

ENVIRONMENTAL ANALYSIS REPORT
Review and Approval Sheet

Proposed Project -STAHL- GRAVE TIMBER SALE

Ranger District- Fortine Ranger District

National Forest - Kootenai National Forest

Analysis Prepared by Larry A. Sears Date 2/20/79

Reviewed and Recommended by:

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District Ranger

Interdisciplinary Review:

Jack Myers 3/23/79
Wynne G. Goshorn 3/23/79

Reviewed and Approved by:

[Signature] Date 3-23-79
Forest Supervisor

Based upon analysis of the proposed action, it is recommended that an Environmental Statement is is not required.

Date

I concur that an Environmental Statement is is not required. My reasons for nonconurrence are attached.

[Signature] Date 3-23-79

STAHL-GRAVE

TABLE OF CONTENTS

I. Description.	1
A. Overview of the Project	1
B. Description of the Project Area	1
1. Location and Size.	1
2. Land Ownership, Status, and Special Uses	3
3. Physiography-Geology	4
4. Minerals	4
5. Timber-Habitat Types	5
6. Ecological Land Units	6
7. Management Units	7
C. Description of the Resource Management Situation and the Proposed Action, Objectives and Constraints	8
1. Timber Management-Silviculture	8
2. Wildlife Management.	10
3. Watershed Management	13
4. Fisheries Management	16
5. Range Management	18
6. Logging and Transportation Systems	19
7. Recreation and Visual Management	25
8. Fire and Fuels Management	27
9. Historical-Archeological	30
II. Environmental Impacts.	31
A. Physical	31
B. Biological	31
C. Cultural	33
D. Economic	33
III. Favorable Environmental Effects.	34
IV. Adverse Environmental Effects.	34
V. Alternatives to the Proposed Action.	35

VI.	Relationship Between Short Term Uses of Man's Environment and Maintenance and Enhancement of Long Term Productivity	39
VII.	Irreversible and Irretrievable Commitment of Resources	39
VIII.	Consultation with Others	39
IX.	Management Requirements and Constraints	40
X.	Environmental Statement Recommendations	40

APPENDIX

Left Side

Right Side

Vicinity Map	Base Map with Silvicultural Opportunities
Volume Calculations	Transportation - Logging Systems Overlay
Soils Report -- Louis Kuennan	Corrected E.L.U. overlay
MU 6 Statement -- Bob Seidel	
Silvicultural Report -- Dave Brockmann	
Grizzly Bear Report -- Dave Brockmann	
Logging Systems Reports -- Ole Olson	
Landscape Architect Report -- Wayne Tlusty	
Archeology Reports -- Montana Historical Society University of Montana J. Mathews and A. Frost	

ENVIRONMENTAL ANALYSIS REPORT
PROPOSED STAHL-GRAVE TIMBER SALE

I. Description

A. Overview of the Project

The proposed project is a timber sale of approximately 12 MMBF in the Grave and Weasel Creek drainages in the Northeast corner of the Fortine Ranger District, Kootenai National Forest.

The proposed sale date is FY 1982.

The sale area is within the Eureka-Grave Creek planning unit (#2). Land use planning is completed and was approved by CEQ in 1975. The proposed project is consistent with the land use plan objectives and management guidance.

This proposed sale was placed on the five-year plan largely because of its great amount of dead and dying old growth timber (Western White Pine, Douglas-Fir, Lodgepole Pine and Whitebark Pine). Suitability for timber production is generally high.

Management objectives which this project intends to accomplish are;

1. Salvage high valued and concentrated mortality.
2. Harvest mature and overmature stands within environmental and management constraints.
3. Remove overstory and rehabilitate spruce bark beetle cutover areas where silvicultural objectives are not being met.
4. Perform timber stand improvement activities.
5. Provide access for future "Wyssen" and helicopter logging as well as conventional salvage opportunities.
6. Protect or enhance Grizzly Bear Habitat.

B. Description of the Project Area

1. Location and Size

The proposed project area encompasses most of the timber management opportunity areas in the upper Grave Creek and Weasel Creek drainages. Site drainages included are Clarence Creek, Stahl Creek, South Fork of Stahl Creek, Foundation Creek, Divide Creek and Camp Creek.

The approximate legal description is the eastern half of T36N, R24W; the eastern two-thirds of T36N, R25W; and the extreme northwestern corner of T35N, R25W, PMM.

The area considered in this report is generally bounded by Wilderness Study Areas and/or Roadless Areas. Exceptions are: Canada, to the North; Lewis, Blue Sky and Williams Creek drainages, to the East; a future and unnamed sale area on the upper slopes below Krinklehorn and Deep Mountains, to the Southeast; and proposed Jager Sale Area to the South. Private land lies adjacent to the Southwest corner (lower Grave Creek). The Northwestern boundary generally follows the divide between Grave Creek and the Wigwam River.

The total area covered by this report is 29,400 acres, all within Lincoln County.

The appendix section of this report contains maps and over-lays illustrating the proposed project area, management units, E.L.U. silvicultural opportunities, and transportation-logging system plan.

The scope of timber management opportunities may be described as follows:

	<u>Acres</u>	<u>% of Total Report Acres</u>
Cut-over area	3,000	19%
Uncut area, but not available for Timber Management (MU 3,6)	5,150	33%
Uncut area available for Timber Management	7,350	48%
TOTAL	15,500	100%

The uncut area available for timber management is further described as follows:

Silvicultural opportunity	Acres and % of area by Management Unit				
	Total	5	6	7	8
Regeneration	4070 54%	2201 29%	427 6%	64 1%	1378 18%
Commercial Thin	240 3%	 	 	 	240 3%
Overstory Removal	770 10%	320 4%	 	 	450 6%
Defer	2470 33%	Not Classified			
Total	7550 100%	2521 33%	427 6%	64 1%	2068 27%

6. Logging and Transportation Systems

A transportation plan was developed through the unit planning process. The portion of the plan covering the proposal area has been revised to better fit the ground and the planned logging systems. This revision (see appendix) is planned around the least-cost combination of yarding and transportation costs that will do the job and satisfy management unit objectives. Further modifications will be made to resolve unforeseen problems.

Road spacing in most cases is a function of topography, skyline deflection and maximum skyline or jammer span capabilities. Ground profiles were drawn from a 4 inch-to-the-mile contour map using a desk-top computer and digitizer. Slopes greater than 35-40% were planned for cable yarding. Critical points were identified both optically and calculated using skyline analysis programs.

Logging systems were tried for "fit" generally in the following order: Tractor, live skyline, jammer/running skyline, standing skyline with one intermediate support (Wyssen) and helicopter. This usually resulted in the valley bottoms and benches being planned for tractor yarding, the lower slopes live skyline, middle slopes running skyline or jammer, upper slopes (uniform slope to convex) standing skyline with intermediate support and the remaining areas (blind leads or high ridges) planned for helicopter yarding.

All climbing forest collector roads are in place. Few forest local roads are existing. At least minor reconstruction will be required on most existing roads used by the project. Specific needs will be determined during project design and layout. Figure III displays rough mileage and cost estimates for proposed project road construction and reconstruction.

The management classification (FSM 7705) for roads referred to as forest collector is "long term - constant service - secondary - all weather or seasonal." Forest local roads are classified as "long term - intermittent service - tertiary - seasonal."

Gravel for all-weather roads will probably come from a potential pit site north of Weasel cabin. Pit investigation remains to be done. A good pit site in the southern portion of the project area is also needed.

The appraisal point is Fortine, Montana. Road management and closures will be as directed in the Eureka-Graves unit plan. Additional closures will be considered if the grizzly bear habitat analysis and consultation with the Fish and Wildlife Service concludes that such

closures are necessary to prevent this sale from having a negative impact on a Threatened or Endangered Species.

Collector roads will normally be kept open for public use. Exceptions will be those roads such as Camp, Divide and Upper Foundation Creek roads. They will remain closed to motorized vehicles between April 1 and December 1 in accordance with the Forest Travel Plan.

The bridge crossing Clarence Creek on the Grave Creek Road will need replacement to support legal highway loads. The bridge site survey was completed this summer. It has been picked up on the Capital Investment Program for FY 80.

The county bridge crossing Grave Creek on the Williams Creek Road presently has a 4-ton load limit. It is on the normal haul route for that portion of the project area south of Williams Creek and east of Grave Creek. The county recognizes the need to replace this bridge. The possibility of the Forest Service cooperating with the county in the replacement of the bridge is being checked into by Engineering, we do have an alternate route. Engineering is analyzing a proposed tie-through route from the switchback on the Deep Divide Road (#7066), around to the South. It would tie into an existing road (#7069) off the Deep Creek Road. If this route should be the appraised route for timber tributary to the Williams Creek Road, then that acreage and volume will be deleted from this sale and added to the proposed Jager Sale, also an '82 sale.

A bridge is needed either across Grave Creek in the vicinity of Clarence Creek or across Blue Sky Creek near it's confluence with Grave Creek. This is to serve the area east of Grave Creek and south of Blue Sky Creek. Harvest opportunities there presently are mostly overstory removal/salvage because of heavy logging in the past. It was accessed via a temporary bridge across Grave Creek. The next significant entry may not be for twenty to forty years unless management direction for MU 3 changes to permit regeneration harvest.

A detailed examination of this area will be done by the District Silviculturist to determine the urgency for harvest at this time. If harvest with this project is indicated, an economic analysis will be made to aid in bridge site selection (Grave Creek vs. Blue Sky Creek).

The Grave Creek Road is a single lane road with turnouts. The upper portion is wider--even double lane in places. The average daily traffic, without logging traffic, is approaching 100 which is considered maximum for safety on a single-lane road (FSM 7721.1).

Safe travel must be provided for recreation and logging. Alternatives are (1) reconstruction to double lane and (2) traffic regulation.

STAHL-GRAVE: TRANSPORTATION COSTS

Road Number	Road Classification	Reconst. Mileage	Reconst. Cost	Const. Mileage	Const. Cost	TOTAL MILEAGE	TOTAL COST
114	Forest Collect.	12.8	127,400			12.8	127,400
7066	Forest Collect.	1.2	13,200			1.2	13,200
7019	" "	2.8	31,400			2.8	31,400
7021	" "	5.4	92,500			5.4	92,500
7022	" "	1.4	22,400			1.4	22,400
319	" "	3.8	60,800			3.8	60,800
7108	" "	0.8	6,400			0.8	6,400
114Y	" "	0.7	12,000			0.7	12,000
7029	" "	2.9	65,300			2.9	65,300
7000	" "	0.5	26,000			0.5	26,000
7027	Forest Local	1.9	15,100	0.3	7,300	2.2	22,400
7066-B	Local			0.5	8,600	0.5	8,600
7019-A	Local			1.0	17,200	1.0	17,200
7019-C	Local			0.6	10,300	0.6	10,300
7030	Local			0.7	44,300	0.7	44,300
7030-A	Local			0.6	13,100	0.6	13,100
7030-B	Local			0.3	6,500	0.3	6,500
7029-B	Local			0.3	6,500	0.3	6,500
7029-E	Local			1.4	36,000	1.4	36,000
7029-H	Local			0.5	12,200	0.5	12,200
7029-I	Local			0.8	24,000	0.8	24,000
7021-C	Local			0.9	27,000	0.9	27,000
7021-D	Local			.5	12,200	.5	12,200
7021-E	Local			1.5	36,600	1.5	36,600
7027-A	Local			0.2	4,400	0.2	4,400
114-B	Local			0.4	8,700	0.4	8,700
7108-B	Local			0.5	12,200	0.5	12,200
7109	Local			0.2	5,200	0.2	5,200
7109-A	Local			0.3	7,800	0.3	7,800
7039	Local			0.4	9,800	0.4	9,800
7040	Local			0.4	9,800	0.4	9,800
7040-A	Local			0.4	9,800	0.4	9,800
7040-B	Local			0.2	4,900	0.2	4,900
7000-A	Local			0.3	7,300	0.3	7,300
7000-C	Local			0.1	2,500	0.1	2,500
319-C	Local			0.3	7,300	0.3	7,300
319-D	Local			0.3	7,300	0.3	7,300
TOTALS		34.2	472,500	13.9	358,800	48.1	831,300
Average Costs			13,800/mi		25,800/mi		17,300/mi

Figure III

Reconstruction to a double lane standard would be very costly. Resource and visual impacts would also be high where the road crosses the face of lacustrine deposits. Ravelling and slumping is already a problem on these high cut slopes.

Traffic regulation could be accomplished in several ways: (1) prohibiting log haul on weekends and holidays, (2) prohibiting recreational use on weekdays, (3) prohibiting or restricting log haul during the highest recreation use seasons, (4) make the single lane portion alternating oneway using flagmen, or (5) any combination of the above. Traffic regulation is the preferred means of providing safe travel. The type of regulation is best selected when the Purchaser desires to begin operations, but should include methods 1 and 3 in the timber sale contract. Signs warning the public of hazardous driving conditions due to heavy truck traffic will be required also.

Skyline logging adjacent to the Grave Creek Road will block all traffic at that point. Therefore, yarding and loading operations that require blocking the road will be prohibited during high recreation use season. The road will be kept open during all weekends, holidays and after working hours.

Logging and Transportation System project objectives include the following:

- (a) Continue the development of a permanent transportation system that will serve future management activities at least cost.
- (b) Design the least expensive combination of road and logging systems that will accomplish project objectives and minimize adverse environmental impacts.
- (c) Coordinate route locations and design standards with harvest methods and other management requirements.
- (d) Minimize road maintenance costs by controlling the season of use; designing low maintenance drainage facilities where feasible and achieving adequate revegetation.
- (e) Provide for at least a minimum of 500 MBF per cable logging system if jammer or live or running skyline is required.
- (f) Design, construct and manage all forest collector roads to all weather standards when warranted, and open to the public, except where other resource considerations dictate the need for public closures. Provision may be made to close such roads during a short period in the spring when the subgrade is saturated. The Kootenai's hydraulic

guide, "All Weather Road Planning Criteria" will be used as an aid in determining when a road should be designated "All Weather."

- (g) Design local roads with minimum cost and environmental impacts consistent with the purpose of the road.
- (h) Minimize mileage and degree of road reconstruction to that necessary for the operation of this sale.
- (i) Inventory existing roads not needed for the transportation system and which are either erosion problems or are not productive and provide for their rehabilitation.

Management Guidance and Constraints associated with the project objectives for logging and transportation are:

- (a) In Management Units 7 (Timber-Viewing) and 8 (Viewing), precede road location and design activities with a landscape architect's input.
- (b) Where opportunities exist, construct turnouts or pull-offs near stream crossings with opportunities for dispersed recreation.
- (c) Turnouts will be intervisible on collector roads, but not necessarily on local roads. Turnouts should be incorporated as landings where cable yarding will be required.
- (d) Slash treatment should be 100 percent adjacent to arterial and collector roads for a distance to be determined at the time of project design.
- (e) Road clearing widths will be kept to the minimum necessary for safe travel at the design speeds.
- (f) Design standard for collector roads will be S-20, for local roads, S-10. Subgrade width will be 14 feet (or more where required for surfacing) except where cable logging is required. Roads serving cable yarding landings will be 14 feet without ditch or 12 feet with ditch.
- (g) Survey methods will be Class II in areas that could pose resource damage, high construction costs or through areas of difficult construction. It is anticipated that "Six-Rivers Method" surveys could be used on several of the proposed road locations.
- (h) Seismic and soil investigations will be done prior to actual design. Investigations of this type will help in determining

surface and subsurface rock, slope ratios, slope stability needs (seed & fertilizer), and the need for spot rocking.

- (i) Local roads needed for this sale will not have an all-weather standard.
- (j) Maintenance levels for local roads after sale termination will be level 2. After post sale activities are completed some roads may be maintained at level 1.
- (k) Many of the existing collector roads will require gravel or spot gravel. The exact depth and areas will be determined with the aid of CBR tests. Some roadside brushing will be necessary.
- (l) A multi-discipline investigation and engineering economic analysis is needed during final design to help determine whether or not this project will harvest timber east of Grave Creek and south of Blue Sky Creek and if so, which stream the bridge should cross.
- (m) Traffic regulation will be required on Grave Creek Road during the life of the sale. This will include prohibiting log haul on weekends and holidays and will restrict blockage of Grave Creek Road for yarding and loading operations to lower recreation use seasons.
- (n) Final road locations and appraised yarding system in cable logging areas will be planned with the aid of ground profiles plotted from field notes.
- (o) Cable skidding is preferred in ELU 130 on slopes over 20% because of the high overland flow potential. Road construction is not recommended in this ELU, but if necessary, it should be located on the upper portion.
- (p) The operating season for tractor skidding and dozer piling will be limited to periods of low soil compaction hazard.
- (q) All cut and fill slopes will be revegetated using an appropriate seed and fertilizer mix based on soil testing and current revegetation recommendations. The road surface on all local roads subject to surface erosion will be seeded using a rangeland drill if possible; otherwise they should be lightly scarified and seeded.
- (r) During final design, inventory all existing roads that are not needed in the ultimate transportation plan and make provisions for their obliteration in the K.V. plan if appropriate.

- (s) Analyze the need for dust abatement based on soil types, season of use, and traffic volumes. Dust abatement in the form of dust oil will be required only where other forms are impractical.
- (t) Coordinate all stream crossings and cutting units next to streams with the Forest Fisheries Biologist.

7. Recreation and Visual Management

Recreation in the proposal area encompasses most types of mountain recreation, including camping, picnicing, hiking, fishing, hunting, berry picking, sightseeing and snowmobiling. A great deal of traffic passes through the area enroute to the Ten Lake Senic Area or the Terriault Lakes campground.

The periods of heaviest recreation use are July-August, (camping, hiking, fishing, berry picking); October-November, (hunting); and January-March, (snowmobiling).

There are no developed recreation sites within the area, however there are eleven inventoried dispersed recreation sites. Potential development sites have been inventoried at the mouth of Clarence Creek and on Graye Creek about one mile above Blue Sky Creek.

Hiking in the area is on the increase. Six inventoried Forest Trails (#77, 78, 80, 81, 335 and 358) are maintained and are receiving use. The proposed Pacific Northwest Trail linking Glacier National Park and the Pacific Ocean may traverse the project area. Route selection has not yet been done but it will follow existing roads and trails.

Most of the streams in the area are fisheries. Graye Creek, Weasel Creek and Weasel Lake receive the greatest fishing pressure.

Huckleberry picking is very popular in the Stahl and Clarence Creek drainages during August.

Hunting begins with upland birds in early September and lasts until the big game season closes in late November. Some bear hunting is done in the spring. The heaviest hunting is done in late October through November, during the deer and elk season.

During the winter months, snowmobilers travel much of the established road system and use the Weasel Cabin as an overnight stopover point. The large clearcuts in the Weasel Creek drainage are favorite play areas.

Our R.I.M. (Recreation Inventory Management) report for 1977 indicates that 8300 recreationists travel the Graye Creek road annually. Traffic

counter data shows that traffic (excluding logging traffic) has nearly doubled in the last three years.

Three Wilderness Study Areas lie adjacent to the project area. The Tuchuck area lies east of Foundation Creek and North of Lewis Creek; the Thompson-Seton area lies east of Grave Creek and between Blue Sky and Lewis Creek. Both were selected for wilderness study by the Chief through the RARE I process and are being studied by the Flathead National Forest because it contains most of their acreage. They are also being re-evaluated under RARE II. The Ten Lakes area lies adjacent to the western boundary of the proposed project area from lower Graves Creek to upper Foundation Creek. It is being studied under RARE II and Senate Bill S-393 (The "Metcalf Bill") for wilderness.

Approximately 25% of the project area is within Management Units 7 and 8. These are the important viewed areas from Grave Creek Road and Weasel Lake.

Wayen Tlusty, the Forest Landscape Architect at the time, reviewed the area on the ground and provided advice via a letter. A copy of his letter is in the appendix.

Project objectives related to Recreation-Viewing are as follows:

- (a) Guide project activities within MU5 (timber) by "maximum modification" landscape management objectives.
- (b) Guide project activities within MU's 4 (Wildlife-Timber), 7 (viewing) and 8 (viewing-timber) by "partial retention" landscape management activities.
- (c) Guide project activities within MU6 by partial retention objectives where the "visual significance map" in the Multiple Use plan shows "moderate" or higher significance. Elsewhere, maximum modification objectives will guide.
- (d) Maintain existing dispersed recreation sites and where opportunities arise create new sites through project design.
- (e) Protect the suitability of the two inventoried potential recreation development sites for development.
- (f) Consider controlling timing of logging operations where they might interfere with recreation traffic during high use periods.
- (g) Protect the integrity of system trails where roads or units cross them and provide for signing through the Timber Sale Contract.

Management Guidance and Constraints oriented to Recreation-Viewing consists of the following:

(a) Within MU 7 (viewing):

1. Timber harvest will normally be conducted with "advanced Technological Systems."
2. Only salvage logging will be done within this MU around Weasel Lake until a landscape management plan is developed.

(b) Within MU 8 (viewing-timber):

1. The services of a landscape architect will be used in designing cutting patterns and locating roads.
2. Encourage species composition providing the greatest flexibility in timber management.
3. Roadside slash cleanup will leave a finished appearance.
4. Shelterwoods will be left in place until regeneration has become visually significant.
5. Roads will be screened where practical.
6. Road spacing will approach the maximum conventional skidding distance.
7. Protect the development potential of the inventoried potential recreation development sites.

(c) Within the project area:

1. Clearcuts and seed tree units will be kept in the 10-25 acre size range.
2. All roads designated for public use will be designed, constructed and maintained to present a pleasing appearance to the traveler.

8. Fire and Fuels Management

Since 1940, 19 fires have occurred within the project area. Two were man caused, cause uncertain. All were A & B size class. A number of large fires occurred during the early part of this century prior to organized detection and suppression. Even though much of the country is steep and inaccessible except by trail and cross country foot travel, suppression of fires is