CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Crispy Columbus Salvage Timber Permit
Proposed Implementation Date:	April 2012
Proponent:	Tricon Timber, LLC
Location:	Section 36, Township 1 South, Range 19 East and Section 2, Township 2 South, Range 19 East
County:	Stillwater
Trust:	Common Schools

I. TYPE AND PURPOSE OF ACTION

DNRC, Bozeman Unit, is proposing a commercial limited access timber permit to harvest an estimated 500 MBF of burned ponderosa pine sawtimber from approximately 500 acres located in Section 36-T1S-R19E and Section 2-T2S-R19E. Existing roads would be utilized and no new road construction would be needed to access the harvest units. Purpose of the action is to generate revenue for the Common School trust; recover value from damaged timber; improve the health, vigor and productivity of the forest stands through the removal of dead, dying and at-risk timber.

Lands involved in this proposed project are held by the State of Montana in trust for the Common Schools (Enabling Act of February 22, 1889: 1972 Montana Constitution, Article X Section 11). The Board of Land Commissioners and the DNRC are required, by law, to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for these beneficiary institutions (Section 77-1-202, MCA). The DNRC would manage lands involved in this project in accordance with the State Forest Land Management Plan (DNRC 1996), the Administrative Rules for Forest Management (ARM 36.11.401 through 450), and all other laws applicable to timber harvest activities on State lands.

(See Attachment A for site specific locations).

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

DNRC Soil Scientist J. Schmalenberg and DNRC Forester C. Barone conducted a field review in March 2012. Individual scoping notices were sent in March 2012.

Other contacts:

DNRC, Archaeologist, P. Rennie
DNRC, Wildlife Biologist, R. Baty
FWP, Wolf Program Specialist, A. Nelson
Retamco (lessee)
Montana Natural Heritage Program

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

The Stillwater County Weed District administers the State weed laws in Stillwater County. The Weed District is contacted by the DNRC and given a weed plan for the project.

DNRC is classified as a major open burner by the Montana Department of Environmental Quality (DEQ), and is issued a permit from the DEQ to conduct burning activities on State lands managed by the DNRC. As a major open burning permit holder, DNRC agrees to comply with all of the limitations and conditions of the permit.

Access to the State parcels would require a temporary road use agreement with private landowners.

3. ALTERNATIVES CONSIDERED:

No Action Alternative: Current management actions would be maintained and forest management and harvesting actions would be deferred. These tracts are currently leased for grazing. The burned timber would not be harvested and would lose any remaining value within the next six months. The Common Trust would lose an opportunity to recover any value from the damaged resource.

Action Alternative: Commercially harvest approximately 500 MBF of fire damaged timber from an estimated 500 acres of State land, located in Section 36-T1S-R19E and Section 2-T2S-R19E. Existing roads would be utilized and BMP's applied.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:
Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Soils within the project area are derived from sedimentary parent materials lending to rather fine textured, silt loam surface soils.

In August of 2010, the Stump Gulch fire burned 100% of all analysis areas resulting in moderate to high burn severity. A large summer thunderstorm immediately followed the fire and resulted in substantial hillslope erosion and sediment delivery to stream channels. Spring flood events in 2011 also contributed to additional hillslope erosion and subsequent sediment delivery to stream channels. These areas of surface soil loss are easily evident today as no vegetative cover has become established on these areas of high burn severity accompanied by sheet and rill erosion. Elevated rates of soil erosion, compared to pre-burn conditions, were still observed during field review conducted in March of 2012. The Stump Gulch fire resulted in a dramatic decrease in soil productivity within the project area due to the loss of these surface soils.

Under the action alternative, with recommended soil mitigations are applied, a high probability exists that 15% of the surface soils within the projects harvest units will be detrimentally disturbed via compaction, displacement and erosion (DNRC 2009). These impacts are expected to have a moderate risk affect the long-term soil productivity of the project area for approximately 80-100 years. Considering the impact of the Stump Gulch fire in conjunction with the proposed actions, there is a high probability of moderate cumulative effects to the long-term soil productivity of the site for approximately 80-100 years and potentially longer.

(See Attachment C – Watershed and Soils Assessment)

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:
Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

All identified stream channels in the watershed analysis areas have been classified as Class III streams under the Montana Streamside Management Zone law. Both Stump Gulch and Baney Coulee contribute all intermittent surface flows to an irrigation ditch that has no return flow to the Yellowstone River. The Face drainage of Kersey Creek contributes intermittent flows to Kersey Creek proper which is also an intermittent stream.
Kersey Creek is classified as B-2 under Montana surface water quality classification and is a tributary to the Yellowstone River with direct hydrologic connectivity. This portion of the Yellowstone River is classified as B-1 under Montana surface water quality classifications. No portion of any stream in the analysis areas has been listed on the 2012 303(d) list.

The Stump Gulch Fire and associated post-fire runoff events delivered large volumes of fine sediments to all channels in the analysis areas. All road stream crossings on private lands had culverts that were undersized for these runoff and sediment transport events. These culverts have since been plugged with sediment and the hydrologic capacity has been compromised. Road fills at the crossing sites have also been compromised to various degrees. Haul routes within a majority of the analysis areas currently don't met BMP's for road surface drainage.

The primary affect mechanism driving sediment delivery to stream channels resulting from the proposed actions is disturbed hillslope soils and the use of the haul routes within the project area. The primary mitigation measures to decrease this risk is the application of extended RMZ's adjacent to stream channels, coarse woody debris retention, application of BMP's to the haul routes and to conduct hauling during dry conditions when road ruts will not confine road surface runoff. The existing road stream crossing on private land will be reconstructed as drive thru crossings to eliminate long-term maintenance requirements at these sites and only used during dry conditions. Upon approval of a 310 or 124 permit, these crossing sites will have culverts removed and the channel grades will be reconstructed so that stream equilibrium will be achieved more rapidly than what is currently presented in the existing conditions. When considering the above mentioned mitigation measures that would be implemented under the proposed actions in context of the existing conditions, there is a high probability of low level direct and indirect effects of sediment delivery to streams channels from the proposed actions.

Private landowners surrounding the project area are also conducting salvage harvesting activities and will use some of the same haul routes as those proposed here. The mitigation measures applied on these private harvest activities are unknown. Mitigation measures applied on private lands are assumed to be less conservative than those proposed here while harvest treatments are most likely more aggressive. Because of this assumption, it is a reasonable conclusion that a high probability of moderate level cumulative effects can be expected in all watershed analysis areas with regard to sediment delivery to stream channels.

(See Attachment C – Watershed and Soils Assessment)

6. AIR QUALITY:
What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

The project includes piling and burning of logging slash. Localized short duration particulate emissions occur during slash burning. Slash burning is normally conducted in late October through November. The DEQ and the Cooperative Airshed groups regulate particulate emissions during this period. Burning times are coordinated to 1) limit burning periods of acceptable smoke dispersion and 2) to limit the cumulative generation of particulates.

DNRC is a member of the Montana/Idaho Airshed Group, which coordinates burning activities related to forest management among the group's members in order to minimize impacts from smoke generated by those activities. As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit in Missoula, MT. Thus direct, indirect, and cumulative impacts associated with the proposed action are expected to minimal.

7. VEGETATION COVER, QUANTITY AND QUALITY:
What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

Vegetation is a complex of grass range with mosaic stands of ponderosa pine. The State parcels are located in rolling pine hills along the forest/grassland/urban interface and are surrounded by private lands. Lands occur in open, rolling country with generally broad and gentle ridge tops. Slopes range from 5-50% with an elevation range of 3600 to 4200 feet. The State parcels have ~1280 acres of which ~1050 acres burned in August 2010. All stands in Section 36 and 80% of the stands in Section 2 were burned moderate to severely.

Ponderosa pine dominates all stands and is the climax species and Ponderosa Pine/Bluebunch Wheatgrass (PIPO/AGSP) is the habitat type. The cover type is Ponderosa pine and the forested stands are included in fire group two where periodic low to moderate severity wildfires and stand replacing wildfires can sweep through the stands

Stands are composed of ponderosa pine which burned moderate to severe ~18 months ago. 95% of the trees are dead or dying from fire damage and pine beetle infestations. Only a few pockets of live trees remain. Majority of burned timber is short (16-25' short logs), blue stained and starting to check. Yield capacity is 20-30 cu. ft/acre/year. Regeneration and understory vegetation was burned severely and coverage is minimal with little coarse woody debris. No old growth is present within the proposed project area.

Treatments for ponderosa pine cover types would target all dead, dying and at-risk ponderosa pine exhibiting signs of burn damage, insect/disease, poor health and/or poor tree form characteristics for removal utilizing selection and regeneration harvests. Large live trees, live cull trees, snags, cull snags, and coarse woody debris and fine materials would be protected and retained in sufficient quantities where applicable.

Harvest prescription would recover value from resources before it is lost, fire hazard, and additional insect and disease while promoting forest health, vigor and productivity. Additionally, harvest would encourage natural regeneration of shade intolerant species, deposit slash on burned/bare soils, promote a ponderosa pine cover type while maintaining a semblance of historic stand conditions.

Excess slash would be consolidated at landings and burned. Natural regeneration would be expected. No sensitive plant species have been noted within the proposed project area.

The DNRC requires the washing of equipment, seeding of grass and monitoring of disturbed areas to minimize the potential of noxious weeds being introduced. There is low risk of direct, indirect, or cumulative impacts due to weeds.

Due to the size, duration, harvest method and burned nature of the proposed project and additional recommended mitigation measures, direct, indirect or cumulative impacts to vegetative communities and cover from commercial harvesting are expected to be minor and temporary.

(See Attachment F – Vegetative Analysis/Stand Prescription)

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

A variety of big game, small mammals, raptors and songbirds potentially use this area. There are no known cold-water fisheries within the proposed project area.

The project area lies within the MT. Fish, Wildlife and Parks Mid-Yellowstone Elk Management Unit/Hunting District 500. Preventing elk populations from increasing and expanding into new areas causing damage to agricultural crops is the primary concern expressed by MFWP in this hunting district. Achieving these goals would be heightened when available cover at the landscape level is reduced appreciably through timber harvest activities, road management, or natural disturbances, such as large scale stand-replacement wildfires.

Any adverse direct, indirect or cumulative impacts to wildlife as a result of the proposed actions are expected to be minor and temporary. As a result of implementing the proposed actions, direct, indirect or cumulative impacts to the fisheries within these watersheds are not expected.

(See Attachment C and E –Watershed and Soils Assessment; Checklist for Endangered, Threatened and Sensitive Species)

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

No threatened or endangered species are known to have been documented within the proposed project area.

Occasional Grizzly Bear use may occur, however, the project area is generally considered outside of their normal occupied habitat. Preferred habitat for grizzly bear is not present within the proposed project area. Adverse direct, indirect and cumulative impacts to Grizzly Bear's as a result of this project are expected to be negligible.

The proposed project lies within the Greater Yellowstone Wolf Recovery Area. There are no known packs or confirmed sightings in the area of the proposed project. The nearest pack is the Rosebud pack. Individuals from these packs or transients from other packs could occasionally use portions of the project area, however, due to the size, nature and location of the proposed project, activities associated with this proposal are expected to have minimal affect on wolves and recovery efforts.

The project area lies outside of FWP general Canada Lynx distribution. The proposed project area was severely burned and is not preferred lynx habitat or habitat for their primary prey, snowshoe hares. All acres within the proposed harvest would be categorized as temporary non-habitat. Due to the small size and short duration of the project and lack of desirable habitat, adverse direct, indirect or cumulative impacts to lynx as a result of this project are expected to be negligible.

The proposed project area falls within the range of wolverines. The DNRC is not aware of any specific observations of wolverines associated with the proposed project area, however, periodic or transient use of the proposed project area could occur. Due to the size, nature, duration and location of the proposed project, activities associated with this proposal are expected to have minimal effect on wolverines.

The project area lies outside of FWP occupied Sage Grouse habitat. However, sagebrush semi-desert habitats suitable for use by Sage Grouse do occur within the project area. No leks or core areas are known to occur within one mile of the proposed project or haul route. Should sage grouse be present in the vicinity of the project area, any effects to habitat or disturbance-related effects would be expected to be minimal and preferred sagebrush habitat would not be altered. Impacts to Sage Grouse would not be anticipated.

Nesting habitat and nesting home range for Bald Eagles does occur within one mile of the southern edge of the proposed project area. No direct, indirect or cumulative effects to bald eagles associated with this project are anticipated.

There are no known cold-water fisheries within the proposed project area. Direct, indirect or cumulative impacts to fisheries within these watersheds are expected to be negligible.

Five vertebrate animal species of concern, Great Blue Heron, Black-billed Cuckoo, Pinyon Jay, Greater Short-horned Lizard and Common Sagebrush Lizard, have been observed within one-quarter mile of the proposed project area or within the proposed project area.

No other sensitive species/species of special concern have been documented or observed within the proposed project area.

Due to the size, season, duration and harvest methods and additional recommended mitigation measures, adverse direct, indirect or cumulative impacts to endangered, threatened or sensitive species as a result of the proposed action is expected to be minimal.

(See Attachment C and E –Watershed and Soils Assessment; Checklist for Endangered, Threatened and Sensitive Species)

10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

There are no cultural resource concerns associated with this proposed project.

11. AESTHETICS:
Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

The proposed project area is not visible to any heavily populated area but portions of the sale area can be seen from select segments Interstate 90. Due to the aspect, current burned landscape and topography of the proposed sale area and limited viewing area, impacts concerning aesthetics are expected to be minimal.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

None.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:
List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

None.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project.

NONE

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

NONE

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:
Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

People are currently employed in the wood products industry. Due to the relatively small size of the timber sale program, there would be no measurable direct, indirect, or cumulative impact from this proposed action on employment.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

People are currently paying taxes from the wood products industry in the region. Due to the relatively small size of the timber sale program, there would be no measurable direct, indirect, or cumulative impact from this proposed action on tax revenues.

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services.

There would be no measurable direct, indirect, or cumulative impacts related to demand for government services due to the small size of the timber sale program, the short-term impacts to traffic and the small possibility of a few people temporarily relocating to the area.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:
List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

DNRC developed the State Forest Land Management Plan (SFLMP) in 1996, a programmatic plan that outlines the approach and philosophy guiding land management activities on forested school trust lands throughout the state of Montana.

DNRC adopted the Administrative Rules for Forest Management on March 13, 2003, applicable to management activities on forested school trust lands.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

Persons having legal access to the parcels and possessing a valid state lands recreational use license or FWP conservation license may conduct recreational activities on the parcels. The proposed project would not affect the existing access for the general public.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

There would be no measurable direct, indirect, or cumulative impacts related to population and housing due to the relatively small size of the timber sale program, and the fact that people are already employed in this occupation in the region.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

NONE

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

NONE

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

The estimated return to the trust would be $7,500.00 (500 MBF of sawtimber @ $15.00/MBF). This estimate is intended for comparison of alternatives, not as an absolute estimate of return.

Income from grazing license's of $1,903.90/year for 241 AUM of use and $1,920.00/year for oil/gas leases would continue with or without the harvest proposal.

EA Checklist Prepared By:	**Name:**	Chuck Barone	**Date:**	April 3, 2012
	Title:	Bozeman Unit Forester		

V. FINDING

25. ALTERNATIVE SELECTED:

I have determined to select the Action Alternative with the recommended mitigating measures because it:

- adequately addresses all issues and concerns raised by the public and internally,
- adequately meets the purpose of the project and accomplishes the project objectives,
- contains an appropriate level of mitigation for the various affected resources, and
- meets all applicable rules and regulations.

MEASURES RECOMMENDED TO MITIGATE POTENTIAL IMPACTS:

1) Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, applicable DNRC Forest Management Administrative Rules and applicable Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP).
2) Limit equipment operations to periods when soils are dry (less than 20% soil moisture), frozen or snow covered (12 inches packed or 18 inches unconsolidated) to minimize soil compaction, rutting, vegetative disturbance and maintain drainage features. Control erosion by installing adequate drainage on roads and skid trails.
3) Ground-based logging equipment (tractors, skidders, and mechanical harvesters) is limited to slopes less than 45% outside of a riparian management zone.
4) Ground-based logging equipment (tractors, skidders, and mechanical harvesters) may not operate within a riparian management zone when it is located on slopes less than 35%, unless the operation can be conducted without causing excessive compaction, displacement, or erosion of the soil.
5) No equipment will be operated within a riparian management zone on slopes greater than 35% unless on an existing road.
6) Any constructed skid trails will have the cut slopes reclaimed to a stable angle, surface drainage installed, slashed and seeded to control gully formation and chronic erosion.
7) To decrease sediment travel distances, create micro growing sites, and provide soil organic matter, coarse woody debris retention targets of 3-5 tons/acre, ideally in cull trees greater that 3 inches in diameter, will be retained on site.
8) All Class III channels will have a 50' SMZ prohibiting equipment operations within its boundaries. All other SMZ rules pertinent to Class III stream will apply.

9) Adjacent to the SMZ, a riparian management zone of 100' will be applied. Within this RMZ, equipment may only be operated when slope is less that 35% **AND** the operation can be conducted without causing excessive compaction, displacement, or erosion of the soil.
10) No equipment will be operated within a riparian management zone on slopes greater than 35%.
11) The Forest Officer shall approve a plan for felling, yarding and landing location in each harvest unit prior to the start of operations in the unit.

    The locations and spacing of skid trails and landings shall be designated and approved by the Forest Officer prior to operations and skid trails will not be spaced less than 60 feet. Retain all fine litter as feasible and 5-10 tons/acre of large woody debris >3" diameter. Limit scarification to 30-40% of the harvest area. Slash would be left in the harvest units where feasible, and distributed on skid trails upon completion of use, for nutrient cycling, to control erosion and to provide shade and protection for seedlings.
12) All haul routes will have surface drainage BMP's applied to limit road surface runoff and direct it away from stream channels. No wheeled rutting on road surfaces will be allowed during hauling that renders road surface drainage features ineffective. No surface water flow at road-stream crossing locations will be present during hauling activities. Install adequate road drainage to control erosion concurrent with harvest activities. Provide effective sediment filtration along drainage features near crossing sites.
13) Major skid trails on State lands would be closed with slash and debris and/or barriers, and adequate drainage provided.
14) All road and logging equipment would be power washed and inspected prior to being brought on site. Sale area would be monitored for weeds following harvest and a treatment plan would be developed should noxious weeds occur.
15) At sale closure, grass seed constructed skid trails (where needed) and landings with an appropriate seed mixture.
16) One snag and one snag recruit per acre, of the largest diameter class, would be retained where applicable. Cull live trees and cull snags would be retained where applicable.
17) Contact DNRC wildlife biologist should any threatened or endangered species be encountered within the proposed project area.
18) DNRC employees and contractors and their employees would be prohibited from carrying firearms while on duty, unless the person is specifically authorized to carry a firearm under DNRC Policy 3-0621.
19) Emphasize the retention of downed logs of 15-inch diameter or larger where they occur.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

I have determined that none of the anticipated environmental impacts outlined in the EA are significant according to the criteria outlined in *ARM 36.2.524.* I find that no impacts are regarded as severe, enduring, geographically widespread, or frequent. Further, I find that the quantity and quality of various resources, including any that may be considered unique or fragile, will not be adversely affected to a significant degree. I find no precedent for future actions that would cause significant impacts, and I find no conflict with local, State, or Federal laws, requirements, or formal plans. In summary, I find that the identified adverse impacts will be avoided, controlled, or mitigated by the design of the project to the extent that the impacts are not significant.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

[ ]	EIS	[ ]	More Detailed EA	[X]	No Further Analysis

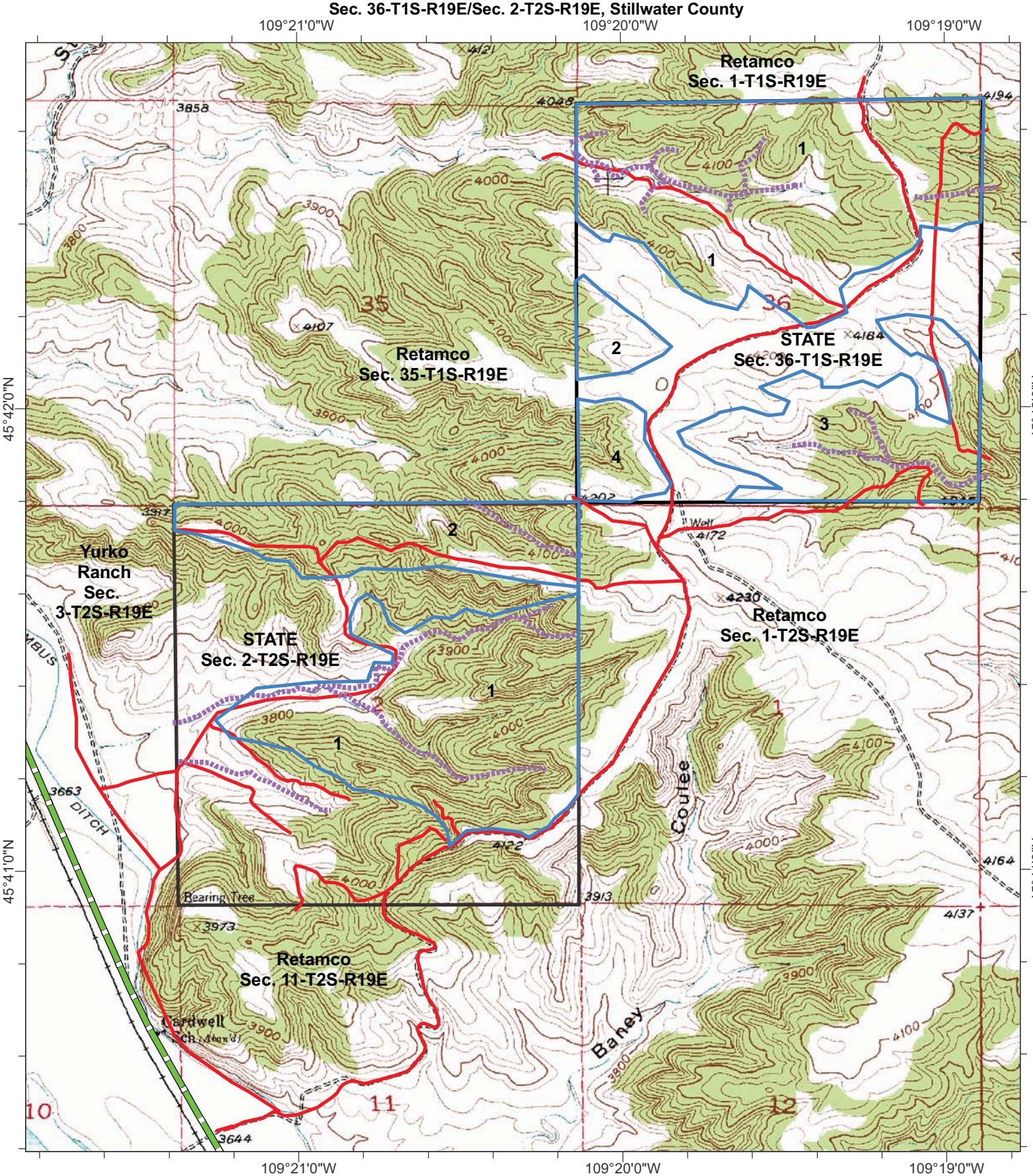
EA Checklist Approved By:	**Name:**	Craig Campbell
	Title:	Bozeman Unit Manager

Signature:	Craig Campbell/s/	**Date**:	April 5, 2012

ATTACHMENTS

A – Site Specific Map
C – Watershed and Soils Assessment
E – Checklist for Endangered, Threatened and Sensitive Species
F – Vegetative Analysis/Silvicultural Prescription

ATTACHMENT A
Crispy Columbus Salvage Timber Permit
Sec. 36-T1S-R19E/Sec. 2-T2S-R19E, Stillwater County



I-90

Access Road

50' SMZ/100' RMZ

Harvest Area

0 700 1,400 2,800 Feet

1:20,000

N

ATTACHMENT C

WATERSHED AND SOILS ASSESSMENT
CRISPY COLUMBUS SALVAGE TIMBER PERMIT

Jeff Schmalenberg, Soil Scientist, Forest Management Bureau

April 3, 2012

Southern Land Office
T2S R19E S2 and T1S R19E S36

Issues

1. Equipment used for timber harvesting and skidding has the potential to compact, displace and erode surface soils.
2. Compacted, displaced or eroded soils have the potential to lose some productive capacity which can affect long-term soil productivity.
3. Disturbed hillslope soils and haul routes have the potential to increase sediment delivery to stream channels.

Analysis Area

The analysis area for issues #1 and #2 above will be the individual harvest units for the project. Issue #3 will be analyzed for three individual watersheds. These watersheds are presented in *Table CC-01* below along with specific watershed attributes. A map of these watershed analysis areas can be found in *Appendix 1; Maps*.

Analysis Area	Area (Acres)	Average Precipitation (in)	Relief (ft)	Average Slope (%)	SMZ Stream Class	Contributes to Downstream Waters?
Face Drainage to Keyser Creek	4,579	14	423	14% (σ 9%)	Class III	Yes
Baney Coulee	1,275	14	558	17% (σ 11%)	Class III	No
Stump Gulch	887	14	718	15% (σ 9.0%)	Class III	No

Table CC-01; Watershed Analysis Areas and Attributes

Analysis Methods

Results from DNRC Soil Monitoring (DNRC, 2009) will be used to forecast the potential level of detrimental soil disturbance resulting from timber harvesting activities. The forecasted level of detrimental disturbance (% of area) will be used to analysis potential impacts to long-term soil productivity. The amount (acres) and location of disturbed soils will be used to qualitatively forecast the potential risk of sediment delivery.

Existing Conditions

Soils

Soils within the project area are derived from sedimentary parent materials lending to rather fine textured, silt loam surface soils. Four soil map units have been identified within the project area and are presented below in *Table CC-02* along with each soils risk of impact resulting from the proposed actions.

Soil Map Unit ID	Map Unit Name	Soil Texture	Percent of Project Area	Compaction Hazard	Displacement Hazard	Erosion Hazard
15	Birney-Yawdim-Rock outcrop association, steep	Channery Loam	52.9	High	High	High
39	Lonna silt loam, 2 to 8 percent slopes	Silt Loam	1.3	High	Moderate	Moderate
56	Tanna-Rentsac complex, 4 to 15 percent slopes	Clay Loam	15.1	High	High	High
71	Yawdim-Lambeth-Rock outcrop association, steep	Clay Loam	30.7	High	High	High

Table CC-02; Soil Map Units within the Project Area and their Attributes

In August of 2010, the Stump Gulch fire burned 100% of all analysis areas resulting in moderate to high burn severity. A large summer thunderstorm immediately followed the fire and resulted in substantial hillslope erosion and sediment delivery to stream channels. Spring flood events in 2011 also contributed to additional hillslope erosion and subsequent sediment delivery to stream channels. These areas of surface soil loss are easily evident today as no vegetative cover has become established on these areas of high burn severity accompanied by sheet and rill erosion. Elevated rates of soil erosion, compared to pre-burn conditions, were still observed during field review conducted in March of 2012. The Stump Gulch fire resulted in a dramatic decrease in soil productivity within the project area due to the loss of these surface soils.

Watershed

All identified stream channels in the watershed analysis areas have been classified as Class III streams under the Montana Streamside Management Zone law. Both Stump Gulch and Baney Coulee contribute all intermittent surface flows to an irrigation ditch that has no return flow to the Yellowstone River. The Face drainage of Kersey Creek contributes intermittent flows to Kersey Creek proper which is also an intermittent stream.

Kersey Creek is classified as B-2 under Montana surface water quality classification and is a tributary to the Yellowstone River with direct hydrologic connectivity. This portion of the Yellowstone River is classified as B-1 under Montana surface water quality classifications. No portion of any stream in the analysis areas has been listed on the 2012 303(d) list.

The Stump Gulch Fire and associated post-fire runoff events delivered large volumes of fine sediments to all channels in the analysis areas. All road stream crossings on private lands had culverts that were undersized for these runoff and sediment transport events. These culverts have since been plugged with sediment and the hydrologic capacity has been compromised. Road fills at the crossing sites have also been compromised to various degrees. Haul routes within a majority of the analysis areas currently don't met BMP's for road surface drainage.

Mitigations

The follow mitigations will be applied during harvesting and hauling activities so that the proposed actions may be implemented with a moderate level of risk of adverse impacts to sediment delivery and soil productivity.

Soils Mitigations

- Limit equipment operations to periods when soils are relatively dry, (less than 20% soil moisture), frozen or snow covered (12 inches packed or 18 inches unconsolidated) to minimize soil compaction and rutting, and maintain drainage features.
- Ground-based logging equipment (tractors, skidders, and mechanical harvesters) is limited to slopes less than 45% outside of a riparian management zone.
- Ground-based logging equipment (tractors, skidders, and mechanical harvesters) may not operate within a riparian management zone when it is located on slopes less than 35%, unless the operation can be conducted without causing excessive compaction, displacement, or erosion of the soil.
- No equipment will be operated within a riparian management zone on slopes greater than 35% unless on an existing road.
- To decrease sediment travel distances, create micro growing sites, and provide soil organic matter, coarse woody debris retention targets of 3-5 tons/acre, ideally in cull trees greater that 3 inches in diameter, will be retained on site.
- The Forest Officer shall approve a plan for felling, yarding and landings in each harvest unit prior to the start of operations in the unit. The locations and spacing of skid trails and landings shall be designated and approved by the Forest Officer prior to construction.
- Any constructed skid trails will have the cut slopes reclaimed to a stable angle, surface drainage installed, slashed and seeded to control gully formation and chronic erosion.

Watershed Mitigations

- All Class III channels (see attached map) will have a 50’ SMZ, unless extended to 100’ for slope, prohibiting equipment operations within its boundaries. All other SMZ rules pertinent to Class III stream will apply.
- Adjacent to the SMZ, a riparian management zone of 100’ will be applied. Within this RMZ, equipment may only be operated when slope is less that 35% **AND** the operation can be conducted without causing excessive compaction, displacement, or erosion of the soil.
- No equipment will be operated within a riparian management zone on slopes greater than 35%.
- All haul routes will have surface drainage BMP’s applied to limit road surface runoff and direct it away from stream channels.
- No wheeled rutting on road surfaces will be allowed during hauling that renders road surface drainage features ineffective.
- No surface water flow at road-stream crossing locations will be present during hauling activities.

Environmental Effects

Direct, Indirect and Cumulative Soils Effects

If all the above soil mitigations are applied, a high probability exists that 15% of the surface soils within the projects harvest units will be detrimentally disturbed via compaction, displacement and erosion (DNRC 2009). These impacts are expected to have a moderate risk affect the long-term soil productivity of the project area for approximately 80-100 years.

Considering the impact of the Stump Gulch fire in conjunction with the proposed actions, there is a high probability of moderate cumulative effects to the long-term soil productivity of the site for approximately 80-100 years and potentially longer.

Direct, Indirect and Cumulative Watershed Effects

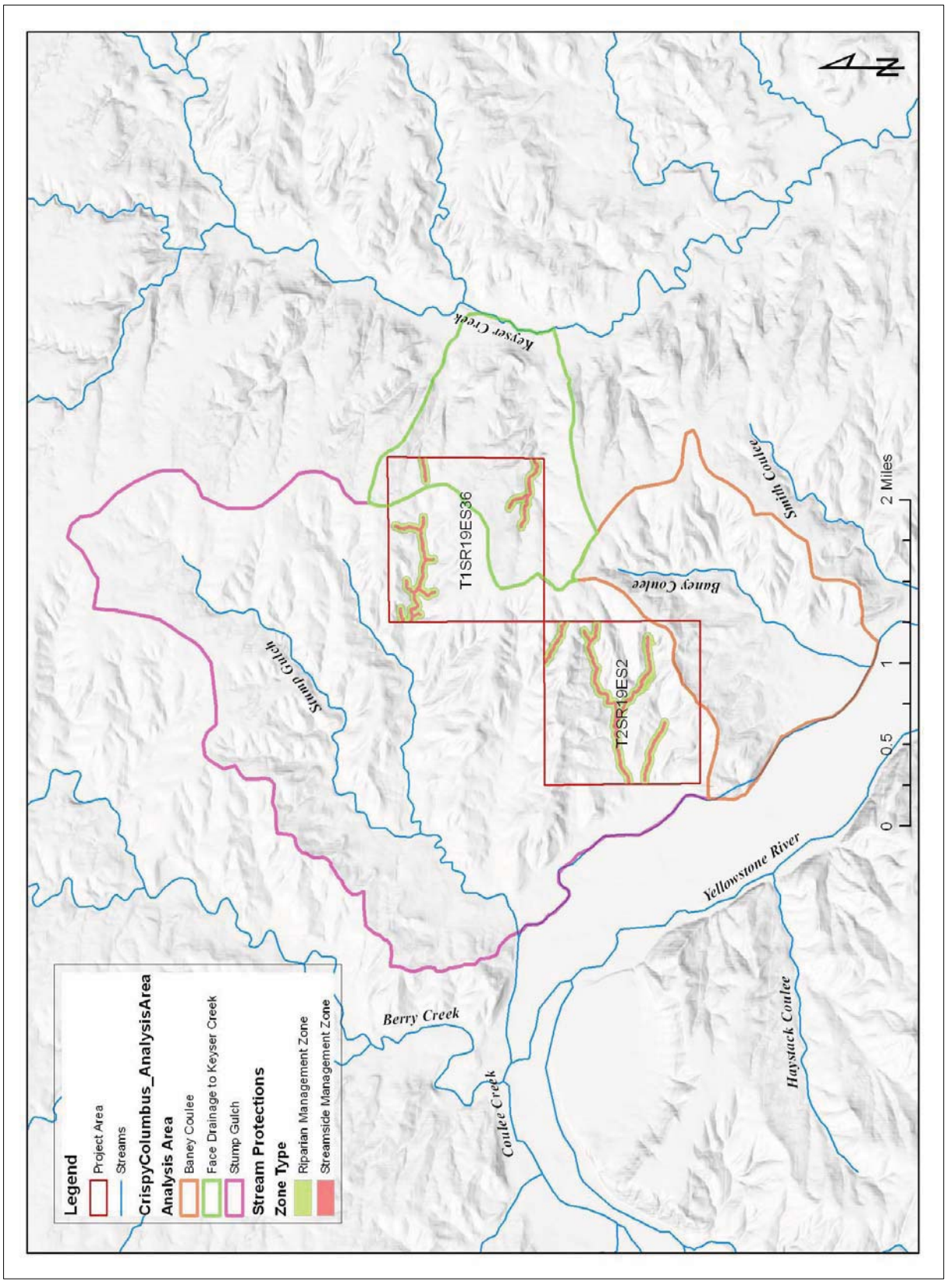
The primary affect mechanism driving sediment delivery to stream channels resulting from the proposed actions is disturbed hillslope soils and the use of the haul routes within the project area. The primary mitigation measures to decrease this risk is the application of extended RMZ's adjacent to stream channels, coarse woody debris retention, application of BMP's to the haul routes and to conduct hauling during dry conditions when road ruts will not confine road surface runoff. The existing road stream crossing on private land will be reconstructed as drive thru crossings to eliminate long-term maintenance requirements at these sites and only used during dry conditions. Upon approval of a 310 or 124 permit, these crossing sites will have culverts removed and the channel grades will be reconstructed so that stream equilibrium will be achieved more rapidly than what is currently presented in the existing conditions. When considering the above mentioned mitigation measures that would be implemented under the proposed actions in context of the existing conditions, there is a high probability of low level direct and indirect effects of sediment delivery to streams channels from the proposed actions.

Private landowners surrounding the project area are also conducting salvage harvesting activities and will use some of the same haul routes as those proposed here. The mitigation measures applied on these private harvest activities are unknown. Hauling condition stipulations, coarse woody debris retention, slope limitation and RMZ design are most likely not applied for these private harvest activities. Mitigation measures applied on private lands are assumed to be less conservative than those proposed here while harvest treatments are most likely more aggressive. Because of this assumption, it is a reasonable conclusion that a high probability of moderate level cumulative effects can be expected in all watershed analysis areas with regard to sediment delivery to stream channels.

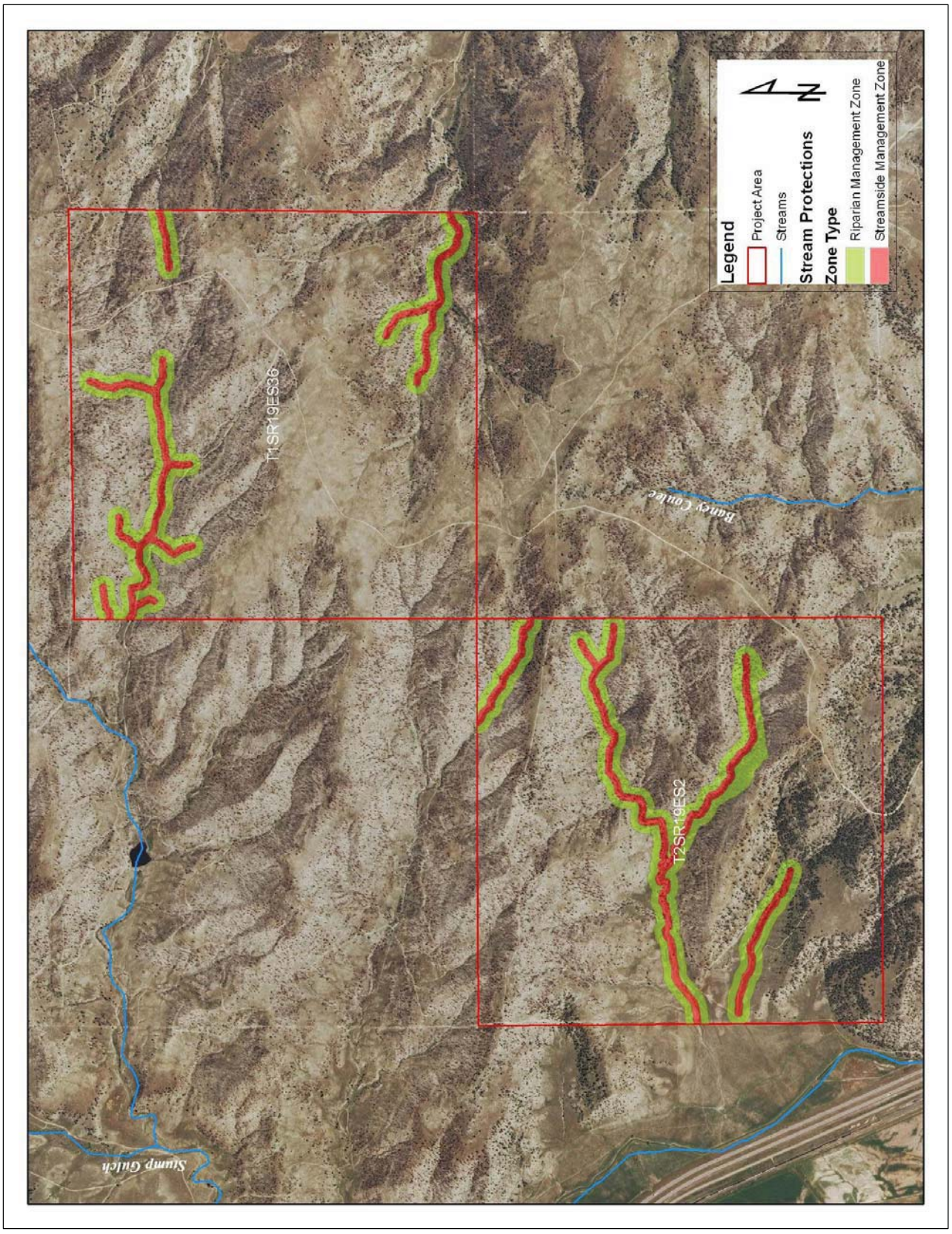
References

DNRC, 2009. DNRC compiled soils monitoring report on timber harvest projects, 1988-2005, 2nd Reprint Edition. Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, MT.

Appendix 1; Maps – Analysis Areas



Appendix 1; Maps – RMZ and SMZ Design



ATTACHMENT E
CRISPY COLUMBUS SALVAGE TIMBER PERMIT

CHECKLIST FOR ENDANGERED, THREATENED AND SENSITIVE SPEICES
Pertains to Section II. 9. of the DS-252 DNRC Environmental Checklist
SOUTHERN LAND OFFICE

Prepared by Chuck Barone April 4, 2012

Threatened and Endangered Species	[Y/N] Potential Impacts and Mitigation Measures N = Not Present or No Impact is Likely to Occur Y = Impacts May Occur (Explain Below)
Grizzly Bear (*Ursus arctos*) Habitat: recovery areas, security from human activity	[N] The proposed project area is situated approximately 27 air miles northeast of the Greater Yellowstone Ecosystem Grizzly Bear Recovery Zone. In recent years, grizzly bears have been documented ranging greater distances outside of the Yellowstone Ecosystem. The proposed project area lies outside what would be considered as occupied habitat (Interagency Occupied Habitat Map, September 2002). DNRC is not aware of any specific observations of grizzly bears associated with the proposed project area; however, periodic or transient use is possible. Riparian habitats preferred by bears do not occur within the proposed project area. The dry, burned draws support relatively minimal levels of hiding cover and human access levels are presently moderate. Present hiding cover is composed predominately of burned Ponderosa Pine within the proposed treatment area and ranges from minimal to low due to the burned nature of these stands. The value of habitat contained in the proposed project area overall is minimal for grizzly bears. No new road would be constructed; and any skid trails developed to accomplish treatment objectives would be closed with slash and debris. Proposed project activities would occur from March 15 - June 15. Harvest and road activities would be short-term in nature. The potential for any measurable increases in bear-human conflicts following the project activities are expected to be negligible. Adverse direct, indirect and cumulative impacts to bears as a result of this project are expected to be negligible.
Lynx (*Felis lynx*) Habitat: mosaics--dense sapling and old forest >5,000 ft. elev.	[N] The project area lies outside of FWP general Canada Lynx distribution. The proposed project area was severely burned and is not preferred lynx habitat or habitat for their primary prey, snowshoe hares. All acres within the proposed harvest would be categorized as temporary non-habitat. Due to the small size and short duration of the project and lack of desirable habitat, adverse direct, indirect or cumulative impacts to lynx as a result of this project are expected to be negligible.

DNRC Sensitive Species	[Y/N] Potential Impacts and Mitigation Measures N = Not Present or No Impact is Likely to Occur Y = Impacts May Occur (Explain Below)
Bald Eagle (*Haliaeetus leucocephalus*) Habitat: late-successional forest <1 mile from open water	[N] Bald Eagles have been documented within the quarter latilong (L40A/B) that encompasses the proposed project area. Nesting habitat and nesting home range for Bald Eagles does occur within one mile of the southern edge of the proposed project area. No direct, indirect or cumulative effects to bald eagles associated with this project are anticipated.
Black-Backed Woodpecker (*Picoides arcticus*) Habitat: mature to old burned or beetle-infested forest	[Y] Black-backed woodpeckers have not been documented within the quarter latilong (L40A/B) that encompasses the proposed project area. However, stands found within the proposed project area are presently experiencing insect activity and could attract birds. A recent burns (≤2 years old) has occurred within the State tracts and adjoining sections. Due to the small size, location and short duration of this proposed project only minor potential for direct, indirect or cumulative effects to black-backed woodpeckers would be expected to occur.
Black-tailed Prairie Dog (*Cynomys ludoviscianus*) Habitat: grasslands, short-grass prairie, sagebrush semi-desert	[N] Black-tailed prairie dogs are known to occur in Stillwater County. However, no prairie dog complexes are known to occur within the project area or within 1 mile of the project area. Impacts to black-tailed prairie dogs are not anticipated.
Gray Wolf (*Canis lupus*) Habitat: ample big game pops., security from human activity	[N] The proposed project area falls within the Greater Yellowstone Wolf Recovery Area for gray wolves. There are no known packs or confirmed sightings in the area of the proposed project (A. Nelson, R-3 Wolf Management Specialist, pers. comm. 4/4/12). The nearest pack is the Rosebud pack. Individuals from this pack or transients from other packs could occasionally use portions of the proposed project area; however, due to the size, nature, duration and location of the proposed project, activities associated with this proposal are not expected to affect wolves or recovery efforts. Should a new den be located within one mile of the proposed project area, activities would cease and a DNRC Biologist would be contacted immediately. Mitigations would then be developed and implemented to minimize adverse impacts to wolves prior to initiating any activity.
Greater Sage Grouse (*Centrocercus urophasianus*) Habitat: sagebrush semi-desert	[N] Sage Grouse have not been documented in the quarter latilong (L40A/B) that encompasses the proposed project area. The project area lies outside of FWP occupied Sage Grouse habitat. However, sagebrush semi-desert habitats suitable for use by Sage Grouse do occur within the project area. No known leks or core areas have been identified within one mile

	of the project area. Should sage grouse be present in the vicinity of the project area, any effects to habitat or disturbance-related effects would be expected to be minimal and preferred sagebrush habitat would not be altered. Impacts to Sage Grouse are not anticipated.
Harlequin Duck (*Histrionicus histrionicus*) Habitat: white-water streams, boulder and cobble substrates	[N] Harlequin ducks have not been documented in the quarter latilong (L40A/B) that encompasses the proposed project area. High gradient streams suitable for use by harlequins do not occur within the project area. No impacts to harlequin ducks would be expected to occur as a result of this project.
Mountain Plover (*Charadrius montanus*) Habitat: short-grass prairie, alkaline flats, prairie dog towns	[N] Mountain Plovers have not been documented in the quarter latilong (L40A/B) that encompasses the proposed project area. No short-grass prairie or prairie dog towns are known to occur on, or within one mile of the proposed project area. No impacts to mountain plovers are expected as a result of this project.
Peregrine Falcon (*Falco peregrinus*) Habitat: cliff features near open foraging areas and/or wetlands	[N] Peregrine Falcons have not been documented within the quarter latilong (L40A/B) that encompasses the proposed project area. No cliff features suitable for nesting peregrine falcons were observed on the project area or within one mile of the project area. Impacts to Peregrine Falcons are not anticipated.
Spotted Bat (*Euderma maculatum*) Habitat: rock outcrops, cliffs, caves, old mines	[N] It is possible that spotted bats might occasionally forage in the vicinity of the project area. However, DNRC is unaware of any cliff features, rock outcrops, mines or caves on the project area or within one mile of the project area that would be suitable for use by spotted bats. Impacts to Spotted bats are not anticipated as a result of this project.
Townsend's Big-Eared Bat (*Plecotus townsendii*) Habitat: caves, caverns, old mines	[N] The DNRC is unaware of any mines or caves within the proposed project area or close vicinity that would be suitable for use by Townsend's big-eared bats. Impacts to Townsend's big-eared bats are not anticipated as a result of this project.
Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*) Habitat: white-water streams, boulder and cobble substrates	[N] White-water streams with boulder and cobble substrate habitats suitable for use by Westslope Cutthroat Trout do not occur within the proposed project area. Impacts to Westslope Cutthroat Trout are not anticipated.
White-tailed Prairie Dog (*Cynomys leucurus*) Habitat: mountain meadows, semi-desert grassland	[N] White-tailed Prairie Dogs have not been observed within the project area. The proposed project area is considered outside the normal range of White-tailed prairie dogs. Impacts to White-tailed prairie dogs are not anticipated.
Yellowstone Cutthroat Trout (*Oncorhynchus clarkii bouvieri*) Habitat: white-water streams, boulder and cobble substrates	[N] White-water streams with boulder and cobble substrate habitats suitable for use by Yellowstone Cutthroat Trout do not occur within the proposed project area. Impacts to Yellowstone Cutthroat Trout are not anticipated.

Montana National Heritage Program 2012. National Heritage Tracker 2012. Montana Field Guide 2012.

ATTACHMENT F

Vegetative Analysis/Stand Prescription
Crispy Columbus Salvage Timber Permit

The State parcels are located in rolling pine hills along the forest/grassland/urban interface and are surrounded by private lands. Lands occur in open, rolling country with generally broad and gentle ridge tops. Slopes range from 5-50% with an elevation range of 3600 to 4200 feet. The State parcels have ~1280 acres of which ~1050 acres burned in August 2010. All stands in Section 36 and 80% of the stands in Section 2 were burned moderate to severely.

Ponderosa pine dominates all stands and is the climax specie and Ponderosa Pine/Bluebunch Wheatgrass (PIPO/AGSP) is the habitat type. The cover type is Ponderosa pine and the forested stands are included in fire group two where periodic low to moderate severity wildfires and stand replacing wildfires can sweep through the stands.

Stand Prescriptions:

Treatments for ponderosa pine cover types would target all dead, dying and at-risk ponderosa pine exhibiting signs of burn damage, insect/disease, poor health and/or poor tree form characteristics for removal utilizing selection and regeneration harvests. Large live trees, live cull trees, snags, cull snags, and coarse woody debris and fine materials would be protected and retained in sufficient quantities where applicable.

Harvest prescription would recover value from resources before it is lost, reduce overstocking, fire hazard, and additional insect and disease while promoting forest health, vigor and productivity. Additionally, harvest would encourage natural regeneration of shade intolerant species, deposit slash on burned/bare soils, promote a ponderosa pine cover type while maintaining a semblance of historic stand conditions.

Old Growth – No old growth is present within the proposed project area.

Excess slash would be consolidated at landings and burned. Natural regeneration would be expected. No sensitive plant species/species of concern have been noted within the proposed project area.

All Harvest Units (500 ac - 500 MBF) - Stands are composed of ponderosa pine which burned moderate to severe ~18 months ago. 95% of the trees are dead or dying from fire damage and pine beetle infestations. Only a few pockets of live trees remain. Majority of burned timber is short (16-25' short logs), blue stained and starting to check. Understory was burned severely and coverage is sparse. Yield capacity is 20-30 cu. ft/acre/year. Regeneration and understory vegetation is minimal with little coarse woody debris.

Harvest all merchantable ponderosa pine material. Selection/regeneration harvests would be utilized. At least one large snag or snag recruit (≥21" dbh or next size smaller) per acre would be left where available. Retain all fine litter and 5-10 tons/acre of large woody debris >3" diameter as feasible. Consolidate remaining slash at landings for burning. Conduct regeneration survey in 5-7 years and a thinning survey in 15 years after harvest.

There is currently more total forest cover in Stillwater County than in prior historical conditions. Salvage harvesting an estimated 500 MBF of burned forest products would not greatly alter the present forest cover. Harvest design is intended to maintain a semblance of historic conditions while promoting forest health and productivity by removing dead and dying timber.

MEASURES RECOMMENDED TO MITIGATE POTENTIAL IMPACTS

1) Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, applicable DNRC Forest Management Administrative Rules and applicable Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP).

2) Limit equipment operations to periods when soils are dry (less than 20% soil moisture), frozen or snow covered (12 inches packed or 18 inches unconsolidated) to minimize soil compaction, rutting, vegetative disturbance and maintain drainage features. Control erosion by installing adequate drainage on roads and skid trails.
3) Ground-based logging equipment (tractors, skidders, and mechanical harvesters) is limited to slopes less than 45% outside of a riparian management zone.
4) Ground-based logging equipment (tractors, skidders, and mechanical harvesters) may not operate within a riparian management zone when it is located on slopes less than 35%, unless the operation can be conducted without causing excessive compaction, displacement, or erosion of the soil.
5) No equipment will be operated within a riparian management zone on slopes greater than 35% unless on an existing road.
6) Any constructed skid trails will have the cut slopes reclaimed to a stable angle, surface drainage installed, slashed and seeded to control gully formation and chronic erosion.
7) 5-10 cull trees per acre will be fell, ideally perpendicular to slope, to decrease sediment travel distances, create micro growing sites, and provide site nutrients.
8) All Class III channels (see attached map) will have a 50' SMZ, unless extended to 100' for slope, prohibiting equipment operations within its boundaries. All other SMZ rules pertinent to Class III stream will apply.
9) Adjacent to the SMZ, a riparian management zone of 100' will be applied. Within this RMZ, equipment may only be operated when slope is less that 35% **AND** the operation can be conducted without causing excessive compaction, displacement, or erosion of the soil.
10) No equipment will be operated within a riparian management zone on slopes greater than 35%.
11) The Forest Officer shall approve a plan for felling, yarding and landing location in each harvest unit prior to the start of operations in the unit. The locations and spacing of skid trails and landings shall be designated and approved by the Forest Officer prior to operations and skid trails will not be spaced less than 60 feet. Retain all fine litter as feasible and 5-10 tons/acre of large woody debris >3" diameter. Limit scarification to 30-40% of the harvest area. Slash would be left in the harvest units where feasible, and distributed on skid trails upon completion of use, for nutrient cycling, to control erosion and to provide shade and protection for seedlings.
12) All haul routes will have surface drainage BMP's applied to limit road surface runoff and direct it away from stream channels. No wheeled rutting on road surfaces will be allowed during hauling that renders road surface drainage features ineffective. No surface water flow at road-stream crossing locations will be present during hauling activities. Install adequate road drainage to control erosion concurrent with harvest activities. Provide effective sediment filtration along drainage features near crossing sites.
13) Major skid trails on State lands would be closed with slash and debris and/or barriers, and adequate drainage provided.
14) All road and logging equipment would be power washed and inspected prior to being brought on site. Sale area would be monitored for weeds following harvest and a treatment plan would be developed should noxious weeds occur.
15) At sale closure, grass seed constructed skid trails (where needed) and landings with an appropriate seed mixture.
16) One snag and one snag recruit per acre, of the largest diameter class, would be retained where applicable. Cull live trees and cull snags would be retained where applicable.
17) Contact DNRC wildlife biologist should any threatened or endangered species be encountered within the proposed project area.
18) DNRC employees and contractors and their employees would be prohibited from carrying firearms while on duty, unless the person is specifically authorized to carry a firearm under DNRC Policy 3-0621.
19) Emphasize the retention of downed logs of 15-inch diameter or larger where they occur.