Draft Environmental Assessment

Mount Haggin Wildlife Management Area
Forest Management Project

April 2012

1.0: PURPOSE OF AND NEED FOR ACTION

1.1 Proposed Action

Montana Department of Fish, Wildlife, and Parks (FWP) proposes to remove standing dead and green beetle-infested lodgepole pine from select areas on Mount Haggin Wildlife Management Area (WMA) in order to reduce road- and trailside hazard trees. Merchantable dead and dying timber will be removed from certain expanded road- and trailside units in order to cover costs of the project which includes removal of noncommercial trees, road improvements, and weed control. Funds generated in excess of project costs will be applied to several maintenance and habitat projects on the WMA such as fence removal, erosion control, and interpretative signs. The proposed action would remove dead and beetle-infested hazard trees on either side of 4.8 miles of road and over 8 miles of ski trails. An additional 800 acres in 16 expanded road-trailside units in close proximity to these roads and trails would also have a portion of the dead and beetle infested lodgepole pine removed. No new roads would be constructed.

1.2 Need for the Action

Mount Haggin WMA supports a significant amount of year-round recreational usage on the Big Hole side of the WMA such as campers, trail riders, and wildlife watchers in the summer, hunters in the fall, and skiers and snowmobilers in the winter. Approximately 40 miles of primitive roads allow for motorized access throughout the WMA. Cross-country ski trails, developed on the WMA in 1985 using old logging roads support approximately 3,000 skier days annually. Much of the road and trail miles occur within forested areas.

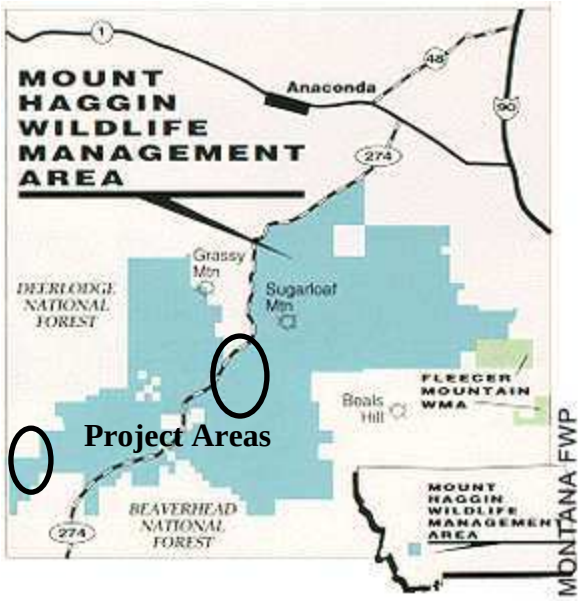
Due to the significant outbreak of mountain pine beetle throughout southwest Montana over the last six years, there are large tracts of dead and dying lodgepole pine throughout Mount Haggin WMA. Where they occur along roads and trails, they create a potential hazard to human safety should they fall. This project proposes to pre-emptively remove standing dead and green beetle-infested lodgepole pine trees from roadsides and ski trails to minimize human safety risk.

Additional areas have been identified where tree removal can be logistically and ecologically expanded to include merchantable standing dead and green beetle-infested lodgepole pine in order to defray implementation cost of the project. Funds generated from this commercial timber will pay for noncommercial tree removal, improvements on primitive logging roads, and weed treatment in affected areas. Additional funds would be applied to other maintenance and habitat projects on the WMA such as fence removal, erosion control, and interpretative signs.

Location of Project Area

Mount Haggin WMA is located approximately five miles south of Anaconda, MT, in Deer Lodge and Silver Bow Counties. The proposed project will take place within the Deer Lodge County portion of the WMA at Sections 3 and 6 of T02N, R11W; Sections 15, 16, 20, 21, 22, 27, 28, 29, 30, 32, and 33 of T03N, R11W; and Section 7 of T02N, R12W.

NOTE: Site-specific project area maps and treatments are shown in *Appendix A*.



1.3 Objectives of the Proposed Action

1.3.1 Objective 1: Minimize risk to human safety by removing hazard trees from along select roads and trails.

1.3.2 Objective 2: Generate sufficient funds to pay for the project by removing merchantable dead and dying timber from expanded road- and trailside units and selling a portion of slash for firewood.

1.3.3 Objective 3: Use excess funds to pay for fence removal, erosion control, and interpretative signs.

1.4 Relevant Plans and Authority

1.4.1 Section 87-1-201 (iv), MCA

Section 87-1-201 (iv), MCA requires FWP to address fire mitigation, pine beetle infestation, and wildlife habitat enhancement, giving priority to forested lands in excess of 50 contiguous acres in any state park, fishing access site, or wildlife management area under the department's jurisdiction.

1.4.2 Mount Haggin Wildlife Management Area Interim Management Plan (1980)

The interim management plan states Mount Haggin WMA will be managed for dispersed outdoor recreation activities that are consistent with the area's ability to support such use without degradation of its natural resource values (wildlife, fisheries, vegetation, and cultural/historical resources). The plan describes activities that are aimed at protecting the basic soil, vegetation, and water resources of the WMA that will maintain or enhance wildlife and wildlife habitat.

1.4.3 Montana Statewide Elk Management Plan (2004)

One goal specified in FWP's 2004 Elk Management Plan promotes improvement of elk habitat by improving vegetative diversity. The proposed project would work toward this by promoting forest health through the removal of standing dead and beetle-infested lodgepole pine from select stands on the WMA within elk summer range.

1.4.4 Montana Department of Fish, Wildlife and Parks Comprehensive Fish and Wildlife Conservation Strategy (2005)

Numerous wildlife species of concern are found on Mount Haggin WMA. The following is a list of sensitive species that are known or assumed to exist within the WMA. Each species has a notation which tier it is ranked (1-5, with 1 being most in need of conservation) and whether it is a Species of Concern in Montana (SOC) or a federally listed Threatened or Endangered Species (T/E).

Common Name	**Scientific Name**	**Tier Rank/SOC**
Northern Goshawk	*Accipiter gentiles*	2, SOC
Black-backed Woodpecker	*Picoides articus*	1, SOC
Olive-sided Flycatcher	*Contopus cooperi*	1, SOC
Great Gray Owl	*Strix nebulosa*	2, SOC
Flammulated Owl	*Otus flammeolus*	1, SOC
Clark's Nutcracker	*Nucifraga Columbiana*	3, SOC
Fringed Myotis	*Myotis thysanodes*	2, SOC
Hoary Bat	*Lasiurus cinereus*	2, SOC
Wolverine	*Gulo gulo*	2, SOC
Canada Lynx	*Lynx Canadensis*	1, T/E
Fisher	*Martes pennanti*	2, SOC
Westslope Cutthroat Trout	*Oncorhynchus clarkii lewisi*	1, SOC
Western Pearlshell Mussel	*Margaritifera falcata*	2, SOC
Agapetus Caddisfly	*Agapetus Montanus*	3, SOC

1.5 Overlapping Jurisdiction

1.5.1 Name of Agency and Responsibility

a. Montana Department of Environmental Quality – Air Quality Permits

b. Montana Department of Fish, Wildlife & Parks - Montana Stream Protection Act (124 permit)
c. Montana Department of Natural Resources & Conservation – Wildfire Suppression and Fire Hazard Reduction Agreement
d. Montana State Historic Preservation Office – Cultural and Historic Resources
e. Deer Lodge County – Weed Management

All necessary permits will be obtained by the contractor prior to the implementation of the project.

1.6 Decision

Based on his review of the project as well as public comment, FWP's Region 3 Supervisor will decide whether or not to approve this forest management project for a portion of Mount Haggin WMA.

2.0: ALTERNATIVES

2.1 Alternative A (Proposed Action): Remove Standing Dead and Green Beetle-Infested Lodgepole Pine along Select Roads and Trails and Within Portions of Designated Expansion Units within Mount Haggin WMA.

Four distinct project areas have been identified:

California Creek
Cross-Country Ski Trails
Little American Creek/French Gulch
Seymour Creek

Site-specific project maps and treatments are shown in *Appendix A*.

Four treatment methods are proposed within the four proposed project areas.

<u>75' Wide Roadside Hazard Tree Removal</u> – This treatment would cut, skid or forward, and remove all dead standing trees within 75 feet of the road or trailside. Green trees would only be cut where necessary to access dead timber or if beetle infested (pitch tubes present). Merchantable saw-log size material would be decked and sold to saw mills. Firewood and house log material would also be decked and sold separately. Slash would be piled and burned at roadside landings in the Little American Creek/French Gulch project area. In the California Creek project area, slash would be used to fill in deep-cut gullies on the south slope of Sugarloaf Mountain in an effort to control erosion and subsequent sediment flows into California Creek.

<u>200' Wide Roadside Hazard Tree Removal</u> – This treatment would extend a maximum distance of 200 feet on either side of the road or trail where saw-log size dead trees are present. Treatment area would be limited to slopes of 40% or less. The first 75' width would be treated under the 75' prescription (see above). Beyond 75 feet from the road,

only dead standing and green beetle-infested (pitch tubes present) trees greater than 7" diameter at breast height (DBH) will be cut, skidded, and decked. Firewood and house logs will be sorted and decked separately. Non-beetle infested green trees would only be cut to clear space for roadside log landings and skid trails. Slash would be piled and burned at roadside landings.

Proposed Expansion Units – Dead and green beetle-infested trees greater than 7" DBH would be cut, skidded, and decked in areas that contain a significant component of dead, saw-log size lodgepole pine. Treatment area would be limited to slopes of 40% or less. Firewood and house logs will be sorted and decked separately. Non-beetle infested green trees would only be cut to clear space for road or trailside landings and skid trails. Slash would be piled and burned at roadside landings. A number of the expansion units within the Cross-Country Ski Trails Project Area have cross country ski trails within them. Dead and beetle infested hazard trees will be cut and removed from within 200' of either side of these trails.

Shaded Fuel Breaks – A shaded fuel break will be established within two chains (132') of the private property boundary in sections 7 and 8 in the Seymour Creek Area of the WMA. All standing dead and beetle infested lodgepole pine will be removed. Non-merchantable trees will be thinned or masticated to an average spacing of 10 feet between tree crowns. Slash will be piled and burned or masticated.

California Creek Project Area Summary
~1 mile of 75'Width Roadside Hazard Tree Removal (8.1 acres or less)
~1 mile of 200' Width Roadside Hazard Tree Removal (22.1 acres or less)
106 acres of Proposed Expansion Unit Area

Little American Creek/French Gulch Project Area Summary
2.7 miles of 200' Width Roadside Hazard Tree Removal (66 acres or less)
231 acres of Proposed Expansion Unit Area

Cross-Country Ski Trails Project Area Summary
~8 miles of 200' Width Trailside Hazard Tree Removal (200 acres or less)
320 acres of Proposed Expansion Unit Area

Seymour Project Area Summary
~0.5 mile of 200' Width Roadside Hazard Tree Removal (5.5 acres)
~1 mile of Shaded Fuel Break (16.5 acres)
155 acres of Proposed Expansion Unit Area

The proposed action would remove dead and beetle-infested hazard trees on either side of approximately 4.8 miles of road and 8 miles of ski trails. Approximately 800 additional acres in 16 expanded road- or trailside units in close proximity to these roads and trails would also have a portion of the dead and beetle-infested lodgepole pine removed. Approximately one mile of boundary with additional private land will be treated as a fuel break to prevent wildfire from spreading to a subdivision adjacent to the WMA.

Logging will occur during summer and early fall. Winter logging in this area is not feasible due to deep snows. Strict adherence to Montana's Forestry Best Management Practices (BMPs) and Streamside Management Zone (SMZ) law will reduce potential impacts to water quality and help prevent increased sediment flows to California, Little California, Little American, and French creeks. Mechanized logging equipment is not permitted within SMZs. The only hazard trees that will be removed within SMZs are those that could fall directly on a trail or road. Logging operations will be suspended when conditions are wet and the ground is more susceptible to disturbance. In addition, logging operations will be suspended if conditions are extremely dry and fire danger is high.

A written logging plan will be developed after a qualified logging professional has been selected in coordination with the FWP biologist. The plan will identify recommended equipment as well as haul road locations, landings, and designated skid trails. Stump heights will be cut to 6" or less. Trees that have been damaged from logging equipment will be removed.

All guidelines and recommendations for managing noxious weeds in FWP's Integrated Noxious Weed Management Plan will be adhered to. These include:

1. Surveying the proposed project area prior to logging and thinning operations and identify noxious weeds, map them, and attempt to control them by a combination of mechanical, biological or chemical methods. The project area will be revisited a minimum of three years post-logging, and treated for weeds as needed.
2. Power washing any logging equipment prior to its arrival on the WMA.
3. Seeding any logged and thinned areas with a native seed mixture appropriate for the area immediately upon completion of the harvest operation.

Access to all project areas will be from existing primitive roads that merge with Montana Highway 274, locally known as the Mill Creek Highway. Existing primitive roads (California Creek and American Creek roads) will be graded and improved upon completion of the project. No new roads will be constructed.

A licensed forester will be retained on contract by FWP to supervise the proposed project in conjunction with the Butte Area wildlife biologist. The forester will be selected through the State's competitive bid process.

It is anticipated that expenses for this project (removal of non-merchantable trees, road improvements on California and American Creek roads, and weed inventory and control) will be fully covered by revenue generated from the sale of merchantable timber. Surplus income will be put toward removing approximately one mile of defunct jack-leg fence along American Creek Road, placing slash in deeply eroded gullies on the slope of Sugarloaf Mountain, and constructing and placing interpretative signs at historical sites along the cross-country ski trails. The FWP contract with a licensed forester will be paid from the FWP Habitat Section operations budget. Any remaining funds after the completion of the project will be deposited into FWP's Forest Management account created by the 2009 Legislature in House Bill 42.

The revenue generated from the sale of dead and beetle-infested hazard trees is difficult to determine without knowing the log and haul costs and the amount being paid by the purchasers of forested products. For purposes of preliminary budget estimations, however, revenue can be estimated based on the approximate acres treated and the amount of merchantable timber removed per acre. A conservative estimate is based on an average of 2.5 thousand board feet of merchantable timber per acre within treatment areas. Three hundred treated acres would yield 750,000 board feet of timber. The stumpage rate (revenue generated) would be the amount paid by the purchasers minus the cost of logging and hauling the timber. For example, if FWP receives $25.00 for every thousand board feet produced and delivered from 300 treated acres the yield would be $18,750.00. The chart below illustrates different revenue estimates based on the amount of acres treated and two different stumpage rates.

Board feet per acre	Number of Acres	Stumpage Rate per thousand board feet of timber	Revenue Generated
2.5	300	$25 x750mbf	$18,750
2.5	300	$40 x750mbf	$30,000
2.5	600	$25 x1,500mbf	$37,500
2.5	600	$40 x1,500mbf	$60,000
2.5	800	$25 x2,000mbf	$50,000
2.5	800	$40 x2,000mbf	$80,000

2.2 Alternative B (No Action): Implement No Forest Management Activities and Status Quo is Maintained on the WMA.

FWP would not conduct any forest management projects under this alternative. Trees will only be removed once they have fallen across roads and trails. Road improvements, fence removal, erosion control on Sugarloaf Mountain, and construction and placement of interpretive signs along the ski trails would not be completed due to insufficient funds in the annual maintenance and operation budget for the WMA.

FWP will continue to manage the WMA for the benefit of wildlife and for year-round recreation activities. FWP will continue noxious weed management activities within the WMA.

2.3 Alternative C: Remove Standing Dead and Green Beetle-Infested Trees Only from Select Roads and Trails on Mount Haggin WMA.

The 75’ Width Roadside Hazard Tree Removal treatment, similar to Alternative A, will be employed. Under the 200’ Width Hazard Tree Removal treatment, however, only the first 75’ width would be treated under the 75’ prescription; no other treatment will occur beyond 75’. The Proposed Expansion Unit treatment and Shaded Fuel Break treatment will also be eliminated. The project area summary would be adjusted to the following:

California Creek Project Area Summary

~1 mile of 75’ Width Roadside Hazard Tree Removal (8.1 acres or less)

~1 mile of Modified 200’ Width Roadside Tree Removal (10 acres or less)

Little American Creek Project Area Summary

2.7 miles of Modified 200' Width Roadside Tree Removal (30 acres or less)
Cross-Country Ski Trails Project Area Summary
~8 miles of Modified 200' Width Roadside Hazard Tree Removal (92 acres or less)
Seymour Project Area would be eliminated.

The proposed action would remove dead and beetle infested hazard trees on either side of approximately 4.7 miles of road and 8 miles of ski trails affecting 140 acres or less. All other aspects of Alternative A would apply.

It is likely under this alternative that revenue generated would be insufficient to pay for the entire cost of the project (timber removal, road improvements, weed inventory, and treatment), and FWP would have to compete with other Wildlife Section projects to obtain the necessary funding to complete the proposed action. None of the additional maintenance and habitat projects (fence removal, erosion control on Sugarloaf Mountain, construction and placement of interpretive signs along the ski trails) will be completed due to lack of funds.

3.0: AFFECTED ENVIRONMENT

3.1 Description of Relevant Pre-Existing Factors

The proposed project area has been impacted by past logging- and mining practices of the historic Anaconda Copper Mine in nearby Anaconda, MT. Much of the Mount Haggin WMA had been heavily logged during the mine's operation from the 1880s to the 1940s in order to provide lumber for shaft supports, building materials, and fuel for the smelters. The most recent logging on Mount Haggin WMA occurred in the 1970s and 1980s in accordance with a timber contract that came with the purchase of the WMA by FWP.

Vegetation as far as eight miles away from the smelter in Anaconda has been negatively impacted by smelter emissions. The air pollution contained high levels of arsenic, sulfur, and zinc that contaminated the soil and greatly reduced the rejuvenation capacity of grasses, shrubs, and trees. The presence of bare slopes devoid of topsoil and vegetation can easily be seen on parts of Mount Haggin WMA today.

3.2 Description of Relevant Affected Resources

3.2.1 Soil & Geologic

The project area is located east of the Anaconda-Pintler Range along the western edge of the Boulder batholith. The Anaconda-Pintler Range contains ancient Proterozoic upper Belt sedimentary rocks, Cretaceous granite (associated with the Boulder batholith), Tertiary volcanic, and Quaternary glacier sediments. These rocks are the sources of the Quaternary stream sediments that lie on top of Tertiary basin fill which create the flat riparian area and associated hills in the southwestern portion of the WMA. Paleozoic limestone/dolomite rocks dominate the surface geology along the Continental Divide in the south-central area of the WMA

Soils on Mount Haggin WMA are primarily either Mollisols or Alfisols. Mollisols generally form under a grassland cover in semi-arid to semi-humid areas with temperate climates while Alfisols form under forest cover in semi-arid to humid areas. Entisols are also present in the

project area. Entisols form quickly, are relatively unaltered from their parent material and have minimal organic matter. Most of the soil on Mount Haggin WMA is loamy while a few smaller areas are more sandy or clayey in texture.

3.2.2 Air & Noise

The California Creek and Little American Creek/French Gulch project areas are adjacent to established primitive roads. These areas are routinely subjected to noise and dust generated by passing vehicles. The Cross-Country Ski Trails project area is used primarily during the winter and primarily by non-motorized recreationists; some snowmobiling does occur in the area. Ambient air quality is good and noise levels are limited to those times in the winter when snowmobilers use the area. The area is restricted to non-motorized travel the remainder of the year

3.2.3 Water & Fisheries

Four creeks occur within the proposed project area: California Creek, Little California Creek, Little American Creek, and French Creek. All of these streams are located within the Big Hole River watershed. The native fish community in these streams historically consisted of westslope cutthroat trout, Arctic grayling, mountain whitefish, and mottled sculpin. The current fish community in Little American Creek consists of eastern brook trout and mottled sculpin. California and Little California Creeks contain eastern brook trout, rainbow trout, mountain whitefish, and mottled sculpin. They may also contain Arctic grayling, brown trout, and white and longnose suckers because of similar gradient and stream characteristics to nearby streams that maintain these species. French Creek contains mottled sculpin and brook trout although surveys conducted up until the late 1990's also found Arctic grayling in this system. Western pearlshell mussels, a species of concern, are also present in California Creek.

3.2.4 Vegetation

The portion of Mount Haggin WMA that would be affected by the proposed project is comprised of conifer forests transected by creeks and associated riparian areas of willow communities. Forests at lower elevations are dominated by early- to mid-seral stage lodgepole pine. Engleman spruce and subalpine fir at higher elevations comprise the majority of the forests.

Much of the conifer forest on Mount Haggin WMA has been heavily affected by the logging practices of the late 19th and 20th centuries when timber was harvested to supply lumber to the Anaconda Copper Mining Company. Large amounts of timber were necessary not only to convert to charcoal for fueling local smelters but also to produce mine "stulls" that could be used to support tunnels and shafts (Newell 1980). The ridges surrounding Mount Haggin, with their vast acreages of lodgepole pine, offered a convenient source of timber. The Anaconda Company awarded a contract for 300,000 cords of wood in 1883. A second contract was awarded for 100 million board feet of timber in 1906, all from the Mount Haggin area. The Big Hole Forest Reserve was established in November 1906 in part to bring some measure of protection to the timber resources of the Mount Haggin area. Two years later, lands from this reserve were divided into the Beaverhead, Bitterroot, and Deerlodge National Forests. Most of the timberlands in the Mount Haggin area were included in the Deerlodge National Forest.

Because of the immense amount of timber being harvested in the Mount Haggin area, the U.S. Forest Service developed many of their marking rules and timber selection guideline. The 1906 timber contract, in fact, was the first large timber sale in U.S. Forest Service's Region 1, and because of such status earned a visit from Gifford Pinchot, chief of the U.S. Forest Service from 1905 to 1910.

The end result of the various methods employed to select timber for harvest was that large tracts of lodgepole pine forests in the Mount Haggin area were clear-cut at least once at some point throughout the past century. What we see today is the residual effect of those logging practices: large stands of densely packed, even-aged lodgepole pine. These uniform stands lack the variety of understory vegetation and structural diversity that provide forage and shelter to game and nongame species, reduce the potential for multi-aged conifer establishment due to intense competition for sunlight, soil and water resources, and enable large-scale infestations and disease outbreaks to occur due to the density of trees in the stand.

3.2.5 Wildlife

Mount Haggin WMA was established in 1976 in part to provide year-round habitat for wildlife emphasizing elk, moose, and mule deer. Other species that are known to use the management area permanently, seasonally, or occasionally are antelope, white-tailed deer, black bear, wolf, coyote, mountain lion, grizzly bear, bobcat, beaver, pine marten, wolverine, various bird species, a variety of amphibians, and a variety of small mammals.

The Big Hole side (east of the Continental Divide) of the WMA provides calving and summer range to elk. Recent field observations suggest 300-400 elk using the area during the non-winter months. Mule deer also utilize this area during the summer and fall as well as a herd of 60-100 antelope. Deep snows force these ungulates to migrate to lower elevation during the winter.

The project area is located within Hunting Districts 319 and 341. Recent population surveys indicate 841 and 445 observed elk in Hunting Districts 319 and 341, respectively. These counts represent an increase in the population for both districts, placing the current population within management objectives. Mule deer populations are currently at a low, although stable, trend with 299 and 154 observed animals in Hunting Districts 319 and 341, respectively.

Moose occur year-round on Mount Haggin WMA including that portion that lies within the proposed project area. Annual winter aerial surveys of the WMA have observed 19 to 52 moose during the period 2003-2011. Moose, due to their predominant consumption of browse, are heavily associated with wet areas predominated by aspen and willow with nearby conifer stands for security in this area of Mount Haggin WMA.

A comprehensive year-round bird survey was conducted on Mount Haggin WMA in 2010-2011. Results from that survey can be found in the form of a downloadable birders checklist located on the FWP website at http://fwp.mt.gov/fwpDoc.html?id=53772.

3.2.6 Aesthetics

The proposed project areas would be visible from the California Creek Road, the American Creek Road, the French Creek Road, or the ski trails on the WMA. Pine needles in areas of forest

affected by the infestation of the mountain pine beetle appear in shades of red and brown denoting a dying or dead tree. Such areas are visible from various vantage points in and around the WMA. The WMA offers many spectacular views of the Pintler Mountains as well as close-up opportunities to observe historical homesteader, mining, and logger cabins and dwellings.

3.2.7 Cultural & Historic

Portions of Mount Haggin WMA have been affected by the mining and logging industries in the late19th and 20th centuries as previously noted. Some remnants of these activities, such as flumes, trestles, roads, and cabins, remain scattered throughout the drainages where the proposed project is to take place. There are, additionally, several homesteader cabins and outbuildings that are located throughout the WMA. An inventory of the cultural resources found on the WMA has been documented by Newell (1982) and Wood (1990). Evidence of the presence of ancient peoples using the area also remains in the form of lithic scatter throughout the WMA.

3.2.8 Recreation

The WMA provides the public with year-round recreation opportunities such as hunting, fishing, trapping, hiking, camping, horseback riding, cross-country skiing, snowmobiling, and wildlife viewing. Snowmobiling, cross-country skiing, and other forms of winter recreation is permitted within Mount Haggin WMA on the east or Big Hole side of the Continental Divide only. The remainder of the WMA is closed to motorized travel and most forms of recreation in order to provide security for wintering big game.

3.2.9 Health Risks/Hazards

Highway 274 sustains a moderate amount of traffic from WMA users, local residents, and traffic between Anaconda and the Big Hole Valley. Motorists would need to be mindful of logging trucks and equipment entering and exiting the highway from the project areas.

FWP currently uses chemical means as one method of managing noxious weed infestations, therefore there is the potential for spillage to occur. Only trained and licensed staff or contractors would apply the herbicides to specified areas within the WMA to decrease the chance of negative consequences to native vegetation.

3.2.10 Community Resources

There are several private residences, agricultural lands, and a business adjacent to nearby boundaries of the WMA. Five patented mining claims are located along California Creek within the proposed project area. The Sugarloaf Cabins are located directly across Highway 274 from the Ski Trail project area. A small subdivision and a fourth generation cattle ranch are located at the south end of the WMA. These areas are accessed via Highway 274 or from Highway 43, known locally as the Big Hole Highway.

4.0: ENVIRONMENTAL CONSEQUENCES

4.1 Description of Relevant Affected Resources

4.1.1 Soil & Geologic

Predicted Consequences of Alternative A
Timber removal is expected to occur during the summer and into fall when the ground is primarily free of snow. The ground, without the protective snow layer, will be susceptible to the establishment of new erosion patterns and compactions. A short-term effect caused by the use of mechanical equipment to cut and transport trees to landings may lead to some soil instability. Ground disturbance will be mitigated by utilizing existing roads, avoiding skidding straight up and down slopes, limiting cutting to slopes of 40% or less, avoiding wet areas, utilizing cut-to-length logging systems, using rubber-tired skidders, and avoiding areas with thin and sensitive soils. There will be no short- or long-term effects on the overall geologic substrate.

Landings and areas of slash accumulation are subject to soil compaction. To mitigate these effects, landings will be located where hardened sites currently exist such as parking areas, old roadways, or other already compacted sites. Existing roads will be used to transport material.

Any disturbed areas will be reseeded with native grasses and forbs to reduce new erosion patterns from becoming established and moving sediment into nearby creeks. The reseeding of disturbed areas additionally will decrease establishment of noxious weeds into previously unaffected areas. Any invading noxious weeds will be managed through FWP's Integrated Noxious Weed Management Plan.

FWP will meet the requirements of the Streamside Management Zone Law (MCA 77-5-301) that protects stream channels and banks and prohibits streamside activities that would diminish riparian habitat values.

The additional maintenance and habitat projects proposed in Alternative A will have short-term negative impacts and long-term positive impacts on soil. Road improvements to California Creek and American Creek Roads will temporarily cause soil instability on the road prisms as work is being done, but the long-term effect will be to stabilize road conditions by grading, re-contouring, placing culverts, and allowing for better drainage off the road surface. Using slash generated in the California Creek project area to fill in deeply-eroded gullies on the southern slope of Sugarloaf Mountain will help to prevent further erosion in the short-term, and in the long-term refill the gullies, allow for vegetation to take hold on stable soil, and slow the deposition of sediment into California Creek.

No unique geologic or physical features have been identified in the project areas. Areas identified for treatment are similar to surrounding terrain found outside the unit boundaries.

Predicted Consequences of Alternative B
If the No Action alternative were chosen, no disturbance to the current soil conditions would occur from logging activity. Current soil conditions will continue to deteriorate if road improvements are not made or deep-cut gullies are not filled in with slash to reduce erosion caused by historic damage from the Anaconda Smelter as explained above.

Predicted Consequences of Alternative C
There will be the same impacts as described for Alternative A under Alternative C although fewer acres will be affected. Current soil conditions will continue to deteriorate if road improvements are not made due to both lack of funds and lack of filling in of deep-cut gullies with slash to reduce erosion caused by historic damage from the Anaconda Smelter as explained above.

4.1.2 Air & Noise

Predicted Consequences of Alternative A
Machinery used during the timber removal and associated maintenance and habitat projects will create noise and emissions. Cutting operations, road work, and logging traffic are likely to generate dust in the area. This project will occur during the summer and into the fall; visitation to Mount Haggin WMA is moderate during the summer and increases as hunting season approaches. The intrusion of noise from logging equipment and activities will be taken into consideration and limited to daylight hours to minimize disturbance to potential recreationists in the area. Contracted workers will be exposed to intermittent noise levels that will require the use of hearing protection. All generated noise and emissions are temporary and will cease at the completion of the timber removal activities.

Burning of slash will result in creation of smoke and temporary deleterious effects on air quality which may affect the health of individuals and will be visible from surrounding areas. Any burning will occur during periods when conditions are suitable for good air dispersion. All applicable air shed or burning permits will be acquired before any burning takes place.

Predicted Consequences of Alternative B
Ambient air quality and noise level would remain at the current levels if the No Action Alternative were chosen.

Predicted Consequences of Alternative C
There will be noise and emissions from logging activities under Alternative C, similar to Alternative A, but not from any of the additional associated projects such as road improvements, fence removal, and filling in eroded gullies with slash. The extent and duration of noise and emissions will be less than Alternative A since the timber removal would be significantly less under Alternative C. The duration of the project would be shorter and therefore have less temporal impact on recreationists to the WMA.

4.1.3 Water & Fisheries

Predicted Consequences of Alternative A
There is the threat of erosion and sediment into water resources as with any removal of vegetation and soil-disturbing activities in close proximity to these resources. The proposed project areas occur within the California, Little California, Little American, and French Creek drainages. There may be a short-term increase in surface runoff across roads and trails that are used for skidding or transporting mechanical equipment. To minimize impacts, designated skid trails will be located on the contours and will not go straight up and down the slope, tree removal will be limited to slopes of 40% or less, and all disturbed areas will be reseeded with appropriate native grass/forb seed mixtures to reduce chances for erosion. Strict adherence to Montana's Forestry BMPs and SMZ law will additionally reduce potential impacts to water quality and help prevent increased sediment flows to creeks in the project area. Mechanized logging equipment is not permitted within SMZs. The only hazard trees that will be removed within SMZs are those that could fall directly on a trail or road. Logging operations will be suspended when conditions are wet and the ground is more susceptible to disturbance.

The positive impact of this project will occur when slash generated in the California Creek project area is used to fill in deeply eroded gullies on the southern slope of Sugarloaf Mountain. California Creek is listed as impaired by the Montana Department of Environmental Quality for sediment, arsenic and turbidity (MDEQ 2009). The main sources of sediment and arsenic to the stream are the steep, non-vegetated slopes of Sugarloaf Mountain. The lack of vegetation and high arsenic levels in this area are a result of historic emissions from the nearby Anaconda Smelter. The high sediment loading from these unstable hill slopes and gullies has lead to chronic fine sediment inputs into California Creek. Fine sediment impacts aquatic life by filling the interstitial spaces between gravels used by spawning fish and aquatic invertebrates. Placing slash and non-marketable logs in the gullies will act as a check dam, trapping and holding sediment that would otherwise wash into California Creek. The trapping of sediments and slowing of erosion may also aid in vegetation re-establishment along eroding areas. The placing of slash in the gullies will be treated as an experimental treatment for reducing erosion rates in the hopes of a more comprehensive project aimed at further reductions in erosion and re-establishing vegetation on eroding hill slopes.

Predicted Consequences of Alternative B
The implementation of the No Action alternative would not change the supervision and management of the aquatic resources within the WMA. The fisheries biologist would continue to monitor creek health for the benefit of fish and amphibian species. No temporary siltation will flow into the creeks from logging activity. The deep gullies on Sugarloaf will continue to erode with snow melt and heavy rains, washing sediment into California Creek.

Predicted Consequences of Alternative C
This alternative is similar to Alternative A except less potential for temporary increase in surface runoff since the project would be smaller in scope under Alternative C. There will be no long-term positive impact to the flow of sediments from Sugarloaf Mountain into California Creek since the slash check dams will not be put in place under this alternative.

4.1.4 Vegetation

Predicted Consequences of Alternative A
The effects of this project are expected to improve the health and vigor of the treated stands of lodgepole forests. Reducing tree density by taking out dead and infested trees will reduce competition for soil moisture, nutrients, and sunlight, and the spread of infestations or other diseases will be minimized. Additional benefits include better structural diversity to the forest by creating multi-age stands, reduced risk of large-scale fire by reducing forest fuels, and increasing ground cover by opening up the canopy. The forests on Mount Haggin WMA as a whole will not change a great deal from the proposed project since it only affects 800 or less acres within the WMA's 58,000 acres.

There is a possibility for the introduction of noxious weeds in disturbed soils as this project is implemented. As a preventative measure, project areas will be inventoried and treated as needed for weeds prior to logging and for a minimum of three years post-logging. Disturbed soils will also be reseeded with appropriate native grasses and forbs upon completion of the project. Weed treatment will adhere to the guidance of FWP's Integrated Noxious Weed Management Plan.

Predicted Consequences of Alternative B
Under the No Action alternative, lodgepole pine stands will continue along their current ecological trajectory. Beetle infestation will continue to spread throughout dense stands, and competition for resources will decrease as more trees die. Over time the canopy will open up to the benefit of ground cover as infested trees lose needles and begin to fall. Fallen trees would cause a jackstraw build-up of fuels against the soil. Potential fires with such a fuel load would likely burn hot enough to sterilize the ground and prevent vegetation from growing long into the future.

Predicted Consequences of Alternative C
Same as Alternative A except that fewer acres would be impacted.

4.1.5 Wildlife

Predicted Consequences of Alternative A
The proposed actions of this alternative are not anticipated to cause wildlife any lasting negative impacts. The work will be completed in a very limited area, be brief in duration, and occur during the summer when wildlife is less stressed by seasonal conditions. Any present wildlife can easily disperse from the treatment areas until the work is completed. Wildlife security in areas of Roadside Hazard Tree Removal and Expansion Units, however, will be compromised until trees begin to regenerate. In the long term, this proposed action is expected to improve wildlife habitat overall by creating mosaics of various forest ages on the landscape.

Other effects on wildlife in the treatment areas are expected. The change in tree density, for example, may alter the diversity or abundance of bird species in those immediate areas. Cavity-nesting birds such as mountain chickadees and downy woodpeckers may decrease in local numbers while birds that benefit from forest openings, such as olive-sided flycatchers, may increase. Effect on the overall bird diversity or abundance in the area will be insignificant since the bulk of Mount Haggin WMA's forests will remain intact. Removal of a portion of the forest canopy is expected to increase the under-story plant community, providing forage and shelter for

mountain grouse, small mammals, and grazing ungulates. No critical wildlife habitat will be affected.

In addition to tree removal, several maintenance and habitat projects are proposed under Alternative A that will have a positive impact on wildlife. Approximately one mile of defunct jackleg fence will be removed along the American Creek Road with the additional funds generated under this alternative. Removal of this fence will allow for free movement of wildlife in this area. Another project is to use slash to fill deeply-eroded gullies on the slopes of Sugarloaf Mountain. This will help to slow movement of soil off the slopes, and over time, vegetation will take hold on this more stable soil. Improved habitat conditions are expected.

Predicted Consequences of Alternative B
Under this alternative, FWP would continue to manage the WMA for the benefit of wildlife species while providing opportunities for outdoor recreation for the public. Ungulate populations would continue to be monitored and hunting opportunities would be adjusted as needed. None of the benefits listed in Alternative A would be realized. Cavity nesting birds may increase as more dead and dying lodgepole pine become available.

Predicted Consequences of Alternative C
Impacts from Alternative C would be similar to Alternative A except to a lesser degree since the project is smaller in scope. The additional benefits from the fence removal and erosion control would not be realized since those projects would not be funded or completed under the alternative.

4.1.6 Aesthetics

Predicted Consequences of Alternative A
There will be temporary effects to visual quality during the course of logging operations. Conifer removal will create more open environments that will replace the densely-packed forest. Some view-sheds will be opened up, especially along the ski trails, allowing scenic views of the Pintler Range.

Logged areas will look disturbed for a few years post-logging. Understory vegetation would take one to three years to recover. Seeding in disturbed areas will occur with native grasses/forbs to lessen these impacts. Stumps will be cut to a maximum of 6 inches in height to lessen visual impacts and impediments to wildlife movement. Slash will be dealt with in various ways, depending on the treatment area.

Predicted Consequences of Alternative B
Dead and dying lodgepole will become more visible on the landscape if the No Action alternative were chosen once the inevitable beetle infestation spreads.

Predicted Consequences of Alternative C
Similar to Alternative A except that the visual impacts will be limited to 75’ strips along select roads and trails only.

4.1.7 Recreation

Predicted Consequences of Alternative A
The project under Alternative A would be implemented during the summer and early fall when visitation to the WMA is moderate and increases as hunting season approaches. Campers, hikers, bikers, wildlife watchers, anglers, and hunters may be inconvenienced by logging-associated traffic and activity. Negative impacts would be temporary due to the relatively short duration of activity and limited to a few months. Logging and other project-associated activities will be restricted to weekdays and daylight hours to further minimize disturbance. If the project is not completed by the start of general hunting season, FWP may suspend the project until the following year to reduce impacts to hunting in the area. There will be a benefit to reducing deadfall across roads and trails. In addition, removing dead and green beetle-infested trees from trails will open up the canopy and allow more snowfall on cross-country ski trails.

Predicted Consequences of Alternative B
The public's access to the WMA for the pursuit of hiking, camping, hunting, and other recreational activities will go on as usual.

Predicted Consequences of Alternative C
Same as Alternative A except impacts will be for a shorter duration since the project is smaller in scope under Alternative C.

4.1.8 Cultural & Historic

Predicted Consequences of Alternative A
There are several historical structures located within the project area, especially within the Cross-Country Ski Trail project area. These are primarily remnants of past logging activities: cabins, flumes, trestles, and wagon roads. The State Historic Preservation Office (SHPO) has been notified and made aware of the inventories of the cultural resources found on the WMA that were done by Newell (1982) and Wood (1990). No impacts to these resources are anticipated since logging activities will not occur in close proximity to these sites. If cultural or historic artifacts are discovered during the implementation of this project, SHPO will be contacted to ensure those sites are investigated properly and protected from any potential threats resulting from this project.

Under Alternative A, there will be a positive impact to the cultural and historical resources on the WMA through education since a portion of funds generated from the Expansion Units will go toward the cost of constructing and erecting interpretative signs that describe some of the historical structures located along the cross-country ski trails.

Predicted Consequences of Alternative B
FWP will continue to be proper stewards of the State's cultural and historic resources on state-owned lands per the requirements of state law 22-4-424 and 22-4-435. No interpretative signs will be constructed and erected along the ski trails.

Predicted Consequences of Alternative C
Similar to Alternative A except that interpretative signs will not be constructed and erected along the ski trails since additional funds will not be available for this and other maintenance and habitat projects under this alternative.

4.1.9 Hazards / Risks

Predicted Consequences of Alternative A
This project would create temporary hazards associated with tree falling, equipment operation, and increased traffic. Signs will be posted along roads informing drivers to watch for logging trucks and equipment during the operational phase of this project. Professional personnel, knowledgeable in safety practices and procedures, will be employed to carry out this project. Fire ignition caused by equipment would be mitigated by suspending the operation during times of high fire danger. Burning of slash will occur when weather conditions are most favorable and will be conducted by trained professionals to reduce the risk of wildfire. All applicable air shed and burn permits would be obtained.

Herbicide application would create minor, temporary hazards during the treatment for noxious weeds. Herbicide application will be conducted by state-certified applicators and would follow all pertinent laws and restrictions.

The vehicles utilized during the timber operations use various petroleum distillates. Care will be taken to prevent spills. If any significant spills occur, soils saturated with oils will be removed.

There will be a positive impact through the lowering risk to human safety by removing potentially hazardous trees from roads and trails.

Predicted Consequences of Alternative B
FWP would continue to manage noxious weeds within the WMA per the guidance of FWP's Integrated Noxious Weed Management Plan under the No Action alternative. The application of herbicides would be conducted by state-certified applicators and would follow all pertinent laws and restrictions.

The persistence of the mountain pine beetle infestation within the WMA's forests will continue to kill lodgepole pine which have the potential to pose a public safety hazard to hikers, hunters, and other recreationists in this area in the event that they fall or are blown over.

Predicted Consequences of Alternative C
Similar to Alternative A except that the impacts would be shorter in duration since the project is smaller in scope.

4.1.10 Community Resources

Predicted Consequences of Alternative A
A temporary increase in industrial/commercial traffic would be associated with this project. Logging trucks and equipment would be active in the area. The project will occur during summer

and continue into fall, so visitors to the WMA, customers of Sugarloaf Cabins, and local residents will likely be inconvenienced by additional traffic from logging vehicles accessing and using the WMA's interior roads and Highway 274. Hunters may be temporarily disturbed or displaced from the project area. Appropriate traffic and hazard signing will be used to minimize conflict during the implementation of the project.

Predicted Consequences of Alternative B
There would be no change in the community resources bordering the WMA if the No Action alternative was executed. The traffic patterns would remain at their normal levels, and local businesses would continue to exist.

Predicted Consequences of Alternative C
Alternative C is similar to Alternative A except the period of increased traffic associated with the project and disturbance to recreationists, businesses, local residents and hunters would be shorter since the project is smaller in scope.

5.0 MONITORING & LONG-TERM MANAGEMENT

FWP's Butte Area wildlife biologist will work with the contracted forester to implement the proposed project and oversee necessary activities to mitigate the affects of the conifer removal. In compliance with FWP's Integrated Noxious Weed Management Plan, all project areas will be inventoried and treated for weeds prior to the project, and monitored and treated for weeds for a minimum of three years post-project completion. Any areas disturbed during this project will be reseeded with native seed mixtures appropriate for the area.

6.0 POTENTIAL LONG-TERM CONSEQUENCES

Risk to human safety would be minimized by removing dead and dying trees from roads and trails. Lodgepole pine will recolonize cut areas over time, and thinning may need to occur. Removing roadside trees under a formal timber harvest would minimize the illegal cutting of firewood that has been occurring on the WMA in recent years as the amount of standing dead trees have become increasingly accessible.

If the project proceeds as proposed and additional maintenance and habitat projects are implemented with funds generated from merchantable timber, further consequences may be realized. Slash placed in the deeply eroded gullies on the south slopes of Sugarloaf Mountain would trap and hold sediment and eventually fill in the gullies. This would allow vegetation to begin to grow on stabilized areas, further holding sediment in place and preventing its movement into California Creek.

Roadwork done on California Creek and American Creek roads will stabilize the road prism and allow for better drainage of water and snow melt off roadways. This will keep traffic on the roadway and discourage widening of the roads in soft or eroded stretches.

There is the potential to see several long-term ecological consequences with the removal of dead and green beetle-infested lodgepole pine as proposed in this project. First, the structural diversity

of the forest will increase over time due to the creation of a mosaic of forest patches. This will benefit small mammals such as snowshoe hare, pine marten, and a variety of bird species. Secondly, reducing the density of trees will help to slow the spread of mountain pine beetle. Thirdly, removing stands of dead and dying trees will help to reduce the fuel load in the forest while the establishment of new open spaces along existing roads and trails will create fire breaks that could reduce the potential for large-scale fires to spread. Lastly, removal of dead and dying trees will minimize the potential for large piles of downed timber that would impact wildlife movements and use in this area.

7.0 PUBLIC PARTICIPATION AND COLLABORATORS

7.1 Public Participation

Presentations on the proposed forest management project are being offered to area community-based groups, including Anaconda Sportsmen's Association, Skyline Sportsmen's Association, Mile High Nordic Ski Club, and the Mile High Backcountry Horsemen's Association.

The Commissioners of Deer Lodge County have been contacted about the proposed project and are supportive of FWP's efforts.

The public will be notified in the following manner to comment on this draft EA:

- Two public notices in each of these papers: *The Montana Standard* (Butte) and *The Independent* (Anaconda)
- One statewide press release
- Direct mailing to adjacent landowners and interested parties, and
- Public notice on the Fish, Wildlife & Parks web page: *http://fwp.mt.gov*.

Copies will be available for pubic review at FWP Region 3 Headquarters and at the FWP Butte Area Resource Office.

This level of public notice and participation is appropriate for a project of this scope.

The public comment period will extend for (25) twenty-five days. Written comments will be accepted until 5:00 p.m., April 27, 2012 and can be mailed to the address below:

Mount Haggin WMA Forest Management Project
Montana Fish, Wildlife & Parks
1820 Meadowlark Lane
Butte, MT 59701

Or email comments to: vboccadori@mt.gov . Please put "EA Comment" in the subject line.

7.2 Collaborators - Other Agencies/Offices that Contributed to the EA

Montana Department of Fish, Wildlife & Parks: Fisheries, Legal, and Wildlife
Montana State Historic Preservation Office

Northwest Management, Inc

8.0 ANTICIPATED TIMELINE

Public Comment Period of EA: April 3-April 27, 2012
Decision Notice: May 7, 2012
FWP Commission Approval: June 14, 2012
Request for Proposal (RFP) for Licensed Forester Published: June 15, 2012
Project Bid Solicitation and Award of Contract: late July, 2012
Initiation of Project: early August, 2012
Completion of Project: mid October 2012

9.0 DETERMINATION IF AN ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED

Based upon the above assessment, which has identified a limited number of minor impacts to the physical and human environment that will be either for a short duration or that the affects of the proposed project can be mitigated below the level of significance, an EIS in not required and an environmental assessment is the appropriate level of review.

The removal of a limited number of lodgepole pine will not diminish the variety of conifers that can be found on Mount Haggin WMA nor be detrimental to the fisheries or wildlife resources existing there. The proposed action would remove dead and beetle-infested hazard trees on either side of 4.8 miles of road and over 8 miles of ski trails as described in the previous sections of this EA. In close proximity to these roads and trails, an additional 800 acres in 16 expanded road-trailside units would also have a portion of the dead and beetle infested lodgepole pine removed. No new roads would be constructed. All areas disturbed during the project will be reseeded with local native vegetation and treated for noxious weeds so that actions needed to remove conifers will not leave a lasting negative impact on the landscape. The brief duration and targeted approach of the forest management plan will limit the impacts to wildlife and the recreating public.

10.0 EA PREPARER

Vanna Boccadori, FWP Wildlife Biologist Butte, MT

REFERENCES

Montana Fish, Wildlife, & Parks: Comprehensive Fish and Wildlife Conservation Strategy, 2005.

Montana Fish, Wildlife & Parks: Integrated Noxious Weed Management Plan, 2008.

Montana Fish, Wildlife & Parks: Mt. Haggin Interim Management Plan, 1980.

Montana Fish, Wildlife & Parks: Statewide Elk Management Plan, 2005.

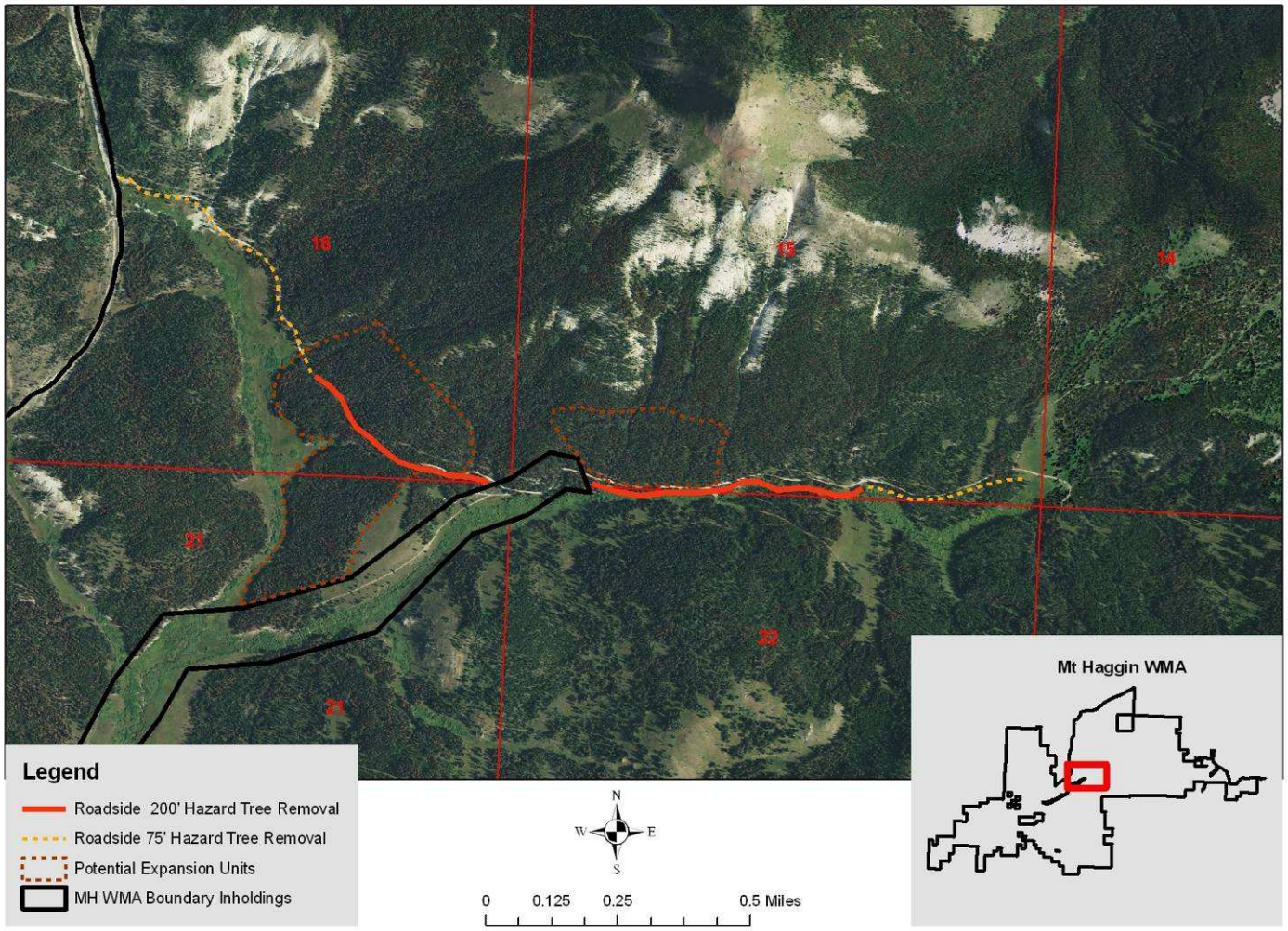
MDEQ, 2009. Middle and Lower Big Hole Planning Area TMDLs and Water Quality Improvement Plan. Montana Department of Environmental Quality, P.O. Box 200901, Helena, MT 59620-0901.

Newell, A.S. 1980. Historic resources study, Mt. Haggin Area, Deer Lodge County, Montana. Prepared for Montana Department of Fish, Wildlife, and Parks, Bozeman, MT.

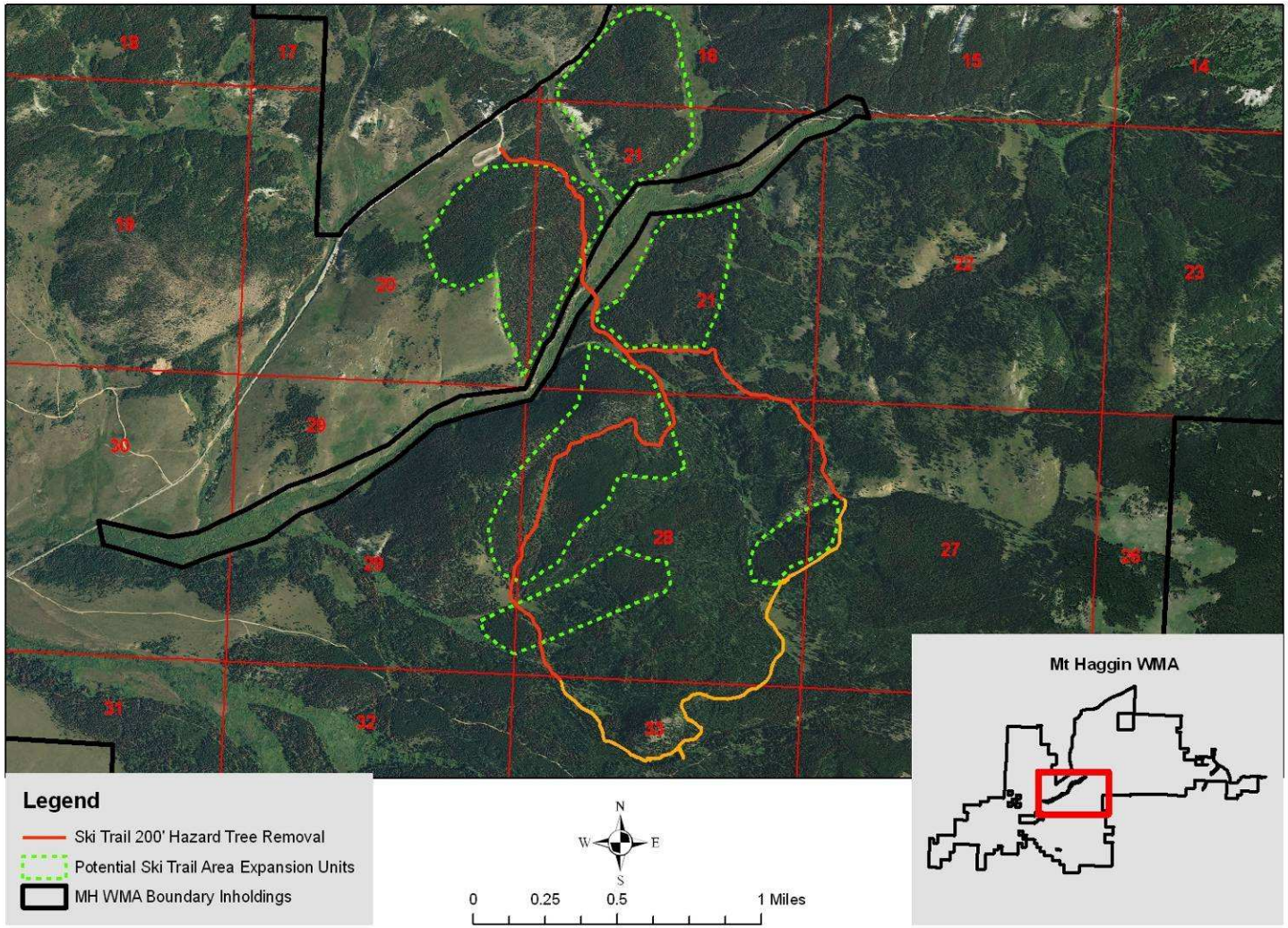
Wood, D. M. 1990. Mt. Haggin Game Management Area, Final Report. Prepared for Montana Department of Fish, Wildlife & Parks, Butte, MT.

APPENDIX A

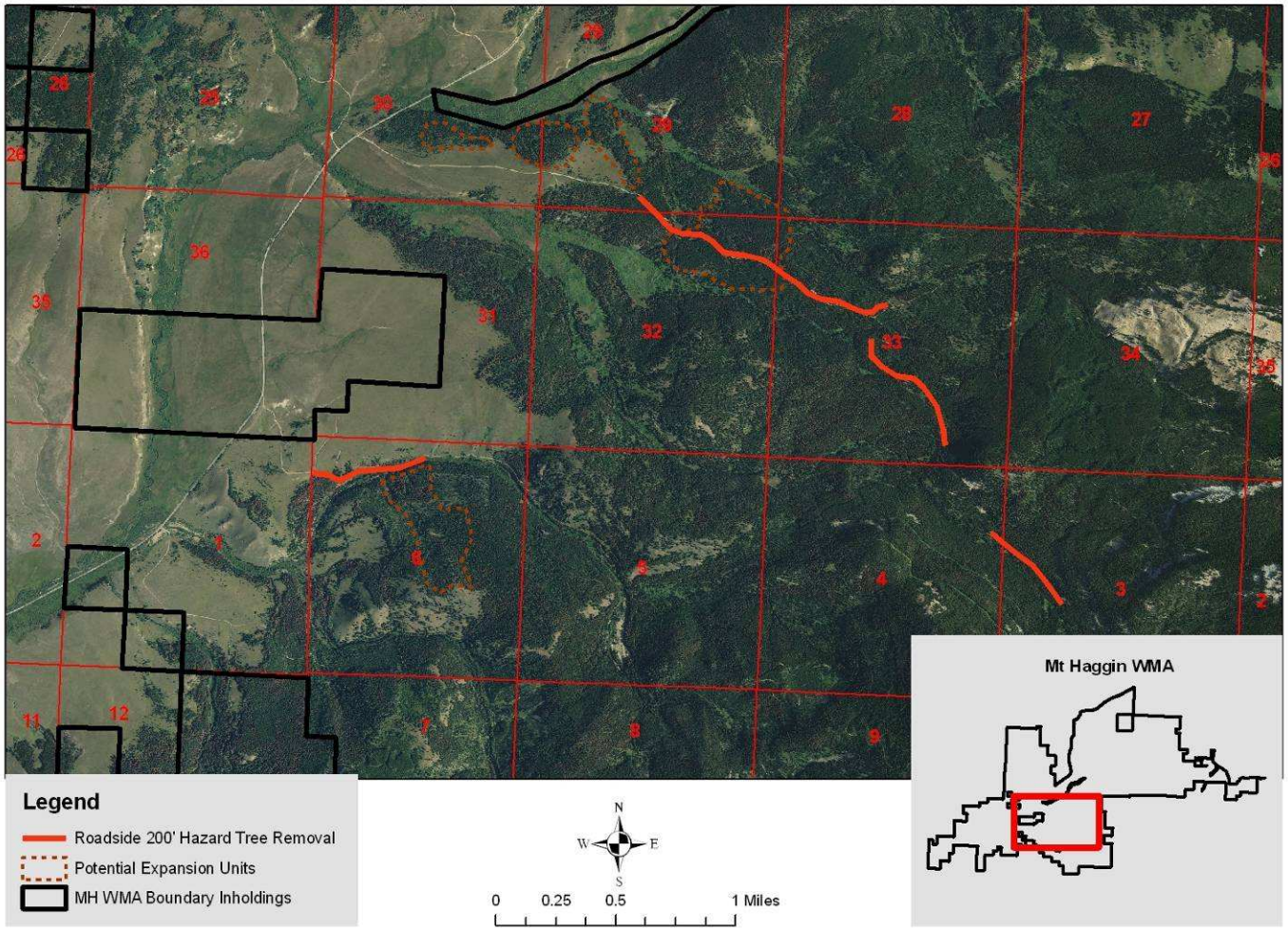
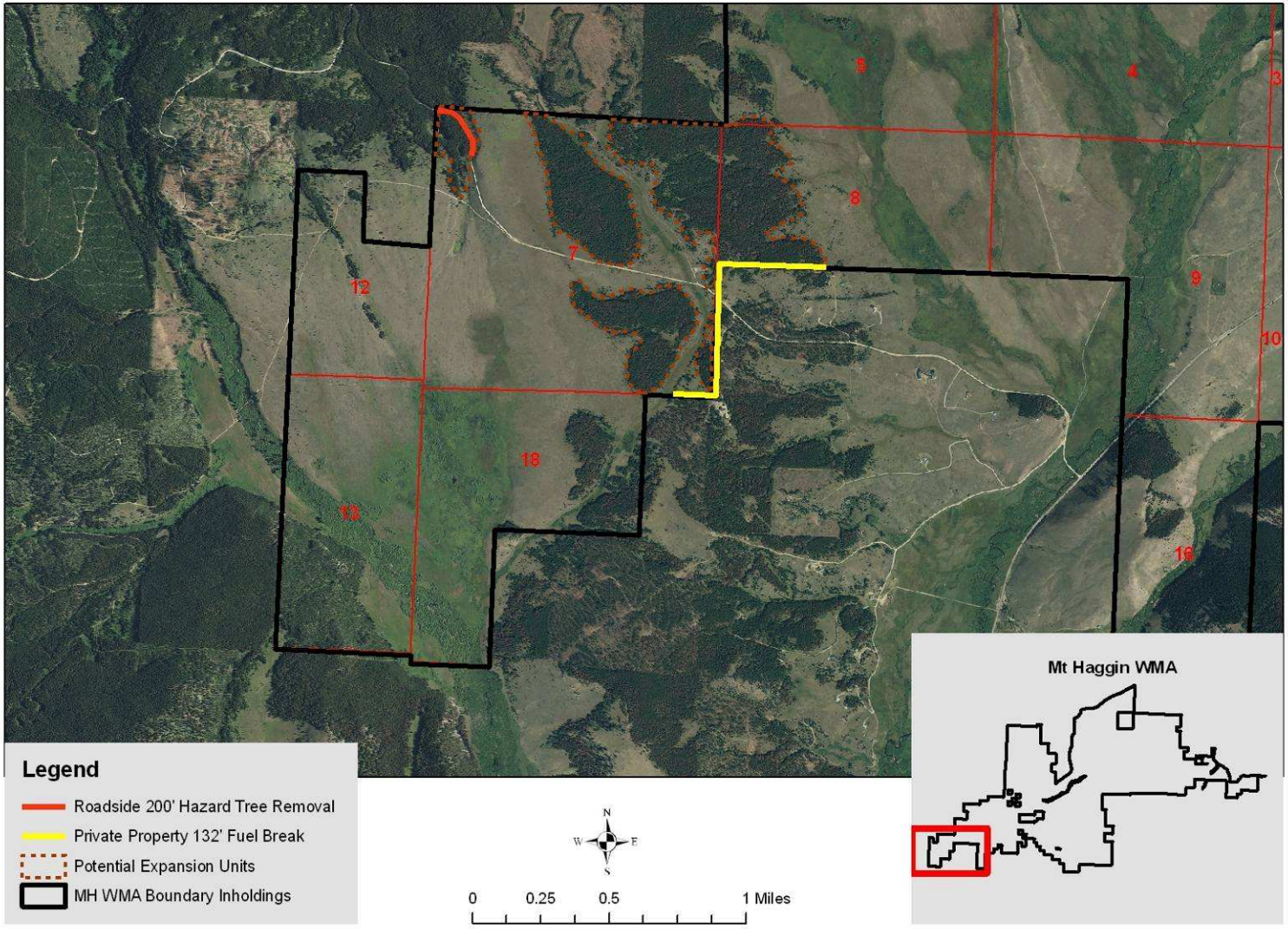
California Creek Area



Mt Haggin Cross Country Ski Area and Trails



Little American Creek and French Gulch Areas



Seymour Creek Area