT / ADDITIONAL INFORMATION

For additional information concerning this decision, contact:

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Fredonia, Arizona 86022
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E-mail address: djvincelette@fs.fed.us

RESPONSIBLE OFFICIAL'S SIGNATURE / DATE SIGNED

As the Responsible Official, my signature below certifies that I am the Agency employee who has the authority to make and implement the decision specified in this Decision Notice. This decision summarizes information described more completely in the Environmental Assessment. For more detailed information, please refer to the EA and project record.

Timothy J. Short

TIMOTHY J. SHORT
District Ranger / North Kaibab Ranger District

January 5, 2012

Date

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