Environmental Assessment Checklist

Project Name: Good Martin West Forest Management Project
Proposed Implementation Date: Summer 2016
Proponent: Stillwater Unit, Northwest Land Office, Montana DNRC
County: Flathead

Type and Purpose of Action

Description of Proposed Action:

The Stillwater Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the Good Martin West Forest Management Project. The project is located approximately 1.5 miles south of Olney and 11 miles northwest of Whitefish, Montana (refer to Attachments Vicinity Map A-1 and Project Map A-2) and includes the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools			
Public Buildings	**T32N, R23W, sec. 19, 31; T31N R24W, sec. 2**	**1,825**	**320**
MSU 2nd Grant	**T31N, R24W, sec. 1**	**692**	**332**
MSU Morrill	**T32N, R23W, sec. 20, 28, 32**	**757**	**160**
Eastern College-MSU/Western College-U of M	**T32N, R23W, sec. 29, 33**	**974**	**397**
Montana Tech	**T32N, R23W, sec. 18, 30, 34**	**706**	**152**
University of Montana			
School for the Deaf and Blind			
Pine Hills School			
Veterans Home			
Public Land Trust			
Acquired Land			

Objectives of the project include:

- Reduce stocking densities and ladder fuels to reduce potential for large fire growth within the wildland urban interface.
- Establish areas of regeneration of the desired species mix, improve vigor/tree growth, and meet the Forest Management Rules in relation to wildlife, fisheries, and water quality.
- Increase future timber productivity in the harvest units.
- Contribute to the DNRC and Northwestern Land Office's annual targets of timber-harvest volumes. DNRC is required by state law (77-5-221 through 223, MCA) to annually harvest approximately 57.6 MMbf statewide.
- Consider and plan for wildlife habitat connectivity.

- Apply Best Management Practices (BMPs) or meet design criteria that are necessary to promote long-term water quality during logging and road improvement operations. BMPs include site improvements such as improvements to drainage from ditches and road surfaces, and road maintenance on segments of roads prior to log hauling.
- Assure that SMZ law, Forest Management Rules, and HCP commitments are met when encountering numerous springs, streams, and associated wetlands in proximity to potential harvest units and new temporary roads.

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	# Acres
Clearcut with reserves	61
Seed Tree with reserves	431
Improvement Cut*	443
Selection	0
Commercial Thinning	71
Overstory Removal	50
Total Treatment Acres	**1056**
Proposed Forest Improvement Treatment	# Acres
Pre-commercial Thinning	305
Planting	61
Mechanical site prep	715
Proposed Road Activities	# Miles
New permanent road construction	
New temporary road construction	1.2
Road maintenance	23.2
Road reconstruction	
Road abandoned	
Road reclaimed	4.5
Other Activities	

Duration of Activities:	50 months
Implementation Period:	June 2016 through November 2021

**Improvement Cut is a regeneration harvest treatment where a higher number of vigorous leave trees would remain as well as there would be a clumpier distribution of leave trees than the seed tree with reserves prescription.*

The lands involved in this proposed project are held in trust by the State of Montana. (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 the 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),
- Administrative Rules for Forest Management (ARM 36.11.401 through 471),
- The Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP) (DNRC 2010), and
- All other applicable state and federal laws.

Project Development

Project Development began with Public Scoping and was further developed by the Interdisciplinary Team of foresters and resource specialists. Overall, internal and external issues and concerns were incorporated into project planning and design and would be implemented in associated contracts.

PUBLIC SCOPING:

- DATE:
  - July 9, 2015
- PUBLIC SCOPED:
  - The scoping notice was posted on the DNRC Website for 30 days at: http://dnrc.mt.gov/PublicInterest/Notices/Default.asp
  - Statewide Scoping List (ver. 7/01/2015)
  - Adjacent Landowners and Businesses
  - Local Industry Professionals
  - Legals Ad in Daily Interlake and Whitefish Pilot
  - Posted at Olney Post Office (30 days)
- AGENCIES SCOPED:
  - MT Fish, Wildlife & Parks
  - USFS – Flathead National Forest
  - All Montana Tribal Organizations
- COMMENTS RECEIVED:
  - How many: During the 30 day public comment period, DNRC received 5 emails, 2 phone calls, and one letter.
  - Concerns:
    - 1 phone call voiced concerns about the need for high hazard fuels reduction on harvest units close to private land.
    - 4 emails, 1 phone call, and 1 letter expressed concern about the haul route on logs coming out of sections 1 and 2, T31N, R24W (Evers Creek Sections), and all would like to see the haul route to go north on USFS 60E to the Good Creek Road rather than south to the Star Meadows Road.
  - Results (how were concerns addressed):
    - Harvest units adjacent to private property would meet the High Standard for reduction of logging slash (*Fire Hazard Reduction Agreement, 1997)*; slash would be treated and removed for 100 feet along the harvest unit boundary on those units next to private ownership and within 1000 feet of a house.
    - The haul route from the Evers Creek Sections would be north on USFS 60E to the Good Creek Road, then to Highway 93. This road is a cost-share road between the US Forest Service and DNRC.

INTERNAL PROJECT DESIGN:

DNRC specialists made up the Interdisciplinary team for this project and included: Mike McMahon (Forest Management Supervisor), Pete Evans (Management Forester), Jason Glenn (Management Forester), Marc Vessar (Hydrologist), Leah Breidinger (Wildlife Biologist), and Patrick Rennie (Archaeologist). The team members were consulted and involved in project development. The proposed forest management project would continue to develop this mosaic while retaining wildlife corridors and old-growth stands that enhance the value of those corridors. More specifically:

- Wildlife travel corridors were identified and the project was developed to retain those corridors. The corridors were closely connected with perennial streams such as Good Creek, as well as corridors retaining connectivity of mature stands with greater than 40% canopy closure.
- Old-growth stands within the project area were rated on value to wildlife species associated with old growth. Approximately 82 acres of old growth proposed for harvest would not be considered old growth post-harvest due to the low density of large-diameter trees. These old-growth stands are next to open roads generally have few or no snags, and little downed woody material. They are also narrow or isolated areas less than 20 acres in size. There are also several connecting stands with a patch size totaling 160 acres which are proposed for an old-growth maintenance treatment. This treatment would create small harvested openings (2-5 acres), which would be regenerated. These stands are primarily western larch and Douglas-fir which is a desired species composition for this area. They have large diameter trees and numerous cull wildlife trees, and multiple stories from saplings to older age-class trees, creating structural diversity.
- The project area exhibits a mosaic of age classes and tree species, yet the risk for high intensity fires is still possible. Reducing stocking density and ladder fuels in both mature and sapling-sized stands to enable firefighters to access fire starts was an objective of the prescribed treatments.
- Precommercial thin sapling-sized stands in order to meet specification of Western Bark Beetle Prevention, Suppression, and Restoration grant project, which would aid in the development of stand conditions favorable to ward off future beetle outbreaks.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED: *(Conservation Easements, Army Corps of Engineers, road use permits, etc.)*

- **United States Fish & Wildlife Service-** DNRC is managing the habitats of threatened and endangered species on this project by implementing the Montana DNRC Forested Trust Lands HCP and the associated Incidental Take Permit that was issued by the United States Fish & Wildlife Service (USFWS) in February of 2012 under Section 10 of the Endangered Species Act. The HCP identifies specific conservation strategies for managing the habitats of grizzly bear, Canada lynx, and three fish species: bull trout, westslope cutthroat trout, and Columbia redband trout. This project complies with the HCP. The HCP can be found at www.dnrc.mt.gov/HCP.

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

- **Montana/Idaho Airshed Group-** The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006). 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.

- **Montana Department of Fish, Wildlife and Parks (DFWP)-** A Stream Protection Act Permit (124 Permit) is required from DFWP for activities that may affect the natural shape and form of a stream's channel, banks, or tributaries. Such activities include:
    - Preparing for installation of two Cross Laminated Timber (CLT) temporary bridges, installing the temporary bridges, and removing the same after site prep has been completed.

- **Flathead County –** Flathead County has an air quality program and their authority supersedes any decision regarding burning from the Airshed Group and MT DEQ. This project area falls under county airshed regulations and DNRC would comply with the regulations by contacting the County ventilation hotline prior to burning logging slash.

ALTERNATIVES CONSIDERED:

No-Action Alternative: Under this alternative, no timber would be harvested and therefore no revenue would be generated from the project area for MSU 2nd Grant, Montana Tech, MSU Morrill Grant, Eastern College-MSU/Western College-U of M, and Public Buildings Trusts at this time. Salvage logging, firewood gathering, recreational use, fire suppression, noxious-weed control, additional requests for permits and easements, and ongoing management requests may still occur. Natural events, such as plant succession, tree mortality due to insects and diseases, windthrow, down fuel accumulation, in-growth of ladder fuels, and wildfires, would continue to occur.

Action Alternative: A commercial timber harvest would take place to remove between 4 and 7 million board feet of timber. Timber would be harvested using ground-based methods on 995 acres and skyline logging on 61 acres. Specific harvest unit data and overall precommercial thinning specifications are provided in Attachment B – Good Martin West Prescription Table; using this table with maps in Attachment A will provide additional detail for this project.

New stands of healthy trees would be regenerated on 935 acres through seed tree with reserves, clear cut with reserves, and improvement cut treatments. Commercial thinning would take place on 71 acres to promote forest health and increase growth.

50 acres of successfully regenerated stands would have the seed trees removed, retaining 2 snags and 2 snag recruits per acre for wildlife considerations (also known as an overstory removal treatment).

Mechanical site preparation would occur on 715 acres of the total harvest area, thus promoting the establishment of natural regeneration, and 61 acres would be planted where mechanical site preparation would be prohibitive due to high soil moisture.

The commercial timber harvest and the high levels of fuel reduction would reduce the potential for a high intensity wildland fire adjacent to private landowners.

Pre-commercial thinning would occur on 305 acres of sapling-sized stands.

This action would also reduce established noxious weed populations through weed spraying of existing populations and grass seeding of disturbed soil surfaces.

Road maintenance and Best Management Practices (BMP) improvements would be performed on approximately 23 miles of existing road. 1.2 miles of temporary roads would be constructed, which would be reclaimed post-harvest along with 3.3 miles of existing unauthorized roads.

Seasonal timing of activities:

- Prohibit all mechanized forest management activities from April 1 – June 15 to provide security for grizzly bears in the spring.
- Bald eagle timing restrictions apply: prohibit mechanized activities in all or portions of units 6, 12, and 25 from February 1- August 15 to protect nesting bald eagles on Lower Stillwater Lake. Timing restrictions may be lifted if the territory is documented as inactive.
- Northern goshawk and red-tailed hawk timing restrictions apply: No harvesting or thinning from April – July 15 within all or portions of units 5, 6, 20, 24, 35, and 36. No harvesting or thinning from April 1 – August 15 within or portions of units 1, 4, 11, 15, 19, 21, 22, 23, 38. Hauling past the Martin Camp goshawk nest is prohibited from April 1- July 15. Timing restrictions may be lifted if territory is documented as inactive.
- Unit 7 would be harvested during winter and would require frozen and/or snow covered conditions.

Impacts on the Physical Environment

Evaluation of the impacts on the No-Action and Action Alternatives including **direct, secondary, and cumulative** impacts on the Physical Environment.

VEGETATION:

Vegetation Existing Conditions: Historical data records provide forest health and economic status for the project area dating back to 1910. Early field notes indicate that the area was thought to have low agricultural value and marginal timber value due to the fires of 1910, 1916,

1918, and 1926. Recorded logging activities began in 1913 to salvage timber from the 1910 fires. Major harvests (greater than 250 Mbf) occurred in the project area in the 1920's, 1948-1950, 1981-82, 1990-91 and 2001-2004. Fire suppression efforts since the 1920's have allowed an increase of shade tolerant species in the project area, particularly Engelmann spruce, grand fir, and subalpine fir. More recent harvests from the 1990's and early 2000's have concentrated on moving stands towards more seral species composition such as western larch/Douglas-fir, ponderosa pine, and western white pine as well as creating a patchwork of age classes.

The Forest Management Rules direct DNRC to promote biodiversity by taking a coarse-filter approach that favors an appropriate mix of stand structures and composition on State lands (ARM 36.11.404). Cover type refers to the dominant tree species that currently occupy a forested area and is one of the factors DNRC uses to describe biodiversity levels. The four cover types present within the proposed harvest units are: mixed conifer (276 acres), western larch/Douglas-fir (586 acres), lodgepole pine (164 acres), and subalpine fir (30 acres). The desired future cover types identified for these stands are western larch/Douglas-fir (1006 acres), lodgepole pine (42 acres), mixed conifer (4 acres) and hardwoods (4 acres).

Stillwater and Coal Creek State Forests currently have 15% of the forest classified as old growth. There are 257 acres of old growth located within the project area.

Stands where the harvest units are proposed are generally in fair condition but declining in vigor, with tree growth beginning to slow due to overstocking. Insects and disease are currently at low to moderate levels, but such timber stand health threats are active in most stands.

Dwarf mistletoe is found in western larch, with the most severe infections within unit 18. Infections of various root disease such as *H. annosus*, *P. schweinitzii*, and *Armillaria* are causing mortality within Douglas-fir in units 3 and 18.

Noxious weeds are present along some of the roads within the project area; these include oxeye daisy, spotted knapweed, orange hawkweed, and hounds tongue. In the recent past, tansy ragwort was found and sprayed with herbicide in the project; this site continues to be monitored in case the plant reestablishes itself.

Using the Natural Heritage Program (NHP) database, no sensitive, threatened, or endangered plant species have been documented within or adjacent to any proposed units.

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Noxious Weeds		**x**				**x**				**x**				**1**
Rare Plants	**x**				**x**				**x**					
Vegetative community	**x**				**x**				**x**					
Old Growth	**x**				**x**				**x**					
Forest Fuels	**x**				**x**				**x**					
Action														
Noxious Weeds		**x**			**x**					**x**			**Y**	**2**
Rare Plants	**x**				**x**				**x**					

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Vegetative community		x				x				x			Y	3,5,6
Old Growth		x				x				x				4
Forest Fuels		x				x				x			Y	6

Comments:

1. *Positive impacts to the control of noxious weed populations would continue given the Stillwater Unit's herbicide spray program conducted within the project area.*
2. *Soil disturbances and logging equipment could increase the amount and distribution of noxious weeds in the project area, yet positive impacts to the control of noxious weed populations would also occur. Road work would increase access on roads for weed spraying equipment and the Unit would continue to conduct weed spraying within the project area and elsewhere on the Stillwater Unit.*
3. *Approximately 276 acres of mixed conifer, 30 acres of subalpine fir, and 122 acres of lodgepole pine would be converted to a western larch/Douglas-fir cover type, which has been determined to be the desired future condition for those stands.*
4. *Timber harvesting and road building in old-growth timber stands would affect the amount and distribution of old growth remaining on the Stillwater Unit, including Coal Creek State Forest. Directly this project would reduce the old-growth amount on the Stillwater Unit by 0.07% and cumulatively, when considering other proposed timber sales on the Unit, the amount of old growth would be reduced approximately 1.2%. Following implementation of Stillwater Unit's currently proposed sales, the Unit would expect to have 13.8% of its forested land meet DNRCs old-growth definitions.*
5. *The timber sale design would promote a healthy and vigorous forest, reduce the risks of wildfires, and improve the species composition to levels and types that were historically present.*
6. *Forest fuel loadings are at a high level due to ladder fuels and closed-canopy timber stands; also portions of the project area are within the wildland/urban interface. This combination causes many areas to be susceptible to intense, property damaging fires. Creating a mosaic of age classes, reducing ladder fuels that could move ground fires to tree crowns, and reducing logging slash to meet high standard fuels reduction levels would lower risks of intense fires as well as increase firefighter's capability to keep fires small.*

Vegetation Mitigations:

- The spread of noxious weeds from the use of mechanized equipment and ground disturbance would be minimized, but not completely eliminated, by the washing of equipment before entering the site, weed spraying on roads before and after harvesting (ARM 36.11.445), and grass seeding disturbed areas and after blading.
- Harvest units adjacent to private property would meet the High Standard for reduction of logging slash; slash would be treated and removed for 100 feet along the harvest unit boundary on those units next to private ownership and within 1,000 feet of any residences. Following harvest and fuels treatments, the connectivity of dense fuel loading and ladder fuels leading to the tree crowns would be removed in the proposed harvest units. The success of aerial and ground attacks on wildfires would likely be improved.

SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions: The Soil Survey of Flathead National Forest Area, Montana (*Martinson and Basko, 1998*) combines landform and soil information with habitat types to inventory and map soils in the project area. Nine landtypes were identified in the project area; harvesting is proposed on nine of these landtypes (10-3, 14-3, 26A-7, 26C-7, 26C-8, 26G-7, 27-7, 27-8 and 28-7). All of these landtypes are considered as having a moderate erosion risk. All landtypes are suitable for conventional ground-based timber harvest or cable harvest depending upon slope.

Impact from skid trails and landings from older timber sales have been reduced through freeze-thaw cycles and root mass penetrating the soil. While many of the impacts have ameliorated over time, some skid trails are still visible in the proposed harvest units and elsewhere in the project area. Skid trails within proposed harvest units do not appear to be eroding more than the surrounding un-trailed areas, but reduced tree densities and vigor is present in these areas as is more brush.

Soil Disturbance and Productivity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Physical Disturbance (Compaction and Displacement)	**X**				**X**					**X**				
Erosion	**X**				**X**					**X**				
Nutrient Cycling	**X**				**X**					**X**				
Slope Stability	**X**				**X**				**X**					
Soil Productivity	**X**				**X**				**X**					
Action														
Physical Disturbance (Compaction and Displacement)			**X**			**X**					**X**		**Y**	**1**
Erosion		**X**				**X**				**X**			**Y**	**1**
Nutrient Cycling		**X**				**X**				**X**			**Y**	**2**
Slope Stability	**X**				**X**				**X**					
Soil Productivity		**X**				**X**				**X**			**Y**	**2**

Comments:

1. *Total moderate or higher impacts for all units would be approximately 125 acres or 11.8 percent of the harvest unit area. Although erosion would potentially result from this alternative, the magnitude, area and duration of erosion and other adverse impacts such as compaction and displacement would remain low. Therefore the risk of unacceptable adverse direct and indirect impacts to physical soil properties would be low.*
2. *Coarse woody debris would be left on-site in volumes recommended to help maintain soil moisture and forest productivity, generally in the 12 to 20 tons per acre range for habitat types found in the harvest locations (Graham et. al. 1994). Because coarse woody debris would be left on site in amounts recommended by scientific literature,*

benefits to nutrient cycling and forest productivity would be maintained over the long term.

Soil Disturbance and Productivity Mitigations:

ARM 36.11.422 (2) and (2)(a) state that appropriate BMPs shall be determined during project design and incorporated into implementation. To ensure that the incorporated BMPs are implemented, the specific requirements would be incorporated into the DNRC Timber Sale Contracts. As part of this alternative design, the following BMPs are considered appropriate and would be implemented during harvesting operations:

- Limit equipment operations to periods when soils are relatively dry, (less than 20 percent), frozen, or snow-covered in order to minimize soil compaction and rutting. Check soil moisture conditions prior to equipment start-up.
- On ground-based units, the logger and sale administrator would agree to a skidding plan prior to equipment operations. Skid-trail planning would identify which main trails to use and how many additional trails are needed. Trails that do not comply with BMPs (i.e. trails in draw bottoms) would not be used unless impacts can be adequately mitigated. Regardless of use, these trails may be closed with additional drainage installed, where needed, or grass-seeded to stabilize the site and control erosion.
- Tractor skidding should be limited to slopes of less than 40 percent unless the operation can be completed without causing excessive displacement or erosion. Based on site review, short, steep slopes may require a combination of mitigation measures, such as adverse skidding to a ridge or winchline, and skidding from more moderate slopes of less than 40 percent.
- Keep skid trails to 20 percent or less of the harvest unit acreage. Provide for drainage on skid trails and roads concurrently with operations.
- Slash disposal: Limit the combination of disturbance and scarification to 30 to 40 percent of the harvest units. No dozer piling on slopes over 35 percent; no excavator piling on slopes over 40 percent, unless the operation can be completed without causing excessive erosion. Consider lopping and scattering or jackpot burning on the steeper slopes. Consider disturbance incurred during skidding operations to at least partially provide scarification for regeneration.
- Retain 12 to 20 tons of large woody debris and a feasible majority of all fine litter following harvesting operations. On units where whole tree harvesting is used, implement one of the following mitigations for nutrient cycling: 1) use in-woods processing equipment that leaves slash on site; 2) return-skid slash and evenly distribute within the harvest area; or 3) cut tops from every third bundle of logs so that tops are dispersed as skidding progresses.

Additional details can be found in the project file, located at the Stillwater Unit office**.**

WATER QUALITY AND QUANTITY:

Water Quality and Quantity Existing Conditions: The project area covers parts of three 6th code watersheds: Evers Creek, Lower Good Creek, and Lower Stillwater Lake. None of these watersheds are listed on the 303(d) list as a water quality impaired waterbody. Streams in the vicinity of proposed harvest units are generally stable with very few indicators of sediment delivery, aggradation, degradation or mass wasting. Due to the limited harvest in relation to

watershed sizes, the gentle terrain, and the dampening effect of Lower Stillwater Lake the risk of adverse cumulative impacts would be low.

Water Quality & Quantity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Water Quality		**X**				**X**				**X**				
Water Quantity	**X**				**X**					**X**				
Action														
Water Quality		**X**				**X**				**X**			**Y**	**1**
Water Quantity		**X**				**X**				**X**			**N**	**1**

Comments:

1. *See Water Resources Analysis in Project File.*

Water Quality & Quantity Mitigations:

- Follow all applicable forestry BMPs.
- Follow Soils Analysis mitigations listed above.

Additional details can be found in the project file, located at the Stillwater Unit office**.**

FISHERIES:

Fisheries Existing Conditions: Fish-bearing streams in the project are limited to Good Creek and the Stillwater River. Non-native species are present in both systems. Westslope cutthroat trout are likely hybridized in the Stillwater River; pure strain are found in Good Creek above the project area. No connectivity issues are present in the project area.

No-Action: No direct or indirect impacts would occur to affected fish species or affected fisheries resources beyond those described in Fisheries Existing Conditions. Cumulative impacts (other related past and present factors; other future, related actions; and any impacts described in Fisheries Existing Conditions) would continue to occur.

Action Alternative (see Fisheries table below):

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Sediment		**X**			**X**					**X**				
Flow Regimes	**X**				**X**				**X**					
Woody Debris	**X**				**X**				**X**					
Stream Shading	**X**				**X**				**X**					
Stream Temperature	**X**				**X**				**X**					

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Connectivity	**X**				**X**				**X**					
Populations	**X**				**X**						**X**		**N**	
Action														
Sediment		**X**				**X**				**X**				
Flow Regimes	**X**				**X**					**X**				
Woody Debris	**X**				**X**				**X**					**1**
Stream Shading	**X**				**X**				**X**					**1**
Stream Temperature	**X**				**X**				**X**					**1**
Connectivity	**X**				**X**				**X**					
Populations	**X**				**X**						**X**			

Comments:

1. *No Riparian Management Zone (RMZ) harvest proposed and no harvest within one site potential tree height of a Class one stream. This would continue to provide recruitable woody debris and provide stream shading to limit the risk of stream temperature increases.*

Fisheries Mitigations: (n/a)

WILDLIFE:

No-Action: None of the proposed activities would occur. In the short-term, no changes to the amounts, quality, or spatial arrangement of mature forested habitat would occur. In the long-term and in the absence of natural disturbance, habitat availability would increase for species preferring mature connected forests while habitat availability would decrease for species preferring young, open stand types.

Action Alternative (see Wildlife table below):

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Threatened and Endangered Species														
Grizzly bear *(Ursus arctos)* Habitat: Recovery areas, security from human activity			**X**				**X**			**X**			**Y**	**1**
Canada lynx (*Felix lynx)* Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone		**X**				**X**				**X**			**Y**	**2**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Wolverine *(Gulo gulo)* Habitat: Alpine tundra and high-elevation boreal forests that maintain deep persistent snow into late spring	X				X				X					
Sensitive Species														
Bald eagle *(Haliaeetus leucocephalus)* Habitat: Late-successional forest within 1 mile of open water		X				X				X			Y	3
Black-backed woodpecker *(Picoides arcticus)* Habitat: Mature to old burned or beetle-infested forest	X				X				X					
Coeur d'Alene salamander *(Plethodon idahoensis)* Habitat: Waterfall spray zones, talus near cascading streams	X				X				X					
Columbian sharp-tailed grouse *(Tympanuchus Phasianellus columbianus)* Habitat: Grassland, shrubland, riparian, agriculture	X				X				X					
Common loon *(Gavia immer)* Habitat: Cold mountain lakes, nest in emergent vegetation	X				X				X					
Fisher *(Martes pennanti)* Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian		X				X				X			Y	4
Flammulated owl *(Otus flammeolus)* Habitat: Late-successional ponderosa pine and	X				X				X					

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Douglas-fir forest														
Gray Wolf *(Canis lupus)* Habitat: Ample big game populations, security from human activities		**X**				**X**				**X**			**Y**	**5**
Harlequin duck *(Histrionicus histrionicus)* Habitat: White-water streams, boulder and cobble substrates	**X**				**X**				**X**					
Northern bog lemming *(Synaptomys borealis)* Habitat: Sphagnum meadows, bogs, fens with thick moss mats	**X**				**X**				**X**					
Northern goshawk (*Accipiter gentilis*) Habitat: Mature stands with open understory for nesting		**X**				**X**				**X**			**Y**	**6**
Peregrine falcon *(Falco peregrinus)* Habitat: Cliff features near open foraging areas and/or wetlands	**X**				**X**				**X**					
Pileated woodpecker *(Dryocopus pileatus)* Habitat: Late-successional ponderosa pine and larch-fir forest		**X**				**X**				**X**			**Y**	**7**
Townsend's big-eared bat *(Plecotus townsendii)* Habitat: Caves, caverns, old mines	**X**				**X**				**X**					
Big Game Species														
Elk	**X**				**X**				**X**					**8**
White-tailed Deer		**X**				**X**				**X**			**Y**	**8**
Mule Deer	**X**				**X**				**X**					**8**
Other	**X**				**X**				**X**					**8**

Comments:

1. Grizzly bear *– Approximately 3,173 acres (68.2%) of visual screening available in the Project Area would be affected by the proposed activities. To mitigate for potential adverse effects, patches of cover would be retained such that no point within seed tree and clear cut*

units would be greater than 600 feet to hiding cover. Additionally, visual screening would be retained between open roads and regeneration treatment units and 3.3 miles of illegal roads would be closed to reduce the potential of human-bear conflicts and bear displacement from potential habitat. Spring timing restrictions would be applied from April 1 – June 15 to provide security for grizzly bears in the spring.

***2. Canada lynx** – The availability of suitable lynx habitat would be reduced by 857 acres (18.9% of existing habitat in the Project Area). To ensure that forest structural attributes preferred by snowshoe hares remain following harvest, dense patches of advanced regeneration would be retained where possible within portions of lynx winter forage habitat, and shade-tolerant trees would also be retained in all pre-commercial thinning units. Additionally, 12 to 20 tons/acre of coarse woody debris would be retained in accordance with DNRC Forest Management Rules (ARM 36.11.414) and retention of downed logs ≥15 inch diameter would be emphasized. Lynx habitat connectivity would be reduced; however, overall, suitable lynx habitat would remain continuous. In the block of parcels adjacent to Lower Stillwater Lake, wide travel corridors >700 feet wide would be present running from north to south and east to west across the Project Area. Connectivity would not be as extensive post-harvest in the two parcels in the vicinity of Evers Creek, however travel would still be possible along 300-foot wide corridors along Good Creek and a tributary to Evers Creek.*

***3. Bald eagle** - The project area is located within the home range of bald eagles that nest on Lower Stillwater Lake. To reduce potential adverse impacts on nesting eagles, no harvest would be permitted from February 1 – August 15 within ½ mile of the nest and large emergent trees would be retained within this area.*

***4. Fisher** - Fisher habitat availability would be reduced by 629 acres (25.0% of habitat available in the Project Area) including 21 acres of riparian fisher habitat harvest. To reduce potential adverse effects on fishers, at least 2 large snags and 2 large snag recruitment trees per acre (>21 inches dbh) would be retained (ARM 36.11.411) and connectivity would be retained in all riparian areas.*

***5. Gray wolf** - Wolves may use habitat in the vicinity of the Project Area. Disturbance associated with timber sales at den and rendezvous locations can adversely affect wolves; however, timing restrictions would apply if den or rendezvous sites are documented (ARM 33.11.430(1)(a)(b)).*

***6. Northern goshawk** - Two goshawk nests were active in the Project Area during 2015. Within a 20-acre area surrounding each nest site, 90 ft^2 of basal area would be retained, which is within the range of conditions at nest sites observed in Oregon and Washington (McGrath et al. 2003). The nest tree and all trees shading the nest tree would be retained. Occupancy status and nest location would be surveyed in the spring and summer to ensure that the correct area is protected with timing restrictions. Within ¼ mile of both nests, logging and associated activities would be restricted from April 1 – August 15 and within ½ mile of the nests those activities are restricted from April 1 – July 15. Hauling would not be permitted past the Evers Creek Nest until after August 15. The Martin Camp nest is located within 300 feet of an open road; hauling past the nest would be restricted from April 1- July 15 at this nest site.*

***7. Pileated woodpecker** – The proposed activities would reduce pileated woodpecker suitable habitat availability by 221 acres (20.5% of habitat available in the Project Area). To reduce potential adverse effects on pileated woodpeckers, at least 2 large snags and 2 large snag recruitment trees per acre (>21 inches dbh) would be retained and all snags cut for safety reasons would be left in the harvest unit (ARM 36.11.411).*

***8. Big game** - Approximately 168 acres of white-tailed deer winter range would be treated with a group select cut under the Action Alternative; however, this treatment would create small openings and is not likely to have a significant effect on thermal cover or sight distance. To reduce adverse impacts to big game, visual screening would be retained between open roads and regeneration treatment harvest units.*

Wildlife Mitigations:

- If a threatened or endangered species is encountered, consult a DNRC biologist immediately. Similarly, if undocumented nesting raptors or wolf dens are encountered within ½ mile of the Project Area, contact a DNRC biologist.
- Contractors will adhere to food storage and sanitation requirements as described in the timber sale contract. Ensure that all attractants such as food, garbage, and petroleum products are stored in a bear-resistant manner.
- Prohibit contractors and purchasers conducting contract operations from carrying firearms while on duty as per *ARM 36.11.444(2)* and *GB-PR2* (*USFWS and DNRC 2010)*.
- Restrict public access at all times on restricted roads that are opened for harvesting activities. Effectively close temporary and illegal roads in the project area via a combination of kelly humps, rocks, and road obliteration.
- To retain visual screening for grizzly bears, design clearcut and seed tree units such that vegetation or topographic breaks be no greater than 600 feet from any point in the unit as per *GB-NR4* (*USFWS and DNRC 2010*). Prohibit cutting and motorized activities within hiding cover leave patches. Flagged hiding cover patches must be identified in Unit 12 and these areas may not be entered by heavy equipment.
- In commercial harvest units currently providing lynx winter foraging habitat (applies to all units *<u>except</u>* 2, 4, 6 and 14) retain patches of advanced regeneration of shade-tolerant trees as per *LY-HB4* (*USFWS and DNRC 2010*). In all pre-commercial thinning units retain young shade-tolerant trees as per *LY-HB4*.
- Retain visual screening along open roads where possible to increase security for wildlife, especially adjacent to regeneration treatments.
- Retain at least 2 snags and 2 snag recruits per acre >21 inches dbh or the next available size class, particularly favoring western larch and Douglas-fir for retention. If snags are cut for safety concerns, they must be left in the harvest unit. Retain 12-20 tons/acre of coarse-woody and emphasize retention of 15-inch diameter downed logs where they occur.
- Prohibit all mechanized forest management activities from April 1 – June 15 to provide security for grizzly bears in the spring.
- Bald eagle timing restrictions apply: prohibit mechanized activities in units 6, 12, and 25 from February 1- August 15 to protect nesting bald eagles on Lower Stillwater Lake. Timing restrictions may be lifted if the territory is documented as inactive.
- Northern goshawk and red-tailed hawk timing restrictions apply: No harvesting or thinning from April – July 15 in Units 5, 6, 20, 24, 35, and 36. No harvesting or thinning from April 1 – August 15 in Units 1, 4, 11, 15, 19, 21, 22, 23, 38. Hauling past the Martin Camp goshawk nest is prohibited from April 1- July 15. Timing restrictions may be lifted if territory is documented as inactive.
- Retain a minimum of 90 ft^2 basal area of large trees in identified 20-acre goshawk nesting areas as identified in ID team meetings. Retain the nest tree and trees shading the nest.

Additional details can be found in the project file, located at the Stillwater Unit office**.**

AIR QUALITY:

Air Quality	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Smoke	**x**				**x**				**x**					
Dust	**x**				**x**				**x**					
Action														
Smoke		**x**				**x**				**x**			**Y**	**1, 2**
Dust		**x**				**x**				**x**			**Y**	**3**

Comments:

1. *This project is not within an impact zone as described by the Montana/Idaho Airshed Group. Under the Action Alternative, slash piles consisting of tree limbs, tops, and other vegetative debris would be created throughout the project area during harvesting and site prep. These slash piles would ultimately be burned after harvesting and site preparation operations have been completed.*

2. *Burning that may occur on adjacent properties in combination with the proposed action could potentially increase cumulative impacts to the local airshed. Thus, cumulative impacts to air quality due to slash pile burning associated with the proposed action would also be expected to be minimal.*

3. *Under the Action Alternative, dust may be generated by log hauling activities during dry conditions.*

Air Quality Mitigations:

- Burning within the project area would be short in duration and would be conducted when conditions favor good to excellent ventilation and smoke dispersion as determined by the Montana Department of Environmental Quality and the Montana/Idaho Airshed Group.
- The DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days. DNRC would also follow regulations Flathead County has for Air Quality. Thus, direct, secondary and cumulative effects to air quality due to slash pile burning associated with the proposed action would be minimal.
- Dust abatement may be required on a portion of Martin Camp Loop or USFS 60E roads if deemed necessary by the Forest Officer.

ARCHAEOLOGICAL SITES / AESTHETICS / DEMANDS ON ENVIRONMENTAL RESOURCES:

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Historical or Archaeological Sites	**x**				**x**				**x**					
Aesthetics	**x**				**x**				**x**					
Demands on Environmental Resources of Land, Water, or Energy	**x**				**x**				**x**					
Action														
Historical or Archaeological Sites	**x**				**x**				**x**					**1**
Aesthetics		**x**				**x**				**x**			**Y**	**2**
Demands on Environmental Resources of Land, Water, or Energy	**x**				**x**				**x**					

Comments:

1. *A Class I (literature review) level review was conducted by the DNRC staff archaeologist for the area of potential effect (APE). This entailed inspection of project maps, DNRC's sites/site leads database, land use records, General Land Office Survey Plats, and control cards. The Class I search results revealed that no cultural or paleontological resources have been identified in the APE on state land. No additional archaeological investigative work will be conducted in response to this proposed development. However, if previously unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.*
2. *The project area is not located on a prominent topographic area or visible from a densely populated area, but portions of the project's harvest units would be visible from open roads within the project area. Following harvest, landings and slash would be visible in the foreground views and minor changes to tree densities would be noticeable.*

Archaeological Sites/Aesthetics Mitigations:

- The proposed harvest treatments would leave more trees near the open roads in compliance with the HCP guidelines for visual screening.
- Following harvest, landings and slash would be visible in the foreground views. Forest improvement work and burning of slash piles and landings would be planned within a year of harvest and this would speed up the recovery of the vegetation that would eventually mitigate the impacts of logging.

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.*

- Good Long Boyle EA (2000)
- Olney Urban Interface CEA (2009)
- Highway 93 Corridor CEA (2011)
- Miller Martin Camp CEA (2012)
- Stillwater Olney Categorical Exclusion (2015)
- Stryker Basin Timber Sale (Proposed 2016)
- Antice Stryker Timber Sale (Proposed 2016)
- Salish Good Resource Management Project- USFS (Proposed 2017)

Impacts on the Human Population

Evaluation of the impacts on the proposed action includes direct, secondary, and cumulative impacts on the Human Population.

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Health and Human Safety	**x**				**x**				**x**					
Industrial, Commercial and Agricultural Activities and Production	**x**				**x**				**x**					
Quantity and Distribution of Employment	**x**				**x**				**x**					
Local Tax Base and Tax Revenues	**x**				**x**				**x**					
Demand for Government Services	**x**				**x**				**x**					
Access To and Quality of Recreational and Wilderness Activities	**x**				**x**				**x**					
Density and Distribution of population and housing	**x**				**x**				**x**					
Social Structures and Mores	**x**				**x**				**x**					
Cultural Uniqueness and Diversity	**x**				**x**				**x**					

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Action														
Health and Human Safety		**x**			**x**				**x**				**Y**	**1**
Industrial, Commercial and Agricultural Activities and Production	**x**				**x**				**x**					
Quantity and Distribution of Employment	**x**				**x**				**x**					**2**
Local Tax Base and Tax Revenues	**x**				**x**				**x**					**2**
Demand for Government Services	**x**				**x**				**x**					
Access To and Quality of Recreational and Wilderness Activities	**x**				**x**				**x**					
Density and Distribution of population and housing	**x**				**x**				**x**					
Social Structures and Mores	**x**				**x**				**x**					
Cultural Uniqueness and Diversity	**x**				**x**				**x**					

Comments:

1. *No unusual safety considerations are associated with the proposed project. Because of the relatively small size of the proposed project, and mitigation measures that would be taken, health and safety risks posed by the project would be minimal.*
2. *Due to the relatively small size of the proposed timber sale, no measurable direct, indirect, or cumulative effects would be likely.*

Mitigations:

- Warning signs would be located along the Martin Camp and Evers Creek roads cautioning recreational and residential traffic of log hauling.
- Log trucks would be required to adhere to all posted speed limits and other applicable traffic laws.

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.*

In 1996, the Land Board approved the Record of Decision (ROD) for the State Forest Land Management Plan (SFLMP). The SFLMP provides philosophical basis, consistent policy, technical rationale, and guidance for the management of forested state trust lands. In 2003, DNRC adopted the Administrative Rules for Forest Management (Forest Management Rules; ARM 36.11.401 through 456). The Forest Management Rules are the specific legal resource

management standards and measures under which DNRC implements the SFLMP and subsequently its forest management program. The SFLMP outlines the management philosophy, and the proposal will be implemented according to the Forest Management Rules.

In December 2011, the Land Board approved the ROD for the Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP). Approval of the ROD was followed by the issuance of an Incidental Take Permit (Permit) by the U.S. Fish and Wildlife Service (USFWS). The HCP is a required component of an application for a Permit which may be issued by the U.S. Fish and Wildlife Service or National Marine Fisheries Service to state agencies or private citizens in situations where otherwise lawful activities might result in the incidental take of federally-listed species. The HCP is the plan under which DNRC intends to conduct forest management activities on select forested state trust lands while implementing specific mitigation requirements for managing the habitats of grizzly bear, Canada lynx, and three fish species: bull trout, westslope cutthroat trout, and Columbia redband trout.

Other Appropriate Social and Economic Circumstances:

Costs, revenues and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return. The estimated stumpage is based on comparable sales analysis. This method compares recent sales to find a market value for stumpage. These sales have similar species, quality, average diameter, product mix, terrain, date of sale, distance from mills, road building and logging systems, terms of sale, or anything that could affect a buyer's willingness to pay.

No-Action: The No-Action Alternative would not generate any return to the trusts at this time.

Action Alternative: The timber harvest would generate additional revenue for the Public Buildings (PB), MSU 2nd Grant (ACB), MSU Morrill (ACI), Eastern/Western Montana College (SNS), and Montana Tech (SM) Trusts. The estimated return to the trust for the proposed harvest is $1,333,486 based on an estimated harvest of 7.3 Million board feet (42,549 tons) and an overall stumpage value of $31.34 per ton. Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives, they are not intended to be used as absolute estimates of return.

REFERENCES

VEGETATION:

Allen, Eric, Morrison, D., Wallis, G. Common Tree Diseases of British Columbia. Online: http://forestry-dev.org/diseases/CTD/index_e.html

Carlson, Clinton E., and N. William Wulf. 1989. Silvicultural strategies to reduce stand and forest susceptibility to the western spruce budworm. Agricultural Handbook No. 676. USDA Forest Service Cooperative State Research Service.

DNRC 1996. State forest land management plan: final environmental impact statement (and appendixes). Montana Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, Montana.

DNRC 2010. Montana Department of Natural Resources and Conservation Forested State Trust Lands Habitat Conservation Plan: Final EIS, Volume II, Forest Management Bureau, Missoula, Montana.

Fellin, D.G.; Dewey, J.F. Western Spruce Budworm. For. Insect & Disease Leafl. 53. Washington DC: U.S. Department of Agriculture, Forest Service; 1982.

Fisher, W.C., and A.F. Bradley. 1987. Fire Ecology of Western Montana Forest Habitat Types. USFS General Technical Report INT-223.

Flathead County Weed Board. October 2007. Flathead County Weed Management Plan.

Green, P., J. Joy, D. Sirucek, W. Hann, A. Zack, and B. Naumann. 1992. Old Growth Forest Types of the Northern Region. R-1 SES. USDA Forest Service, Northern Region, Missoula, Montana 60pp.

Hagle, Susan, Gibson, K., Tunnock, S. 2003. Field Guide to Disease and Insect Pests of Northern and Central Rocky Mountain Conifers. USDA Forest Service. Northern Region. Missoula, Montana.

Harger, R. 1978. Old-growth forests: managing for wildlife. USDA Forest Service, Northern Region, Missoula, MT. 58pp.

Losensky, B.J. 1997. Historical Vegetation of Montana. Montana Department of Natural Resources and Conservation. Missoula, MT.

Maloy, O.C. 2001. White Pine Blister Rust. Online: Plant Health Progress doi:10.1094/PHP-2001-0924-01-HM.

SOILS:

DNRC, 1996. State Forest Land Management Plan Final Environmental Impact Statement. Montana Department of Natural Resources and Conservation, Forest Management Bureau. Missoula, MT.

DNRC 2011. DNRC update to the Compiled Monitoring Report. Includes data from 1988 through 2011. Unpublished. Prepared by J. Schmalenberg, Forest Management Bureau, Missoula, MT.

Graham, R.T., A.E. Harvey, M.F. Jurgensen, T.B. Jain, J.R. Tonn, and D. S. Page-Dumroese. 1994. Managing Coarse Woody Debris in Forest of the Rocky Mountains. USDA Forest Service Research Paper. INT-RP-447. 13 pp.

Harmon, M.E.; J.F. Franklin, and F. J Swanson. 1986. Ecology of coarse woody debris in temperate ecosystems. Advances in Ecological Research, Vol. 15. New York: Academic Press: 133-302.

Harrington, Timoth B.; Kirkland, John 2012. Logging debris matters: better soil, fewer invasive plants. Science Findings 145. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 6 p.

Martinson, A. H. and W. J. Basko. 1998. Soil Survey of Flathead National Forest Area, Montana. USDA Forest Service, Flathead National Forest, Kalispell, Montana.

Wicklow, M.C., W. B. Bolen, and W.C. Denison. 1973. Comparison of Soil micro-fungi in 40-year-old stands of pure alder, pure conifer and alder-conifer mixtures. Soil Biology and Biochemistry, 6:73-78.

WATER RESOURCES:

DNRC, 2000. The Good/Long/Boyle Timber Sale Project Environmental Assessment. Montana Department of Natural Resources and Conservation. Olney, MT.

DNRC, 2007. Shorts Meadow/Evers Creek Timber Sale Project Environmental Assessment. Montana Department of Natural Resources and Conservation. Olney, MT.

MDEQ, 2007. Montana Nonpoint Source Management Plan. Montana Department of Environmental Quality, Water Quality Planning Bureau, Watershed Protection Section. Helena, MT. 136 pages.

MFISH. Montana Fisheries Information System. Fisheries database managed by Montana Fish, Wildlife and Parks, Information Services Division, Helena, MT. http://fwp.mt.gov/fishing/mfish/

Haupt, H.F., et al., 1974. Forest Hydrology Part II Hydrologic Effects of Vegetation Manipulation. USDA Forest Service, Region 1. Missoula, Montana.

USFWS and DNRC. 2010. Montana Department of Natural Resources and Conservation Forested Trust Lands Habitat Conservation Plan, Final Environmental Impact Statement, Volumes I and II. U.S. Department of Interior, Fish and Wildlife Service, Region 6, Denver, Colorado, and Montana Department of Natural Resources and Conservation, Missoula, MT. September 2010.

Wenger, S. 1999. A review of the scientific literature on riparian buffer width, extent, and vegetation. Publication of the Office of Public Service and Outreach, Institute of Ecology, University of Georgia.

WILDLIFE:

Bull, E.L., and J.A. Jackson. 2011. Pileated woodpecker (*Dryocopus pileatus*), *In* A. Poole (editor) The Birds of North America Online. Cornell Lab of Ornithology, Ithaca; retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/148

DFWP. 2006. Ecology of whit-tailed deer in the Salish Mountains, Northwest Montana. Kalispell, MT.

Green, P., J. Joy, D. Sirucek, W. Hann, A. Zack, and B. Naumann. 1992. Old growth forest types of the northern region. R-1 SES. Missoula, MT : USDA Forest Service, Northern Region, 60pp.

Harger, R. 1978. Old-growth forests: managing for wildlife. USDA Forest Service, Northern Region, Missoula, MT. 58pp.

Mace, R.D., and J.S. Waller. 1997. Final report: grizzly bear ecology in the Swan Mountains, Montana. Montana Fish, Wildlife and Parks, Helena, MT. 191pp.

McClelland, B.R. 1979. The pileated woodpecker in forests of the Northern Rocky Mountains. Pp. 283-299 *in* Role of insectivorous birds in forest ecosystems. Academic Press.

McLellan, B.N. and F.W. Hovey. 2001. Habitats selected by grizzly bears in a multiple use landscape. Journal of Wildlife Management 65:92-99

McGrath, M.T., S. DeStefano, R.A. Riggs, L.L. Irwin, and G.J. Roloff. 2003. Spatially explicit influences on northern goshawk nesting habitat in the interior Pacific Northwest. Wildlife Monographs, 1-63.

Parks, C.G. and D.C. Shaw. 1996. Death and decay: a vital part of living canopies. Northwest science 70:46-53.

Raley, C.M., E.C. Lofroth, R.L. Truex, J.S. Yaeger, and J.M. Higley. 2012. Habitat ecology of fishers in western North America: a new synthesis. In: Aubry, K.B., Zielinski, W.J., Raphael, M.G., Proulx, G., Buskirk, S.W. (Eds.), Biology and Conservation of Martens, Sables, and Fishers: a New Synthesis. Cornell University Press, Ithaca, New York.

Ruediger, B., J. Claar, S. Mighton, B. Nanaey, T. Tinaldi, F. Wahl, N. Warren, D. Wenger, A. Williamson, L. Lewis, B. Holt, G. Patton, J. Trick, A. Vandehey, and S. Gniadek. 2000. Canada Lynx Conservation Assessment (2nd Edition). USFS, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Missoula, MT.

Schwartz, M.K., N.J. DeCesare, B.S. Jimenez, J.P. Copeland, and W.E. Melquist. 2013. Stand- and landscape-scale selection of large trees by fishers in the Rocky Mountains of Montana and Idaho. Forest Ecology and Management 305:103-111.

Servheen, C. 1983. Grizzly bear food habits, movements, and habitat selection in the Mission Mountains, Montana. Journal of Wildlife Management 47(4):1026-1035.

Servheen, C., J.S. Waller, and P. Sandstrom. 2003. Identification and management of linkage zones for wildlife between the large blocks of public land in the northern Rocky Mountains (revised July 8, 2003). Unpublished report. USFWS, Missoula, Montana.

Squires, J.R. N.J. Decesare, J.A. Kolbe, and L.F. Ruggiero. 2010. Seasonal resource selection of Canada lynx in managed forests of the Northern Rocky Mountains. Journal of Wildlife Management, 74(8):1648-1660.

Squires, J.R., N.J. DeCesare, L.E. Olson, J.A. Kolbe, M. Hebblewhite, and S.A. Parks. 2013 Combining resource selection and movement behavior to predict corridors for Canada lynx at their southern range periphery. Biological Conservation 157:187-195.

USFS. 2015. Salish Good Resource Management Project scoping notice. Available online at: http://www.fs.fed.us/nepa/nepa_project_exp.php?project=47257.

USFWS. 1993. Grizzly bear recovery plan. Missoula, Montana. 181 pp.

USFWS and DNRC. 2010. Montana Department of Natural Resources and Conservation Forested Trust Lands Habitat Conservation Plan, Final Environmental Impact Statement, Volumes I and II. U.S. Department of Interior, Fish and Wildlife Service, Region 6, Denver, Colorado, and Montana Department of Natural Resources and Conservation, Missoula, MT. September 2010.

Warren, N.M. (ed.) 1990. Old-growth habitats and associated wildlife species in the northern Rocky Mountains. USDA Forest Service, Northern Region, Missoula, MT.

Wittinger, W.T. 2002. Grizzly bear distribution outside of recovery zones. Unpublished memorandum on file at U.S. Forest Service, Region 1, Missoula, Montana.

Does the proposed action involve potential risks or adverse effects that are uncertain but extremely harmful if they were to occur?
No

Does the proposed action have impacts that are individually minor, but cumulatively significant or potentially significant?
No

Environmental Assessment Checklist Prepared By:

Name: Pete Evans
Title: Management Forester, Stillwater Unit
Date: 1/20/2016

Finding

A Department of Natural Resources and Conservation (DNRC) Interdisciplinary Team (ID Team) has completed the Environmental Assessment Checklist (EAC) for the proposed Good Martin West Forest Management Project. The project is located approximately 1.5 miles south of Olney and 11 miles northwest of Whitefish, Montana. Public Buildings, MSU 2nd Grant, MSU Morrill, Eastern College-MSU/Western College-U of M, and Montana Tech would be the beneficiaries of income generated by this project.

The Stillwater Unit staff and the ID Team conducted extensive data collection and reconnaissance of the project area. The ID Team is comprised of a wildlife biologist, a hydrologist, silviculturist, archeologist and several foresters. DNRC initiated the public scoping process for this project with a scoping notice posted on the DNRC website, legals ads in the Daily Interlake and Whitefish Pilot, and a posting at the Olney Post Office. Adjacent landowners, individuals on the Statewide scoping list, natural resource agencies and other interested parties were also included in the scoping effort. The scoping period was open for 30 days. The DNRC received 5 emails, 2 phone calls, and one letter in response to the scoping. The issues and concerns identified through public scoping and ID Team work were summarized and used to further refine the project (see page 3 and 4 of the EA).

After a thorough review of the EA, project file, public correspondence, Montana Statutes, Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP), State Forest Land Management Plan (SFLMP), and adopted rules, I have made the following 3 decisions:

(1) Alternative Selected

Two alternatives are presented and were fully analyzed in the EAC:

The *No-Action Alternative* allows for existing activities, but does not include this timber management project.

The *Action Alternative* involves a commercial timber harvest that would yield between 4 and 7.5 million board feet of timber. Timber would be harvested using ground-based methods on 995 acres and skyline logging on 61 acres.

- New stands of healthy trees would be regenerated on 935 acres through seed tree with reserves, clear cut with reserves, and improvement cut treatments. Commercial thinning would take place on 71 acres to promote forest health and increase growth.
- 50 acres of successfully regenerated stands would have the seed trees removed, retaining 2 snags and 2 snag recruits per acre for wildlife considerations (also known as an overstory removal treatment).
- Mechanical site preparation would occur on 715 acres of the total harvest area, thus promoting the establishment of natural regeneration, and 61 acres would be planted where mechanical site preparation would be prohibitive due to high soil moisture.
- The commercial timber harvest and the high levels of fuel reduction would reduce the potential for a high intensity wildland fire adjacent to private landowners.
- Pre-commercial thinning would occur on 305 acres of sapling-sized timber stands.
- This action would also reduce established noxious weed populations through weed spraying of existing populations and grass seeding of disturbed soil surfaces.

- Road maintenance and Best Management Practices (BMP) improvements would be performed on approximately 23 miles of existing road. 1.2 miles of temporary roads would be constructed, which would be reclaimed post-harvest along with 3.3 miles of existing unauthorized roads.

On behalf of the DNRC I have selected the Action Alternative.

Rationale for Decision

I have selected the Action Alternative with considerations to the following rationale:

- The Action Alternative meets the *PURPOSE OF PROPOSED ACTION* and *OBJECTIVES OF PROPOSED ACTION;* as stated in the EAC *(page 1 and 2*).
- The lands involved in this project are held by the State of Montana in trust for the support of specific beneficiary institutions. DNRC is required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run (Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11; and 77-1-202, Montana Codes Annotated [MCA]). The SFLMP and associated rules provide the management philosophy and framework to evaluate which alternative would maximize real income while sustaining the production of long-term income.
- This project was designed to provide revenue to the trust beneficiaries. An estimated $1,333,486 in revenue would be earned for the Trusts involved. In addition, approximately $183,449 would be collected for Forest Improvement.
- On March 13, 2003, DNRC adopted Administrative Rules for Forest Management (Forest Management Rules ARM 36.11.401 through 456). This project is designed in accordance with these rules.
- In December 2011, the Land Board approved the Record of Decision (ROD) for the Montana DNRC Forested State Trust Lands HCP. This project was designed to be in compliance with the HCP.
- The proposed timber sale project contributes to harvest levels mandated by state statute (MCA 77-5-222).
- DNRC is required to salvage timber damaged by insects, diseases, fires, or wind before it loses value to decay, provided such harvesting is economically warranted (MCA 77-5-207).
- The analyses of identified issues did not reveal information to persuade DNRC to choose the No-Action Alternative.

How the Chosen Alternative Addresses Concerns and Issues

The Action Alternative includes activities to address the concerns expressed by the public and DNRC specialists, which include, but are not limited to, the following:

- The effects to water quality, fisheries, and soils would be reduced by:
  - meeting or exceeding all applicable Streamside Management Zone (SMZ) rules and following the Forest Management Rules and HCP;

- adding erosion-control measures that will reduce sediment delivery to streams over the long-term; and
- minimizing the area of adverse soil impacts through the implementation of BMPs that include planning skid-trail systems and limiting the landing size. Woody debris would be retained for nutrient cycling and long-term soil productivity.

- This alternative was designed to retain important wildlife habitat components such as snags, coarse woody debris, visual screens, and seasonal security.
- In consideration of bald eagle, red-tailed hawk and Northern goshawk nests in the project area, timing restrictions have been designed into the project to reduce the potential disturbance to nesting birds.
- In consideration of grizzly bear habitat, patches of cover would be retained such that no point within seed tree and clear cut units would be greater than 600 feet to hiding cover. Additionally, visual screening would be retained between open roads and regeneration treatment units and 3.3 miles of illegal roads would be closed to reduce the potential of human-bear conflicts and bear displacement from potential habitat. Spring timing restrictions would be applied from April 1 – June 15 to provide security for grizzly bears. Contractors will adhere to food storage and sanitation requirements as described in the timber sale contract, and ensure that all attractants such as food, garbage, and petroleum products are stored in a bear-resistant manner.
- In consideration of lynx habitat, patches of advanced regeneration of shade-tolerant trees would be retained within harvest units as per *LY-HB4* (*USFWS and DNRC 2010*).

This alternative is designed to perpetuate tree species that are considered appropriate for the sites being harvested, and to address concerns regarding the effects to forest revegetation by:

- retaining large, phenotypically-superior western larch, Douglas-fir, and ponderosa pine to provide seed for natural regeneration in harvest units;
- reducing stocking density and increasing growth rates in existing sapling stands regenerated in previous harvest units by pre-commercial thinning of approximately 305 acres;
- including regeneration (seed tree), commercial thinning and selection treatments in harvest prescriptions, which will result in both even-aged and uneven-aged stand conditions as well a mosaic of timber stands with structural and species diversity;
- converting approximately 276 acres of mixed conifer, 30 acres of subalpine fir, and 122 acres of lodgepole pine to a western larch/Douglas fir cover type, which has been determined to be the desired future condition for those stands; and
- limiting noxious weed spread by washing equipment prior to being allowed on site, grass seeding roads and disturbed areas, and applying herbicides along roadsides and on site-specific weed infestations.

(2) Significance of Potential Impacts

For the following reasons, I find that the Action Alternative will not have significant impacts on the human environment, as:

- no impacts are regarded as severe, geographically widespread, or frequent;
- the quantity and quality of various resources, including any that may be considered unique or fragile, would not be adversely affected to a significant degree;
- there is no precedent for future actions that would cause significant impacts; and

- there is 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.

(3) Need for Further Environmental Analysis

Based on the following considerations, I find an EIS does not need to be prepared, as:

- The EA adequately addresses the issues identified during project development and displays the information needed to make the decisions.
- Evaluation of the potential impacts of the Good Martin West Forest Management Project indicates no significant impacts would occur.
- The ID Team provided adequate opportunities for public review and comment. Concerns received from the public as well as those identified by the resource specialists involved were addressed in project design and the analysis of impacts.

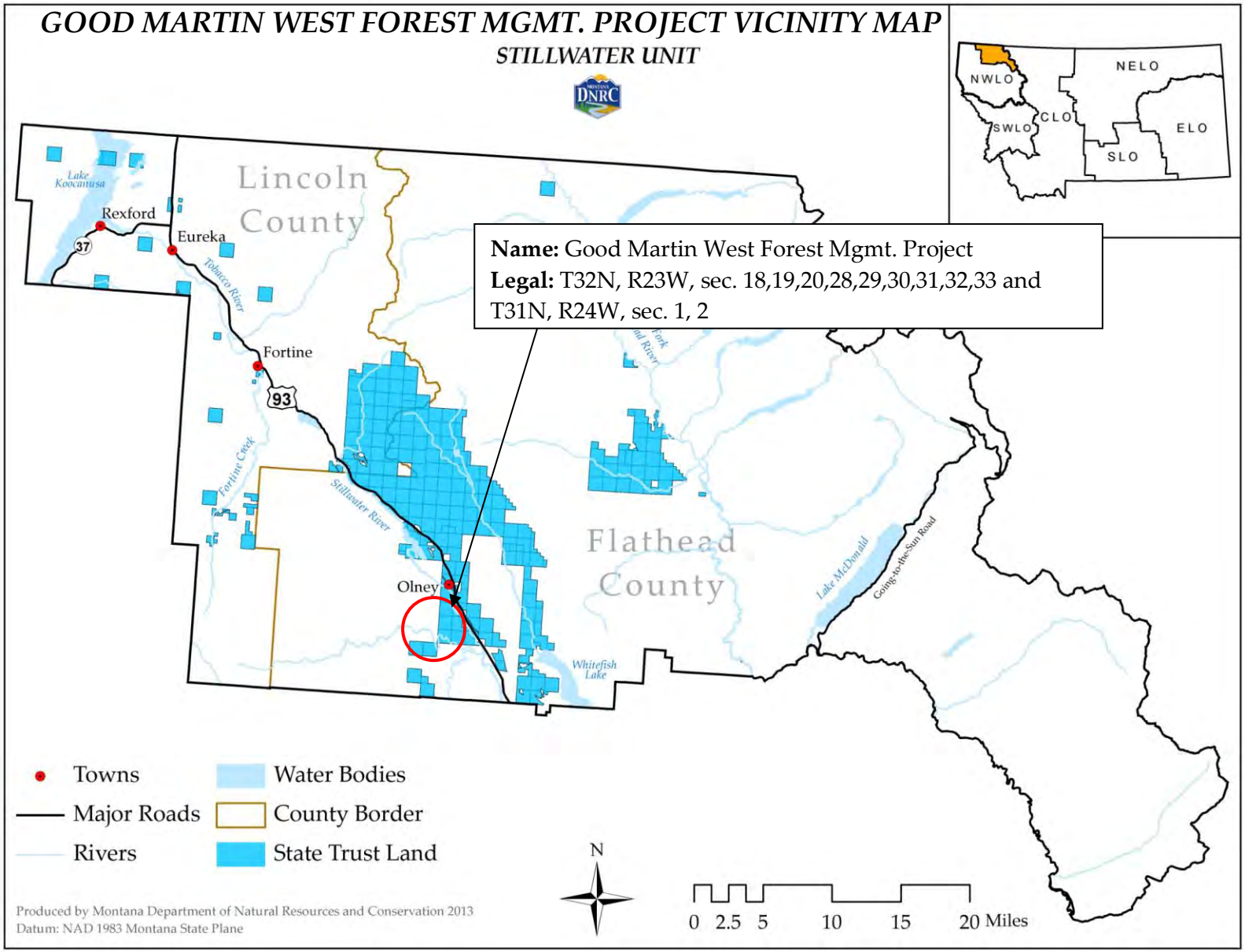
	EIS		More Detailed EA	**X**	No Further Analysis

Environmental Assessment Approved By:

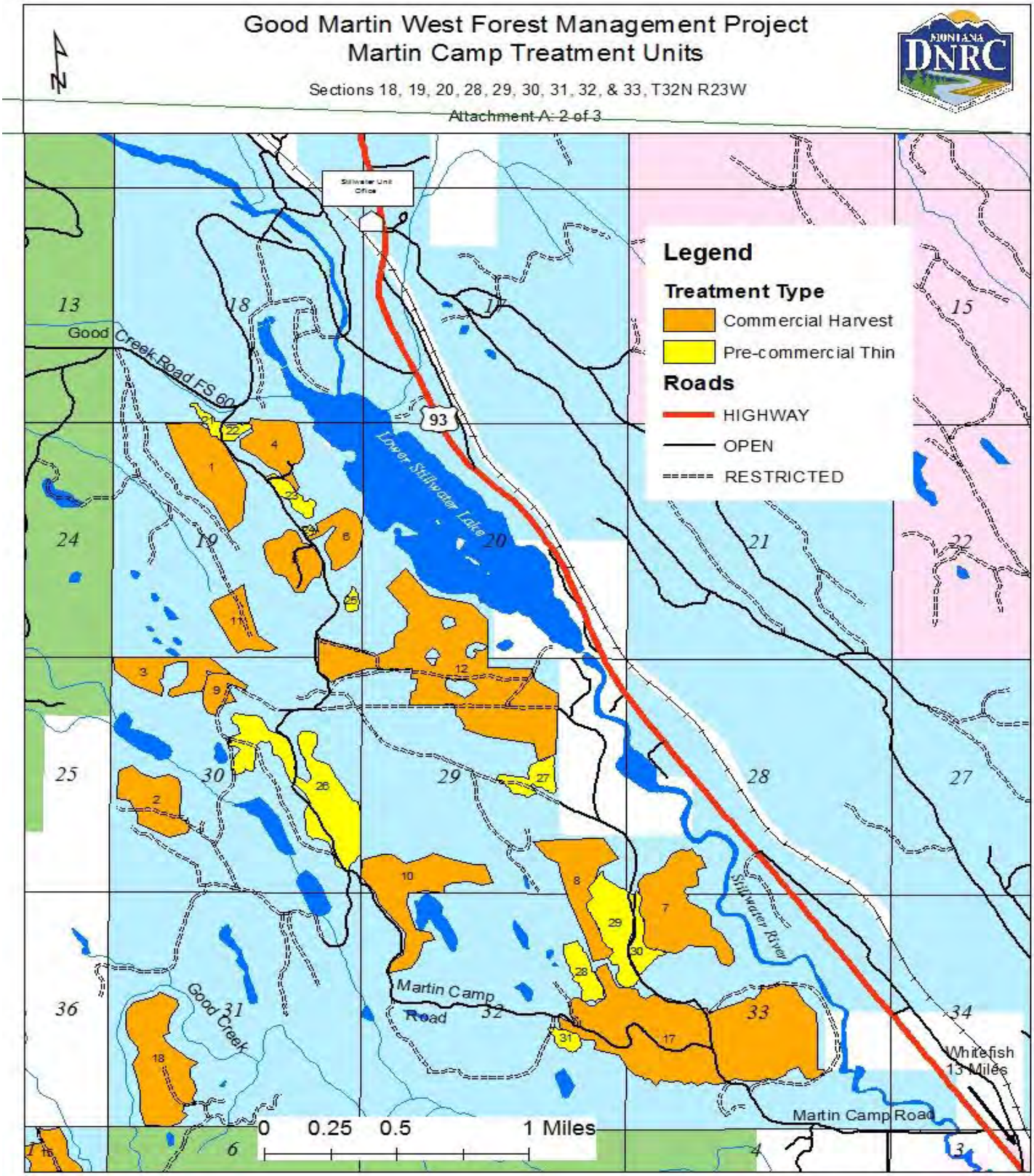
Name: Brian Manning
Title: Unit Manager
Date: February 8, 2016
Signature: */s/ Brian Manning*

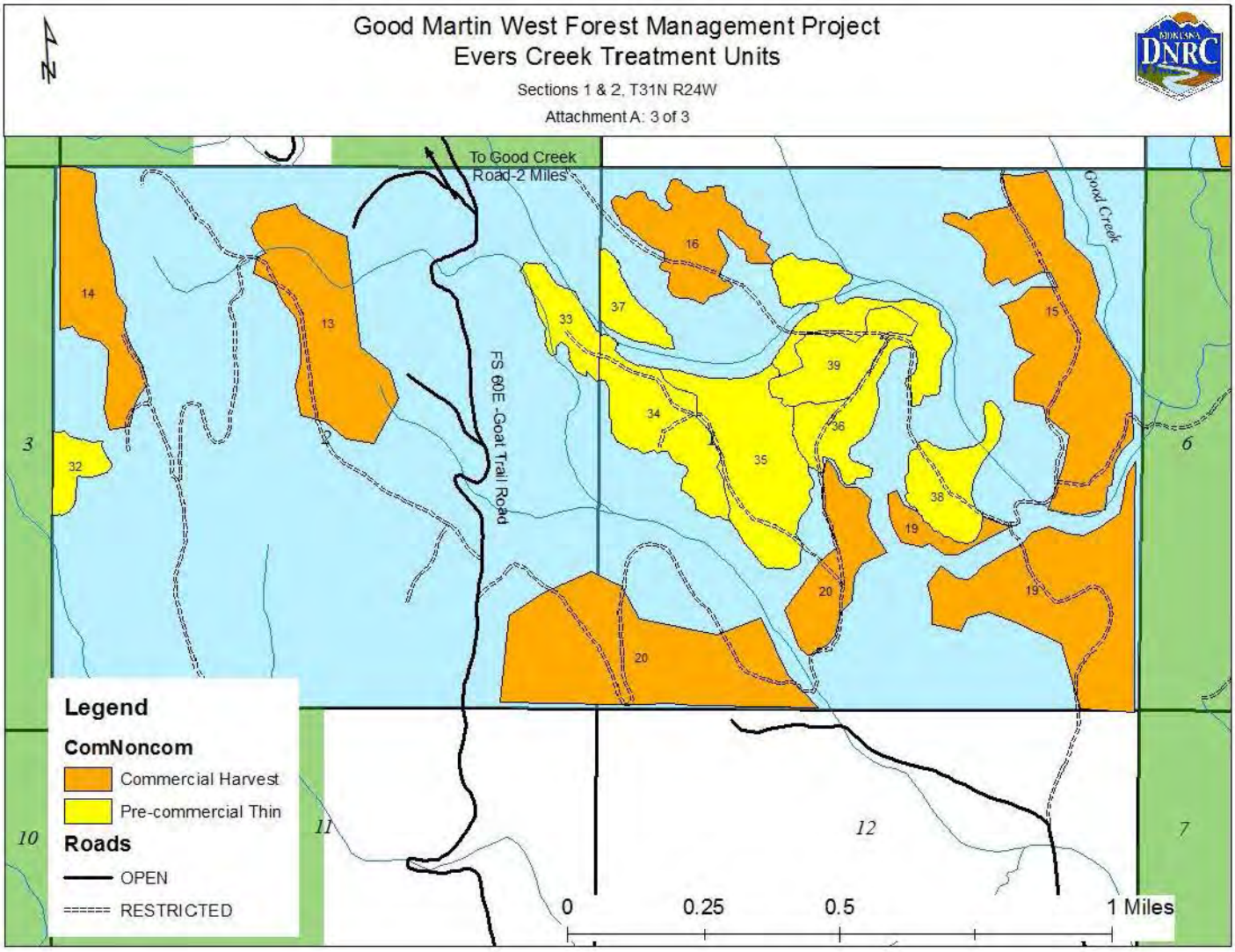
Attachment A- Maps

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Harvest Units




Good Martin West Forest Management Project
Evers Creek Treatment Units
Sections 1 & 2, T31N R24W
Attachment A: 3 of 3
N
To Good Creek Road-2 Miles
FS 60E -Goat Trail Road
Good Creek
Legend
ComNoncom
Commercial Harvest
Pre-commercial Thin
Roads
OPEN
RESTRICTED
0
0.25
0.5
1 Miles

Attachment B:

Prescription Table

Unit Number	Est. Acres / MBF	Prescription	Particulars involved in unit(s)
1	45 acres 650 Mbf	Seed Tree	- Tractor harvest unit - Retain 6-8 DF/WL per acre. - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH - Goshawk retention area (6 acres) - retain 90 ft. Basal area - Goshawk timing restrictions apply - Machine pile and scarify - Natural regeneration - Visual buffer required along open road
2	33 acres 100 Mbf	Commercial Thin	- Tractor harvest unit - 1 SMZ , no harvest in SMZ - Maintain 30-foot spacing in WL, DF and LPP - Retain all trees >= 15 inches DBH
3	26 acres 330 Mbf	Seed Tree	- Tractor harvest unit - Natural regeneration - Borders private land; high hazard reduction near private ground - Machine pile and scarify - Goshawk timing restrictions apply
4	27 acres 140 Mbf	Seed Tree	- Tractor harvest unit - Retain 6-8 DF/WL per acre. - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH - Goshawk retention area (retain 90 ft. BA) - Goshawk timing restrictions apply - Machine pile and scarify - Natural regeneration - 1 SMZ, no harvest in SMZ

Unit Number	Est. Acres / MBF	Prescription	Particulars involved in unit(s)
5	23 acres 308 Mbf	Seed Tree	- Tractor harvest unit - Retain 6-8 DF/WL per acre. - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH - 1 SMZ , no harvest in SMZ - Natural regeneration - Machine pile and scarify - Visual buffer required along open road - Goshawk timing restrictions apply
6	19 acres 50 Mbf	Seed Tree	- Tractor harvest unit - Retain 6-8 DF/WL per acre - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH - Natural regeneration - Machine pile and scarify - Goshawk and bald eagle timing restrictions apply - Visual buffer required along open road.
7	61 acres 500 Mbf	Seed Tree With Reserves	- Cable harvest unit - Numerous SMZs/ERZs; wetland harvest would retain 50% of trees in the wetland - Average skid distance: 600’ - Plant WL/DF - Whole tree log - Winter logging required - Retain 4-6 WL/DF per acre - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH
8	39 acres 52 Mbf	Overstory Removal	- Tractor harvest unit - Species designated to cut = WL/DF - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH
9	11 acres 30 Mbf		

Unit Number	Est. Acres / MBF	Prescription	Particulars involved in unit(s)
10	57 acres 280 Mbf	Seed Tree	- Tractor harvest unit - Retain 6-8 DF/WL per acre - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH - Machine pile and scarify - Natural regeneration - Visual buffer required along open road
11	21 acres 140 Mbf	Seed Tree	- Tractor harvest unit - Retain 6-8 DF/WL per acre - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH - Machine pile and scarify - Natural regeneration
12	167 acres 140 Mbf	Seed Tree	- Tractor harvest unit - Species designated to cut = LPP - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH - Maintain 20-foot spacing in western larch and Douglas-fir - Natural regeneration - High hazard reduction near private ground - Machine pile and scarify - Bald eagle timing restrictions apply
13	38 acres 254 Mbf	Commercial Thin	- Tractor harvest unit - 2 SMZs; no harvest in SMZ - Maintain 30-foot spacing in WL, DF and LPP unless live crown ratios are less than 30% - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH
14	24 acres 75 Mbf	Seed Tree	- Tractor harvest unit - Retain 6-8 DF/WL per acre - Commercial Thin in areas where the average DBH of trees is less than 12”, live crown ratios exceed 35%, and tree stocking is dense - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH - Machine pile and scarify - Natural regeneration

Unit Number	Est. Acres / MBF	Prescription	Particulars involved in unit(s)
15	59 acres 500 Mbf	Improvement Cut	- Tractor harvest unit - 1 SMZ , no harvest in SMZ - Borders private land; high hazard reduction near residences - Machine pile and scarify - Natural regeneration - Commercial Thin in areas where the average DBH of trees is less than 12”, live crown ratios exceed 35%, and tree stocking is dense - Overall retain 6-8 larger diameter seedtree-quality DF/WL per acre - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH (100’ spacing) - Goshawk timing restrictions apply
16	21 acres 190 Mbf	Seed Tree	- Retain 6-8 seedtree-quality DF/WL per acre - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH (100’ spacing). - Machine pile and scarify - Natural regeneration
17	193 acres 1.0 MMbf	Group - Shelterwood	- Tractor harvest unit - Group Selection on areas 3-5 acres (when possible next to openings with advanced regeneration) - Up to 25% of the stand would receive the Group selection - The 3-5 acre Group Selection areas would receive Seed Tree marking prescription - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH (100’ spacing) - Single-tree select to cut along skid trails to landings, retaining WL/DF at a 30-foot spacing between leave trees - Machine pile and scarify 3-5 acre openings - Natural regeneration
18	62 acres 500 Mbf	Improvement Cut	- Tractor harvest units - SMZs in Unit 19, ERZs in Units 18 and 19 - Borders private or USFS; high hazard reduction near residences - Species designated to cut = ES, LPP, AF - Commercial Thin in areas where the average DBH of trees is less than 12”, live crown ratios exceed 35%, and tree stocking is dense; in these areas maintain 30 foot spacing in WL, DF and LPP - Seed Tree in areas with larger diameter trees (>12”DBH); in these areas retain 6-8 DF/WL per acre - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21” DBH - Machine pile and scarify - Natural regeneration - Goshawk timing restrictions apply
19	54 acres 300 Mbf		

Unit Number	Est. Acres / MBF	Prescription	Particulars involved in unit(s)
20	75 acres 225 Mbf	Improvement Cut	- Tractor harvest units - 1 SMZ - Borders private; high hazard reduction near residences - Species designated to cut = ES, LPP, AF - Commercial Thin in areas where the average DBH of trees is less than 12", live crown ratios exceed 35%, and tree stocking is dense; in these areas maintain 30 foot spacing in WL, DF and LPP - Seed Tree in areas with larger diameter trees (>12"DBH); in these areas retain 6-8 DF/WL per acre - Retain 2 DEAD snags and 2 LIVE snag recruits per acre >21" DBH - Machine pile and scarify - Natural regeneration
21 through 39	306 acres	Precommercial Thinning	- Hand thinning - Preferred leave species = PP, WL, DF, LPP, with crowns ≥60%, good form and free from insects, disease, and physical and mechanical damage - Average leave tree spacing will be 10-feet (436 TPA) or 9-feet (538 TPA); specific requirements vary by unit - All trees ≤2-feet in height are designated to leave - All western white pine will be ghosted (not cut or counted in leave tree spacing requirements) - Slash will be bucked and lopped to within 18-inches of the ground throughout all units - Wildlife restrictions: Feb 1 to Aug 15 (unit 25); Apr 1 to Aug 15 (units 21, 22, 23, & 38); Apr 1 to Jul 15 (units 24, 35, 36 & 39); Apr 1 to Jun 15 (units 26, 27, 28, 29, 30, 31, 32, 33, 34 & 37)

NOTES:

AF = Alpine fir
BMP = Best Management Practices
DBH = Diameter at Breast Height
DF = Douglas-fir
ERZ = Equipment Restriction Zone
ES = Englemann spruce
LPP= Lodgepole pine
RMZ = Riparian Management Zone
SMZ = Streamside Management Zone
WL= Western Larch