The Holy Cross District of the White River National Forest (WRNF) is proposing a forest health and fuel reduction project on National Forest System lands within the permitted boundary of the Beaver Creek Ski Resort. This proposal is the result of numerous collaborative dialogs with the ski resort, the public, interested stakeholders, and local governments. Over half of the Beaver Creek Ski Area is within National Forest System Lands, with most of the private land being around the base areas.

**Purpose and Need**

The purpose of this proposal is to reduce risk to the public and resort infrastructure from hazard trees, reduce fire hazard around resort infrastructure, increase age and species diversity in forested stands, and retain forest cover sufficient to maintain a positive guest experience at the resorts. Specifically, the proposed treatments aim to address immediate and long-term vegetation concerns resulting from the mountain pine beetle epidemic, localized infestations of mountain spruce bark beetle, aspen mortality and decline, and other forest health and fuel loading issues.

**Proposed Action**

The Forest Service proposes to meet the purpose and need for action by removing dead and dying trees, reducing hazardous fuels accumulation, regenerating aspen, and perpetuating mixed conifer, and aspen stands on key National Forest System land within the Beaver Creek Ski Resort:

- Where hazardous trees (as defined in *Tree Hazards: Recognition and Reduction in Recreation Sites* by David W. Johnson (revised 1981) or other acceptable publication) are identified.
- Where there are high numbers of dead or beetle infested trees, and stand management is necessary to maintain mature trees on the landscape.
- Where hazardous fuels treatments would reduce risk to resort infrastructure.

Vegetation treatments would be designed to complement recreation, wildlife, watershed and scenic resource values where possible, and would meet the objectives of reducing risk to the public and resort infrastructure from identified hazard trees, reducing fire hazard around resort infrastructure, increasing age and species diversity in forested stands, and retaining forest cover sufficient to maintain a positive guest experience at the resort. This project will address not only lodgepole pine stands affected by the bark beetle epidemic, but also aspen and conifer stands that have begun to deteriorate or that seen recent spruce beetle activity. Vegetation treatments are designed to accommodate changing conditions within the resort. Some actions, such as hazard tree removal, may occur every year. Other treatments, such as clear cutting deteriorating stands of aspen, may occur as single-year treatments and only when management requirements and conditions on the ground necessitate action.

**Proposed treatments include:**
• Cutting and removing dead and dying trees, possibly in clearcuts, to minimize risk of falling trees to the public and resort infrastructure, reduce fuel loading, and regenerate declining tree stands. This treatment will result in an increased potential for remaining live trees to blow over and uproot due to increased wind exposure after the removal of dead trees. Additional cutting of vulnerable live trees may be necessary to minimize risk to the public and resort infrastructure.

• Cutting and removing trees, possibly in small groups or clearcuts, to regenerate declining stands and to perpetuate forest cover. Live aspen and encroaching conifers would be cut to facilitate aspen stand regeneration.

• Planting seedlings or transplants to facilitate regeneration in key areas.

• Applying pesticides to protect high value trees from bark beetle attack.

• Implementing measures to reduce the impact from the increasing spruce bark beetle population such as peeling down spruce logs, removing infested trees or logs, or setting trap trees.

• Burning or removing logging-generated slash to reduce fuels and to stimulate aspen regeneration.

Because the forested landscape at the resorts has changed dramatically in recent years with the mountain pine beetle epidemic, and the current conditions will likely evolve as the project planning and implementation process continues, vegetation treatments would vary depending on the current stand conditions at the time of treatment. Treatment would not be limited to a single proposed action but instead be selected from a menu of alternative or adaptive management solutions that best meet the project’s purpose while minimizing resource impacts and tree mortality. Treatment menus were developed according to resource constraints and the current and desired forest health conditions for these areas.

**Treatment Menu**

The following menu of proposed treatment options allows for implementation of those treatments that best match stand conditions at the time of treatment. The menu is arranged by stand types on the resort that are characterized by vegetation stand type or infrastructure location and are identified as:

1. Lodgepole Pine (90%) with <50% Mortality
2. Lodgepole Pine (90%) with >50% Mortality
3. Lodgepole Pine Mixed (70-90%) Mixed with Other Species
4. Lodgepole Pine (50-70%) and other species
5. Mixed Conifer with a Lodgepole component (<50%)
6. Pure Spruce and Mixed Spruce Fir
7. Aspen, and Aspen mixed with Other Species

**Stand Type 1, Lodgepole Pine with light mortality:** These stands consist of a mostly pure, even-aged stand of lodgepole pine with light, under 50%, mortality from mountain pine beetles. These stands tend to have only scattered understory, with most of that located near the edges of the stands. These prescriptions would be used for those portions of R2Veg sites 514-38, -40, -55, -58, -63, -71, -72, -92 and 516-32 located on NFS land.
RX OPTION 1.1 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management. If the stand succumbs to mountain pine beetles before multiple age classes can be regenerated, options 2.1 or 2.2 should be used.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 1.2 – Shelterwood Cutting (Partial Cut): Option 1.2 is an even-aged management option. The treatment encourages an initial flush of regeneration and protects it with the residual stand until the regeneration is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB for removal. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10-15 years.

RX OPTION 1.4 – Insecticide or Pheromone Application and Treating Infested Trees (Preventive Action): This treatment maintains the stand through the current insect outbreak. If the stand succumbs to bark beetles another option should be used.

Treat high value trees by applying an approved insecticide or by applying an approved anti-aggregative pheromone prior to beetle emergence each year until the threat of infestation is over. In high value areas treat beetle-infested trees by felling and peeling, burning, chipping or removing the trees prior to beetle emergence.

RX OPTION 2.1 – Salvage Cutting (Partial Cut): This is an even-aged management option designed to provide ski run separation and protect regeneration in situations where high levels of MPB mortality exist.

Salvage all dead lodgepole pine, removing no more than 75% of the basal area. Retain all live lodgepole pine and other species, if present, to maintain the functionality of the stand for ski run separation as much as possible. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.
RX OPTION 5.2 – Hazard Tree Removal (Partial Cut): This is a sanitation/salvage treatment. This option may be used in any stand type where appropriate, and is an understood component of all prescription options where appropriate.

Harvest hazard trees located within a 150 foot buffer zone from the edge of the stand. Retain all other species.

**Stand Type 2, Lodgepole Pine with heavy mortality:** These stands consist of a mostly pure, even-aged stand of lodgepole pine with heavy, over 50%, mortality from mountain pine beetles. These stands tend to have only scattered understory, with most of that located near the edges of the stands. These prescriptions would be used for those portions of R2Veg sites 508-2, -12, -21, 514-96, -97, 516-12 and -39 located on NFS land.

RX OPTION 2.1 – Salvage Cutting (Partial Cut): This is an even-aged management option designed to provide ski run separation and protect regeneration in situations where high levels of MPB mortality exist.

Salvage all dead lodgepole pine, removing no more than 75% of the basal area. Retain all live lodgepole pine and other species, if present, to maintain the functionality of the stand for ski run separation as much as possible. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

RX OPTION 2.2 – Clearcut: This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the trees killed or infested with MPB. Retain any live trees with live crown ratios of 50% or greater. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Interplanting other species and the use of larger transplants is recommended. Regeneration should be protected until it is established.

RX OPTION 1.1 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management. If the stand succumbs to mountain pine beetles before multiple age classes can be regenerated, options 2.1 or 2.2 should be used.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Interplant with Engelmann spruce above
9000 feet and Douglas-fir below 9000 feet to provide species diversity. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 1.2 – Shelterwood Cutting (Partial Cut): Option 1.2 is an even-aged management option. The treatment encourages an initial flush of regeneration and protects it with the residual stand until the regeneration is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB for removal. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10-15 years.

RX OPTION 1.4 – Insecticide or Pheromone Application and Treating Infested Trees (Preventive Action): This treatment maintains the stand through the current insect outbreak. If the stand succumbs to bark beetles another option should be used.

Treat high value trees by applying an approved insecticide or by applying an approved anti-aggregative pheromone prior to beetle emergence each year until the threat of infestation is over. In high value areas treat beetle-infested trees by felling and peeling, burning, chipping or removing the trees prior to beetle emergence.

RX OPTION 5.2 – Hazard Tree Removal (Partial Cut): This is a sanitation/salvage treatment. This option may be used in any stand type where appropriate, and is an understood component of all prescription options where appropriate.

Harvest hazard trees located within a 150 foot buffer zone from the edge of the stand. Retain all other species.

Stand Type 3, Lodgepole Pine mixed with other species: These stands consist of an almost pure, even-aged stand of lodgepole pine (70 to 90%) with other species mixed in. These stands tend to have an unevenly distributed understory of mostly fir, but can contain other species. The following prescriptions would be used for those portions of R2Veg sites 508-1, 509-2, -3, 514-32, -34, -36, -47, -98 and 516-33 located on NFS land.

RX OPTION 3.1 – Shelterwood Cutting (Partial Cut): Option 3.1 is an even-aged management option designed to encourage an initial flush of regeneration, and protect it with the residual stand until it is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB for removal. Retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10-15 years.
RX OPTION 3.2 – Small Clearcuts within a Thinning (Partial Cut):  This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Interplant with Engelmann spruce above 9000 feet and Douglas-fir below 9000 feet to provide species diversity. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 2.2 – Clearcut: This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the trees killed or infested with MPB. Retain any live trees with live crown ratios of 50% or greater. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Interplanting other species and the use of larger transplants is recommended. Regeneration should be protected until it is established.

RX OPTION 5.1 – Partial Cut (Remove all lodgepole pine): Option 5.1 creates a two-aged stand that can be moved toward uneven-aged management in the future.

Harvest all lodgepole pine in the stand (up to 35% of the basal area) and retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source.

RX OPTION 1.4 – Insecticide or Pheromone Application and Treating Infested Trees (Preventive Action): This treatment maintains the stand through the current insect outbreak. If the stand succumbs to bark beetles another option should be used.

Treat high value trees by applying an approved insecticide or by applying an approved anti-aggregative pheromone prior to beetle emergence each year until the threat of infestation is over. In high value areas treat beetle-infested trees by felling and peeling, burning, chipping or removing the trees prior to beetle emergence.

RX OPTION 5.2 – Hazard Tree Removal (Partial Cut): This is a sanitation/salvage treatment. This option may be used in any stand type where appropriate, and is an understood component of all prescription options where appropriate.
Harvest hazard trees located within a 150 foot buffer zone from the edge of the stand. Retain all other species.

**Stand Type 4, Mixed Lodgepole Pine and other species:** These stands are predominantly lodgepole pine (50 to 70%), but they contain a significant component of other species. These stands can be even-aged or two storied. These stands tend to have a significant, but unevenly distributed, understory of mostly fir, but can contain other species. The following prescriptions would be used for those portions of R2Veg sites 508-9, -16, 514-39, -52, -57, -60, -74, 516-7 and -34 located on NFS land.

**RX OPTION 4.1 – Shelterwood Cutting (Partial Cut):** This is an even-aged management option designed to encourage an initial flush of regeneration, and protect it with the residual stand until it is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB, and trees with less than 30% live crown ratios, for removal. Retain other trees. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10-15 years.

**RX OPTION 4.2 – Partial Cut (Remove all lodgepole pine):** Option 4.2 creates a two-aged stand that can be moved toward uneven-aged management in future entries.

Harvest all the lodgepole pine in the stand and retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Regeneration should be protected until it is established.

**RX OPTION 4.3 – Partial Cut (Thinning):** This thinning maintains the stand through the current insect outbreak. If the stand succumbs to the mountain pine beetle before multiple age classes can be regenerated, options 4.1 or 4.2 should be used.

Thin the stand, removing approximately 20 to 30% of the basal area to a residual minimum of 50 square feet per acre. Lodgepole pine and subalpine fir are the preferred species for removal, in that order. Retain Engelmann spruce and aspen. Scarify the ground to expose 25% mineral soil, and lop and scatter tops evenly to provide a seed source. If needed, protect advanced regeneration from skier damage.

**RX OPTION 4.4 – Salvage Cutting (Partial Cut):** Option 4.4 salvages dead and infested lodgepole pine, and maintains the stand through the current insect outbreak.

Harvest all the dead or beetle infested trees in the stand, up to 35% (in stands of recently killed trees) to 50% (stands of mostly older dead trees) of the basal area of the stand, and retain all other trees. Scarify the ground to expose 25% mineral soil, and lop and scatter tops evenly to provide a seed source. Protect regeneration with fencing, signing, barriers, etc.
RX OPTION 2.2 – Clearcut: This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the trees killed or infested with MPB. Retain any live trees with live crown ratios of 50% or greater. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Interplanting other species and the use of larger transplants is recommended. Regeneration should be protected until it is established.

RX OPTION 3.1 – Shelterwood Cutting (Partial Cut): Option 3.1 is an even-aged management option designed to encourage an initial flush of regeneration, and protect it with the residual stand until it is less susceptible to ski damage.

Treat the entire stand as the seed cut (first cutting) of a 2-step shelterwood harvest, removing approximately 35% of the basal area to a target of 50 to 70 square feet per acre. Target lodgepole pine and other trees infested by MPB for removal. Retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Perform an overstory removal (second and last cutting) in 10-15 years.

RX OPTION 3.2 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Interplant with Engelmann spruce above 9000 feet and Douglas-fir below 9000 feet to provide species diversity. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 1.4 – Insecticide or Pheromone Application and Treating Infested Trees (Preventive Action): This treatment maintains the stand through the current insect outbreak. If the stand succumbs to bark beetles another option should be used.

Treat high value trees by applying an approved insecticide or by applying an approved anti-aggregative pheromone prior to beetle emergence each year until the threat of infestation is over. In high value areas treat beetle-infested trees by felling and peeling, burning, chipping or removing the trees prior to beetle emergence
RX OPTION 5.2 – Hazard Tree Removal (Partial Cut): This is a sanitation/salvage treatment. This option may be used in any stand type where appropriate, and is an understood component of all prescription options where appropriate.

Harvest hazard trees located within a 150 foot buffer zone from the edge of the stand. Retain all other species.

Stand Type 5, Mixed Conifer with a Lodgepole component: These stands contain more than one species, usually conifers although aspen may be a component. Lodgepole is a component of these stands, but consists of less than 50% of the stand. These stands can be even-aged, two storied or uneven-aged. These stands tend to have a significant, but unevenly distributed, understory of fir and spruce, but can contain other species. The following prescriptions would be used for those portions of R2Veg sites 514-59, -69, -80, -91, -99, -100, 516-30, -35, -41, -42, -58 and -61 located on NFS land.

RX OPTION 5.1 – Partial Cut (Remove all lodgepole pine): Option 5.1 creates a two-aged stand that can be moved toward uneven-aged management in the future.

Harvest all lodgepole pine in the stand (up to 35% of the basal area) and retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source.

RX OPTION 5.2 – Hazard Tree Removal (Partial Cut): This is a sanitation/salvage treatment. This option may be used in any stand type where appropriate, and is an understood component of all prescription options where appropriate.

Harvest hazard trees located within a 150 foot buffer zone from the edge of the stand. Retain all other species.

RX OPTION 3.2 – Small Clearcuts within a Thinning (Partial Cut): This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Interplant with Engelmann spruce above 9000 feet and Douglas-fir below 9000 feet to provide species diversity. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.

RX OPTION 6.2 – Selection Cutting (Partial Cut): This option regenerates the stand with spruce in phases and maintains the stand’s uneven-aged character.
Harvest up to 20% of the stand in 1 to 2 acre groups. Scarify the ground to expose up to 25% mineral soil. Lop and scatter slash to protect regeneration. Perform the next cutting in 15 – 20 years.

**RX OPTION 1.4 – Insecticide or Pheromone Application and Treating Infested Trees (Preventive Action):** This treatment maintains the stand through the current insect outbreak. If the stand succumbs to bark beetles another option should be used.

Treat high value trees by applying an approved insecticide or by applying an approved anti-aggregative pheromone prior to beetle emergence each year until the threat of infestation is over. In high value areas treat beetle-infested trees by felling and peeling, burning, chipping or removing the trees prior to beetle emergence.

**Stand Type 6, Pure Spruce and Mixed Spruce/Fir:** These stands tend to be uneven-aged spruce/fir with little to no lodgepole pine. These stands tend to have a significant understory of fir and spruce seedlings and saplings. Often with these stands the No Action option is preferred, but initiating regeneration may be desirable in some stands. The following prescriptions would be used for those portions of R2Veg sites 514-68, -78, -95, -101, -102, -103, 516-36, -43, -44, -45, -46, -47, -48, -54, -57 and 601-200 located on NFS land.

**RX OPTION 6.2 – Selection Cutting (Partial Cut):** This option regenerates the stand with spruce in phases and maintains the stand’s uneven-aged character.

Harvest up to 20% of the stand in 1 to 2 acre groups. Scarify the ground to expose up to 25% mineral soil. Lop and scatter slash to protect regeneration. Perform the next cutting in 15 – 20 years.

**RX OPTION 5.1 – Partial Cut (Remove all lodgepole pine):** Option 5.1 creates a two-aged stand that can be moved toward uneven-aged management in the future.

Harvest all lodgepole pine in the stand (up to 35% of the basal area) and retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source.

**RX OPTION 5.2 – Hazard Tree Removal (Partial Cut):** This is a sanitation/salvage treatment. This option may be used in any stand type where appropriate, and is an understood component of all prescription options where appropriate.

Harvest hazard trees located within a 150 foot buffer zone from the edge of the stand. Retain all other species.

**Stand Type 7, Aspen, and Aspen mixed with other species:** These are aspen stands. Often, when other species are mixed in it is because the aspen clone is old and declining and the other species are encroaching or beginning to replace the aspen stand. Lodgepole may be a component, as may spruce or fir, often as younger trees encroaching on the aspen. These stands are usually even-aged if pure aspen, or may be two storied with other species. These stands tend to have little or no viable aspen regeneration except where there has been recent
disturbance, although conifers may be establishing themselves in the understory. Often with these stands the No Action option is preferred, but initiating regeneration may be desirable in some declining stands. The following prescriptions would be used for those portions of R2Veg sites 508-5, -8, -10, -11, -13, -15, -18, -24, 509-4, 514-23, -26, -33, -41, -42, -43, -46, -50, -54, -56, -61, -62, -64, -65, -67, -70, -77, -82, -83, 516-8, -16, -26, -31, -56, 601-201, -203 and -206 located on NFS land.

**RX OPTION 5.2 – Hazard Tree Removal (Partial Cut):** This is a sanitation/salvage treatment. This option may be used in any stand type where appropriate, and is an understood component of all prescription options where appropriate.

Harvest hazard trees located within a 150 foot buffer zone from the edge of the stand. Retain all other species.

**RX OPTION 2.2 – Clearcut:** This is an even-aged management option for areas where ski run separation and protection of regeneration is not critical, and future management will focus on forest cover.

Clearcut (with reserves) the stand, if it is not needed for skier management, removing 100% of the trees killed or infested with MPB. Retain any live trees with live crown ratios of 50% or greater. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Interplanting other species and the use of larger transplants is recommended. Regeneration should be protected until it is established.

**RX OPTION 5.1 – Partial Cut (Remove all lodgepole pine):** Option 5.1 creates a two-aged stand that can be moved toward uneven-aged management in the future.

Harvest all lodgepole pine in the stand (up to 35% of the basal area) and retain other species. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source.

**RX OPTION 3.2 – Small Clearcuts within a Thinning (Partial Cut):** This option maintains the stand through the current insect outbreak, regenerates it in phases, and moves it to uneven-aged management.

Patch clearcut (with reserves) approximately 25% of the stand in 1 to 5 acre patches focusing on areas of MPB caused mortality. Thin the remaining 75% of the stand to a target of 60 to 80 square feet per acre to reduce attraction to MPB (McGregor, Amman, Schmitz and Oakes, 1987; Samman and Logan 2000), removing no more than 35% of the basal area where there are blowdown concerns. Patch shapes should be irregular and mimic natural disturbances. Strip patches along the contour can be used to limit aesthetic impacts. Scarify the ground to expose 25% of the surface as mineral soil, and lop and scatter tops evenly to provide a seed source. Interplant with Engelmann spruce above 9000 feet and Douglas-fir below 9000 feet to provide species diversity. Perform another series of patch clearcuts in 20 years for the next phase of regeneration.
Stand Type Other, Mixed Conifer with a Lodgepole component: The following stands have the No Action, or do nothing, prescription option recommended as the only option (other than hazard tree removal where appropriate). The reason differ for each stand, but could be because the stand is young and healthy or could be because access is too difficult and the stand is not near any developments. The stands can be lodgepole (508-3, -4, 514-48 and -76), spruce/fir (514-73, -84, -89, -93, -94, -105, 516-37 and 601-204), or aspen (504-20 and -81).

RX OPTION 5.2 – Hazard Tree Removal (Partial Cut): This is a sanitation/salvage treatment. This option may be used in any stand type where appropriate, and is an understood component of all prescription options where appropriate.

Harvest hazard trees located within a 150 foot buffer zone from the edge of the stand. Retain all other species.