PARK COUNTY
ENVIRONMENTAL
COUNCIL

District Ranger Clint Kolarich
Gardiner Ranger District
Custer Gallatin National Forest
805 Scott Street, Gardiner, MT 59030

RE: Bear Palmer Project #68985 Public Comment
June 1st, 2026

Park County Environmental Council (PCEC) appreciates the opportunity to submit these formal public comments regarding the proposed Bear Palmer project on the Custer Gallatin National Forest. Established in 1990, PCEC's core mission is to work alongside our community to protect the land, water, wildlife, and foster a resilient future for Yellowstone's Northern Gateway. PCEC has deep roots working to protect national forest lands in the Jardine area, including permanently protecting public lands surrounding Crevice Mountain from industrial gold mining through the Yellowstone Gateway Protection Act.

As an organization dedicated to building community resilience and protecting healthy landscapes, PCEC represents more than 5,000 supporters and 500 local donors who live, work, and recreate in Park County. We work shoulder-to-shoulder with local residents, regional scientists, and gateway community leadership to foster social and environmental stewardship across our public lands. While PCEC supports intentional, climate-adaptive forest management designed to protect our communities from wildfire risk, we are deeply concerned by the current structure, scale, and rapid sequencing of the Bear Palmer proposal. As detailed in the sections below, the Preliminary Effects Document relies on broad, obsolete baselines that fail to account for site-specific climate realities, municipal watershed vulnerabilities, and critical wildlife habitat requirements. By out-pacing local collaborative efforts—such as the ongoing Park County Community Wildfire Protection Plan (CWPP) update—the Forest Service risks fracturing institutional trust and missing a vital opportunity to build long-term, place-based solutions with the communities of Gardiner and Jardine.

PCEC submits these comments in the spirit of collaborative governance, hoping to ensure that federal actions on the Custer Gallatin National Forest reflect robust Western fire science, respect listed species, and preserve the long-term health of Yellowstone's Northern Gateway.

Thank you for taking the time to review our comments. References will be provided in the following days.

Respectfully,

Sarah Stands, Bethany Allen, and Alecia Jongeward

To protect our irreplaceable natural infrastructure and ensure that public land management aligns with community safety and ecological resilience, PCEC suggests the following:

Public Engagement, Data Access, and Procedural Transparency

We commend the local district for actively engaging the public, listening to diverse stakeholders, and providing an early opportunity for public comment. The Jardine and Gardiner communities are deeply committed to forest health and wildfire safety, and residents are eager to serve as active, collaborative partners. While we agree that restoring a landscape historically impacted by intensive mining and past management is a shared goal, a fast-tracked process risks missing the wealth of local and expert knowledge that resides in this area. We fully support a long-term investment in forest resilience that relies heavily on prescribed fire, cultural burning, and selective thinning rather than intensive commercial clear-cutting. Ensuring that short-term disruptions lead to true ecological resilience for several generations—rather than just meeting arbitrary acreage targets—requires a long-term vision and a more robust and transparent public process.

The extended comment timeline to June 1st was highly appreciated. We found that it was still inadequate for a meaningful, scientifically rigorous review of each unit, as was requested at the April 30th meeting. A 30-day window during peak spring runoff and snowmelt means that a majority of the project terrain has been completely inaccessible due to snowpack and closed gates. For example, Upper Bear Creek was only opened on June 1st, the final day before comments are due. Critical datasets were delayed: the project map with specific unit numbers and Wildland-Urban Interface (WUI) boundaries was not released until May 1st, and the proposed treatment GIS shapefiles were only available May 12th. This left the public with a small viable window to cross-reference essential baseline data such as historical harvests, soil types, whitebark pine surveys, and localized wildlife habitat against individual proposed units.

Because the scoping materials rely on broad approximations and leave critical operational details up to future administrative discretion, the public is forced to assume a worst-case scenario regarding on-the-ground impacts. Without concrete data, the localized detriments to our gateway community seem to outweigh the long-term ecological benefits.

Preliminary Effects Document Discrepancies and Recommendations Summary

The Preliminary Effects Document (PED) and scoping materials released by the Forest Service rely on broad geographic approximations, leave critical operational details up to future administrative discretion, and display internal data contradictions.

Monitoring, Collaborative Governance, and Project Reinvestment

The PED outlines tracking project metrics via general post-decisional administrative reviews, stating that long-term project monitoring, weed management, and field rehabilitation are dependent on variable agency funding, staff resources, and partnerships. This framework

leaves the tracking of critical resources—such as Canada lynx horizontal cover, whitebark pine survival, and stream sediment changes—vulnerable to documented agency staffing shortages and shifting regional priorities. Relying on vague, contractually unenforceable design features, passive data tracking, or retroactive contract enforcement mechanisms rather than legally binding mitigations violates the Custer Gallatin Land Management Plan and leaves the public unable to verify accountability. In addition, traditional commercial timber sales extract local wood commodities while removing the resulting revenues from the district instead of reinvesting them locally. Pressure from commercial contractors to minimize operating restrictions can create a conflict of interest, threatening project accountability and undermining community trust.

- We recommend that the Forest Service utilize its statutory authority under the Omnibus Parks and Public Lands Management Act (16 U.S.C. § 2113) or the Healthy Forests Restoration Act (16 U.S.C. § 6591c(g)) to evaluate executing the Bear Palmer project via a formal Stewardship Contracting Agreement rather than a standard commercial timber sale, while retaining resources to fund on-site restoration services.
- We recommend analyzing a community-driven process alternative that formalizes a Multiparty Monitoring Group—adopting successful templates from across Montana like the Colt Summit Restoration Project and the Blackfoot Clearwater Stewardship Project—where independent scientists, community representatives, land owners, and agency specialists work in tandem.
- We recommend that this agreement mandate pre-harvest boundary ground-truthing to carve out unmapped stands, integrate contractually binding biophysical triggers (such as cold-weather and frozen-ground operational mandates via C6.422 soil protection clauses), and enforce independent post-harvest adaptive auditing to alter subsequent cutting phases if unexpected ecological degradation is detected.
- We recommend that the retained funds be earmarked for multi-decade prescribed fire maintenance, labor-intensive manual fuels reduction, and watershed protections developed in coordination with community members and regional experts.
- We recommend the final decision disclose localized weed mitigation and habitat restoration plans and resources within the active units.

Climate Hydrology Modeling and Microclimates

The PED claims logging treatments and conifer removals will increase seasonal water yields by stopping tree water uptake. This ignores regional warming data from the Greater Yellowstone Climate Assessment and Montana Climate Assessment, creating an analytical gap that violates the 2012 National Forest System Land Management Planning Rule (36 CFR Part 219) mandate to enhance ecosystem adaptability to climate change.

- We recommend that the final EA abandon outdated water-yield assumptions and simulate the interactive effects of canopy removal, advanced solar snowmelt, snowpack retention and regional warming on late-season baseflows. The Forest Service is expected to use the best available science and water balance modeling to demonstrate how the project actively enhances true ecosystem adaptability to align with Volume 4 of the Custer Gallatin Final Environmental Impact Statement (FEIS).

- We recommend configuring treatments to the local topography to function as defensive firebreaks, safely returning fire to the landscape, and disrupting fuel continuity without altering the wind-damping, moisture-retaining microclimate of the surrounding forest matrix.

The 40-Acre Clearcut Limitation

The PED states that "clearcuts will be limited to 40 acres in size." However, a review of the agency's raw GIS data reveals an analytical gap: seven distinct treatment units appear to exceed this ceiling, totaling hundreds of acres of contiguous clearing. Proposing a maximum in text, while GIS data represents otherwise is an inconsistency that would benefit from further clarification under NEPA and the Forest Plan. Stating the Forest Plan 40-acre limitation might inadvertently obscure whether such clearcuts are suited for this highly sensitive landscape which sits adjacent to Yellowstone National Park and within an Inventoried Roadless Area (IRA) viewshed. An earlier public presentation contradicted this by listing up to a 70 acre exception for lodgepole pine regeneration treatments.

- We recommend aligning block sizes with local topography and that the EA provide a site-specific maximum clearcut size based on the high-altitude, semi-arid constraints of the Gardiner Basin rather than defaulting to the absolute statutory maximum ceiling. The goal of clearcut needs to help with reintroducing fire to the landscape.

Silvicultural Labeling and Group Selection Dynamics

Under Group Selection, the PED describes a "multi-entry cutting method as part of an uneven-aged management system." Yet, it defines these sections as large "three to five-acre openings" leaving only 6 to 10 trees per acre. A contiguous 5-acre clearing with minimal retention functions microclimatically and operationally as an even-aged clearcut, not true uneven-aged management. Group selection openings in mixed Douglas-fir/Spruce-fir systems are ecologically smaller in scientific standards, such as 0.5 to 2 acres to protect canopy continuity and maintain the surrounding forest matrix.

- We recommend clarifying this data alignment to ensure restrictions are supported by the best science to achieve the forest health goal. If 5-acre openings are utilized, they must be analyzed under even-aged structural impacts for wildlife displacement.

Conditional Invasive Species Mitigation

Page 4 of the PED notes that the project area contains 519 acres of known invasive species and admits operations will likely create new populations. It then states, "The amount of pre- and post-project noxious weed treatment and monitoring is dependent on funding, staff resources, and partnerships." Making invasive species mitigation conditional on future, unbudgeted district funding violates Forest Plan standards requiring mandatory weed control during periods of high vector disturbance (such as commercial logging and timber hauling).

- We recommend that the Forest Service integrate weed treatment costs directly into the commercial timber sale contract funding mechanisms generated by the sale itself, ensuring mitigation is legally bound to the action rather than dependent on fluctuating annual district budgets.

Birds, Nesting and Snags

The document mandates retaining “approximately six to 10 residual sawtimber sized trees per acre for future recruitment of snags and downed woody debris” across Clearcut units and Group Selection units. This metric fails the biological requirements of local cavity-nesting species, utilizing contract averaging and living green tree substitutions that create ecological voids. Mapped data confirms the project area supports four native owl species that depend entirely on standing dead trees (snags) for survival: Great Gray Owls, Boreal Owls, Northern Pygmy Owls, and Northern Saw-whet Owls.

- We recommend that the EA completely eliminate landscape averaging.
- We recommend a 100-foot equipment exclusion buffer around active cavity-nesting trees.
- We recommend enforcing unit-by-unit retention caps protecting all snags over 12 inches DBH.

Contradiction in Geospatial Modeling Metrics

The document states that the “acres, miles and locations of actions described in this document are approximate and will be refined based on the field conditions,” noting that “temporary road locations are approximate and road maintenance descriptions... may change with layout and during sale implementation”. Treating 16.9 miles of temporary road infrastructure as fluid lines while simultaneously using those exact coordinates as fixed mathematical inputs to calculate watershed sedimentation, water yield, and soil disturbance thresholds represents a contradiction that invalidates modeling calculations.

- We recommend that the final EA bind temporary road corridors and log landings to fixed map coordinates on surveyed, low-vulnerability soils rather than leaving them to post-decisional operator layout.

Socioeconomic Scope and Geographic Context

The Preliminary Economic Analysis section in the PED narrowly captures the socioeconomic context of the area (Region 1 sale feasibility to "support regional timber harvesting and processing infrastructure") and concludes that the project "will not have significant effects on the quality of the human environment." This excludes the recreation-driven economies of Gardiner and Jardine—the gateway communities closest to the project area that bring $294.4 million annually into Park County. Collaborative planning with Gardiner and Jardine residents and business is essential, where their economies and infrastructure are deeply sensitive to federal

land management decisions. The limited perspective in the PED demonstrates that the agency's baseline data is inadequate and triggers the need for a deeper analysis or a full EIS.

- We recommend that the Forest Service expand the EA to include a localized recreation-asset impact study focusing on economic displacement and tourism disruption within the unincorporated Gateway Communities of Gardiner and Jardine.
- We urge the Forest Service to strengthen coordination with local leaders and to work with the agency's Gateway Community Coordinator to evaluate how the Bear Palmer project satisfies Department of the Interior Secretary's Order 3434 (Strengthening Coordination with Gateway Communities).

Elk Habitat Displacement along Migration Corridors

The PED notes that treatments are designed to manage forest structures to historical baseline conditions (Page 4) and asserts that the proposed action will have minimal long-term displacement effects on big game species (Page 10). This creates a discrepancy with on-the-ground conditions across the clearcut units, which display active big game use and bedding signs by local elk populations.

- We recommend that the Forest Service identify and protect high-density habitat corridors.
- We recommend mandating seasonal timing restrictions on all heavy machinery.
- We recommend a site-specific mitigation plan to preserve established hiding cover along the northern migration corridor.

Wilderness Boundary Vulnerability and Road Infrastructure

The PED proposes constructing or re-establishing 16.9 miles of roads near the Absaroka-Beartooth Wilderness (ABW), alongside logging treatments that overlap an Inventoried Roadless Area (IRA). The plan includes re-opening 9.2 miles of existing road templates, asserting that these zones are not an intact forest because historical, non-system corridors exist. This layout presents an operational and management contradiction that compromises the core intent of the Roadless Area Conservation Rule and alters adjacent wilderness values by re-opening heavily re-vegetated templates that currently function as intact forest matrices.

- We recommend that the Forest Service completely eliminate all proposed road construction, template re-establishments, and log deck placements situated within the Inventoried Roadless Area and within views of the Wilderness boundaries from the project design.
- We recommend eliminating all commercial clearcuts and thinnings from units overlapping the Inventoried Roadless Area boundary.
- We recommend that the final decision detail a transportation and site preparation plan that addresses local topography, rainfall patterns, and critical landforms, specifying what

slash treatments and debris retention levels are necessary across silvicultural units to prevent excessive mulching from hindering natural forest regeneration.

Endangered Species Act

The PED outlines general commitments to maintaining forest-wide standards for Endangered Species Act (ESA) listed and candidate species, noting that the project area overlaps with mapped critical habitat and key corridors. The agency relies on broad, non-binding forest-wide guidelines rather than project-specific, enforceable frameworks to protect threatened species like the Canada lynx, grizzly bear, and whitebark pine across a 3,073-acre cumulative mechanical footprint.

The PED asserts that commercial clearcutting and broad canopy extraction are necessary surrounding the community of Jardine to break up continuous fuel beds, reduce hazardous fuels, and mitigate high-severity wildfire risk. However, the project's expansive cumulative footprint of 3,073 total acres of mechanical disturbance and 16.9 miles of log-hauling road infrastructure over a 10-year lifespan creates immediate, unanalyzed conflicts with federally listed species under the ESA within this critical wildlife bridge connecting Yellowstone National Park to the Absaroka-Beartooth Wilderness. The proposed commercial logging footprint and intensive log-truck traffic will fragment critical habitat corridors. This contradicts Forest Plan conservation rules for endangered species by compromising dense lynx foraging cover and displacing vulnerable grizzly bears from secure drainages. Removing over 1,600 acres of forest canopy accelerates the melt of persistent spring snowpack required for wolverine denning, while heavy machinery operated above 8,000 feet can easily crush and kill protected whitebark pine saplings.

- We recommend that the Forest Service scale back large-scale commercial extraction and instead implement an alternative where clearcuts are minimized to a maximum of 5 acres to benefit Lynx, Grizzly Bear, and Whitebark pine at the same time. Strategically configured across local topography to function as defensive firebreaks that disrupt fuel continuity without altering the wind-damping, moisture-retaining microclimate of north and north east facing aspects.
- We recommend that in all management units situated at or above 8,000 feet in elevation where whitebark pine is present, heavy ground-based logging machinery be completely prohibited and replaced exclusively with non-commercial hand-crews who manually flag and clear space around individual whitebark clusters within a 30-foot radius.
- We recommend establishing strict, contractually binding seasonal timing restrictions on heavy machinery during critical wintering and breeding windows to protect unfragmented habitat cores and prevent wildlife displacement.
- We recommend completely eliminating all proposed road construction, temporary road templates, and commercial thinning units that overlap with mapped grizzly bear Secure Habitat and Canada lynx Critical Habitat to maintain necessary landscape connectivity.

Soil Disturbance (DSD) Thresholds and Hydrologic Function

The PED notes that standard summer logging and whole-tree yarding will cause a subset of treatment units to exceed the 15% DSD threshold stated in the Forest Plan. While the document notes that a winter harvest only alternative over a frozen snowpack is being considered to mitigate these project-wide DSD violations, an operational contradiction invalidates this mitigation: commercial activity is explicitly prohibited along Bear Creek trails from January through March to protect winter recreation. Using winter recreation trail closures to default to high-impact summer or shoulder-season ground operations that cross the 15% DSD threshold is an analytical flaw, as NRCS Web Soil Survey data confirms these soils are fragile, functionally brittle, and show virtually no natural compaction recovery for decades under a Cryic temperature regime.

- We recommend that the final decision mandate compliance with Montana DNRC Forestry BMPs within the timber sale contract.
- We recommend that the contract restrict mechanical operations to periods with a dry soil profile or deep snowpack (>1 foot), enforce a 1,000-foot soil compaction buffer around all wet meadows and riparian zones, and limit dispersed equipment travel to a single pass.
- We recommend restricting any remaining high-hazard operations to designated skid trails covering less than 15% of the unit area, or utilizing them exclusively via low-ground-pressure equipment (<6.0 PSI) and Cut-to-Length systems operating on a continuous bed of protective slash to avoid crossing DSD thresholds.

Diameter Breast Height (DBH) Limits

The PED has no DBH upper limits. This creates a management gap and oversight when the goal is creating uneven-aged stands and fostering wildfire resilience. Mature and old-growth tree retention is left up to field discretion rather than bounded by measurable criteria in the environmental analysis.

- We recommend contractually binding species-specific upper DBH limits for all timber removals to resolve the management gap and protect the remaining mature forest matrix.
- We recommend that all fire-resistant mature Douglas-Fir trees over 14 inches DBH are retained while limiting treatments to the removal of understory ladder fuels under 10 inches DBH.
- We recommend that for Lodgepole Pine stands, treatments target beetle-vulnerable size classes (8 to 13 inches DBH) within restricted 1-to-5-acre gaps to break up contiguous host matrices, while retaining all immature cohorts under 7 inches DBH.
- We recommend that Engelmann Spruce and Subalpine Fir trees retain over 16 inches DBH, while restricting treatments to understory ladder fuels under 10 inches DBH to prevent vertical crown fire ignition.

Water Quality, Riparian Buffers, and Aquatic Habitat Integrity

The PED lacks site-specific water balance modeling and baseline data for native Yellowstone Cutthroat Trout. Streamside Management Zone (SMZ) laws fall short of protecting subterranean water routing, microclimatic shading, or large woody debris recruitment cycles. The PED uses broad conifer encroachment narratives to authorize logging in sensitive riparian zones without defining or quantifying a vegetative departure. This omission, alongside missing baseline metrics for native willow (*Salix geyeriana/boothii*) and water sedge (*Carex aquatilis/utriculata*) densities, prevents public evaluation of streamside alterations. Commercial harvesting, log decks, and heavy machinery will accelerate surface erosion and deposit fine sediment that smothers spawning gravels (redds) across unredacted aquatic and wetland intersections. Unanalyzed runoff alterations risk rapid, snowmelt-driven peak flows that cause channel incision, triggering late-summer baseflow deficits that threaten downstream domestic water users and agricultural irrigators. Because these site-specific hydrological risks and cumulative impacts remain highly uncertain, the NEPA threshold of Finding of No Significance has been crossed, rendering an EA insufficient and suggests the need for a full EIS.

- We recommend the Forest Service prepare a full EIS to analyze and disclose uncertain cumulative watershed impacts across the Eagle, Palmer, Crevice, Davis, and Bear Creek drainages.
- We recommend a contractually binding, dual-tiered protective buffer framework for all units adjacent to critical headwaters: an expanded Riparian Management Zone (RMZ) providing a 150-foot heavy equipment exclusion setback and an inner 100-foot strict no-cut buffer restricted entirely to non-commercial hand-crews.
- We recommend a 500-to-1,000-foot extended hydrological buffer on steep, high-compaction hazard soils mandating Cut-to-Length (CTL) harvesting systems, a maximum static ground pressure limit of 6.0 PSI, and a 4-inch secondary slash mat.
- We recommend the administrative removal or rigorous application of these extended hydrologic setbacks within the following vulnerable units containing unredacted aquatic and wetland intersections. Clear Cut: Unit 19 (Wetland), Unit 34 (Bear Creek Tributary), Unit 43 (Wetland), Unit 57 (Palmer Creek), Unit 69 (Wetland), Unit 72 (Pole Creek); Commercial Thinning**:** Unit 1 (Eagle Creek), Unit 3 (Wetland), Unit 5 (North Fork Bear Creek Tributary), Unit 14 (Pole Creek), Unit 31 (Bear Creek Tributary), Unit 42 (Wetland), Unit 65 (Eagle Creek), Unit 80 (Bear Creek Tributary); Group Selection**:** Unit 41 (Wetland), Unit 52 (Malin Creek), Unit 53 (Malin Creek).
- We recommend the EA define the biophysical parameters of a vegetative departure and require comprehensive disclosure mapping of specific riparian and wetland indicator plants prior to authorizing streamside treatments.
- We recommend that all wet-meadow conifer removal slash be entirely extracted rather than lopped-and-scattered to prevent nutrient loading, and that structurally diverse coarse woody debris be left within channels to dissipate stream energy and prevent channel incision.

Mining Claims & Potential for Contamination

The historical footprint of mining across the Jardine and Gardiner area introduces subsurface environmental liabilities under NEPA and the Clean Water Act. Previous studies have shown elevated levels of arsenic and provides a detailed understanding of arsenic sources and transport in Bear Creek, enabling informed assessment and mitigation of potential water quality impacts that could be intensified by logging-related land disturbance (Thamke, J., et al., 2002). Ground-based mechanical logging, skid trail excavation, and log-hauling road maintenance operating across or adjacent to mining claims, historical tailings, and reclaimed mine sites present a risk of re-mobilizing heavy metals and toxic legacy contaminants into local aquifers and surface streams. Reclaimed mine sites and historical mineral operations in this district are often capped by fragile, thin topsoil layers. Increasing the frequency and weight of heavy machinery disturbance can accelerate the erosion of underlying waste rock and trigger acid mine drainage or arsenic/heavy metal leaching into active watersheds. Mines were absent from the Preliminary Effects Document.

- We recommend that the final Environmental Assessment (EA) map and disclose all active and legacy mining claims, historical tailings, and reclaimed mine sites within the project boundaries; using ArcGIS layer cross-references and photographic documentation where possible.
- We suggest prohibiting heavy ground-based mechanized equipment, skid trail excavation, and road construction on or immediately adjacent to mining claims and reclaimed mine caps to prevent fracturing fragile soil covers and re-mobilizing toxic heavy metals into the watershed.
- We recommend no-logging setbacks along Bear Creek and its tributaries, especially near identified arsenic source areas (e.g., Former Arsenic Mill, Outfall 001, Old Tailings North).
- We suggest machinery exclusion buffers around all mapped AML polygons and active mine drainages to avoid fracturing unstable subsurface ground networks and worsening existing water contamination liabilities.
- We recommend the Forest Service require targeted monitoring and remediation to prevent further degradation of Bear Creek's water quality from logging-related activities.

Specific Unit Considerations and Recommendations

Historical Cumulative Logging Impacts

The PED acknowledges that the Bear Palmer footprint contains a significant history of timber management, practices of canopy fragmentation, edge-effects, and soil disturbance. It also appears to use this past activity as a justification for further intervention rather than a warning sign of cumulative ecological strain. A review of the agency's database shows that multiple proposed units overlap or directly border areas heavily impacted by historical timber sales executed over the past several decades. This trajectory prioritizes the ecosystem surrounding

Jardine as an active timber management unit rather than supporting its function as a wildlife habitat and migratory corridor.

We hope additional consideration will be taken into account to allow these impacted areas to naturally recover and develop complex, old-growth structural characteristics. Adding 3,073 acres of modern mechanical disturbance and 16.9 miles of active log-hauling infrastructure to these slow-recovering areas have the potential to cause severe cumulative impacts.

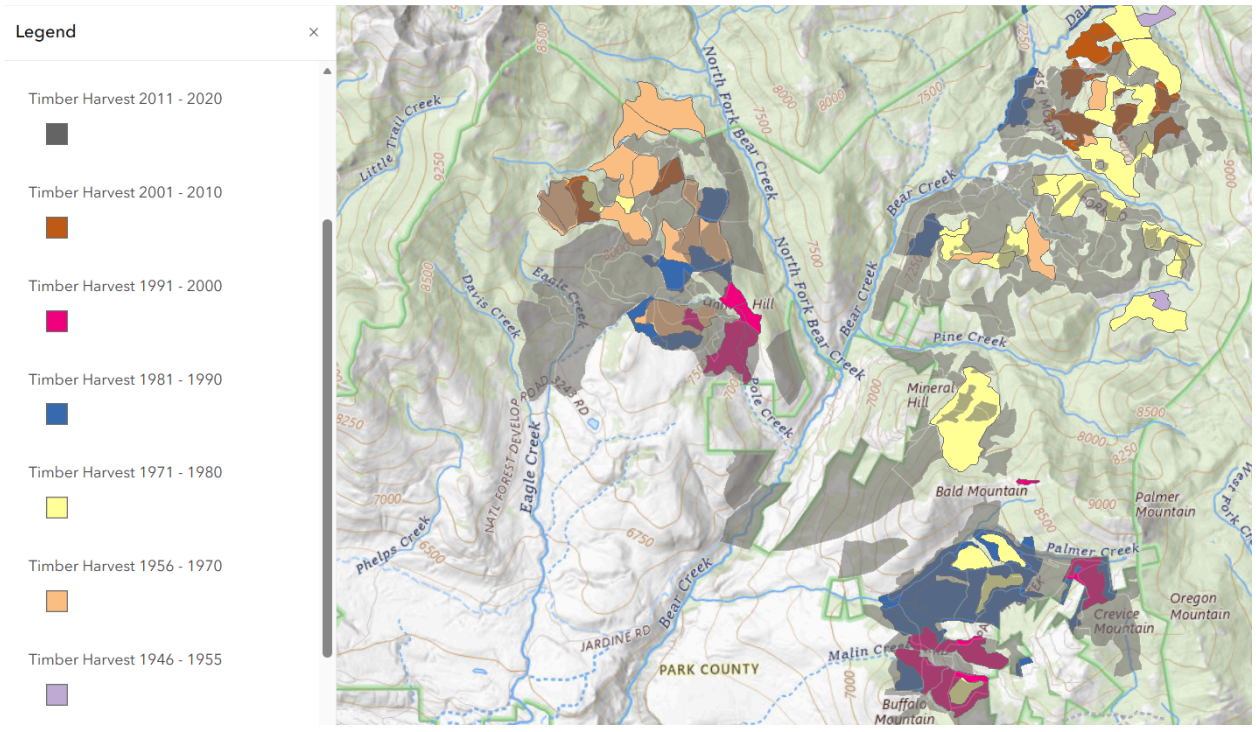

Figure 1: Map of Bear Palmer Project Area (gray) overlaid historical logging treatments between 1946-2020.

Units To Eliminate From the Project Scope

We have identified sixteen units (less than 11%) that should be reconsidered as they exhibit ecological sensitivity—including old-growth structural potential, steep slopes, high elevations, sensitive aspects, unlogged status, and direct proximity to Wilderness boundaries:

- Unit 5: This unit contains no history of prior logging and is characterized by deep soils and a predominantly North to Northeast aspect, presenting high potential for mature and old-growth forest structures. Additionally, it sits within a critical 300-foot buffer of the shared Wilderness Area boundary.
- Unit 25: This upper subalpine unit is situated above the critical 8,000-foot elevation threshold and remains entirely unlogged, possessing high baseline ecological integrity.
- Unit 34: This unit has no record of past timber harvest. Its northern administrative boundary intersects an active tributary stream channel, and the unit footprint exhibits a

predominantly North aspect with deep soils capable of supporting mature and old-growth forest conditions.

- Unit 36: Situated in close proximity to Bear Creek, this unlogged unit is defined by steep terrain and predominantly North-facing aspects, serving as a strong candidate for mature and old-growth structural retention.
- Unit 37: Located adjacent to the Bear Creek riparian corridor, this unit has no history of previous logging operations and exhibits high potential for old-growth development.
- Unit 38: Positioned in near proximity to Bear Creek, this unlogged unit contains a high percentage of severe, steep slopes that elevate erosion risks, while retaining structural potential for mature and old-growth forest.
- Unit 43: This upper subalpine unit is located entirely above the 8,000-foot elevation line and has never been subjected to prior logging operations.
- Unit 44: This unit consists of unlogged forest structures and directly encompasses sensitive, complex wetland habitats.
- Unit 48: Field monitoring and partial ground-truthing confirm that this highly valued recreation area has never been logged. It features severe slopes exceeding 31% directly above a public road corridor and serves as an ideal candidate for mature and old-growth preservation.
- Unit 49: This unlogged unit features a high percentage of territory above the 8,000-foot elevation threshold, paired with deep soils and a clear majority of North to Northeast aspects that favor old-growth forest development.
- Unit 62: Situated adjacent to Eagle Creek, this unlogged unit features deep soils and a high majority of North to Northeast aspects, showcasing strong potential for mature and old-growth forest development.
- Unit 66: Positioned near the North Fork of Bear Creek, this unlogged unit features deep soils and a predominantly Northeast aspect with high old-growth potential. It is also located within the sensitive 300-foot setback of the Wilderness Area boundary.
- Unit 72: Located in close proximity to Pole Creek, the vast majority of this unit remains unlogged. It is characterized by deep soils and entirely North to Northeast aspects that support high-value mature and old-growth cohorts.
- Unit 80: Located near a critical tributary of Bear Creek, this unlogged unit features steep, vulnerable terrain with a predominantly North aspect and deep soils supporting old-growth potential.
- Unit 107: This unit falls directly within the protected 300-foot mechanical equipment setback from the shared Wilderness Area boundary.
- Unit 312: Situated near a vital tributary of Eagle Creek, this unlogged unit must be managed to enhance localized aspen stands, restricting management actions strictly to low-intensity prescribed fire as the primary treatment mechanism.

Selection Management Alternatives

Riparian & Headwater Buffer Zone [Units: 1, 3, 5, 14, 19, 31, 34, 41, 42, 43, 52, 53, 57, 59, 65, 69, 72, 80, 99, 106, 112, 114, 123, 125, 129, 300, 312, 315, 316, 319, 320]: Establish an expanded Riparian Management Zone (RMZ) providing a 150-foot heavy equipment exclusion setback from the ordinary high-water mark of all perennial and intermittent streams, with an inner 100-foot strict no-cut buffer restricted entirely to

non-commercial hand-crews to preserve canopy shade. For “mechanical system” operations extending into the 500-to-1,000-foot extended hydrological buffer on high-compaction hazard soils above 15% DSD, contractually mandate winter-only operations on frozen snowpacks, Cut-to-Length (CTL) systems, a maximum static ground pressure of 6.0 PSI, and a 4-inch secondary slash mat.

WUI & Canopy Gap Transition Zone [Units: 7, 9, 12, 18, 19, 22, 23, 26, 29, 30, 32, 34, 36, 43, 44, 46, 54, 55, 56, 57, 60, 69, 84]: Completely replace broad commercial clearcuts with small, irregular canopy gaps between 1 and 5 acres. Retain structural clumps of young trees (2 to 8 feet tall) to preserve wildlife winter foraging cover, and ensure no point sits farther than 300 feet from a protective forest edge. These should be purposely placed to incorporate prescribed fire to achieve forest health goals and to prepare the landscape for wildfire after a century of suppression.

Road Construction Limits [Units: 13, 28, 37, 38, 50, 52, 58, 62, 65, 68, 72, 73, 74, 99, 109, 110, 112, 115, 116, 117, 310, 318, 326, 401, 407, 408, 409, 418, 421]: Eliminate temporary road construction and legacy road reopening across all units within the Roadless Area.

High-Elevation Zone (Above 8,000 ft) [Units: 28, 43, 44, 46, 50, 52, 54, 55, 56, 57, 58, 60, 62, 65, 68, 69, 72, 73, 74, 84, 99, 109, 110, 112, 115, 116, 117]: Restrict all treatments to manual non-mechanical hand-crews using chainsaws and loppers. Prohibit heavy ground-based machinery to protect whitebark pine saplings from mechanical crushing. Limit work to manual daylighting within a 30-foot radius of whitebark pine trees, removing competing understory conifers under 8 inches DBH.

Species-Specific DBH Limits [All Units]: Unconditionally retain all fire-resistant Douglas-fir over 14 inches and riparian spruce/fir over 16 inches DBH. Within mesic Douglas-fir stands, maintain 50–60% overstory canopy cover and limit treatments to removing understory ladder fuels under 10 inches DBH. Target beetle-vulnerable lodgepole pine (8 to 13 inches DBH) strictly within the 1-to-5-acre gaps, while retaining all immature cohorts under 7 inches DBH.

Wilderness Setback Limits [Units: 5, 66, 107]: To protect adjacent pristine forest structures from microclimatic degradation, accelerated windthrow, and noxious weed vectors, the agency should enforce a strict 300-foot mechanical equipment setback from the shared Wilderness Area boundary. Within this 300-foot buffer, all commercial timber extraction and heavy machinery operations are completely prohibited. Any required fuel reduction or forest health treatments should be restricted entirely to non-commercial hand-crews utilizing chainsaws and hand-pulling, or the application of low-intensity prescribed broadcast burns.

Steep Slope Limits [66, 67, 68, 12, 36, 37 and other units that apply]: Prohibit ground-based mechanical machinery on all slopes exceeding 40% to 45% and require a transition to cable or winch-assisted tethered harvesting systems to prevent severe soil gouging and rutting. On any stream-adjacent side-slopes exceeding 35%, the agency

must enforce Montana's mandatory SMZ slope protections by automatically doubling heavy equipment setbacks to 100 feet to prevent gravity-driven runoff from channelizing down skidder tracks.

Shaded North- and Northeast-Facing Hillsides [Units**:** 5, 34, 36, 49, 62, 66, 72, 80, 81 and other unity that apply]: Retain at least 60% to 70% of the upper tree branches intact. This ensures the leaves and needles form a thick ceiling that blocks solar radiation and strong winds from melting the winter snow too early.

Abandon Mine Lands [Units: 73, 74, 51, 54, 55, 57, 58, 107, 113, 114, 116, 419, 420]: These commercial and prescribed burn treatment units should prohibit all ground-based mechanical machinery, commercial log landings, and active ignition lines within a 300-foot buffer zone around mine features, tailing piles, or historic adits to prevent collapse, landslide hazards and contamination. Limit unit treatments to low-impact, over-snow operations or cable-yarding systems. Eliminate soil gouging and toxic arsenic and heavy metals entering watersheds. Prescribed burning to include low-intensity underburning parameters and maintain a 150-foot no-burn buffer around historical waste sites to prevent contaminant and post-fire runoff into the watershed.

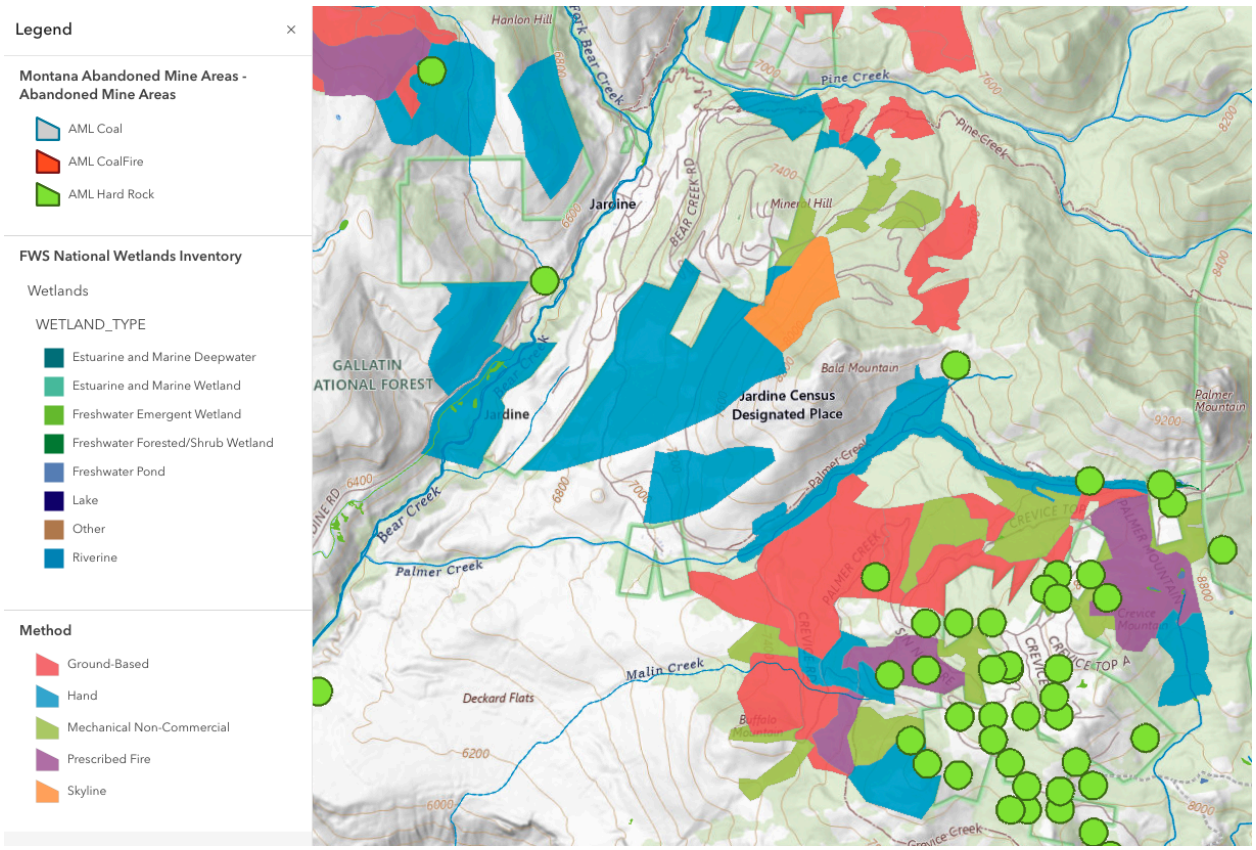

Figure 2: Bear Palmer Forest Health Project boundaries overlapping with historic abandoned mine lands (AML) near Jardine, Montana. The overlay highlights potential spatial conflicts where planned commercial forestry and prescribed burning intersect critical local watersheds.