# Environmental Assessment Checklist

**Project Name:** Garnet Creek Timber Sale
**Proposed Implementation Date:** June 16, 2020
**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 Garnet Creek Timber Sale. The project is located approximately 56 miles north of Columbia Falls along the North Fork Road, about 2 miles south of the Canadian border, and includes the following section:

| Beneficiary | Legal Description | Total Acres | Treated Acres |
|---|---|---|---|
| Common Schools | **Sec. 16, T37N R22W** | **640** | **149** |
| Public Buildings | | | |
| MSU 2nd Grant | | | |
| MSU Morrill | | | |
| Eastern College-MSU/Western College-U of M | | | |
| Montana Tech | | | |
| University of Montana | | | |
| School for the Deaf and Blind | | | |
| Pine Hills School | | | |
| Veterans Home | | | |
| Public Land Trust | | | |
| Acquired Land | | | |

Objectives of the project include:

- Contribute 600-800 Mbf to the annual targets of timber-harvest volumes of DNRC and the Northwestern Land Office. DNRC is required by state law (MCA 77-5-221 through 223) to sell approximately 56.9 MMbf of timber annually and continue to produce revenue over time.
- Generate revenue for the appropriate school trust (Common Schools-K-12).
- Improve the long-term productivity of timber stands and reduce the incidence and risk of insect and disease damage through silvicultural treatments designed to reduce stand density and improve forest health, and regenerate stands displaying poor vigor and growth.

- Reduce the risk and severity of wildland fire in stands adjacent to private and public property by reducing fuel loading and stand density through silvicultural treatments.
- Continue to apply silvicultural prescriptions in the Garnet Creek area to promote biodiversity as called for in the State Forest Land Management Plan (1996).
- Apply Best Management Practices (BMPs) or meet design criteria that are necessary to promote long-term water quality during logging and road improvement operations.
- Establish areas of regeneration of the desired species mix, keeping stands in DNRC's Desired Future Conditions (DFCs), improve vigor/tree growth, and meet the Habitat Conservation Plan (HCP) commitments and Forest Management Rules in relation to wildlife, fisheries, and water quality.

Proposed activities include:

| Action | Quantity |
|---|---|
| **Proposed Harvest Activities** | # Acres |
| Clearcut With Reserves | 98 |
| Modified Clearcut with Reserves | 41 |
| Overstory Removal | 8 |
| RMZ Harvest up to 50% | 1.4 |
| | |
| | |
| | |
| **Total Treatment Acres** | **149** |
| **Proposed Forest Improvement Treatment** | # Acres |
| Pre-commercial Thinning | |
| Planting | |
| | |
| **Proposed Road Activities** | # Miles |
| New permanent road construction | 0 |
| New temporary road construction/reclamation | 0.75 |
| Road maintenance | 1.55 |
| Road reconstruction | |
| Road abandoned | |
| Road reclaimed | |
| | |
| **Other Activities** | |
| | |
| | |

| | |
|---|---|
| **Duration of Activities:** | 52 Months |
| **Implementation Period:** | June 2020-October 2024 |

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 (SFLMP) (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

**SCOPING:**

- DATE:
  - August 5, 2019
- PUBLIC SCOPED:
  - The scoping notice was posted for 30 days on the DNRC Website: http://dnrc.mt.gov/public-interest/public-notices
  - In August 2019, DNRC solicited public participation for 30 days on the Garnet Creek Timber Sale Project. The Initial Proposal with maps was sent to approximately 70 individuals, agencies, and other organizations that have expressed interest in DNRC's management activities. A notification was also placed in the Whitefish Pilot and Daily Interlake newspapers.
- AGENCIES SCOPED:
  - MT Fish, Wildlife and Parks
  - USFS Flathead National Forest
  - All Montana Tribal Organizations
- COMMENTS RECEIVED:
  - *How many*: There were three comments; two received by e-mail, and one from face-to-face discussion with an adjacent landowner. One e-mailed comment was sent by Montana Fish, Wildlife and Parks (FWP), and the other an e-mail from DNRC's wildlife biologist relaying concerns stated by another FWP biologist in a telephone call.
  - *Concerns*:
    - One comment from Montana Fish, Wildlife, and Parks noted the project area included habitat for diverse species of interest to FWP --specifically moose and amphibians-- and stated they would communicate any specific concerns as the project develops through DNRC's wildlife biologist assigned to the project.
    - The other comment from FWP expressed concerns regarding potential impacts to habitat (large trees for roosting) for bat species including little brown myotis and hoary bats.
    - A landowner adjacent to the project area expressed interest in fuels reduction bordering his land.
  - *Results* (how were concerns addressed):
    - General wildlife and habitat comments and concerns from FWP were relayed to DNRC's Wildlife Biologist Chris Forristal and were incorporated into the Wildlife portion of this document.
    - The area adjacent to the landowner interested in fuels reduction near his property was included in the project. For this stand, a clearcut with reserves harvest has been determined as the appropriate silvicultural

prescription to meet DNRC's goals, provide fuels reduction, and regenerate the stand.

DNRC specialists on the Interdisciplinary Team (ID Team) were consulted, including: Chris Forristal (Wildlife Biologist), Tony Nelson (Hydrologist), and Patrick Rennie (Archeologist).

Internal and external issues and concerns were incorporated in to project planning and design and would be implemented in associated contracts.

**PROJECT DEVELOPMENT:**

- Stand Prioritization
  - Initial reconnaissance of the area included prioritizing areas with dense lodgepole pine displaying poor growth and vigor over areas treated in 2010 and mixed conifer forest types that are healthy and vigorous.
  - Stand health: areas of older lodgepole pine that are prone to advanced insects/disease problems (bark beetles, stem rots, rusts), and dense stands of young lodgepole pine displaying poor growth and vigor guided foresters to focus on silvicultural treatments to improve stand health.
  - Fuel loading and stand density: high fuel loading and tree density in lodgepole pine stands which have increased the likelihood of stand-replacing fire in the area directed foresters to mitigate the fire risk through silvicultural treatments.
  - Wildland Urban Interface Fuel Reduction: Discussion with the adjacent landowner to the north expressing interest in reduction of fuels on DNRC land bordering his property directed foresters on considering high standard hazard fuels reduction treatments near private property.

- Transportation Development
  - Access roads to proposed harvest units are in place, and there are three road/stream crossings with culverts where a temporary bridge would be placed on the road during operations to comply with BMPs. The bridges would be removed after harvest and the culverts would remain.

## 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 http://dnrc.mt.gov/divisions/trust/forest-management/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.

**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 the Common Schools 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 600 and 800 Mbf of timber using ground-based methods on 149 acres. Specific harvest unit data is provided in Attachment B- *Garnet Creek Timber Sale Project 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 139 acres through clearcut with reserves and modified clearcut with reserves. An eight acre stand with a successfully regenerated lower and middle story would have the overstory removed, retaining two snags and two snag recruits per acre for wildlife considerations (also known as an overstory removal treatment). A harvest of up to 50% of the trees in a Riparian Management Zone (RMZ) would also occur on 1.4 acres.

Site preparation would occur through dispersed skidding when feasible, facilitating the establishment of natural regeneration.

The commercial timber harvest from units 1, 2, 7, and 8 would reduce the potential for a high intensity wildland fire near adjacent landowners.

Weed spraying would occur on up to 1.3 miles of roads, with grass seeding occurring after construction and after harvest on disturbed surfaces and road beds as needed.

Road maintenance and BMP improvements would be performed on approximately 1.55 miles of existing roads and include building and then reclaiming up to 0.75 miles of temporary roads.

# 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:

The project area has undergone forest management treatments twice since 1980. As part of the North Fork by Two Timber Sale project in 2010-2011, 113 acres of the project area was commercially thinned.

In 1979 and 1980, the Mud Flats Timber Sale salvage treated 349 acres of the project area for mountain pine beetle infestation. All sawlog-size lodgepole pine was targeted for harvest at that time. Project goals included capturing value from beetle-infested trees and lessening future risk and severity of wildfire by harvesting dead and dying lodgepole pine.

Units 5 and 10 were salvage logged as part of the Mud Flats Timber Sale, as well as portions of units 8, 9, and 11. Units 1-4, 6, and 7 were not salvage logged at that time. A portion of the area that was not salvage logged in the Mud Flats Timber Sale is dominated by dense lodgepole pine, with poor overall health and growth rates.

Potential old-growth stands in the harvest areas have been evaluated to verify the status of those areas. There are no stands that qualify as old-growth in the project area.

The following rare or sensitive plants were identified within the Montana Natural Hertiage Database to potentially occur within the project area: *Pinus albicaulis* (Whitebark Pine), and *Botrychium sp.* (Adder's Tongue/Moonworts) are listed as species of concern. Field reconnaissance did not find these species within any proposed harvest units, and whitebark pine does not occur at this elevation.

Spotted knapweed and orange hawkweed have been identified in the project area. The first 800 feet of the main road into the unit (Sage Spur) will be sprayed before harvest and after harvest as needed.

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| 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*** | | | | | | | | | | | | | | |
| Vegetative community | **X** | | | | **X** | | | | **X** | | | | | |
| Forest Fuels | **X** | | | | **X** | | | | | **X** | | | | **V-2** |
| Old Growth | **X** | | | | **X** | | | | **X** | | | | | |
| Rare Plants | **X** | | | | **X** | | | | **X** | | | | | |
| Noxious Weeds | | **X** | | | | **X** | | | | **X** | | | | **V-3** |
| ***Action*** | | | | | | | | | | | | | | |
| Vegetative community | | **X** | | | | **X** | | | | **X** | | | **Y** | **V-1** |
| Forest Fuels | | **X** | | | | **X** | | | | **X** | | | **Y** | **V-2** |

| Vegetation | Impact | | | | | | | | | | | | Can Impact Be Mitigated? | Comment Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | | | | Secondary | | | | Cumulative | | | | | |
| | No | Low | Mod | High | No | Low | Mod | High | No | Low | Mod | High | | |
| Old Growth | **X** | | | | **X** | | | | **X** | | | | | |
| Rare Plants | **X** | | | | **X** | | | | **X** | | | | **Y** | |
| Noxious Weeds | | **X** | | | | **X** | | | | **X** | | | **Y** | **V-3** |

*Comments*

**V-1:** The Action Alternative would harvest 600-800 Mbf over 149 acres and would be treated with prescriptions including modified clearcut with reserves, clearcut with reserves, species designated overstory removal, and would include 1.4 acres of RMZ harvest of up to 50% of trees in the stand (see Attachment B *Garnet Creek Timber Sale Project Prescription Table*). The even-aged management approach on some stands would focus on holding stands in the DNRC's desired future conditions.

Treatments would result in no change in cover types in the project area. Approximately 111 acres would be converted to the 0-39-year age class from age classes above 40 years old by clearcut with reserves and modified clearcut with reserves treatments. About 28 acres in the 0-39-year age class would stay in the same age class, as would 10 acres in the 40-99-year age class.

**V-2:** Although the potential for ignition of a wildfire would continue to exist following treatment, fuel treatments following harvest would limit the fire intensity under most circumstances. The proposed treatments would create interconnected openings, resulting in wider spacing and reducing the amounts of understory trees with boughs that extend to the ground and act as ladder fuels which can carry fires into the crowns of the forest. The success of aerial and ground attacks on wildfires would potentially be improved because fires would most likely burn through and remain in the understory, rather than climbing into the overstory and moving through the upper canopy. Cumulatively, natural stand development and past timber sales have created a mosaic of age classes and stand structures in the area. The proposed action, along with potential activities associated with the USFS Frozen Moose project would sustain the mosaic and reduce the potential for high intensity wildfires.

**V-3**: Soil disturbances from road work and logging equipment could increase the amount and distribution of noxious weeds in the project area. Mitigations listed below would lessen any impacts to the area.

*Vegetation Mitigations:*

- Implement High Standard Hazard Reduction practices for 100' inside unit boundaries on harvest units within 1,000 feet of structures.
- If any of the listed sensitive plants are found during this project period, then harvesting operations would be diverted from the plants and further reviewed by DNRC and plant specialists.
- Mitigation measures for noxious weed control include washing equipment before entering the site, sowing grass seed on roads after road maintenance and harvesting (ARM 36.11.445) and applying herbicide on spots of weed outbreaks along roadways including areas behind road closures. This would minimize the spread and continued prevalence of noxious weeds in the project area.

- Additional mitigation measures for noxious weed control include Flathead County's weed spraying on the North Fork Road, 800 feet of weed spraying that would occur pre-harvest, and adding up to two miles of weed spraying on roads other than the North Fork Road that would be added to the Stillwater Unit's weed management monitoring program and result in spraying for weeds as needed.

## SOIL DISTURBANCE AND PRODUCTIVITY:

**Soil Disturbance and Productivity Existing Conditions:** Timber harvesting in the proposed project area has been ongoing since the 1950s. Less than 15% of soils are impacted from past entries where ground-based yarding was done.

| 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** | **S-1** |
| Erosion | | **X** | | | | **X** | | | | **X** | | | **Y** | **S-2** |
| Nutrient Cycling | **X** | | | | **X** | | | | **X** | | | | | |
| Slope Stability | **X** | | | | **X** | | | | **X** | | | | | |
| Soil Productivity | | **X** | | | | **X** | | | | **X** | | | **Y** | **S-3** |

*Comments:*

**S-1:** Based on DNRC soil monitoring on similar soils with a similar harvest intensity, approximately 14% of area may be in an impacted condition (DNRC, 2006). This level is below the range analyzed for in the *EXPECTED FUTURE CONDITIONS* section of the SFLMP, and well within the 20-percent impacted area established as a level of concern in the SFLMP *(DNRC 1996)*. This level translates to a low risk of low direct, secondary and cumulative impacts to soil physical disturbance.

**S-2:** Low impacts to soil erosion are possible due to exposure of bare soil during yarding operations. Risk of erosion would be mitigated by implementing all applicable BMPs prior to and during harvesting activities.

**S-3:** Soil productivity would be impacted by the use of ground-based machinery to yard timber. As stated in comment S-1, levels of ground disturbance are expected to be less than 14% with

roads included, which is well below the range analyzed for in the *EXPECTED FUTURE CONDITIONS* section of the SFLMP, and well within the 20-percent impacted area established as a level of concern in the SFLMP (*DNRC 1996*). This level translates to a low risk of low direct, secondary and cumulative impacts to soil productivity.

*Soil Mitigations:*

- Operate ground-based equipment only during periods of dry, frozen or snow-covered conditions.
- Space skid trails a minimum of 60 feet apart to minimize areas impacted by ground-based equipment.
- Use existing skid trails if they are in suitable locations to minimize potential for cumulative impacts to soil physical disturbance.
- Leave approximately 12-24 tons of woody material 3-inches in diameter or greater on the ground for nutrient cycling.

## WATER QUALITY AND QUANTITY:

Potential cumulative effects to water quality and quantity were deemed low due to the limited area of proposed harvest relative to watershed size, current channel stability and the flow regime of the hydrology in the project area (beaver ponds and wetlands).

**Water Quality and Quantity Existing Conditions:** Past activities in and around the proposed project area include timber management, agriculture, and home site development. These activities have led to reductions in forest canopy cover, and construction of roads. None of these activities has led to any identified impacts to water quality or quantity in or around the project area. All identified stream channels in the proposed project area were found to be stable and well-vegetated during field reconnaissance.

| 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** | **WQ-1** |
| Water Quantity | | **X** | | | | **X** | | | | **X** | | | **Y** | **WQ-2** |

*Comments:*

**WQ-1:** All requirements found in ARM 36.11.301-313, and ARM 36.11.421-427 would be implemented, where applicable. In addition, all applicable forest management BMPs would be implemented. These measures would minimize any potential risk of sediment delivery to a stream or draw and leave a low risk of direct, secondary or cumulative impacts to water quality.

**WQ-2:** There is a very low risk of the proposed project affecting water quantity. Vegetation removal can impact water use and snowpack distribution in harvested areas. The proposed project would harvest timber from approximately 149 acres. In an approximately 2,400-acre

watershed with wetlands and ponds to store and ameliorate changes in flow, the proposed harvest represents approximately 6% of the watershed area in harvesting. This presents a very low risk of measurable impacts to water quantity from the proposed harvesting.

*Water Quality & Quantity Mitigations:*

- Avoid use of ground-based equipment in the bottoms of draws to reduce risk of scour, compaction or routing of surface runoff in draws.
- Implement all applicable BMPs and SMZ Law rules to ensure protection of project area streams.

## FISHERIES:

**Fisheries Existing Conditions**: One fish-bearing stream was identified in the proposed project area by the FishMT website (FWP, 2020). This stream is an unnamed tributary to the North Fork Flathead River, and likely contains westslope cutthroat and bull trout. The stream is intermittent, but during spring runoff has connected flow to the North Fork Flathead River. It also has a series of beaver ponds and wetlands that support fish populations perennially.

**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 effects (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 | | | | | |
| Connectivity | X | | | | X | | | | X | | | | | |
| Populations | X | | | | X | | | | X | | | | | |
| ***Action*** | | | | | | | | | | | | | | |
| Sediment | | X | | | | X | | | | X | | | Y | F-1 |
| Flow Regimes | | X | | | | X | | | | X | | | Y | F-2 |
| Woody Debris | | X | | | | X | | | | X | | | Y | F-3 |
| Stream Shading | | X | | | | X | | | | X | | | Y | F-3 |
| Stream Temperature | | X | | | | X | | | | X | | | Y | F-3 |
| Connectivity | X | | | | X | | | | X | | | | | |
| Populations | | X | | | | X | | | | X | | | Y | F-4 |

*Comments:*
**F-1:** All requirements found in ARM 36.11.301-313, and ARM 36.11.421-427 would be implemented, where applicable. In addition, all applicable forest management BMPs would be implemented. These measures would minimize any potential risk of sediment delivery to a fish-bearing stream and leave a low risk of direct, secondary or cumulative impacts to water quality and fish habitat.

**F-2:** As outlined in comment **WQ-2**, with the proposal to harvest 149 acres of timber from approximately 6% of the watershed, there would be a very low risk of measurable impacts to water quantity or flow regime from the proposed harvesting.

**F-3:** All proposed harvesting of trees within the SMZ or RMZ of a class 1 stream or lake would follow all requirements of ARM 36.11.425 and DNRC's HCP commitments. This would leave a very low risk of the proposed project affecting existing or potential downed woody debris, stream shading or stream temperature in any fish-bearing stream.

**F-4:** Provided the measures listed in F-1, F-2, F-3, DNRC's HCP and the mitigation measures listed in the water quality portion of this analysis are followed, there is a very low risk of adverse direct, secondary or cumulative impacts to fish habitat or populations as a result of the proposed project.

*Fisheries Mitigations:*
- Implement mitigations in Water Quality section above.

**References:**

DNRC, 1996. State Forest Land Management Plan. Montana Department of Natural Resources and Conservation. Missoula, Montana.

DNRC, 2011. Montana Forestry Best Management Practices Monitoring: The 2010 Forestry BMP Audits Final Report. Montana Department of Natural Resources and Conservation, Forestry Division.

FWP, 2020. "FishMT" 6 January 2020. < https://myfwp.mt.gov/fishMT/waterbody/55803>

## WILDLIFE:

**Wildlife Existing Conditions**: The 640-acre Project Area contains of variety of habitat conditions for native wildlife species, ranging from open wetlands to dense lodgepole stands to aspen and cottonwood galleries. This DNRC-managed parcel in Section 16, T37N R22W is included in DNRC's Habitat Conservation Plan (HCP, USFWS and DNRC 2010). The Project Area is primarily surrounded by USDA Forest Service (USFS) lands comprised of forested stands. Some private lands containing low-density home sites border the Project Area to the north and south-southwest. Glacier National Park is within a mile to the east, across the North Fork of the Flathead River. Approximately 3.4 miles of existing roads occur within the project area, of which 1.0 miles are open to public motorized use (county-managed North Fork Road) and 2.4 miles are restricted. Approximately 0.3 miles of restricted road has a private easement

belonging to the landowner to the north and receives periodic motorized use during the non-winter months by the resident and their guests. Another 2.1 miles of restricted road does not currently receive any motorized use due to a berm barricade and heavy brush growth. The presence of roads in the larger surrounding area is largely dependent upon the land owner or manager. Private lands, which comprise a minority of the cumulative effects areas (between 12 and 26 percent), contain the majority of roads. Conversely, USFS lands (59 to 84 percent of the larger cumulative areas or Cumulative Effects Analysis Areas--CEAAs) contain few roads and some proposed wilderness areas are present. The project area is a mix of forested habitats and wetland/riparian habitats. It supports a relatively high amount of biological diversity for the area (Cooper et al. 2000). The project area contains approximately 436 acres of mature forest (trees ≥9" dbh with ≥40% canopy closure) in four patches. Mature forest patches are broken up by wetlands and more open aspen/cottonwood stands. Approximately 145 acres of younger, pole-sized stands with canopy closure generally ≥40% are also present. Unforested areas, such as wetlands and riparian zones, comprise another 59 acres. Approximately 127 acres of the Project Area were harvested with selective thinning treatments in 2009-2012 but are still providing mature forest habitat. Snags and downed wood are plentiful across 346 acres of mature forest in the western half of the Project Area but are considerably less numerous in the 235 acres of smaller-diameter lodgepole pine-dominated stands that make up the eastern half of the Project Area. Overall, habitat conditions within the Project Area are diverse and adequate to support a wide variety of wildlife species.

The USFS has proposed a large vegetation management project in the area surrounding the project area named "Frozen Moose." This project is in the early scoping/public comment stages, but as proposed could affect up to 2,456 acres of wildlife habitat within the large cumulative effects analysis area. Proposed treatments include prescribed burning, fuels reduction thinning and commercial regeneration harvest.

**No-Action**: None of the proposed activities would occur. In the short-term, no changes to the amounts, quality, or spatial arrangement of forested habitat would occur. In the long-term, habitat suitability for mature forest-associated species would remain similar or increase compared to current conditions. Forested stands/habitat comprised of aspen (*Populus tremuloides*) would likely continue to degrade in the long term due to conifer encroachment. Overall, in the absence of other natural disturbance, current wildlife habitat conditions would be expected to persist under the No-Action Alternative.

**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 | WI-1 |
| **Canada lynx** (*Felix lynx)* Habitat: Subalpine fir habitat types, | | X | | | | X | | | | X | | | Y | WI-2 |

| Wildlife | Impact | | | | | | | | | | | | Can Impact be Mitigated? | Comment Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | | | | Secondary | | | | Cumulative | | | | | |
| | No | Low | Mod | High | No | Low | Mod | High | No | Low | Mod | High | | |
| dense sapling, old forest, deep snow zone | | | | | | | | | | | | | | |
| **Sensitive Species** | | | | | | | | | | | | | | |
| **Bald eagle** *(Haliaeetus leucocephalus)* Habitat: Late-successional forest within 1 mile of open water | | X | | | | X | | | X | | | | | WI-3 |
| **Black-backed woodpecker** *(Picoides arcticus)* Habitat: Mature to old burned or beetle-infested forest | X | | | | X | | | | X | | | | | WI-4 |
| **Coeur d'Alene salamander** *(Plethodon idahoensis)* Habitat: Waterfall spray zones, talus near cascading streams | X | | | | X | | | | X | | | | | WI-4 |
| **Columbian sharp-tailed grouse** *(Tympanuchus Phasianellus columbianus)* Habitat: Grassland, shrubland, riparian, agriculture | X | | | | X | | | | X | | | | | WI-4 |
| **Common loon** *(Gavia immer)* Habitat: Cold mountain lakes, nests in emergent vegetation | X | | | | X | | | | X | | | | | WI-4 |
| **Fisher** *(Martes pennanti)* Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian | | X | | | | X | | | X | | | | Y | WI-5 |
| **Flammulated owl** *(Otus flammeolus)* | | X | | | | X | | | | X | | | Y | WI-4 |

| Wildlife | Impact | | | | | | | | | | | | Can Impact be Mitigated? | Comment Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | | | | Secondary | | | | Cumulative | | | | | |
| | No | Low | Mod | High | No | Low | Mod | High | No | Low | Mod | High | | |
| Habitat: Late-successional ponderosa pine and Douglas-fir forest | | | | | | | | | | | | | | |
| **Gray Wolf** *(Canis lupus)* Habitat: Ample big game populations, security from human activities | | X | | | | X | | | | X | | | Y | WI-6 |
| **Harlequin duck** *(Histrionicus histrionicus)* Habitat: White-water streams, boulder and cobble substrates | X | | | | | X | | | X | | | | | WI-4 |
| **Northern bog lemming** *(Synaptomys borealis)* Habitat: Sphagnum meadows, bogs, fens with thick moss mats | | X | | | | X | | | | X | | | | WI-7 |
| **Peregrine falcon** *(Falco peregrinus)* Habitat: Cliff features near open foraging areas and/or wetlands | X | | | | X | | | | X | | | | | WI-4 |
| **Pileated woodpecker** *(Dryocopus pileatus)* Habitat: Late-successional ponderosa pine and larch-fir forest | | X | | | X | | | | X | | | | | WI-8 |
| **Townsend's big-eared bat** *(Plecotus townsendii)* Habitat: Caves, caverns, old mines | X | | | | X | | | | X | | | | | WI-9 |
| **Wolverine** *(Gulo gulo)* Habitat: Alpine tundra and high- | X | | | | X | | | | X | | | | | WI-10 |

| Wildlife | Impact | | | | | | | | | | | | Can Impact be Mitigated? | Comment Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | | | | Secondary | | | | Cumulative | | | | | |
| | No | Low | Mod | High | No | Low | Mod | High | No | Low | Mod | High | | |
| elevation boreal forests that maintain deep persistent snow into late spring | | | | | | | | | | | | | | |
| **Big Game Species** | | | | | | | | | | | | | | |
| **Whitetail deer** | | X | | | | X | | | | X | | | N | WI-11 |
| **Mule deer** | X | | | | X | | | | X | | | | | WI-11 |
| **Elk** | | X | | | | | X | | | X | | | N | WI-11 |
| **Moose** | | X | | | | X | | | X | | | | N | WI-11 |
| **Other** | | | | | | | | | | | | | | |
| **Mature Forest** | | X | | | | X | | | | X | | | N | WI-12 |

*Comments:*

**WI-1. Grizzly Bear –** Harvesting would occur on 149 acres within grizzly bear recovery zone habitat. Approximately 124 acres of grizzly bear hiding cover would be harvested, or about 29.2% of available cover within the project area. Hiding cover would be removed on 118 acres and reduced on another 6 acres. To mitigate for potential adverse effects, patches of cover would be retained such that no point within seed tree units would be greater than 600 feet to hiding cover. No new open roads would be built, but motorized use of 1.6 miles of existing roads within the project area would increase during project implementation. Approximately 0.8 miles of temporary roads would be built and would add to temporary motorized disturbance in the area. Temporary roads would be reclaimed and rendered impassible after project activities conclude. Existing restricted roads used for harvesting would remain restricted during and after conclusion of the project. Visual screening along open roads would not be impacted by the proposed activities. Additionally, spring timing restrictions on harvesting activities would be applied from April 1 – June 15 to provide security for grizzly bears in the spring. If harvest activities were conducted during the denning season (November 16 – March 31), displacement risk to bears would be further reduced. Many of the forest stands proposed for harvest contain shrubs used by foraging bears; grizzly bears using the project area could be temporarily displaced from food sources by the proposed activities for up to three years. Approximately 24% of the Project Area would be altered by harvesting and the larger surrounding area (CEAA) would continue to contain high-quality grizzly bear habitat and few roads. Impacts to hiding cover and increased disturbance under the Action Alternative would be additive to proposed USDA Forest Service projects (Frozen Moose), wildfire and recent forest management projects on adjacent private lands within the CEAA. The greatest risks to bears within the CEAA would continue to be neighboring human habitations and associated attractants that bring bears into conflict with people.

**WI-2. Canada Lynx –** Approximately 149 acres of suitable lynx habitat (25.3% of existing suitable habitat in the Project Area) would be altered by the proposed timber sale. Of these acres, 144 acres would be treated with harvest prescriptions that would not retain enough conifer cover to continue providing suitable lynx habitat immediately post-harvest. The remaining 5 acres would receive treatments that would reduce some suitable habitat attributes but would overall continue to provide suitable lynx habitat as long as sufficient understory conifers are retained. To ensure that forest structural attributes preferred by lynx and snowshoe hare prey remain following harvest, some patches of advanced regeneration and shade-tolerant

trees would be retained within portions of suitable lynx habitat. Additionally, 12 to 24 tons/acre of coarse woody debris would be retained in accordance with DNRC Forest Management Rules (*ARM 36.11.414, except along boundaries with private property)* and retention of downed logs ≥15 inch diameter would be emphasized. Lynx habitat connectivity within the project area would be reduced; however, overall suitable lynx habitat would remain continuous and habitat corridors along riparian areas would be maintained. Any lynx that might be using the area could temporarily be displaced from the Project Area for up to three years by the proposed activities. Disturbance/displacement and habitat alteration by the proposed DNRC activities would be additive to proposed USDA Forest Service projects (Frozen Moose), wildfire and recent forest management projects on adjacent private lands within the CEAA. The large CEAA contains >90% suitable habitat for lynx and provides ample connected habitat for lynx persistence at the larger landscape level.

**WI-3. Bald Eagle –** Although no known bald eagle nesting territories are within 2 miles of the Project Area, some use of the area by bald eagles would be expected due to the presence of suitable wetlands and waterways commonly used for foraging. Large trees directly adjacent to foraging areas would not be harvested under the proposed Action Alternative. Bald eagles occasionally foraging in the Project Area could be temporarily displaced by proposed harvesting activities. However, no appreciable effects to bald eagle nesting or reproductions would be expected.

**WI-4.** This species was evaluated, and it was determined that the project area lies outside of the normal distribution for the species, and/or suitable habitat was not found to be present.

**WI-5. Fisher –** Approximately 8 acres of suitable fisher habitat would be affected by the proposed activities (2.5% of fisher habitat available in the Project Area). Of these acres, 7 acres would not be suitable post-harvest due to low amounts of mature conifer cover. The remaining 1 acre of stands would receive intermediate harvest treatments, and thus remain suitable for fisher use post-harvest due to sufficient retention of mature trees. To reduce potential adverse effects on fishers, at least 2 large snags and 2 large snag recruitment trees per acre (>21 inches dbh, or largest size class available) would be retained (*ARM 36.11.411*). These snags are important habitat features that provide resting and denning sites for fishers. However, few large snags were observed within the relatively small-diameter lodgepole stands targeted for harvesting by the Action Alternative. Approximately 2 acres of fisher riparian habitat would be removed by harvest treatments. Another 1 acre of riparian fisher habitat would be selectively thinned, which would reduce habitat quality but not remove it from suitability. Overall connectivity would not substantially change across the Project Area, as only 2.5% of suitable fisher habitat in the Project Area would be harvested. Should any fishers be present within the CEAA, habitat alteration and potential disturbance (if activities are concurrent) would be additive to the USFS Frozen Moose project and any activities occurring on surrounding private lands. However, considering the low availability of suitable fisher habitat in the stands proposed for harvest, small amount of harvest, and lack of fisher observations within the last 15 years (MNHP 2020), negligible effects to fishers in the CEAA would be expected.

**WI-6. Gray Wolf –** Wolves may use habitat near 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)*).

**WI-7. Northern Bog Lemming –** Wetlands with floating vegetation mats are present within the Project Area and use by northern bog lemmings is possible. The northern bog lemming's natural history and use of habitat outside of peat bogs/fens is relatively unknown. Proposed harvesting under the Action Alternative would not alter wetlands or habitat within 50 feet of wetlands.

Because primary habitat would be unaffected, potential impacts to northern bog lemmings would be expected to be negligible or low. The surrounding area contains numerous potentially suitable wetlands and fens that may support bog lemmings. However, nothing is known about northern bog lemming habitat metapopulations.

**WI-8. Pileated Woodpecker –** The proposed activities would not harvest any potentially suitable pileated woodpecker habitat, but pileated woodpeckers are likely present in adjacent stands within the Project Area. Pileated woodpeckers are generally tolerant of human disturbance, but individuals could be temporarily disturbed should they be in the area when harvesting activities occur. To maintain important habitat attributes for woodpeckers and many other forest-dwelling species, at least 2 large snags and 2 large snag recruitment trees per acre (>21 inches dbh, or largest size class available) would be retained and all snags cut for safety reasons would be left in the harvest unit (*ARM 36.11.411*). Approximately 354 acres of mature stands with larger trees and more snags would remain unaltered within the Project Area under the Action Alternative.

**WI-9. Townsend's big-eared bat –** No suitable mines or caves are known to occur in the area, and bat surveys conducted within 1.5 miles of the Project Area did not find any Townsend's big-eared bats. However, Montana Fish, Wildlife, and Parks submitted a phone comment recognizing that the area supports a relatively high diversity of native bats (Chris Hammond, personal communication, August 27, 2019). The majority of forest stands targeted for harvest are dominated by smaller-diameter lodgepole pine stands with few snags. Thus, roosting habitat for other bats is very limited and measurable adverse effects on other native bats is unlikely. All existing snags within these harvested areas would be retained as much as possible. Timber harvesting adjacent to areas of aspen and cottonwood would be designed to encourage new growth (release) and expansion of this high-value habitat. Approximately 354 acres of mature stands containing higher habitat quality for bats (due to larger trees and more snags) would remain unaltered within the Project Area under the Action Alternative.

**WI-10. Wolverine -** No potentially suitable wolverine habitat exists within the proposed Project Area. The project area does not maintain deep snow into late spring and does not contain high-elevation alpine habitat. While a wolverine could pass through the Project Area during its extensive movements, particularly given its proximity to Glacier National Park, appreciable use of the area is not expected. Given the large home range area (average 150+ sq. miles) wolverines occupy, and long distances wolverines typically cover during their movements, the proposed activities would not be expected to measurably affect use of the area by wolverines.

**WI-11. Big Game –** DFWP considers the entire project area to be winter range for white-tailed deer, elk and moose (*DFWP 2008*). Moose scat, tracks and browsing activity was commonly observed in the Project Area. The proposed activities would reduce thermal cover on 123 acres of winter range (22.9% of thermal cover available in the Project Area). Regeneration harvest prescriptions on 120 acres would reduce live tree densities and canopy cover to <15%, thus reducing the capacity of these stands to provide thermal cover and snow intercept during typical winter conditions. Another 3 acres of thermal cover would be harvested with intermediate treatments that would reduce canopy cover but retain sufficient trees to provide some viable thermal cover/snow intercept. Retaining healthy sub-merchantable trees and saplings would provide additional cover and reduce the amount of time until stands grow into suitable thermal cover/snow intercept again. Approximately 413 acres (64.5% of the Project Area) of thermal cover/snow intercept would remain within the Project Area. Connectivity to potential thermal cover on adjacent private and USFS lands would be maintained, although the relative amounts of thermal cover in the surrounding area could measurably change based on preliminary plans

for the Frozen Moose vegetation management project. Reductions to thermal cover under the Action Alternative would be additive to proposed USDA Forest Service projects (Frozen Moose) and recent forest management projects on adjacent private lands within the CEAA. The Project Area would still be able to support deer, elk and moose use during the winter, but capacity of habitat would be lowered due to reductions in thermal cover availability. Proposed harvesting adjacent to aspen and cottonwood stands would be designed to encourage new growth (release) and expansion of these species and increase high-value browse habitat. No new open roads would be built and visual screening along existing roads would be maintained. Approximately 1.4 miles of existing restricted, impassible road would be opened up for harvesting activities. This road would remain restricted at the conclusion of activities, but removal of dense brush would likely encourage increased non-motorized recreational use into the Project Area; increased hunting pressure would be expected, and security would decrease. Hiding cover would remain in place so no point in any harvest unit would be more than 600 feet to cover and help provide escape cover from hunters and predators. Elk and moose are more sensitive to human disturbance and could be temporarily displaced from portions of the Project Area for up to three years. Impacts to thermal cover and increased disturbance under the Action Alternative would be additive to proposed USDA Forest Service projects (Frozen Moose), wildfire and recent forest management projects on adjacent private lands within the CEAA. However, substantial changes in the overall use of the project area or CEAA by big game would not be expected.

**WI-12. Mature Forest –** The proposed action would harvest approximately 82 acres of mature forest (18.8% of mature forest within the project area) with a reasonably closed canopy (≥40% canopy closure). Harvest prescriptions on 82 acres would reduce live tree densities to below 40% canopy closure and remove mature forest. Thus, these stands would no longer be suitable for wildlife species preferring dense forest with more shaded canopies. At the same time, habitat suitability for species utilizing younger stands and open forest with widely scattered mature trees would increase. Approximately 354 acres (55.3% of the Project Area) of mature forest would remain within the project area upon completion of activities. Connectivity of mature forest would remain moderate within the Project Area and CEAA due to scattered wetlands and open riparian areas, as well as more open forest types and past forest disturbance (e.g. wildfire). Timber harvesting and wildfire within the last 40 years has reduced the abundance and connectivity of mature forest within the CEAA, and the proposed action would be additive to these changes and those proposed by adjacent land managers (e.g. USFS's Frozen Moose project).

*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)*.
- Restrict motorized activities more than 100 feet from open roads from April 1 – June 15 per *GB-NR3* (*USFWS and DNRC 2010*).
- If harvesting activities occur for more than 45 days during any single grizzly bear non-denning season, observe the 8-year rest period as per *GB-SC2* (*USFWS and DNRC 2010*).
- Retain visual screening along roads to the greatest extent practicable.

- Effectively close restricted roads and skid trails in the Project Area via a combination of gates, kelly humps, rocks, and stumps.
- Retain patches of advanced regeneration of shade-tolerant trees as per *LY-HB4* (*USFWS and DNRC 2010*) in all harvest units.
- Retain at least 2 snags and 2 snag recruits per acre >21 inches dbh or the next available size class, particularly favoring ponderosa pine, western larch and Douglas-fir for retention. If snags are cut for safety concerns, they must be left in the harvest unit. For units lacking 2 snags/acre prior to harvest, retain all available snags and increase the number of large snag recruits (live trees) for retention.
- Retain 12-24 tons/acre of coarse-woody debris and emphasize retention of 15-inch diameter downed logs, striving for at least one 20-foot-long section per acre. High-hazard cleanup areas adjacent to private lands are exempt from this mitigation.

*Literature:*

Cooper, S.V., J. Greenlee, and C. Jean. 2000. Ecologically significant wetlands in the North Fork Flathead River watershed. Montana Department of Environmental Quality by the Montana Natural Heritage Program, Helena, Montana.

DFWP. 2008. Maps of moose, elk, mule deer, and white-tailed deer distribution in Montana. *In* Individual GIS data layers. Available online at:
http://fwp.mt.gov/gisData/imageFiles/distributionElk.jpg
http://fwp.mt.gov/gisData/imageFiles/distributionMoose.jpg
http://fwp.mt.gov/gisData/imageFiles/distributionMuleDeer.jpg
http://fwp.mt.gov/gisData/imageFiles/distributionWhiteTailedDeer.jpg

MNHP. 2020. Natural Heritage Map Viewer. Montana Natural Heritage Program. Retrieved on January 13, 2020, from http://mtnhp.org/MapViewer.

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.

## 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** | **A-1, A-2** |
| Dust | | **X** | | | | **X** | | | | **X** | | | **Y** | **A-3** |

*Comments:*

**A-1**: This project is within Airshed 2, but is not within an impact zone, as described by the Montana/Idaho Airshed Group. The Columbia Falls Impact Zone is approximately 54 miles southeast of the project area. Under the Action Alternative, some slash piles consisting of tree limbs, tops, and other vegetative debris would be created throughout the project area during harvesting and site preparation. These slash piles would ultimately be burned after harvesting and site preparation operations have been completed.

**A-2**: Burning that may occur on adjacent properties in combination with the proposed action could potentially increase cumulative impacts to the local airshed. However, because DNRC would burn only on approved days as determined by the Montana DEQ and Montana/Idaho Airshed group, cumulative impacts to air quality due to slash pile burning associated with the proposed action would also be expected to be minimal.

**A-3**: Under the Action Alternative, dust may be generated by log hauling activities during dry conditions; less dust would be generated if harvested during the winter.

***Air Quality Mitigations:***

- Burning activities within the project area would be of brief 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.

## 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** | | | | | **ARCH-1** |
| Aesthetics | **X** | | | | **X** | | | | **X** | | | | | |
| Demands on Environmental Resources of Land, Water, or Energy | **X** | | | | **X** | | | | **X** | | | | | |
| ***Action*** | | | | | | | | | | | | | | |
| Historical or Archaeological Sites | **X** | | | | **X** | | | | **X** | | | | | **ARCH-1** |
| Aesthetics | | **X** | | | | **X** | | | | **X** | | | **Y** | **AEST-1** |
| Demands on Environmental Resources of Land, Water, or Energy | **X** | | | | | | | | **X** | | | | | |

*Comments:*

**ARCH-1:** The tribes of Montana were scoped, but none responded or identified a specific cultural resource concern. A Class I level review (literature 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 revealed that no cultural or paleontological resources have been identified in the APE. Because the area of potential effect on state land has experienced past timber harvest work, no additional archaeological investigative work will be conducted in response to this proposed action. 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.

**AEST-1:** Aesthetic impacts were analyzed using ArcGIS tools, aerial photos, and visiting possible viewpoints. Visual aesthetic impacts from the proposed project would vary depending on the elevation and location of the vantage point, as well as surrounding topography and forest cover.

The gentle topography of the Garnet Timber Sale project area precludes it from being a high-profile or highly visible area. The harvest area may be visible in the distance from vantage points in the mountains miles to the west, but the harvest area is not visible from the North Fork Road or the North Fork River. All harvest units are in the eastern half of the Project Area with more than 2,300 feet of forested area masking the area from the road. The harvest units would be visible to the private landowner to the north of the project area, and the landowners to the immediate south.

At close range, standing within or adjacent to individual harvest units, the visual impact would be highest. Visual impacts would vary by prescription, from increased spacing of trees and small openings in areas of lesser harvest levels, to higher harvest level areas with open areas where individual scattered trees and clumps of trees, stumps and some logging slash would be visible.

Visual impacts would be greatest within the first few years after harvest. Over time, as the harvest areas regenerate, and the trees and brush grow larger, the visual distinction of the harvested areas will be lessened.

During harvest operations, noise may be discernable from private residences in the area.

*Mitigations:*

- Timber sale design would minimize visual impacts by variably spacing both individual and clumps of retention trees in the units, retaining varying amounts of leave trees along some unit boundaries, and leaving most hardwood clumps largely intact.
- Units 1, 7, and 8 will have a screen of merchantable and submerchantable trees left along the boundary with private property.

**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.*

- North Fork by Two Environmental Assessment (2008), DNRC.
- Mud Flats Prescriptive Environmental Review (1979), DNRC.

- Frozen Moose Initial Proposal (2019), USFS--Flathead National Forest.

## Impacts on the Human Population

Evaluation of the impacts on the proposed action including **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 | | | | | | | | | | | | | |
| Industrial, Commercial and Agricultural Activities and Production | X | | | | | | | | | | | | | |
| Quantity and Distribution of Employment | X | | | | | | | | | | | | | |
| Local Tax Base and Tax Revenues | X | | | | | | | | | | | | | |
| Demand for Government Services | X | | | | | | | | | | | | | |
| Access to and Quality of Recreational and Wilderness Activities | X | | | | | | | | | | | | | |
| Density and Distribution of population and housing | X | | | | | | | | | | | | | |
| Social Structures and Mores | X | | | | | | | | | | | | | |
| Cultural Uniqueness and Diversity | X | | | | | | | | | | | | | |
| ***Action*** | | | | | | | | | | | | | | |
| Health and Human Safety | X | | | | X | | | | X | | | | | **HUM-1** |
| Industrial, Commercial and Agricultural Activities and Production | X | | | | X | | | | X | | | | | |
| Quantity and Distribution of Employment | X | | | | X | | | | X | | | | | **HUM-2** |
| Local Tax Base and Tax Revenues | X | | | | X | | | | X | | | | | **HUM-2** |
| Demand for Government Services | 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 | | |
| Access to and Quality of Recreational and Wilderness Activities | X | | | | X | | | | X | | | | | HUM-3 |
| 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:*
**HUM-1**: Due to log trucks using the shared County road, the disturbance to users' experience and health and human safety would be expected to be none or very low, and of short duration. Mitigations have been and developed for all log hauling to allow for safe travel on shared use of the shared County road.

**HUM-2:** Due to relatively small size of the proposed timber sale, no measurable direct, indirect, or cumulative effects would be likely.

**HUM-3**: General recreation in the project area would continue to be accessible by the public on open County roads, and by foot traffic within the project area. There is no motorized access for the public on the Sage Spur and Sage Spur B roads currently, as it is classified Restricted Use road and would be closed to the public during operations as well.

*Mitigations:*
- Signs displaying location of harvest activities and logging would be installed. Additionally, log trucks will obey all traffic laws and observe the 35-mph speed limit on the County North Fork road.

**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.*

- Flathead Wild and Scenic River Management Plan (1980)
  The Plan does not affect the project as the project area is not visible from the North Fork of the Flathead River and is not located in the Wild and Scenic Corridor.

**Other Appropriate Social and Economic Circumstances:**

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

**Action Alternative**: The timber harvest would generate approximately $135,184 for the Common Schools Trust (K-12), and approximately $20,320 in Forest Improvement (FI) fees would be collected for FI projects. This is based on a stumpage rate of $18.34 per ton, multiplied by the estimated volume of tons. This stumpage rate was derived by comparing attributes of the proposed timber sale with the attributes and results of other DNRC timber sales

recently advertised for bid. Costs related to the administration of the timber sale program are only tracked at the Northwestern Land Office (NWLO) and Statewide level. DNRC does not track project-level costs for individual timber sales. An annual cash flow analysis is conducted on the DNRC forest product sales program, and revenue and costs are calculated Statewide and by the NWLO. From 2006 through 2014, revenue-to-cost ratio of the Northwestern Land Office was 2.07. This means that, on average, for every $1.00 spent in costs, $2.07 in revenue was generated. 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

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.

**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:** Les Thomas
**Title:** Management Forester, Stillwater Unit
**Date:** February 20, 2020

## Finding

### Alternative Selected

Upon Review of the Environmental Assessment Checklist and attachments, I find the Action Alternative, as proposed, meets the intent of the project objectives as stated in **Type and Purpose of Action.**

The lands involved in this project are held by the State of Montana in trust for the support of specific beneficiary institutions and 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, 77-1-212 MCA).

The Action Alternative complies with all pertinent environmental laws, the DNRC SFLMP and HCP, and is based upon a consensus of professional opinion on limits of acceptable environmental impact. We received (3) comments on this project from the public and Montana Fish Wildlife & Parks during the scoping process. Their comments were addressed in the **Project Development** portion of this document. For these reasons and on behalf of DNRC I have selected the Action Alternative to be implemented on this project.

In summary, I find that the identified adverse impacts will be controlled, mitigated, or avoided by the design of the project to the extent that the impacts are not significant.

**Significance of Potential Impacts**
After a review of the scoping documents and comments, project file, Forest Management Rules, SFLMP and HCP checklists, and Department policies, standards, and guidelines, I find all the identified resource management concerns have been fully addressed in this Environmental Assessment Checklist and its attachments.

Specific project design features and various recommendations by the resource management specialists will be implemented to ensure that this project will fall within the limits of environmental change. Taken individually and cumulatively, the proposed activities are common practices, and no project activities are being conducted on important unique or fragile sites. I find there will be no significant impacts to the human environments as a result of implementing the Action Alternative.

## Need for Further Environmental Analysis

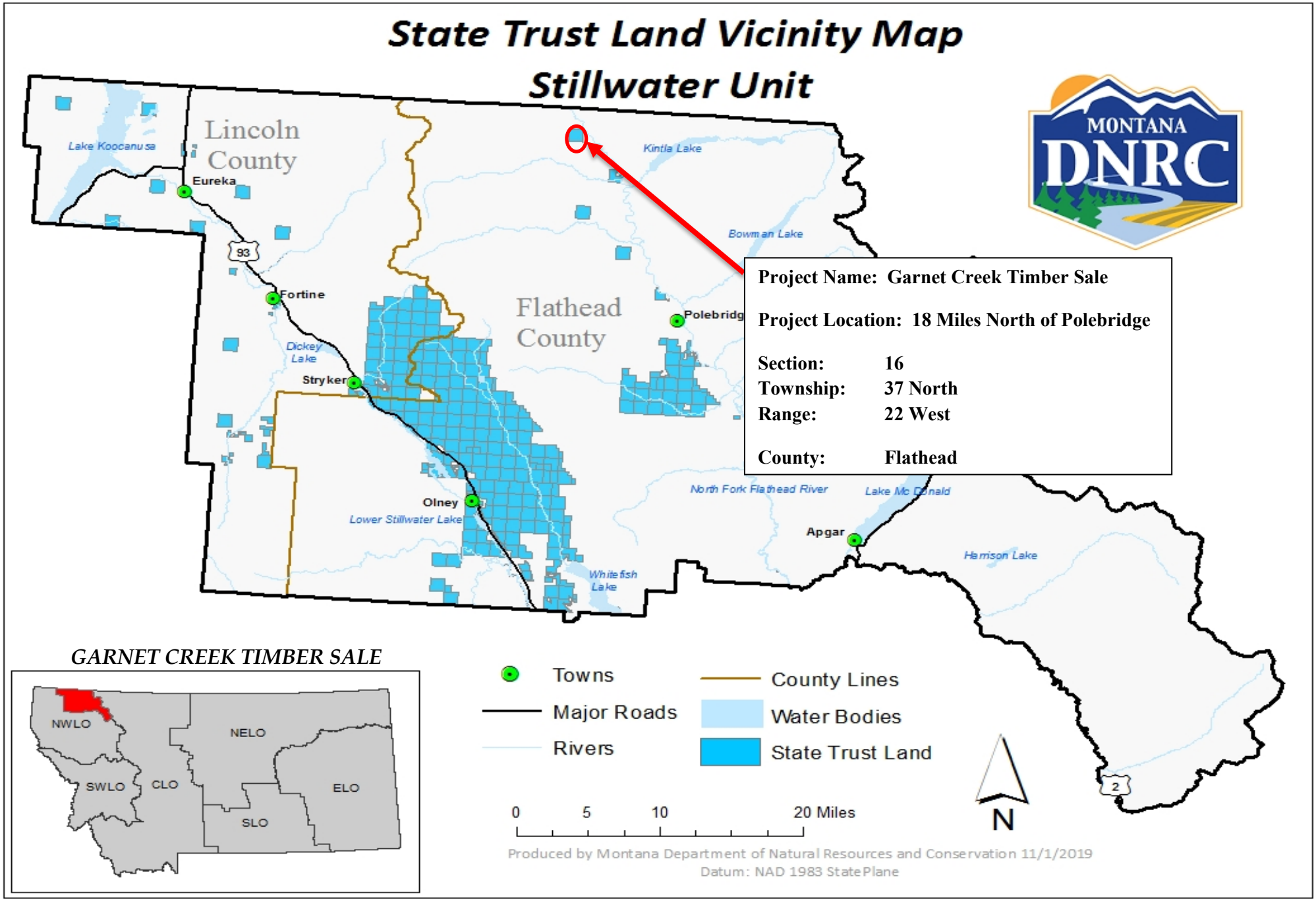
| | | | | | |
|---|---|---|---|---|---|
| | EIS | | More Detailed EA | | No Further Analysis |
| | | | | X | |

**Environmental Assessment Checklist Approved By:**

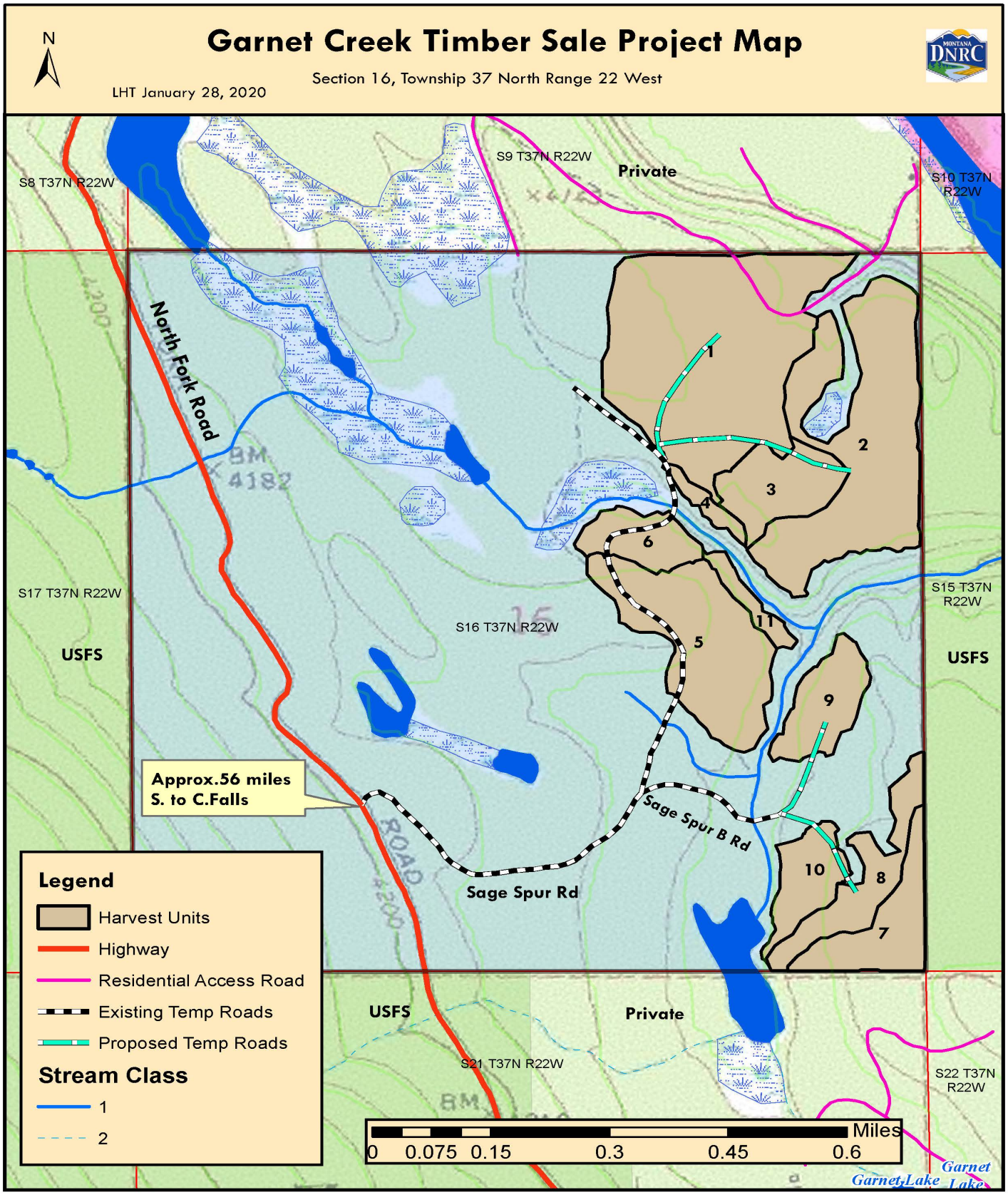
**Name:** Dave Ring
**Title:** Stillwater Unit Manager
**Date:** March 2, 2020
**Signature:** ***/s/ David A. Ring***

# Attachment A- Maps

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Harvest Units



# Attachment B: Prescription Table

# Prescription Table

| Unit # | Est. Acres / Mbf | Prescription | Particulars involved in unit(s) |
|---|---|---|---|
| 1 | 44 acres<br>283 Mbf | Clearcut with Reserves | - Tractor harvest unit.<br><br>- Species designation: Harvest lodgepole pine sawlog trees and lodgepole pine post and pole only.<br>- In approximately 6 acre clump of mostly quaking aspen in north of unit, harvest scattered lodgepole pine, and a few aspen along the edge only.<br>- Retain all non-lodgepole pine sapling, pole and sawlog trees (except some aspen around the edge as stated above).<br>- Leave all snags greater than 7 inches dbh.<br>- Leave 4 trees per acre of the largest diameter class (approximately 100 foot bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. Check in five years, evaluate for planting. |
| 2 | 32 acres<br>159 Mbf | Modified Clearcut with Reserves and SMZ/WMZ harvest | - Tractor harvest unit.<br><br>- Class 3 SMZ and attached WMZ in west of unit.<br>- Possible limited SMZ and WMZ harvest of up to 50% of sawlog trees other than quaking aspen (less than 25% total harvest).<br>- Protect submerchantable trees and shrubs as much as practical in SMZ and WMZ.<br>- Quaking Aspen harvest will be limited to some around the edge of the SMZ and WMZ to encourage sprouting/regeneration of this species.<br>- Harvest sawlog only; protect and retain all advanced regen.<br>- Retain all Western larch and Douglas-fir trees.<br>- Retain sub-alpine fir and Engelman spruce under 9 inches at dbh.<br>- Retain quaking aspen, though limited harvest along the edges of aspen pockets may be allowed to facilitate sprouting/regeneration of this species.<br>- Retained regeneration and overstory will be scattered and clumpy, resulting in greater than 5% canopy closure.<br>- Leave all snags greater than 7 inches dbh.<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 foot bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. Check in five years, evaluate for planting. |
| 3 | 9 acres<br>49 Mbf | Modified Clearcut with Reserves with some post and pole harvest | - Tractor harvest unit.<br>- About 1.5 acres in east of unit will be overstory removal harvest only, retaining all non-sawlog regeneration, as it is more open-grown and has crown ratios over 30%.<br>- 2-3 acres in the middle of the unit has mostly scattered overstory and few sapling and pole size trees and is also sawlog-only harvest.<br>- Rest of unit will include both sawlog and post and pole harvest.<br>- Leave all Douglas-fir and Western larch regardless of size, leave all sub-alpine fir and Engelman spruce less than 9 inches dbh.<br>- Limited harvest along edges of quaking aspen clumps may be allowed, with less than 25% of trees harvested, in order to facilitate sprouting/regeneration of this species.<br>- Leave all snags greater than 7 inches dbh.<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 feet bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. |

| | | | |
|---|---|---|---|
| 4 | 2 acres<br>10 Mbf | Clearcut with Reserves with post and pole harvest | - Tractor harvest unit.<br><br>- Harvest sawlog trees and lodgepole pine post and pole only.<br>- Retain all non-lodgepole pine sapling, pole and sawlog trees less than 9 inches dbh.<br>- Leave all snags greater than 7 inches dbh<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 foot bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. |
| 5 | 21 acres<br>29 Mbf<br>plus Post & Pole | Clearcut with Reserves with Post & Pole and limited RMZ harvest | - Tractor harvest unit.<br><br>- RMZ/SMZ Class 1 east of unit.<br>- Limited RMZ harvest of up to 50% of sawlog trees possible along east boundary.<br>- RMZ is 80 feet wide, or 30 feet west of SMZ flagging.<br>- Protect submerchantable trees and shrubs as much as practical within RMZ. (Harvest up to 50% of sawlog trees only.)<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 foot bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. |
| 6 | 6 acres<br>37 Mbf<br>plus Post & Pole | Clear cut with reserves with post and pole harvest | - Tractor harvest unit.<br><br>- RMZ/SMZ Class 1 along northern unit boundary of unit. No SMZ harvest.<br>- RMZ is 80 feet wide, or 30 feet past SMZ/Unit boundary flagging.<br>- RMZ harvest of up to 50% of sawlog trees in RMZ possible.<br>- Protect all submerchantable trees and shrubs within RMZ.<br>- Clear cut with reserves harvest to RMZ boundary (within 30'of SMZ flagging).<br>- Leave all snags greater than 7 inches dbh.<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 foot bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. |
| 7 | 10 acres<br>34 Mbf | Clearcut with Reserves with post and pole harvest | - Tractor harvest.<br>- Dispersed skidding.<br><br>- Harvest sawlog trees and lodgepole pine post and pole only.<br>- Retain all non-lodgepole pine sapling, pole, and sawlog trees less than 9 inches dbh.<br>- Leave all snags greater than 7 inches dbh<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 foot bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. |

| | | | |
|---|---|---|---|
| 8 | 9 acres<br>43 Mbf | Modified Clearcut with Reserves with post and pole harvest | - Tractor harvest.<br>- Protect advanced regeneration as much as practical.<br><br>- Protect submerchantable trees and shrubs as much as practical in RMZ.<br>- Harvest sawlog trees and lodgepole pine post and pole only.<br>- Retain all non-lodgepole pine sapling, pole and sawlog trees and overstory trees less than 9 inches dbh.<br>- Leave all snags greater than 7 inches dbh.<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 feet bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. |
| 9 | 8 acres<br>35 Mbf | Overstory Removal | - Tractor harvest unit.<br>- Protect advanced regeneration as much as practical.<br><br>- SMZs Class 1 along west of unit is also unit boundary. No harvest in SMZ.<br>- RMZ along west of unit.<br>- RMZ is 80 feet wide, extends up to 30 feet east of SMZ/unit boundary flagging.<br>- RMZ harvest of up to 50% of trees possible.<br>- Protect submerchantable trees and shrubs in RMZ.<br>- Harvest sawlog lodgepole pine only.<br>- Leave all snags greater than 7 inches dbh.<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 feet bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. |
| 10 | 7 acres<br>0 Mbf<br>plus Post & Pole | Clearcut with Reserves with post and pole harvest | - Tractor harvest unit.<br><br>- SMZ Class 1 and RMZ along east boundary. No harvest in SMZ.<br>- RMZ is 80 feet wide, extends up to 30 feet east from SMZ flagging.<br>- RMZ harvest of up to 50% of trees possible.<br>- Harvest lodgepole pine post and pole and sawlog trees.<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 feet bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration |
| 11 | 2 acres<br>4 Mbf | Modifed Clearcut with RMZ harvest | - Mostly hand fall, tractor winch harvest unit.<br><br>- SMZ Class 1 and RMZ along east boundary. No harvest in SMZ.<br>- RMZ is 80 feet wide, extends up to 30 feet west of SMZ flagging.<br>- Limited RMZ harvest up to 50% of sawlog trees.<br>- Protect submerchantable trees and shrubs as much as practical within RMZ.<br>- Clearcut w/Reserves from RMZ boundary west (1 acre or less).<br>- Leave all snags.<br>- Leave 4 trees per acre of the largest diameter class (approx. 100 foot bole spacing), of which 2 may be snags (if present).<br><br>- Natural regeneration. |

**NOTES:**

DBH = Diameter at Breast Height
Mbf = Thousand board feet
RMZ = Riparian Management Zone
SMZ = Streamside Management Zone
WMZ= Wetland Management Zone