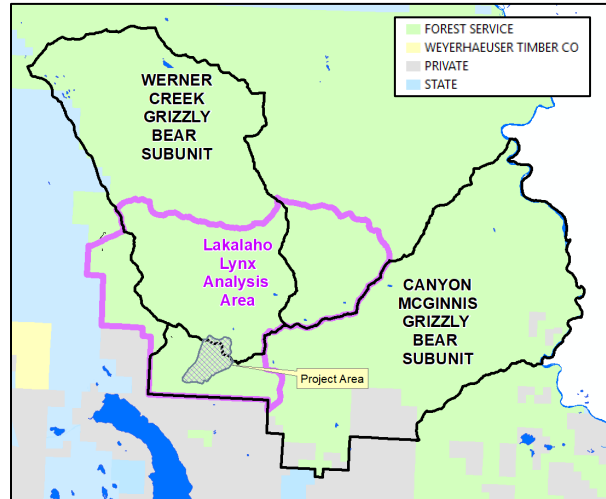


Cumulative Effects for Grizzly Bear and Wolverine across the Werner Creek and Canyon McGinnis Subunits

The proposed project would add to human activities in the affected subunits, including vegetation management, road management, private land development, hunting, firewood gathering, berry picking, hiking, trail running, mountain biking, horseback riding, driving, motorcycle/ATV riding, snowmobiling, camping, race events, and other recreational uses. Whitefish Mountain Resort has an array of ski runs, ski lifts, trailheads, and buildings, which includes the Summit House Restaurant and generates relatively high levels of recreational activity yearlong in the western end of the Canyon McGinnis Subunit and heavy use during the winter in the southern end of the Werner Creek Subunit. These activities can displace bears from these areas in all seasons. In addition, hiding cover in both of those areas continues to be modified by ski area maintenance. There is a State DNRC lookout cabin on Werner Peak which is accessed by the Taylor Road NFSR 9790. The Great Northern Flats and Big Creek River Accesses are on the east edge of the Canyon McGinnis subunit. Winter activities in potential denning habitat, such as ski area operation, avalanche blasting, snowmobiling, and communication tower maintenance, may have reduced denning in some parts of the analysis area.



Human activities on NFS lands in the project area increase the chance of conflict with bears and thus the chance for grizzly bear mortality. Road closures, decommissioning, and creation of Secure Core in the project subunits have decreased grizzly bear mortality risk and increased habitat security.

Past and ongoing timber harvest will continue to affect cover and forage in the affected subunits, with additional effects on individual grizzly bears through disturbance. Upcoming prescribed burns for the Whitefish Municipal Watershed Fuel Reduction Project (WMWFRP) will use a helicopter for ignition of the units within the Canyon McGinnis subunit. Vegetation management in the Municipal Watershed Project will reduce hiding cover in the Canyon McGinnis subunit by approximately 600 acres, which was incorporated into the baseline vegetation data used for this analysis. Access conditions in the Canyon McGinnis subunit will be temporarily affected by project activities, but will return to pre-project levels upon project completion. The WMWFRP will result in temporary displacement during implementation of project activities. Effects of WMWFRP vegetation management activities were incorporated into the baseline vegetation data used for this analysis. The WMWFRP will result in potential displacement during implementation of project activities but will increase Secure Core in the Canyon McGinnis subunit, moving it toward motorized access management objectives.

The proposed Taylor Hellroaring Project, also incorporated in the exiting condition tables and project effects analysis above, is expected to temporarily decrease hiding cover by approximately 800 acres and

also temporarily decrease the availability of forage, such as huckleberries. About 7 acres of fuel reduction and prescribed fire overlaps a proposed ski area development and thus would be made permanent through maintenance activities. During implementation, human and mechanical activity may displace bears from the areas surrounding proposed vegetation treatment units, roads, haul routes, and other activities. Proposed road construction effects would be largely temporary and motorized access parameters would return to baseline levels, but proposed trail construction may lead to long-term displacement cumulative to that caused by existing roads and trails.

Maintenance of habitat security for grizzly bears in the Hellroaring drainage through limitations on human activity was a mitigation measure of the 1995 Big Mountain Expansion record of decision (USDA 1995). This drainage has added value as security habitat immediately adjacent to an area of relatively high levels of human use, although it is not large enough to be considered “secure core”. From April 1 to November 30, the Hellroaring drainage has been managed to provide grizzly habitat security and this would continue under the proposed action. Human access into the Hellroaring drainage during the non-ski season has been discouraged through the placement of slash and stumps near the top of ski runs and lift corridors. In the proposed Taylor Hellroaring Project, one section of Trail 2 would switchback down from the southern ridge into the lower drainage and has the potential to affect grizzly bear security in this area.

A Special Food Storage Order on the Flathead National Forest has contributed to improved conditions for grizzly bears. The Food Storage Order requires all users of NFS lands to store food, garbage, and other bear attractants in a bear-resistant manner. Contractors and others implementing the Hellroaring Basin Improvement Project would be required to comply with this order.

Winter activities in wolverine habitat, such as ski area operation, snowmobiling, and communication tower maintenance, may have displaced wolverines from denning in some parts of the analysis area and this proposal would add cumulatively to that effect. Ski area development would reduce cover by a small amount in combination with vegetation management as described above for grizzly bear. The Municipal Watershed Project will result in potential displacement during implementation of project activities but will increase wildlife security elsewhere in the analysis area. The proposed Taylor Hellroaring Project would manage vegetation in 171 acres of “primary wolverine habitat” as modeled by Inman et al. (2013) and 500 acres of maternal denning habitat as modelled by Copeland et al. (2010). Other past and future prescribed burns may increase the availability of food for wolverine. Wolverines would be disturbed or displaced to some degree by trail use on up to forty miles of new trails to be built by the proposed Taylor Hellroaring Project.

The analysis area is within wolverine management unit 1 (northwest Montana), which had a quota of three wolverines (with a maximum of one female) in 2010 and has had a quota of zero since then. In December 2012, a state district court judge in Helena granted a temporary restraining order that blocked the opening of Montana’s 2012-2013 wolverine trapping season, and it has remained closed since then. With respect to connectivity and highways, there are no high elevation paved highways in the analysis area. On public lands across the analysis area, road closures and decommissioning have decreased wolverine mortality risk. See the grizzly bear cumulative effects section for more information, as the effects on wolverine are similar and the spatial and temporal extent are the same.

Hellroaring Basin Improvements

	Past	Present	Reasonably Foreseeable	Does it Contribute?
Wildfires and Wildland Fire Suppression	There is evidence of wildland fire in and near the analysis area over the last several hundred years. Most fires have been less than one acre and were suppressed using hand crews, but there have been large fires in recent years. The 2003 Robert Fire burned over 12,000 acres in the Canyon McGinnis Subunit, much of which is included in the 1400 acres also burned by the 2001 Moose Fire. In the Werner Creek Subunit, the 2006 Werner Peak Fire burned 18 acres, the 2001 Werner Fire burned about 30 acres, the 2001 Moose Fire burned nearly 3800 acres, and an unnamed 1994 fire burned 35 acres. Since about 1930, wildland fires have been actively suppressed by the Forest Service and other agencies and wildland fires will continue to be suppressed.			Yes
Hunting, Trapping, and Predator Control	These activities have been and continue to be popular uses of National Forest System land and other ownerships. Popular hunted species include white-tailed deer, mule deer, elk, moose, and gray wolf. Some species that are now currently listed as threatened, such as grizzly bears and Canada lynx, were hunted and trapped in the past. Some predator populations, such as graywolves and coyotes, were reduced in numbers from the analysis area in the early part of the last century.			Yes
Fishing	Fishing within the analysis area is not a common activity except along the North Fork of the Flathead River and its low-elevation tributaries.			Yes
Firewood and Other Miscellaneous Forest Product Gathering	Firewood gathering has occurred and will continue in the future. Recent higher than historic energy costs may increase the public's desire to obtain firewood but air quality concerns may also reduce reliance on this source of fuel in the future. Other products gathered in small quantities in the area include posts and poles, mushrooms, berries, and Christmas trees.			Yes
Snowmobiling	Snowmobiling is allowed on designated roads, NFS trails, and areas as identified on the Tally Lake and HH/GV Over Snow Maps (https://www.fs.usda.gov/main/flathead/maps-pubs). Groomed routes include Upper Whitefish Lake road on DNRC lands, NFSR 9790 which access the back side of WMR and NFSR 316 in Canyon Creek which is a designated groomed over snow trail. The Lakalaho Snow Park and Warming Hut are in the upper reaches of the Big Creek drainage.			Yes
Camping	Two developed campgrounds occur in the analysis area -- the Big Creek Campground on the eastern edge of the analysis area and the Moose Lake Campground up the Big Creek drainage and numerous dispersed sites occur in the Big Creek drainage. On USFS lands, dispersed camping is allowed within 300 feet of open roads.			Yes
Other Developed Recreation Sites or Areas	Whitefish Mountain Resort has an array of ski runs, ski lifts, trailheads, and buildings, which includes the Summit House Restaurant. DNRC has a lookout cabin on Werner Peak which is accessed by the Taylor Road NFSR 9790. The Great Northern Flats and Big Creek River Accesses are on the east edge of the Canyon McGinnis Subunit.			Yes
Driving	Driving, sightseeing, and wildlife viewing on open Forest, State, and private roads will continue.			Yes
Hiking, Mountain Biking, and Horseback Riding	These activities occur on roads and trails throughout the analysis area, with numerous formal trailheads. The highest density of trails are in the Whitefish Mountain Resort (WMR) permit area and have increased in popularity. Dispersed, hiking, hunting, biking, and ORV activities are expected to increase in popularity on adjacent lands in the area. A proposed trail addition to the Whitefish Trails system will occur with a trailhead in the Haskill Basin area which could eventually link to FS lands. NOTE: Trail 818 and a small part of Trail 808, both in the Whitefish Mountain Ski Area Resort area, cross back and forth over the			Yes

Hellroaring Basin Improvements

	Past	Present	Reasonably Foreseeable	Does it Contribute?
	ridgeline as they head up the divide along the southwestern edge of the Hellroaring drainage, as do the existing service roads. These are used by hikers and occasionally for events like the Whitefish Legacy Ultramarathon. Such activities along this heavily forested ridge do not impact the security value of the Hellroaring drainage for species like grizzly bears and wolverines. See map below.			
Motorcycle and ATV Riding	There are no trails available for motorcycle or ATV (Four-wheeler) use on NFS lands other than on roads open to regular vehicle traffic. This activity occurs on and off roads on other ownerships.			Yes
Road Construction	The analysis area has approximately 152 miles of USFS system roads. Most were built since 1960. In 2014, The Forest Service authorized an easement to the DNRC allowing for construction of two segments of permanent road through NFS lands totaling .84 miles.	See table below for the ongoing Whitefish Municipal Watershed Project. Contribution of the Taylor Hellroaring Project's road construction to cumulative effects is discussed above.		Yes
Road Maintenance, BMPs, and road use	Roads on all ownerships will be maintained for use either by all users or for individual landowners. Roads used for the transport of forest products are generally maintained to meet Montana Best Management Practices (BMP). Road work to improve surface drainage, stabilize slopes, and reduce erosion and stream sedimentation has occurred on roads used by the Forest Service. Roads designated for motorized use by the public are maintained with safety as a high priority. This primarily involves repairing drainage features and clearing of live and down vegetation. Some roads have been closed and are maintained at a lower level. There are currently approximately 151.6 miles of road under USFS jurisdiction within the project area; of which 19.9 miles are open year- long, 39.7 miles are open seasonally, and 92.0 miles are closed yearlong. Records show that there are approximately 250 miles of non-Forest Service road within the analysis area including state, private, county, and special use roads. Contribution of the Taylor Hellroaring Project's road maintenance actions to cumulative effects is discussed above.			Yes
Road Decommissioning	Roads have been removed from the transportation system and rendered undrivable to improve wildlife security, landscape hydrologic function, and reduce maintenance costs.		Contribution of the Taylor Hellroaring Project's road actions to cumulative effects is discussed above.	Yes
Beaver Control	Trapping of beavers and destruction of beaver dams occurred up to the 1990s on a variety of ownerships.	This activity may continue to take place on private property.		Yes
Mineral Extraction	Gravel pit and borrow source	Hallowat pit and borrow site occur in the Werner Creek subunit along Hallowat Creek and about 4 miles apart.		Yes
Timber Harvest	See tables below for harvest history on USFS lands. Timber harvesting has also occurred in the past on DNRC, Weyerhaeuser, F.H. Stoltze, and small private lands.	See tables below, including a table for the ongoing Whitefish Municipal Watershed Project. Timber harvesting on private property is currently unknown. Lands managed by DNRC are expected to continue to have resource management in the currently and in the foreseeable future.		Yes

Hellroaring Basin Improvements

	Past	Present	Reasonably Foreseeable	Does it Contribute?
		Contribution of the Taylor Hellroaring Project’s vegetation management actions to cumulative effects is discussed above.		
Thinning for Hazardous Fuels Reduction	See table below. Removal of live and dead vegetation for the purpose of reducing wildland fire intensity has been accomplished on private and state property within the analysis area. This activity is expected to continue.	See tables below, including a table for the ongoing Whitefish Municipal Watershed Project. Contribution of the Taylor Hellroaring Project’s vegetation management actions to cumulative effects is discussed above.		Yes
Prescribed Burning	Prescribed fire will continue to be used in the future as a management tool.			Yes
Precommercial Thinning	See table below.	The amount of pre-commercial thinning to reduce the density of sapling sized stands and decrease wildland fire intensity in the WUI adjacent to private lands is unknown. It is expected that it has occurred and would continue to occur in the future.		Yes
Special Use Permits	Communications towers and Winter Sports Incorporated operations and facilities are mentioned above and the Knights of Columbus have a permit for a religious statue nearby. Glacier Institute operates a permitted educational facility near the confluence of Big Creek and the North Fork of the Flathead River.		Any permit in good standing that meets the Forest’s screening process, is current with their yearly fees, and requests a renewal, would be eligible for a permit.	Yes
Trail Construction / Maintenance	On USFS lands central to the analysis area, the Ralph Thayer Memorial NFS Trail 26, or the Whitefish Divide trail, is a National Recreation Trail and the Smokey Range NFS Trail 270 is nearby. Both trails have been maintained in recent years. Miles of other system and user-created trails occur across the area, with far fewer in the higher elevations. Contribution of the Taylor Hellroaring Project’s trail construction actions to cumulative effects is discussed above.			Yes
Noxious Weed Control	Noxious weed control as outlined in the 2001 Flathead National Forest Noxious and Invasive Weed Control Environmental Assessment and Decision Notice will continue to take place in the analysis area and is expected to increase in the future. Individual landowners will continue to control weeds with primarily spot applications on their property.			Yes
Communication Towers, Utilities, and Transmission	Communications towers occur west of Whitefish Mountain Resort, with an underground powerline coming from the east. A sewer line reaches from the Whitefish Mountain Summit Area to private land to the south. Other utilities			Yes
Lines -- Construction and Maintenance	on USFS land include gas lines and small power lines. About 7.5 miles of major transmission lines were constructed across non Forest Service lands, averaging 90 feet of clearing. Maintenance on all of these is expected to continue.			

Exhibit **12-07**
Hellroaring Basin Improvements

	Past	Present	Reasonably Foreseeable	Does it Contribute?
Private Land Development	Some amount of construction of driveways, buildings, and other improvements on private land in the analysis area has been occurring for decades and will continue.			Yes

Past Forest Service Vegetation Treatments, in Acres, across the Grizzly Bear Analysis Area (based on 11/2017 query of the FACTS database).

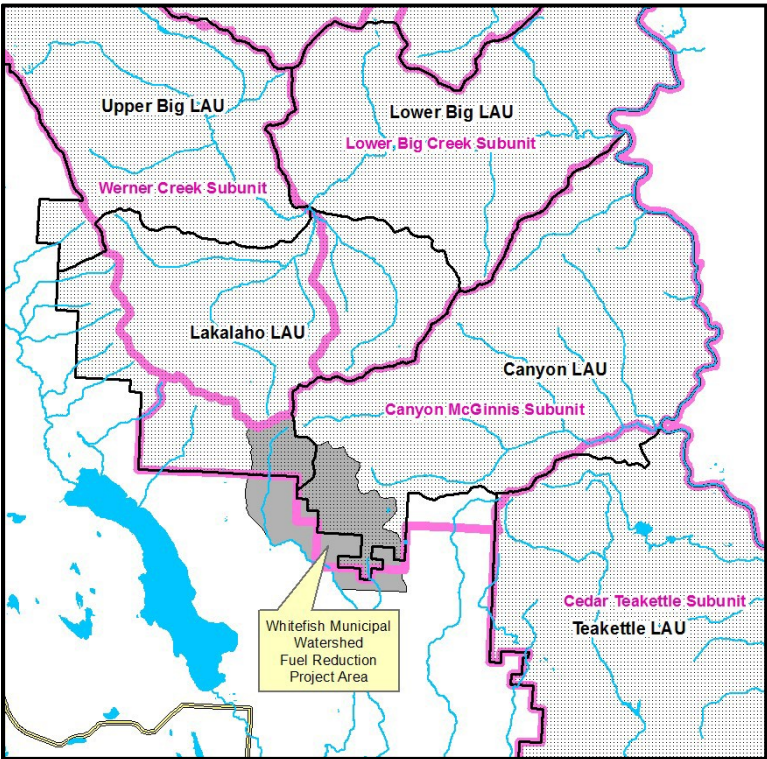
Timber Harvest Activities	60s	70s	80s	90s	00s	10s	Total
Liberation Cut	1,551	0	0	0	0	0	1,551
Permanent Land Clearing	6	0	0	0	0	0	6
Precommercial Thin	661	0	0	0	0	0	661
Salvage Cut (intermediate treatment, not regeneration)	456	0	0	0	0	0	456
Shelterwood Removal Cut (EA/NRH/FH)	18	0	0	0	0	0	18
Single-tree Selection Cut (UA/RH/FH)	598	0	0	0	0	0	598
Stand Clearcut (EA/RH/FH)	4,990	0	0	0	0	0	4,990
Total Harvest	8,307	0	0	0	0	0	8,307

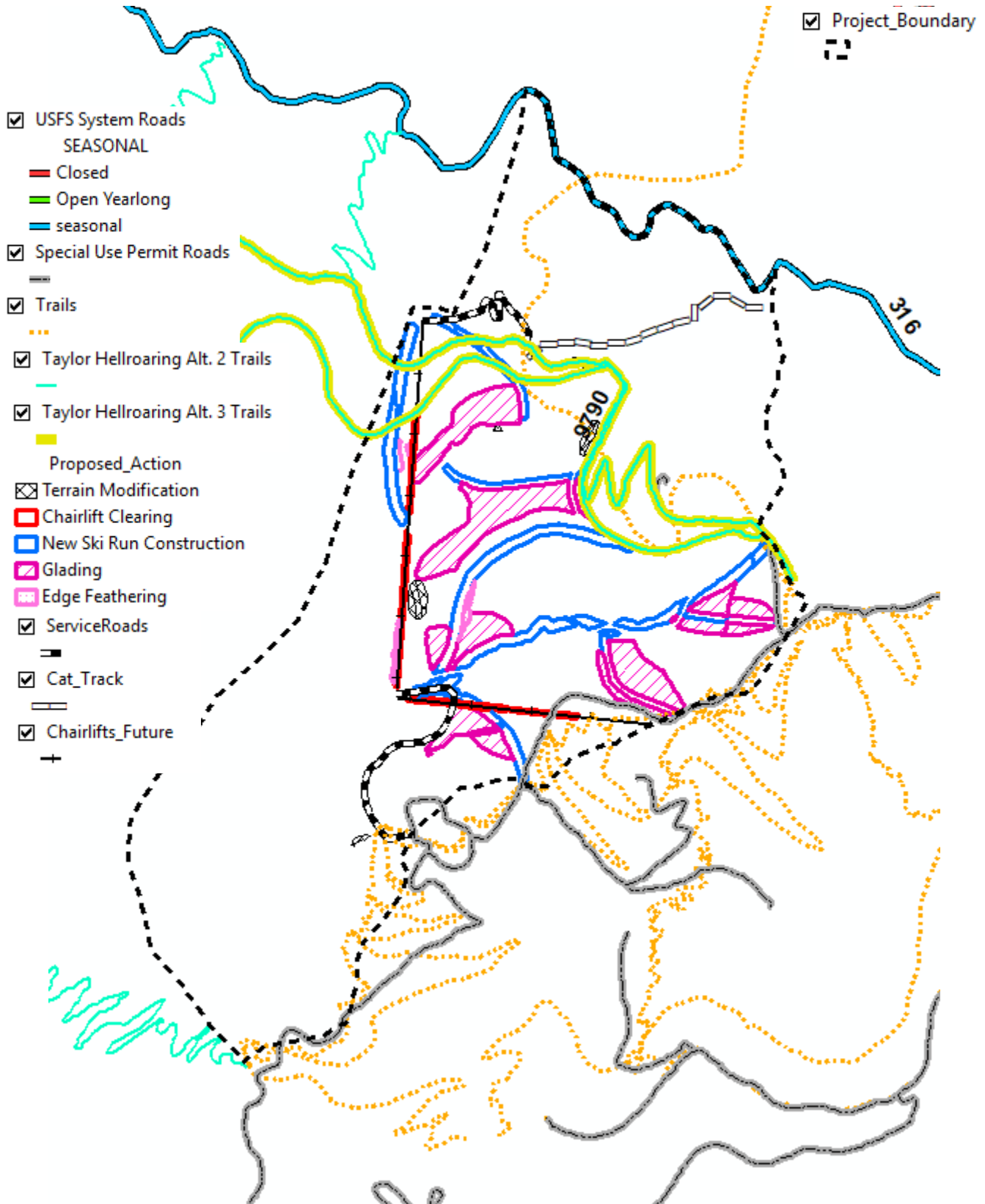
Past Forest Service Timber Sales across the Grizzly Bear Analysis Area.

Sale Name	Year Accomplished	Acres in Taylor Hellroaring Wildlife Analysis Area
Upper Big Creek	1960-69	8,307
Total:		8,307

Whitefish Municipal Watershed Project activities.

COMMERCIAL AND NONCOMMERCIAL HARVEST TREATMENT ACRES	
Seed Tree with Reserves	196
Commercial Thin	58
Understory Removal	103
Fuel Break	1
Total Treatment Acres	358
LOGGING SYSTEM ACRES	
Tractor (Ground-based)	144
Skyline	110
COMMERCIAL AND NONCOMMERCIAL HARVEST TREATMENT ACRES	
Total Logging System Acres	254
PRESCRIBED BURN ACRES	
Prescribed Burn Units within the Wildland Urban Interface	756
ROAD MANAGEMENT MILES	
Haul Routes (BMPs to be applied to meet Timber Sale Requirements)	10
Temporary Roads(2.06 on NFS Lands and 0.49 on Private and State Lands)	2.55





The map illustrates the Taylor Hellroaring Project area, detailing proposed actions, existing conditions, and project boundaries. Key features include:

- Proposed Actions:**
 - Terrain Modifications (indicated by pink hatched areas).
 - Ski Runs (numbered 1-8, shown as orange lines).
 - Abandoned Portion of Existing Run (green hatched area).
 - Selective Tree Removal for Scenery (pink dashed lines).
- Existing Conditions:**
 - Whitefish Mountain Resort Permit Boundary (dashed black line).
 - Ranger District & Geographic Area Boundary (yellow outline).
 - Existing Ski Runs (solid green lines).
 - Existing Trails (dotted black lines).
 - Existing Chairlifts (red circles with numbers).
 - Existing Roads (brown lines).
 - Snowmobile Trail (purple line).
 - Cut Track (blue line).
 - Haul Area (orange square).
 - Service Roads (red lines).
 - Rehabilitation Work Needed (red flag icon).
 - Gate (black X icon).
 - Bridge (black bridge icon).
- Project Boundaries:**
 - Project Area Boundary (dashed black line).
 - Permit Boundary (dashed black line).
- Geographic Features:**
 - Hellroaring Peak.
 - Glory Hole.
 - Hell Fire.
 - Gray Wolf.
 - Bighorn.
 - Summit House.
 - Tally Lake.
 - Salish Mountains.
 - Grand Junction Service Road.
 - Highway to Heaven.
 - Purgatory Creek.
 - Swift Creek.
 - Tom Mat.
 - 1000 Turns.
 - Big Ravine.
 - Chair 7 - Big Creek Express.
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 - Chair 1 - Big Diamond Express.
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- Scale:** 1:10,500.
- Date:** May 1, 2019.
- North Arrow:** Indicated by a black arrow pointing upwards.
- Legend:** Located at the bottom of the map, detailing symbols for terrain modifications, ski runs, abandoned portions, selective tree removal, project boundaries, permit boundaries, Whitefish Mountain Resort Permit Boundary, Ranger District & Geographic Area Boundary, existing ski runs, existing trails, existing chairlifts, existing roads, snowmobile trail, cut track, haul area, service roads, rehabilitation work needed, gate, bridge, and Taylor Hellroaring Project Proposed Trail Reductions & Vegetation Treatments.