Data Submitted (UTC 11): 10/12/2020 6:00:00 AM
First name: Arlene
Last name: Montgomery
Organization: Friends Of The Wild Swan
Title:
Comments: Attached are Friends of the Wild Swan's comments on the Draft Environmental Impact Statement for the Mid Swan Project.

Please acknowledge that you received them.

Please accept the following comments on the Mid-Swan Landscape Restoration and Wildland Urban Interface Project Draft Environmental Impact Statement (DEIS) on behalf of Friends of the Wild Swan. We incorporate by reference the comments submitted by Swan View Coalition, Native Ecosystems Council, Brian Peck Independent Consultant, and Friends of the Clearwater - Alliance for the Wild Rockies.

The DEIS lacks the specificity to adequately analyze the impacts to wildlife, fish, native plants and water quality that is required by the National Environmental Policy Act. NEPA requires that agencies take a "hard look" at the impacts to ensure they are making informed decisions prior to acting and that the public has meaningful input based on the best available science and site- specific information.

The Mid-Swan project covers 174,000 acres, Alternative B would log 197-235 mmbf of timber on 118,399 acres and Alternative C logs 101-115 mmbf on 55,478 acres, and would take at least 15 years to complete the logging. The DEIS does not disclose where units are and the Flathead has not even ground-truthed the project area -- that will be done when they are ready to log and the public has no opportunity to challenge the site-specific project elements.

The Flathead relies on photo interpretation and computer models, not on the ground inspection, to determine many important features on the landscape such as:

[bull] Riparian management zones are narrow linear features and their composition may not be accurately represented in the photo-interpreted data (DEIS page 100)

[bull] Roads adjacent to streams within the Inner and Outer RMZs, changes to aquatic network within the CWN, changes to unique habitat and their RMZs and changes to WCF ratings are all GIS calculated. (DEIS page 161)

[bull] We created a model of lynx habitat in the project area based on the same three- dimensional aerial photo interpretation data. (DEIS page 201)

[bull] Since the spatial extent of old growth is not currently known... (DEIS page 112)

[bull] Surveys at the time of implementation would determine whether these stands qualify as old growth... (DEIS page 114)

[bull] Photo interpreted data were also used to estimate old forest structure, a late seral stage in forest succession characterized by an abundance of larger and presumably older trees and one or multiple canopy strata (O'Hara et al. 1996). Mapped areas with old forest structure may qualify as old-growth forest following the minimum criteria in Green et al. (2011) but we cannot determine exact stand age from aerial photography. Verification of old growth status following Green et al. (2011) would happen during the implementation stage of this project. (DEIS page 8) [Emphasis added]

[bull] To move existing conditions towards desired conditions, we compared the photo- interpreted existing

conditions with desired conditions derived from integrated objectives and themes and assigned an initial level-of-change (LOC) category. (DEIS page 27)

[bull] Forest structural stages were derived from photo interpreted data. (DEIS page 97)

[bull] Vegetation characteristics available in the photo-interpreted polygon data were used to assign fuel models to the Mid Swan Project landscape. (DEIS page 133)

[bull] Forest vegetation was classified into seven structural classes (O'Hara et al. 1996), using photo-interpreted data for tree sizes, canopy covers and number of canopy layers (strata). (DEIS page 96)

[bull] Vegetation characteristics derived from high-resolution 3-dimensiional aerial photo interpretation were used to estimate existing habitat conditions including snow intercept cover, hiding cover and forage areas in the project area for forest ungulates. (DEIS page 267)

This failure to provide accurate baseline data also violates NEPA. The agency cannot analyze and disclose the effects nor can the public review and comment on the scope of the impacts and where those impacts may occur without site-specific information.

The Implementation Guide on Restoration (IGOR) is not a substitute for site specific analysis, it is merely a series of vague guidelines. The Mid Swan project is to be implemented in smaller geographic areas than the entire project area with logging units identified at a later time, these are not analyzed in the DEIS. Public feedback when implementation areas are proposed are informal and will not allow the public to formally comment or object based on this new information so it is essentially meaningless.

Aquatics

[bull] The aquatic condition indicators rely on GIS computer models and aerial photo derived road and stream locations. There is no reference in the DEIS as to whether the road locations, culverts, stream crossings have been ground-truthed. Furthermore, the DEIS does not contain or utilize objective and measurable habitat criteria such as temperature, pool frequency and other parameters that gauge stream baseline condition because neither the Forest Plan nor the Bull Trout Recovery Plan contain these criteria. Yet this is essential to determining whether habitat conditions are improving or declining. Attached are the comments by Dr. Christopher Frissell on the Bull Trout Recovery Plan that are relevant to this project.

Montana Dept. of Fish, Wildlife and Parks has regularly used McNeil core samples to determine the median percentage of streambed material smaller than 6.35mm since 1987 on 10 bull trout spawning streams in the Swan watershed. (Attached) Research shows a negative relationship between fine sediment and embryo survival to emergence -- as the percentage of fine material increased, habitat quality decreased.

In the Flathead basin when the percentage of fine materials in spawning gravels in any given year is greater than 35% the stream is considered threatened as a bull trout spawning and/or rearing stream. When the percentage of fine materials in spawning gravels in any given year is greater than 40% the stream is considered impaired. In 2018 five bull trout spawning streams exceeded 35% fine sediment: Squeezer (40%), Lion (36.1%), Jim (39.1%), Soup (36.2%) and Woodward (40%).

The DEIS discloses that higher levels of fine-grained sediment are in managed stream reaches than within reference reaches. It pinpoints the extensive road network in most watersheds as the cause of this increased sediment. Yet, this project does little to reduce the 567 miles of Forest Service roads (which is in addition to the 578 miles of roads on other ownerships).

In addition, temporary roads were not modeled for sediment delivery because they are not additions to the NFS road system and are typically rehabilitated five years after construction. The IGOR (INF20) states that a temporary road shall not exist for more than 5 years after completion of project activities. If the project takes four or five years to complete than those temporary roads can have impacts for as many as 10 years, and then if a watershed has multiple entries over the 15 year period more temporary roads can be constructed. This is an impact!

The impacts of building temporary roads are the same as building permanent roads such as:

-The greatest surface erosion from roads occurs during the construction phase and first year after.

-Soil erosion and compaction (as always occurs with roads) causes long-term loss of soil productivity.

-The loss of topsoil and attendant loss of soil productivity is permanent.

-Road obliteration does not immediately stop severely elevated soil erosion from roads.

-Temporary roads have enduring impacts on aquatic resources.

-Roads and increased sedimentation cause long-term negative impacts on a variety of aquatic biota.

Yet the DEIS does not disclose the landtypes in the project area, soil compaction levels nor does it analyze the impacts to soils.

[bull] The USFWS recognized sediment as one of the key factors impacting water quality and fish habitat. [See USFWS 2010]

The introduction of sediment in excess of natural amounts can have multiple adverse effects on bull trout and their habitat (Rhodes et al. 1994, pp. 16-21; Berry, Rubinstein, Melzian, and Hill 2003, p. 7). The effect of sediment beyond natural background conditions can be fatal at high levels. Embryo survival and subsequent fry emergence success have been highly correlated to percentage of fine material within the streambed (Shepard et al. 1984, pp. 146, 152). Low levels of sediment may result in sublethal and behavioral effects such as increased activity, stress, and emigration rates; loss or reduction of foraging capability; reduced growth and resistance to disease; physical abrasion; clogging of gills; and interference with orientation in homing and migration (McLeay et al. 1987a, p. 671; Newcombe and MacDonald 1991, pp. 72, 76, 77; Barrett, Grossman, and Rosenfeld 1992, p. 437;Lake and Hinch 1999, p. 865; Bash et al. 2001n, p. 9; Watts et al. 2003, p. 551; Vondracek et al. 2003, p. 1005; Berry, Rubinstein, Melzian, and Hill 2003, p. 33). The effects of increased suspended sediments can cause changes in the abundance and/or type of food organisms, alterations in fish habitat, and long-term impacts to fish populations (Anderson et al. 1996, pp. 1, 9, 12, 14, 15; Reid and Anderson 1999, pp. 1, 7-15). No threshold has been determined in which fine- sediment addition to a stream is harmless (Suttle et al. 2004, p. 973). Even at low concentrations, fine-sediment deposition can decrease growth and survival of juvenile salmonids.

Aquatic systems are complex interactive systems, and isolating the effects of sediment to fish is difficult (Castro and Reckendorf 1995d, pp. 2-3). The effects of sediment on receiving water ecosystems are complex and multi-dimensional, and further compounded by the fact that sediment flux is a natural and vital process for aquatic systems (Berry, Rubinstein, Melzian, and Hill 2003, p. 4). Environmental factors that affect the magnitude of sediment impacts on salmonids include duration of exposure, frequency of exposure, toxicity, temperature, life stage of fish, angularity and size of particle, severity/magnitude of pulse, time of occurrence, general condition of biota, and availability of and access to refugia (Bash et al. 2001m, p. 11). Potential impacts caused by excessive suspended sediments are varied and complex and are often masked by other concurrent activities (Newcombe 2003, p. 530). The difficulty in determining which environmental variables act as limiting factors has made it

difficult to establish the specific effects of sediment impacts on fish (Chapman 1988, p. 2). For example, excess fines in spawning gravels may not lead to smaller populations of adults if the amount of juvenile winter habitat limits the number of juveniles that reach adulthood. Often there are multiple independent variables with complex inter-relationships that can influence population size.

The ecological dominance of a given species is often determined by environmental variables. A chronic input of sediment could tip the ecological balance in favor of one species in mixed salmonid populations or in species communities composed of salmonids and nonsalmonids (Everest et al. 1987, p. 120). Bull trout have more spatially restrictive biological requirements at the individual and population levels than other salmonids (USFWS (U.S. Fish and Wildlife Service) 1998, p. 5). Therefore, they are especially vulnerable to environmental changes such as sediment deposition.

Aquatic Impacts

[bull] Classify and analyze the level of impacts to bull trout and westslope cutthroat trout in streams, rivers and lakes from sediment and other habitat alterations:

Lethal: Direct mortality to any life stage, reduction in egg-to-fry survival, and loss of spawning or rearing habitat. These effects damage the capacity of the bull trout to produce fish and sustain populations.

Sublethal: Reduction in feeding and growth rates, decrease in habitat quality, reduced tolerance to disease and toxicants, respiratory impairment, and physiological stress. While not leading to immediate death, may produce mortalities and population decline over time.

Behavioral: Avoidance and distribution, homing and migration, and foraging and predation. Behavioral effects change the activity patterns or alter the kinds of activity usually associated with an unperturbed environment. Behavior effects may lead to immediate death or population decline or mortality over time.

Direct effects:

Gill Trauma - High levels of suspended sediment and turbidity can result in direct mortality of fish by damaging and clogging gills (Curry and MacNeill 2004, p. 140).

Spawning, redds, eggs - The effects of suspended sediment, deposited in a redd and potentially reducing water flow and smothering eggs or alevins or impeding fry emergence, are related to sediment particle sizes of the spawning habitat (Bjornn and Reiser 1991, p. 98).

Indirect effects:

Macroinvertebrates - Sedimentation can have an effect on bull trout and fish populations through impacts or alterations to the macroinvertebrate communities or populations (Anderson, Taylor, and Balch 1996, pp. 14-15).

Feeding behavior - Increased turbidity and suspended sediment can affect a number of factors related to feeding for salmonids, including feeding rates, reaction distance, prey selection, and prey abundance (Barrett, Grossman, and Rosenfeld 1992, pp. 437, 440; Henley, Patterson, Neves, and Lemly 2000, p. 133; Bash et al. 2001d, p. 21).

Habitat effects - All life history stages are associated with complex forms of cover including large woody debris, undercut banks, boulders, and pools. Other habitat characteristic important to bull trout include channel and hydrologic stability, substrate composition, temperature, and the presence of migration corridors (Rieman and McIntyre 1993, p. 5).

Physiological effects - Sublethal levels of suspended sediment may cause undue physiological stress on fish, which may reduce the ability of the fish to perform vital functions (Cederholm and Reid 1987, p. 388, 390).

Behavioral effects - These behavioral changes include avoidance of habitat, reduction in feeding, increased activity, redistribution and migration to other habitats and locations, disruption of territoriality, and altered homing (Anderson, Taylor, and Balch 1996, p. 6; Bash et al. 2001t, pp. 19-25; Suttle, Power, Levine, and McNeely 2004, p. 971).

We presented this information during scoping yet none of these effects were analyzed for bull trout or westslope cutthroat trout.

[bull] The DEIS acknowledges that there would be between 49,250-58,750 trips on the haul route for alternative B and between 25,250-28,750 trips for alternative C, most existing Forest Service roads could be used as a haul route, and impacts from dust and road use can cause pulse effects to water quality. Yet there is no disclosure of the impacts to aquatic life and water quality.

It also states that a well-maintained road system is less likely to fail, which can potentially result in large pulses of sediment delivery yet the Flathead receives less than 1/6th of the funding necessary to maintain the road system. Typically roads are maintained if they are a main route or when there is a timber sale. It is obvious that there is no well-maintained road system on the Flathead.

The DEIS also does not disclose what the cost to taxpayers are for additional road maintenance on Highway 83 from 25,250 to 58,750 log trucks on the highway.

[bull] Alternative B proposes 3.7 miles of new road construction crossing through RMZs. The DEIS assumes that it's OK to build new permanent and temporary roads in RMZs because it's offset by decommissioning RMZ roads somewhere else. However, this does not account for soil types, slope, or aspect and this information is not disclosed in the DEIS.

The DEIS also discloses that Alternative B would result in short-term and long-term negative effects to aquatic ecosystem during project implementation and beyond. What are those short and long term negative impacts? How will aquatic life be impacted? If, for example, there is too much fine sediment in a stream from project actions and bull trout are unable to successfully spawn how does that affect the population? For how many years? Will they be extirpated from that stream due to reduced spawning success from fine sediment increases?

The DEIS does not contain an analysis of bull trout critical habitat. How does the project impact the Primary Constituent Elements? It does disclose that it is likely that bull trout would be adversely affected resulting in the loss of some individuals but long term the restoration work is expected to have beneficial effects that far offset the initial loss. How will the project adversely modify critical habitat? What time frame is considered "long term"? How many individuals of a threatened species can be lost without extirpating a spawning population?

[bull] The IGOR Figure 9 on page A-43 allows 10% of existing culverts on all proposed ISS roads to be retained. The DEIS contains no analysis of the impacts this has on aquatic ecosystems.

[bull] What monitoring has been done for macroinvertebrates to determine a baseline? What monitoring will be done for macroinvertebrates during the project?

[bull] If beavers are relocated into the Swan Valley will trapping them be banned?

[bull] The DEIS states: "Effects from the proposed actions are not expected to be discernible from existing conditions more than 300 meters into Swan Lake, as the large volume of water present would quickly mix any

transported fine-grained sediment and rapidly dilute this effect to zero."

Swan Lake is a WQLS and a Water Quality Protection Plan and TMDLs were prepared for the Swan Lake Watershed in 2004. Low dissolved oxygen (DO) concentrations in the deeper basins led to Swan Lake being placed on the state's 303(d) list in 1996. The 2004 Beneficial Use Determination is:

"Data indicate that beneficial uses are being supported, however there is a documented adverse pollution trend as evidenced by the Spencer (1991b) sediment-core study. This study clearly shows that the sedimentation in Swan Lake has increased >3 times its historic (late 1800s) rates, and that much of the increase occurred concurrently with large-scale timber harvest in the watershed since the 1960's. This increased sediment/nutrient/carbon load to the sediments may be responsible for the oxygen depletions noted in the deeper basins. A more recent work (Ellis et al, (1999a) has failed to make a clear connection between land use and water quality, but that study indicated that the complexities of this flood plain riverine system make such a correlation difficult. An increase in the noted oxygen depletions is to be avoided in order to maintain the lake in its current oligotrophic state."

The TMDL further states: "The remaining siltation listing is associated with increased accumulation of inorganic and organic material (specifically organic carbon) to the lake bottom/sediments... The increased organic material in lake sediments can lead to DO reductions and subsequent depletion (anoxic conditions). A reduction in DO can directly limit aquatic life and cold-water fish habitat, and can also lead to conditions where phosphorus is released from the bottom sediment layer. This phosphorus could then enter the water column, leading to additional negative impacts to aquatic life and cold-water fish due to nutrient enrichment conditions in Swan Lake, as well as increasing downstream nutrient loading to Flathead Lake."

Applicable Source Load Allocations for Swan Lake are:

- Road Erosion: Nutrient and particulate organic carbon loading associated with sediment delivery from road erosion.

Allocation: 40% total reduction in modeled sediment loading from road stream crossings based on FRS method.

- Riparian and Streambank Protection: Nutrient and POC loading associated with eroding banks, loss of woody debris and riparian vegetation impacts.

Allocation: 10% decrease in total loading throughout the Swan Lake Watershed. Canopy density is used as a surrogate to measure progress.

- Other Timber Harvest Impacts: Nutrient and POC loading from timber harvest (other than road erosion and riparian harvest covered above); this also includes road culvert failures.

Allocation: No loading increase.

The DEIS disregards Swan Lake's threatened status and minimizes the impacts that cumulative sediment pollution has on the lake that is critical habitat for bull trout. One of the deeper basins is directly impacted by sediment transported to the lake from the river. That deep basin has been precariously close to 0 DO which would lead to impacts to fish and other aquatic life. The DEIS must quantify and analyze the impacts to Swan Lake rather than flippantly blowing them off.

Old-Growth Forest Habitat

The project proposes logging in old growth forest habitat and claims it will still function as old growth after it is

logged yet cites no science to support that theory. "Should any stands qualify as old growth under Green et al. (2011) prior to treatment, they will remain old growth after treatment." (DEIS page 110)

The DEIS also discloses: "Proposed treatments may include even-aged regeneration on up to 702 acres and regeneration openings on up to 7,998 acres. Regeneration treatments would generally only be used when there are few desirable trees on site. Many large trees would be retained." (DEIS page 111) And "Commercial harvest is proposed in 15.6% of all old forest structure.

Treatment options in old forest structure include even-aged regeneration harvest on up to 473 acres within WUI." (DEIS page 112) Clearcutting old growth habitat is not restoration nor will it remain old growth after being chainsawed.

Alternative B proposes the construction of up to 4.1 miles of roads through stands classified as old forest structure. Of these, 0.5 miles would be temporary roads. Surveys at the time of implementation would determine whether these stands qualify as old growth and whether alternative routes are available to prevent the loss of old growth forest. (DEIS page 114)

Regeneration opening adjacent to old growth could increase windthrow and stem breakage and further increase the amount of large wood on the ground. (DEIS page 114)

In essence, the Flathead is proposing to log, road and clearcut old growth or potential old growth forest without disclosing to the public where this might take place because the Flathead does not know where old growth habitat is located because they haven't bothered to survey for it.

See:

Since the spatial extent of old growth is not currently known, maximum treatment acres are shown for late seral stands with old forest structure. (DEIS page 112)

Surveys at the time of implementation would determine whether these stands qualify as old growth... (DEIS page 114)

Photo interpreted data were also used to estimate old forest structure, a late seral stage in forest succession characterized by an abundance of larger and presumably older trees and one or multiple canopy strata (O'Hara et al. 1996). Mapped areas with old forest structure may qualify as old-growth forest following the minimum criteria in Green et al. (2011) but we cannot determine exact stand age from aerial photography. Verification of old growth status following Green et al. (2011) would happen during the implementation stage of this project. (DEIS page 8)

The DEIS claims that: "Commercial harvest or other mechanized treatments under alternative B would not reduce the quantity of old growth." (page 113) The Flathead doesn't understand that old growth is more than just big trees, it is a host of attributes including snags, down woody material, multiple canopy layers, etc. that are essential for wildlife. The DEIS talks about retaining "desirable" tree species, but desirable to humans, not necessarily wildlife who need those other attributes for survival.

Old growth manipulation was addressed in the 2000 Contract Review of Old Growth Management on School Trust Lands by R.D. Pfister, W.L. Baker, C.E. Fiedler and J.W. Thomas.

"In addition, there is the question of the appropriateness of management manipulation of old-growth stands - both those extant and those in process of development toward old- growth condition. Opinions of well-qualified experts vary in this regard. As long term results from active management lie in the future - likely quite far in the future -

considering such manipulation as appropriate and relatively certain to yield anticipated results is an informed guess at best and, therefore, encompasses some unknown level of risk. In other words, producing "old-growth habitats through active management is an untested hypothesis. Scientists vary in their degree of faith in such manipulations being successful in mimicking natural processes. Adherence to the precautionary principle (and the probability of losing in court when dealing with threatened or endangered species) have produced the more common approach of "reserve strategies" considering the above mentioned variables of numbers of old-growth patches, stand size, juxtaposition with other stands, and connectivity."

The Flathead has no plan for retaining old-growth forest habitat on the landscape and allowing stands to develop into old growth. Instead this project will fragment old growth, create abrupt edges from roads and cutting units adjacent to it, and degrade the habitat quality for old growth associated birds and wildlife.

Pfister, Baker, Fiedler and Thomas lay out considerations for designing old growth networks: "Interior" old growth habitat (>100 meters from edge of an opening or stand of lesser age or a road) is the most important component of old-growth habitat (Baker and Knight 200). I.e., in general, larger stands are more effective as habitat than smaller stands.

Fragmentation of existing patches of old growth by roads, timber harvesting, or other created openings will decrease effectiveness of the patch as habitat due to the reduction in amount of interior old-growth conditions (Baker and Knight 200). I.e, in general, non- fragmented stands are more effective as habitat than smaller stands. To decrease or avoid fragmentation, roads can be designed to avoid large patches, harvest units can be placed on or near existing roads, and roads can be closed where no longer needed.

Stands of old-growth forests will function best as habitat when they are connected to other stands. Connectivity can thus be achieved by corridors of actual old growth or by suitable closed-canopy or mature condition of the matrix between old-growth stands (Thomas and others 1990, Bennett 1999). Stands designated as future old growth that are presently mature may be suitable. Linkages should, when possible, contain a large fraction of interior forest (i.e., >100 meters from high contrast edge) (Bennett 1999).

When designating old-growth patches (whether extant or planned) it is important to span a representative cross-section of sites, rather than to concentrate them in streamside areas or on poorer sites.

Place longer-rotation or less intensive uses adjacent to designated old growth, so that a lower intensity managed zone serves as a buffer for old-growth system (Noss and Cooperrider 1994). Avoid placing high intensity land uses (e.g., clearcuts, roads) next to designated old growth.

Don't worry about the appropriate mix of stand structures and compositions within old growth, because the science has not yet provided that kind of resolution.

Other things being equal, big old-growth reserves are better than small ones, unfragmented reserves are better than fragmented, reserves closer together are better than reserves far apart, reserves connected to others are better than those not connected.

Integrate future replacement old growth into the network. Where otherwise equivalent replacement stands exist, choose those adjacent to designated old growth as future old growth.

Designate the existing old growth and future old growth and place them on maps.

Furthermore, the DEIS doesn't even analyze impacts to old growth associated wildlife from clearcut logging and species conversion to human "desirable" tree species. These forests and wildlife evolved with fire and Forest Service "undesirable" tree species. What monitoring has the Flathead done to determine that reducing old growth

forest characteristics to the Green, et al. minimum won't impact old growth associated wildlife? By not looking at impacts to the wildlife who need these forest conditions the DEIS violates NEPA.

Wildlife

[bull] The DEIS identifies five cross-valley wildlife corridors based on more mobile, cover-dependent species crossing the valley without detection or disturbance. In addition to a combination of riparian networks and multistory forest connectivity for less mobile species.

Have these cross valley corridors been verified for use by wildlife? For example, in the early 1990s the USFWS identified grizzly bear linkage zones in the Swan Valley based on cover and land use, however years later when GPS collars were available it was found that bears used the valley differently than was assumed with these linkage zones.

Have these cross valley corridors been verified on the ground or is this once again a computer exercise?

The DEIS discloses that wildlife will be displaced by logging, roading and burning activities during at least the 15 year life of this project. How will this impact the cross valley corridors?

Why weren't John Squires lynx connectivity corridors identified?

[bull] The DEIS discloses that logging, roads and helicopters will displace wildlife yet there is no analysis of how this impacts feeding, breeding and shelter or whether there is sufficient habitat to support them over the long term. It also does not analyze the impacts on an animal's home range and whether that displacement will put them in conflict because they are displaced to another animal's home range.

[bull] The DEIS does not analyze the impacts from reduced thermal cover for ungulates. Dense forest canopy limits snow depth allowing animals to move through deep snow in the winter. In winter and summer dense forest canopy provides thermal regulation, it is warmer under the canopy in the winter and cooler under the canopy in the summer. Mule deer, elk and moose populations are in decline yet the additional stress of logging off thermal cover was not evaluated in the DEIS. Nor does the Forest Plan contain standards for ungulate cover.

[bull] The DEIS does not analyze the impacts to Region 1 Sensitive Species such as bald eagle, black-backed woodpecker, common loon, harlequin duck, bighorn sheep, fisher, wolf, bats and toads. Ironically the black swift was analyzed but according to Region 1 it doesn't even occur on the Flathead. [See attached Region 1 Sensitive Species list] Since sensitive species are

designated because population viability is a concern on National Forest lands it is imperative that impacts to them be analyzed to ensure that numbers and population distribution are adequate so they are not extirpated on Forest Service land.

[bull] Lynx connectivity will be fragmented in 11 watersheds under Alternative B and 4 under Alternative C. How does this impact lynx travel through the valley?

[bull] The EA is confusing because it uses the term multi story which is not the NRLMD/Forest Plan's "multi story mature or late successional forest" in VEG-S6. There is no definition of multi story and how it differs from multi story mature habitat. Furthermore, the DEIS essentially ignores the large openings that will be created. There is no analysis of lynx avoiding these large openings, there is no analysis of roads running through or adjacent to old-growth forest habitat, there is no analysis of logging in or adjacent to late successional forest and there is no analysis of lynx being displaced from key habitat.

[bull] The DEIS discloses that 16,028 acres of multistory habitat in 11 of the 12 LAUs will be impacted in the project area. The DEIS does not disclose where this multi story habitat is located, whether it is mature multi story habitat, or the quality of the habitat. It assumes that all habitat is equal and lynx can be displaced -- except for Woodward Creek where there is the highest quality habitat that will be logged over 7 years.

[bull] The DEIS's assumptions about regeneration fail to consider climate change and the possibility that the logged forest will not regrow in the future as it may have in the past. It also fails to factor in the inevitable fires that still will occur and are additive to the logging that is proposed.

[bull] The project results in openings greater than 40 acres in size but the DEIS does not disclose where those will be. Regional Forester policy (FSM 2471.1) directs the size of harvest openings created by even-aged silvicultural practices (e.g. seed tree, shelterwood, and clearcut harvest prescriptions) would be normally 40 acres or less. The National Forest Management Act at 219.27(d)(2)(ii): Size limits exceeding those established in paragraphs (d)(2) and (d)(2)(i) of this section are permitted on an individual timber sale basis after 60 days public notice and review by the Regional Forester.

The EIS does not analyze the impacts to wildlife of exceeding the opening size, it instead tiers to a generic Forest Plan standard that states that exceptions "may" occur. The impacts to wildlife must be analyzed on a site specific level and not rely on aspirational desired conditions.

[bull] The baseline habitat conditions for grizzly bears in the Swan Valley is below what is scientifically necessary for secure core and road densities are above thresholds necessary for grizzly bears to safely live in the Swan Valley.

The Mid Swan project will reduce hiding cover and displace bears. In the Meadow Smith and Cold Jim subunits there will be near constant activity. Meadow Smith will have five years of activity, one year of rest then another four years of activity. Cold Jim will have four years of activity, one year of rest and another four years of activity. This will especially impact females with cubs.

[bull] The DEIS fails to include logging on the Swan River State Forest in the grizzly bear cumulative effects analysis.

Climate Change

[bull] The Forest Service did not take a hard look at how climate change affects and is affected by this project. Published scientific reports indicate that climate change will be exacerbated by logging, and that climate change will lead to increased wildfire severity (including drier and warmer conditions that may render obsolete the proposed effects of the project). The former indicates that the Mid Swan Project may have a significant adverse effect on the environment, and the latter undermines a central underlying purpose of the Project. Therefore, the Forest Service must candidly disclose, consider, and fully analyze the published scientific papers addressing climate change in these two contexts.

The Mid Swan Project purports to replicate past conditions created by fire by using logging; however, the effects of climate change were not adequately analyzed. These stands that are regeneration logged may not regrow due to increased temperatures drying out the understory. The Forest Service cannot use the past as a desired future condition because the future is uncertain due to climate change.

Challenges in predicting responses of individual tree species to climate are a result of "species competing under a never-before-seen climate regime - one forests may not have experienced before either." Achievable future conditions as a framework for guiding forest conservation and management, Forest Ecology and Management 360 (2016) 80-96, S.W. Golladay et al. (Attached)

NFMA requires restocking in five years. Forest managers must analyze and disclose the fact that the current conditions make old assumptions about natural regeneration obsolete. The Forest Service can no longer "insure that timber will be harvested from the National Forest system lands only where[hellip]there is assurance that such lands can be restocked within five years of harvest." (NFMA[sect]6(g)(3)(E)(ii)).

Assuming large clearcuts will regenerate is no longer automatically consistent with NFMA's "adequate restocking" requirement. Scientific research can no longer be ignored.

At dry sites across our study region, seasonal to annual climate conditions over the past 20 years have crossed these thresholds, such that conditions have become increasingly unsuitable for regeneration. High fire severity and low seed availability further reduced the probability of postfire regeneration. Together, our results demonstrate that climate change combined with high severity fire is leading to increasingly fewer opportunities for seedlings to establish after wildfires and may lead to ecosystem transitions in low-elevation ponderosa pine and Douglas-fir forests across the western United States. Wildfires and climate change push low-elevation forests across a critical climate threshold for tree regeneration, PNAS (2018), Kimberley T. Davis, et al. (Attached)

The Forest Plan has no strategy for carbon reduction and this project will increase carbon emissions from log trucks driving to access the project area and from removing stored carbon from the forest.

The Mid Swan DEIS did not analyze the impacts to fish from rising stream temperatures, less water and increased peak flows due to climate change.

Other Issues

[bull] In order to implement Alternative B the Flathead must deviate from its newly revised Forest Plan to allow excessive logging in lynx critical habitat and helicopters in recommended wilderness. It is unacceptable that you cannot even comply with the weakened Forest Plan.

[bull] The DEIS fails to consider a reasonable range of alternatives.

[bull] Whitebark pine "restoration" in the Mission Mountain Wilderness is an untested experiment that conflicts with the Wilderness Act and could have unknown consequences to the ecosystem that is not to be manipulated by humans.

This project should not proceed because it violates the National Environmental Policy Act, National Forest Management Act and Endangered Species Act.

REFERENCES:

FRISSELL BULL TROUT RECOVERY PLAN COMMENTS FINAL copy (pg. 11 OF 95)

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