CHECKLIST ENVIRONMENTAL ASSESSMENT (EA)

Project Name:	Flower Creek Trails
Proposed Implementation Date:	Summer 2019
Proponent:	Lincoln County
Location:	The Flower Creek watershed, Sections 16 & 20, T30N, R31W.
County:	Lincoln

I. TYPE AND PURPOSE OF ACTION

The proponent, Lincoln County, has requested the Montana Department of Natural Resources and Conservation (DNRC) to grant authorization for construction and operation of approximately 8.0 miles of single track trail, use of 2.7 miles of existing roads and trails to be used as trail and the construction of a trailhead.

Granting the proposed authorization, which would require issuance of a Land Use License (LUL), and would permit the proponent to construct, operate and maintain a non-motorized recreation trail complex. The proposed project area is located on state trust lands in the Flower Creek watershed, more specifically described as Sections 16 & 20, T30N, R31W.

The lands involved in this proposed project are held by the State of Montana in trust for Common Schools and Public Buildings per the Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11. The Board of Land Commissioners and 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)*.

II. PROJECT DEVELOPMENT

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

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

Public involvement for the Flower Creek Trails consisted of scoping all adjacent landowners, interested parties, the statewide timber scoping list, FWP, USFS and all Montana tribal organizations as well as public notices run in the Western News.

Opportunities for public comment occurred from July 3 through August 3 of 2018. Sixty-two written, verbal, and email comments were subsequently logged.

Issues Analyzed in Further Detail and Issues Eliminated from Further Analysis with EA Citations and/or Response

Issues/Comments Received	Where Addressed in the EA	Additional Information
Trails and trailhead should be created in a wildlife-friendly manner, i.e. signage and bear proof trash receptacles.	8. Terrestrial, avian and aquatic life and habitats 9. Unique, endangered, fragile or limited environmental resources	
Who pays for construction and ongoing maintenance?	3. Alternatives considered	
Easement holder on segment of State road from end of county road to proposed parking area concerned about increased road maintenance from increased traffic.	3. Alternatives considered	
Established trails have a negative effect on the economics of timber management as it	24. Other appropriate social and economic circumstances	

relates to accommodations that are made to protect trail infrastructure and "forest aesthetics" around established recreation areas. What is the strategy to compensate the Trusts from lost revenue resulting from these accommodations?		
What is the fee structure for the use of the trail system? Would the LUL cover the cost for the public to use these trails without an individual incurring the additional cost of a State lands recreational use permit?	24. Other appropriate social and economic circumstances	Under the terms of an LUL, the proponent must pay $200 per mile of trail per year. Users of proposed trails would be required to possess a "*State Land Recreational Use License*", which is available from any authorized DFWP license agent or through DFWP's online license service at the following web address: https://app.mt.gov/als/index/index.html.
Proposed trails and trailhead will increase traffic, loitering, litter, as well as disrupting wildlife and privacy.	14. Human Health and Safety 20. Access to and quality of recreational and wilderness activities	

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

Montana Department of Fish, Wildlife and Parks (FWP) has jurisdiction over the management of wildlife in the project area, and issuance of Stream Protection Act Permits (124 permit).

Montana Department of Environmental Quality (DEQ) has jurisdiction over burning of slash that may be created in the project area.

U.S. Forest Service (USFS) has jurisdiction over fire suppression in the project area, as well as any cost-share roads' usage.

Permits are also required from the Lincoln County Environmental Health Department to authorize the installation of the proposed vault toilet.

3. ALTERNATIVES CONSIDERED:

No-Action Alternative: Under the No-Action Alternative, no activity would be undertaken. No related trail would be constructed, and no parking lots would be built; sections of the proposed trail corridor that are not located on existing roadbed would remain as productive timber-harvest land.

Action Alternative: The Flower Creek Trail project would be constructed to International Mountain Biking Association (IMBA) standards and operated as a mixed-use, non-motorized (including foot, bike, ski, equestrian) recreational trail as proposed by the proponent. The project would consist of constructing approximately 8.0 miles of new single-track trail and use of 2.7 miles of existing roads and trails. An 80' bridge is proposed to cross Flower Creek 150 feet downstream from lower reservoir allowing the connection of these trails with the historic Norguard trail in the southeast ¼ section of 16. A main trailhead of approximately 1/5th acre would be built to accommodate several parking spaces and a vault toilet and kiosk. The proponent would be required to maintain or improve the surfacing on approximately 400 feet of graveled road from the end of the paved county road to the parking area. Amenities to the project would include both directional and interpretive signing along the trail as well as an informational kiosk, vaulted toilet and graveled or paved parking. The planning and construction of the proposed trail system are being funded by Lincoln County, and Lincoln County (licensee) would be ultimately responsible for ongoing maintenance of the amenities. In the event of the expiration or termination of authorization, these amenities would be required to be removed at the expense of the licensee.

Approximately 8.0 miles of proposed trail would be constructed (with these respective areas being removed from timber production), as well as a parking area (1/5th acre) and sanitation facilities. An approximately 48" wide trail would be centered on the trail corridor that is cleared of trees and stumps to approximately 8' wide and are interspersed with wider trail "bulb-outs" placed approximately every thousand feet, as well as some additional intermittent width as necessary to accommodate the initial trail construction on steeper slopes. These

trail corridors would also be removed from timber production. Some thinning of sub-merchantable timber may occur up to 50' on either side of the trail, to DNRC-designated forest-management standards.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

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

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

No-Action Alternative: No measurable direct, indirect, or cumulative impacts to air quality are anticipated.

Action Alternative: Risk of measurable direct, indirect or cumulative impacts to soil erosion from proposed trail construction is expected to be low. Risk would be increased over the existing condition for approximately 2-3 years until bare soil is re-vegetated. All proposed trails would be constructed on well-drained soils. Installation of surface drainage features on all trail surfaces combined with the well-drained nature of the soils would make the risk of soil erosion low. In addition, all cut- and fill-slopes would be re-vegetated with a site-specific grass seed mix to further reduce bare soil erosion.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

No-Action Alternative: No measurable direct, indirect, or cumulative impacts to air quality are anticipated.

Action Alternative: No measurable direct, indirect or cumulative impacts to water quality from sediment delivery are expected. Two stream crossings are proposed with this project. In the southwest corner of section 16, the proposal would install a 30-foot log stringer bridge that would span approximately 3 feet above the bankfull channel depth. The crossing site selected would require minimal excavation adjacent to the creek, and erosion control measures would be installed to minimize risk of sediment delivery from trails. The crossing on Flower Creek in the southeast portion of section 16 would be located on a stable crossing site approximately 150 feet downstream from the lower reservoir. The proposal would install approximately an 80-100-foot steel bridge that would span the bankfull channel and clear the bankfull depth by approximately 5-6 feet. This would be sufficient to pass a minimum 50-year flood event and pose a low risk of sediment delivery.

Field reconnaissance of proposed trail locations revealed that, other than the two proposed stream crossings, no stream channels within 200 feet of proposed trail construction.

There is a low risk of direct, indirect or cumulative impacts to sediment delivery provided surface drainage features are installed on all trails at regular intervals, and erosion control BMPs are installed at stream crossing locations.

6. AIR QUALITY:

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

No-Action Alternative: No measurable direct, indirect, or cumulative impacts to air quality are anticipated.

Action Alternative: Direct, indirect, and cumulative impacts related to the initial trail and parking lot construction are expected to be minor and temporary, with minor particulate being released during corresponding periods of soil disturbance. Once the trail is completed, traffic on the trail and associated parking lot would increase

intermittently and seasonally over time as public awareness and use of the system increases. The cumulative amount of trail use would be dispersed over the outlying segments of trail.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

Existing Condition:

The corridor of the area where trail work is proposed is characterized by fully regenerated and stocked forestland. Much of the forest consists of plantation and commercially thinned and managed stands dominated by Ponderosa Pine, Douglas-fir and Western larch.

The topography of the area ranges from riparian areas, flat upland forests to well-drained aspects located on the lower slopes of the Cabinet Mountains. The forest productivity is rated high. Common species of ground cover include ninebark, kinnikinnick, twinflower, bunchgrasses and queen cup beadlily.

Past disturbance in the area includes an active history of timber harvesting, wildfires, and substantial dispersed recreational use. There are several unauthorized ATV trails in section 16 that circumvent the road closures. Noxious weeds in the area include spotted knapweed, oxeye daisy, Canada thistle, orange and yellow hawkweed. Most weeds occur on the roadside of the existing roads in the project area.

Direct and Indirect Effects to Vegetation

No-Action Alternative: With the No-Action Alternative, no new trail work would be authorized. No additional forest land would be taken out of timber production. The existing unauthorized trails in the area would likely continue to be used and a moderate increase in use over time may occur consistent with the area's modest population growth. Current uses of the area would continue with the potential of increased recreation in the future. The potential for the spread of noxious weeds would remain and may increase over time with increased recreational use.

Action Alternative: With the Action Alternative, activities such as pruning trees, removing downfall and hazardous trees, and clearing the trail tread of ground cover and other small areas adjacent to the trail that would be used for signs and benches would directly affect vegetation in these areas. The effect to vegetation would occur on a narrow, confined area and the overall vegetation in the general area would not be affected. The exposed areas would have a greater risk of weed infestation. Authorization of the proposed trail would remove approximately 8 acres from timber production and, over time, possibly substantially increase the recreational use of the area. Consequently, there is a risk that more unauthorized trails could be constructed, which would spread more noxious weeds and remove additional acreage from timber production. Potential effects to vegetation include increased opportunity for weed spread. Abiding by the Montana County Noxious Weed Management Act, Mont. Code Ann., 7-22-2101, *et seq.* would be required. DNRC would approve method of control with the minimum requirement being a spring treatment of weeds in the trail corridors during the rosette stage by a certified applicator.

Cumulative Effects to Vegetation

No-Action Alternative:

Ongoing dispersed recreation, past harvesting and road construction in the area have resulted in impacts. These impacts include additional weed infestations and removal of forest acreage to become part of a road system. Recent timber sales *(Flower Creek and Upper Flower Rebid Timber Sale Project EAs)* were planned in the area of the proposed trail, and had been designed by DNRC to have a long-term positive effect on forest growth, vigor, and desired species mix. Additional areas of exposed soil would be created by these projects and would increase the risk of the spread and establishment of noxious weeds. Increased weed management is often implemented with timber sale projects, greatly offsetting the effect, or providing a net benefit.

Action Alternative: Potential cumulative effects to vegetation include increased soil area exposed to weed infestation as the area would receive additional public access and use under recreation management. Another effect related to the construction of Flower Creek Trails is likely to be an increase in the cost and time of managing future timber sales in the area, due to increased complications of arranging logging activities around

recreational corridors and the restoration of recreational trails damaged by logging operations. Past harvesting and road construction in the area have impacted vegetation by allowing additional weed infestations and by removing some acreage from the forest which became part of a road system. Recent timber sales *(Flower Creek and Upper Flower Rebid Timber Sale Project EAs)* were planned in the area of the proposed trail and had been designed to have a positive effect on forest growth, vigor, and desired species mix. Additional areas of exposed soil would be created by these projects and would increase the risk of the spread and establishment of noxious weeds. Increased weed management is often implemented with timber sale projects, greatly offsetting the effect. Managing the trail system in the area under the Land Use License would lead to identification and reclamation of problem weed areas on trails, as well as increased public information that would provide details on how to use the trail responsibly in order to reduce the spread of noxious weeds, unauthorized trails, and human-caused fire.

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

No-Action Alternative: No measurable direct, indirect, or cumulative impacts to terrestrial, avian and aquatic life and habitats are anticipated.

Action Alternative: There is a low risk of low impacts to fish habitat from the proposed project since the only portions of the proposal located within 200 feet of a stream would be the proposed bridges. Only one of these proposed structures is located on Flower Creek and known fish habitat. Since this proposed bridge has a low risk of low impacts to sediment delivery, there is also a low risk of low impacts of that potential sediment delivery affecting fish habitat. For additional information see "Watershed, Hydrology and Fisheries Analysis attachment".

Moderate direct and indirect effects associated with the anticipated risk of disturbance and wildlife conflicts would be expected. Minor adverse cumulative effects associated with the anticipated risk of disturbance and wildlife conflicts would be expected. For additional information see "Wildlife Analysis attachment".

No, negligible, or minor direct, indirect or cumulative impacts would be expected to occur for Bald eagles, Black-backed woodpeckers, Coeur d'Alene salamanders, Columbian sharp-tailed grouse, Common loons, Fishers, Flammulated owls, Gray wolves, Harlequin ducks, Northern bog lemmings, Peregrine falcons, Pileated woodpeckers or Townsend's big-eared bats. Moderate adverse direct and indirect effects and minor adverse cumulative effects to big game animals and spring/winter range quality would be anticipated. For additional information see "Wildlife Analysis attachment".

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

No-Action Alternative: No measurable direct, indirect, or cumulative impacts to threated or endangered species or habitats are anticipated.

Action Alternative: Moderate direct and indirect effects associated with the anticipated risk of disturbance and wildlife conflicts would be expected. Minor adverse cumulative effects associated with the anticipated risk of disturbance and wildlife conflicts would be expected. For additional information see "Wildlife Analysis attachment".

Minor direct, indirect or cumulative impacts would be expected to occur for Canada lynx.
Moderate adverse direct and indirect effects are expected to occur, and minor adverse cumulative effects are expected for Grizzly bear. For additional information see "Wildlife Analysis attachment".

Wildlife Mitigations:

- If a threatened or endangered species is encountered, consult a DNRC biologist and develop additional mitigations that are consistent with DNRC's HCP and the Forest Management Rules for managing threatened and endangered species (*ARM 36.11.428* through *36.11.435*).

- Contractors/Licensee will adhere to food storage and sanitation requirements as per GB-PR3 (*DNRC HCP FEIS Vol. II p. 2-6*).
- Construct trail and maintain trailside vegetation to encourage longer site distances, particularly in riparian areas.
- Post and maintain signs at the trailheads to inform users of the inherent risks of recreating in an area with large carnivores and to educate recreationists of proper behavior around wildlife. Signs should focus on the following:
    - Inform trail-users of risks associated with recreating in grizzly, lion, moose and wolf country.
    - Encourage trail-users to make noise and carry pepper spray.
    - Require trail-users to maintain vocal control over their dogs or keep them on a leash to minimize disturbance to wildlife, particularly big game, wolves, and grizzlies.
    - Require trail-users to properly dispose of garbage to reduce the risk of food-conditioning.
    - Discourage trail-users from approaching wildlife.
    - Include signage specific to mountain biking in grizzly bear habitat as recommended by the IGBC and found here:

      http://igbconline.org/wp-content/uploads/2016/03/160629_BOR_Recomm_Treat_NCDE.pdf

- Provide and maintain bear-resistant garbage containers (as approved by the IGBC) or pack-in-pack out regulations at trailhead to reduce the risk of wildlife attraction or habituation to human activity. Regularly monitor trash and human waste at trailhead areas and require additional measures to secure attractants should conflicts arise.
- Implement a seasonal trail closure in section 20, T30N, R31W from April 1 to June 15. Gate and sign primary trail access points and sign all potential access points. Clearly mark on trailhead maps where seasonal trail closures exist.

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10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine effects to historical, archaeological or paleontological resources.

DNRC staff archaeologist inspected the proposed project area. No heritage properties were identified in the area of potential effect and no additional archaeological investigative work is recommended.

No measurable direct, indirect, or cumulative impacts are anticipated for either the No-Action Alternative or Action Alternative. Should historical archeological or cultural features be discovered during construction, a cultural resource specialist would be notified and work in that area would be suspended until the site can be properly evaluated.

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11. AESTHETICS:

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

Existing Condition:

Upper elevation areas are visible from downtown Libby while the flatter areas are visible only from closely adjoining properties. Due to recent forest management, views from the project area capture lake and mountain scenery. Both Upper and Lower Flower Creek reservoirs are visible from within the project area as well as some panoramas of the Cabinet Mountain Wilderness looking up the Flower Creek drainage.

No-Action Alternative: No measurable direct, indirect, or cumulative impacts to aesthetics are anticipated.

Action Alternative: The proposed trails are anticipated to increase access to positive aesthetic opportunities and scenic locations. One of the proposed trails would run near the Lower Flower Creek reservoir and several locations overlook both Upper and Lower reservoirs and views can be enjoyed looking up the Flower Creek drainage into the Cabinet Mountain Wilderness. Due to the trail layout and location, the trail may be visible to property owners along the north and west sides of section 16 where it borders developed subdivisions. Users of the trails would have a positive aesthetic experience while the state's neighboring small private landowner's aesthetic experiences would be diminished.

A parking area (1/5 acre) and vaulted toilet facilities would be constructed near the north property line approximately 400 feet from the end of Upper Flower Creek Road, a paved county road. The parking area, associated kiosk with signage and vaulted toilet would be visible to those traveling to the end of Upper Flower Creek Road.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

No measurable direct, indirect, or cumulative impacts on resources of land, water, air or energy are anticipated with either the No-Action Alternative or Action Alternative.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

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

- November 8, 2007; Checklist EA for Flower Creek Timber Sale
- May 4, 2010; Checklist EA for Upper Flower Timber Sale
- August 8, 2017; EA for Flower Creek Forest Health and Hazardous Fuels Project, USDA/Forest Service Kootenai National Forest, Libby Ranger District
- November 26, 2018; Checklist EA for Kootenai Cross Country Ski Club Trails

IV. IMPACTS ON THE HUMAN POPULATION

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

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

Existing Condition:

The main access road for this project is Upper Flower Creek Road. It is a narrow, winding, paved county road. This road is used to access approximately 25 single-family residences; numerous recreationalists also use this road to access the project area for dispersed recreation opportunities.

The state trust lands accessed by Upper Flower Creek Road have traditionally been a well-used recreation area, due to close proximity with the City of Libby. The trust lands in this area are classified Forest Land and are regularly managed to provide ongoing revenue to the trust beneficiaries and to maintain desired forest conditions.

The project area falls within the administrative boundary of the Libby Asbestos Superfund Site; and based on the Environmental Protection Agency's (EPA) Site-Wide Human Health Risk Assessment, the proposed action alternative activities do not present an un-acceptable risk to human health.

Direct and Indirect Effects to Health and Human Safety

No-Action Alternative: A moderate related increase in use and traffic may occur over time consistent with the area's population growth.

Action Alternative: As part of this proposal, Upper Flower Creek Road would see an increase in traffic. Lincoln County would manage road standards to safely handle expected traffic. For trail user safety, signs would be required to be posted at the trailhead educating users about safe behavior around wildlife.

Adjacent landowners would experience some adverse effects pertaining to the increased use of the project area and Upper Flower Creek Road. Increased use of the road may lead to increased violation of road regulations such as speeding and parking.

Direct and indirect effects to health and human safety are expected to be minor.

Cumulative Effects to Health and Human Safety

Current and proposed projects that may affect Health and Human Safety within the cumulative effects analysis area include the US Forest Service's Flower Creek timber sale project. Timber harvesting on Forest Service ground in the Flower Creek watershed is slated to occur simultaneously with this project.

No-Action Alternative: There would be less opportunity for interface between timber harvest operations, and recreationalists in the area using the project area and Upper Flower Creek Road. Some risks to human health and safety may be reduced given that the area would be signed and restricted during the harvest process, as well as other mitigations being applied to reduce the risk to health and human safety.

Action Alternative: There would be increased opportunity for interface between timber harvest activities and use of the proposed trail. The area would be signed and restricted during the harvest process, in addition to other mitigation measures that would be applied to reduce the risk to health and human safety; therefore, cumulative effects to health and human safety are expected to be minimal.

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

No measurable direct, indirect, or cumulative impacts to industrial, commercial and agricultural activities are anticipated with either the No-Action Alternative or Action Alternative.

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

No measurable direct, indirect, or cumulative impacts are anticipated for the No-Action Alternative.

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

No known direct, indirect, or cumulative impacts to local and state tax base and revenues are anticipated with either the No-Action Alternative or the Action Alternative.

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

Existing Condition:

Currently there is little appreciable demand for Government Services. The DNRC and USFS share costs for road maintenance under their jurisdiction and Lincoln County maintains roads under their jurisdiction. Law Enforcement is under the jurisdiction of the Lincoln County Sheriff.

Direct, Indirect and Cumulative Effects on Government Services

No-Action Alternative:
Currently, the No-Action Alternative requires some law enforcement efforts when unauthorized use or violations occur within the project area. Road managers maintain road surfaces by pothole patching paved surfaces and grading native and graveled driving surfaces.

Action Alternative: There would be a higher level of commitment from law enforcement to enforce laws pertaining to loitering, vandalism, and littering at the site. Road maintenance would likely need to increase in proportion to increased use. Lincoln County would also bear the expense of maintenance of the trash receptacles and vaulted toilet. An increased presence of law-abiding public users may curtail the opportunities for violators. Public education proposed therein, may also reduce the number of violations and subsequent law enforcement response required to the area. Lincoln County would be covering the cost of the development and maintenance of the trailhead and trail system, it should be expected that this service to the community would be

reflected in the County's Parks and Recreation budget, Road Maintenance budget and Sheriff's office budget; and tax collections to fund those department's budgets may increase.
The potential exists for wildland fires igniting from increased public use of the trail and for additional needs in fire protection. Signage would be installed at trailheads and along the trail as a mitigation to inform users about trail-use safety. Additional mitigations outlined in the existing license include;

- Licensee must obtain and carry for the duration of this License comprehensive general liability insurance coverage with minimum limits of $1,000,000 for each claim or each occurrence.
- Licensee agrees to take all reasonable precautions to prevent and suppress wildland fires. Licensee accepts full responsibility, financial and otherwise, for fires resulting from trail maintenance activities that are authorized by Licensee. Licensee also agrees to assume responsibility, financial and otherwise, for fires caused by Licensee's negligent or willful misconduct.

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

Greater Libby Area Trails Plan (2016):

The Greater Libby Area Trails Plan was created by the Lincoln County, City of Libby, Montana Department of Commerce and the Libby Park board. Its primary goal is to create a complex of trails for both summer and winter usage that is accessible from the City of Libby, providing multiple mountain biking skill level trails as well as hiking, cross country skiing, and snowshoeing in the winter.

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

Existing Condition: The Flower Creek project area, which contains Upper and Lower Flower Creek Reservoirs, mature forests, plantations, old and new logging roads and skid trails, is a prime area for recreation. Flower Creek Road and Upper Flower Creek Roads are main access connection between the City of Libby and the Cabinet Mountain Wilderness. The area does support a vibrant cross-country ski club site in section 20. The primary dispersed recreational uses include snowmobile riding, cross country skiing, hunting, fishing, hiking, berry picking, bicycling, fishing, firewood gathering, target shooting and camping. With the exception of the licensed Kootenai Cross Country Ski Club trails in the south east ¼ of section 20, the state land in the project area has no developed recreation sites. The Kootenai Cross Country Ski Club trailhead and parking area is located on City of Libby property adjacent to state land. This trailhead is used extensively for access to the groomed ski trails on state, city and Forest Service lands.

Direct, Indirect and Cumulative Effects on Recreational Activities
No-Action Alternative:
A moderate increase in dispersed recreational use over time would occur, consistent with the area's population growth. It is probable that there could be a corresponding risk of increased noxious weed spread, littering and garbage problems, diminished privacy to adjacent landowners, human-caused fires, and trespass/vandalism to trust land and neighboring property. The existing unauthorized trails in the area would likely continue to be used.
Action Alternative: The proposed trails would traverse through highly popular hunting areas. There could be a safety concern to users of the trail during prime hunting seasons. A development of this scale would increase by a large measure the available trails designed specifically for these uses. This project is an important piece of that would connect the City of Libby to the existing Kootenai Cross Country Ski trails system and those trails planned to continue south to the Snowshoe mine area.

Adjacent landowners and others may experience adverse effects pertaining to the proposed trailhead and trail construction, and the maintenance, use, and associated activities. Possible adverse effects include; littering and garbage problems, diminished privacy, weed introduction, and human-caused fires. If the trail is not monitored, policed, and maintained, unauthorized use and violations in the area could increase. While a formal

trail system would increase the overall use of the area, active management of the trail use is expected to increase the access to, and quality of, recreational use.

Mitigation measures were developed to offset many of the adverse effects and include:

- The proposed trail route has been specifically engineered and professionally designed to minimize potential mixed-use conflicts, minimize illegal motorized trail use, and provide for safe recreational use. Trail design is consistent with the industry standards developed by IMBA for sustainable trail design and multi-use or shared-use systems, and encompasses design features such as
    - reduced grade percentages to facilitate adequate stopping for bikers,
    - avoiding blind corners,
    - thinning trail corridor vegetation to maintain lines of sight so various users can see each other,
    - providing for multiple "pull-outs" along the trail for users to pass one another or stop and rest along the trail.
- Signage would be installed at trailheads and along the trail to inform users about trail-use safety, procedures, etiquette, and other pertinent information.
- The licensee would be responsible to coordinate and provide for access road maintenance, parking area tidiness, including picking up garbage, checking restrooms for cleanliness and supplies, reporting vandalism and trail maintenance.

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

No measurable impact to density and distribution of population and housing is anticipated under either the No-Action Alternative or the Action Alternative.

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

No measurable disruption of social structures is anticipated as a result of either the No-Action Alternative or the Action Alternative.

The Action Alternative would formalize the use of an area traditionally used by the community for recreation.

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

No impact to cultural uniqueness and diversity is anticipated as a result of either the No-Action Alternative or the Action Alternative.

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

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.

Existing Condition: DNRC has four classifications for state trust surface rights. These classifications are (1) forest, (2) agriculture and grazing, (3) minerals, and (4) real estate. The classifications are based on the lands estimated productivity for highest and best use. The project area is classified forest lands. Currently, classified-forest trust lands in the Flower Creek area generate average timber revenue of approximately $27.00 per acre per year. Current DNRC management allows for stacked uses on trust lands. This allows for the multiple incomes to be generated on tracts of land while broadening the portfolio for compensation to trust beneficiaries.

No-Action Alternative

The No-Action Alternative would leave the proposed trail corridor in timber production and potentially produce approximately $27.00 in average annual per-acre return (without incurring increased costs due to trail-based

2. Provide and maintain bear-resistant garbage containers at trailhead to reduce the risk of attraction or habituation to human activity.
3. DNRC will instate seasonal trail closures in section 20 from April 1 – June 15 and may instate additional temporary closures if conflicts with wildlife occur.

- **Long Term Commitments:** The proponent is committed to long term solutions for timber and weeds management, public and neighbor involvement and user safety. The proponent shall schedule public trail meetings periodically to provide the opportunity for trail users and neighbors to discuss concerns and recommendations. The proponent will be required to be actively involved in providing and maintaining signs and other public information opportunities to address safety issues associated with wildlife conservation and hunting in the project area.
- **Scope of Decision:** Selection of the Action alternative shall not be interpreted as a decision to implement the proponent's proposal in its entirety. Any authorization granted to proponent will remain within the scope of the analysis but may not encompass all of the proposed activities. This environmental analysis establishes the parameters of management decisions and does not dictate management decisions.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

After a review of the project file; scoping documents; project design; this Checklist Environmental Assessment; and, Department policies, standards and guidelines; I find that all the identified resource management concerns have been fully addressed. Specific project design features and various recommendations of the resource management specialists shall be implemented to ensure that this project will fall within the limits of acceptable environmental change. No project activities are being conducted on important fragile or unique sites. 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.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

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

EA Checklist Approved By:	**Name:**	Douglas Turman
	Title:	Unit Manager, MT DNRC Libby Unit
Signature:	Douglas Turman	**Date:** 8/23/19

management issues), however, there would be no annual recreation revenue generated on that same property as provided for in the Action Alternative.

Action Alternative

The proposed trail corridor licensing area of the Action Alternative encompasses approximately 12 acres. While timber harvest would be authorized to continue in some portions of the trail corridor, the amount of timber harvested within the previously-cleared trail corridor is likely to be negligible. Effectively, up to approximately 8 additional acres may be removed from timber production, totaling an annual decline in timber revenue for the project area at a value of approximately $216 per year. Conversely, the recreation revenue generated by the Action Alternative, as outlined in the current Land Use License, would be (at the base fee of $200/mile of trail) about $2,240 per year for the trails, $200 per year for the access road (minimum $200 for any portion of the first mile) and $200.00 per year for the trailhead parking area and vault toilet (calculated at approximately $200.00 per site). $2,640 total annual revenue could be expected with this alternative.

Future timber sales in the project area would likely bear an increased cost (e.g., added restrictions on the timber sale contract in turn increasing the cost to the potential purchaser) due to management issues involved in working around and accommodating recreational trails threading through the sale area. Lincoln County and DNRC, however, are committed to working together to come up with reasonable solutions to reducing these costs. If the timber related trail accommodations became too costly, there are systems in place that would allow the DNRC to charge the licensee for some of the additional costs.

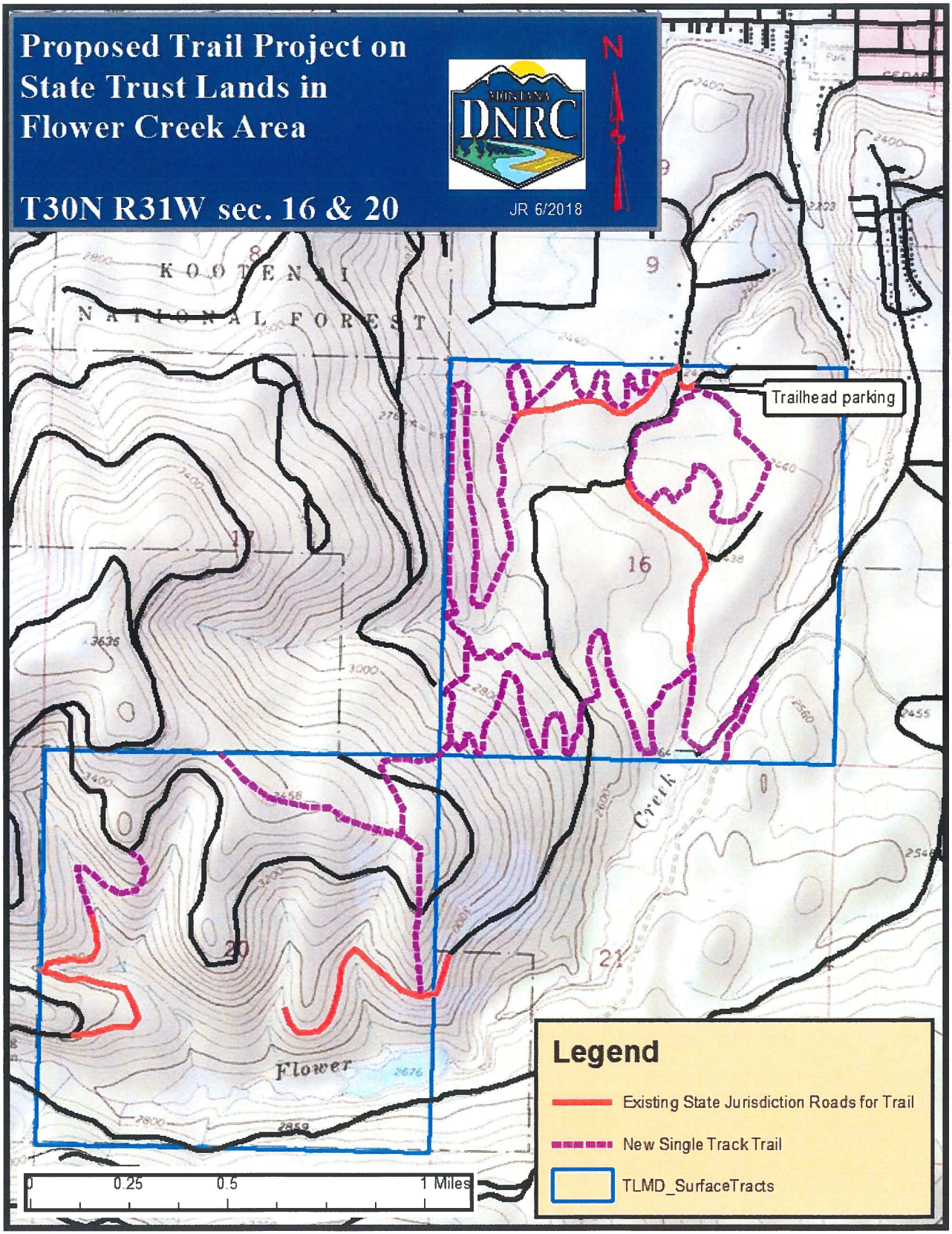
EA Checklist Prepared By:	**Name:**	Jeremy Rank	**Date:**	08/14/2019
	Title:	Service Forester		

V. FINDING

25. ALTERNATIVE SELECTED:

Upon review of The Flower Creek Trails Checklist EA, and associated documents, I find the Action Alternative, as proposed, meets the intent of the project objectives as stated in *Section I – Type and Purpose of Action*. The Action Alternative is designed for the construction and operation of the Flower Creek Trails and Trailhead and associated amenities. The project has been identified in the Greater Libby Area Trails Plan. The trail project is being implemented to provide for a high quality recreational experience for non-motorized use in close proximity to the Libby community and another source of revenue from associated Public Buildings and Common School Trust properties. The Action Alternative would be implemented in a way that addresses the concerns that were identified with the project, including but not limited to the following:

- **Design:** The trail will be built to meet International Mountain Biking Association (IMBA) standards and operated as a mixed-use recreational trail as proposed by the proponent. The trail is designed to provide adequate drainage to avoid erosion or water quality impacts; control speed; provide signage and information as needed; and is located to avoid long excessive steep side slope construction and unnecessary travel through riparian areas. The design will also integrate suitable privacy buffers along shared property lines with private landowners, trail construction alignment and trailside vegetation shall be cleared to encourage longer site distances.
- **Management:** The trail will be operated under a Land Use License that requires an operating plan which is updated periodically. The operating plan requires monitoring and maintenance of trail conditions as well as the management of trailheads and associated amenities such as vaulted toilets, kiosks, public information and litter control. Mitigation to protect wildlife is incorporated into the Land Use License the trail will operate under, including but not limited to:
    1. Educating trail users by maintaining signs at the trailheads to inform users of the inherent risks of recreating in an area with large carnivores and to educate recreationists of proper behavior around wildlife.


Proposed Trail Project on
State Trust Lands in
Flower Creek Area
T30N R31W sec. 16 & 20
DNRC
JR 6/2018
N
KOOTENAI
NATIONAL FOREST
Trailhead parking
16
20
21
Flower
Creek
0 0.25 0.5 1 Miles
Legend
Existing State Jurisdiction Roads for Trail
New Single Track Trail
TLMD_SurfaceTracts

WATERSHED, HYDROLOGY AND FISHERIES ANALYSIS FOR THE FLOWER CREEK BICYCLE TRAILS

INTRODUCTION

Project Area and Project Activities

The gross project area includes approximately 1280 acres near Libby, MT. Affected watershed is Flower Creek. This watershed includes land managed by the Kootenai National Forest, the city of Libby, private ownership and the DNRC. The proposed action alternative would construct approximately 8.0 miles of trails suitable for mountain biking.

Issues and Measurement Criteria

The following issues encompass the specific issues and concerns raised through public comment and scoping of the proposed project.

Sediment Delivery
Sediment delivery from construction and use of trails can lead to water-quality impacts by increasing the production and delivery of fine sediment to streams. Stream crossings are proposed in two locations. With the exception of these crossings, none of the proposed trail use or construction would be located within 200 feet of a live stream.

Fish Habitat
Fish habitat may be affected by construction and use of trails if those activities lead to delivery of fine sediment to fish-bearing streams. Fine sediment delivery to fish-bearing streams can affect spawning gravel and embryo survival.

Analysis Area
Direct, indirect and cumulative effects to sediment delivery will be reviewed in the gross project area.

Analysis Methods
Analysis methods included field reconnaissance which reviewed all proposed trail locations. A qualitative assessment of sediment delivery potential was conducted based on this reconnaissance.

Risk Assessment Criteria
Where risk is assessed in the sediment delivery analysis, the following definitions apply to the level of risk reported:

- low risk means that impacts are unlikely to result from proposed activities,
- moderate risk means that there is approximately a 50-percent chance of impacts resulting from proposed activities, and
- high risk means that impacts are likely to result from proposed activities.

Where levels or degrees of impacts are assessed in this analysis, the following definitions apply to the degree of impacts reported:

- very low impact means that impacts from proposed activities are unlikely to be measurable or detectable and are not likely to be detrimental to the water resource;
- low impact means that impacts from proposed activities would likely be measurable or detectable, but are not likely to be detrimental to the water resource;
- moderate impact means that impacts from proposed activities would likely be measurable or detectable, and may or may not be detrimental to the water resource;
- high impact means that impacts from proposed activities would likely be measurable or detectable and are likely to have detrimental impacts to the water resource.

Relevant Agreements, Laws, Plans, Rules, and Regulations

Montana Surface Water-Quality Standards

According to ARM 17.30.609 (1), portions of the Flower Creek drainage in section 20 are classified as A-1. Among other criteria for A-1 waters, no increases are allowed above naturally occurring levels of sediment or turbidity. According to ARM 17.30.609 (1), portions of the Flower Creek drainage in section 16 are classified as B-1. Among other criteria for B-1 waters, no increases are allowed above naturally occurring levels of sediment, and minimal increases over natural turbidity. "Naturally occurring," as defined by ARM 17.30.602 (17), includes conditions or materials present during runoff from developed land where all reasonable land, soil and water conservation practices (commonly called BMPs) have been applied. Reasonable practices include methods, measures or practices that protect present and reasonably anticipated beneficial uses. These practices include but are not limited to structural and non-structural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after completion of potentially impactive activities.

Water Quality Limited Waterbodies

None of the streams in the proposed project area are currently listed as water-quality-limited waterbodies in the *2018 Montana 303(d)* list.

Montana SMZ Law

By the definition in ARM 36.11.312 (3), Flower Creek is a class 1 stream. Flower Creek has flow for more than 6 months each year, contributes surface water to another body of water and support fish populations. By the Definition in ARM 36.11.312(3) through (5), the tributaries to Flower Creek located in the north and western portions of the project area are class 2 streams. They have a defined channel, generally flow less than six

Sediment Delivery

No measurable direct, indirect or cumulative impacts to water quality from sediment delivery are expected. Two stream crossings are proposed with this project. In the southwest corner of section 16, the proposal would install a 30-foot log stringer bridge that would span approximately 3 feet above the bankfull channel depth. The crossing site selected would require minimal excavation adjacent to the creek, and erosion control measures would be installed to minimize risk of sediment delivery from trails. The crossing on Flower Creek in the southeast portion of section 16 would be located on a stable crossing site approximately 150 feet downstream from the lower reservoir. The proposal would install approximately an 80-100-foot steel bridge that would span the bankfull channel and clear the bankfull depth by approximately 5-6 feet. This would be sufficient to pass a minimum 50-year flood event and pose a low risk of sediment delivery.

Field reconnaissance of proposed trail locations revealed that, other than the two proposed stream crossings, no stream channels are within 200 feet of proposed trail construction.

There is a low risk of direct, indirect or cumulative impacts to sediment delivery provided surface drainage features are installed on all trails at regular intervals, and erosion control BMPs are installed at stream crossing locations.

Fish Habitat

There is a low risk of low impacts to fish habitat from the proposed project since the only portions of the proposal located within 200 feet of a stream would be the proposed bridges. Only one of these proposed structures is located on Flower Creek and known fish habitat. Since this proposed bridge has a low risk of low impacts to sediment delivery, there is also a low risk of low impacts of that potential sediment delivery affecting fish habitat.

months of the year, do not support fish, and contribute surface flow to another body of water. A class 2 stream is defined as a stream that does not meet the criteria for class 1 or class 3 streams.

Forest Management Rules
In 2003, DNRC drafted Administrative Rules for Forest Management. The portion of those rules applicable to watershed and hydrology resources include ARM 36.11.422 through 426. All applicable rules will be implemented if they are relevant to activities proposed with this project.

EXISTING ENVIRONMENT

Introduction
The proposed project lies entirely within the Flower Creek watershed. Precipitation in the gross project area is approximately 30 inches annually.

Sediment Delivery
No sediment delivery was observed in the proposed project area from any existing roads, or in proposed locations of trails. The proposed trail system would require 2 stream crossings. One is located in the southwest corner of section 16. The stream is an intermittent class 2 stream and has an approximately 3-foot bankfull channel with stable bed and banks. The other is on Flower Creek approximately 150 feet downstream from the lower reservoir in the southeast portion of section 16. Below the proposed crossing site, there is some recent bank erosion due to a high flow event from 2016 when the upper Flower Creek dam was being reconstructed. Flows in this reach are a very low risk of flooding due to the presence of two reservoirs immediately upstream to temper high runoff events.

Fish Habitat
Several species of fish were found to inhabit Flower Creek, including hybridized bull trout and westslope cutthroat trout during a survey in 2012. Species identified include: brook trout, brook/bull trout hybrid, longnose dace, rainbow/cutthroat trout hybrid, sucker, torrent sculpin, slimy sculpin and westslope cutthroat trout. No fish habitat survey data were found for Flower Creek.

ENVIRONMENTAL EFFECTS

Direct, Indirect and Cumulative Effects of No-Action Alternative A
No measurable direct, indirect or cumulative impacts to water quality or fish habitat from sediment delivery are expected.

Direct, Indirect and Cumulative Effects of Action Alternative B

WILDLIFE ANALYSIS

INTRODUCTION

The wildlife analysis is designed to disclose the existing condition of wildlife resources and the anticipated direct, indirect, and cumulative effects that may result from implementing the No-Action and Action alternatives. The following issue statements were developed from concerns raised by DNRC specialists and comments received during scoping and will be addressed in the following analysis:

- **Human Access.** The proposed trail construction, maintenance, and use of the trail by recreationists and their pets could increase disturbance to wildlife near the trail, which could displace wildlife and adversely affect habitat.
- **Human-wildlife Conflicts.** The proposed trail construction, maintenance, and use could increase litter and garbage, which could attract wildlife species and/or habituate wildlife; creating potential for increased conflicts.
- **Grizzly bears.** The proposed trail construction, maintenance, and use could reduce visual screening and increase human access, which could adversely affect bears by displacing them from important habitats and/or increase the risk of human-caused bear mortality.
- **Big game.** The proposed trail construction, maintenance, and use could disturb or displace big game species, reducing the quality of spring habitat and winter range habitat.

ANALYSIS AREAS

Direct and Indirect Effects

The direct and indirect effects of the proposed activities on all species/issues were analyzed within the project area which consists of 1,282 acres of DNRC-managed lands in Sections 16 & 20, T30N, R31W. These two sections share a corner with each other, but no borders. Neighboring landowners are the USDA Forest Service (USFS), the city of Libby and other private landowners. Both parcels contain segments of Flower Creek, a perennial fish-bearing stream with mature riparian vegetation.

Cumulative Effects

The cumulative effects of the proposed activities on all species/issues were analyzed at a broad surrounding landscape scale that varies according to the issue or wildlife species being discussed. Cumulative effects analysis areas (CEAAs) include the project area as well as lands managed by other agencies and private landowners. In general, CEAAs were delineated to approximate the size of a focal species' home range or to approximate a surrounding landscape in which the proposed activities could most likely have measurable cumulative effects to the species, habitat or issue examined.

ANALYSIS METHODS

Analysis methods are based on DNRC State Forest Land Management Rules, which are designed to promote biodiversity. The primary basis for this analysis included information obtained by: field visits, review of scientific literature, Montana Natural Heritage Program (MNHP) data queries, DNRC Stand Level Inventory (SLI) data analysis, aerial photograph analysis, and consultation with other professionals. The coarse-filter wildlife analysis section includes analyses of the direct, indirect and cumulative effects of the proposed alternatives on old growth forest, connectivity of mature forest habitats, snags and coarse woody debris, human access and potential for wildlife conflicts. In the fine-filter analysis, individual species of concern are evaluated. These species include wildlife species federally listed under the Endangered Species Act, species listed as sensitive by DNRC, and species managed as big game by DFWP.

Cumulative effects analyses account for known past and current activities, as well as planned future agency actions. Ongoing non-timber sale activities in the cumulative effects analysis areas include:

- South Flower Creek cross-country ski trails (DNRC and USFS)
- USFS Flower Creek Fuels Reduction Project

RELEVANT AGREEMENTS, LAWS, PLANS, RULES, AND REGULATIONS

Legal documents dictate management criteria for the management of wildlife and their habitat on state lands. The documents most pertinent to this project include: *DNRC Forest Management Rules*, *DNRC Forested Trust Lands Final Environmental Impact Statement and Habitat Conservation Plan (USFWS and DNRC 2010)*, the *Endangered Species Act*, the *Migratory Bird Treaty Act*, and the *Bald and Golden Eagle Protection Act*.

COARSE-FILTER WILDLIFE ANALYSIS

TABLE W-1 –COARSE-FILTER. Analysis of the anticipated effects for coarse-filter resource topics for the Flower Creek Trails Proposal.

COARSE-FILTER RESOURCE TOPIC	COARSE-FILTER ANALYSIS
Old Growth Forest	There is no old-growth forest located within the project area. Thus, no direct, indirect or cumulative effects to old-growth forest would be anticipated.
Connectivity of Mature Forest Habitat	Trail construction would create small openings to accommodate the new trail and proposed trailhead. However, the majority of the project area is comprised of open forest stands (<40% mature tree canopy cover) harvested within the last 10 years. Additionally, the trail would be designed such that few trees > 8 inches diameter would be removed. Given the small spatial scale of proposed tree removal and the lack of mature forest stands in the project area, the availability of this habitat is not expected to be affected by the proposed activities. Thus, negligible adverse direct, indirect or cumulative effects on species sensitive to removal of mature forest cover would be anticipated.
Snags and Coarse Woody Debris	Some individual snags and downed logs could be removed due to trail construction. However, all existing snags would be retained where they do not pose a safety hazard and coarse woody debris would be retained in amounts that would meet or exceed those recommended by *Graham et al. 1994*. Thus, negligible adverse direct, indirect and cumulative effects on species that depend on these resources would be anticipated.
Human Access & Potential for human-wildlife conflicts	***Detailed Analysis Provided Below*** – The proposed trail and trailhead construction would increase human access and the potential for human-wildlife conflicts in the project area.

WILDLIFE HABITAT ALTERED WITH HUMAN ACCESS

Issue: The proposed trail construction, maintenance, and use of the trail by recreationists and their pets could increase disturbance to wildlife near the trail, which could displace wildlife.

Issue: The proposed trail construction, maintenance, and use could increase litter and garbage, which could attract wildlife species and/or habituate wildlife creating potential for increased conflicts.

Introduction

Recreational activities on public lands have the potential to adversely affect wildlife by causing avoidance behavior, or conversely, causing habituation or food-related attraction to humans and associated development. The responses of individual animals may range from increased alertness to flight, which adversely affects energy budgets by causing the animal to allocate energy that could be used for feeding or breeding activities to increased vigilance or flight. Over time, disturbance may lead to temporary or permanent displacement from preferred habitat, lower population levels, or changes in the composition of

wildlife communities. Some wildlife may shift the timing of their daily behaviors to avoid the area during times when humans are using the trails (*Parsons et al. 2016; Reilly et al. 2017*). Furthermore, the area affected is not limited to the narrow trail corridor but extends considerably further into the area surrounding the trail. The area affected by disturbance depends upon the wildlife species under consideration and may be further extended if dogs accompany recreationists (*Miller et al. 2001; Banks and Bryant 2007; Parsons et al. 2016*). Important factors in the response of wildlife to disturbance include the type of activity, the predictability of the activity, the frequency and magnitude of the activity, timing, the relative location, vegetative cover present, and the type of animal (*Joslin and Youmans 1999*). Wildlife are often more sensitive to disturbance during specific seasons, such as winter (*Larson et al. 2016*) and especially the breeding season. Management considerations for reducing the impact of humans on wildlife in recreational areas include reducing the risk of disturbance and displacement of wildlife by locating trails in areas that are not important wildlife habitat and reducing the potential for conflicts with wildlife by encouraging control of dogs and by encouraging proper disposal of wildlife attractants such as garbage (*Joslin and Youmans 1999*).

Analysis Methods

Analysis methods include Geographical Information System (GIS) analysis of aerial-photographs, DNRC stand level inventory data (SLI), and field evaluations. Factors considered in the analysis include: 1) the miles of trail constructed, 2) level of human access, 3) risk of displacement of wildlife, and 4) the likelihood of introducing wildlife attractants. Additional information related to the affect of human access on specific wildlife species can be found in the fine filter section.

Existing Conditions

Disturbance & Conflicts

Portions of the project area are currently subject to moderate levels of disturbance to wildlife in the form of hiking, fishing, biking, firewood gathering, snowmobiling, and hunting. Section 16 sits in the wildland-urban interface; with more neighboring human development and recreational use, while section 20 receives some recreational use and motorized traffic but is slightly more remote. Approximately 1.7 miles of open and seasonally open road occur in the project area. Approximately 3.0 miles of existing restricted road (primarily in section 16) likely receives moderate amounts of non-motorized recreational use due to ease of access and proximity to adjacent neighborhoods. Another 3.7 miles of restricted road undergo occasional or rare non-motorized recreational use. Additionally, private residences are located to the north and west of section 16. The highest density of homes and associated disturbance/attractants occurs near the north-central border of section 16, within 500 feet of the proposed trailhead construction. Motorized access to the area is facilitated by the open Upper Flower Creek Road and the seasonally open Flower Lake Road (Forest Rd #128). Open road density in the project area is 0.9 miles/square mile and the density of open and restricted roads is 4.2 miles/square mile. Cross-country skiing and grooming activities are present on 0.8 miles of trail in section 20; some non-winter recreational use likely occurs on these trails as well. Timber harvesting has occurred on approximately 1,058 acres (82.5% of the project area) within the last 10 years, resulting in 981 acres of open forest generally possessing less than 40% overstory and little understory vegetative screening. Overall, escape cover is low within the project area but limited amounts of topographic screening for wildlife is present.

The cumulative area is characterized by human development associated with the townsite of Libby to the north and east, and USFS lands to the south and west. Like the project area, the primary sources of disturbance are hiking, fishing, biking, firewood gathering, ATV/UTV riding, snowmobiling, and hunting. Levels of human activity, disturbance and potential food attractants are highest in close proximity to the town of Libby and decrease as you move farther to the south and west. Road density follows the same pattern and drops off quickly moving west of the project area. The Cabinet Mountain Wilderness Area boundary is located 2-3 miles west of section 20. While lands in and directly adjacent to the wilderness boundary do not contain any roads, hiking trails traverse up most drainages and serve as a minor source of human disturbance in otherwise secure habitat.

Environmental Effects

Direct and Indirect Effects of the No-Action Alternative on Disturbance & Risk of Conflicts

None of the proposed trail construction and associated activities would occur. Existing levels of disturbance and potential for conflicts would not change. Thus, since: 1) no change in the level of human access would occur, 2) the risk of altering wildlife use of the project area would not change, and 3) the risk of introducing attractants would not change, no direct or indirect effects associated with the anticipated risk of disturbance and wildlife conflicts would be expected as a result of the No-Action Alternative.

Direct and Indirect Effects of the Action Alternative on Disturbance & Risk of Conflicts

Under the Action Alternative, approximately 8.0 miles of new trails would be constructed and 6.5 miles of trail on restricted road or existing social trail would be formalized within the project area. A trailhead would also be constructed. Human access and disturbance levels would increase throughout the project area. New trail construction would temporarily disturb and displace wildlife throughout most of the project area. Long term, the trails would facilitate hiking, running, biking, and equestrian uses, increasing the risk of wildlife disturbance, displacement, or altered habitat use. A 100-meter (328 foot) buffer around trails was used to estimate the potential disturbance zone of wildlife species sensitive to human presence (Fortin et al. 2016, Lenth et al. 2008, Parsons et al. 2016, Taylor and Knight 2003). After removing the disturbance effect of open roads within and adjacent to the project area, the action alternative could increase levels of wildlife disturbance across 472 acres (36.8% of the project area) currently receiving low levels of disturbance. New trail construction would create new, long-term disturbance on an additional 278 acres (21.7%) of the project area. The total potential disturbance footprint for proposed trails under the Action Alternative would be approximately 750 acres or 58.5% of the project area. Elevated long-term disturbance levels may cause some animals to avoid the area or to alter their diurnal patterns of use. Other wildlife could become habituated to human use or become attracted to the area if attractants (e.g. garbage) provide food rewards. Providing bear-resistant trash receptacles and educating trail-users about packing out their garbage would reduce this risk of causing wildlife to become attracted to humans. However, in general, the risk of wildlife/human conflicts would increase in the area. Although most of the trails would be located in areas that receive wildlife use but are not known to be of particularly high importance (see the fine filter section for additional details relevant to specific wildlife species), approximately 0.7 miles of trail would past through riparian areas with more dense vegetation. There would likely be an increased risk of wildlife disturbance and/or conflict on these 0.7 miles of trail compared to the rest of the trail system. Trails within section 20 (5.3 miles) would be closed during the spring period (April 1 – June 15) to provide security and reduce disturbance to wildlife. Conflicts could be reduced by requiring leashes for dogs or, less effectively, encouraging dog owners to control their dogs vocally, which would decrease the area disturbed by trail-users and reduce the potential for dogs to chase or harass wildlife. Educational signs at the trailhead would be put in place and maintained to inform users of the inherent risks of recreating in an area with potentially dangerous wildlife and educate trail-users of proper behaviors around wildlife including proper disposal of wildlife attractants. Thus, since: 1) 14.5 miles of trail would be established, increasing the level of human access; 2) additional long-term disturbance/displacement of some wildlife could occur on 58.5% of the project area, however some species would likely habituate to human presence or alter their daily activity patterns and continue use of the area; 3) 5.3 miles of trail in section 20 would be closed during the spring period, providing some seasonal security for wildlife; 4) the risk of altering wildlife use of the project area would increase, but would be partially mitigated by leash requirements and/or educational signs encouraging control of dogs and appropriate behaviors around wildlife; and 5) the risk of introducing attractants would increase, but would be mitigated to some extent by educating trail-users and proper garbage disposal/removal; moderate direct and indirect effects associated with the anticipated risk of disturbance and wildlife conflicts would be expected as a result of the Action Alternative.

Cumulative Effects of the No-Action Alternative on Disturbance & Risk of Conflicts

None of the proposed trail construction and associated activities would occur. Existing levels of disturbance and potential for conflicts would not change. Any proposed or ongoing activities within the cumulative effects analysis area could affect the risk of disturbance and wildlife conflict. Thus, since: 1)

no change in the level of human access would occur, 2) the risk of altering wildlife use of the project area would not change, and 3) the risk of introducing attractants would not change, no cumulative effects associated with the anticipated risk of disturbance and wildlife conflicts would be expected as a result of the No-Action Alternative.

Cumulative Effects of the Action Alternative on Disturbance & Risk of Conflicts

Under the Action Alternative, approximately 8.0 miles of new trails would be constructed and 8.6 miles of trail on restricted road or existing social trail would be formalized within the cumulative effects analysis area (CEAA). Total mileage for the trail "system" would be approximately 16.6 miles, which would have a potential disturbance/displacement footprint of 941.0 acres. Of these 16.6 miles, 8.6 miles on existing restricted road or social trail already receive low levels of nonmotorized recreational use. Recreational use of these trails and roads would increase considerably. Increased levels of human access for recreation would be additive to the current level of recreation including hiking, biking, fishing, skiing and hunting, including 0.8 miles of existing formalized trail within section 20 of the project area. Nonmotorized recreational use of 4.0 miles of seasonally open roads connected to the trail system would also likely increase. Wildlife disturbance and potential displacement under the Action Alternative would be additive to existing sources of disturbance, both motorized and nonmotorized, present within the CEAA. Species with larger home ranges would still find ample habitat relatively free of disturbance to the west and south, particularly in the nearby wilderness area. Educational signs at the trailhead would inform users of the inherent risks of recreating in an area with large carnivores and educate trail-users of proper behaviors around wildlife including proper disposal of wildlife attractants, reducing the potential for disturbance and human-wildlife conflicts. Additionally, pack-in-pack-out garbage disposal requirements or bear-resistant garbage cans would be installed at trailheads to minimize the risk of wildlife becoming attracted to trails due to food rewards. Human settlements and livestock associated with the town of Libby would remain as the greatest source of wildlife attractants and potential conflict within the CEAA. Thus, since: 1) a 16.6-mile trail system would be created, increasing the level of nonmotorized human access; 2) the risk of altering wildlife use of the CEAA adjacent to the trail system would increase, but would be reduced by educational sings encouraging control of dogs and appropriate behaviors around wildlife; 3) much of the CEAA would remain relatively free of roads, trails and associated human disturbance; and 4) the risk of introducing attractants would increase, but would be partially mitigated by educating trail-users and requiring proper garbage disposal; minor adverse cumulative effects associated with the anticipated risk of disturbance and wildlife conflicts would be expected as a result of the Action Alternative.

FINE-FILTER WILDLIFE ANALYSIS

The fine-filter wildlife analysis discloses the existing conditions of wildlife resources and the anticipated direct, indirect, and cumulative effects that may result from the No-Action and Action alternatives. Wildlife species considered include: 1) species listed as threatened or endangered under the Endangered Species Act of 1973, 2) species listed as sensitive by DNRC, and 3) species managed as big game by DFWP. TABLE W-2 –FINE-FILTER provides an analysis of the anticipated effects for each species.

TABLE W-2 –FINE-FILTER. Status of species considered in the fine-filter wildlife analysis and effects assessments for the Flower Creek Trails Project. For several species, more detailed analysis is provided below where indicated.

SPECIES/HABITAT	EFFECTS ASSESSMENT
THREATENED & ENDANGERED SPECIES	

Canada lynx (*Felis lynx*) Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zones	The project area contains 257 acres of suitable lynx habitat, however the 1,282-acre project area consists primarily of unsuitable habitat. The proposed trail project would remove some trees and snags adjacent to suitable lynx habitat along approximately 0.7 miles of new trail construction. The proposed trail construction would not change the classification of lynx habitat types. Increased human access to the area and the presence of dogs could disturb lynx; however, due to the prevalence of unsuitable habitat and proximity to human development, appreciable use of the project area by lynx would not be expected. Additionally, elevation and snow loads in the project area would suggest the majority of lynx activity in the area is likely to occur in the winter, when trail use would be minimal. If a lynx den is discovered in the vicinity of the trail, a temporary trail closure would be instated. Thus, since only 0.7 miles of trail would be constructed in lynx habitat, the structure of lynx habitat would not change, and risk of disturbance is minimal, low direct, indirect, and cumulative effects to lynx would be anticipated as a result of the Action Alternative.
Grizzly bear (*Ursus arctos*) Habitat: Recovery areas, security from human activity	***Detailed Analysis Provided Below*** – Section 20 of the project area is located in grizzly bear recovery zone habitat and non-recovery occupied habitat associated with the Cabinet-Yaak Ecosystem (*USFWS 1993, Wittinger 2002*).
SENSITIVE SPECIES	
Bald eagles (*Haliaeetus leucocephalus*) Habitat: Late-successional forest less than 1 mile from open water	A portion of the proposed activities are located within the home range of a bald eagle pair associated with Libby Creek. The last reported nest site was approximately 1.3 miles from the project area. A few trees and snags would be removed to construct the trail, but this would not occur in areas preferred by eagles. The project area is not located within known bald eagle flight paths, but bald eagles may forage at two water impoundments along Flower Creek. However, the likelihood of disturbing bald eagles in this area is minimal due to the presence of visual screening and distance between the trail and Flower Creek. Thus, negligible direct, indirect, and cumulative effects to bald eagles would be anticipated as a result of the Action Alternative.
Black-backed woodpeckers (*Picoides arcticus*) Habitat: Mature to old burned or beetle-infested forest	No recently (<5 years) burned areas occur in the project area. Thus, no direct, indirect, or cumulative effects to black-backed woodpeckers would be expected to occur as a result of either alternative.

Coeur d'Alene salamanders (*Plethodon idahoensis*) Habitat: Waterfall spray zones, talus near cascading streams	No moist talus or streamside talus habitat occurs in the project area. Thus, no direct, indirect, or cumulative effects to Coeur d'Alene salamanders would be expected to occur as a result of either alternative.
Columbian sharp-tailed grouse (*Tympanuchus Phasianellus columbianus*) Habitat: Grassland, shrubland, riparian, agriculture	No suitable grassland communities occur in the project area. Thus, no direct, indirect, or cumulative effects to Columbian sharp-tailed grouse would be expected to occur as a result of either alternative.
Common loons (*Gavia immer*) Habitat: Cold mountain lakes, nest in emergent vegetation	No suitable lakes occur within 500 feet of the project area. Flower Creek Dam does not provide suitable nesting habitat for loons due to artificial water fluctuations. Thus, no direct, indirect or cumulative effects to common loons would be expected to occur as a result of either alternative.
Fishers (*Martes pennanti*) Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian	Approximately 170 acres of suitable fisher habitat occur within the project area. Unsuitable cover types are prevalent in the project area, however fishers could move through the area along riparian habitat associated with Flower Creek. The proposed activities would remove a few trees and snags located adjacent to approximately 0.7 miles of new trail construction. Approximately 0.3 miles of proposed trail would cross Flower Creek riparian habitat, which could temporarily disturb any fishers that may be present. However no fishers have been reported within 5 miles of the project area (MNHP 2019). Following trail construction, human activity would increase in the area; however, due to the small amount of new trail construction and current accessibility of the area provided by existing restricted roads, the risk of trapping mortality is not expected to increase. Thus, since the proposed activities would have a minimal effect on the structure of fisher habitat and human activity is unlikely to increase trapping mortality, but a minor amount of fisher disturbance/displacement is possible, low direct, indirect and cumulative effects to fishers would be expected to occur as a result of the Action Alternative.

Flammulated owls (*Otus flammeolus*) Habitat: Late-successional ponderosa pine and Douglas-fir forest	Approximately 248 acres of suitable flammulated owl habitat occur within the project area. New trail construction could remove a few trees and snags, but flammulated owl habitat would not be appreciably affected. A trail closure from April 1 until June 15 would reduce potential disturbance in most of the suitable habitat during the early part of the breeding season. Additionally, flammulated owls are relatively tolerant of human disturbance and nest abandonment is rare (*McCallum 1994*). Given tolerance of flammulated owls to disturbance, a spring closure on most trails in breeding habitat, and habitat quality would not be appreciably altered, low direct, indirect, and cumulative effects to flammulated owls would be expected to occur as a result of the Action Alternative.
Gray wolves (*Canis lupus*) Habitat: Ample big game populations, security from human activities	The proposed project area does not occur within a known wolf pack home range. While use of the area by wolves is possible, adjacent home sites, open roads and some existing recreational disturbance makes substantial use by wolves unlikely. Should a potential den or rendezvous site be discovered, appropriate mitigations would be enacted to minimize disturbance to wolves during the breeding season. Anticipated changes to big game presence in the area would not be anticipated to appreciably affect wolves during the wolf breeding season. Thus, negligible direct, indirect or cumulative effects to gray wolves would be expected to occur as a result of either alternative
Harlequin ducks (*Histrionicus histrionicus*) Habitat: White-water streams, boulder and cobble substrates	No potentially suitable habitat occurs within the project area. Flower Creek is not a high-gradient stream in the project area and no harlequin ducks have been noted using it (MNHP 2019). Thus, no direct, indirect or cumulative effects to harlequin ducks would be expected to occur as a result of either alternative.
Northern bog lemmings (*Synaptomys borealis*) Habitat: Sphagnum meadows, bogs, fens with thick moss mats	No suitable sphagnum bogs or fens occur in the project area. Thus, no direct, indirect, or cumulative effects to northern bog lemmings would be expected to occur as a result of either alternative.
Peregrine falcons (*Falco peregrinus*) Habitat: Cliff features near open foraging areas and/or wetlands	No suitable cliffs/rock outcrops for nest sites occur in the project area or within 0.5 miles of the project area. Thus, no direct, indirect, or cumulative effects to peregrine falcons would be anticipated as a result of either alternative.

Pileated woodpeckers (*Dryocopus pileatus*) Habitat: Late-successional ponderosa pine and larch-fir forest	Approximately 85 acres of suitable pileated woodpecker habitat occur in the project area. The proposed activities could remove a few trees and snags from suitable pileated woodpecker habitat located adjacent to approximately 0.3 miles of trail. All snags that do not pose a safety hazard would be retained. Human activity would increase in the area following trail construction; however, pileated woodpeckers are fairly tolerant of human disturbance (*Bull and Jackson 1995*). Thus, since the proposed activities would have a minimal effect on the structure of pileated woodpecker habitat and human activity is unlikely to adversely affect productivity, negligible adverse direct, indirect, and cumulative effects to pileated woodpeckers would be anticipated.
Townsend's big-eared bats (*Plecotus townsendii*) Habitat: Caves, caverns, old mines	No suitable caves or mine tunnels are known to occur in the project area. Thus, no direct, indirect or cumulative effects to Townsend's big-eared bats would be expected to occur as a result of either alternative.
BIG GAME	
Elk (*Cervus canadensis*)	***Detailed Analysis Provided Below*** – The project area contains 1,282 acres of potential elk, moose, and mule deer winter range habitat as identified by Montana Fish, Wildlife, and Parks (*DFWP 2008*). Approximately 640 acres of white-tailed deer winter range is also present (*DFWP 2008*).
Moose (Alces alces)	
Mule Deer (*Odocoileus hemionus*)	
White-tailed Deer (*Odocoileus virginianus*)	

THREATENED AND ENDANGERED SPECIES

GRIZZLY BEAR

Issues:

The proposed trail construction, maintenance, and use could reduce visual screening and increase human access, which could adversely affect bears by displacing them from important habitats.

Use of the trail, particularly by mountain bikers, could increase the risk of bear/human conflicts and human-caused bear mortality.

Introduction

Grizzly bears are opportunistic omnivores that inhabit a variety of habitats in Montana. Preferred grizzly bear habitats include avalanche chutes, fire-mediated shrub fields, and riparian areas, all of which provide seasonal food sources (*Servheen 1983, McLellan and Hovey 2001*). Grizzly bears are currently listed as "Threatened" under the *Endangered Species Act of 1973* and primary threats are related to human-bear conflicts and long-term habitat loss associated with human development. Human-caused deaths have been the leading cause of grizzly bear mortality in the Cabinet-Yaak Ecosystem; hence, reducing the potential for human-grizzly conflicts is especially important (*Kasworm et al. 2017*). Keeping bears from consuming unnatural foods is the most important factor in reducing human-bear conflicts and bear mortalities. However, human recreation can also result in bear deaths. For instance, a female grizzly

bear was shot and killed by hikers in the Cabinet Mountains in early August of 2019 (*MFWP news release*). There are an estimated 55 grizzly bears in the Cabinet-Yaak Ecosystem, indicated that grizzly bear density is very low (*Annis 2018*). A number of studies have documented disturbance and displacement of grizzly bears associated with human use of trails and roads (*Jope 1985, McLellan and Shackleton 1989, Mace and Waller 1996, Waller and Servheen 2005, Coleman et al. 2013; Fortin et al. 2016*). The response of grizzly bears to human disturbance can vary based on the surrounding habitat, season, as well as the gender and reproductive status of the bear (*Moen et al. 2012, Sahlén et al. 2015, Støen et al. 2015*). Management considerations for constructing recreational trails in grizzly bear habitat include the amount of visual screening, the location of seasonally important habitat, encouraging proper disposal of attractants, and educating recreationist on behaviors to reduce risk of encounters in bear country.

Analysis Area

The analysis area for direct and indirect effects is the 1,282-acre project area (FIGURE W-1 –ANALYSIS AREAS). The analysis area for cumulative effects is the 54,470-acre cumulative effects analysis area depicted in FIGURE W-1 –ANALYSIS AREAS. The cumulative effects analysis area is centered on the project area and is defined according to geographic features (i.e., ridgelines, watershed boundaries), which bound a reasonable analysis area for grizzly bears.

Analysis Methods

Analysis methods included field evaluations, Geographical Information System (GIS) analysis of SLI data, consultation with wildlife professionals, and aerial photograph interpretation. To estimate the size of the area where bears could be displaced, the proposed trails were buffered by 100-meters (330 feet). This distance as selected based upon peer-reviewed research examining non-motorized effects of humans on bears (*Moen et al. 2012, Coleman et al. 2013; Sehlen et al. 2015, Fortin et al. 2016*). Factors considered in the analysis included: 1) the level of human access, 2) the availability of visual screening cover, 3) the location of important seasonal habitat, 4) and risk of displacement or conflict.

Existing Conditions

Grizzly Bears

A portion of the project area is located within grizzly bear recovery zone habitat and non-recovery occupied habitat (NROH) associated with the Cabinet-Yaak Ecosystem (hereafter CYE, *Wittinger 2002*). NROH consists of occupied areas near grizzly bear recovery zones in Montana that were mapped by grizzly bear researchers and managers to account for increased sightings of grizzly bears outside of recovery zones. Section 20 of the project area is comprised of 631 acres of NROH and 10 acres of recovery zone. Section 16 contains approximately 1.5 acres of NROH in the southwest corner of the section. The project area is located east of the Cabinet mountains in low elevation habitat. Riparian habitat associated with Flower Creek and a couple of intermittent Class 2 streams likely provide the only suitable foraging habitat for bears. Other important grizzly bear habitats, including fire-mediated shrub fields and avalanche chutes, were not observed within the project area. Much of the project area (928.3 acres, 72.4%) consists of open forest with widely scattered mature trees and hiding cover is lacking. Extensive use of the project area by bears, especially in section 16, would not be expected due to close proximity to human development, low numbers of bears across the ecosystem, some existing recreational use, lack of sizeable berry patches, and low amounts of hiding cover. Open and seasonally open road density in the project area is 0.4 miles/square mile and total road density is 4.3 miles/square mile. See the "WILDLIFE HABITAT ALTERED WITH HUMAN ACCESS – Existing Conditions" section in this document for more details regarding human disturbance and use in the project area. Private property and residences are located adjacent to the project area, resulting in elevated levels of disturbance and risk of habituation or attraction to human activity.

The cumulative effects analysis area is also located within grizzly bear recovery zone habitat and non-recovery occupied habitat (NROH) associated with the CYE (*Wittinger 2002*). This majority of the area consists of forested habitats relatively uninfluenced by human developments and contains a variety of preferred grizzly bear habitats (berry fields, riparian areas, etc). The area is owned primarily by the USFS (49,699 acres), Weyerhaeuser (2,808 acres) Montana DNRC (1,282 acres), and small private landowners

around Libby. Approximately 20,504 acres of the CEAA is USFS wilderness area. Open road density in the large cumulative effects analysis area is >0.0 miles/square mile and total road density is 0.2 miles/square mile. Overall, security for bears is high in most of the CEAA (due to wilderness area and low road densities), with the greatest risks for bears being human development and associated attractants near Libby.

Environmental Effects

Direct and Indirect Effects of the No-Action Alternative on Grizzly Bears

None of the proposed activities would occur. No trail construction or changes to grizzly bear habitat would occur. Thus, since: 1) the level of human access to the area would not change, 2) the availability of visual screening would not change, 3) preferred seasonal habitat would not be affected, and 4) the risk of displacement or conflict would not change; no direct or indirect effects associated with grizzly bear displacement or human-caused bear mortality risk would be anticipated as a result of the No-Action Alternative.

Direct and Indirect Effects of the Action Alternative on Grizzly Bears

Under the Action Alternative, approximately 8.0 miles of new trails would be constructed and 6.5 miles of trail on restricted road or existing social trail would be formalized within the project area. A trailhead would also be established on section 16, outside of NROH. Approximately 5.3 (1.7 miles new construction, 0.3 miles on existing road bed) of these miles would be located within NROH habitat. Some trees, snags, and brush would be removed during trail construction, but minimal effects to visual screening availability are anticipated. Trail construction and formalization would increase recreational use of the area substantially, particularly hiking and mountain biking. After removing the disturbance effect of open roads within and adjacent to the project area, the action alternative could increase levels of wildlife disturbance for grizzly bears across 472 acres (36.8% of the project area) currently receiving low levels of disturbance. New trail construction would create new, long-term disturbance on an additional 278 acres (21.7%) of the project area. The total potential disturbance footprint for proposed trails under the Action Alternative would be approximately 750 acres or 58.5% of the project area. Approximately 330 acres of potential disturbance/displacement could occur in NROH, but none of it in recovery zone. Recreational use of the trail system would likely increase over time, but potentially increasing disturbance would be partially offset by regeneration and growth of recently managed forest stands in the project area. Approximately 928 acres of additional hiding cover would likely be restored within the next 15 to 20 years. Additional grizzly bear hiding cover and security come with a trade-off, as the potential for a surprise encounter and potential conflict would increase as visibility (site distance) decreases over time. Displacement and risk of conflict is of most concern during the spring because the project area contains low elevation riparian and wetland habitat that would be more likely to receive grizzly bear use in the spring. To minimize potential for adverse effects to bears during the spring, DNRC would instate a seasonal spring closure on the trail system in section 20. Temporary closures and additional signage would also be considered if grizzly bears are observed in the area. Where levels of human activity are high, grizzly bears tend to be more active in crepuscular and nocturnal hours (Coltrane and Sinnott 2015). Therefore, temporal shifting in foraging activity may occur to avoid humans, which could reduce the effects of disturbance/displacement. Trails would be day-use only. To further reduce the risk of human-bear conflicts and food conditioning, bear-resistant garbage cans or pack-in-pack-out regulations would be present at the trailhead along with signs encouraging trail-users to properly dispose their garbage, to leash dogs or keep them under vocal control, and to carry pepper spray. Mountain-bike-specific signage would also be present to address the added risks and recommended safely precautions of this type of recreation in bear habitat. Thus, since: 1) approximately 8.0 miles of trail would be constructed and 6.5 miles formalized within potential grizzly bear habitat, increasing human access to the area; 2) the risk of displacement would increase on approximately 750 acres (58.5% of the analysis area) adjacent to the proposed trails but bears may shift to nighttime use; 3) minor amounts of preferred seasonal (riparian) habitat may be affected, but seasonal trail closures would be instated if human-bear conflicts occur during this time period; 4) the availability of visual screening would not change; 5) spring trail closures would be implemented in NROH (section 20); 6) sub-optimal habitat conditions for extensive use by bears; and 7) regulations for trash disposal and educational signage would help mitigate the risks of conflicts; moderate

adverse direct and indirect effects associated with grizzly bear displacement or human-caused bear mortality risk would be anticipated as a result of the Action Alternative.

Cumulative Effects of the No-Action Alternative on Grizzly Bears

None of the proposed activities would occur. No trail construction or changes to grizzly bear habitat would occur although ongoing and proposed forest management projects within the cumulative effects analysis area could affect human access, visual screening, and the risk of displacement or conflict. Thus, since: 1) the level of human access to the area would not change, 2) the availability of visual screening would not change, 3) preferred seasonal habitat would not be affected, and 4) the risk of displacement or conflict would not change, no cumulative effects associated with grizzly bear displacement or human-caused bear mortality risk would be anticipated as a result of the No-Action Alternative.

Cumulative Effects of the Action Alternative on Grizzly Bears

The proposed Action Alternative would establish a 16.6-mile trail system, including 8.0 miles of new trail construction and 8.6 miles on existing restricted road or social trail. Approximately 6.6 miles of trail would be located in CYE NROH. The trail system could have a potential disturbance/displacement footprint of 941.0 acres (1.6% of the CEAA). The increase in recreational activity would be additive to recreational activity already occurring in the CEAA including hiking, biking, fishing, hunting, snowmobiling, ATV/OHV riding, and camping. DNRC is not aware of any additional proposed plans for recreational trails in the CEAA. Over half the CEAA would remain free of roads and trails; providing excellent security habitat for grizzly bears. Some trees and shrubs would be removed during the construction of the trail but impacts to visual screening are expected to be minimal. DNRC would instate a seasonal spring closure on the trail in NROH (section 20) to reduce potential disturbance to bears during this crucial time. Additional temporary closures would also be considered if grizzly bears are observed in the area at any time. To further reduce the risk of human-bear conflicts and food conditioning, bear-resistant garbage cans or pack-in-pack-out regulations would be present at the trailhead along with signs encouraging trail-users to properly dispose their garbage, to leash dogs or keep them under vocal control, and to carry pepper spray. Additional trail signage recommended by the Interagency Grizzly Bear Committee (IGBC) would address mountain-bike recreation in bear habitat. Thus, since: 1) approximately 16.6 miles of trail would be established, including 6.6 miles within CYE NROH habitat, increasing human access to the area; 2) the availability of visual screening would not change; 3) limited amounts of preferred seasonal habitat may be affected, but seasonal trail closures would be implemented in the spring (in section 20) and if bears begin frequenting the area; 4) the risk of displacement would increase on approximately 941.0 acres (1.6% of analysis area) adjacent to the proposed trail; and 5) regulations for trash disposal and educational signage would help mitigate the risks of conflicts; minor adverse cumulative effects associated with grizzly bear displacement or human-caused bear mortality risk would be anticipated as a result of the Action Alternative.

OTHER SPECIES

BIG GAME

Issue: *The proposed trail construction, maintenance, and use could disturb or displace big game species, reducing the quality of spring habitat and winter range habitat.*

Introduction

During the winter season, big game, including elk, moose, mule deer, and white-tailed deer are seasonally restricted to areas with adequate amounts of cover and forage at lower elevations. In Western Montana, effective big game winter range contains ample mid-story and overstory coniferous cover, which minimizes severe winter conditions by reducing wind velocity and providing snow intercept, enabling big game to move across the landscape and access forage with less energy expenditure. Recreational activities may adversely affect big game by causing responses ranging from increased vigilance to flight, all of which have consequences for energy budgets and breeding success if disturbance occurs during spring calving season (Johnson et al. 2004). Some big game species (e.g. deer) near high human use areas often shift their activity to nocturnal hours and become more secretive,

land development within the CEAA, availability of mature forested habitat with suitable canopy cover for wintering big game is variable across the area. The project area has relatively little forest offering thermal cover/snow intercept (140 acres) compared to the surrounding CEAA, however some winter use is possible. USFS lands provide much of the available dense forest cover needed by deer during harsh winter conditions. Other deer likely seek out shelter amongst homes and structures on the outskirts of Libby. Elk are more tolerant of deeper snows and colder temperatures than deer, thus they have more available winter range within the CEAA (TABLE W-3 BIG GAME, *DFWP 2008*). Moose are more tolerant still; browsing shrubs and trees while traversing deep snow with their long legs. Winter recreationists, including snowmobilers and skiers likely utilize roads and trails on public lands, and could disturb wintering big game. Approximately 6.7 miles of groomed cross-country ski trails are just south of section 20 of the project area and are a common winter recreational disturbance in the vicinity of the project area.

TABLE W-3 –BIG GAME. Acreages (and percentages) of big game winter range for 4 species in the Flower Creek Trail Project occurring in the cumulative effects analysis area. Estimates derived from DFWP winter range distribution maps (*DFWP 2008*).

BIG GAME SPECIES	ANALYSIS AREA	
	Project Area	Acreages within Cumulative Effects Analysis Area (CEAA)
Elk (% of area)	1,282 (100.0%)	18,588 (31.3%)
Mule Deer (% of area)	1,282 (100.0%)	17,291 (29.1%)
Moose (% of area)	1,282 (100.0%)	25,935 (43.6%)
White-tailed Deer (% of area)	642 (50.1%)	13,621 (22.9%)

Environmental Effects

Direct and Indirect Effects of the No-Action Alternative on Big Game Winter Range

None of the proposed trail construction would occur. Thus, since: 1) the level of human access to the area would not change, and 2) the risk of disturbance to calving or wintering big game would not change, no direct and indirect effects to big game winter range quality or spring habitat would be anticipated as a result of the No-Action Alternative.

Direct and Indirect Effects of the Action Alternative on Big Game Winter Range

Under the Action Alternative, approximately 8.0 miles of new trails would be constructed and 6.5 miles of trail on restricted road or existing social trail would be formalized within elk, mule deer, and moose winter range, as well as elk spring habitat. Approximately 9.2 of these miles would also be in white-tailed deer winter range. After removing the disturbance effect of open roads within and adjacent to the project area, big game species could be disturbed by recreationists and their pets on approximately 750 acres (58.5% of big game winter range in the project area). The action alternative would increase levels of big game disturbance across 472 acres (36.8% of the project area) currently receiving low levels of disturbance. New trail construction would create new, long-term disturbance on an additional 278 acres (21.7%) of the project area. However, the trail would not be maintained for winter recreationists (i.e., no trail grooming). Since the proposed trails would not be maintained for recreationists in winter, the number of users accessing these trails during time periods when snowpack is high and big game are more vulnerable to disturbance is expected to be low in section 20 and moderate in section 16 (due to adjacent homes).

while others (e.g. elk) may avoid areas near high-use trails all together (*Naylor and Wisdom 2009, Reilly et al. 2017, Rogala et al. 2011*). The type of recreational activity can also influence how big game are affected; Naylor and Wisdom (2009) found that elk flee longer distances in response to mountain bikers compared to hikers and horseback riders. In contrast, deer living in areas with regular human use show reduced flight response, indicating habituation or temporal changes in activity are possible depending on the recreational activity and ungulate species (Snetsinger and White 2009). For example, both white-tailed and mule deer can be observed year-round within the city limits of Libby; eating landscaping and bedding down in front yards. Management considerations for constructing recreation trails in big game habitat include reducing risk of disturbance by informing recreationists of proper behavior around big game and encouraging control of dogs (*Joslin and Youmans 1999, Lenth et al. 2008; Taylor and Knight 2003, Parsons et al 2016*).

Analysis Area

The analysis area for direct and indirect effects is the 1,282-acre project area (FIGURE W-1 –ANALYSIS AREAS). The analysis area for cumulative effects is the 54,470-acre cumulative effects analysis area depicted in FIGURE W-1 –ANALYSIS AREAS. The CEAA is centered on the project area and defined according to geographic features including watershed boundaries (i.e. ridgelines), which would somewhat confine movements of big game animals in the vicinity of the project area, and it provides a reasonable biological analysis unit for local big game animals that could be influenced by project-related activities.

Analysis Methods

Analysis methods include field evaluations, aerial photograph interpretation, and GIS analysis of available big game winter range (*MFWP 2008*). The proposed trail was buffered by 100 meters to estimate the area in which big game could be disturbed by recreationists and their pets. This distance falls within the range of displacement distances reported for ungulates from roads and trails and provides a reasonable area for analyzing the effects of non-motorized recreation (*Miller et al. 2001, Lenth et al 2008, Taylor and Knight 2003, Rogala et al. 2011)*. However, some species of big game are likely more sensitive than others to human disturbance and could be affected at greater distances depending on the surrounding topography and vegetation. Factors considered in the analysis include: 1) the level of human access, 2) risk of disturbance of big game during winter and spring.

Existing Conditions

Big Game Winter Range

The entire project is considered elk, moose, and mule deer winter range as described by DFWP (TABLE W-3 BIG GAME, *DFWP 2008*). Approximately 641 acres of white-tailed deer winter range are also present in section 16. Evidence of year-round big game use of the project area in the form of browsed twigs and droppings was also observed during visits to the area. DFWP also identified the project area as spring elk habitat. The project area is situated at the base of the slopes of the Cabinet Range in low elevation habitat below 3,500 feet. Slope aspects are variable, but primarily south-facing in section 20 and east-northeast-facing in section 16. Recent timber harvest on approximately 928.3 acres (72.4% of the project area) has reduced mature crown closure values below 40% and decreased winter range habitat quality as well as hiding cover during all seasons. Only about 140 acres (10.9% of project area) of mature forest with >40% crown closure is currently providing big game sufficient thermal cover and snow intercept for harsh winter conditions. Due to the low availability of dense canopy cover, the project area likely provides marginally suitable habitat for wintering big game, but some limited winter use is possible. Extensive winter use by large groups of deer or elk would not be anticipated. Additionally, approximately 0.8 miles of groomed cross-country ski trails pass through the far southeast corner of section 20 and serve as a source of big game disturbance during the winter. See the "WILDLIFE HABITAT ALTERED WITH HUMAN ACCESS – Existing Conditions" section in this document for more details regarding human disturbance and use in the project area.

Portions of the CEAA area are identified as elk, mule deer, moose, and white-tailed deer winter range by DFWP (TABLE W-3 BIG GAME, *DFWP 2008*). Winter range is located primarily in the eastern portion of the CEAA where snowpack is lighter due to the low elevation of the area. Over half of the deer winter range in the CEAA is managed by private landowners. Because of past timber harvesting and private

Spring trail closures (April 1 – June 15) would be implemented in section 20 to lessen potential disturbance to deer and elk in spring habitat. Hiding cover for big game on 928.3 acres within the project area should be restored during the next 15-20 years as previously harvested forest stands regenerate. Additionally, signs at the trailhead would educate trail users on appropriate behaviors when recreating in wildlife habitat. Thus, since: 1) human access to the area would increase following the establishment of 14.5 miles of trail in the project area; 2) potential disturbance could occur on approximately 750 acres (58.5% of big game winter range in the project area), but trail use during winter is expected to be minimal when snowpack is high; 3) current winter range habitat conditions do not likely support large groups of wintering big game; 4) a spring trail closure in section 20 would reduce some potential disturbance during deer and elk calving season; and 5) recreationists would be required to control their pets and be discouraged from approaching wildlife; moderate adverse direct and indirect effects to big game animals and winter range quality would be anticipated as a result of the Action Alternative.

Cumulative Effects of the No-Action Alternative on Big Game Winter Range

None of the proposed trail construction would occur. The level of access and risk of disturbance would not change within the project area, but may change on other portions of the medium cumulative effects analysis area. Thus, since: 1) the level of human access to the area would not change, and 2) the risk of disturbance to calving or wintering big game would not change, no cumulative effects to big game animals or winter range quality would be anticipated as a result of the No-Action Alternative.

Cumulative Effects of the Action Alternative on Big Game Winter Range

The proposed Action Alternative would establish a 16.6-mile trail system, including 8.0 miles of new trail construction and 8.6 miles on existing restricted road or social trail. All of these miles of trail would occur within elk, mule deer, and moose winter range. Approximately 9.2 of these miles would also be in white-tailed deer winter range. Recreationists and their pets using the proposed trail system could potentially disturb/displace big game over 941.0 acres (5.1% of elk, 3.6% of moose, 5.4% mule-deer, and 448.5 acres or 3.3% of white-tailed deer winter range within the CEAA). Trail use is expected to be minimal on the proposed trail in the winter because the trails would not be maintained for winter recreationists and an existing winter trail system is located nearby; however, some winter use would likely occur. Increased disturbance to wintering big game as a result of the Action Alternative would be additive to existing human disturbance, including snowmobiling and skiing occurring within the CEAA. Trails in section 20 would be closed during the spring period to reduce some potential disturbance of calving deer and elk. Overall populations of big game and usage of the CEAA by big game would not be expected to be measurably impacted by the proposed Action. The adverse effect of recreational activities on big game would be partially mitigated by requiring trail-users to maintain vocal control of their dogs or keep them on a leash. Additionally, signs at the trailhead would discourage recreationists from approaching wildlife and advise appropriate behaviors in wildlife habitat. Thus, since: 1) human access to the area would increase following the establishment of 16.6 miles of trail in the project area; 2) potential disturbance of big game could occur over 941.0 acres (5.1% of elk, 3.6% of moose, 5.4% mule-deer, and 448.5 acres or 3.3% of white-tailed deer winter range within the CEAA), but trail use during winter is expected to be minimal when snowpack is high; 3) big game numbers and presence within the CEAA would not be measurably impacted; 4) a spring trail closure in section 20 would reduce some potential disturbance during deer and elk calving season; and 5) recreationists would be required to control their pets and be discouraged from approaching wildlife; minor adverse cumulative effects to big game winter range and spring habitat quality would be anticipated as a result of the Action Alternative.

LIST OF MITIGATIONS

- If a threatened or endangered species is encountered, consult a DNRC biologist and develop additional mitigations that are consistent with DNRC's HCP and the Forest Management Rules for managing threatened and endangered species (*ARM 36.11.428* through *36.11.435*).
- Contractors/Licensee will adhere to food storage and sanitation requirements as per GB-PR3 (*DNRC HCP FEIS Vol. II p. 2-6*).
- Construct trail and maintain trailside vegetation to encourage longer site distances, particularly in riparian areas.

- Post and maintain signs at the trailheads to inform users of the inherent risks of recreating in an area with large carnivores and to educate recreationists of proper behavior around wildlife. Signs should focus on the following:
    - Inform trail-users of risks associated with recreating in grizzly, lion, moose and wolf country.
    - Encourage trail-users to make noise and carry pepper spray.
    - Require trail-users to maintain vocal control over their dogs or keep them on a leash to minimize disturbance to wildlife, particularly big game, wolves, and grizzlies.
    - Require trail-users to properly dispose of garbage to reduce the risk of food-conditioning.
    - Discourage trail-users from approaching wildlife.
    - Include signage specific to mountain biking in grizzly bear habitat as recommended by the IGBC and found here:
      http://igbconline.org/wp-content/uploads/2016/03/160629_BOR_Recomm_Treat_NCDE.pdf

- Provide and maintain bear-resistant garbage containers (as approved by the IGBC) or pack-in-pack out regulations at trailhead to reduce the risk of wildlife attraction or habituation to human activity. Regularly monitor trash and human waste at trailhead areas and require additional measures to secure attractants should conflicts arise.
- Implement a seasonal trail closure in section 20, T30N, R31W from April 1 to June 15. Gate and sign primary trail access points and sign all potential access points. Clearly mark on trailhead maps where seasonal trail closures exist.

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FIGURE W-1 – ANALYSIS AREAS. Wildlife analysis areas for the proposed Flower Creek Trails project.