APPENDIX F
RESPONSE TO COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

Source/ Project File Reference	Com-ment #	Comment	Response
John Rohrbach B-25	1	Road 10360 is used for snowmobiling, and the Forest Service should take this into account when we do road reclamation and to leave this road in a condition suitable for continued snowmobiling.	Our road reclamation efforts are designed to first reduce or eliminate sediment-reaching streams while putting the road in a condition that no longer requires regular maintenance. Snowmobiling would be allowed on the former road surface but reclamation of the slope and drainages may make snowmobiling use difficult. No additional cost will be incurred to facilitate snowmobiling on Road 10360.
"	2	The Forest Service should organize volunteer residents into weed crews to survey and treat weeds in closed areas.	This is an interesting, cost effective, and innovative concept to address invasive species. It is worthy of pursuing.
The Mussers C-66	3	It was difficult just reading the summary, let alone comprehending the total scope of it.	We acknowledge this project is large and complex. We decided to take a large-area landscape approach to the management of this drainage in order to consider the effects of our proposals as completely as possible.
John Ruth C-67	4	Hopes that lighter harvest than in the Proposed Action is done across the river from his property (Units 1 and 2).	Alternative F, the Preferred Alternative, proposes the highest level of retention for Units 1 and 2.
"	5	Thinks that the Forest Service land uphill to the east of his property is a mess that should be cleaned up since one can hardly walk there and it is a fire risk (Units 6, 7, and/or 300).	We agree fuel loading in the area referred to is high, and wildland firefighting would be difficult if a fire were to start or spread to this area. Units 6, 7, and 300 are all a component of Alternative F, the Preferred Alternative.
"	6	Was concerned about the heavy fuels left by precommercial thinners last year to the northeast of his property.	We agree precommercial thinning slash is a wildland fire concern, particularly when it is in the "red needle" stage up to three or four years after the thinning is complete. The hazard of fire spreading in a thinned area is considerably reduced after the red needles fall to the ground. A hazard still exists for about another ten years as the fine branches deteriorate. A component of all alternatives is to pile and subsequently burn thinning slash under controlled conditions when these areas are near private property.
US Dep't of the Interior C-68	N/A	Reviewed document and had no comments.	
F.H. Stoltze Land and Lumber Company C-70	7	On page 3-239 of the Draft, you state that no larch or ponderosa pine, greater than 18 inches in diameter, would be harvested under any alternative in the Logan Creek Project. The Draft also states that larger diameter trees of other species would only be harvested if they show signs of beetle infestation or if they are dominated by larger larch and Douglas-fir where large retention tree densities are in excess of 15 trees per acre. We believe that a more conservative approach might be to remove those trees with signs of stress, mortality, and poor form so as to reap the additional benefits of increased forage, growing space, and reduction in fire hazard.	To meet the standards in Amendment 21, if there are more than 10 trees per acre greater than 17" DBH, the stand qualifies as "old growth habitat" for the most restrictive of our old growth definitions. The intent of this project is to exclude management activities in old growth habitat. If there were less than 10 trees per acre greater than 17" DBH in a stand, due to the need to retain the largest trees on site, those trees would be left as seedtrees or shelterwood. Consequently, the only circumstances under which trees larger than 18" DBH will be removed is if there are less than 10 per acre.
"	8	Although we do not support Alternative D, we are very concerned by the lack of long term	Part of the design of Alternative D involved reducing its effects on Canada lynx,

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		consideration used in eliminating 90% of the acres that are candidates for pre-commercial thinning in the future…. If the sapling / pole size stands are intended to eventually replace the mature and old growth stands, then it seems this lack of silvicultural treatment is counter productive to protecting long term lynx habitat and old growth.	including having no pre-commercial thinning in lynx habitat. This allowed us to evaluate the effects of not thinning the remaining 3473 acres, as discussed in the sections on Vegetation and on Fire and Fuels. The amount of potential denning habitat in mature and old growth stands across the Logan Creek analysis area would remain sufficient with or without precommercially thinning these acres. See Exhibits Rt-8, Rt-10, and Rt-15.
"	9	It is important…that the planned closure of all new roads and an additional 6.9 miles of existing road be done with a gate rather than road obliteration or tank trapping. When roads are maintained and passable, they will serve their purpose for fire suppression efforts, future planting and thinning needs, noxious weed patrol, and basic forest health monitoring.	Roads planned for reclamation or closures with berms were carefully considered for their access to remote areas. Those roads selected for closure typically were redundant to other open roads in the transportation system or had chronic water drainage problems that could not be economically fixed. Closure of redundant roads is also often a necessary option when road maintenance funding is limited and other important roads in the transportation system are neglected.
"	10	Even with your offering of 3 separate timber sales for the Logan Creek Project, your average road maintenance package is 50 miles of road per sale and that figure is extremely high. We believe that an active road maintenance program would help you avoid such a backlog of road improvement needs in the future.	We agree. However, active road maintenance is very expensive and Congressionally appropriated funds have not be available to meet all our needs. Using funds available from timber sales is a legitimate source for making road improvements.
"	11	On page 3-233, there is a chart that shows existing downed wood habitat amounts are averaging 19-30 tons per acre and page 3-92 shows that post-harvest surface fuels should be between 5 and 23 tons per acre. In that same paragraph, it explains that fire hazard reaches a high rating when fuel levels reach 25 to 30 tons per acre. Given your existing condition, it seems that the high end range of your post-harvest desired condition will not buy you much in terms of hazard reduction….where understory and broadcast burning is planned, and excavator piling will follow harvesting, perhaps it makes more sense to leave less material on the ground initially.	The 5 to 23 tons per acre of large coarse woody debris to be retained would be comprised primarily of 9 to 20 inch diameter material, 32 pieces per acre with a piece length of approximately 20 feet. The residual coarse woody debris would be scattered throughout each acre and occupy 1 to 2 percent of the total surface area. This minor amount of post treatment residual large coarse woody debris would not exacerbate surface fire behavior if fine surface fuels and ladder fuels (small woody fuels) are treated as proposed. Surface fire flame lengths will range from 1.2 to 3.6 feet. As discussed on DEIS pages 3-92 through 3-96, crown fire potential in treated areas would be unlikely with the reduction of surface fuels and aerial fuels (canopy bulk density, canopy base height).
"	12	Under non-game habitat, where down wood debris requirements are listed (pg. 2-5 of the Draft Summary and 3-240 of the Draft), the logger must leave 32 logs per acres on the ground….The draft states that this downed wood debris requirement is an attempt to meet the intent of Amendment 21 for old growth in the Flathead Forest Plan, however, it is not clear whether the expectation is to leave merchantable material behind or only to leave that material which is already laying on the forest floor and is no longer salvageable. This should be clarified in your document.	The Forest Plan standard for downed wood retention will be met even if it requires the retention of additional large trees in a stand (Exhibits Q-13 and Rd-3). However, residual standing trees are considered potential coarse down woody recruitment trees over time and the intention is not to require felling of these trees. Downed logs can be a safety hazard or an inconvenience during logging operations. Besides, a downed log is most valuable to wildlife if it is larger-diameter and longer, and has its root wad attached (Exhibit Rd-4). Designated merchantable sawlog material is not intended to left for coarse woody debris requirements, although firewood, pulpable material, or other cull material may be retained to meet the down woody requirement.
"	13	Where post-harvest treatments such as hand slashing and piling are prescribed, we are concerned that the end result would be a single story stand without much diversity. This prescription should be modified to maintain scattered clumps of healthy sapling and pole size trees that will also serve as future crop trees.	Slashing is proposed to meet the project objectives, including reducing the potential for crown fire and to maintain the health and vigor of the area proposed for treatment. In most cases the understory trees are not manageable, have lost epinastic control, and will not respond to release. Where saplings will not conflict with project objectives and appear to be able to respond to release, they will be retained.

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"	14	…we are concerned with some of the mitigation measures for hauling on roads that go through designated old growth stands. Page 1-15 of the Draft Summary states that existing downed logs that lie across the road within all old growth stands must be carefully removed and left intact so that they may be replaced following the active log hauling period….For what little gain it provides in travel corridor continuity, this particular mitigation measure seems to be excessive. What is the specific purpose of this requirement?	This section of the draft summary (actually on page 1-14 of both the summary and the DEIS), applies only to haul routes on currently bermed roads that pass through old growth habitat. This is the case only on a portion of Road 2913, with the length varying by alternative. As stated on page 1-14 of these documents, the purpose is to "help retain downed wood habitat features and continuity of habitats in these old growth stands."
"	15	Under soils mitigation for Unit 101A (Chapter 2-2 in the Draft Summary) the planned prescription is to do a moderate density retention harvest on 14 acres and protect the sensitive soils by cable yarding the area. No heavy equipment would be allowed and a broadcast burn is the follow-up treatment for the stand. If this occurs, would the unit be whole tree yarded and the usual downed woody debris requirements eliminated? If not, how would a fire line be dug with the required water bars that are mentioned? Would a hand line be sufficient enough to control the burn?	Unit 101A would be whole-tree yarded, and hand constructed fireline would be used to contain the prescribed fire.
"	16	On page S-7, under Threatened and Sensitive Plants, it states that sale area boundaries would be moved if threatened and sensitive plants were located. It seems safe to assume that winter logging would be another alternative to eliminating the area from harvesting activities.	While winter logging minimizes soil disturbance, it does not prevent it, and thus the possibility of damage to a sensitive plant population would still exist with winter logging. The objective of sensitive plant management is to prevent the possibility of affecting an individual plant.
Alan and Sallie Gratch C-71	17	Unit 59 …touches the northeast corner of our Taylor Creek parcel. Our property line at this location has not been renewed or otherwise delineated. What will the Forest Service do to insure no encroachment?	Our alternative maps do indeed depict Unit 59 as adjacent to your property. If this unit is selected in the Record of Decision for implementation, separation between the treatment boundary and the estimated boundary line will be sufficient to insure no encroachment.
"	18	Regarding Unit 59, we noted and assume that most of the Western larch would be marked for retention. Is this a correct assumption? How will the Douglas-fir be treated? What will be done to reduce the fuel load created by blowdown and poaching?	It is a correct assumption that larch would be marked for retention. Most of the Douglas-fir in this unit is infested or is at risk for bark beetle infestation. These trees would be removed. Any merchantable trees blown down or felled by illegal activities would be removed during the timber harvest activity. If the material is unmerchantable and a fuel hazard, the material would be piled with the logging slash and burned in controlled conditions.
"	19	We see that the south line of Unit 59 does not include all the trees cut, stacked, and left by an apparent poacher. Nor does it include the adjacent, large patch of blowdown, dead or dying lodgepole pine. We ask you to enlarge this unit to absorb these two areas into your fuel load reduction treatment plan.	The area you are referring to adjacent to Unit 59 is in the riparian area of Taylor Creek and would not allow for vegetation treatment with heavy equipment without damage to the stream and soil. Hand treatment of the fuels in this area would be prohibitively expensive.
"	20	Unit 59 interrupts a wildlife corridor coming from the unit's north and narrows the wildlife corridor along the unit's south line. In order to minimize the impact on wildlife, we ask that you maximize tree retention by changing the designated treatment to High Dispersed Retention.	Due to the density of infested trees in this area, insufficient healthy trees are available for Heavy Dispersed Retention.
"	21	We walked proposed cutting Unit 60. We found the area to be predominantly (and surprisingly) "old growth," with a healthy balance of Douglas fir, Western larch, and subalpine fir. We did not observe any fir beetle kill or root rot. The amount of blowdown seems insignificant. We noticed many animal trails crossing the unit. Based on these observations, we request that Unit 60 be withdrawn from the Project. This unit should be designated old growth (ask Amy Jacobs to walk this unit). In addition, it serves an important wildlife cover and seems to be an active wildlife corridor. If Unit 60 is not withdrawn, we wish to have further discussions with the Forest Service about its treatment.	We agree there are low levels of beetle and root rot activity as well as blowdown. However, the unit does have characteristics allowing treatment that would be consistent with most of this project's purpose and need statements. The Northern Region of the Forest Service uses "Old Growth Forest Types of the Northern Region" (Green, et al. 1992) for defining old growth stands. Unit 60 was evaluated as potentially being old growth type 4 in the western Montana zone, essentially requiring a minimum age of 180 years for large trees and 10 trees per acre greater than 21" DBH. Stand exams and "walk-through" evaluations do not

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			support that these conditions exist in this stand. In addition, it is expected that wildlife cover and function as a corridor will persist after this unit is commercially thinned, due to the high retention level of trees (Exhibits Rb-8 and Rg-9).
"	22	In our judgment, Unit 31A provides a critical (and the sole) wildlife corridor from the ridge above to Taylor Creek below. …Given the steepness of the terrain, the fragility of its ground cover, the fact that it bottoms into Taylor Creek and its riparian environs, and the additional consideration that Unit 31A lies in or adjacent to an area designated Elk habitat, please withdraw Unit 31A as a cutting unit. If cutting cannot be avoided, we advocate the least cutting feasible (very high Dispersed Retention). Do whatever is within your power to minimize disturbance of wildlife cover and corridor.	Unit 31A is not a component of the preferred Alternative F.
"	23	How does the Forest Service deal with blowdown, in general, and in particular with regard to Units 59 and 31A?	Blowdown is a natural event occurring from high winds. Sometimes areas susceptible to blowdown are influenced by past timber management practices. A single tree and up to hundreds of acres of trees could be vulnerable. When trees do blow down on the National Forest, the risk of insect infestations and fuel loading is assessed to determine if the trees need to be removed. The value of the timber and the cost of the logging operation is also assessed. If the need for removal of the blown over trees is apparent, a formal assessment with application of the National Environmental Policy Act for determination of adverse effects is made before deciding to treat the material. Units 31A and 59 would have this process applied to them if blowdown were to occur there.
"	24	To further support the elk habitat, and based on the elk (and moose) scat we located in Unit 31A, we request the proposed Forest Service gate along FS2909 be situated at the intersection of Unit 31A, FS2909, and the east line of Section 34.	Moving the gate on Road 2909 to the location you suggest would add about 100 acres of elk hunting season security area. However, there is not a good turn-around there, so we can't relocate the gate to that location.
"	25	Figure 1-3 shows that [precommercial] thinning would occur at the south end and northwest corner of our Taylor Creek parcel. The property line at the northwest corner has not been run. It is not yet clear to us how the Forest Service will insure "no encroachment."	Precommercial thinning in the vicinity of your property is not a component of Alternative F, the Preferred Alternative. Also, please see the response to question #17.
"	26	Forewarning about this [precommercial] thinning and mutual agreement as to timing would be most helpful.	We typically try to contact adjacent landowners who occupy their land when precommercial thinning activities are about to begin.
"	27	We asked you to consider hand piling and burning the areas of precommercial thinning adjacent to our Taylor Creek parcel.	During the planning of this project, hand piling and burning in the area of your property was not considered a priority due to the low hazard condition of the fuel on the private side of the property boundary. Additionally, wildland fires typically are at little risk to burn downhill on north facing slopes (for the area on the south end of your property). Wildland fires also typically burn from the southwest to the northeast in northwest Montana, therefore the proposed thinning on the northwest corner of your property would not create a fuels problem for fires to burn onto your property.
"	28	We noted that FS313 and FS2909 would be worked on as early as year 2004. We expressed our concern that continuous access to Taylor Creek be maintained between June and September.	Road rehabilitation activities may close roads for very short periods of time while culverts are installed or replaced. Such closures are known in advance and contacting our office on a regular basis would allow us to keep you informed.
"	29	I brought to your attention the desirability of lumping together all the units that will be using	The vast majority of timber harvest units proposed in the preferred Alternative F

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		road FS313 and FS2909. As I understand the conditions of letting out units, required roadwork will be completed before commencement of cutting and hauling. Any bidder burdened with the cost of roadwork would want to maximize the number of units benefiting from road improvements. Sallie and I suggested that all units using roads FS2909 and FS313 be part of the same phase, and that such phase be phase 1. We are driven by our desire to remove affected Douglas-fir beetle kill in the Taylor Creek areas as soon as possible, thereby slowing the spread of the Douglas-fir beetle and reducing the fuel load in the event of a fire.	would have log haul on the Road 313 system. Treating all units accessed by Road 313 in "Phase 1" would create an undesirably large timber sale. Offering timber sales in two or three phases for an area this size offers administrative and economic advantages. A logical break between timber sale areas is Taylor Creek, with units north of Taylor Creek (with the exceptions of 57 and 135) in the first phase and units south of the creek in subsequent phases. Including units 57 and 135 in "Phase 2" allows all areas upstream from your property to be treated in the same phase and Road 2909 to be primarily lumped with the second phase of implementation.
"	30	Sallie and I assume that road damage will be repaired and the roads will meet "best management practices" standards.	Your assumption is correct.
"	31	It would be helpful to know when traffic is expected in and out on these roads. Speed limit notices and enforcement would go a long way in reducing the risk of collision.	Public safety is always a concern of the Forest Service. We design our roads with adequate turn-outs and wide spots to maintain a high safety standard. Vehicle accidents involving log trucks are very infrequent, and most logging companies have a stellar safety record. A citizen's band radio can be used to locate the position of log trucks if an extra measure of safety is desired. Log truck drivers will announce their milepost location as they travel both loaded and empty on forest roads. The channel being used is indicated on a sign at the beginning of the gravel road. Notice of log haul will be posted on all gravel roads and speed limits are always posted. Calling or stopping by our district office can also be helpful in finding out when and where logging activities are occurring.
"	32	As for weed control, you mentioned washing down equipment; I mentioned spraying. Sallie and I urge greater attention to suppressing weeds.	Washing for noxious weed control before the equipment arrives at the logging site and before the equipment leaves the site are both required in all our timber harvest contracts. This approach has shown to be effective in the past for reducing weed spread from our logging areas. Additional weed spraying along haul routes may be used if a particularly invasive species of weed is known to be in the area. The Flathead National Forest has a weed management program in place that allows for quick responses to noxious weed conditions when they develop.
Montanans for Multiple Use C-72	33	The Logan Creek Assessment must have been at least three years in process, now the EIS three years later. The costs of these studies should be monitored and reported.	The comment implies the process has been six years; however, the initial Logan Creek watershed assessment began in August of 2000 and is now culminating three years later. The planning costs for this project are a component of the economic analysis found in Chapter 3 of both the DEIS and FEIS.
"	34	Here is a case where a watershed analysis area does not really meet the need to analyze and take action on the most strategic areas to of *[sic]* hazardous fuels to protect values at risk….Including the rather narrow strip of National Forest between the east watershed divide and the Forest boundary would have many benefits for achieving hazardous fuel and National Fire Plan objectives.	The eastern front of the Tally Lake Ranger District (Round Meadow to Lost Creek) is presently in the watershed assessment phase and is referred to as the Valley Face project. Comments or suggestions on this project will be solicited within the next few months. This portion of the Flathead National Forest was determined in the Cohesive Strategy process to be the highest priority fuels treatment area.
"	35	Why are not maps of the fire hazard rated stands disclosed and evaluated relative to historic and predicted fire behavior in the drainage? Why are fire models not used to disclose and evaluate probable effects of worst-case scenario fire behavior for existing stand conditions and treatment	Exhibit O-1 Historic Fire Regimes by Condition Class Departure, Exhibit O-16 Surface Fire Behavior Fuel Models Map (existing condition), and Exhibit O-17 Fuel Reduction Zones Model Maps by Alternative are in the project file and were

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		alternatives?	evaluated in relationship to historic and predicted fire behavior. Exhibit O-9 Fire Behavior Fuel Behave Model Runs, Exhibit O-10 Crown Fire Worksheet, and Crown Fire Behavior in the Northern Rockies Nomograms were used to describe expected fire behavior for existing condition fuel models on DEIS pages 3-83 thru 3-86 of the DEIS. The Nexus Model which links surface and crown fire prediction models was used to evaluate fire behavior for existing stand conditions and varying treatment alternatives at the stand level under normal summer and drought conditions, DEIS pages 3-92 thru 3-96. Exhibit O-14 Nexus Inputs and Outputs is in the project file.
"	36	There is no discussion in the draft of strategic placement of treatments to minimize fire threats relative to the values at risk.	Pages 3-100 thru 3-103 Effective Fuel Reduction Zones discusses the strategic placement and evaluates each alternative's effectiveness relative to values at risk or values to protect. Exhibit O-11 Values to Protect (or at risk) from Wildland Fire and Exhibit O-17 Fuel Reduction Zones by Alternative were use to demonstrate the juxapositioning of prior and proposed treatments relative to values at risk and their respective effectiveness either at the site, subdrainage, or landscape level.
"	37	The DEIS is packed with minute details the public likely does not understand nor is there any explanation or analysis of the need for some of it.	Analysis details are necessary to disclose the effects of our proposals. We cannot respond to your comment regarding lack of explanation or analysis of some of the details without knowing which details are being referred to.
"	38	To just make a blanket prohibition of harvesting any larch or ponderosa pine greater than 18" across thousands of acres of proposed treatments is unreasonable. Even if the tree is infested with insects or disease or exhibits other undesirable traits that can spread to desired vegetation, it will be left? This is not professional or good stewardship of valuable natural resource. Where is the analyses that non-game wildlife populations or habitat is in any way inadequate or threatened in any way so that every single tree or snag over 18" of these species must be saved?	Large ponderosa pine are relatively uncommon across the area. They are also highly valuable to many species of wildlife that use cavities in live and dead trees (Exhibits Rd-2, Rd-4, Rd-5, and Rd-9). This is particularly true of trees that have some kind of "defect," such as insects, disease, dead tops, or broken tops. To meet the standards in Amendment 21, if there are more than 10 trees per acre greater than 17" DBH, the stand qualifies as "old growth habitat." The intent of this project is to exclude management activities in old growth habitat. If there are less than 10 trees per acre greater than 17" DBH in a stand, due to the need to retain the largest trees on site, those trees would be left as seedtrees or shelterwood. Consequently, the only circumstances under which trees larger than 18" DBH will be removed is if there are less than 10 per acre.
"	39	…it appears you are prescribing to retain an undesirable hazardous fuel situation. Where are the studies that show viable populations of non-game wildlife require that much downed wood per acre.	The larger-diameter pieces that will be retained are not nearly as hazardous as leaving the much more flammable smaller-diameter pieces. They are also far more valuable as wildlife habitat and many other ecosystem processes. See the EIS sections on "Snags and Downed Woody Material Wildlife Habitat", "Fire and Fuels", "Soils", and "Vegetation", as well as Exhibits Rd-2 through Rd-4.
"	40	[Regarding requirements for downed wood per acre,] please don't require merchantable wood to be cut down to meet this unreasonable standard.	The Forest Plan standard for downed wood retention will be met even if it requires the retention of additional large trees in a stand (Exhibits Q-13 and Rd-3). However, the intention is not to require felling of these trees. Downed logs can be a safety hazard or an inconvenience during logging operations. Besides, a downed log is most valuable to wildlife if it is larger-diameter and longer, and has its root wad attached (Exhibit Rd-4).

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"	41	Use of temporary roads appears excessive… If access is needed for management, it should not be obliterated, only to be reconstructed for the next project, not only for the acres treated in this entry, but adjacent stands which will need treatment in the future.	Please see the response to #9 above. Temporary roads are a low cost and low impact solution to gaining access for areas where future access is not needed or is uncertain. If access may not be needed for many years into the future, the cost of constructing and maintaining a system road, particularly on gentle slopes such as is typical on the Tally Lake Ranger District, would be greater than constructing two temporary roads in the same location.
"	42	Please reconsider "reclamation" of roads 9895, 10360, 2913, 10436, 2886B, 313V, 9538, and 9524. These roads provide significant access for fire fighting, and cost efficient land and vegetation management. If the cost planned for "reclamation" was instead invested in BMP improvements on these roads both resources and people (taxpayers) will benefit.	The IDT did reconsider the reclamation of these roads and proposed an alternative reclamation plan with Alternative E. This alternative's reclamation plan was used in the preferred Alternative F. Reconsideration was given for the long-term need for forest management and for fire suppression access. The results of the reconsideration for Alternative F are: Road 9895 would only be reclaimed on the eastern one-third; Road 10360 would still be reclaimed due to the need to reduce erosion on a failed slope and the high cost of fixing this failure to maintain vehicle use; Road 2913 would not be reclaimed except for the portion that is relocated to new system road 2; Road 10436 would not be reclaimed; Road 2886B would have reclamation reduced to the southern one-third of the road segment; Road 313V would still be reclaimed because it is redundant to Road 313U; Road 9538 would still be reclaimed because it is redundant to Roads 9517 and 2914; Road 9524 would still be reclaimed because it is redundant to Road 9518.
"	43	There is no solid justification for locking out public use of the Taylor Creek Road yearlong. What about people who have purchased permits to hunt or otherwise use DNRC lands. Did the DNRC have a reason not to want the public to get to the state section?	The proposal to gate a portion of Road 2909 for elk security purposes does not lock out public use. This area would continue to provide access except for motorized vehicles. Permits to hunt or otherwise use DNRC land are still valid and section 36 can still be accessed by non-motorized means. Section 36 is currently not accessible via motorized vehicles because of an existing gate near the boundary between state and national forest land. DNRC employees have indicated they do not believe the public is precluded from accessing this state land as a result of the proposal to install a gate farther away from section 36 (Exhibit B-39 of Logan project file and Exhibit B-41 of Logan EAWS project file).
"	44	If we can be assured that the "low dispersed retention" treatment will produce enough space between the crowns of leave trees to effectively preclude running crown fires, then the level of these treatments proposed is inadequate.	"Low dispersed retention" employs the seedtree and clearcut with reserves silviculture systems. Typically, no more than 5 to 10 mature trees per acre are retained. Spacing between 5 to 10 trees per acre is more than adequate to effectively preclude running crown fires.
US EPA, John Wardell C-69	45	The EPA has concerns that the proposed action, Alternative B, would increase water yields, peak flows, and sediment delivery in tributaries to Logan Creek, and that this may be inconsistent with recovery of Logan Creek, which is on Montana's 1996 Clean Water Act Section 303(d) list of impaired waters…We would be very concerned about selection of Alternative B, since Alternative B would have the highest level of ground disturbing activities in Reid, Bill, Cyclone, and Pike Creeks that already are experiencing high water yield due to prior management activities. A high level of additional management activities in these watersheds and would likely increase channel erosion (page 3-140), which may be inconsistent with recovery of impaired Logan Creek. It is stated that Alternative B would increase water	Alternative F has been designed to incorporate the most water quality sensitive features of Alternative E. The main theme of Alternative E is to minimize harvests; especially in Reid, Pike, Bill, and Cyclone; to areas with the most existing dead or high risk trees and reclaim a different group of roads than the Proposed Action that would produce the most direct improvements in water quality (improving road drainage features in or near streamside areas or riparian zones). Most information that we have collect in the past few years indicate that there was not sufficient credible information to place this section of Logan Creek on the 1996 list and confirms its removal from later lists.

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		yields, peak flows, and sediment delivery to streams in most sub-drainages in the Logan Creek area (Page S-7).	
"	46	Alternative E… may have other potential adverse impacts to other resources such as old growth habitat and wildlife (e.g., inconsistency with Canada Lynx Conservation Assessment and Strategy; may affect—likely to adversely affect the threatened Canada lynx; and may increase fragmentation of old growth habitat.	Effects of Alternative E on wildlife are documented in Chapter 3 of the EIS in sections on "Old Growth Habitat and Old Growth Associated Wildlife Species", "Snags and Downed Woody Material Wildlife Habitat", "Riparian and Wetland Wildlife Habitat", "Management Indicator Species—Commonly Hunted Big Game", "Sensitive and Threatened Wildlife Species", and "Neotropical Migratory Birds", and in Exhibits Q-6, Q-9, Q-10, Q-14, Q-15, Rb-1, Rb-4, Rb-7 through Rb-9, Rd-1, Rd-3, Rg-5, Rg-8, Rg-9, Rr-1, Rr-2, Rr-4, Rs-2, Rs-3, Rs-8, Rs-10, Rs-16, Rs-22, Rt-5, Rt-6, Rt-10, Rt-15, Rt-17, and Rt-18.
"	47	We suggest development of a modified preferred alternative for the final EIS to better optimize environmental and resource management trade-offs while addressing project purpose ad need…EPA encourages development of a modified preferred alternative to better optimize the environmental and resource management trade-offs….We recommend that such optimizing of trade-offs be considered for the Logan Creek Ecosystem Restoration Project by evaluating individual treatment units and road management options in the current action alternatives and developing a modified preferred alternative (e.g., Alternative F) to optimize the environmental and resource management trade-offs while addressing project purpose and need. In general desirable features we consider worthy of including in a modified preferred alternative include: (1) avoid excessive water yield, channel erosion and sediment transport, and maximize fish and watershed improvement and recovery of impaired waters (i.e., road obliteration/improvement, stream stabilization, aquatic habitat improvement, and revegetation); (2) reduce fuel loadings in high fire risk areas, particularly urban interface areas, and restore desired vegetative conditions, while protecting other resource values (e.g., wildlife habitat and security, air and water quality, old growth, forest connectivity, control of noxious weeds; (3) restrict motorized vehicle access and reduce road density adequately to protect wildlife and wildlife habitat and watersheds while allowing for necessary management and reasonable public access.	Alternative F in the FEIS addresses these recommendations.
"	48	We also recommend that the FEIS include further analysis and documentation of potential long-term water quality improvements and benefits resulting from the proposed project in order to better demonstrate TMDL consistency….It would be helpful if the long-term water quality benefits of these restoration activities were better described or quantified and compared to sediment production and transport from proposed timber harvest and road building activities.	The ID Team is likely to recommend for inclusion in the final decision a description of features common to all alternatives that would address the primary sediment producing areas in the Logan Creek drainage. A special design would be included for the main Tally Lake road, where it runs adjacent to Logan Creek, to eliminate sediment from road maintenance going into the creek.
"	49	We also believe it is important that aquatic monitoring be carried out to validate that BMPs protect water quality and fish habitat and that proposed restoration activities in the Logan Creek drainage are consistent with long-term water quality recovery for support of beneficial uses and TMDL development….Mention is made of "ongoing monitoring" on page 3-142. This "ongoing monitoring" of streams in the project area should be further described in the final EIS….we also believe that some level of stream channel or water quality or fisheries habitat monitoring would be useful to validate that BMPs protect water quality and fish habitat, and that proposed activities in the Logan Creek drainage [on 1996 303(d) list] are consistent with long-term water quality recovery and TMDL development.	The Tally Lake Ranger District believes that monitoring aquatic habitat and biotic communities is vital to properly assess the "health" of a watershed. The district recently completed a Water Quality and Aquatic Life/Fisheries Status Report for the Montana Department of Environmental Quality that examined habitat and aquatic communities in Logan Creek (Exhibit F-12 in Project File). This report summarized some three decades of monitoring efforts in Logan Creek and included new data gathered during the current field season. The Tally Lake Ranger District is committed to continuing and expanding the aquatic monitoring program throughout the district to ensure management protocols successfully protect aquatic ecosystems.

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"	50	We note that the permanent new roads to be constructed are not very clear on the alternatives maps due to using dotted black lines for trails and dotted dark blue lines for new roads….Perhaps a starker color contrast could be used in the final EIS to more clearly identify locations of proposed new roads vs. trails.	A starker color scheme will be used in the FEIS maps and an improved legend will be incorporated on each map.
"	51	Recommendation for developing a modified preferred alternative: Drop Unit 32A for old growth protection, and reshape Unit 127A to avoid skid trails through old growth.	Both of these suggestions were incorporated into Alternative F, the preferred alternative.
"	52	Recommendation for developing a modified preferred alternative: …reevaluate need to harvest Unit 138A within an RHCA.	Due to the amount and location of bark beetle infested trees, as well as the risk of further mortality, it is necessary to include the RHCA in Unit 138A.
"	53	Recommendation for developing a modified preferred alternative: Reevaluate units 127A, 127, 73, 73A, 74, 88 in the heavily impacted Reid, Bill, Cyclone, and Pike Creeks drainages. Can these units be harvested without further adverse impacts to the Logan Creek drainage?	The entire ID team re-evaluated all of the units as alternative "F" was developed. Of the units you mention, most were reduced in size within the drainages of concern or silvicultural prescriptions designate greater amounts of retention than the other action alternatives. The treatments should speed vegetative and hydrologic recovery.
"	54	Recommendation for developing a modified preferred alternative: Modify Alternative E harvest units to provide consistency with all recommendations, standards and guidelines in the Canada Lynx Conservation Assessment and Strategy, and avoid a "likely to adversely affect" opinion on the Canada lynx.	The preferred alternative, Alternative F, was created by combining important aspects of all resource concerns. Avoiding a "likely to adversely affect" determination was one of those considerations.
"	55	Recommendation for developing a modified preferred alternative: include adequate fuels reduction activities to reduce fire risk in urban interface areas.	We believe we have designed a network of timber harvest units, prescribed burns, and hand fuel treatments in the urban interface areas that would substantially reduce the hazard of wildland fire from spreading onto private land. The Preferred Alternative F incorporates this network.
"	56	Recommendation for developing a modified preferred alternative: …since road construction provides some of the more significant impacts to water quality and wildlife… all possible measures should be taken to minimize new road construction (and to locate roads where they have minimal impacts)….[The proposed road construction for the action alternatives] appears like a relatively high amount of new road construction in an area that is already impacted by high intensity road densities and high intensity past timber harvests. Are the proposed 2.7 to 4.7 miles of new permanent road and 3.6 to 5.4 miles of temporary road in the action alternatives all necessary? Can some of the proposed new roads be considered for temporary roads that would be obliterated after the project to further reduce road density following project completion? Do locations of all new roads avoid sensitive soils, stream crossings, and riparian areas as much as possible?	All possible measures to minimize new road construction were investigated during the development of the proposed action. Some measures, such as helicopter yarding, were rejected due to economic reasons. The net effect of implementing one of the action alternatives is to substantially reduce the density of roads in the project area since far more miles of roads would be reclaimed than constructed. The new Alternative F proposes less permanent and temporary road construction than Alternative B, the proposed action. All roads proposed for permanent use were carefully considered for their future use and were determined to be necessary for long-term access. All new road construction avoids sensitive soils entirely and avoids perennial stream crossings and riparian areas as much as possible. In fact, all proposed units are in upland sites except for Unit 138A, and that would involve harvest within an area 200 to 300 feet away from the stream in the RHCA.
"	57	Recommendation for developing a modified preferred alternative: increasing to the maximum extent possible road drainage and BMP improvements to existing roads (that funding allows) to reduce sediment production/transport to surface waters, and maximizing culvert replacements to reduce blockage of fish passage (except where such blockage is desired to protect native fish populations).	Road drainage and BMP improvements are features of each action alternative on those roads needed for hauling timber products. The number of miles of road to be improved ranges from 99 to 141. In addition to haul routes, each action alternative (including the preferred alternative) includes replacement of several problem culverts that are not on haul routes but can be replaced with KV funds.
"	58	Recommendation for developing a modified preferred alternative: maximizing decommissioning of roads and reductions in existing "high intensity" road densities, since improved watershed conditions and wildlife habitat and security are associated with reduced	Please see the response to #56 above. The new alternative F described in the FEIS proposes the greatest amount of road reclamation.

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		road densities….we would encourage consideration of additional road reclamation (decommissioning) to reduce road density below the high intensity level of impact and promote further recovery of the Logan Creek watershed….Further reduction in road density may, therefore, reduce occurrences of human caused fires, and demands on road maintenance funds.	
"	59	Recommendation for developing a modified preferred alternative: maximizing tree and shrub plantings on light to moderate retention level harvest units to promote rapid revegetation and habitat enhancement.	All methods will be employed to assure reforestation success within five years as required in the National Forest Management Act. This may be most economically achieved by using natural regeneration methods. Monitoring for regeneration success would take place.
"	60	Recommendation for developing a modified preferred alternative: reevaluate roads #18 and #22 in light of their impact upon old growth and connectivity.	The effects of proposed system roads 18 and 22 on old growth and connectivity was discussed in the DEIS on pages 3-218 through 3-226 and in Exhibits Q-9, Q-10, Q-14, and Q-15. This included an analysis of the timber harvest units that would require the construction of these roads in both the Logan and Good Creek drainages.
"	61	Recommendation for developing a modified preferred alternative: revaluate units 32, 32A, and 136 in old growth habitat.	Unit 32A is not included in Alternative F, the preferred alternative. The 5 acres of 32 that currently appear to be old growth habitat were also dropped, plus another 17 acres. The single acre in Unit 136 that appears to be old growth will only be logged if this portion no longer meets the old growth definitions (Exhibits Q-1 and Q-6).
"	62	Recommendation for developing a modified preferred alternative: revaluate units 17, 17A, and 19 in big-game habitat.	These units are not directly mentioned in the big game section. However, System Roads 18 and 22 (which would require construction for these units) would cross or pass within a few hundred feet of elk moist sites near Johnson Peak (Exhibit Rb-7). Unit 17A is not included in Alternative F, the preferred alternative.
"	63	[J. Wardell is concerned about Alternative B because it] includes timber harvest in old growth habitat including regeneration harvest in 4994 acres of mature forests, which would reduce these habitats by 17 percent across the analysis area (page 3-217).	Alternatives B, E, and F would harvest one acre of old growth habitat, due to construction of Proposed System Roads 2 and 18 (Exhibit Q-15). The roads were located to minimize impacts to old growth to the extent feasible, consistent with Vegetation Standard Section H6 in Amendment 21. There would be no timber harvest in old growth habitat other than this one acre necessary for road construction. Up to 65 acres of regeneration harvest is proposed in stands that currently qualify as old growth habitat (page 3-216 of DEIS). This would be implemented only if these stands no longer meet the minimum definitions in "Old-Growth Forest Types of the Western Montana Zone" (Green, et al. 1992; Exhibit Q-1) due to possible continued large tree mortality up to the time of timber sale preparation. All alternatives include 127 acres of prescribed underburning in old growth habitat northwest of Tally Lake campground (Unit 200). "Old growth habitat" is not synonymous with "mature forest." Old growth has features such as large trees for the species and site, accumulations of large dead standing and fallen trees, decay or breakage, and multiple canopy layers. The timber harvest in mature forests is discussed in the EIS Chapter 3 sections on "Old Growth Habitat and Old Growth Associated Wildlife Species" and "Vegetation." See also Exhibit Q-14.
"	64	Alternative B would sever or narrow forest connections for wildlife travel corridors (page 3-	Issue #3, "Landscape dynamics—Connectivity" and Issue #4, "Landscape

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		218).	Patterns—Seral/structural stage patch size and shapes," were instrumental in the development of Alternative D (Exhibit E-2). These issues were briefly described on page 1-28 of the DEIS. The effects of changes in connectivity conditions were thoroughly analyzed for this proposal. Existing conditions and effects of fragmentation of forested areas and of severing and/or narrowing forested corridors were described in the DEIS on pages 3-211, 3-212, 3-214, 3-215, 3-217, 3-218, 3-219, 3-222 through 3-225, 3-227, 3-230, 3-244, 3-250, 3-253 through 3-255, 3-280, 3-281, and 3-287. Table 3-73 is specific to fragmentation concerns for wildlife. See also Exhibits P-10, Rg-7, and Rg-9.
"	65	[Alternative B] would be inconsistent with the Canada Lynx Conservation Assessment and Strategy, and "may affect—likely to adversely affect" the threatened Canada lynx (page 3-303).	Page 3-303 of the DEIS states this to be the case, along with Alternatives C and E. See also Exhibits Rt-15 and Rt-17.
"	66	It is stated that all action alternatives include construction of large fish habitat pools in the lower reaches of Logan Creek near Round Meadows. It is not clear how these pools will be constructed. Is it proposed that heavy equipment will be used in stream channels to excavate pools? Are boulders or woody debris placements intended to allow for natural scouring of pools? Is a mixture of these options proposed?	These pools would be constructed with an excavator by enlarging the pool with the bucket and placing large rocks on the upstream side of the pool.
"	67	We recommend that aquatic biologists and staff with training and knowledge of alluvial geomorphology be consulted during design of woody debris placements and construction of stream pools….We also recommend that the Army Corps of Engineers, US Fish & Wildlife Service, and Montana Dept. of Environmental Quality be contacted if dredging or placement of fill material or structures in stream channels is proposed to assure that all proper authorizations and permits are obtained…	The Tally Lake Ranger District will obtain all required permits prior to commencing instream restoration activities. The US Fish & Wildlife Service has already been informed of the restoration plans as part of the bull trout consultation process. Actual restoration methods and designs will be derived through an interdisciplinary process involving fisheries biologists and hydrologists trained in stream restoration along with engineers familiar with the capabilities and limitations of the equipment that will be needed.
"	68	Erosion control should be kept current with log skidding activities and that road maintenance (e.g., blading) focused on reducing road surface erosion and sediment delivery from roads to area streams. Blading of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important to maintain crowns on roads and to provide adequate dips and/or waterbars to promote drainage off roads.	The Flathead National Forest has a formal road maintenance plan that includes the scheduled blading and maintenance of road surfaces and functionality of ditches. These scheduled road maintenance activities are overseen by trained Forest engineering representatives to ensure compliance with State BMPs.
"	69	This high level of prior impacts from road construction and past timber harvests should be considered in evaluating and determining proposed new road construction and timber harvest activities in the Logan Creek area….Alternative E appears to include some light and moderate retention timber harvests within the watersheds of Reid, Bill, Cyclone and Pike Creeks (e.g., units 127A, 127, 73, 73A, 74, 88). Are such harvest units consistent with avoiding further degradation of these Logan Creek tributaries?	In all of the Units mentioned, with the exception of Unit 88, there are extraordinarily high populations of Douglas-fir bark beetles. Given the severe drought conditions, the outlook is for further mortality in Douglas-fir. The proposed harvest treatment is actually more benign than the effect of doing nothing and allowing fuel to accumulate and a large wildfire affecting vast portions of the watershed. Unit 88 will be harvested using only existing roads.
	70	This high level of prior impacts from road construction and past timber harvests should be considered in evaluating and determining proposed new road construction and timber harvest activities in the Logan Creek area…. It … appears that some new roads are proposed in the Reid Creek watershed. Are these new roads consistent with watershed recovery?	The purpose of the new road segment in Reid Creek is to promote watershed recovery by re-routing the road system away from the riparian area adjacent to the creek. A portion of the existing road (2913) encroaches upon the floodplain of Reid Creek and is a potential sediment source. The new road will be located upslope away from the stream and the existing road section will be decommissioned, greatly reducing the risk of sediment delivery to the stream from the road system.
"	71	It would be helpful if the stream channel segments with "fair" channel stability ratings could be	Pfankuch channel stability surveys are typically conducted on a randomly

Source/ Project File Reference	Com-ment #	Comment	Response
		identified in the FEIS, so that assessments could be made on the potential impacts to these channels by proposed treatment units and road management.	selected 100-meter section of the stream. The streams in the analysis area that have channel segments with a "fair" rating are Reid, Cyclone, Oettiker, Meadow, Sanko, East Sanko, Evers, and Bill Creeks. With the exception of East Sanko Creek, where only one stability survey was conducted in 1999, all the remaining streams also have surveyed reaches that rated "good" for stability. Most (75%) of the surveys that rated segments as "fair" were conducted in 1978, and more recent surveys have indicated that channel stability tends to be "good" throughout the watershed. Project record exhibit G-4 contains the summary report of channel stability surveys in the Logan Creek watershed.
"	72	Logan Creek is in the Flathead-Stillwater TMDL Planning Area with TMDLs due in 2005. We note that this 2005 TMDL due date appears to contradict the TMDL due date of 2007 reported in the DEIS (page 3-144).	Logan Creek is indeed slated for a TMDL in 2005, not 2007 as reported in the DEIS. However, the district is currently working with MDEQ to reassess the status of Logan Creek to determine if the stream is truly impaired or is in fact fully supporting its beneficial uses. Logan Creek was removed from the 303(d) list in 2000 and placed on MDEQ's Appendix F, which includes streams lacking sufficient credible data for a status determination.
"	73	WATSED was used to model annual water yield increases of alternatives (Table 3-56). It is our understanding that if the WATSED model was run for water yield outputs it would not be too difficult to have it also output sediment production estimates. Although WATSED sediment modeling has limitations, sediment production estimates may be of interest for comparison of estimated sediment production differences between alternatives, and may also provide information regarding potential long-term water quality benefits associated with the road rehabilitation and reclamation activities.	WATSED is capable of calculating reductions of sediment, but the project hydrologist determined that actual on-the-ground measurements of reductions of contributing area was much more valuable as the best reporting value since it was available for this project and did not have to be modeled.
"	74	We are pleased that Unit 101A is proposed for skyline yarding and broadcast underburning to avoid heavy equipment use on the sensitive soil. Would harvest during winter on snow and frozen ground reduce soil impacts even further?	Yes. That is an option the logger has, but it is not required because the very small amount of marginal increase in reducing soil impacts could not be justified economically.
"	75	It is stated that unit 138A will involve timber harvest with RHCAs (page 3-243). We could not locate Unit 138A on the alternatives maps. Why must Unit 138A within an RHCA be harvested?	Unit 138A is located about two miles west of the Tally Lake Campground. Due to the amount and location of bark beetle infested trees, as well as the risk of further mortality, it is necessary to include the RHCA in Unit 138A.
"	76	It is stated that the Island/Squaw cattle allotment partially causes "extremely poor habitat" for cutthroat trout in upper Griffin Creek (page 3-183). What is being done to improve grazing practices in this allotment to address habitat degradation caused by grazing practices?	The Island/Squaw cattle allotment is scheduled for NEPA analysis and a permit will be reissued in the near future. The condition of the allotment will be assessed and appropriate measures to reduce habitat degradation would be incorporated into the permit at that time.
"	77	We fully support proposals to plant trees and shrubs in timber harvest units with light to moderate retention levels (page 2-6). We note that page 2-6 indicates the total maximum area to be treated would be 100 to 500 acres, however, the reforestation discussions in Chapter 3 note that all stand groups with light to moderate retention would require reforestation with planting for Alternative C on 1602 acres, and for Alternative D on 1840, and for Alternative E on 2731 acres (pages 3-43, 3-48, 3-54). These acreage amounts for planting are much higher than the 100 to 500 acres mentioned on page 2-6. This inconsistency should be explained.	Deciduous shrubs will be planted on 100 to 500 acres for wildlife browse. Reforestation refers to planting only conifer seedlings.
"	78	We also suggest that riparian areas and any stream banks that are identified with eroding and sensitive reaches be considered for planting with shrubs and trees to provide bank and channel	The district plans to continue assessing stream habitat in the Logan Creek watershed using the R1/R4 survey methodology, along with other survey methods

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		stability, sediment filtration, shade, woody debris recruitment, and other functions, and to promote establishment of healthy communities of riparian vegetation.	capable of capturing bank stability status. To date, the data gathered indicate few problem areas within the watershed. Most harvest activity in the upper watershed took place after riparian buffer strips were afforded regulatory protections, and areas harvested prior to that time in the lower watershed have largely recovered in the interim. However, the Tally Lake Ranger District places a high priority on maintaining healthy riparian areas and will actively seek to identify and restore degraded sites throughout the district.
"	79	We are pleased that all mature trees within at least one tree length of the stream would be retained in all alternatives (page 3-160). How are "mature" trees defined?	This statement referred to two possible activities that will take place in a very minor number of locations. Shrub slashing to enhance wildlife browse would not affect conifers. The other activity is thinning saplings, which would only be implemented if an older harvest area occurred within the tree length zone. This would enhance tree growth and not affect stream temperature.
"	80	It would be of interest to know how the 18 inch and 25 inch tree diameter limits were determined for Amendment 21? … Are the approximate numbers of larch and Ponderosa pine trees greater than 18 inches in diameter and Douglas fir over 25 inches in diameter to be retained known? Will such tree retention limits allow for adequate snags, and snag replacement trees, and adequate middle sized larch, Ponderosa pine and Douglas fir tree to promote increased numbers of large desirable fire resistant tree species in the future?	The numbers of large larch and ponderosa pine to be retained are derived from quantified, field-derived, stand-exam data (Exhibit P-4). We expect that adequate large dead and replacement larch, Ponderosa pine, and Douglas fir trees will persist. Please refer to administrative record for Amendment 21 for detailed information about the development of the large tree and snag standards.
"	81	It is also not clear how the tree retention information on page 2-5 relates to the harvest prescriptions described in the vegetation section of Chapter 3, that for example indicates that light retention harvest would leave approximately 5 live trees per acre or that shelterwood harvests would leave between 15 and 30 of the largest larch and Douglas fir trees per acre (pages 3-31, 3-33). It is our understanding that the light retention harvests would only be proposed in timber stands of lodgepole pine or mixed conifers that did not contain large larch and Ponderosa pine or large healthy Douglas fir. Is that correct?	That is correct. Light retention is applied to stands that are dominated by lodgepole pine or spruce and subalpine fir where ponderosa pine, larch, and Douglas-fir are a minor part of the species composition.
"	82	If increased numbers of large fire resistant tree species are desired, consideration should be given to reducing diameter limits for retention of larch, Ponderosa pine, and Douglas fir (e.g., reduce large and Ponderosa pine retention diameter limits to 14 inches, and Douglas fir to 18 inches), and/or perhaps specifying retention of a certain number of middle sized trees of desirable species per acre so they are allowed to become large fire resistant trees.	Where the structure and composition is available, your recommendation is applied and called an intermediate treatment or commercial thin. It is also desirable on a portion of the landscape to convert Douglas-fir stands to larch and ponderosa pine and introduce fire, which in many cases precludes leaving many Douglas-fir less than 18" DBH.
"	83	We believe there should be ongoing beetle monitoring to confirm beetle presence and tree mortality and the risk of beetle epidemics. We also believe it would be helpful if the FEIS evaluated in greater detail options for utilizing pheromone treatments to trap and repel beetles, burning/peeling infested logs to destroy brood, and chemical treatments as well as harvest of infested or vulnerable trees as ways to reduce epidemic beetle infestations.	Insect and disease monitoring occurs annually by aerial detection as well as ground surveys and brood sampling. Requests for funding through Federal, State, and Private Forest Health Protection are made to support these activities. The Tally Lake Ranger District has made extensive use of pheromones, lures, traps, and trap trees where these tactics can be used effectively.
"	84	It is important that if herbicides are used, the water contamination concerns of herbicide usage be fully evaluated and mitigated. Herbicides used in the project area should be used in a safe manner to ensure protection of surface water ecological integrity, and maintain public health and safety, and no spraying should occur in wetlands or other aquatic areas.	All herbicide applications are made by licensed applicators that follow label instructions. Applications are made conservatively and avoid aquatic areas as well as windy conditions to minimize drift.
"	85	We are concerned about potential loss of habitat for old growth species such as pileated woodpeckers and barred owls (page 3-226)….Are project modifications possible that would address purpose and need, but also would reduce adverse impacts to nesting and feeding habitat	Alternative D was designed largely to reduce effects on old growth habitat, including dropping some units, reshaping others to leave a buffer along old growth habitat, and dropping most of the road construction through old growth.

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		of these old growth species? We encourage reevaluation of proposed roads through old growth habitat and harvest units to reduce potential impacts upon such habitats and upon wildlife dependent on old growth habitat.	
"	86	We believe that the preferred alternative that is developed for the final EIS should include appropriate project revisions and modifications to be consistent with the recommendations of the Canada Lynx Conservation Assessment and Strategy, and avoid a likely to adversely affect determination.	Alternative F, the preferred alternative, is consistent with the recommendations of the LCAS, and avoids a likely to adversely affect determination (Exhibits Rt-15 and Rt-17).
M. Garrity Alliance for the Wild Rockies C-74	87	In the absence of a TMDL, federal agencies have a duty to avoid further degradation of WQLS stream segments. The Logan Creek Ecosystem Restoration Project violates this duty and thereby violates the CWA (Clean Water Act)….The recent United States District Court for the District of Montana order (CV 03-22-M-DVM) Sierra Club and the Alliance for the Wild Rockies vs. Deborah Austin, stated a TMDL must be completed to determine if WQLS streams can handle the increase in sediment from logging. This has not been done.	The Montana Department of Environmental Quality (MDEQ) removed Logan Creek from the 303(d) list of WQLS streams in 2000, after determining that there was insufficient credible data to demonstrate impairment of beneficial uses in the stream. Logan Creek was subsequently placed on the MDEQ's Appendix F list of streams needing further study for determination of the need for a TMDL. The Flathead National Forest and MDEQ have recently cooperated in a reassessment of physical and biological conditions within Logan Creek, which included new surveys of the periphyton, macroinvertebrate, and fish communities. MDEQ is currently reviewing the body of data generated during this assessment for evidence of impairment. In the event that MDEQ decides evidence of impairment exists, Logan Creek will be placed back on the 303(d) list and a TMDL will be developed for the listed segments. In the event MDEQ determines that Logan Creek is fully supporting its designated beneficial uses, then a TMDL would not be required. In either case, the use of Best Management Practices during timber harvest and other sediment reducing activities will protect water quality and the aquatic environment in the watershed.
"	88	The time frame for this project is longer than 5 years and therefore violates NEPA.	NEPA is not violated if projects are implemented five years or longer after a decision is made. The Council on Environmental Quality regulations for implementing the National Environmental Policy Act at 40 CFR 1502.9 (c)(1) require the agency to prepare a supplement to either a draft or final Environmental Impact Statement if: (i). The agency makes substantial changes in the proposed action that are relevant to the environmental concerns; or (ii). There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. In addition, Forest Service Handbook 1909.15 Section 18.1 further defines the procedures for complying with 40 CFR 1502.9. If the implementation of the selected action as described in the Logan Creek Ecosystem Restoration Project Final EIS and Record of Decision (ROD) significantly changes at any time and new circumstances and/or information exists, a supplemental EIS will be prepared.
"	89	The Flathead National Forest does not have adequate information about noxious weed populations and locations and as a result cannot accurately determine impacts associated with the proposed project.	A complete inventory of weed populations is not possible with the funding available. Therefore the Flathead Forest evaluates the effect of projects by analyzing the risk of invasive species becoming established in any given area.
"	90	Cumulative impacts on fish…are not adequately analyzed. The Logan Creek Ecosystem Restoration Project preferred alternative would log 6624 acres, which is an incredibly significant action. We do not believe that the DEIS adequately analyzed the impacts associated	Cumulative effects on fisheries and fish habitat were incorporated into the Chapter 3 "Affected Environment" and "Cumulative Effects" sections on "Fisheries." See also Exhibit F-10.

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		with this huge project, which is a project area of 61,300 acres (DEIS, page S-1).	
	91	Cumulative impacts on wildlife…are not adequately analyzed. The Logan Creek Ecosystem Restoration Project preferred alternative would log 6624 acres, which is an incredibly significant action. We do not believe that the DEIS adequately analyzed the impacts associated with this huge project, which is a project area of 61,300 acres (DEIS, page S-1).	Cumulative effects on wildlife and their habitats were incorporated into the Chapter 3 "Affected Environment" and "Cumulative Effects" sections on "Old Growth Habitat and Old Growth Associated Wildlife Species", "Snags and Downed Woody Material Wildlife Habitat", "Riparian and Wetland Wildlife Habitat", "Management Indicator Species—Commonly Hunted Big Game", "Sensitive and Threatened Wildlife Species", and "Neotropical Migratory Birds". See also Exhibits P-10, Q-3, Q-8, Q-10, Q-18, Rb-1, Rb-8, Rd-1, Rd-9, Rg-1, Rg-7, Rg-9, Rs-24 through Rs-28, Rt-3, Rt-9, Rt-17, and Rt-20.
	92	Cumulative impacts on plant species…are not adequately analyzed. The Logan Creek Ecosystem Restoration Project preferred alternative would log 6624 acres, which is an incredibly significant action. We do not believe that the DEIS adequately analyzed the impacts associated with this huge project, which is a project area of 61,300 acres (DEIS, page S-1).	The Logan Creek Project Proposed Action includes 6,624 acres of vegetative treatment. The direct, indirect, and cumulative effect of this and all of the alternatives to the proposed action appear in the DEIS and FEIS in chapter three under vegetation, invasive plant species, threatened and sensitive plants, fire and fuels, and old growth habitat.
"	93	The US Fish and Wildlife Service must formally be consulted to ensure that the Logan Creek Project will not harm endangered species such as bull trout, wolves, bald eagles, and grizzly bears. We believe the large harvest and area impacted will harm these threatened species.	Consultation with the US Fish and Wildlife Service will be completed, as documented in Exhibits F-2, Rt-1, Rt-2, Rt-17, and Rt-21and Exhibits P-24, F-2, Rt-1, Rt-2, Rt-17, and Rt-21.
"	94	The Flathead has not amended its Forest Plan nor reinitiated consultation on the Plan.	Please see #125 below.
"	95	The Forest Service must first formally consult with FWS to ensure that the Lynx Conservation Assessment and Strategy will not jeopardize the continued existence of the lynx, will not harm the lynx, will not adversely modify lynx habitat the FWS is bound to designate as critical habitat, and that it will indeed conserve the lynx and its habitat. Then the Forest Service must formally amend the Flathead Forest Plan to make it consistent with the Lynx Conservation Assessment and Strategy and again consult with FWS to ensure that it has done so adequately. Then, the Forest Service must rework the Logan Creek Project to ensure it is consistent with the Lynx Conservation Assessment and Strategy and the amended Forest Plan and again consult with FWS to ensure that it has done so adequately. …The DEIS does not disclose that the Forest Plan "is likely to adversely affect" the lynx—effectively the Forest Plan is a "taking" of lynx. The FNF must amend its Forest Plan before allowing the project activities in lynx habitat, because implementation of its present Plan is a factor that has led to the necessity for listing the lynx under the ESA.	The Forest Service completed a biological assessment on all Forest Plans in lynx habitat in December 1999 (Exhibit Rt-15). In addition, the Forest Service signed a conservation agreement with the USFWS in February 2000 (Exhibit Rt-15). The agreement says the Forest Service "agrees to review and consider the recommendations in the LCAS prior to making any new decisions to undertake actions in lynx habitat." The USFWS completed a biological opinion on the plans in October 2000 (Exhibit Rt-15). This found that "After reviewing the current status of Canada lynx, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, it is the Service's biological opinion that the current Plans, as implemented in conjunction with the Conservation Agreements, are not likely the jeopardize the continued existence of the lynx." Based on these documents, formal consultation on the existing plans has already occurred. The Forest Service is in the process of amending current plans to incorporate management direction that conserves and promotes recovery of the Canada lynx by reducing or eliminating adverse effects from land management activities while preserving the overall multiple-use direction in existing plans. The Flathead National Forest's Forest Plan is part of the amendment process (*Federal Register,* Volume 66. No. 176, 47160-47163). The Lynx Conservation Assessment and Strategy recommendations identify ways to conserve lynx and to reduce or eliminate adverse effects of management actions. Therefore, the recommendations were used as a screen to determine if

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			the project would adversely affect lynx. Exhibit Rt-15 shows how the project considered the recommendations in the LCAS. In addition, the Forest Service has consulted on the Logan project. The Biological Assessment (Exhibit Rt-17) determined that Alternative F (preferred) is "not likely to adversely affect lynx". The USFWS has issued a Biological Opinion with a no jeopardy conclusion (Rt-21). In summary, we find that we have considered the best science available for the conservation of the lynx and have taken measures to reduce or avoid adverse effects. Please see #93 above for information about consultation with the US Fish and Wildlife Service.
"	96	The direct, indirect, and cumulative impacts of old growth logging on the viability of old growth associates was never done.	Direct, indirect, and cumulative effects on wildlife species that use old growth habitats are disclosed in Chapter 3 of the EIS in the section for "Old Growth Habitat and Old Growth Associated Wildlife Species". See also Exhibits Q-6, Q-9, Q-10, Q-13 through Q-15, Q-18, Rg-1, and Rg-9.
"	97	Amendment 21 notes that old growth on the Flathead Forest has been reduced to the bare minimum that would have existed at historical times (15%). Optimal levels of old growth may have reached 60%. Amendment 21 (pages 53 and 84) suggests that a minimum of 20% of old growth habitat may be required to ensure viability of associated wildlife. This level would fall within historical ranges of old growth on the Flathead Forest. Implementation of Amendment 21 within the Logan Creek area clearly shows that old growth wildlife is threatened by this Forest Plan amendment.	As described in the response to Comment #63, the Logan Creek project would reduce current old growth habitat by 1 acre due to road construction. No other existing old growth habitat would be harvested. As stated in the FEIS, implementation of all alternatives would comply with the standards contained in the Forest Plan related to old growth, and Alternatives D and F are consistent with Amendment 21's objectives and goals (Exhibit Q-13), as well as the findings and conclusions of Amendment 21's effects analysis process as shown in its Biological Assessment, Biological Evaluation, FEIS, and project record. The current amount of old growth habitat in the Logan Creek analysis area is at 17%, which is within 75% of the historic range of variability for this area. The FEIS for Amendment 21 (pages 53 and 84) cited Fahrig 1998 (which is actually 1997) in the analysis of the No Action Alternative (which would have left old growth direction in the Flathead LRMP unchanged). Fahrig (1997) used computer model simulation to find that species persistence was virtually ensured, irrespective of habitat configuration, when breeding habitat exceeded 20%. The FEIS stated "if the 20% prediction generally holds, then [the no-action/no amanedment] alternative would result in an increased risk of viability for old growth-associated species." By providing an amount within 75% of the historical range of variability, the selected alternative for Amendment 21 was found to "reduce the current risk of loss of viability for old growth-associated species" (page 92 of the FEIS). See also Exhibits Q-5, Q-8, and Rg-2.
"	98	The Forest has violated the National Forest Management Act because no effective monitoring will be implemented to prevent viability losses of old growth management indicator species (MIS)….Upon review of the monitoring proposal for the Logan Creek project, it is clear that the proposed monitoring will not address either population or habitat trends of old growth wildlife, and cannot be used as an indication of viability on the Flathead Forest. Hence, the viability monitoring requirements as defined in the NFMA are not going to be met with Amendment 21….absolutely no information was provided on monitoring of old growth MIS in the Logan Creek DEIS.	Page 3-215 of the DEIS states that "Before the LRMP Amendment 21 decision of January 1999 (Exhibit Q-4), Old Growth Management Indicator Species (OGMIS) habitat was designated throughout this area. The three species formerly listed as OGMIS occur in the analysis area. Of these, barred owl and pileated woodpecker reproduction has been detected, as well as that of boreal owls. Monitoring results and other sightings suggest that all four of these species are relatively common throughout the area (Exhibit Q-16)". This detection was through formal monitoring of these species (Exhibit Q-16). It also states:

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			"Exhibits Q-4 and Q-16 display occupation by old growth associated species and provide more information about these species' habitat components, population trends, and risk factors."
"	99	The DEIS states that the project area is outside of the grizzly bear recovery area, yet the DEIS admits that grizzly bears occupy the area (DEIS, page 2-286). …Recently, a study of grizzly spatial needs has found that a viable population of grizzlies in the Northern Rockies requires 147,883 to 184,919 square kilometers of habitat. These spatial requirements far exceed those provided for by the USFWS recovery strategy for grizzly bears (Bader 200b). Hence, any projects that degrade bear habitat should be considered a threat to population viability for grizzly bears.	As stated in the DEIS, the Logan drainage is outside the Grizzly Bear Recovery Zone identified in the Grizzly Bear Recovery Plan (USFWS 1993, p. 59). Federal lands within the proposed project area are designated in the Flathead LRMP as unoccupied grizzly bear habitat (II-24). However, as stated in the DEIS (page 3-286), grizzly bears are reasonably expected to occur within the Logan Creek area (Exhibit Rt-13). Consultation with the US Fish and Wildlife Service included consideration of the effects of this project on grizzly bears, as documented in Exhibits Rt-1, Rt-2, Rt-17, and Rt-21.
"	100	The impacts of the current and post proposed project road densities (and other aspects of the development of Logan Creek Project) on the population viability of grizzlies in the analysis area and the Northern Rockies should be thoroughly analyzed…..The FS needs to consider alternatives that close far more roads than those considered in the analysis (with no new access route construction). The FS also needs to consider the effectiveness of road closure efforts.	The effects of the proposal on grizzlies is displayed in the "Gray Wolf and Grizzly Bear" portion of the FEIS's Chapter 3 section on "Sensitive and Threatened Wildlife Species." This includes the effects of roads, vegetation manipulation, and other aspects of the proposal. The densities of open roads and of total roads would decrease under every action alternative analyzed. Benefits to wildlife, fisheries, and water quality, as well as future needs for human access, were the basis for proposing all of the seasonal and yearlong road closures, road reclamation, and construction of new system roads. Road closure effectiveness is monitored throughout the year on the Tally Lake Ranger District, particularly during the general hunting season.
"	101	The FS should properly monitor the area for wolves and other TES species, and their habitat.	Monitoring of all TES wildlife in or near the Logan area is done in cooperation with the US Fish and Wildlife Service; Montana Fish, Wildlife and Parks; and the Montana Natural Heritage Program. See Exhibits Rs-2, Rs-4 through Rs-6, Rs-14 through Rs-16, Rs-20, Rs-21, Rs-30, Rt-7, Rt-11, Rt-12, and Rt-22.
"	102	The FS should also document why the acknowledged "increased risk" from human caused mortality that this project entails would not affect wolf viability and wolf recovery (DEIS 3-289).	The mortality risk for wolves is judged as "low" for all alternatives of this project, with or without consideration of cumulative effects. The risk level given on page 3-289 of the DEIS was in error. For the rationale and more information, see the Threatened and Endangered Wildlife Species Biological Assessment (Exhibit Rt-17).
"	103	The DEIS does not demonstrate consistency with all applicable project-specific and forest wide Standards the adoption of the Lynx Conservation Strategy and Assessment and Strategy (LCAS) instituted. Full, forest wide compliance is necessary before any activities can be undertaken that affect lynx.	The DEIS (pages 3-272 through 3-276) and Biological Assessment (Exhibit Rt-17) were developed in accordance with the Canada Lynx Conservation Agreement signed by the FS and USFWS February 7, 2000. The agreement says the "FS agrees to review and consider the recommendations in the LCAS prior to making any new decisions to undertake actions in lynx habitat." The LCAS recommendations identify ways to conserve lynx and to reduce or eliminate adverse effects of management actions. Therefore the recommendations were used as a screen to determine if the project would adversely affect lynx. Exhibit Rt-15 shows how the project considered the recommendations in the LCAS. The team also evaluated current science (Exhibit Rt-15; Koehler and Aubrey 1994, Lynx Biology Team 2000, Powell and Zielinski 1994, Ruggiero et al. 1999, and U.S. Fish and Wildlife Service 1998a) to determine if any other measures were

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			warranted. See also the response to #95.
"	104	The analysis for lynx suffers from deficiencies that preclude it from satisfying NEPA, NFMA, and the ESA in other ways. Simply put, the analysis uses methodology—a database query—that is not adequate for delineation of lynx habitat components and thus lacks scientific integrity….A big problem with relying on database-derived suitability models for habitat analyses is that such data is not reliable enough.	The elements of lynx habitat (i.e., sapling feeding habitat or denning habitat) were determined in several ways for the Logan Creek project (Exhibit Rt-8). After a review of the LCAS and science (see response to Comment #103), we queried a database that was created by a detailed interpretation of recent aerial photos. The resulting habitat map was field verified by the Flathead Forest Wildlife Biologist and three District-level Wildlife Biologists (Exhibit Rt-8), and proved to be remarkably accurate with the exception of some under-representation of sapling feeding stands and potential denning stands. These were adjusted by adding all stands in lynx habitat that were proposed for precommercial thinning to sapling feeding habitat. Such stands were based on detailed site visits and "pre-thin" exams. In addition, all stands that qualified as old growth habitat were added to potential denning habitat (Exhibits Q-1 and Q-11).
"	105	This same problem (as the comment immediately above, #16) exists for analyses of other MIS and Sensitive species, including the fisher, the northern goshawk, and others.	The methodology and documentation of potential habitats and effects analysis is found in the Chapter 3 section on "Sensitive and Threatened Wildlife Species" (DEIS pages 3-260 through 3-205) and detailed in Exhibits Rs-1 through Rs-6, Rs-8, Rs-10, Rs-14 through Rs-16, Rs-20 through Rs-23, Rt-2, Rt-5 through Rt-12, Rt-15 through Rt-19, and Rt-22.
"	106	The FS has not complied with the NFMA regulations at 36 C.F.R. 219.19(a)(1) which require: In order to estimate the effects of each alternative on fish and wildlife populations, certain vertebrate and/or invertebrate species present in the area shall be identified and selected as management indicator species and the reasons for their selection will be stated. These species shall be selected because their population changes are believed to indicate the effects of management activities. In the selection of management indicator species, the following categories shall be represented where appropriate: Endangered and threatened plant and animal species identified on State and Federal lists for the planning area; species with special habitat needs that may be influenced significantly by planned management programs; species commonly hunted, fished, or trapped; non-game species of special interest; and additional plant or animal species selected because their population changes are believed to indicate the effect of management activities on other species of selected major biological communities or on water quality. On the basis of available scientific information, the interdisciplinary team shall estimate the effects of changes in vegetation type, timber age classes, community composition, rotation age, and yearlong suitability of habitat related to mobility of management indicator species.	The selection of Management Indicator Species (MIS) is a programmatic-level issue. The analysis of effects of the Logan Creek project on these species and their habitats are documented in Chapter 3 sections of the EIS on "Old Growth Habitat and Old Growth Associated Wildlife Species", "Snags and Downed Woody Material Wildlife Habitat", "Riparian and Wetland Wildlife Habitat", "Management Indicator Species—Commonly Hunted Big Game", "Sensitive and Threatened Wildlife Species", and "Neotropical Migratory Birds", and in Exhibits Q-6, Q-9, Q-10, Q-14, Q-15, Rb-1, Rb-4, Rb-7 through Rb-9, Rd-1, Rd-3, Rg-5, Rg-8, Rg-9, Rr-1, Rr-2, Rr-4, Rs-2, Rs-3, Rs-8, Rs-10, Rs-16, Rs-22, Rt-5, Rt-6, Rt-10, Rt-15, Rt-17, and Rt-18. See also Exhibit Rg-2. The mobility of MIS and other wildlife species was assessed for the Logan project primarily via changes in forested connectivity, as described above in the response to Comment #64.
"	107	The EIS must also discuss the spatial separation of its designated old growth blocks, and the implications this separation has for pileated woodpeckers and other sensitive old growth species.	The spatial separation of old growth areas is discussed in the "Old Growth Habitat and Old Growth Associated Wildlife Species" section of Chapter 3 of the FEIS and in Exhibit Q-7. The effects on the Flathead's former Old Growth Management Indicator Species (pileated woodpecker, barred owl, and marten) are disclosed in this section and in Exhibit Q-9. All of the "old growth associated species" (Exhibit Q-4) that were identified in Amendment 21 are also covered in this EIS section and in multiple Project File Exhibits, including Rg-2. These include 5 sensitive wildlife species: the harlequin duck, northern goshawk,

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			flammulated owl, black-backed woodpecker, and fisher. These are further covered in the "Sensitive and Threatened Wildlife Species" section of Chapter 3 of the FEIS and Exhibits Rs-2, Rs-3, Rs-8, Rs-10, and Rs-16. For connectivity analyses, please see the response to Comment #64, above. It is not appropriate to designate "old growth blocks," in accordance with the Flathead's Amendment 21 (Management Direction Related to Old Growth Forests). Instead, all habitat that meets old growth criteria (Exhibit Q-1) is designated as such and maintained, consistent with native disturbance and succession regimes.
"	108	There is no design specification in the DEIS that makes adequate commitment to a numerical dbh cutting limit, no specification on leaving a specified number of 30" dbh trees. The Forest Service must explicitly state its commitment to maintain an adequate 30" dbh live and dead tree component in logged and unlogged areas, addressing nesting habitat needs of the pileated woodpecker.	This project emphasizes the retention of the largest trees, particularly the larch and ponderosa pine important for pileated woodpeckers. It cannot require a certain number of 30" diameter trees, because these are unevenly distributed across the landscape. The DEIS pages 3-239 and 3-240 and Exhibits Q-13 and Rd-3 address the design features intended to achieve Amendment 21 standard for snags and downed logs.
"	109	The DEIS fails to reconcile its and the Forest Plan's reliance on Thomas (1979) with the fact that its own scientists regard that guidance to be out-of-date and inadequate for maintaining viable populations of snag-dependent and cavity nesting species….The above studies present new data suggesting that some of the assumptions and data used in the Thomas model are not valid, and that the prescribed snag densities need to be revised upward.	Thomas, et al. 1979 was cited to document the fact that "an insufficient number of suitable snags may limit or eliminate populations of cavity-using species" (DEIS 3-231). More recent studies, including Bull, et al. 1997, McClelland and McClelland 1999, Saab and Dudley 1998, Torgersen, et al. 1990, and Torgersen 1996, where used to evaluate effects on cavity-using species.
"	110	Reynolds et al 1992 (which was not even cited in the DEIS) recommends at least 40% of a goshawk territory be comprised of late successional habitat (over-mature and old growth). The DEIS fails to disclose how these habitat needs are met, even over any one or set of theoretical home ranges.	Reynolds et al. 1992 was reviewed but was not cited for this project because it applies to the goshawk in the southwestern United States, although it was cited in Exhibit Rs-17. Clarke 1998 appears to provide more relevant information. See also the response to Comment # 111 below.
"	111	Due to the heavily logged nature of much of the project area and the FNF, it is questionable whether goshawks may be able to find enough suitable home ranges for a viable population.	The Northern Goshawk portion of the DEIS Chapter 3 section on "Sensitive and Threatened Wildlife Species" describes the number of goshawk pairs that the project area would be expected to support under the alternatives. Following implementation, the analysis area would be still be expected to support two pairs of goshawks in all alternatives (Exhibit Rs-16). Also see Exhibit Rg-1.
"	112	Furthermore, the **distribution** of goshawk habitat, also not a subject the DEIS addresses, may further reduce its effectiveness….The level of population decline of the goshawk as a result of this logging and habitat fragmentation is unknown, since no monitoring data on the status of the goshawk is available.	Goshawk monitoring has been done in the Logan project area (Exhibit Rs-20, as well as in other areas of the Flathead National Forest. Effects on connectivity were evaluated at for all users of forested habitats, not with a single-species approach, and compared to HRV. See also the response to Comment #64.
"	113	The EIS does not define the level of effectiveness of goshawk surveys on the forest or in the project area. Current survey guidelines indicate areas should be surveyed for a minimum of 2-3 years, two to three times per year, to achieve a reliable survey of nesting goshawks (USDA 2000).	See the response to Comment # 112.
"	114	The DEIS does not satisfy the economic requirements of the Forest Plan and federal financial reporting laws. There is an inaccurate and incomplete economic analysis in the FEIS.	Economic requirements in the Forest Plan for project implementation are outlined on page V-5 of the 2001 version. The Logan Creek project meets these requirements as demonstrated in the Socio-Economics section of Chapter 3 and in Exhibit N. We did not know which federal financial reporting laws are being referred to but most of these laws deal with the financial accounting of agency budgets, not the economic comparison of alternatives during project planning.

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			The economic efficiency analysis in the FEIS is accurate and complete because it follows the methods described in FSH 1909.17 as well as FSM 2431.22a.
"	115	36 C.F.R. § 219.27(a)(7) requires the Forest Service prior to project implementation to access *[sic]* for potential physical, biological, esthetic, cultural, engineering, and economic impacts and for consistency with multiple uses planned for the general area. This has not been done in full.	Please see #124 below.
"	116	Planned type conversion shall be justified by an analysis showing biological, economic, social, and environmental design consequences, and the relation of such conversion to the process of natural change.	Project File Exhibit P-23 includes an analysis of the historic and current distribution of tree species. From these data it is apparent that the Logan Creek landscape is dominated by greater amounts of Douglas-fir than at any time in this climatic era.
"	117	The DEIS does not analyze economic consequences of the loss of plant and animal communities due to logging. Nor was the value of clean water in the project area analyzed or the economic impact of logging on clean water.	Please see #118 below.
"	118	If a cost-benefit analysis relevant to the choice among environmentally different alternatives if being considered for the proposed action, it shall be incorporated by reference of appended to the statement as an aid in evaluating the environmental consequences. To assess the adequacy of compliance with section 102(2)(B) of the Act, the statement shall, when a cost-benefit analysis is prepared, discuss the relationship between that analysis and any analyses of unquantified environmental impacts, values, and amenities. This has not been done.	Project-level economic analysis does not require that non-commodity economic values be addressed. "Weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations" (40 CFR 1502.23). The NEPA process shall be used "…to emphasize real environmental issues and alternatives" [40 CFR 1500.2(b)]. The primary focus at the project level is to identify economic implications that are unique to the decisions made at this management level, as was done in the Socio-Economics section in Chapter 3 of the FEIS. The economic analysis complies with all laws and the Forest Service Manual and Handbook.
"	119	To meet the letter and intent of NFMA, the Forest Service must analyze the market and non-market benefits of unlogged forests in analysis areas…	Please see #118 above.
"	120	The Flathead National Forest no longer produces a financial analysis or TSPIRS report. Since the TSPIRS report can no longer be used to satisfy the economic monitoring requirements, there is no fiscal monitoring occurring….The DEIS is not in compliance with NFMA, NEPA, or the Forest Plan due to the unreliability of the accounting data.	The Flathead National Forest continues economic monitoring of timber sales. Financial information for each timber sale is entered into the Timber Sale Accounting System, a nation-wide database. This information is used to provide Congress and the public with a clear understanding of what is accomplished with appropriated funds and the revenues generated. The FEIS and ROD are in compliance with NFMA, NEPA, and the Forest Plan. All accounting data used in the economic efficiency analysis in the DEIS and FEIS, found in the Socio-Economics section of Chapter 3 and in Exhibit N, are from reliable sources.
"	121	The FNF and this DEIS are also in violation of the Chief Financial Officers Act of 1990 which calls for CFO Act agencies, such as the USDA, to have financial management systems, including internal control, that provide complete, reliable, and timely information.	The Chief Financial Officers Act of 1990 addresses the improved central coordination of internal controls and financial accounting of federal agency budgets, not the economic comparison of alternatives during project planning. This Act is therefore not applicable to our Logan Creek planning effort.
"	122	This project is also in violation of the Government Management Reform Act of 1994 which requires CFO Act agencies to prepare and have audits of annual financial statements.	The Government Management Reform Act of 1994 addresses a number of government management issues, one of which is financial accounting and auditing of federal agency budgets, not the economic comparison of alternatives during project planning. This Act is therefore not applicable to our Logan Creek

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			planning effort.
"	123	In a May 1, 2003 report, the General Accounting Office reported "the Forest Service has not been able to provide to Congress and the public with a clear understanding of what its 30,000 employees accomplish with the approximately $5 billion it received every year." The Forest Service therefore cannot ensure that the FNF is managing national forest system lands in a manner that "maximizes long term net public benefits" {36 CFR 219.1(a)].	"Maximizing long-term net public benefits" as addressed in 36 CFR 219 refers to the National Forest System Land and Resource Management Planning process under the NFMA. This regulation is not applicable to project planning at the level of the Logan Creek planning effort.
"	124	The Logan Creek project is also in violation of 36 C.F.R. § 219.27(a)(7) which requires the Forest Service prior to project implementation to access *[sic]* for potential physical, biological, aesthetic, cultural, engineering, and economic impacts and for consistency with multiple uses planned for the general area and 36 C.F.R. 219.12(3) which requires documentation of costs associated with carrying out the planned management prescriptions as compared with costs estimated in the Forest Plan.	36 C.F.R. § 219.27(a)(7) and 36 C.F.R. 219.12(k)(3) are both regulations of the National Forest System Land and Resource Management Planning process under the NFMA. This regulation is not applicable to project planning at the level of the Logan Creek planning effort because CFRs address national forest planning activities, not site-specific project proposals.
"	125	The Flathead National Forests Forest Plan has expired. The Forest Plan no longer meets the legal requirements of the National Forest Management Act. Additionally, the FS has failed in its obligation to finish each five-year review process mandated by the NFMA regulations. The FS cannot know, therefore, if "conditions or demands in the area covered by the plan have changed significantly…." Project-level decisions based upon an out-of-date Forest Plan, and inadequately informed because of the failures to monitor and periodically review the implementation of the Forest Plan, are illegal.	On November 10, 2003, the President signed The Department of the Interior and Related Agencies FY04 Appropriations Act, H.R.2691, P.L.108-108. Sec. 320 of the resolution states, "Prior to October 1, 2004, the Secretary of Agriculture shall not be considered to be in violation of subparagraph 6(f)(5)(A) of the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1604(f)(5)(A)) solely because more than 15 years have passed without revision of the plan for a unit of the National Forest System. Nothing in this section exempts the Secretary from any other requirement of the Forest and Rangeland Renewable Resources Planning Act (16 U.S.C. 1600 et seq.) or any other law: *Provided*, That if the Secretary is not acting expeditiously and in good faith, within the funding available, to revise a plan for a unit of the National Forest System, this section shall be void with respect to such plan and a court of proper jurisdiction may order completion of the plan on an accelerated basis." The Flathead National Forest is currently in the process of revising their Forest Plan, with a decision anticipated in late 2006. Moreover, Congress did not intend management to cease if the 15-year date for plan revision was not met. NFMA, Sec. 1604(c), illustrates this point. In the development of the original Forest Plans, Congress specifically allowed management of the forests to continue under existing resource plans pending approval of the first NFMA Forest Plan for each administrative unit. On several occasions Congress allowed management to continue under existing plans while work to complete the original Forest Plans was underway (*see, e.g.* 16 U.S.C.A. 1604 note), demonstrating Congress' intent that on-the-ground forest management continue while the agency developed programmatic planning documents. On other occasions Congress halted funding for Forest Plan revisions (delaying the completion of plan revisions) without halting any site-specific projects or activities. Comments that resource management must be halted pending completion of plan revision are contrary to Congressional intent.
Jeff Juel	126	You are also operating in the absence of any scientifically sound conservation strategies that	The purpose of the EIS is to disclose effects on the environment from the

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The Ecology Center C-73		would insure forest wide viability of Sensitive and Management Indicator Species, which means that the Project's adverse impacts on such species would not be in compliance with NFMA….[The DEIS does not demonstrate consistency with the Forest Plan as amended by Amendment 21 in regards to this clause: "In cooperation with federal, state, and private organizations, conduct inventories of sensitive species and develop Species Conservation Strategies (FN Plan Am 21 p. 7).	proposed action and its alternatives. The analysis of effects on sensitive and other species of concern ends with a conclusion by the analyst whether the project would cause a population viability concern (Exhibits Rg-1, Rs-3, and Rt-17). Also see the response to Comments # 96, 98, 101, 112, 137, 138, and 140. The Flathead National Forest cooperated in the development of the multi-agency Lynx Conservation Strategy and Assessment, which is now in place. Efforts are underway at the USFS Region One level to generate conservation strategies, at appropriate scales, for other species.
"	127	The DEIS does not present any solid scientific evidence that proves your theory that the forest in the project area is denser than any historic norm.	Information and discussion has been added to Chapter 3 in the FEIS in the section on vegetation explaining the methodology and analysis results regarding historic stand structure and how that relates to current conditions. This information also appears in Project File Exhibit P-23.
"	128	Your activities will add sediment to water bodies already identified as Water Quality Limited Segments, in the absence of TMDLs, without your being able to know if the balance of sediment is improved or worsened. This is in violation of the Forest Plan, NFMA, the Clean Water Act, NEPA, and State water quality regulations.	Please see the response to comment # 87.
"	129	The impacts on the Canada lynx are in violation of NFMA and the Endangered Species Act. The FS has yet to identify critical habitat, which means the habitat adversely affected by the Project is being committed before you can know its importance for the recovery of the species….The Project area is recognized as lynx habitat, and may well end up being designated as critical habitat. It is thus unlawful to proceed with further adverse modifications of lynx habitat pending final designation of critical habitat.	Please see the response to comment # 95.
"	130	The DEIS does not state that you would compare the proposed cutting units with objective old growth criteria.	All of the proposed cutting units, along with every other stand in the analysis area, were screened for old growth status, both before and during the design and effect analysis of this project. See pages 3-211 and 3-214 of the DEIS, and Exhibits Q-1 through Q-3, Q-6, and Q-11.
	131	The areas showing tree mortality from beetles are likely the very most valuable for many species of wildlife, especially those that forage on insects and those that depend upon dead tree (standing and fallen) structures for habitat needs. The dynamics of these areas make them the area you should least look at for logging.	Since 1998, about 5500 acres have had high levels of mortality of large trees due to Douglas-fir beetles, with about 13,000 additional acres at moderate to high risk of this mortality (Exhibits P-1, P-8, and Rd-5). After implementation of the Preferred Alternative, at least 25,000 acres would continue to be at very low to high risk of Douglas-fir bark beetle infestation. See also Exhibits Rd-2, Rd-4, and Rd-9.
"	132	The DEIS does not demonstrate consistency with the Forest Plan as amended by Amendment 21…	Consistency with the Amendment 21 clauses referenced in your letter is shown on pages 3-228 through 3-230 and in Exhibit Q-13. Also see the responses to Comments # 63, 91, 96, 98, 101, 108, 112, 137, 138, 140, 150, and 158.
"	133	Lesica (1995) stated that many species of plants and animals find their optimum habitat in the old growth forests of the northern Rocky Mountains. Using fire history models, Lesica (1995) estimated that old growth occupied 20 to 50 percent of many pre-settlement forest ecosystems in the Northern Rockies, particularly in low- and many mid-elevation habitats. Thus the FS's position, as assumed in the DEIS, that a minimal amount of forests in the area are within the historic range and will support viable populations of old growth dependent species is not	Information and discussion has been added to Chapter 3 of the FEIS in the section on Vegetation to explain the methodology and analysis results regarding historic stand structure and how that relates to current conditions. This information also appears in Project File Exhibit P-23. Information has been added to Chapter 3 section on Old Growth Habitat and Old Growth Associated Wildlife Species. This includes information on old growth percentages as they relate to historic

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		supported by the best scientific information.	conditions, and the ability of habitats to support old growth dependant species. This information is also in Q-8 project file exhibit. See the response to Comment #97 for information about the Logan Creek project's consistency with Flathead LRMP's Amendment 21.
"	134	The Forest Plan and [this] EIS fail to provide a scientific basis for assuming that is own requirements are sufficient to maintain viable populations of old growth dependent species.	Please refer to administrative record for Amendment 21 for detailed information about the development LRMP Amendment 21's standards. Also see Exhibits Q-4, Q-18, Rd-9, Rg-1, Rs-24 through Rs-26, and Rt-20 in the Logan Creek project record.
"	135	The FNF has failed to cite any evidence that is "managing for old growth habitat" (i.e., logging old growth) strategy will improve old growth species habitat over the short-term or long-term….The FS must show that any old growth area "treated" will retain characteristics meeting Northern Region (Green et al. 1992) or Forest Plan old growth criteria—and if they won't, how they will at some specified time in the future. The FNF must also monitor such "treated" habitat to show that old growth species still use it, and to our knowledge this monitoring has never occurred.	As stated in the DEIS (pages 3-216, to 3-217, 3-221, 3-223, and 3-225), none of the alternatives include timber harvest in old growth habitat that is intended to improve old growth species habitat. See the response to comment # 63 for more information, including the 1 acre that would be harvested for road construction in some alternatives. All alternatives include 127 acres of prescribed underburning in old growth northwest of Tally Lake campground (Unit 200). Post-implementation monitoring of a similar effort (Unit 200 of the Good Creek Resource Management Project; March 2000 ROD) was done in fall 2003 (Exhibit Q-6). Flathead LRMP "Monitoring and Evaluation" standard # 15 was amended by A21 to read "Occupancy of old growth forests by old growth-associated wildlife species." This is not specific to areas where habitats have been manipulated, as in Monitoring Item 70.
"	136	The DEIS does not explain how historic (or natural) ranges of variability were analyzed and whether they were analyzed on a proper temporal scale for the ecosystems here….This failure to disclose methodologies used for estimating the historic range of viability *[sic]* would undermine the scientific integrity of the entire environmental analysis.	Information and discussion has been added to Chapter 3 in the section on vegetation explaining the methodology and analysis results regarding historic stand structure and how that relates to current conditions. This information also appears in Project File Exhibit P-23.
"	137	Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero et al 1994), the cumulative effects of carrying out multiple management projects across the Forest makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy 1992).	Exhibit Rg-1 is an assessment of wildlife species viability specific to the Logan Creek project. The assessment was done at multiple scales, including the Forest and Regional scales.
"	138	It is also of paramount importance to monitor population trends (as mandated by the Forest Plan) during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence (i.e., population viability) (Marcot and Murphy 1992; Lacy and Clark 1993).	Please see the responses to Comments # 96, 98, 126, 137, and 140.
"	139	The DEIS contains only vague assurances that the FS has performed adequate field surveys of old growth stands across the Forest and Project area, and compared them to the applicable old growth criteria. Since the FNF has apparently never analyzed its forestwide old growth situation (the DEIS doesn't incorporate such an analysis) in order to prove it has the amount and distribution necessary to maintain old growth species <u>forestwide</u>, the DEIS is based upon an inadequate cumulative impacts analysis for old growth dependent wildlife species.	See the response to comment # 130 for information about field verification of Logan's old growth habitat. Amendment 21 provided an analysis of old growth habitat at the subbasin level and prescribed standards, goals, and objectives to provide habitat for old growth dependant species. The results of monitoring for landscape-level vegetation patterns and old growth habitat (A21 monitoring items #68 and 69) were reviewed and considered by the IDT and deciding official. These records are kept at the Forest Supervisor's Office, and were incorporated by reference into the Logan project file.
"	140	The DEIS fails to demonstrate consistency with Forest Plan Standards and guidance regarding long-term retention of sufficient habitat to assure viability of species that need standing and	Consistency with Flathead Forest Plan Amendment 21 is shown on pages 3-228 through 3-230, 3-239 through #-240, and in Exhibit Q-13. Direct, indirect, and

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		down dead trees *(NOTE: Question regards the following species listed in the paragraph previous to this comment: northern goshawk, flammulated owl, white-headed woodpecker, pileated woodpecker, black-backed woodpecker, fisher, marten, and wolverine).*	cumulative effects on wildlife species that use old growth and dead wood habitats are disclosed in Chapter 3 of the EIS in the sections for "Old Growth Habitat and Old Growth Associated Wildlife Species" and Snags and Downed Woody Material Wildlife Habitat". See also Exhibits Q-6, Q-9, Q-10, Q-13 through Q-15, Q-18, Rd-9, Rd-10, Rg-1, and Rg-9. For information about continued viability of these species, see Exhibits Q-4, Q-18, Rd-3, Rd-9, Rg-1, Rs-24 through Rs-26, and Rt-20.
"	141	There is no evidence that the FS has thoroughly monitored for these items in the appropriate geographical areas prior to approving this project: The FNF Plan specifically requires the FS to monitor "vegetation composition, structure, and pattern in relationship to the estimated range of natural variability by subbasin" (FNF Plan Am 21 pg. 31).	Vegetation composition and structure information is collected during the stand inventory process. This data is stored in a corporate database called the "Timber Stand Management Record System" (TSMRS). Project File Exhibit P-4 includes stand summaries of this inventory for stands proposed for treatment. Hard copy files and database files are kept at the district office. Landscape pattern was analyzed using the Hessburg protocol and is included in Project file exhibit P-23.
"	142	There is no evidence that the FS has thoroughly monitored for these items in the appropriate geographical areas prior to approving this project: Monitor the "occupancy of old growth forests by old growth associated species" (FNF Plan Am 21 p. 31).	See the response to Comment # 98.
"	143	There is no evidence that the FS has thoroughly monitored for these items in the appropriate geographical areas prior to approving this project: Monitor the "Proportion of old growth forest and patch sizes, by subbasin and watershed" (FNF Plan Am 21 p. 31).	The results of monitoring for landscape-level old growth habitat (A21 monitoring item #69) were reviewed and considered by the IDT and deciding official. These records are kept at the Forest Supervisor's Office, and were incorporated by reference into the Logan project file. See response to Comment #139.
"	144	The DEIS does not disclose the fact that the FNF failed to monitor Sensitive, old growth, and cavity nesting wildlife species habitats and population trends, as the Forest Plan required, before adoption of Amendment 21. And as noted above, the DEIS does not disclose the results of monitoring required subsequent to Amendment 21.	See the response to Comment # 98.
"	145	The Northern Region lists the northern goshawk species as Sensitive on the Forest. The DEIS has no any *[sic]* population data or population trend data, as required by the Forest Plan and NFMA regulations.	See the response to Comment # 98 as well as Exhibits Rs-20 and Rs-27.
"	146	Nowhere does the DEIS cite any documentation that shows the FNF is maintaining adequate old growth or goshawk habitat, in the project area or forestwide, to ensure viability of the goshawk….the FNF shows no indication of implementing such habitat guidance in the project area or forestwide. The FS simply has not analyzed whether inadequate habitat conditions for the goshawk exist to maintain the viability of the goshawk.	Please read pages 3-292 through 3-294 of the DEIS, along with the Exhibits Rg-1 and Rs-27, which were cited on these pages. These include an analysis of viability for the goshawk at the project, Forest, and Regional scales. Also see the response to Comment # 126.
"	147	And the DEIS provides no detailed analysis of cumulative effects to the goshawk, including impact related to activities on land of other ownership.	For an analysis of cumulative effects on goshawks, see page 3-294, 3-284, and 3-227 of the DEIS. Also see the response to Comment # 91.
"	148	The issue of fragmentation should have been more thoroughly considered with respect to goshawks.	A closer look at fragmentation effects on potential goshawk habitat was done for the FEIS. See the Northern Goshawk portion of the Chapter 3 section on "Sensitive and Threatened Wildlife Species."
"	149	…the DEIS makes no determination regarding the significance of the pine marten habitat losses associated with past or proposed vegetation treatments.	Please read DEIS pages 3-220, 3-223 through 3-226 for an evaluation of the effects of proposed vegetation treatments on marten habitat. The effects of past vegetation treatments are discussed on page 3-337 of the DEIS and in Exhibit Q-8
"	150	The FNF originally selected the pileated woodpecker as a Management Indicator Species. The	Please read DEIS page 3-231, which states "Although smaller creatures can use

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		DEIS recognizes no need to consider the retention of particularly large snags, even though the FS's scientific information and other research indicates this clearly.	many sizes of dead trees, larger birds and mammals require larger snags. The larger the diameter of the snag, the less the nestlings are crowded and the better they are protected from weather and predators." Also, please read page 3-235 of the DEIS which states that across all alternatives of this project "all live and dead larch and ponderosa pine greater than 18 inches at DBH would be retained, unless leaving them would compromise safety."
"	151	The pileated woodpecker's strong preference for trees of rather large diameter is not considered in the DEIS nor the Forest Plan.	See the response to Comment # 150.
"	152	The DEIS does not support the conclusion that the Project would not impact fisher or fisher habitat. The DEIS failed to disclose and analyze the uncertain and precarious population status of the sensitive fisher, as described in Witmer et al. 1998…	The DEIS did not conclude that there would be no impact on the fisher or its habitat. Please read DEIS page 3-305, Table 3-97, which clearly shows a determination of "May Impact Individuals or Habitat but will not likely result in a trend toward federal listing or reduced viability for the population or species." The support for this conclusion is provided on DEIS pages 3-278 through 3-282, and Exhibits Rg-1, Rs-3, Rs-7, Rs-8, Rs-14, and Rs-25. Information from Witmer et al. 1998 was incorporated into the FEIS.
"	153	Johnsen 1996, Jones (undated), and Heinemeyer and Jones (1994) provide some examples of conservation strategies for the fisher, something the FNF has so far neglected for this Sensitive species.	See the response to Comment # 126.
"	154	The DEIS does not consider cumulative effects on upland habitat for boreal toads.	Effects on upland habitat for boreal toads were displayed in the DEIS pages 3-298. Cumulative effects on this habitat element were covered on the same page of the DEIS, with some additional information added to the FEIS.
"	155	The DEIS does not discuss the implications that the presently "increasing" snowmobile use has for wolverine populations.	The DEIS (page 3-301) discussed potential cumulative effects of snowmobiling, as do Exhibits Rg-1 and Rs-28. Wolverines are not expected to use the Logan Creek project in the winter, and none have been reported in the project area at any time of the year. As stated on page 3-300 of the DEIS, the closest suspected denning habitats are on the Whitefish Divide and in the drainages of the North and Middle Forks of the Flathead River in Glacier National Park, upper Grave Creek, and the Ten Lakes area.
"	156	Again, no [wolverine] conservation strategy (such as suggested in USDA Forest Service, 1993) has been designed with public involvement.	See the response to Comment # 126.
"	157	The FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers.	See the response to Comment # 126
"	158	The DEIS fails to demonstrate how the prescriptions provide for long-term snag and coarse woody debris recruitment…	Please read DEIS pages 3-239 and 3-40 part of the "Regulatory Framework and Consistency" section for Snags and Downed Woody Material Wildlife Habitat. This demonstrates how the prescriptions would meet or exceed Amendment 21 standards for snags. See also Exhibits Q-13 and Rd-9.
"	159	[The DEIS fails to demonstrate how the prescriptions provide for] essential soil processes, including nutrient cycling and mycorrhizal functions…	The DEIS discusses nutrient cycling and mycorrhizal functions within the discussions on organic matter on pages 3-188, 3-195, and 3-196. It is further discussed under Soil Microorganisms on page 3-198 and under the heading Soil Productivity on page 3-203.
"	160	[The DEIS fails to demonstrate how the prescriptions provide for] species habitat including feeding and dispersal habitat for small mammals and birds…	Please read the DEIS Chapter 3 section on "Snags and Downed Woody Material Wildlife Habitat," pages 3-231 through 3-240.

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"	161	[The DEIS fails to demonstrate how the prescriptions provide for] long-term structural diversity of forest stands in a site specific manner, given the changed circumstances resulting from the fire.	There has not been a fire within the Logan analysis area since the 1960s. All alternatives describe the resulting structural distribution, as well as the landscape patterns in Chapter 3 vegetation, environmental consequences.
"	162	The DEIS does not disclose whether snags per acre or large snags per acres would meet the levels Amendment 21 Standards or some level below them.	Please read DEIS pages 3-239 and 3-40 part of the "Regulatory Framework and Consistency" section for Snags and Downed Woody Material Wildlife Habitat. This demonstrates how the prescriptions would meet or exceed Amendment 21 standards for snags. See also Exhibits Q-13 and Rd-10.
"	163	The range of alternatives evaluated is too narrow to meet NEPA requirements. The DEIS fails to consider an alternative that includes a substantial amount of road obliteration, restoration of areas damaged by recent wildfire suppression, and reduction of sediment from areas that are existing sources of the problems – not more logging.	One no action alternative and five action alternatives were fully evaluated in the FEIS. In addition, four other alternatives were considered but eliminated from detailed study. We believe this range of alternatives meets NEPA requirements. A substantial amount of road reclamation is proposed (up to 16.6 miles) and sediment would be reduced on up to 141 miles of existing road. "Restoration of areas damaged by recent wildfire suppression" is a statement not applicable to this project since wildfire suppression in the project area as not occurred on a large scale in the last 62 years.
"	164	The DEIS does not cite from adequate monitoring results that demonstrate the FS is protecting soil productivity while managing the Forest.	See pages 3-196 through 3-199 of the DEIS and the associated citations and project file exhibits for how monitoring results are used to support protecting soil productivity on these sites and for the proposed activities.
"	165	The FS's determination that is may permanently damage the soil on 15% or 20% of an activity area and still meet NMFA and planning regulations is arbitrary. Neither the DEIS, the Forest Plan, FSH 2509.18-2003, nor the FSM 2500-99-1 cite adequate scientific basis for adopting 15% or 20% as a numerical limit—it is simply a number pulled out of thin air.	The rationale for using a 15 percent limit of change is detailed in Exhibit H-9 referred on page 3-186 of the DEIS. Essentially, this conservative figure of 15 percent was derived from what is physically possible in order to achieve other resource management objectives and to be detectable by current monitoring methods. As an example, 14-foot wide skid trails typically located 120 feet apart would create about 10 percent change.
"	166	A problem with the soil quality standards (and the DEIS's interpretation of them) is that they do not set any rational limits for cumulative loss in soil productivity **outside the activity areas** of the proposed timber sale…. Even the fact that detrimental soil damage in old activity areas from past logging activities exceeds present soil quality standards, as is the case for the Logan Project area, means nothing since you are now proposing more soil-damaging logging activities in previously unimpacted areas in a project area that the FS admits has practically unprecedented levels of soil damage. It is clear that the intent of the soil quality standards is that the FS must, in each case, consider the cumulative effects of both past and proposed soil disturbances to assure that soil productivity will be maintained. This includes impacts from activities that include logging, livestock grazing, motorized vehicle use, etc.	We believe we have addressed any possible cumulative loss of soil productivity outside the activity areas. See the Cumulative Effects Common to all Action Alternative on pages 3-205 through 3-209 of the DEIS. It addresses effects in both the activity area and the analysis area. See also the existing condition of proposed harvest areas presented in Table 3-64 on page 3-192.
"	167	An adequate cumulative effects analysis must consider the cumulative effects of livestock grazing….The DEIS must disclose where livestock have been permitted to graze in the project area, at what intensity, and the resulting soil damage.	See the Past, Present and Reasonably Foreseeable Actions discussion on page 3-205, which includes an estimate of the amount of disturbance from grazing.
"	168	The DEIS also ignores the impacts of snowmobiles on vegetation and soil productivity, which have been explained to the FS by Hammer (2002). The DEIS fails to evaluate cumulative detrimental soil disturbance from these causes.	See the discussion on Past, Present and Reasonably Foreseeable Actions on page 3-206, which includes a statement on the effects of snowmobiling on soil productivity.
"	169	…when an Activity Area reaches 15% or 20% detrimentally impacted soils via compaction,	We use the lower figure of 15 percent as out maximum allowable amount of

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		tree growth **outside the skid trail**, or beyond the compacted area, is affected. This is ignored in the DEIS.	detrimental soil disturbance. The effect on trees outside the actual compacted area is part of the consideration in selecting the lower limit.
"	170	The FS does not have enough soil bulk density and other compaction monitoring data collected at the adequate soil depths and in enough sites on the FNF to be able to make accurate predictions about the effects of soil compaction in Logan Creek Project activity areas.	See the following Exhibits in the project record: H-10, H-11, H-12, H-13, H-14, H-17, and H-18. These exhibits display several hundred bulk density samples and include a statistical analysis of the results. The exhibits also include monitoring results for condition class surveys taking from recent logging operation and display how much of the logged areas were detrimentally impacted by the logging.
"	171	We are unaware of the FNF accomplishing the monitoring of either soil function nor soil quality, as FSM 2500-99-1 defines it, on the FNF following management activities. Unfortunately, the FS seems to have only interpreted monitoring requirements in terms of maintaining no more than 15% or 20% of activity areas in a detrimentally disturbed condition.	See the reply to comment 170 above.
"	172	The DEIS does not provide any measurements of the litter, duff and humus for the proposed units and the previously logged units in the cumulative effects area. Without on the ground surveys, indirect, direct, and cumulative effects to the soils cannot be ascertained….The amount of duff and humus loss relative to mycorrhizal content also has not been measured on ground and the cumulative effects are indeterminate.	See Table 3-64 on page 3-192 of the DEIS, which discusses the existing condition of proposed cutting units that had previous management activities. All proposed units were viewed on the ground. See also discussions of organic matter and their associated literature citations found on page 3-188, 3-196, 3-197, and 3-198.
"	173	The survey methodology is not sufficient to determine the condition of the soils in the project and cumulative effects area.	See Exhibit H-2 and the document by S.W. Howes in Exhibit H-7, which both describe the processes used to monitor soil conditions.
"	174	The [soil] monitoring cited was not taken in the project area. It is not valid to extrapolate conditions from other areas and assume the project area shares the same conditions.	See the discussion of soil taxonomy and classification in the Soil Section of the FEIS. Mapping soils via a scientifically rigorous taxonomic and classification system allows for extrapolations and interpretations from one area to another.
"	175	It is also this set of organic layers that supports a host of microorganisms including those acting as antagonists to pathogenic fungi such as the root-rotting fungi. There was little in DEIS defining which diseases are present and what [are] their current levels of activity.	The DEIS discussed insect and disease conditions in Chapter 3, Vegetation on pages 3-9 through 3-13. The FEIS will elaborate on this topic, also in Chapter 3, Vegetation. The amount of discussion is commensurate with the level of concern.
"	176	This same set of organic layers also contains mites, ants, nematodes and other roundworms, small rodents and too many other small organisms to enumerate here….Without these layers the lives and activities of all animal life in the forest are restricted or eliminated. Diverse animal activity is rare for years in heavily cutover areas for these reasons. This system is unexplored in the documents.	See the DEIS pages 3-188, 3-196, 3-197, 3-198, 3-199, and 3-209 through 3-240.
"	177	The DEIS has no evidence of FS inventories or monitoring of indicators, including lichens, fungi, insects, etc. although these can and do define existing and probably future forest conditions….The DEIS does not adequately consider the effects on ecological functioning in the project area when these critical elements are reduced by the logging activities proposed.	The Forest soil specialist does not monitor these indicators of forest conditions, but has chosen to concentrate on monitoring soil conditions that indicate effects to soil quality. These are described throughout the document in the soils section.
"	178	There is also a large body of scientific information regarding the effects of logging on soil productivity to which the FS pays no attention.	We pay attention to all of the scientific information that is cited and exhibited in the document and the project record, as well as many articles of scientific information that may not be relevant to this project.
"	179	Another problem with the FS's soil monitoring is that it fails to measure soil productivity in terms of loss of soil nutrients due to logging activities, including removal of boles, branches, and from site preparation methods such as burning.	See pages 3-188 and its associated references to current literature. See the Direct and Indirect Effects discussion beginning on page 3-196. See the discussion of Features Common to All Alternatives for soils in Chapter 2. This describes measures to be takes that will preserve a variety of organic matter on the site.
"	180	Another big problem is that the DEIS relies on the FS's track record of relying upon Best	See discussions of mass failure potential on pages 3-189, 3-191, and page 3-202.

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		Management Practices (BMPs) to base its claims that soil productivity will be maintained following logging practices. However one example of the uncertainties of BMP effectiveness is on the landslide-prone areas. The elevated erosion (landslide and mass wasting) risk induced by the logging activities was not adequately considered in the DEIS.	Also see Table 3-65, which lists all the Landtypes in the project area. Landtype 31 and 32 are landslide units, and they do not occur in the Logan area.
"	181	The DEIS fails to cite monitoring results showing the FS has been able to correctly implement coarse woody debris guidelines such as Graham et al 1994 on the FNF.	Exhibit Rd-10 is included in the Project Record for post-activity downed wood and snag monitoring for the Swaney Salvage Project. This is the only post-A21 project that has been fully completed, in terms of site-preparation and fuel reduction. Such monitoring is underway for other projects, such as the Moose Post-fire Project.
"	182	Since the DEIS doesn't provide the public or decision maker with any kind of information on the accuracy of the estimated sediment yields or sediment modeling results, for example, the information is not scientifically valid or reliable. The DEIS "reports no confidence intervals, standard deviations, or standard errors in association with its conclusions" regarding many quantitative estimates presented in the DEIS. If the FS had performed the validation of the sediment modeling required by Forest Plan, there might be some basis for determining the accuracy of its sediment predictions.	As stated in the DEIS in the Water Resources section of Chapter 3, there have been several tools used to indicate the current condition of the streams in the Logan Creek watershed. This was done despite the fact that the model's coefficients were primarily developed using water quality Monitoring data from the Flathead National Forest. It is the determination of the project hydrologist that the more tools used, the more sufficient the analysis; especially when they all point to the same predicted outcome.
"	183	The fact that continued implementation of the Forest Plan constitutes a "taking" of the lynx is not disclosed in the DEIS. Such taking can only be authorized with an incidental take statement, issued as part of a Biological Opinion (B.O.) during a Section 7 consultation. The FNF must incorporate terms and conditions from a programmatic B.O. into a Forest Plan amendment or revision before projects affecting lynx habitat, such as the Logan Creek Project, can be authorized.	See the responses to Comments # 93 and 95.
"	184	The DEIS fails to fully demonstrate Project consistency with all Lynx Conservation Assessment and Strategy (LCAS) Standards and guidelines. For example, the LCAS sets mandatory Standards that would modify or amend the Forest Plans—steps the FNF has thus far not accomplished.	See the responses to Comments # 93 and 95.
"	185	The DEIS discloses use by motorized recreationalists in the project area. But is provides an incomplete analysis of the impacts [see note*] of the current level of use of the project area for motorized recreationalists. *(*Note: this sentence was in a paragraph about lynx, so assume that this comment regards impacts from recreationalists on lynx.)*	The effects of motorized recreation on wildlife were disclosed on pages 3-219, 3-222, 3-224, 3-226, 3-227, 3-228, 3-234 through 3-238, 3-250 through 3-257, 3-265, 3-268, 3-269, 3-272 through 3-276, 3-278, 3-280, 3-282, 3-285, 3-287 through 3-289, 3-295, 3-300, and 3-301 of the DEIS. See also Exhibits Rb-1, Rb-2, Rb-7, Rd-1, Rg-5, and Rg-8. This includes firewood collection, recreational driving, motorized vehicle use while hunting or trapping, motor boating, and snowmobiling.
"	186	The DEIS fails to disclose the expected level of cumulative impacts on lynx from the skid trails/logging access forest opening to be created—access that could be used by snowmobilers, snowshoers, and cross country skiers long after the logging activities have stopped. These access areas can also impact lynx habitat during other seasons because of increased access for humans. The increased access that will result form this project contradicts LCAS requirements because the new access will create an increase in over-the-snow routes.	LCAS requirements about over-snow travel concern designated over-the-snow routes and designated snowmobile play areas. The LCAS specifically exempts winter logging activity from restrictions concerning over-snow travel. Skid trails and temporary roads in the Logan Creek Area are not expected to promote any recreational winter use. These are not groomed or designated snowmobile trails.
"	187	36 C.F.R. § 219.14(b) requires the Forest Service to conduct an in-depth economic analysis to determine the costs and benefits of proposed timber sales….Flathead National Forest must tell	Please see #118 above.

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		the full economic story of just what the Logan Creek project's impacts would be to taxpayers, not just to local timber interests. Also, please see our April 16, 2002 scoping comments regarding economic issues.	

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