

Project-Specific Forest Plan Amendment Discussion

During scoping for the Gold Butterfly project, the public was notified there were four Forest Plan standards the project may not meet. During the analysis for the DEIS, it was determined there were only two standards regarding elk habitat that would require a project-specific variance regarding elk habitat. They are discussed below.

The Supplemental EIS contains the analysis of the need to amend the Forest Plan regarding old growth.

Forest-wide standard for Elk Habitat Effectiveness (Forest Plan pp. II-21, F.1.e.(14)): Manage roads through the Travel Plan process to attain or maintain 50 percent or higher elk habitat effectiveness (Lyon, 1983) in currently roaded third order drainages. Drainages where more than 25 percent of roads are in place are considered roaded. Maintain 60 percent or higher elk habitat effectiveness in drainages where less than 25 percent of the roads have been built.

Purpose: This project-specific variance from this standard is intended to provide exceptions from the elk habitat effectiveness standards in six third order drainages in the analysis area. The small size of the 3rd order watersheds in this project area limits the amount of roads that can be present on the ground. To meet the standards, the mileage of roads needed to be closed would limit forest management access and conflict with other Forest Plan management objectives to provide roaded, dispersed recreation.

Management Area 3a standard for Thermal Cover (Forest Plan ROD, p. 8): Winter range will be managed to provide diversity of forage and hiding cover with at least 25 percent of the area in thermal cover at all times.

Purpose: This proposed project-specific variance from this standard is intended to apply the best available scientific information to the Gold Butterfly project's thermal cover design and adapt to changes that have occurred on the landscape in support of Forest Plan and project goals and objectives.

Applicable 2012 Planning Rule Component

During scoping, the Forest is required to identify which components of the 2012 Planning Rule apply to a project amendment. Scoping notifications acknowledged that a project-specific variance of the winter range thermal cover and elk habitat effectiveness standards are likely related to the Forest Planning consideration of habitat conditions for wildlife commonly used and enjoyed by the public at § CFR 219.10(a)(5).

Planning Regulation Section 219.10 Multiple Use, Part (a) Integrated Resource Management for Multiple Use, Subpart (5) Habitat conditions, subject to the requirements of § 219.9, for wildlife, fish, and plants commonly enjoyed and used by the public; for hunting, fishing, trapping, gathering, observing, subsistence, and other activities (in collaboration with federally recognized Tribes, Alaska Native Corporations, other Federal agencies, and State and local governments).

Elk Habitat Effectiveness

The Forest Plan standard for elk habitat effectiveness (EHE) is to manage roads through the Travel Plan process to attain or maintain 50 percent or higher EHE in currently roaded third order drainages, and 60 percent or higher EHE in drainages where less than 25% of the roads had been built. EHEs of 50% and 60% equate to 2 miles and 1 mile of open road per square mile, respectively (Lyon 1983). This standard supports the Forest Plan objectives of maintaining habitat to support viable populations of wildlife species and cooperating with the state of Montana to maintain the current level of big game hunting opportunities. The EHE model described by Lyon does not explicitly factor in noise to help determine the effects of motorized vehicles to the ability of elk to utilize habitat near roads. However, noise from vehicles likely affects the distance from roads or trails at which elk are disturbed and would thus be one of the implicit factors that influenced the amount of elk use at various distances from open roads documented by Lyon (1983).

The EHE model described by Lyon was the best information available at the time the Plan was implemented. Subsequently, a model developed by Hillis et al. (1991) has been used in Bitterroot National Forest project planning to maintain elk security during hunting season when elk are most vulnerable.

The project would reduce the existing elk security area percentage in HD 261 to a minor degree. Several units in areas currently classified as security cover would no longer qualify as security cover due to loss of hiding cover (PF-WILD-030; PF-WILD-083). New specified and temporary roads would not reduce security area because they would be closed to public motorized use. The fact that elk numbers in the area are stable or increasing may be a reflection of the rugged topography in much of the area, which limits hunter access to elk in areas that may not technically qualify but nonetheless function as security area. Elk may also escape hunting pressure by moving to private land refuges where hunting is limited or prohibited. The project could result in a minor increase in the number of elk using private land.

Thermal Cover

Thermal cover was analyzed separately within the identified winter range across HD 261 that includes the Gold Butterfly project area. Winter range in the project area is generally limited to lower elevations along the western edge of the project area, as well as the lower elevation south aspects along the larger streams. Most of the project area is too high to be classified as winter range (PF-WILD-076). Approximately 64,709 acres of BNF and adjacent private lands in a larger herd unit area defined by HD 261 are classified as elk winter range (Ibid). VMap estimates that about 10,304 acres (16%) of this winter range area qualify as thermal cover (PF-WILD-030). This amount of thermal cover does not meet either the 20% optimal thermal cover percentage referenced in Guides for Elk Habitat Objectives (USDA Forest Service 1978), nor the 25% minimum standard for thermal cover in winter range set in the Bitterroot Forest Plan Record of Decision.

The purpose of the Forest Plan thermal cover requirement was to provide habitat that, at that time, was believed to be necessary to meet the Forest Plan goals and objectives of maintaining the State's population goals for elk. Recent research, however, has questioned the necessity of thermal cover for survival of wintering elk (Cook et al. 1998). The researchers found "no significant, positive effect of thermal cover on the condition of elk during any of their six experiments. In contrast, dense cover provided a costly energetic environment, resulting in significantly greater over-winter mass loss, fat catabolism, and (in one winter) mortality." Whether thermal cover is necessary for individual elk survival or elk population viability

seems open to question. As discussed in Chapter 3 of the FEIS, large amounts of winter range thermal cover do not seem necessary to support the State's elk population goals on the Bitterroot National Forest.

The Gold Butterfly project- specific plan amendments for thermal cover and elk habitat effectiveness would meet the Planning Regulation 219.10(a)(5) for elk hunting, observation and other activities. It is likely that there would be little discernable change in elk numbers as a result of implementing the project. However, the combination of reduced cover and increased human access in some parts of the project area could displace more elk onto adjacent private land during some parts of the year. Changes to elk populations resulting from implementation of the project would be difficult to quantify because elk populations are also affected by hunting regulations, predation levels and weather, among other factors. The 2022 elk trend count indicated that elk populations across Hunting District (HD) 261, which includes the project area, are within the range of desired elk population objectives identified in the 2004 Montana Elk Management Plan (MDFWP 2004, amended). Habitat conditions for elk would not result in discernable change in elk numbers in the project area for the public to hunt, observe and enjoy.

Discussion

Intent of Forest Plan Standards

The Forest Plan standard for elk habitat effectiveness (EHE) cites Lyon et al. (1983) as a standard for road density that should be used to evaluate elk habitat effectiveness. The intent of the standard was to provide better security for animals.

The purpose of the thermal cover requirement was to provide habitat that, at the time, was believed to be necessary to support viable populations of wildlife species and to maintain the current level of big game hunting opportunities (USDA Forest Service 1987, p. II-5).

Elk Habitat Effectiveness

The Forest Plan says Lyon et al. (1983) should be applied to third order drainages. There are 385 third order drainages on the forest which range between 3 – 9,625 acres in size. Only 75 drainages (19%) are >3,000 acres. Lyon et al. (1983) says his standards should be applied to an area >3,000 acres. The standard does not state what roads are to be considered i.e., all roads, all publicly open roads, only roads open during hunting season. Most recently, the Bitterroot National Forest has been using all roads open at any point during the year, maximizing the number of drainages that do not meet the standard. The elk population in the Bitterroot has increased dramatically since the Forest Plan has been written despite non-compliance with this standard in 110 drainages (out of 386 drainages across the forest). True elk habitat “effectiveness” is more related to forage abundance and quality than road density (Millspaugh et al. 2015, Ranglack et al. 2016, Crane et al. 2016). Pages 90 - 104 in PF-WILD-001 and pages 24-28 in SUPP-WILD-034 discuss existing conditions and effects of proposed actions to elk habitat effectiveness as assessed by existing Forest Plan Standards.

Elk Thermal Cover

Thermal cover is difficult to accurately measure on the landscape. Procedures outlined in Guides for Elk Habitat Objectives (USDA Forest Service, 1978) are no longer used and standards are expressed in crown closure not canopy cover. This nuance is important in that each is measured in a different way. As defined by Paletto and Tosi (2009):

“The canopy cover can be defined as the percent forest area occupied by the vertical projection of tree crowns (Avery and Burkart 1994; Korhonen et al. 2006), which can be assumed as the true value of the overstorey cover according to Bonnor (1967). The canopy closure has an analogous meaning, but it is represented by the proportion of sky hemisphere obscured by vegetation when viewed from a single point (Jennings et al. 1999) and, with the maximum expansion’s degree of its angle of view, it is a projection of a hemisphere onto a plane (Daubenmire 1959)”.

Closure when measured from the ground using a wide-angle view (spherical densiometer) or from antiquated aerial hemispherical digital photographs overestimate canopy cover (Paletto and Tosi 2009). Furthermore, there is significant variability of results from different techniques to measure canopy closure (Paletto and Tosi 2009). Whereas different techniques to measure canopy cover are more correlated and produce more similar results (Mirik and Absley 2012, Hulet et al. 2013, Richardson and Moskal 2014). Techniques used to measure canopy closure overestimate canopy cover on average by 10.15% (Paletto and Tosi 2009). Therefore, values $\geq 60\%$ canopy cover likely fulfill the Forest Plan standard of $\geq 70\%$ crown closure. VMap is the most appropriate tool for assessing canopy cover and other vegetation variables because it captures a moment in time for comparison across the entire forest, uniformly measured, and is sufficiently accurate. VMap accuracy is $>90\%$ (Brown 2016). Landscape scale remote sensing mapping is considered suitable for management planning when overall accuracy is $>85\%$ (Anderson et al. 1976, Hulet et al. 2013). Pages 90 - 104 in PF-WILD-001 and pages 24-28 in SUPP-WILD-034 discuss existing conditions and effects of proposed actions to elk thermal cover as assessed by existing Forest Plan Standards.

Cumulative Impact

Elk Habitat Effectiveness and Habitat Objectives Amendment

There have been 11 project-specific amendments related to EHE since the Forest Plan was approved in 1987. There have been 9 project-specific amendments related to thermal and hiding cover. As discussed above, the Forest Plan objective of maintaining the current (1987) level of big-game hunting opportunities has been achieved. The number of hunters, as well as the number of elk, continues to increase, and the general hunting season has remained at five weeks. We have added an elk security analysis (Hillis et al. 1991) to our environmental analysis protocol that has proven to be a better tool than EHE analysis for achieving the Forest Plan objective to maintain elk populations and hunting season opportunities in cooperation with the Montana Department of Fish, Wildlife and Parks. In summary, the proposed activities, in combination with past and reasonably foreseeable future actions in this analysis area, are not expected to cumulatively degrade the habitat effectiveness for elk.

Programmatic Forest Plan Amendment – Elk, Old Growth, Coarse Woody Debris and Snag Forest Plan Components

The proposed forest-wide amendment would resolve certain long-standing problematic language regarding elk habitat standards, snags, and coarse woody debris and improve our inventory of old growth forest stands by amending the current Bitterroot Forest Plan using the best current relevant science. The Bitterroot NF is currently analyzing a programmatic amendment for elk habitat objectives under the 1987 Forest Plan. Scoping was initiated December 18, 2019, for elk habitat and is being done in close coordination with biologists and managers from the Montana Fish, Wildlife and Parks. This effort will address the discrepancy between guidance provided by Lyon et al. (1985) and the Forest Plan and thus allow for compliance with Forest Plan standards on subsequent projects. Scoping was initiated for the old growth, snags, and coarse woody debris on July 14, 2022.

With respect to the Gold Butterfly Project, the effects of the Programmatic Forest Plan Amendment will be the same as the effects from the project-specific amendments related to Gold Butterfly, and thus cumulative effects would be negligible. See PF-SUPP-WILD-034 for more discussion and analysis.

Forest Plan Consistency

Table 1. Displays forest plan consistency with Gold Butterfly Project proposed actions including proposed project-specific amendments.

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Recreation 1	The Forest Travel Plan will be reviewed annually, and revisions made to meet Forest plan management direction. Off-road vehicle use decisions will be incorporated into the Forest Plan as amendments. The Montana Fish and Game Commission Road Management Policy will be considered in the annual Travel Planning process.		N/A, project does not propose actions regarding Forest Travel Plan.
Recreation 2	Road end facilities and trails will be built to provide access to wilderness and roadless area trail systems.	Yes, trails located within project area provide access to Stony Mountain Roadless Area.	
Recreation 3	Trails in areas proposed for development or paralleled by new roads will be evaluated for retention during project environmental analysis.	Yes, all existing trails within project area would be retained.	
Recreation 4	The priority for trail reconstruction and relocation will be based on public safety, resource damage and type of use.	Yes, these variables were given priority in consideration of new trail segments listed in proposed action.	
Recreation 5	Off-road vehicle use will be controlled to prevent soil degradation.	Yes, proposed action includes closing illegal, user-created trails.	
Recreation 6	Information and education will be provided to meet visitor needs and encourage appropriate visitor behavior.	Yes, proposed action includes visitor information material provided at Burnt Fork and Willow Creek trailheads.	
Wilderness 1	Subject to existing private rights and pending final action by Congress, wilderness recommendations and Montana Wilderness Study Act areas shall be managed to maintain their existing wilderness character		N/A, project proposed no actions in recommended wilderness.
Cultural Resources 1	The Forest will undertake a systematic program of cultural resource inventory, evaluation, and preservation aimed at the enhancement and protection of significant cultural resource values.	Yes, a cultural resource inventory was completed in 2017.	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Cultural Resources 2	Significant evaluated cultural resource sites will be preserved in place whenever possible.	Yes, all eligible properties within the project APE will be avoided.	
Cultural Resources 3	An inventory survey for cultural resources will be made for most surface-disturbing activities.	Yes, a cultural resource inventory was completed applying the Forest’s Site Inventory Strategy (SIS).	
Cultural Resources 4	Discovered cultural resources will be evaluated in relation to published Advisory Council on Historical Preservation criteria for eligibility to the National Register of historic Places.	Yes, all sites were evaluated for the National Register.	
Cultural Resources 5	The Forest will enhance and interpret significant cultural sites for the education and enjoyment of the public when such development will not degrade the cultural property.	Yes, interpretation will be completed as needed.	
Cultural Resources 6	The Forest will consult with Native American traditional religious leaders to identify sites to be protected in accordance with the American Indian Religious Freedom Act.	Yes, Native American Tribes were consulted with prior to project approval.	
Visual Quality 1	The time required for openings to visually recover before adjacent stands can be harvested will vary by visual quality and other management objectives as determined through application of the visual management objectives as determined through application of the visual management system and project interdisciplinary team process. As a general guide, recovery in retention and partial retention areas, from middle ground viewing distances, occurs when the site is stocked with about 300 trees per acre with the dominant trees 20 feet tall. This condition is reached in 26 to 34 years from the time of harvest. Habitat types not capable of supporting 300 trees per acre generally recover in 30 years. The minimum recovery period, generally associated with maximum modification VQO areas, occurs when a new forest stand is established and certified as stocked.	Yes, the proposed action meets this standard with application of design criteria for those units noted in the scenery specialist report.	
Visual Quality 2	Openings created by timber harvest should be designed to blend with natural openings to the extent practical.	Yes, the proposed action meets this standard with application of design criteria for those units noted in the scenery specialist report.	
Visual Quality 3	The size, shape, and location of the area between openings will be consistent with water, wildlife, and visual resource consideration. Documentation of rationale and tradeoffs will be required if the proposed openings are larger than the intervening leave areas.	Yes, the proposed action meets this standard with application of design criteria for those units noted in the scenery specialist report.	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Wildlife and Fish 1	The amount and distribution of old growth will be used to ensure sufficient habitat for the maintenance of viable populations of existing native and desirable non-native vertebrate species, including two indicator species, the pine marten and pileated woodpecker.	Yes. Indicator evaluated under effects analysis, see Wildlife specialist report.	
Wildlife and Fish 2	Stand conditions that qualify as old growth will vary by habitat type and landform. Criteria to consider for identifying old growth include [those listed in the Forest Plan on page II-20].	.	This standard will be amended by this project when a Record of Decision is signed. See FSEIS. The amended definition for old growth will allow for additional acres of old growth to be identified.
Wildlife and Fish 3	All snags that do not present an unacceptable safety risk will be retained.	Yes. See design features.	
Wildlife and Fish 4	Long rotations will be prescribed to meet old growth requirements on suitable timberland in management areas 1, 2, 3a, 3b, and 3c.	Yes. See Silviculture specialist report.	
Wildlife and Fish 5	Old growth stands may be logged and regenerated when other stands have achieved old-growth status.		Proposed regeneration harvest of old growth will not be carried forward into the Decision.
Wildlife and Fish 6	Sanitation and salvage harvests may occur in stands classified as old growth if old growth characteristics are retained after logging.	Silvicultural prescriptions have been written to improve and maintain old growth stands.	
Wildlife and Fish 7	Cutthroat trout populations will be used as an indicator of fisheries habitat changes.	Yes, the distribution and current status of westslope cutthroat trout is discussed in detail in FEIS Section 3.5.3. Likewise the analysis of effects focuses on potential effects to cutthroat trout. Cutthroat trout is analyzed as a sensitive species in the biological evaluation presented in Section 3.5.3.	
Wildlife and Fish 8	Watershed project analysis will estimate the effects of sediment on fish habitat.	Yes, the fisheries and hydrology analysis include extensive analysis of potential sediment inputs	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
		and their likely effects on fish habitat.	
Wildlife and Fish 9	In cooperation with the Idaho Department of Fish and Game, the need for additional salmon hatching channel capacity on the Selway River will be assessed by 1990. The facility will be expanded if additional capacity is required. The existing facility will be maintained.		N/A, outside the scope of the project. Standard 9 only applies to the Selway River, which is not in the analysis area.
Wildlife and Fish 10	Beaver will be introduced into suitable riparian habitat.		N/A, outside the scope of this project.
Wildlife and Fish 11	Elk population status will be used as an indicator of commonly hunted ungulate species and the status of their habitat.	Yes, indicator evaluated under effects analysis, see Wildlife specialist report.	
Wildlife and Fish 12	Big game cover/forage relationships, as described in Guides for Elk Habitat objectives will be a consideration in planning timber management activities.	Yes, indicator evaluated under effects analysis, see Wildlife specialist report.	
Wildlife and Fish 13	The recommendations in the Coordinating Elk and Timber management report will be considered during timber management and transportation planning.	Yes, indicator evaluated under effects analysis, see Wildlife specialist report.	
Wildlife and Fish 14	Manage roads through the travel plan process to attain or maintain 50 percent or higher elk habitat effectiveness in currently roaded third order drainages. Drainages where more than 25 percent of roads are in place are considered roaded. Maintain 60 percent or higher elk habitat effectiveness in drainages where less than 25 percent of the roads have been built.	No.	EHE standards are not currently being met in six of the 19 third order drainages within the Project Area, but the project will not change EHE. Indicator evaluated under effects analysis, see Wildlife specialist report. A site-specific Forest Plan amendment will be included.
Wildlife and Fish 15	If, for three years running, the bull elk harvest during the first week of the hunting season exceeds 40 percent of the total bull harvest, additional fall road closures will be considered.		N/A, FWP no longer provides this data.
Wildlife and Fish 16	The habitat needs of sensitive species, as listed by the Regional Forester, will be considered in all project planning.	Yes, indicator evaluated under effects analysis, see Wildlife, Fisheries and Botany specialist reports.	
Wildlife and Fish 17	Wildlife use will have priority over livestock use on elk winter range.		N/A, there are no active cattle allotments within the project area.
MA 1 c(2)	Old growth stands should be 40 acres and larger, distributed over the management area. About 3 percent of management Area 1 suitable	No. The existing condition of one third order drainage in	However, incorporating the project-specific amendment

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
	timberland, in each third order drainage, will be maintained in old growth. Provide 40-acre stands of old growth by coordinating management activities in this area with activities in adjacent management areas and with intermingled riparian and unsuitable management areas.	MA 1 that overlaps the project area does not contain 3 percent of suitable timberland in old growth.	would not result in reductions to the existing condition of old growth because any treatments in old growth stands are designed to maintain the old growth condition. The project specific amendment to allow the identification of stands less than 40 acres in size as old growth will comply with the Forest Plan, when amended with a Record of Decision on this project.
MA 2 c(2)	Old growth stands should be 40 acres and larger, distributed over the management area. About 8 percent of management Area 2 suitable timberland, in each third order drainage, will be maintained in old growth. Provide 40-acre stands of old growth by coordinating management activities in this area with activities in adjacent management areas and with intermingled riparian and unsuitable management areas.	No. The existing condition of three third order drainages in MA 2 that overlap the project area do not contain 8 percent of suitable timberland in old growth.	However, incorporating the project-specific amendment would not result in reductions to the existing condition of old growth because any treatments in old growth stands are designed to maintain the old growth condition. The project specific amendment to allow the identification of stands less than 40 acres in size as old growth will comply with the Forest Plan, when amended with a Record of Decision on this project.
MA 3a c(2)	Old growth stands should be 40 acres and larger, distributed over the management area. About 8 percent of management Area 3a suitable timberland, in each third order drainage, will be maintained in old growth. Provide 40-acre stands of old growth by coordinating management activities in this area with activities in adjacent management areas and with intermingled riparian and unsuitable management areas.	No. The existing condition of one third order drainage in MA 3a that overlaps the project area does not contain 8 percent of suitable timberland in old growth. Percentages of old growth are maintained.	However, incorporating the project-specific amendment would not result in reductions to the existing condition of old growth because any treatments in old growth stands are designed to maintain the old growth condition. The project specific amendment to allow the identification of stands less than 40 acres in size as old growth will comply with the Forest Plan, when amended with a Record of Decision on this project.

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Threatened and Endangered Species 1	No formal recovery plan has been established for threatened and endangered species on the Bitterroot Forest. Specific population objectives will be established when sufficient biological information is available to do so. Cooperate and involve the Public in any interagency recovery effort.		N/A, Recovery Plan for bull trout has been developed. The proposed action is located in the Columbia Headwaters Recovery Unit-Bitterroot River Sub-Unit. Recovery Plans for grizzly bears have been developed, but the project area is not within any Recovery Zone. No formal Recovery Plan has been developed for lynx.
Threatened and Endangered Species 2	Participate in the identification and protection of threatened and endangered species and vascular plants identified as rare, pending study and proposal as threatened or endangered.	Yes, indicator evaluated under effects analysis, see Wildlife, Fisheries and Botany specialist reports, see also Biological Assessments.	
Timber 1	All timber sales will be designed, as well as possible, to be affordable to purchasers under average market conditions at the time of sale.	Yes. The timber sale feasibility analysis, described in the economic analysis report, indicates the sale will be affordable to purchasers.	
Timber 2	<p>The allowable sale quantity 33.4 MMBF, includes components which may not be available for the annual timber sale program due to lack of demand or because legislative action is required. These components include the following:</p> <p>Includes 2.3 MMBF of small size material not merchantable under current timber sale contract utilization standards.</p> <p>Montana Wilderness Study Act areas, Blue Joint and Sapphire, contribute 1.9 MMBF to the allowable sale quantity.</p> <p>Helicopter yarding is required to harvest 4.3 MMBF of the allowable sale quantity. Approximately 1.4 MMBF is located on lands that support high value ponderosa pine in major travel corridors and 2.9 MMBF is located in small scattered acreages on steep slopes and/or sensitive soils that support less valuable Douglas-fir, lodgepole pine, spruce, and subalpine fir.</p> <p>Sandy, decomposed granite land types, which are difficult to develop and maintain fish habitat, contribute 5.7 MMBF to the allowable sale quantity.</p>	Yes, economic analysis report shows the total estimated volume generated by the proposed action to be approximately 67,000 CCF or 33 MMBF. Because this volume would be awarded over the course of 3 years, the allowable sale quantity would not be exceeded.	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
	<p>Salvageable material portions of the allowable sale quantity is 2.2 MMBF. The components are based on the total ASQ and therefore cannot be added. For example, portions of the helicopter yarding volume are included in all the other components.</p> <p>If one or more components are not available or saleable, the annual timber sale program will be reduced accordingly. For sawtimber sales, the program will be reduced when the volume of a component offered but unsold exceeds 10 MMBF.</p>		
Timber 3	A variety of tree species will be planted, where habitat conditions permit, to prevent creation of monocultures that are susceptible to insect and disease epidemics.	Yes, this indicator is evaluated under effects analysis.	
Timber 4	By the end of the first decade, all of the reforestation backlog will be eliminated.	No	An annual reforestation needs certification of data accuracy is done every fiscal year. Current reforestation needs for fiscal year 2021 is 9,019 acres. This complies with standards described in FSM 2400, CH 2496.1.
Timber 5	Approved site preparation methods on land suitable for timber production include mechanical preparation, burning and spot scarification. The ground application of herbicides may be utilized to prepare planting spots in an environmental analysis indicates that other silvicultural alternatives will not meet management objectives or are significantly more costly.	Yes, site preparation is covered under the effects analysis.	
Timber 6	Establish vegetative cover on temporary roads and skid trails within two years.	Yes, these standards are met through project design criteria.	
Timber 7	Stand size will generally be larger than 5 acres.	Yes.	
Timber 8	Train personnel currently involved in timber sale preparation, tree marking, and timber sale administration to ensure the application of genetic principles in on-the-ground timber management activities.	Yes.	
Timber 9	Implement scientifically based, efficient, and effective methods of selecting seed collection stands and procuring seeds.	Discussion for Standard 10 below applies to Standard 9.	
Timber 10	Participate in ongoing selective breeding projects for ponderosa pine, Douglas-fir, Engelmann spruce, and lodgepole pine.	Yes, the Forest has an active tree improvement program covering ponderosa pine, Douglas-fir and lodgepole pine. Engelman	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
		spruce is not a Regional or Forest priority.	
Timber 11	An economic analysis will be completed for all alternatives presented in detail on timber sales over 1 million board feet in size, and on capital investment transportation systems. Project alternatives will be designed to show the economic tradeoffs of different ways to implement Forest Plan standards. Project net public benefit and/or probable marketability will be analyzed and a decision made whether to continue at each of the following stages of planning.	Yes, refer to the Gold Butterfly economic analysis report.	
Timber 12	Timber harvests to meet timber production objectives and related site preparation and regeneration practices will be designed so that there is reasonable assurance that stands can be restocked within 5 years after final harvest.	Yes, this has been evaluated under effects analysis in the Silviculture specialist report.	
Water, Air, Soil 1	Utilize equivalent road area or similar concept to evaluate cumulative effects of project involving significant vegetation removal, prior to including them on implementation schedules.	Yes, variables of existing road system were used by resource specialists during project cumulative effects analysis.	
Water, Air, Soil 2	Hydrologic recovery following land-disturbing activities will normally take 20 years from time of harvest. The maximum area allowed to be hydrologically unrecovered, by habitat and land type is shown below (also see FP page II-24 for further definitions):		N/A, project will not have created any hydrologically unrecovered areas.
Water, Air, Soil 3	As part of project planning, site-specific water quality effects will be evaluated and control measures designed to ensure that the project will meet Forest water quality goals; projects that will not meet State water quality standards will be redesigned, rescheduled or dropped.	Yes, site-specific water quality effects were analyzed in the Hydrologist specialist report, and site-specific BMPs were developed.	
Water, Air, Soil 4	Water for non-consumptive uses (instream flows) necessary for maintaining fishery habitat, recreational uses, channel maintenance, and aesthetics will be protected by negotiation (compacts), adjudication, special use permits or state reservation. Consumptive water uses to meet National Forest needs will be pursued through appropriate federal and state systems.		N/A, project proposed no changes to existing instream flows.
Water, Air, Soil 5	Soil Survey and interpretations will be provided at an order III, the forest land planning level of detail, for the Forest outside wilderness except for high use recreation areas, and rangeland which will be inventoried as indicated in Table II-3.	Yes, see Soils specialist report for detailed analysis.	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Water, Air, Soil 6	Soil and Water Conservation practices will be a part of project design and implementation to ensure soil and water resource protection.	Yes, these practices were incorporated into project design criteria.	
Water, Air, Soil 7	Plan and conduct land management activities so that reductions of soil productivity potential caused by detrimental compaction, displacement, puddling, and severe burning are minimized.	Yes, project design criteria were developed to minimize detrimental soil disturbance and protect land productivity and stability.	
Water, Air, Soil 8	Plan and conduct land management activities so that soil loss, accelerated surface erosion and mass wasting, caused by these activities, will not result in an unacceptable reduction in soil productivity and water quality.	Yes, project design criteria were developed to minimize detrimental soil disturbance and protect land productivity and stability.	
Water, Air, Soil 9	Design or modify management practices as necessary to protect land productivity and maintain land stability	Yes, project design criteria were developed to address this.	
Water, Air, Soil 10	Actively reduce sediment from existing roads. Sediment reduction measures to be considered include: Cross-drains into vegetative filter strips away from streams Grass seed, fertilized, mulch and netting on cuts and fills Slash filter windrows or straw bales at toe of fill in contributing areas and Gravel ditches and road surface.	Yes, site-specific road maintenance improvements were identified and will be implemented to address chronic sediment sources.	
Water, Air, Soil 11	The Forest will cooperate with the Montana and Idaho Air Quality Bureaus in the State implementation plans. The Bitterroot National Forest is an active member of the Montana State Airshed Group and adheres to practices and policies of the State of Montana Cooperative Smoke management plan.	Yes, appropriate state implementation plans will be followed prior to and during prescribed burn activities.	
Water, Air, Soil 12	Upon receipt of a Notice of prevention of Significant Deterioration action that may impact the wilderness air quality, the air quality values and the standards for predicting them will be identified.	Yes.	
Water, Air, Soil 13	Protect and preserve the integrity of and maintain access to the snow survey sites and electronic SNOTEL sites shown in Table II-6 (page II-26).		N/A, this project does not propose any actions that would impact snow survey or SNOTEL sites.
Water, Air, Soil 14	Road plans and environmental analysis reports for activities in the Cow and Burnt Fork municipal watersheds will be submitted to the Montana Water Quality Bureau for review and approval.	Yes, Montana Department of Environmental Quality will be consulted on proposed	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
		actions within the Burnt Fork watershed.	
Minerals and Energy 1	Case by case surface management restrictions will be developed for locatable, leasable and common variety minerals.		N/A, no actions are proposed to surface management restrictions of minerals or lease applications.
Minerals and Energy 2	Before recommendations are made on any lease application, analysis of environmental effects will be made in compliance with NEPA. Stipulations which are displayed in Appendix N and which are based upon the “Oil and Gas Leasing of Nonwilderness National Forest Lands, 1981,” (Appendix K), will be recommended in accord with Management Area direction in Chapter III.		N/A, no actions are proposed to surface management restrictions of minerals or lease applications.
Minerals and Energy 3	Identify common variety mineral sites that are suitable for construction aggregate and compatible with management area goals and standards.	Yes, identified materials source sites are compatible with respective management area.	
Minerals and Energy 4	Areas currently withdrawn from mineral entry will be evaluated in accordance with the provisions of Section 204 of the Federal Land Policy and Management Act of 1976 (Appendix I).		N/A, treatment units do not include areas currently withdrawn from mineral entry.
Minerals and Energy 5	Coordinate transportation system with mineral development.		N/A, proposed actions do not include mineral development.
Minerals and Energy 6	Consider outstanding and reserved mineral rights during project analysis.	Yes, proposed actions would not impact outstanding or reserved mineral rights.	
Road System 1	Roads will be maintained to design standards.	Yes, roads would be maintained to design standards.	
Road System 2	Roads will be closed to public use if adequate road maintenance funds are not available.	Yes, the project travel analysis did not identify any road that required immediate maintenance to address concerns.	
Road System 3	All roads will be designed to facilitate reestablishment of vegetative cover on disturbed areas within a reasonable time, not to exceed 3 years, after termination of a contract. If the road is necessary as a permanent addition to the National Forest transportation systems, then the roadbed may not be revegetated.	Yes. Timber sale contract provisions and design criteria address this standard.	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Road System 4	Temporary roads, tractor roads, skid trails, and firelines will be waterbarred and revegetated to control erosion. Table II-7 is a guide to waterbar spacing depending on the disturbed surface gradient and erodibility of the soil.	Yes, measures are among the BMPs included in project design criteria.	
Protection 1	Fire management standards, including the expected average annual acreage burned by management area, are contained in the Bitterroot Forest “Fire Management Action Plan”, see Appendix M. The plan was developed after completion of the Level II fire management analysis as outlined in Forest Service Manual 5109.19. The Fire Management Action Plan will be revised annually to identify the differences between the most cost-efficient fire management program determined by the Level II analysis and the fire management program funded in the current fiscal year.		N/A, revisions to Fire Management Plan outside the purpose of this project.
Protection 2	The time and number of planned ignition prescribed burns will be scheduled in cooperation with the State of Montana to meet air quality requirements.	Yes, prescribed burn activities will be coordinated with the State of Montana.	
Protection 3	The fuels treatment backlog will be eliminated by the end of the first decade. Priority for treatment will be given to high-risk stands with fuels exceeding 70 tons per acre.		N/A. Standard refers to fuels backlog that existed when Plan was established. Backlog no longer exists.
Insect and Disease 1	Silvicultural prescriptions will utilize integrated pest management strategies and treatments that reduce long-term losses due to insects and diseases.	Yes, this indicator is evaluated under effects analysis.	
Insect and Disease 2	Pesticides, biological agents, preventive chemicals, and insecticide implants may be utilized on insects and diseases to provide short-term protection on specific sites after appropriate environmental analysis.		No, preventive chemicals or insecticides for insects and disease not being proposed for use.
Insect and Disease 3	Mountain pine beetle in lodgepole pine: utilize the mortality prediction model to identify the susceptibility of lodgepole pine stands to mountain pine beetle losses and to schedule silvicultural treatments. Prescribe even-aged silvicultural systems, including clearcutting where it is optimal, to create mosaics in extensive lodgepole pine stands. Prescribe thinning in young lodgepole pine stands to maintain stand vigor and control tree size and rotation age. Preventive chemicals, may be utilized to reduce losses or protect high-value sites such as campgrounds and seed orchards, after an environmental analysis is completed.	Yes, this indicator is evaluated under effects analysis. However, preventive chemicals not being proposed for use.	
Insect and Disease 4	Mountain pine beetle in ponderosa pine; prescribe thinning in young ponderosa pine stands to reduce stand density to a level that minimizes mortality. Chemical strategies, like lethal trap trees utilizing bait and	Yes, this indicator is evaluated under effects analysis. However,	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
	Sevimol-4®, may be applied to protect high-value sites, after an environmental analysis is completed.	preventive chemicals not being proposed for use.	
Insect and Disease 5	Dwarf mistletoe control in lodgepole and Douglas-fir (Gibson and Dooling, 1982): Prescribe silvicultural treatments in managed stands to reduce losses to dwarf mistletoe. Treatments include clearcutting; overstory removal; controlling species composition through thinning; planting and removing infected trees from logged or burned stands.	Yes, this indicator is evaluated under effects analysis.	
Insect and Disease 6	Western spruce budworm in Douglas-fir (Gibson and Dooling, 1982): Silvicultural strategies and treatments of host stands will be utilized to reduce and prevent long-term damage in timber production areas. Strategies will include presalvage of susceptible trees and managing species, genetic composition, density, vigor, age, and structure. Biological strategies, such as the use of <i>Bacillus thuringiensis</i> (Bt), may be utilized to reduce or prevent damage in timber production and high-value areas such as campgrounds. Chemical strategies, like implants, may be utilized where both risk of unacceptable damage and value are high, such as seed production areas, administrative sites, and campgrounds after environmental analysis.	Yes, this indicator is evaluated under effects analysis. However, biological, or preventive chemicals for Western spruce budworm not being proposed for use.	
Noxious Weeds 1	The primary means of preventing, containing, or controlling noxious weeds will be through vegetative management practices and by the use of biological agents such as insects, rusts, molds and other parasites on host plants. However, herbicides may be utilized to provide short-term protection on specific sites, after appropriate environmental analysis.	Yes, noxious weed prevention and control measures have been included in the project design criteria.	
Special Uses 1	New outfitter and guide permits for traditional uses will be considered only when the services offered by existing outfitters are fully utilized. Proposed transfer, termination or relinquishment of permits operating at less than 100 service days will be considered for phasing out or reallocation of the service days to other current permit holders, to provide for more economic operations.		N/A, proposed actions do not include new outfitter or guide permits for the project area.
Special Uses 2	Permits for new uses or uses not currently under permit will be considered.		N/A, proposed actions do not include any new uses.
Range 1	Allotments may be closed if the permittee stops his or her cattle or if transitory range is eliminated by tree regeneration, if it is not cost effective, or if environmental quality can't be protected.		N/A, proposed actions do not include any changes to range allotments.
Wild and Scenic Rivers 1	Eligible river wild, scenic or recreational values will be protected until suitability studies provide the basis for future disposition.		N/A, no rivers eligible for these designations exist within the project area.

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Arterial and Major Collector Roads 1	Minimize road standards and resulting environmental impacts by limiting design speeds to 45 mph on arterials and 20 mph on collectors.		N/A, outside of site-specific road improvements and maintenance BMPS, project does not propose any actions to existing or construction of new arterial or major collector roads.
Arterial and Major Collector Roads 2	Arterial roads will be designed double lane and major collector roads single lane.		N/A, outside of site-specific road improvements and maintenance BMPS, project does not propose any actions to existing or construction of new arterial or major collector roads.
Arterial and Major Collector Roads 3	Channel water away from the road surface to minimize loss of material from the roadway. Utilize outsloping, rolling grades, culverts or other appropriate measures and structures. Culverts will be used for drainage crossings that carry water during any part of the year, and where there is need to relieve ditch water.	Yes, road maintenance BMPs and improvement measures will include these design features.	
Arterial and Major Collector Roads 4	Design and maintain for low-boy use with adequate turnout or double track. Turnouts should be located, and of adequate length to accommodate mixed traffic types.		N/A, outside of site-specific road improvements and maintenance BMPS, project does not propose any actions to existing or construction of new arterial or major collector roads.
Arterial and Major Collector Roads 5	Grades will not exceed 6 percent for arterial roads, and 6 percent with pitches to 10 percent for major collector roads. Special erosion protection measures such as additional cross drains and ditch and roadway graveling will be applied to steep sections as needed. Deviations to the above may be approved by the Forest Supervisor after consideration for log haul costs, maintenance costs, erosion control, graveling, additional ditches, and improved technology.		N/A, outside of site-specific road improvements and maintenance BMPS, project does not propose any actions to existing or construction of new arterial or major collector roads.
Arterial and Major Collector Roads 6	Machine marks should be left on cut slopes to catch seed and fertilizer. Cut slope seeding and fertilizing shall be completed during the first season of construction and fill slopes immediately after final blading. Native vegetation will be encouraged where it will not be a safety hazard or maintenance problem.		N/A, outside of site-specific road improvements and maintenance BMPS, project does not propose any actions to existing or construction of new arterial or major collector roads.
Arterial and Major Collector Roads 7	Road maintenance operations and practices shall be conducted to protect the road investment, minimize loss of material from the roadway, and	Yes, road maintenance BMPs and improvement	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
	minimize erosion. Practices that will be avoided include undercutting the backslopes and leaving berms on the road surface.	measures are designed to address these factors.	
Arterial and Major Collector Roads 8	Sections of roads with soils that may become rutted during wet weather should be surfaced to provide an all-weather surface and prevent erosion.	Yes, haul route conditions will be monitored by the timber sale administrator and prevention measures will be implemented where / when appropriate.	
Minor collector and Local Roads 1	Machine marks left on cut slopes catch seed and fertilizer and shall be left. Cut slope seeding and fertilizing shall be completed during the first season of construction and fill slopes immediately after final blading. Native vegetation will be encouraged on permanently or temporarily closed roads and where it will not be a safety hazard or maintenance problem on open roads. Apply practices that encourage revegetation including ripping the road surfaces of closed roads, allowing native plant encroachment, and blading only when necessary.	Yes, cut and fill slopes on constructed roads will be stabilized during the first season. Roads identified for decommissioning will be evaluated to determine which segments require ripping to facilitate native plant re-establishment.	
Minor collector and Local Roads 2	Design and maintain roads with sufficient width to accommodate planned use.	Yes, route design will include appropriate lane widths.	
Minor collector and Local Roads 3	Channel water away from the road surface to minimize loss of material from the roadway. Utilize outsloping, rolling grades, culverts or other appropriate measures and structures. Culverts will be used for drainage crossings that carry water during any part of the year, and where there is need to relieve ditch water. In addition, provide drive through dips or other type cross drains where culverts and grade rolling are too widely spaced to adequately divert water. As a minimum, roads with gradients less than 4 percent should provide cross drains equal to natural drainage spacing. Cross drains on steeper gradient roads should be spaced at sufficient intervals to control rills on the road surface and rilling or gullyng of fill slopes. Divert runoff onto areas of vegetative cover to provide a filter for sediment and avoid diversions onto fill slopes at natural drainages.	Yes, road maintenance BMPs and improvement measures will include these design features.	
Minor collector and Local Roads 4	Maximum permissible sustained grades will not exceed 8 percent where the native soil has a moderate or low erodible rating and will not exceed 6 percent where the soil erodible rating is high. Pitches from 8 to a maximum of 15 percent will be allowed when special erosion control measures are designed into the road. Pitches from 8 to 10 percent are limited to a maximum of 1000 feet and over 10 percent are limited to a maximum of 500 feet in length. Deviations to the above may be approved	Yes, these standards will be applied during road design lay-out.	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
	by the Forest Supervisor after consideration for log haul costs, maintenance costs, erosion control, graveling, additional ditches, and improved technology.		
Minor collector and Local Roads 5	Road maintenance operations and practices shall be conducted to protect the road investment, minimize loss of material from the roadway, and minimize erosion. Practices that will be avoided include undercutting the backslopes and leaving berms on the road surface.	Yes, road maintenance BMPs and improvement measures are designed to address these factors.	
Minor collector and Local Roads 6	Sections of roads with soils that may become rutted during wet weather should be surfaced, traffic restricted, or otherwise managed to prevent damage.	Yes, haul route conditions will be monitored by the timber sale administrator and prevention measures will be implemented where / when appropriate.	
Roads in Riparian Areas 1	Plan transportation systems to minimize roads crossing or running parallel to streams.	Yes, proposed road construction would include three stream crossings, all on headwater intermittent stream reaches. Proposed route locations were determined following discussions to relocate a proposed route away from a perennial stream reach. The Hydrology analysis estimates negligible amounts of sediment would be generated at these proposed stream crossings.	
Roads in Riparian Areas 2	Avoid beaver habitat and elk wallows.	Yes, road placement will avoid these habitats.	
Roads in Riparian Areas 3	Except at stream crossings, vegetative buffer strips shall be maintained between the toe of the road fill and the stream on soils that are likely to produce sediment above natural levels. In sandy soils, the minimum buffer strip should be 100 feet with an added 5 feet for each percent of land slope between the road and stream. In other soils, the width of the strip will vary by geomorphology, but as a guideline, the buffer strip should be a minimum of 25 feet wide with an added 2 feet for each percent of land slope between the road and stream (Trimble and Sartz 1957).	Yes, except for stream crossings, new constructed roads proposed in this project will be outside the riparian habitat conservation area.	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Roads in Riparian Areas 4	Windrows of baled straw, slash or other effective material shall be placed at the toe of the fill slope as sediment filters where needed. They shall be constructed during clearing operations and prior to culvert installation (Forest Plan Note No. 212).	Yes, these BMPs are routinely implemented during clearing and culvert installations on the Bitterroot National Forest.	
Roads in Riparian Areas 5	Revegetation of cut and fill slopes shall be insured through adequate measures such as grass seeding, application of mulch or special slope treatments depending on the nature of native soil.	Yes, cut and fill slopes of newly constructed roads will be stabilized to minimize soil movement.	
Roads in Riparian Areas 6	Road gradients should be 5 percent or less within 400-feet of streams or stream crossings. Where gradients exceed 5 percent, the road surface will be stabilized unless the native material resists erosion.	Yes, these standards will be applied during road design lay-out.	
Roads in Riparian Areas 7	Road surface runoff should be channeled off the road outside of riparian areas. Drive through dips, in or out slopes or cross drains with ditches may be appropriate. Some cross drainage and/or surfacing will normally be provided within 200 feet of all stream channel crossings unless native material resists erosion.	Yes, these road improvement measures have been proposed along haul routes through the project area.	
Roads in Riparian Areas 8	Closed roads should be revegetated to prevent surface erosion.	Yes, decommissioned routes will be decompacted, reseeded and mulched where natural revegetation is determined to be inadequate.	
Roads in Riparian Areas 9	Fish passage shall be provided where roads cross fisheries streams.	Yes, project proposed replacement of several culverts that are fish passage barriers.	
Roads in Riparian Areas 10	Prevent material from entering streams by utilizing measures noted above, removing material to appropriate disposal areas, or other effective measures.	Yes, project proposes site-specific road improvement measures.	
Roads in Riparian Areas 11	If construction cannot be avoided during periods when the soils are saturated, special measures will be taken such as installing debris basins, filters, or other methods to trap sediment.	Yes, haul route conditions will be monitored by the timber sale administrator and prevention measures will be implemented where / when appropriate.	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Roads in Riparian Areas 12	Dewater live stream channels during culvert installation in soil types which are likely to increase stream sedimentation.	Yes, dewatering of the work site will occur when culverts are installed in streams.	
Roads in Riparian Areas 13	Permanent culverts shall be installed during the initial crossing of live streams.	Yes, only one new stream crossing is proposed on an intermittent channel. The appropriately sized culvert will be installed during route construction.	
Road Density Standard	Transportation system densities will be subject to the interdisciplinary team process. As a general guide, average road densities in 3 rd order and larger drainages should not exceed the densities by land type and visual quality objective displayed in Table II_8. See Forest Plan page II_33.		
INFISH Timber Management TM-1	<p>Prohibit timber harvest, including fuelwood cutting, in Riparian Habitat Conservation Areas, except as described below.</p> <p>a) Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage results in degraded riparian conditions, allow salvage and fuelwood cutting in RHCA only where present and future woody debris needs are met, where cutting would not retard or prevent attainment of other RMOs and where adverse effects can be avoided to Inland native fish. For priority watersheds, complete watershed analysis prior to salvage cutting in RHCAs</p> <p>b) Apply silvicultural practices for RHCAs to acquire desired vegetation characteristics where needed to attain RMOs. Apply silvicultural practices in a manner that does not retard attainment of RMOs and that avoids adverse effect in Inland native fish.</p>	Yes, no timber harvest is proposed in INFISH RHCAs.	
INFISH Roads Management RF-1	Coordinate with Federal, Tribal, State and county agencies, and cost-share partners to achieve consistency in road design, operation, and maintenance necessary to attain Riparian Management Objectives.	Yes, the proposed action is designed to improve the condition of project area roads in order to reduce future sediment inputs into fish bearing streams.	
INFISH Roads Management RF-2	<p>For each existing or planned road, meet the RMOs and avoid adverse effect to inland native fish by:</p> <p>a. Completing watershed analysis prior to construction of new roads or landings in RHCA s within priority watersheds.</p> <p>b. Minimizing road and landing location in Riparian Habitat Conservation Areas.</p>	<p>a. yes, no new roads or landings are proposed in priority watersheds.</p> <p>b. yes, roads and landings are minimized in RHCAs and where they are proposed, analysis</p>	

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
	<p>c. Initiating development and implementation of a Road Management Plan or a Transportation management Plan. At a minimum, address the following items in the plan:</p> <ol style="list-style-type: none"> 1. Road design criteria, elements and standards that govern construction and reconstruction. 2. Road management objectives for each road. 3. Criteria that govern road operation, maintenance, and management. 4. Requirements for pre-, during, and post storm inspection and maintenances. 5. Regulation of traffic during wet periods to minimize erosion and sediment delivery and accomplish other objectives. 6. Implementation and effectiveness monitoring plans for road stability, drainage, and erosion control. 7. Mitigation plans for road failures. <p>d. Avoiding sediment delivery to streams from the road surface.</p> <ol style="list-style-type: none"> 1. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is infeasible or unsafe. 2. Route road drainage away from potentially unstable stream channels, fills and hillslopes. <p>e. Avoiding disruption of natural hydrologic flow paths.</p> <p>f. Avoiding sidecasting of soils or snow. Sidecasting of road material is prohibited on road segments within or abutting RHCAs in priority watersheds</p>	<p>demonstrates that there would be no effect to native fish.</p> <p>c. yes, the Gold Butterfly project included an analysis that considered the current condition of each road and its potential effects on resources, including aquatics (Project File Road-0004).</p>	
<p>INFISH Roads Management RF-3</p>	<p>Determine the influence of each road on the RMOs. Meet RMOs and avoid adverse effects on inland native fish by:</p> <ol style="list-style-type: none"> a. Reconstruction road and drainage features that do not meet design criteria or operation and maintenance standards, or that have been shown to be less effective than designed for controlling sediment delivery, or that retard attainment of RMOs or do not protect priority watersheds from increased sedimentation. b. Prioritizing reconstruction based on the current and potential damage to inland native fish and their priority watersheds, the ecological value of the riparian resources affected, and the feasibility of options such as helicopter logging and road relocation out of RHCAs. c. Closing and stabilizing or obliteration, and stabilizing roads not needed for future management activities. Prioritize these action-based on the current and potential damage to inland native fish in priority watersheds, and the ecological value of the riparian resources affected. 	<p>Yes, the Gold Butterfly project included an analysis that considered the current condition of each road and its potential effects on resources, including aquatics (Project File Road-0004)</p>	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
INFISH Roads Management RF-4	Construct new, and improve existing, culverts, bridges, and other stream crossing to accommodate a 100-year flood, including associated bedload and debris, where those improvement would/do pose a substantial risk to riparian conditions. Substantial risk improvements include those that do not meet design and operation maintenance criteria, or that have been shown to be less effective than designed for controlling erosion, or that retard attainment of RMOs, or that do not protect priority watersheds and the ecological value of the riparian resources affected. Construct and maintain crossings to prevent diversion of stream flow out of the channel and down the road in the event of crossing failure.	Yes, culvert replacements proposed in this project will be designed to accommodate a 100-yr flood event.	
INFISH Roads Management RF-5	Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.	Yes, project proposes several culvert replacements to improve fish passage.	
INFISH Grazing Management GM-1	Modify grazing practices (e.g., accessibility of riparian area to livestock, length of grazing season, stocking levels, timing of grazing, etc.) that retard or prevent attainment of RMOs or are likely to adversely affect inland native fish. Suspend grazing if adjusting practices is not effective in meeting RMOs.		N/A, no grazing management actions considered under the Gold Butterfly project.
INFISH Grazing Management GM-2	Locate new livestock handling and/or management facilities outside of RHCAs. For existing livestock handling facilities inside the RHCAs, assure that facilities do not prevent attainment of RMOs. Relocate or close facilities where these objectives cannot be met.		N/A, no grazing management actions considered under the Gold Butterfly project.
INFISH Grazing Management GM-3	Limit livestock trailing, bedding, watering, salting, loading, and other handling efforts to those areas and times that would not retard or prevent attainment of RMOs or adversely affect inland native fish.		N/A, no grazing management actions considered under the Gold Butterfly project.
INFISH Grazing Management GM-4	Adjust wild horse and burro management to avoid impacts that prevent attainment of RMOs or adversely affect inland native fish.		N/A, outside the scope of the project
INFISH Recreation Management RM-1	Design, construct, and operate recreation facilities, including trails and dispersed sites, in a manner that does not retard or prevent attainment of the RMOs and avoids adverse effects on inland native fish. Complete watershed analysis prior to construction of new recreation facilities in RHCAs within priority watersheds. For existing recreation facilities inside RHCAs, assure that the facilities or use of the facilities would not prevent attainment of RMOs or adversely affect inland native fish. Relocate or close recreation facilities where RMOs cannot be met or adverse effects on inland native fish cannot be avoided.	Yes, watershed analysis was completed for the planning area (Daly Gold EAWS in 2008). Proposed action includes moving 2 recreation sites in order to reduce impacts to riparian zones. Establishment of horse campsite in outer portion of Burnt Fork RHCA may direct recreation use in	

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
		the RHCA but overall impacts to RMOS from recreation in the area will be reduced following implementation of all actions.	
INFISH Recreation Management RM-2	Adjust dispersed and developed recreation practices that retard or prevent attainment of RMOs or adversely affect inland native fish. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective in meeting RMOs and avoiding adverse effects on inland native fish, eliminate the practice or occupancy.	Yes, watershed analysis was completed for the planning area (Daly Gold EAWS in 2008). Proposed action includes moving 2 recreation sites in order to reduce impacts to riparian zones. Establishment of horse campsite in outer portion of Burnt Fork RHCA may direct recreation use in the RHCA but overall impacts to RMOS from recreation in the area will be reduced following implementation of all actions.	
INFISH Recreation Management RM-3	Address attainment of RMOs and potential effect on inland native fish in Wild and Scenic Rivers, Wilderness, and other Recreation Management Plans.		N/A, no Wild and Scenic Rivers in planning area.
INFISH Minerals Management MM-1	Minimize adverse effects to inland native fish species from mineral operations. If a Notice of Intent indicates that a mineral operation would be located in a Riparian Habitat Conservation Area, consider the effects of the activity on inland native fish in the determination of significant surface disturbance pursuant to 36 CFR 228.4. For operations in a Riparian Habitat Conservation Area ensure operators take all practicable measures to maintain, protect, and rehabilitate fish and wildlife habitat which may be affected by the operations. When bonding is required, consider (in the estimation of bond amount) the cost of stabilizing, rehabilitating, and reclaiming the area of operations.		N/A, outside the scope of the project.
INFISH Minerals	Locate structures support facilities, and roads outside Riparian Habitat Conservation Areas. Where no alternative to siting facilities in Riparian Habitat Conservation Areas exists, locate and construct the facilities in		N/A, outside the scope of the project.

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
Management MM-2	ways that avoid impacts to Riparian Habitat Conservation Areas and streams and adverse effects on inland native fish. Where no alternative to road construction exists, keep roads to the minimum necessary for the approved mineral activity. Close, obliterate and revegetate roads no longer required for mineral or land management activities.		
INFISH Minerals Management MM-3	<p>Prohibit solid and sanitary waste facilities in Riparian Habitat Conservation Areas. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in Riparian Habitat Conservation Areas exists, and releases can be prevented and stability can be ensured, then:</p> <ul style="list-style-type: none"> a. analyze the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics. b. locate and design the waste facilities using the best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long term, prohibit such facilities in Riparian Habitat Conservation Areas. c. monitor waste arid waste facilities to confirm predictions of chemical and physical stability, and make adjustments to operations as needed to avoid adverse effects to inland native fish and to attain Riparian Management Objectives. d. reclaim and monitor waste facilities to assure chemical and physical stability and revegetation to avoid adverse effects to inland native fish, and to attain the Riparian Management Objectives. e. require reclamation bonds adequate to ensure long-term chemical and physical stability and successful revegetation of mine waste facilities. 		N/A, outside the scope of the project.
INFISH Minerals Management MM-4	For leasable minerals, prohibit surface occupancy within Riparian Habitat Conservation Areas for oil, gas, and geothermal exploration and development activities where contracts and leases do not already exist, unless there are no other options for location and Riparian Management Objectives can be attained and adverse effects to inland native fish can be avoided. Adjust the operating plans of existing contracts to (1) eliminate impacts that prevent attainment of Riparian Management Objectives and (2) avoid adverse effects to inland native fish.		N/A, outside the scope of the project.
INFISH Minerals Management MM-5	Permit sand and gravel mining arid extraction within Riparian Habitat Conservation Areas only if no alternatives exist, if the action(s) would not retard or prevent attainment of Riparian Management Objectives, and adverse effects to inland native fish can be avoided.		N/A, outside the scope of the project.

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
INFISH Minerals Management MM-6	Develop inspection, monitoring, and reporting requirements for mineral activities. Evaluate and apply the results of inspection and monitoring to modify mineral plans, leases, or permits as needed to eliminate impacts that prevent attainment of Riparian Management Objectives and avoid adverse effects on inland native fish.		N/A, outside the scope of the project.
INFISH Fire and Fuels Management FM-1	Design fuel treatment and fire suppression strategies, practices, and action so as not to prevent attainment of RMOs, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management action could perpetuate or be damaging to long-term ecosystem function or inland native fish.	Yes, minimal burning would occur in RHCAs with no effect to RMOs. Potential effects are described in detail in the RHCA.	
INFISH Fire and Fuels Management FM-2	Design prescribed burn projects and prescriptions to contribute to the attainment of the RMOs.	Yes, minimal burning would occur in RHCAs with no effect to RMOs. Potential effects are described in detail in the RHCA.	
INFISH Fire and Fuels Management FM-3	Immediately establish an emergency team to develop a rehabilitation treatment plan to attain RMOs and avoid adverse effects on inland native fish whenever RHCAs are significantly damaged by a wildfire or a prescribed fire burning out of prescription.		N/A, outside the scope of the project.
INFISH Fire and Fuels Management FM-4	Design prescribed burn projects and prescriptions to contribute to the attainment of the Riparian Management Objectives.	Yes, minimal burning would occur in RHCAs with no effect to RMOs. Potential effects are described in detail in the RHCA.	
INFISH Fire and Fuels Management FM-5	Immediately establish an emergency team to develop a rehabilitation treatment plan to attain Riparian Management Objectives and avoid adverse effects on inland native fish whenever Riparian Habitat Conservation Areas are significantly damaged by a wildfire or a prescribed fire burning out of prescription.		N/A, outside the scope of the project.
INFISH Lands Management LH-1	Require instream flows and habitat conditions for hydroelectric and other surface water development proposals that maintain or restore riparian resources, favorable channel conditions, and fish passage, reproduction, and growth. Coordinate this process with the appropriate State agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to the Federal Energy Regulatory Commission (FERC) that require fish passage and flows and habitat conditions that		N/A, outside the scope of the project.

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
	maintain/restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate State agencies.		
INFISH Lands Management LH-2	Locate new hydroelectric ancillary facilities outside Riparian Habitat Conservation Areas. For existing ancillary facilities inside the RHCA that are essential to proper management, provide recommendations to FERC to assure that the facilities would not prevent attainment of the Riparian Management Objectives and that adverse effects on inland native fish are avoided. Where these objectives cannot be met, provide recommendations to FERC that such ancillary facilities should be relocated. Locate, operate, and maintain hydroelectric facilities that must be located in Riparian Habitat Conservation Areas to avoid effects that would retard or prevent attainment of the Riparian Management Objectives and avoid adverse effects on inland native fish.		N/A, outside the scope of the project.
INFISH Lands Management LH-3	Issue leases, permits, rights-of-way, and easements to avoid effects that would retard or prevent attainment of the Riparian Management Objectives and avoid adverse effects on inland native fish. Where the authority to do so was retained, adjust existing leases, permits, rights-of-way, and easements to eliminate effects that would retard or prevent attainment of the Riparian Management Objectives or adversely affect inland native fish. If adjustments are not effective, eliminate the activity. Where the authority to adjust was not retained, negotiate to make changes in existing leases, permits, rights-of-way, and easements to eliminate effects that would prevent attainment of the Riparian Management Objectives or adversely affect inland native fish. Priority for modifying existing leases, permits, rights-of-way, and easements would be based on the current and potential adverse effects on inland native fish and the ecological value of the riparian resources affected.		N/A, outside the scope of the project.
INFISH Lands Management LH-4	Use land acquisition, exchange, and conservation easements to meet Riparian Management Objectives and facilitate restoration of fish stocks and other species at risk of extinction.		N/A, outside the scope of the project.
INFISH General Riparian Area Management RA-1	Identify and cooperate with Federal, Tribal, State and local governments to secure instream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.		N/A, outside the scope of the project.
INFISH General Riparian Area Management RA-2	Trees may be felled in RHCAs when they pose a safety risk. Keep felled trees on site when needed to meet woody debris objectives.	Yes, no trees are proposed for felling in RHCAs.	

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendment

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
INFISH General Riparian Area Management RA-3	Apply herbicides, pesticides and other toxicants, and other chemicals in a manner that does not retard or prevent attainment of RMOs and avoids adverse effects on inland native fish.	Yes, covered in design features.	
INFISH General Riparian Area Management RA-4	Prohibit storage of fuels and other toxicants within RHCAs. Prohibit refueling within RHAs unless there are no other alternatives. Refueling sites within an RHCA must be approved by the Forest Service and have and approved spill containment plan.	Yes, covered in design features.	
INFISH General Riparian Area Management RA-5	Locate water drafting sites to avoid adverse effects to inland native fish and instream flows and in a manner that does not retard or prevent attainment of RMOs.	Yes, covered in design features.	
INFISH Watershed and Habitat Restoration WR-1	Design and implement watershed restoration projects in a manner that promotes the long-term ecological integrity of ecosystems, conserves the genetic integrity of native species, and contributes to attainment of RMOs.	Yes, restoration actions included in the project (removal of culverts and relocation of recreation facilities) fully support attainment of the RMOs. Removal of barriers would not introduce non-natives into areas they have previously not established.	
INFISH Watershed and Habitat Restoration WR-2	Cooperate with Federal, State, local, and Tribal agencies, and private landowners to develop watershed-based Coordinated Resource Management Plans or other cooperative agreements to meet Riparian Management Objectives.		N/A, outside the scope of the project.
INFISH Fish and Wildlife Restoration FW-1	Design and implement fish and wildlife habitat restoration and enhancement actions in a manner that contributes to attainment of the RMOs.	Yes, restoration actions included in the project (removal of culverts and relocation of recreation facilities) fully support attainment of the RMOs.	
INFISH Fish and Wildlife Restoration FW-2	Design, construct, and operate fish and wildlife interpretive and other user-enhancement facilities in a manner that does not retard or prevent attainment of the RMOs or adversely affect inland native fish. For existing fish and wildlife interpretive and other user-enhancement facilities inside RHCAs, assure that RMOs are not and adverse effect on inland native		N/A, outside the scope of the project.

FSEIS Gold Butterfly Project Appendix B- Project-Specific Forest Plan Amendments

Standard	Standard Description	Does the Proposed Action Meet the Standard?	If “No” or “N/A” provide an explanation
	fish are avoided. Where RMOs cannot be met or adverse effect on inland native fish avoided, relocate or close such facilities.		
INFISH Fish and Wildlife Restoration FW-3	Cooperate with Federal, Tribal, and State wildlife management agencies to identify and eliminate wild ungulate impacts that prevent attainment of the RMOs or adversely affect inland native fish.		N/A, outside the scope of the project.
INFISH Fish and Wildlife Restoration FW-4	Cooperate with Federal, Tribal, and State fish management agencies to identify and eliminate adverse effects on native fish associated with habitat manipulation, fish stocking, fish harvest, and poaching.		N/A, outside the scope of the project.

We make every effort to create documents that are accessible to individuals of all abilities; however, limitations with our word processing programs may prevent some parts of this document from being readable by computer-assisted reading devices. If you need assistance with any part of this document, please contact the Bitterroot National Forest at (406) 363-7100.