United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 67, Room 118
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

June 4, 2013

9043.1
ER 13/294

Kevin Riordan, Forest Supervisor
Helena National Forest
2280 Skyway Drive
Helena, MT 59602

Dear Mr. Riordan:

Comment 1- The U.S. Department of the Interior has reviewed the Draft Environmental Impact Statement for the Stonewall Vegetation Project, Helena National Forest, MT, and has no comments on the document.

Sincerely,

Robert F. Stewart
Regional Environmental Officer

cc: Amber Kamps, District Ranger

6/4/2013 DOI Letter responses

Comment #	Response	Topic
1	Comment of no comments noted.	NEPA

June 1, 2013

Amber Kamps
District Ranger
Lincoln Ranger District
Helena National Forest
1569 Hwy 200
Lincoln, MT 59639

Transmitted via email--please acknowledge receipt!

RE: Stonewall DEIS

Dear Ranger Kamps:

Thank you for the opportunity to comment. Please accept these comments on the Stonewall Restoration Project Draft Environmental Impact Statement (DEIS) on behalf of the Alliance for the Wild Rockies and Native Ecosystems Council. The U.S. Forest Service has proposed to implement various logging and burning prescriptions on 8640 acres in the Lincoln Ranger District of the Helena National Forest, near Lincoln, Montana. These activities will require the construction of 5 miles of new roads.

The Alliance for the Wild Rockies and Native Ecosystems Council (collectively "Alliance") submit the following comments on the DEIS for the proposal.

Comment #01 We believe that the Forest Service must formally consult with the U.S. Fish and Wildlife Service to examine the impact of this project on threatened and endangered species and their habitat.

THE PROJECT VIOLATES SECTION 9 BECAUSE IT ALLOWS

UNPERMITTED TAKE.

The project allows unpermitted take of lynx, grizzly bear, wolverine, whitebark pine.

The agencies' failure to implement legally adequate and scientifically sound management direction for grizzly bears, lynx, wolverines, and whitebark pine at both the Helena National Forest level, through the Forest Plan, and at the regional level, violates the ESA as set forth below.

Comment #2

THE AGENCIES MUST COMPLETE A BIOLOGICAL ASSESSMENT, BIOLOGICAL OPINION, INCIDENTAL TAKE STATEMENT, AND MANAGEMENT DIRECTION FOREST PLAN AMENDMENT FOR THE FOREST PLAN FOR WHITEBARK PINE.

The agencies do not have in place any forest plan biological assessment, biological opinion, incidental take statement, and management direction amendment for whitebark pine.

Comment #3

THE AGENCIES MUST PREPARE REGIONAL DIRECTION FOR WHITEBARK PINE.

The agencies do not have in place any recovery plan and regional management direction amendment for whitebark pine.

Comment #4

THE AGENCIES MUST CONDUCT ESA CONSULTATION FOR THE WHITEBARK PINE.

Whitebark pine is present throughout the analysis area for the Project. There may be whitebark pine in the proposed logging units:

Comment #5

The Stonewall Project may affect whitebark pine. The agencies' failure to conduct ESA consultation for a species that may be present and may be affected by the Project violates the ESA.

Whitebark pine is currently warranted for ESA listing and will be listed under the ESA this year, likely pursuant to litigation by the parties, and thus will be listed before this Project is complete, and possibly before the final decision authorizing this Project or before Project activities commence. Regardless, even candidate species must be included in a biological assessment. The Forest Service's biological assessment for the Project does not address whitebark pine.

Whitebark Pine

Not all ecosystems or all Rocky Mountain landscapes have experienced the impacts of fire exclusion. In some wilderness areas, where in recent decades natural fires have been allowed to burn, there have not been major shifts in vegetation composition and structure (Keane et al. 2002). In some alpine ecosystems, fire was never an important ecological factor. In some upper subalpine ecosystems, fires were important, but their rate of occurrence was too low to have been significantly altered by the relatively short period of fire suppression (Keane et al. 2002). For example, the last 70 to 80 years of fire suppression have not had much influence on subalpine landscapes with fire intervals of 200 to several hundred years (Romme and Despain). Consequently, it is unlikely that fire exclusion has yet to significantly alter stand conditions or forest health within Rocky Mountain subalpine ecosystems.

Whitebark pine seedlings, saplings and mature trees, present in subalpine forests proposed for burning, would experience mortality from project activity. Whitebark pine is fire intolerant (thin bark). Fire favors whitebark pine regeneration (through canopy opening and reducing competing vegetation) only in the presence of **adequate seed source** and dispersal mechanisms (Clarks Nutcracker or humans planting whitebark pine seedlings).

White pine blister rust, an introduced disease, has caused rapid mortality of whitebark pine over the last 30 to 60 years. Keane and Arno (1993) reported that 42 percent of whitebark pine in western Montana had died in the previous 20 years with 89 percent of remaining trees being infected with blister rust. The ability of whitebark pine to reproduce naturally is strongly affected by blister rust infection; the rust kills branches in the upper cone bearing crown, effectively ending seed production.

Montana is currently experiencing a mountain pine beetle epidemic. Mountain pine beetle prefer large, older whitebark pine, which are the major cone producers. In some areas the few remaining whitebark that show the potential for blister rust resistance are being attacked and killed by mountain pine beetles, thus accelerating the loss of key mature cone-bearing trees.

Whitebark pine seedlings and saplings are very likely present in the subalpine forests proposed for burning and logging. In the absence of fire, this naturally occurring whitebark pine regeneration would continue to function as an important part of the subalpine ecosystem. Since 2005, rust resistant seed sources have been identified in the Northern Rockies (Mahalovich et al 2006). Due to the severity of blister rust infection within the region, natural whitebark pine regeneration in the project area is prospective rust resistant stock.

Although prescribed burning can be useful to reduce areas of high-density subalpine fir and spruce and can create favorable ecological conditions for whitebark pine regeneration and growth, in the absence of sufficient seed source for natural regeneration maintaining the viability and function of whitebark pine would not be achieved through burning. Planting of rust-resistant seedlings would likely not be sufficient to replace whitebark pine lost to fire activities.

Comment #6 The ROD and FEIS do not show that surveys have been conducted to determine presence and abundance of whitebark pine re-generation or if whitebark pine seedlings and saplings are present, what measures will be taken to protect them.

Comment #7 The Stonewall project should have included an alternative that excludes logging in the presence of whitebark pine regeneration (consider 'Daylighting' seedlings and saplings as an alternative restoration method).

Restoring Whitebark Pine Forests of the Northern Rocky Mountains, USA

Robert F. Keane and Russell A. Parsons 2010 wrote:

Whitebark pine (Pinus albicaulis) has been declining across much of its range in North America because of the combined effects of mountain pine beetle (Dendroctonus ponderosae) epidemics, fire exclusion policies, and widespread exotic blister rust infections. Whitebark pine seed is dispersed by a bird, the Clark's nutcracker (Nucifraga columbiana), which caches in open, pattern-rich landscapes created by fire. This study was initiated in 1993 to investigate the effects of vari ous restoration treatments on tree populations, fuel dynamics, and vascular plant cover on five sites in the U.S. northern Rocky Mountains. The objective of this study was to restore whitebark pine ecosystems using treatments that emulate the native fire regime—primarily combinations of prescribed fire, silvicultural cuttings, and fuel enhancement cuttings.

The main effects assessed included tree mortality, fuel consumption, and vegetation response measured just prior to the treatment, one year after the treatment(s), and five years posttreatment. While all treatments that included prescribed fire created suitable nutcracker caching habitat, with many birds observed caching seed in the burned areas, there has yet to be significant regeneration in whitebark pine. All burn treatments resulted in high mortality in both whitebark pine and subalpine fir (> 40%). Fine woody fuel loadings marginally decreased after fire, but coarse woody debris more than doubled because of falling snags. Vascular species decreased in cover by 20% to 80% and remained low for five years. While the treatments were successful in creating conditions that favor whitebark pine regeneration, the high level of blister rust mortality in surrounding seed sources has reduced available seed, which then forced the nutcracker to reclaim most of the cached seed. Manual planting of whitebark pine seedlings is required to adequately restore these sites. A set of management guidelines is presented to guide restoration efforts.

<u>LYNX</u>

Comment #8 The conclusion that the project will have "No Effect" on Canada Lynx is in error. … Page 266 of the Stonewall DEIS [on the] says lynx critical habitat applies to all NFS lands, mapped or not. … Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. **This is excerpts from the paragraph below**

The conclusion that the project will have "No Effect" on Canada Lynx is in error. Page 8 of the DM says that the project area is within lynx critical habitat but "is currently unsuitable in an unsuitable condition for lynx." The DM illegally decided that it can make a new determination on what is suitable and unsuitable habitat for lynx. Page 266 of the Stonewall DEIS on the says lynx critical habitat applies to all NFS lands, mapped or not. The Department of Interior website defines critical habitat as habitat that contains features essential for the conservation of a threatened or endangered species and that may

require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery.

http://www.fws.gov/midwest/endangered/saving/CriticalHabitatFactSheet.html

What is critical habitat?

Critical habitat is a term defined and used in the Act. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as "critical habitat" after we publish a proposed Federal regulation in the *Federal Register* and then we receive and consider public comments on the proposal. The final boundaries of the critical habitat area are also published in the *Federal Register*.

There is nothing in the legal definition of critical habitat that allows the Forest Service to say that they can adversely modify parts of lynx critical habitat because it is not important.

Comment #9 It is clear that this project is about protecting Forest Service jobs, corporate welfare for the timber industry and large Forest Service budgets rather than protecting and recovering lynx as the law requires. The Stonewall project is in violation of the Endangered Species Act.

Comment #10 As lynx home ranges are large, displaced lynx would move to an undisturbed area of the home range during project implementation. Implementation of the Stonewall project will harm lynx by

displacing them, which constitutes take in violation of the ESA.

Comment #11 The Endangered Species Act requires the FS to insure that the Stonewall project is not likely to result in the destruction or adverse modification of critical habitat.

16 U.S.C. §1536(a)(2). Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for lynx. 74 Fed. Reg. 8644.

Comment #12

The Forest Service must comply with the Northern Rockies Lynx Management Direction (NRLMD).

Because of instructions in the Northern Rockies Lynx Management Direction appeal decision Forest Service is required to consult with the United States Fish and Wildlife Service (USFWS) Forest Service did not consult with the USFWS regarding lynx or the Northenr Rockies Lynx Management Direction (NRLMD), which is a violation of the Endangered Species Act.

The NRLMD as applied in the Stonewall project violates the ESA by failing to use the best available science to insure no adverse modification of critical habitat. The NRLMD carves out exemptions from Veg Standards S1, S2, S5, and S6. In particular, fuel treatment projects may occur in the WUI even though they will not meet standards Veg S1, S2, S5, or S6, provided they do not occur on more than 6% of lynx habitat on each National Forest. See NRLMD ROD, Attachment 1, pages 2-3. Allowing the agency to destroy or adversely modify any lynx critical habitat has the potential to appreciably reduce the conservation value of such habitat.

Comment #13

The agency cannot simply set a cap at 6% forest-wide without looking at the individual characteristics of each LAU to determine whether the project has the potential to appreciably reduce the conservation value. The ESA requires the use of the best available science at the site-specific level. It does not allow the agencies to make a gross determination that allowing 6% of lynx critical habitat to be destroyed forest-wide will not appreciably reduce the conservation value.

Comment #14

The recent Salix decision in Montana Federal District Court ruled the FS has to formally consult on the NRLMD for lynx critical habitat and the Fleecer timber sale decision ruled the FS has to consult on the NRLMD for lynx travel corridors outside of lynx critical habitat. We are a nation of laws and the Forest Service needs to follow the law like the American public. Please find the court's order attached.

Previous comments deal with critical habitat, this one introduces lynx travel corridors

The FS also states that the project will result in disturbance to lynx in the project area and that lynx will move to an undisturbed area of the home range during project implementation.

In December 1999, the Forest Service and Bureau of Land Management completed their "Biological Assessment Of The Effects Of National Forest Land And Resource Management Plans And Bureau Of

Land Management Land Use Plans On Canada Lynx" (Programmatic Lynx BA). The Programmatic Lynx BA concluded that the current programmatic land management plans "may affect, and are likely to adversely affect, the subject population of Canada lynx." The Lynx BA team recommended amending or revising Forest Plans to incorporate conservation measures that would reduce or eliminate the identified adverse effects on lynx. The Programmatic Lynx BA's determination means that Forest Plan implementation is a "taking" of lynx, and makes Section 7 formal consultation on the HNF Plan mandatory, before actions such as the proposed project are approved.

Comment #15 Continued implementation of the Forest Plan constitutes a "taking" of the lynx. Such taking can only be authorized with an incidental take statement, issued as part of a Biological Opinion (B.O.) during of Section 7 consultation.

Comment #16 The HNF must incorporate terms and conditions from a programmatic B.O. into a Forest Plan amendment or revision before projects affecting lynx habitat, such as this one, can be authorized.

The Programmatic Lynx BA's "likely to adversely affect" conclusion was based upon the following rationale. Plans within the Northern Rockies:

- generally direct an aggressive fire suppression strategy within developmental land allocations. …this strategy may be contributing to a risk of adversely affecting the lynx by limiting the availability of foraging habitat within these areas.
- allow levels of human access via forest roads that may present a risk of incidental trapping or shooting of lynx or access by other competing carnivores. The risk of road-related adverse effects is primarily a winter season issue.
- are weak in providing guidance for new or existing recreation developments. Therefore, these activities may contribute to a risk of adverse effects to lynx.
- allow both mechanized and non-mechanized recreation that may contribute to a risk of adverse effects to lynx. The potential effects occur by allowing compacted snow trails and plowed roads which may facilitate the movements of lynx competitors and predators.
- provide weak direction for maintaining habitat connectivity within naturally or artificially fragmented landscapes. Plans within all geographic areas lack direction for coordinating construction of highways and other movement barriers with other responsible agencies. These factors may be contributing to a risk of adverse effects to lynx.
- are weak in providing direction for coordinating management activities with adjacent landowners and other agencies to assure consistent management of lynx habitat across the landscape. This may contribute to a risk of adverse effects to lynx.
- fail to provide direction for monitoring of lynx, snowshoe hares, and their habitats. While failure to monitor does not directly result in adverse effects, it makes the detection and assessment of adverse effects from other management activities difficult or impossible to attain.

- forest management has resulted in a reduction of the area in which natural ecological processes were historically allowed to operate, thereby increasing the area potentially affected by known risk factors to lynx. The Plans have continued this trend. The Plans have also continued the process of fragmenting habitat and reducing its quality and quantity. Consequently, plans may risk adversely affecting lynx by potentially contributing to a reduction in the geographic range of the species.
- The BA team recommends amending or revising the Plans to incorporate conservation measures that would reduce or eliminate the identified adverse effects to lynx. The programmatic conservation measures listed in the Canada Lynx Conservation Assessment and Strategy (LCAS) should be considered in this regard, once finalized.

(Programmatic Lynx BA, at 4.)

The Programmatic Lynx BA notes that the LCAS identifies the following risk factors to lynx in this geographic area:

- Timber harvest and precommercial thinning that reduce denning or foraging habitat or converts habitat to less desirable tree species
- Fire exclusion that changes the vegetation mosaic maintained by natural disturbance processes
- Grazing by domestic livestock that reduces forage for lynx prey
- Roads and winter recreation trails that facilitate access to historical lynx habitat by competitors
- Legal (in Montana) and incidental trapping and shooting
- Predation
- Being hit by vehicles
- Obstructions to lynx movements such as highways and private land development

Comment #17 As evidenced by the fact that the Canada lynx is now listed under the Endangered Species Act and has potential critical habitat in the project area, it is clear that the HNF must do more that follow its Forest Plan's weak protections provided for lynx. The NEPA analysis does not demonstrate that the project and its analysis are consistent with all Standards contained in the Lynx Conservation and Assessment Strategy (LCAS) for lynx critical habitat. This is a violation of NFMA and the ESA.

Comment #18 The NEPA analysis does not adequately address the effects of logging on landscape pattern, which is essential for protection of critical habitat. The LCAS require that the FS:

Maintain suitable acres and juxtaposition of lynx habitat through time. Design vegetation treatments to approximate historical landscape patterns and disturbance processes.

If the landscape has been fragmented by past management activities that reduced the quality of lynx habitat, adjust management practices to produce forest composition, structure, and patterns more similar to those that would have occurred under historical disturbance regimes.

The LCAS sets mandatory Standards that would modify or amend the Forest Plan—steps the HNF has thus far not accomplished. Important Programmatic Standards include:

Identify key linkage areas that may be important in providing landscape connectivity within and between geographic areas, across all ownerships. (LCAS at 89.)

Develop and implement a plan to protect key linkage areas on federal lands from activities that would create barriers to movement. Barriers could result from an accumulation of incremental projects, as opposed to any one project. (Id.)

Map and monitor the location and intensity of snow compacting activities that coincide with lynx habitat, to facilitate future evaluation of effects on lynx as information becomes available. (LCAS at 83.)

On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU.

Comment #19 Among the standards set out in the LCAS are provisions to maintain denning habitat as discussed in the programmatic lynx BO:

> Denning Habitat - Within developmental land allocations, existing Plan direction to maintain old growth habitat was judged to be adequate to provide for lynx denning habitat for all geographic areas except the Great Lakes. (BO at 31.)

However, the HNF cannot meet lynx denning requirements unless it is meeting Forest Plan old-growth requirements. The Programmatic BA's analysis of the ability of the Forest Plans, as "amended" by the LCAS, to prevent a "taking" of the lynx is based upon the Forests' meeting such management standards. As the HNF has not yet proved it is in compliance with old-growth species' viability standards or adequately dealing with forest wide old-growth declines, the project may not be in compliance with the LCAS.

Comment #20 The impacts of both winter and non-winter motorized route densities must be adequately considered.

This is in terms of the LCAS statement p.95

The LCAS states, "the effects of open road densities on lynx are poorly understood" (LCAS at 95).

It is not clear that the HNF has a complete understanding of the current level of use of the project area for snowmobiles and other motorized recreational users.

Comment #21 Please analyze the cumulative impacts on lynx from the additional new roads, additional skid trails, and other logging access routes to be constructed in the project area—roads/access routes that could be used by snowmobilers snowmobiles and other motorized recreational users, snowshoers, and cross country skiers long after the logging activities have stopped. These roads/access routes can also impact lynx habitat during all seasons because of increased access for humans.

From Ruggiero, et al. (1999: "Lynx metapopulation dynamics operate at regional scales" (p. 24). There must be maps and adequate discussion of the connectivity issue in the DN, making it possible to see the landscape features that affect connectivity and metapopulation dynamics within and between LAUs both within and outside the project area, a goal of the LCAS mapping requirement.

The very existence of roads and compacted travel routes from motorized vehicles in snow adversely affect lynx because of the advantage provided for other predators that normally wouldn't be in portions of the project area in winter.

Any assumption that a project will not adversely impact the lynx simply because LCAS standards and guidelines are met has never been verified. These management guidelines are merely a guess for lynx management, developed by the FS and other government agencies. There has never been an independent scientific peer review of these guidelines, including by lynx experts such as those who prepared the Ruggiero, et al. (1999) research paper upon which the LCAS is largely based.
Ruggiero, et al. (1999: "Lynx metapopulation dynamics operate at regional scales" shows that the project area is occupied lynx habitat.

Our goals for the area include fully functioning stream ecosystems that include healthy, resilient populations of native trout. The highest priority management actions in the project area are those that remove impediments to natural recovery.

Comment #22 We request the FS design a restoration/access management plan for project area streams that will achieve recovery goals.

The task of management should be the reversal of artificial legacies to allow restoration of natural, self-sustaining ecosystem processes. If natural disturbance patterns are the best way to maintain or restore desired ecosystem values, then nature should be able to accomplish this task very well without human intervention (Frissell and Bayles, 1996).

Comment #23 Please utilize the NEPA process to clarify any roadless boundary issues. It is not adequate to merely accept previous, often arbitrary roadless inventories—unroaded areas adjacent to inventoried areas were often left out.

We don't believe the DEIS adequately examined if these unroaded areas adjacent to roadless areas have wilderness qualities.

Additionally, there is a lot of public support for adding unroaded areas as small as 1,000 acres in size to the roadless inventory.

Comment #24 We requested in our scoping comments a careful analysis of the impacts to fisheries and water quality, including considerations of sedimentation, increases in peak flow, channel stability, risk of rain-on-snow events, and increases in stream water temperature. This has not been done. Please disclose the locations of seeps, springs, bogs and other sensitive wet areas, and the effects on these areas of the project activities.

Comment #25 Where livestock are permitted to graze, we asked that you assess the present condition and continue to monitor the impacts of grazing activities upon vegetation diversity, soil compaction, stream bank stability and subsequent sedimentation. The DEIS does not adequately analyze this.

Comment #26 This watershed has been proposed as bull trout critical habitat. The project is not meeting the requirements of bull trout critical habitat.

Comment #27 Please disclose in the NEPA document the results of up-to-date monitoring of fish habitat and watershed conditions and how this project will affect the fish in the project area.

Comment #28 It is extremely important the FS disclose the environmental baseline for watersheds. Generally, this means their condition before development or resource exploitation was initiated.

…proper disclosure of baseline conditions would mean estimates of stream stability, pool frequency conditions, and water temperature range—essentially the values of Riparian Management Objectives along with such parameters as sediment levels. When such information is provided, comparison with the current conditions (after impacts of development) will aid in the assessment of cumulative effects of all alternatives.

For example, the baseline condition of a stream means the habitat conditions for fish and other aquatic species prior to the impacts of road building, logging, livestock grazing, etc.

Prescribed fires and mechanical treatments may adversely affect soil productivity. NFMA requires the FS to "not allow significant or permanent impairment of the productivity of the land." [36 C.F.R. § 219.27(a)(1).] NFMA requires the Forest Service to "ensure that timber will be harvested from National Forest System lands only where—soil, slope, or other watershed conditions will not be irreversibly damaged." [16 U.S.C. 1604 (g)(3)(E).]

The Sheep Creek Salvage FEIS (USDA Forest Service, 2005a) states at p. 173:

> Noxious weed presence may lead to physical and biological changes in soil. Organic matter distribution and nutrient flux may change dramatically with noxious weed invasion. Spotted knapweed (Centaurea biebersteinii D.C.) impacts phosphorus levels at sites (LeJeune and Seastedt, 2001) and can hinder growth of other species with allelopathic mechanism. Specific to spotted knapweed, these traits can ultimately limit native species' ability to compete and can have direct impacts on species diversity (Tyser and Key 1988, Ridenour and Callaway 2001).

Comment #29 Please disclose how the productivity of the land been affected in the project area and forestwide due to noxious weed infestations, and how that situation is expected to change in the coming years and decades.

Harvey et al., 1994 state:

> The ...descriptions of microbial structures and processes suggest that they are likely to provide highly critical conduits for the input and movement of materials within soil and between the soil and the plant. Nitrogen and carbon have been mentioned and are probably the most important. Although the movement and cycling of many others are mediated by microbes, sulfur phosphorus, and iron compounds are important examples.
>
> The relation between forest soil microbes and N is striking. Virtually all N in eastside forest ecosystems is biologically fixed by microbes... Most forests, particularly in the inland West, are likely to be limited at some time during their development by supplies of plant-available N. Thus, to manage forest growth, we must manage the microbes that add most of the N and that make N available for subsequent plant uptake. (Internal citations omitted.)

Lacy, 2001 examines the importance of soils for ecosystem functioning and points out the failure of most regulatory mechanisms to adequately address the soils issue. From the Abstract:

> Soil is a critical component to nearly every ecosystem in the world, sustaining life in a variety of ways—from production of biomass to filtering, buffering and transformation of water and nutrients. While there are dozens of federal environmental laws protecting and addressing a wide range of natural resources and issues of environmental quality, there is a significant gap in the protection of the soil resource. Despite the critical importance of maintaining healthy and sustaining soils, conservation of the soil resource on public lands

> is generally relegated to a diminished land management priority. Countless activities, including livestock grazing, recreation, road building, logging, and mining, degrade soils on public lands. This article examines the roots of soil law in the United States and the handful of soil-related provisions buried in various public land and natural resource laws, finding that the lack of a public lands soil law leaves the soil resource under protected and exposed to significant harm. To remedy this regulatory gap, this article sketches the framework for a positive public lands soil protection law. This article concludes that because soils are critically important building blocks for nearly every ecosystem on earth, an holistic approach to natural resources protection requires that soils be protected to avoid undermining much of the legal protection afforded to other natural resources.

The article goes on:

> Countless activities, including livestock grazing, recreation, road building, logging, mining, and irrigation degrade soils on public lands. Because there are no laws that directly address and protect soils on the public lands, consideration of soils in land use planning is usually only in the form of vaguely conceived or discretionary guidelines and monitoring requirements. This is a major gap in the effort to provide ecosystem-level protection for natural resources.

> The rise of an "ecosystem approach" in environmental and natural resources law is one of the most significant aspects of the continuing evolution of this area of law and policy. One writer has observed that there is a
>
> > fundamental change occurring in the field of environmental protection, from a narrow focus on individual sources of harm to a more holistic focus on entire ecosystems, including the multiple human sources of harm within ecosystems, and the complex social context of laws, political boundaries, and economic institutions in which those sources exist.
>
> As federal agencies focus increasingly on addressing environmental protection from an holistic perspective under the current regime of environmental laws, a significant gap remains in the federal statutory scheme: protection of soils as a discrete and important natural resource. Because soils are essential building blocks at the core of nearly every ecosystem on earth, and because soils are critical to the health of so many other natural resources—including, at the broadest level, water, air, and vegetation—they should be protected at a level at least as significant as other natural resources. Federal soil law (such as it is) is woefully inadequate as it currently stands. It is a missing link in the effort to protect the natural world at a meaningful and effective ecosystem level.

> … This analysis concludes that the lack of a public lands soil law leaves the soil resource under-protected and exposed to significant harm, and emasculates the environmental protections afforded to other natural resources.

(Emphasis added.) The problems Lacy (2001) identifies of regulatory mechanisms exist in Regional and Forest-level standards and other guidance applicable for the proposed project.

Comment #30 Please provide estimates of current detrimental disturbance in all previously established activity areas in the watersheds affected by the proposal.

Comment #31 Please disclose the link between current and cumulative soil disturbance in project area watersheds to the current and cumulative impacts on water quantity and quality.

Comment #32 Please disclose if there are any WQLS streams or TMDL streams in the project area.

Comment #33 Please disclose measures of, or provide scientifically sound estimates of, detrimental soil disturbance or soil productivity losses (erosion, compaction, displacement, noxious weed spread) attributable to off-road vehicle use.

Comment #34 Please disclose the results monitoring of weed treatments on the HNF that have been projected to significantly reduce noxious weed populations over time, or prevent spread. This is an ongoing issue of land productivity.

Comment #35 Please disclose how the proposed "treatments" would be consistent with Graham, et al., 1994 recommendations for fine and coarse woody debris, a necessary consideration for sustaining long-term soil productivity.

It has been well-established that site-specific Biological Evaluations (BEs) or Biological Assessments (BAs) must be prepared for all actions such as this. Further, the Forest Service Manual requires that BEs/BAs consider cumulative effects. The Forest Service Manual states that project BEs/BAs must contain "a

discussion of cumulative effects resulting from the planned project in relationship to existing conditions and other related projects" [FSM 2672.42(4)]. "Existing conditions" obviously are the current conditions of the resources as a result of past actions.

Comment #36

Published scientific reports indicate that climate change will be exacerbated by logging due to the loss of carbon storage. Additionally, published scientific reports indicate 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 Stonewall Vegetation Project may have a significant adverse effect on the environment, and the latter undermines the central underlying purpose of the Project. Therefore, the Forest Service must candidly disclose, consider, and fully discuss the published scientific papers discussing climate change in these two contexts. At least the Forest Service should discuss the attached following studies:

- Depro, Brooks M., Brian C. Murray, Ralph J. Alig, and Alyssa Shanks. 2008. Public land, timber harvests, and climate mitigation: quantifying carbon sequestration potential on U.S. public timberlands. Forest Ecology and Management 255: 1122-1134.

- Harmon, Mark E. 2001. Carbon sequestration in forests: addressing the scale question. Journal of Forestry 99:4: 24-29.

- Harmon, Mark E, William K. Ferrell, and Jerry F. Franklin. 1990. Effects of carbon storage of conversion of old-growth forest to young forests. Science 247: 4943: 699-702

- Harmon, Mark E, and Barbara Marks. 2002. Effects of silvicultural practices on carbon stores in Douglas-fir – western hemlock forests in the Pacific Northwest, USA: results from a simulation model. Canadian Journal of Forest Research 32: 863-877.

- Homann, Peter S., Mark Harmon, Suzanne Remillard, and Erica A.H. Smithwick. 2005. What the soil reveals: potential total ecosystem C stores of the Pacific Northwest region, USA. Forest Ecology and Management 220: 270-283.

- McKenzie, Donald, Ze'ev Gedalof, David L. Peterson, and Philip Mote. 2004. Climatic change, wildfire, and conservation. Conservation Biology 18:4: 890 -902.

Comment #37

Please evaluate all of the costs and benefits of this project. Please include a detailed list of all the costs to the agency and the public.

Comment #38 It is our intention that you include in the record and review all of the literature and other incorporated documents we've cited herein. Please contact us if you have problems locating copies of any of them.

Comment #39 Thank you for your attention to these concerns. Please keep us on your list to receive further mailings on the proposal.

Sincerely,

	And on behalf of:
Michael Garrity	Sara Johnson
Alliance for the Wild Rockies	Native Ecosystems Council
P.O. Box 505 Helena, Montana 59624 406-459-5936	P.O. Box 125 Willow Creek, MT 59760

LITERATURE

Ament, Robert 1997. Fire Policy for the Northern Rocky Mountains (U.S.A.) American Wildlands, 40 E. Main, Suite 2, Bozeman, MT 59715. September 1, 1997

Bull, E., et al. 2001. Effects of Disturbance on Forest Carnivores of Conservation Concern in Eastern

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6/1/13 Garrity, Johnson Letter and literature items emailed as attachments

Comment #	Response	Topic
1	The requirements of Section 7 of the Endangered Species Act will be met prior to signing of a Record of Decision (ROD). Should the biological assessment (BA) document adverse effect on listed species, formal consultation would be initiated. The BA and concurrence letter from the US Fish and Wildlife Service will be included in the project record. Regarding whitebark pine: On July 19, 2011, the U.S. Fish and Wildlife Service (FWS) published in the Federal Register its 12-month status review finding on a petition to list whitebark pine under the Endangered Species Act. After a review of all available scientific and commercial information, the FWS concluded that listing the species as threatened or endangered is warranted, but precluded by higher priority actions. This finding results in whitebark pine being a FWS candidate for listing. Candidate species receive no statutory protection under the ESA. Therefore, the Forest Service is not required to formally consult with the FWS concerning whitebark pine. Whitebark pine is designated a R1 sensitive species by the Regional Forester, and the biological evaluation completed for this project reflects that designation. The effects to whitebark pine are included in the analysis with anticipation of the possible federal listing. The analysis disclosed the logging/burning proposed is expected to enhance habitat for Clark's nutcrackers due to the removal of shade-tolerant species and creation of caching sites. In addition, there is a resource protection measure designed to enhance the establishment of caching sites. At this time consultation with the FWS is not required. If it is required in the future it will occur then.	Wildlife - FWS consult Botany/Silviculture –WBP
2	See response to comments 1 and 3 pertaining to whitebark pine and determination.	Wildlife – determinations Botany/Silvicuture – WBP
3	Designating whitebark pine as a sensitive species in the Northern Region ensures that the species will be considered during project planning, and will ultimately accelerate restoration activities. A regional interdisciplinary working group is being formed to help achieve these objectives, in collaboration with Forest personnel. Management of whitebark pine continues to be a priority for Region 1. Please see the Region 1 Whitebark Pine Home page (http://www.fs.usda.gov/detail/r1/plants-animals/?cid=stelprdb5341458) for information about Forest Service activities and programs related to whitebark pine in the Northern Region.	Plants – whitebark pine
4	See response to comment 1 pertaining to whitebark pine and consultation with the FWS.	Plants – whitebark pine
5	See response to comment 1 pertaining to whitebark pine and	Plants – whitebark

Comment #	Response	Topic
	consultation with the FWS.	pine
6	At the release of the Stonewall Vegetation Project draft environmental impact statement the ROD and FEIS were not completed. Available stand exam information was considered for the presence of whitebark pine. Whitebark pine was noted in the inventoried roadless area where restoration activities to increase whitebark pine regeneration are proposed. The DEIS included project design features to protect whitebark pine. The project design features were reviewed and updated to include opportunities for planting. SILV-2 and SILV-5 specifically address whitebark pine treatments and opportunities for planting. SILV-2: To protect whitebark pine to the extent possible, assess low- and mixed-severity prescribed burning units containing groups or stands of whitebark pine to determine if areas need pre-burn treatments to protect whitebark pine from damage during burning. If needed, pre-burn treatments should take place a year prior to the proposed landscape burning. The pre-burn treatments could include cutting and directional felling of conifer trees to increase fuel loadings, improve continuity of the fuelbed, and reduce fuel loads around whitebark pine trees. Create openings designed to serve as nutcracker caching sites should be cut near-circular areas of 1 to 5 acres around mature whitebark pine trees. SILV-5: The Forest Service will conduct silvicultural reconnaissance of whitebark pine habitat post burn treatments to assess impacts and natural regeneration success. To the extent that funding and rust-resistant stock is available, the Forest Service will seek opportunities to plant whitebark pine in suitable habitat areas.	NEPA
7	See response to comment 6 regarding project design features proposed for whitebark pine restoration treatments. Information in Kean and Parsons 2010 was considered for this analysis along with other research items including the *Management guide to ecosystem restoration treatments: Whitebark pine forests of the Northern Rocky Mountains* (USDA Forest Service 2010).	Plants – whitebark pine
8	As described in chapter 3 of the EIS, all National Forest System (NFS) lands within the project area are designated lynx critical habitat and the project area is considered occupied by lynx. While the commenter suggests that the effect analysis conclusion for lynx was “No Effect” as described on pages 392, 393 and 396 of the EIS, implementation of the action alternatives “May Affect, but are Not Likely to Adversely Affect Canada lynx and lynx critical habitat. See response to comment 1.	Wildlife - lynx
9	Rationale, or the purpose and need for treatment is described in chapter 1 of the EIS, including promoting habitat conditions that more closely represent historic conditions, reducing fire risk, and promoting species diversity. See response to comments 1	Wildlife - lynx
10	Effects to lynx from proposed treatments are discussed in chapter 3 of the FEIS and we recognize that proposed activities would disturb and displace lynx during and after treatment. While the commenter suggests that this displacement would result in take and is in violation of ESA, based on the analysis provided in the FEIS, proposed activities	Wildlife - lynx

Comment #	Response	Topic
	are consistent with the Biological Opinion for the Northern Rocky Mountains Lynx Amendment and are not in violation of ESA. See response to comment 1.	
11	See response to comment 1. Effects to lynx critical habitat were evaluated by looking at changes to primary constituent elements, which are discussed in the wildlife section of chapter 3; the lynx information in the FEIS is updated to incorporate new information obtained after the release of the DEIS. Based on the analysis provided and due to the maintenance of winter foraging, den and matrix habitat, implementation of the action alternatives May Affect, but are Not Likely to Adversely Affect lynx critical habitat.	Wildlife - lynx
12	Project specific consultation with the United States Fish and Wildlife Service is ongoing and will be completed prior to issuance of a decision on the Stonewall Vegetation Project. Upon further consideration since release of the DEIS the project analysis for lynx has been updated to a May effect – likely to adversely affect determination for lynx. The FS is conducting formal consultation with the USFWS and the Biological Opinion will address lynx and lynx critical habitat.	Wildlife - lynx
13	The six percent Forest-wide cap was established in the Northern Rocky Mountain Lynx Management Direction. We agree that a site specific analysis is required to adequately assess potential impacts to lynx and the analysis presented in the FEIS includes a site specific evaluation of affected LAU's. Also over 90 percent of the winter hare habitat and 80 percent of the suitable den habitat within both LAU's would be maintained and treatment would provide a mosaic of habitat conditions that would contribute to the recovery and conservation of lynx. See also response to comment 12 regarding consultation with the USFWS.	Wildlife - lynx
14	See response to comment 12 regarding consultation with the USFWS.	Wildlife - lynx
15	See response to comment 12 regarding consultation with the USFWS.	Wildlife - lynx
16	See response to comment 12 regarding consultation with the USFWS.	Wildlife - lynx
17	See response to comment 12 regarding consultation with the USFWS.	Wildlife - lynx
18	Connectivity and Landscape patterns were discussed in chapter 3 of the FEIS. In response to comments received to the EIS, additional discussion/analysis of the effects of treatment on landscape conditions has been added to the FEIS, including information on lynx use and travel corridors provided in Squires et al 2013. As described in the FEIS, while the effects to connectivity and movement by lynx would vary by alternative, both action alternatives would maintain landscape conditions that permit movement within and between LAU's. Also effects of past activities were considered and are reflected in the existing lynx habitat conditions. Finally, historical conditions were considered and are discussed under biophysical settings in the	Wildlife - lynx

Comment #	Response	Topic
	vegetation and wildlife sections of the FEIS. As described the action alternatives would restore fire to a landscape, better mimic ecological processes and reference conditions, improve species composition and promote the long-term sustainability of lynx habitat.	
19	While forest-wide compliance with old growth standards is beyond the scope of this analysis, as discussed in chapter 3 of the FEIS and in the project old growth report, the Stonewall project is consistent with Forest Plan old growth direction. Also in drainages that had less than the five percent old growth identified in the plan, additional old growth stands were identified. Finally stand conditions were assessed on the ground, to ensure that stands selected for old growth would provide the necessary structural conditions into the future. Effects to lynx, including the availability of den habitat in the wildlife section of the FEIS. While the action alternatives would reduce available den habitat, over 80 percent of the existing den habitat would be maintained in both LAU's and adequate lynx denning habitat would be maintained in the short and long-term. Also see response to comments 1.	Wildlife - lynx
20	Effects of winter and non-winter motorized use are evaluated in chapter 3 of the FEIS. As described, while there would be short-term effects to lynx from motorized use, considering that no new permanent roads would be constructed, that large unroaded areas would be maintained, that no new roads would be open to the public, that any increases in snowmobile use would be largely restricted to areas that don't provide winter hare habitat, and that research suggests that compacted snow routes did not appear to enhance access from other predators (Kolbe et al 2007), there are no long-term effects from winter or non-winter motorized use on lynx anticipated.	Wildlife – lynx rds
21	See response to comment 20. Cumulative effects to lynx, including effects from new roads and motorized and non-motorized use are discussed in the FEIS. Because public access would be unchanged and considering that development and/or retention of understory vegetation would reduce the length of time that treatment units would have increased access to Forest users, there are no long-term effects to lynx or lynx habitat from non-motorized use anticipated. As a result and considering that over 80 percent of the suitable lynx habitat would be unaffected by treatment, proposed activities would not result in significant cumulative effects to lynx.	Wildlife – lynx rds
22	Access management was addressed in the Blackfoot Travel Plan analysis. Roads identified for decommissioning in the Blackfoot Travel Plan have been incorporated into the Stonewall analysis.	Hydrology
23	Inventory and evaluation of roadless areas takes place at the forest plan level. Unroaded areas adjacent to IRAs that overlap with proposed treatment areas were evaluated for potential impacts to their roadless and wilderness characteristics. See DEIS page 595-603 and Table 154 and 155.	Inventoried Roadless Areas

Comment #	Response	Topic
24	An analysis of effects to fisheries and habitat is included in the Fisheries section of the Stonewall project DEIS. No wetlands, seeps, or springs have been found during surveys within the project area. If any are located during implementation they will be given the appropriate RHCA buffer and excluded from project activities.	Fisheries
25	Impacts from livestock were taken into account when formulated the current conditions. These impacts will also be taken into account in all future planned activities. Grazing effects are analyzed, managed and monitored under separate NEPA documents and decisions for each allotment on the district. The affected Allotment Management Plans are the Stonewall, Keep Cool and Arrastra allotments. The project would not alter any provisions of these plans or their implementation. The DEIS analyses resource management concerns most directly involved with forest understory vegetation conditions—wildlife, sensitive plants, stream sediment, and silviculture—did not identify any current conditions to which proposed activities and continuance of current permitted grazing would cause changes approaching a threshold of significance. This is the combined result of several factors, including: 1) generally good current vegetation conditions or necessary improvements already underway via other actions (fencing); 2) the lack of intense adverse effects from proposed activities with mitigation, including soils, watershed and fisheries design features (S/WS/F-1 through -26) shown at DEIS pp. 49-53; and 3) contingency mitigation measures in place through grazing-related project design features (RNG-1, -2, and -3) shown at DEIS p. 47.	Grazing
26	Bull trout critical habitat is located downstream of the project area in the Blackfoot River. Effects to bull trout and critical habitat are analyzed in the Stonewall project Biological Analysis for Section 7 consultation with the US Fish and Wildlife Service.	Fisheries - bull trout
27	Monitoring results and current watershed conditions are included in the Current Conditions section of both the Aquatic Species and the Hydrology sections of the Stonewall DEIS.	Fisheries
28	Baseline watershed conditions, including sedimentation, are discussed in the soils, hydrology and fisheries sections of chapter 3.	Hydrology
29	The Forest Service recognizes that land productivity is reduced by noxious weed infestations. That issue is addressed Forest-wide under the Final Environmental Impact Statement: Helena National Forest Noxious Weed Treatment Project and accompanying Record of Decision (USDA Forest Service 2006d). The analysis completed for this project discloses how noxious weeds are expected to respond under the different alternatives, what the environmental consequences are and incorporated practices designed to minimize or avoid potential adverse effects particular to this project.	Noxious weeds
30	Estimates of detrimental soil disturbance on a watershed scale is outside of the scope of this project. All estimates were provided on a	Soils

Comment #	Response	Topic
	site-specific unit-by-unit basis, which is the appropriate scale of analysis for this project.	
31	Current and cumulative soil disturbance is disclosed in the EIS for each individual treatment unit. Sediment modeling was also completed to assess the possibility of sediment delivery to streams. Methodology and assessments of water quantity affects from disturbances are discussed under water quality in the Hydrology section of the EIS.	Soils/Hydrology
32	The Hydrology section of the EIS disclosed the Blackfoot River has a total maximum daily load (TMDL) developed for sediment (for the section downstream of the forest boundary, and noted no WQLS streams in the Beaver Creek an Keep Cool Creek watersheds.	Hydrology
33	Soil disturbance from off-road vehicle use was taken into account when formulating the current conditions and estimating current detrimental soil disturbance.	Soils
34	Please see comment 29. This project includes monitoring for and treatment of noxious weed infestations that may occur as a result of the proposed activities.	Noxious weeds
35	After vegetative treatments, forest standards for coarse woody debris will be retained.	Soils
36	The DEIS at pp. 176-177 discusses non-significant effects of the proposed action and alternatives to carbon storage or release, in a manner consistent with current national environmental policy. Climate change was discussed in the following chapter 3 sections: vegetation (includes ramifications of a changing climate), fire and fuels, habitats of special concern, wildlife, noxious weeds and plants. The studies listed in the comment were considered in the literature review completed for the Stonewall analysis. *The following excerpt is from the Atmospheric Carbon Report for this analysis found in the project file (Amell and Klug 2013):* The Forest Service has reviewed scientific papers attached to this comment and other pertinent literature concerning forest carbon stocks, and the general, broad-scale relationships between forestry operations, atmospheric carbon exchange and global climate concerns. All literature submitted or cited by commenters is listed in a report titled, "Literature and Citations Received from Scoping for the Stonewall Vegetation Project," located in the project record. That report includes interdisciplinary-team determinations of relevance or applicability to the project of each literature item listed. With regard to the [comment], we recognize, as [asserted in the] second point, [that] variance or actual change in climate—past, present and future—potentially affects current and future conditions of the Helena National Forest. These facts are considered and addressed in the formulation of project objectives and the design of proposed and alternative actions. Through these, we seek to culture forest conditions in the Stonewall area that are resilient as possible to disturbance-events, processes, or trends that can—when sufficiently large, intense, or long term—detract from national forest conservation and the delivery of public benefits specified in law and policy. …	Silviculture – climate change

Comment #	Response	Topic
	In [the Atmospheric Carbon Report] we discuss further the first topic raised by [the comment]: the effects of proposed treatments on carbon storage versus no action. The topic is relevant to effects analysis because it identifies an environmental condition the Stonewall Project could change. The Forest Service recognizes that by manipulating forest vegetation through [various means including] silviculture, management of hazardous fuels, and fire, carbon is added to or removed from the earth's atmosphere; the manner and degree to which this happens as a result of the actions proposed can be at least qualitatively analyzed and described in comparison to no action. [These qualitative effects are discussed in DEIS Chapter 3 under Carbon Storage, pp. 176-177.] Concerning possible indirect *climate* effects from project-caused carbon release or storage, the Stonewall Project NEPA process will not attempt to make such an analysis. This position is based upon the fact that questions about whether or how to analyze effects to climate resulting from federal land and resource management are still under consideration by the White House Council on Environmental Quality (CEQ). Currently, CEQ has issued no operative guidance on this, as explained more thoroughly [in the Atmospheric Carbon Report (Amell and Klug 2013)] in the … section, "Regulatory Direction and Guidance on Consideration of Climate Change in Project Related NEPA Analysis."	
37	Pages 632-644 of the EIS disclosed the economic analysis for this project. The economic analysis will be updated for the FEIS based on current market and stand conditions, and also to reflect any changes in the alternatives. Financial efficiency is just one tool that is used to evaluate the costs and benefits of a project. Many non-market values associated with natural resource management are best handled apart from, but in conjunction with a more limited financial efficiency framework. These nonmarket benefits and costs associated with the project are discussed throughout the various resource sections of the EIS.	Economic
38	Available cited literature was reviewed along with other information considered for this analysis. The literature review is available in the project record.	NEPA
39	Commenters will remain on the mailing list for future project information.	NEPA

Reviews of the following Garrity Johnson 6/1/2013 email attachments are included with the literature review document:

Salix Opinion (May 16 2013).pdf; Squires et al_2013_Bio Con_Combining resource selection and movement to predict corridors Canada lynx.pdf; lynx appeal Sara's.doc; Lynx Mgmt Direction Appeal 7_07.doc; Lynx.Ecology.Intermountain.West.2006.Study.Part.I.pdf; lynxmapfinal_color.pdf; Lynx.Ecology.Intermountain.West.2006.Study.Part.II.pdf; Lynx.locations.Seeley.Colt.Summit..pdf; lynxmapfinal_color.pdf; T1_19.pdf; lynxmapfinal_color.pdf; CDOW.Lynx.Report.2007.2008.pdf;; Natl Lynx Survey.pdf; CDOW2008LynxReportJul2007Jun2008; Squires.June.29.2009.Letter.Missoula.County.Rural.Int.Lynx.Seeley..pdf

June 11, 2013

Amber Kamps
District Ranger
Lincoln Ranger District
Helena National Forest
1569 Hwy 200
Lincoln, MT 59639

Transmitted via email--please acknowledge receipt!

RE: Stonewall DEIS

Dear Ranger Kamps:

Thank you for the opportunity to comment. Please accept these additional comments on the Stonewall Restoration Project Draft Environmental Impact Statement (DEIS) on behalf of the Alliance for the Wild Rockies, Montana Ecosystems Defense, Council and Native Ecosystems Council. The U.S. Forest Service has proposed to implement various logging and burning prescriptions on 8640 acres in the Lincoln Ranger District of the Helena National Forest, near Lincoln, Montana. These activities will require the construction of 5 miles of new roads.

The Alliance for the Wild Rockies and Native Ecosystems Council (collectively "Alliance") submit the following comments on the DEIS for the proposal.
The Alliance for the Wild Rockies, Montana Ecosystem Defense Council, Tom Bovington and Native Ecosystems Council (collectively "Alliance") submit the following comments on the environmental analysis for the proposal.

Comment #1 The Forest Service must complete a full environmental impact statement (EIS) for this Project because the scope of the Project will likely have a significant individual and cumulative impact on the environment.

This watershed is functioning at risk or unacceptable risk for habitat parameters important to bull trout and westslope cutthroat trout and will remain so post project.

Maintaining degraded fish habitat conditions does not support narrowing the RHCAs.

The Forest Service and the Fish and Wildlife Service are required by the ESA to recover populations not maintain them at extreme risk of extinction.

Comment #2

This project attempts to sidestep NFMA requirements that a viable population be maintained, with habitat and populations well-distributed throughout the planning area. Managing for extinction in the Stonewall watershed is not a legal option. The Forest Service and the Fish and Wildlife Service are required by the ESA to recover populations not maintain them at extreme risk of extinction. The Forest Service should formally consult with the Fish and Wildlife Service and initiate a project that will recover bull trout instead of maintaining them at risk for extinction in violation of the Endangered Species Act.

Comment #3

Please also examine the planned SW Crown of the Continent Projects impacts in grizzly bears.

Comment #4

Please formally consult with the U.S. FWS to determine the impacts of this project on grizzly bears.

Comment #5

It looks like the open road density will increase during the timber sale. Will this violate the open road density requirements of the Forest Plan? How will construction temporary roads not increase the total road density? These are new roads.

Comment #6

Please formally consult with the USFWS and get a take permit for grizzly bears.

Comment #7-1

1. Did the Forest Service conduct NEPA analysis (i.e. an EA or EIS) for the Fire Plan?

Comment #7-2

2. If the Forest Service did not conduct NEPA for the Fire Plan, please immediately start that NEPA process.

Comment #7-3

3. Please provide a map showing the WUI and the locations of all homes in comparison to the project area.

Comment #7-4 4. If the Forest Service did not conduct NEPA for the Fire Plan, please disclose the cumulative effects of Forest-wide implementation of the Fire Plan in the DEIS to avoid illegally tiering to a non-NEPA document. Specifically analyze the decision to prioritize mechanical, human-designed, somewhat arbitrary treatments as a replacement for naturally-occurring fire.

Comment #7-5 5. Did the Forest Service conduct ESA consultation for the FirePlan?

Comment #7-6 6. Did the Forest Service formallu consult on the NRLMD in lynx critical habitat?

Comment #7-7 7. Will the Forest Service be considering binding legal standards for noxious weeds in its revision of the Helean Forest Plan?

Comment #7-8 8. How effective have BMPs been at stopping (i.e. preventing) new weed infestations from starting during logging and related road operations?

Comment #7-9 9. Is it true that new roads are the number one cause of new noxious weed infestations?

Comment #7-10 10. Why isn't the Forest Service considering a Forest Plan amendment in this Project to amend the Forest Plan to include binding legal standards that address noxious weeds?

Comment #7-11 11. Is it true that noxious weeds are one of the top threats to biodiversity on our National Forests?

Comment #7-12 12. How can the Forest Service be complying with NFMA's requirement to maintain biodiversity if it has no legal standards that address noxious weeds?

Comment #7-13 13. Will this Project address all Project area BMP needs, i.e. will the BMP road maintenance backlog and needs from this Project all be met by this Project?

Comment #7-14 14. The DEIS is not clear if any MIS were found. What MIS did you find, how many and how did you look for these MIS?

Comment #7-15 15. How will the decreased elk security and thermal cover affect wolverines? Please formally consult with the US FWS on the impact of this project on wolverines.

Comment #7-16 16. Which wildlife species and ecosystem processes, if any, does fire-proofing benefit?

Comment #7-17 17. Which species and processes do fire-proofing harm?

Comment #7-18 18. What evidence do you have that this logging will make the forest healthier for fish and wildlife?

Comment #7-19 19. What about the role of mixed severity and high severity fire – what are the benefits of those natural processes?

Comment #7-20 20. How have those processes (mixed and high severity fire) created the ecosystems we have today?

Comment #7-21 21. Over how many millennia have mixed and high severity fire have been occurring without human intervention?

Comment #7-22 22. What beneficial ecological roles do beetles play?

Comment #7-23 23. Can the forest survive without beetles?

Comment #7-24 24. Will all WQLS streams in the project area have completed TMDLs before a decision is signed?

Comment #7-25 25. Why is logging that removes trees considered regeneration (and not loss of existing forest), when a stand-replacing fire is considered loss of the forest (and not regeneration)?

Comment #7-26 26. How will the project improve watershed health?

Comment #7-27 27. Will this project leave enough snags to follow the Forest Plan requirements and the requirements of sensitive old growth species such as flammulated owls and goshawks?

Comment #7-28 28. After snags are cut down for safety for OSHA requirements will there still be enough snags left for old growth sensitive species?

Comment #7-29 29. Will this Project exacerbate existing noxious weed infestations and start new infestations?

Comment #7-30 30. Do unlogged old growth forests store more carbon than the wood products that would be removed from the same forest in a logging operation?

Comment #7-31 31. What is the cumulative effect of National Forest logging on U.S. carbon stores? How many acres of National Forest lands are logged every year? How much carbon is lost by that logging?

Comment #7-32 32. Is this Project consistent with "research recommendations (Krankina and Harmon 2006) for protecting carbon gains against the potential impacts of future climate change? That study recommends "[i]ncreasing or maintaining the forest area by avoiding deforestation," and states that "protecting forest from logging or clearing offer immediate benefits via prevented emissions."

Comment #7-33 33. Please list each visual quality standard that applies to each unit and disclose whether each unit meets its respective visual quality standard. A failure to comply with visual quality Forest Plan standards violates NFMA.

Comment #7-34 34. For the visual quality standard analysis please define "ground vegetation," i.e. what age are the trees, "restablishes," "short-term," "longer term," and "revegetate."

Comment #7-35 35. Please disclose whether you have conducted surveys in the Project area for this Project for wolverines, pine martins, northern goshawk and lynx, grizzly bears as required by the Forest Plan.

Comment #7-36 36. Please disclose the last time the Project area was surveyed for Whitebark pine, wolverines, pine martins, northern goshawk, grizzly bears and lynx.

Comment #7-37 37. Please disclose how often the Project area has been surveyed for wolverines, whitebark pine, pine martins, northern goshawks, grizzly bears and lynx. Is it impossible for a wolverines, pine martins, northern goshawks, grizzly bears and lynx to inhabit the Project area?

Comment #7-38 38. Would the habitat be better for whitebark pine, wolverines, pine martins, northern goshawks, grizzly bears and lynx if roads were removed in the Project area?

Comment #7-39 39. What is the U.S. FWS position on the impacts of this Project on whitebark pine, wolverines, pine martins, northern goshawks, grizzly bears and lynx? Have you conducted ESA consultation?

Comment #7-40 40. Please provide us with the full BA for the whitebark pine, wolverines, pine martins, northern goshawks, grizzly bears and lynx.

POPULATION VIABILITY AND HABITAT MANAGEMENT OF MANAGEMENT INDICATOR AND SENSITIVE SPECIES

Comment #8 The HNF continues to rely on wildlife habitat models for TES and MIS, utilizing the TSMRS or a similar database, of unproven reliability. The HNF cites no on-the-ground studies verifying the assumptions made with the use of these models.[1]

Comment #9 The HNF has consistently ignored the Region's guidance document for old-growth species' habitat management (USDA Forest Service, 1990).

From USDA Forest Service, 1990:

> *The greater vertical and horizontal diversity found within an old-growth stand allows for niche specialization by wildlife. Although the individual wildlife species occurring may not be unique to old-growth stands, the assemblage of wildlife species and the complexity of interactions between them are different than in earlier successional stages. P. 2*

> *Forest-wide estimates are needed of the relative abundance, patch sizes, and spatial distribution of old-growth habitat by forest type. P. 3*

> In northwestern Montana, McClelland (1977) described a general trend of increased species richness in cavity-nesting birds from young to old-growth stands of larch and Douglas-fir. Old growth was particularly important in providing an adequate number of suitable nesting trees for cavity-nesters. P. 6

Patch size correlates strongly with the numbers of species and individuals that can be supported and with rates of extinction and recolonization." …Of 48 old-growth-associated

[1] In his 1991 book, In the Absence of the Sacred, Jerry Mander notes criticisms of the use of computers by the Forest Service biologists, and discusses the loss of relationship between humans and their wildlife neighbors as computers are utilized more widely by biologists (see Mander, 1991).

species occurring in the Northern Region, about 60 percent are thought to require stands larger than 80 acres. P. 8

Roads are generally undesirable within an old-growth habitat patch. P. 9

Providing for well-distributed habitat patches with interconnections between patches thus is necessary to maintain species diversity over the long term. P. 9.

McClelland (1979a) noted that pileated woodpeckers usually avoid open areas for feeding, preferring forests with a significant old-growth component and high basal area. …Bull and Meslow (1977) classified preferred feeding habitats as having high densities of snags and logs, dense canopies, and tall ground cover, with more than 10% of the ground area covered by logs. Pp. 11-12.

In the northern Rockies, the density of snags and stumps at pileated feeding sites (not throughout the feeding range) averaged 7 per acre (Aney and McClelland 1985). At least 500 acres of suitable feeding habitat is needed within the home range of a pair (McClelland 1979a). P. 12.

Monitoring Old-growth Habitats and MIS

Landres et al. (1988) pointed out that identifying old-growth stands based on habitat requirements of the MIS, and then monitoring habitat conditions for those MIS to assess old-growth conditions, is circular reasoning.

Comment #10

Because old-growth associated MIS are intended to represent a community of wildlife species, stand selection, management and monitoring should not be directed only towards the minimum requirements of MIS. Both general habitat conditions in relation to an ecological classification and suitability of the stands or patches to MIS need to be monitored. P. 38, emphasis added.

Three levels of monitoring intensity have been identified for Forest Plan implementation: implementation, effectiveness, and validation monitoring. Monitoring of habitats should be emphasized at all levels, with additional monitoring of habitat occupancy and population trends of MIS as appropriate. P. 38.

Monitoring Intensity

Model predictions can be tested by sampling a portion of the designated old-growth stands to determine the actual rate of occupancy by management indicator species. P. 38.

Validation Monitoring

Comment #11

Model validation should include tests to determine whether model output correctly predicts habitat quality. Reproductive performance over time is a good indicator of site productivity. P. 39.

Validation of Effects of Management Practices on Population Viability

Comment #12

Monitoring data should enable comparison of 'control' and 'treatment' territories. Otherwise, it will be unclear whether observed population changes were due to habitat change, weather, prey population cycles, or other factors. P. 39.

Comment #13

Methods For Habitat Monitoring

Aerial photo interpretation or other remotely-sensed data are suitable to determine cover type, overstory tree size, percent canopy cover, and stand acreage. Additional sampling effort will be needed to obtain reasonably accurate estimates of size and density of dead trees, standing and down. P. 40.

Comment #14

Methods For Monitoring Pileated Woodpecker

(field methodologies given, p. 40)

Comment #15

Methods For Monitoring Goshawk

(field methodologies given, pp. 40-41)

Comment #16

Methods For Monitoring Marten

(field methodologies given, p. 41)

Comment #17

Logging and other disturbance associated with the project and Seeley-Swan Fire F could affect northern goshawk nesting, post-fledging family habitat, alternative nesting, foraging, competitors, prey and potential habitat, including areas far fror cutting units. Research in the Kaibab National Forest found that goshawk populat decreased dramatically even after partial logging and even when large buffers arc nests were provided (Crocker-Bedford, 1990).

Comment #18

The HNF ignores important scientific information on goshawk habitat requirements. Rey et al. 1992 provide a basis for a northern goshawk conservation strategy that could be implemented if forestwide habitat considerations were to be truly taken into account. T suggest that it is essential to viability of goshawks that 20-50% of old growth within thei nesting areas be maintained, yet the HNF fails to recognize that *(see also Suring et al. 1993). Graham, et al. 1999, USDA Forest Service 2000b, Iverson et al. 1996, ana Suring et al. 1993 are more examples of northern goshawk conservation strategie FS might adopt for this Forest or Region, if emphasis was more appropriately pla on species conservation and insuring viability rather than justification for resour extraction.*

USDA Forest Service 2000b recommends that forest opening greater than 50-60 be avoided in the vicinity of goshawks. At least five years of monitoring is necessa allow for effective estimates of habitat quality (Id.). Research suggests that a loca distribution of 50% old growth should be maintained to allow for viability of gosh (Suring et al. 1993).

The scientific information provided in Center for Biological Diversity, 2004, also conflicts with the HNF's analyses and conclusions regarding goshawk viability, an includes vital information on goshawks not considered by the HNF.

Goshawks are often associated with a thick overstory cover and areas with a larg number of large trees. For example, Hayward and Escano (1989) recommend an overstory canopy between 75 and 80%. According to the BE/BA for the Keystone Quartz EIS in the Beaverhead NF, "Goshawks prefer vegetation structure that pe them to approach prey unseen and to use their flight maneuverability to advanta (Widen, 1989, Beier and Drennan 1997)…"

Lit Reviews

Opening forests by logging will increase suitability of species as the red-tailed hawk, w competes with goshawks, as well as the great horned owl, a goshawk predator. The problems of habitat conversion from that of goshawk to red-tailed hawk has been rep by La Sorte et al., 2004 based on a study of over 120 goshawk territories.

Clough (2000) noted that in the absence of long-term monitoring data, a very conservative approach to allowing logging activities near active goshawk nest stands should be taken to ensure that goshawk distribution is not greatly altered. This indicates that the full 180-acre nest area management scheme recommended by Reynolds et al. (1992) should be used around any active goshawk nest on the Forest. Removal of any large trees in the 180-acre nesting area would contradict the Reynolds et al. (1992) guidelines.

Greenwald et al., 2005 reviewed the current literature on goshawk habitat relationships applicable to the Northern Rockies. Nine of 12 studies demonstrated selection for stands with higher canopy closure, larger tree size, and greater numbers of large trees than found in random stands. Some notable statements and conclusions include:

> …Most studies found that goshawks avoided open areas and logged early-seral stands; none of the studies cited in this paper found selection for such features.
>
> …While some studies suffered from small sample sizes or relatively short sampling periods, the consistency of results demonstrates goshawk selection for late-successional forest structures (e.g., high canopy closure, large trees for forest type, canopy layering, abundant coarse woody debris) when using areas within their studied home ranges. … This is not to say that goshawks only forage or roost in mature stands, but rather that such stands are disproportionately selected.
>
> … (R)eviewed studies found goshawks avoided open areas, particularly logged open areas, and none found selection for openings.
>
> *… The 5 studies correlating nest occupancy and productivity with habitat features consistently demonstrated a relationship between closed-canopied forests with large trees and goshawk occupancy. Occupancy rates were reduced by removing forest cover in the home range, which thereby resulted in reduced productivity because there were fewer active breeding territories. (Internal citations omitted.)*
>
> *Seeking to promote abundant populations of 14 prey species, Reynolds et al. (1992) recommend maintaining 20% of the landscape in grass–forb or seedling–sapling stage*

forest, 20% in young forest, 20% in mid-aged forest, and 40% in mature and old forests. … Given the above findings that goshawks generally avoid open areas and early-seral forest, that logging reduces goshawk occupancy and productivity, and a lack of evidence that creating openings or young forest through logging benefits goshawks, these recommendations appear to lack support in research produced since 1992.

Across most of the western United States, mature and old-forests have declined to much less than 40% of the landscape. Given these declines and the lack of information on the amounts of mature and old-forest goshawks require, we recommend protecting existing mature and old-forest characteristics and ensuring that such forests are allowed to develop in proportions similar to presettlement conditions. This can be accomplished by restricting cutting to small trees, and prohibiting large reductions in canopy closure. A similar proposal was recently adopted by Region 5 of the United States Forest Service for the Sierra Nevada. In sum, based on apparent inconsistencies between subsequent research and Reynolds et al. (1992), we recommend adaptation of the management guidelines to incorporate results of numerous studies conducted since 1992. (Internal citations omitted.)

Comment #19 *The issue of fragmentation should have been more thoroughly considered with respec goshawks. Other edge-adapted species may compete with the goshawk and displace th goshawk if inadequate amounts of interior forest habitat are available. Crocker-Bedfo (1990) recommends that a foraging area of >5000 acres of dense forest, in which no logging is permitted, be designated for goshawks, with additional areas of 2500-5000 of more marginal habitat designated beyond this 5,000 acre foraging area.*

Comment #20 The HNF fails to take seriously the uncertain and precarious population status of the fisher, as described in Witmer, et al., 1998

> The status of the fisher in the Western United States is poorly known but generally perceived as precarious and declining. This is a serious issue alone, but it also is a component of the larger problem of the decline of biological diversity. Recovery of species of concern must necessarily focus on the population level, because this is the scale at which genetic variation occurs and because population [sic] are the constituent elements of communities and ecosystems. Systematic habitat alteration and overexploitation have reduced the historical distribution of fishers in suitable habitat in the interior Columbia basin to isolated and fragmented populations. Current populations may be extremely vulnerable to local and regional extirpation because of their lack of connectivity and their small numbers (Id. at 14, internal citations omitted).

The proposed logging could adversely impact fishers and their habitat. Habitat elements for natal and maternal dens are found in large diameter logs or snags, slated to be reduced by the logging. "Though the post-treatment stand condition would not be 'clear cuts', they would be fairly open and Jones (1991) did not expect to find substantial fisher hunting use of plantations by fishers until canopy approached 80% and 10-15 feet respectively (depending on snow depths)" (Helena NF's

Spotted Beetle EA, p. 3-62). The logging, snag removal and other activities associated with the Hidden Lake Fuel Reduction project would negatively affect fisher habitat. Movement, denning, resting areas, genetic diversity, and other aspects of fisher life cycles and fisher survival could be impacted by the project; the FS does not fully consider these elements of the project or adequately mitigate their impacts.

Lit Reviews *Jones (undated) and the LNF's Johnsen (1996) provide examples of possible conser strategies for the fisher, something the FS has so far neglected to implement for this Sensitive species.*

Comment #20 continued

THE AGENCIES SHOULD CONDUCT ESA CONSULTATION FOR THE NORTHERN ROCKIES FISHER…

This year, USFWS found "substantial scientific or commercial information indicating that listing a [Distinct Population Segment] of fisher in the [Northern Rocky Mountains] of the United States [under the ESA] may be warranted." 75 Fed. Reg. 19925 – 19935 (April 16, 2010). In particular, USFWS found that listing the Northern Rockies fisher under the ESA may be warranted in primary part "due to the present and potential future modification and destruction of habitat from commercial timber harvest and commercial wood production by methods that may prevent succession to the mature forest stages preferred by fishers." The Forest Service admits that the fisher and/or its habitat are present within the project area and would be impacted by the project. The Forest Service did no ESA consultation for the fisher for this project.

Comment #21

THE AGENCIES SHOULD CONDUCT ESA CONSULTATION FOR THEWOLVERINE. The wolverine, which was chosen by the Forest Service as a management indicator species forth project area, was recently determined to be warranted for listing under the ESA. 75 Fed. Reg.78030 (Dec. 14, 2010). It is currently a candidate species, waiting for work to be completed on other species before it is officially listed. The USFWS found that "[s]ources of human disturbance to wolverines include . . . road corridors, and extractive industry such as logging . . .." . The Forest Service admits that the wolverine and/or its habitat are present within the project area and would be impacted by the project. The Forest Service must go through ESA consultation for the wolverine for this project.

Lit Reviews

Regarding another Sensitive species, the black-backed woodpecker, Cherry (1997) states:

The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the 'healthy' forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore, the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

The Region 1 black-backed woodpecker assessment (Hillis et al., 2003) notes that the black-backed woodpecker depends upon dead and dying trees:

> Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead or dying trees that have been colonized by bark beetles and woodborer beetles (Buprestidae, Cerambycidae, and Scolytidae). These beetles and their larvae are most abundant within burned forests. In unburned forests, bark beetle and woodborer infested trees are found primarily in areas that have undergone natural disturbances, such as wind-throw, and within structurally diverse old-growth forests. (Internal citations omitted.)
>
> …Black-backed woodpeckers also occur in unburned landscapes Bull et al.1986, Goggans et al.1987, Bate 1995, Hoffman 1997, Weinhagen 1998, Steeger and Dulisse in press, Taylor unpublished data). Taylor's observations of black-backed woodpeckers in unburned forests in northern Idaho suggest that they may occur at substantially lower densities in unburned forests, but no rigorous comparisons between black-backed woodpecker densities in burned and unburned forests have been done. Hutto (1995) hypothesized that black-backed woodpeckers reproduce at *source* reproductive levels in burns, but may drop to *sink* reproductive levels in the intervening periods between large burns.

Dolan (1998a,b) states in regards to impacts on the black-backed woodpecker due to fire suppression and post-fire logging states:

> It seems that we have a huge cumulative effects problem here, and that each salvage sale removes habitat that is already very limited. We are having trouble avoiding a "trend to federal listing" call for the BBWO in salvaging burns, unless comparable acres of fire-killed dead are being created through prescribed burns.

Comment #22

The comments by other biologists attached to Dolan, 1998a,b reveal that the FS has y design a consistent, workable, scientifically defensible strategy to ensure viable popul of the black-backed woodpeckers. The fire suppression and "salvage" logging policies HNF are the biggest threat to black-backed woodpecker population viability on the Fo unfortunately in failing to create a conservation strategy the cumulative impacts of th HNF's ongoing fire suppression policy will remain unexamined. The Hidden Lake Fuel Reduction project continues an unspoken management for extinction policy.

Comment #23

Lofroth (1997) in a British Columbia study, found that wolverines use habitats as dive tundra and old-growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service, 1993). The cumulative impact logging and road building on a species that depends upon remote, wild areas remain unexplored.

Comment #24

The flammulated, boreal owl and the great gray owl are species of concern that are sensitive to logging and other management activities. The HNF provides inadequate management strategies to insure their viability.

See, for example, Hayward and Verner, 1994.

Wright, et al. (1997) point out that habitat restoration for the flammulated owl must be carefully targeted to the correct habitat types. The FS can't simply cut and/or burn forest area and expect flammulated owls to start using it as habitat. Wright, et al. (1997) state:

> (W)e never detected Flammulated Owls in mesic old-growth ponderosa pine stands with a Vaccinium understory. Thus, within suitable landscapes, it may be most effective to conserve and restore stand structural characteristics within suitable habitat types (e.g.,

xeric ponderosa pine/ Douglas-fir stands in our study area), rather than within any stand containing ponderosa pine trees.

Comment #25 The EA [EIS] does not adequately consider cumulative effects on upland habitat for boreal toads. This does not make sense, since such small populations that are likely to persist are especially susceptible to fragmentation and extirpation due to isolation of smaller populations. See Maxell, 2000. In fact, the HNF has never performed a genuine analysis of cumulative impacts of logging activities on boreal toads.

From Ch. 3 p. 173 of the Bristow Area Restoration Project EA, Kootenai National Forest, (USDA Forest Service, 2003a:

> Little quantitative data are available regarding the boreal toad's use of upland and forested habitats. However, boreal toads are know to migrate between the aquatic breeding and terrestrial nonbreeding habitats (TNC Database 1999), and that juvenile and adult toads are capable of moving over 5 km between breeding sites (Corn et al. 1998[2]). It is thought than juveniles and female boreal toads travel farther than the males (Ibid). A study on the Targhee National Forest (Bartelt and Peterson 1994) found female toads traveled up to 2.5 kilometers away from water after breeding, and in foraging areas, the movements of toads were significantly influenced by the distribution of shrub cover. Their data suggests that toads may have avoided macro-habitats with little or no canopy and shrub cover (such as clearcuts). Underground burrows in winter and debris were important components of toad selected micro-sites in a variety of macro-habitats. The boreal toad digs its own burrow in loose soil or uses those of small mammals, or shelters under logs or rocks, suggesting the importance of coarse woody debris on the forest floor. …(T)imber harvest and prescribed burning activities could impact upland habitat by removing shrub cover, down woody material, and/or through compaction of soil.

Montana Fish, Wildlife & Parks, 2005 (a more recent version of the above cite "TNC Database, 1999") also discuss boreal toad habitat:

> Habitats used by boreal toads in Montana are similar to those reported for other regions, and include low elevation beaver ponds, reservoirs, streams, marshes, lake shores, potholes, wet meadows, and marshes, to high elevation ponds, fens, and tarns at or near treeline (Rodgers and Jellison 1942, Brunson and Demaree 1951, Miller 1978, Marnell 1997, Werner et al. 1998, Boundy 2001). Forest cover in or near encounter sites is often unreported, but toads have been noted in open-canopy ponderosa pine woodlands and

[2] Cited and included as Maxell et al., 1998 herein.

> closed-canopy dry conifer forest in Sanders County (Boundy 2001), willow wetland thickets and aspen stands bordering Engelmann spruce stands in Beaverhead County (Jean et al. 2002), and mixed ponderosa pine/cottonwood/willow sites or Douglas-fir/ponderosa pine forest in Ravalli and Missoula counties (P. Hendricks personal observation).
>
> Elsewhere the boreal toad is known to utilize a wide variety of habitats, including desert springs and streams, meadows and woodlands, mountain wetlands, beaver ponds, marshes, ditches, and backwater channels of rivers where they prefer shallow areas with mud bottoms (Nussbaum et al. 1983, Baxter and Stone 1985, Russell and Bauer 1993, Koch and Peterson 1995, Hammerson 1999). Forest cover around occupied montane wetlands may include aspen, Douglas-fir, lodgepole pine, Engelmann spruce, and subalpine fir; in local situations it may also be found in ponderosa pine forest. They also occur in urban settings, sometimes congregating under streetlights at night to feed on insects (Hammerson 1999, P. Hendricks personal observation). Normally they remain fairly close to ponds, lakes, reservoirs, and slow-moving rivers and streams during the day, but may range widely at night. Eggs and larvae develop in still, shallow areas of ponds, lakes, or reservoirs or in pools of slow-moving streams, often where there is sparse emergent vegetation. Adult and juvenile boreal toads dig burrows in loose soil or use burrows of small mammals, or occupy shallow shelters under logs or rocks. At least some toads hibernate in terrestrial burrows or cavities, apparently where conditions prevent freezing (Nussbaum et al. 1983, Koch and Peterson 1995, Hammerson 1999).

Maxell et al., 1998 state:

> We believe that the status of the Boreal toad is largely uncertain in all Region 1 Forests. …Briefly, factors which are a cause for concern over the viability of the species throughout Region 1 include: (1) a higher degree of genetic similarity within the range of Region 1 Forests relative to southern or coastal populations; (2) a general lack of both historical and current knowledge of status in the region; (3) indications of declines in areas which do have historical information; (4) low (5-10%) occupancy of seemingly suitable habitat as detected in recent surveys; (5) some evidence for recent restriction of breeding to low elevation sites and; (6) recent crashes in boreal toad populations in the southern part of its range which may indicate the species' sensitivity to a variety of anthropogenic impacts.

LYNX

Comment #26

Please formally consult with US FWS on the impact of this project on lynx and conference this project adversely modifies lynx critical habitat since page 3-248 of the EA states that Alternative B will take 517 acres of lynx foraging habitat and 327 acres of denning habitat. The EA goes on to say that the reduction of lynx foraging habitat will not be permanent goes on to say that Squires 2010 found lynx are not using regenerated stands are originally thought. Therefore NEPA must be done on the exception in the NRMLD for lynx forage reduction within the WUI.

Comment #27

In December 1999, the Forest Service and Bureau of Land Management completed their "Biological Assessment Of The Effects Of National Forest Land And Resource Manageme Plans And Bureau Of Land Management Land Use Plans On Canada Lynx" ("Programmat BA"). The Programmatic BA concluded that the current programmatic land managemen plans "may affect, and are likely to adversely affect, the subject population of Canada ly The BA team recommended amending or revising Forest Plans to incorporate conservat measures that would reduce or eliminate the identified adverse effects to lynx. The Programmatic BA's determination means that Helena Forest Plan implementation is a "taking" of lynx.

The fact that continued implementation of the Forest Plans constitutes a "taking" of the lynx is not disclosed in the EA or in the EA's Biological Assessment. 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 FS 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 North Butte Salvage Project, can be authorized.

The Programmatic BA's "likely to adversely affect" conclusion was based upon the following rationale (p. 4), all of which apply here. Forest Plans within the Northern Rockies:

- generally direct an aggressive fire suppression strategy within developmental land allocations. …this strategy may be contributing to a risk of adversely affecting the Lynx by limiting the availability of foraging habitat within these areas.

- allow levels of human access via forest roads that may present a risk of incidental trapping or shooting of Lynx or access by other competing carnivores. The risk of road-related adverse effects is primarily a winter season issue.

- are weak in providing guidance for new or existing recreation developments. Therefore, these activities may contribute to a risk of adverse effects to lynx.

- allow both mechanized and non-mechanized recreation that may contribute to a risk of adverse effects to lynx. The potential effects occur by allowing compacted snow trails and plowed roads which may facilitate the movements of lynx competitors and predators.

- provide weak direction for maintaining habitat connectivity within naturally or artificially fragmented landscapes. Plans within all geographic areas lack direction for coordinating construction of highways and other movement barriers with other responsible agencies. These factors may be contributing to a risk of adverse effects to lynx.

- fail to provide direction for monitoring of lynx, snowshoe hares, and their habitats. While failure to monitor does not directly result in adverse effects, it makes the detection and assessment of adverse effects from other management activities difficult or impossible to attain.

- forest management has resulted in a reduction of the area in which natural ecological processes were historically allowed to operate, thereby increasing the area potentially affected by known risk factors to lynx. The Plans have continued this trend. The Plans have also continued the process of fragmenting habitat and reducing its quality and quantity. Consequently, plans may risk adversely affecting lynx by potentially contributing to a reduction in the geographic range of the species.

- The BA team recommends amending or revising the Plans to incorporate conservation measures that would reduce or eliminate the identified adverse effects to lynx. The programmatic conservation measures listed in the Canada Lynx Conservation Assessment and Strategy (LCAS) should be considered in this regard, once finalized.

The BA notes that the LCAS identifies the following risk factors to lynx in this geographic area:

- Timber harvest and precommercial thinning that reduce denning or foraging habitat or converts habitat to less desirable tree species;

- Fire exclusion that changes the vegetation mosaic maintained by natural disturbance processes;
- Grazing by domestic livestock that reduces forage for lynx prey;
- Roads and winter recreation trails that facilitate access to historical lynx habitat by competitors;
- Legal and incidental trapping and shooting;
- Being hit by vehicles;
- Obstructions to lynx movements such as highways and private land development;

It is clear, then, that the FS must do more than follow its Forest Plans to protect lynx. Nonetheless, and in spite of the inadequate analysis population viability following adverse modification of habitat perpetuated by the Project, the North Butte Salvage Project BA concludes that the implementation of the proposed action would result in a determination of "may affect but not likely to adversely affect."

The [EA] and BA fail to fully demonstrate Project consistency with all LCAS Standards and guidelines. For example, the LCAS sets mandatory Standards that would modify or amend the Forest Plans—steps the LNF has thus far not accomplished. Important Programmatic Standards include:

Identify key linkage areas that may be important in providing landscape connectivity within and between geographic areas, across all ownerships. (p. 87)

Develop and implement a plan to protect key linkage areas on federal lands from activities that would create barriers to movement. Barriers could result from an accumulation of incremental projects, as opposed to any one project. (Id.)

Map and monitor the location and intensity of snow compacting activities that coincide with Lynx habitat, to facilitate future evaluation of effects on Lynx as information becomes available. (p. 82)

On federal lands in Lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU.

The EA fails to provide adequate maps of LAUs and habitat components along with areas of human activity as the LCAS requires, making it impossible for the public and decision maker to understand the impacts of motorized travel, as well as to understand impacts on habitat and connectivity of habitat. The BA lacks a genuine analysis of the full range of cumulative impacts of other activities. The EA and BA also fail to disclose the cumulative effects of livestock grazing on the grazing allotments in the project area.

The Programmatic BA's analysis of the ability of the Forest Plans, as 'amended' by the LCAS, to prevent a "taking" of the lynx is based upon the Forests' meeting management standards. As the Helena NF has not adequately shown that it is in compliance with its old growth standards, or that it even has

valid old growth standards, as detailed elsewhere in this appeal, the project BA and EA are not in compliance with the LCAS.

We also have to question the validity of the percentage habitat standards set by the LCAS itself. The Forest Service would be hard-pressed to find many Lynx Analysis Unit in the Northern Region—heavily logged or otherwise—that already don't meet these percentages. Basically, what these Standards accomplish is to validate the management status quo—the very situation that led to the listing of the lynx under the ESA.

Alliance has reviewed the statutory and regulatory requirements governing National Forest Management projects, as well as the relevant case law, and compiled a check-list of issues that must be included in the EIS for the Project in order for the Forest Service's analysis to comply with the law. Following the list of necessary elements, Alliance has also included a general narrative discussion on possible impacts of the Project, with accompanying citations to the relevant scientific literature. These references should be disclosed and discussed in the EIS for the Project.

I. NECESSARY ELEMENTS FOR PROJECT EIS:

Comment #28-A A. Disclose all Helena National Forest Plan requirements for logging/burning projects and explain how the Project complies with them;

Comment #28-B B. Disclose the acreages of past, current, and reasonably foreseeable logging, grazing, and road-building activities within the Project area;

Comment #28-C C. Solicit and disclose comments from the Montana Department of Fish, Wildlife, and Parks regarding the impact of the Project on wildlife habitat;

Comment #28-D D. Solicit and disclose comments from the Montana Department of Environmental Quality regarding the impact of the Project on water quality;

Comment #28-E E. Disclose if there are any WQLS streams in the project area and if TMDLs are completed;

Comment #28-F F. Disclose the biological assessment for the candidate, threatened, or endangered species with potential and/or actual habitat in the Project area;

Comment #28-G G. Disclose the biological evaluation for the sensitive and management indicator species with potential and/or actual habitat in the Project area;

Comment #28-H H. Disclose the snag densities in the Project area, and the method used to determine those densities;

Comment #28-I I. Disclose the current, during-project, and post-project road densities in the Project area;

Comment #28-J J. Disclose the Helena National Forest's record of compliance with state best management practices regarding stream sedimentation from ground-disturbing management activities;

Comment #28-K K. Disclose the Helena National Forest's record of compliance with its monitoring requirements as set forth in its Forest Plan;

Comment #28-L L. Disclose the Helena National Forest's record of compliance with the additional monitoring requirements set forth in previous DN/FONSIs and RODs on the Helena National Forest;

Comment M. Disclose the results of the field surveys for threatened, endangered, sensitive, and rare

Comment #28-A A. Disclose all Helena National Forest Plan requirements for logging/burning projects and explain how the Project complies with them;

#28-M plants in each of the proposed units;

Comment #28-N N. Disclose the level of current noxious weed infestations in the Project area and the cause of those infestations;

Comment #28-O O. Disclose the impact of the Project on noxious weed infestations and native plant communities;

Comment #28-P P. Disclose the amount of detrimental soil disturbance that currently exists in each proposed unit from previous logging and grazing activities;

Comment #28-Q Q. Disclose the expected amount of detrimental soil disturbance in each unit after ground disturbance and prior to any proposed mitigation/remediation;

Comment #28-R R. Disclose the expected amount of detrimental soil disturbance in each unit after proposed mitigation/remediation;

Comment #28-S S. Disclose the analytical data that supports proposed soil mitigation/remediation measures;

Comment #28-T T. Disclose the timeline for implementation;

Comment #28-U U. Disclose the funding source for non-commercial activities proposed;

Comment #28-V V. Disclose the current level of old growth forest in each third order drainage in the Project area;

Comment #28-W W. Disclose the method used to quantify old growth forest acreages and its rate of error based upon field review of its predictions;

Comment #28-X X. Disclose the historic levels of mature and old growth forest in the Project area;

Comment #28-Y Y. Disclose the level of mature and old growth forest necessary to sustain viable populations of dependent wildlife species in the area;

Comment #28-Z Z. Disclose the amount of mature and old growth forest that will remain after implementation;

Comment #28-AA AA. Disclose the amount of current habitat for old growth and mature forest dependent species in the Project area;

Comment #28-BB BB. Disclose the amount of habitat for old growth and mature forest dependent species that will remain after Project implementation;

Comment #28-CC CC. Disclose the method used to model old growth and mature forest dependent wildlife habitat acreages and its rate of error based upon field review of its predictions;

Comment #28-DD DD. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security currently available in the area;

Comment #28-EE EE. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security during Project implementation;

Comment #28-FF FF. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security after implementation;

Comment #28-GG GG. Disclose the method used to determine big game hiding cover, winter range, and security, and its rate of error as determined by field review;

Comment #28-HH HH. Disclose and address the concerns expressed by the ID Team in the draft Five-Year Review of the Forest Plan regarding the failure to monitor population trends of MIS, the inadequacy of the Forest Plan old growth standard, and the failure to compile data to establish a reliable inventory of sensitive species on the Forest;

Comment II. Disclose the actions being taken to reduce fuels on private lands adjacent to the Project

Comment #28-A A. Disclose all Helena National Forest Plan requirements for logging/burning projects and explain how the Project complies with them;

#28-II area and how those activities/or lack thereof will impact the efficacy of the activities proposed for this Project;

Comment #28-JJ JJ. Disclose the efficacy of the proposed activities at reducing wildfire risk and severity in the Project area in the future, including a two-year, five-year, ten-year, and 20-year projection;

Comment #28-KK KK. Disclose when and how the Helena National Forest made the decision to suppress natural wildfire in the Project area and replace natural fire with logging and prescribed burning;

Comment #28-LL LL. Disclose the cumulative impacts on the Forest-wide level of the Helena National Forest's policy decision to replace natural fire with logging and prescribed burning;

Comment #28-MM MM. Disclose how Project complies with the Roadless Rule;

Comment #28-NN NN. Disclose the impact of climate change on the efficacy of the proposed treatments;

Comment #28-OO OO. Disclose the impact of the proposed project on the carbon storage potential of the area;

Comment #28-PP PP. Disclose the baseline condition, and expected sedimentation during and after activities, for all streams in the area;

Comment #28-QQ 1-10 QQ. Disclose maps of the area that show the following elements:

1. Past, current, and reasonably foreseeable logging units in the Project area;
2. The cumulative effects of past, current, and reasonably foreseeable logging units;
3. Past, current, and reasonably foreseeable logging units in the Project area;
4. The cumulative effects of past, current, and reasonably foreseeable grazing;
5. Past, current, and reasonably foreseeable grazing allotments in the Project area;
6. Density of human residences within 1.5 miles from the Project unit boundaries;
7. Hiding cover in the Project area according to the Forest Plan definition;
8. Old growth forest in the Project area;
9. Big game security areas;
10. Moose winter range;

Comment #29 Does this project have a 404 permit from the Army Corp of Engineers to dredge and fill or harm a wetland? Please provide a map of all of the wetlands or wetland complexes. If they are not mapped nothing in the [EA] EIS ensures that wetlands won't be permanently converted to uplands and result in a net decrease in wetlands by dredging and filling when building temporary roads, skid trails or landing sites in wetlands. It is also a violation of NEPA, NFMA and the APA to not notify the public that the Forest Service does not have a 404 permit and is not following the Clean Water Act.

Weeds

Native plants are the foundation upon which the ecosystems of the Forest are built, providing forage and shelter for all native wildlife, bird and insect species, supporting the natural processes of the landscape, and providing the context within which the public find recreational and spiritual opportunities. All these uses or values of land are hindered or lost by conversion of native vegetation to invasive and noxious plants. The ecological threats posed by noxious weed infestations are so great that a former chief of the Forest Service called the invasion of noxious weeds "devastating" and a "biological disaster." Despite implementation of Forest Service "best management practices" (BMPs), noxious weed infestation on the Forest is getting worse and noxious weeds will likely overtake native plant populations if introduced into areas that are not yet infested. The Forest Service has recognized that the effects of noxious weed invasions may be irreversible. Even if weeds are eliminated with herbicide treatment, they may be replaced by other weeds, not by native plant species.

Comment #30

Invasive plant species, also called noxious weeds, are one of the greatest modern threats to biodiversity on earth. Noxious weeds cause harm because they displace native plants, resulting in a loss of diversity and a change in the structure of a plant community. By removing native vegetative cover, invasive plants like knapweed may increase sediment yield and surface runoff in an ecosystem. As well knapweed may alter organic matter distribution and nutrient through a greater ability to uptake phosphorus over some native species in grasslands. Weed colonization can alter fire behavior by increasing flammability: for example, cheatgrass, a widespread noxious weed on the Forest, cures early and leads to more frequent burning. Weed colonization can also deplete soil nutrients and change the physical structure of soils.

The Forest Service's own management activities are largely responsible for noxious weed infestations; in particular, logging, prescribed burns, and road construction and use create a risk of weed infestations. The introduction of logging equipment into the Forest creates and exacerbates noxious weed infestations. The removal of trees through logging can also facilitate the establishment of noxious weed infestations because of soil disturbance and the reduction of canopy closure In general, noxious weeds occur in old clearcuts and forest openings, but are rare in mature and old growth forests. Roads are often the first place new invader weeds are introduced. Vehicle traffic and soil disturbances from road construction and maintenance create ideal establishment conditions for weeds. Roads also provide obvious dispersal corridors. Roadsides throughout the project area are infested with noxious weeds. Once established along roadsides, invasive plants will likely spread into adjacent grasslands and forest openings.

Prescribed burning activities within the analysis area would likely cumulatively contribute to increases to noxious weed distribution and populations. As a disturbance process, fire has the potential to greatly exacerbate infestations of certain noxious weed species, depending on burn severity and habitat type (Fire Effects Information System 2004). Soil disturbance, such as that resulting from low and moderate burn severities from prescribed fire and fire suppression related disturbances (dozer lines, drop spots, etc.), provide optimum conditions for noxious weed invasion. Dry site vegetation types and road corridors are extremely vulnerable, especially where recent ground disturbance (timber management, road construction) has occurred. Units proposed for burning within project area may have closed forest service access roads (jammers) located within units. These units have the highest potential for noxious weed infestation and exacerbation through fire activities.

Comment #31 *Please provide an alternative that eliminates units that have noxious weeds present on roads within units from fire management proposals.*

Comment #32 *Please address the ecological, social and ascetic impact of current noxious weed infestations within the project area. Include an analysis of the impact of the actions proposed by this project on the long and short term spread of current and new noxious weed infestations. What treatment methods will be used to address growing noxious weed problems? What noxious weeds are currently and historically found within the project area? Please include a map of current noxious weed infestations which includes knapweed, Saint Johnswort, cheat grass, bull thistle, Canada thistle, hawkweed, hound's-tongue, oxeye daisy and all other Category 1, Category 2 and Category 3 weeds classified as noxious in the MONTANA COUNTY NOXIOUS WEED LIST.*

Comment #33 *State-listed Category 2 noxious weed species yellow and orange hawkweeds are recently established (within the last 5 to 10 years) in Montana and are rapidly expanding in established areas. They can invade undisturbed areas where native plant communities are intact. These species can persist in shaded conditions and often grow underneath shrubs making eradication very difficult. Their stoloniferous (growing at the surface or below ground) habit can create dense mats that can persist and spread to densities of 3500 plants per square mile (Thomas and Dale 1975). Are yellow and orange hawkweeds present within the project area?*

Comment #34 *Please address the cumulative, direct and indirect effects of the proposed project on weed introduction, spread and persistence that includes how weed infestations have been and will be influenced by the following management actions: road construction including new permanent and temporary roads, and skid trails proposed within this project; opening and decommissioning of roads represented on forest service maps; ground disturbance and traffic on forest service template roads, mining access routes, and private roads; removal of trees through commercial and pre-commercial logging and understory thinning; and prescribed burns. What open, gated, and decommissioned Forest Service roads within the project area proposed as haul routes have existent noxious weed populations and what methods will be used to assure that noxious weeds are not spread into the proposed action units?*

Noxious weeds are not eradicated with single herbicide treatments. A onetime application may kill an individual plant but dormant seeds in the ground can still sprout after herbicide treatment. Thus, herbicides must be used on consistent, repetitive schedules to be effective.

Comment #35 *What commitment to a long-term, consistent strategy of application is being proposed for each weed infested area within the proposed action area? What long term monitoring of weed populations is proposed?*

Comment #36

When areas treated with herbicides are reseeded on national forest land, they are usually reseeded with exotic grasses, not native plant species.
What native plant restoration activities will be implemented in areas disturbed by the actions proposed in this project? Will disturbed areas including road corridors, skid trails, and burn units be planted or reseeded with native plant species?

Comment #37

The scientific and managerial consensus is that prevention is the most effective way to manage noxious weeds. The Forest Service concedes that preventing the introduction of weeds into uninfested areas is "the most critical component of a weed management program." The Forest Service's national management strategy for noxious weeds also recommends "develop[ing] and implement[ing] forest plan standards . . . ." and recognizes that the cheapest and most effective solution is prevention. *Which units within the project area currently have no noxious weed populations within their boundaries?*

Comment #38

What minimum standards are in the Helena National Forest Plan to address noxious weed infestations?

Comment #39

Please include an alternative in the DEIS that includes land management standards that will prevent new weed infestations by addressing the causes of weed infestation. The failure to include preventive standards violates NFMA because the Forest Service is not ensuring the protection of soils and native plant communities. Additionally, the omission of an EIS alternative that includes preventive measures would violate NEPA because the Forest Service would fail to consider a reasonable alternative.

Rare Plants

The ESA requires that the Forest Service conserve endangered and threatened species of plants as well as animals. In addition to plants protected under the ESA, the Forest Service identifies species for which population viability is a concern as "sensitive species" designated by the Regional Forester (FSM 2670.44). The response of each of the sensitive plant species to management activity varies by species, and in some cases, is not fully known. Local native vegetation has evolved with and is adapted to the climate, soils, and natural processes such as fire, insect and disease infestations, and windthrow. Any management or lack of management that causes these natural processes to be altered may have impacts on native vegetation, including threatened and sensitive plants. Herbicide application – intended to eradicate invasive plants – also results in a loss of native plant diversity because herbicides kill native plants as well as invasive plants. Although native species have evolved and adapted to natural disturbance such as fire on the landscape, fires primarily occur in mid to late summer season, when annual plants have flowered and set seed. Following fall fires, perennial root-stocks remain underground and plants emerge in the spring. Spring and early summer burns could negatively impact emerging vegetation and destroy annual plant seed.

Comment #40 *What threatened, endangered, rare and sensitive plant species and habitat are located within the proposed project area?*

Comment #41 *What standards will be used to protect threatened, rare, sensitive and culturally important plant species and their habitats from the management actions proposed in this project?*

Comment #42 *Describe the potential direct and indirect effect of the proposed management actions on rare plants and their habitat.*

Comment #43 Will prescribed burning occur in the spring and early summer; please give justifications for this decision using current scientific studies as reference.

Whitebark Pine

Lit Reviews Not all ecosystems or all Rocky Mountain landscapes have experienced the impacts of fire exclusion. In some wilderness areas, where in recent decades natural fires have been allowed to burn, there have not been major shifts in vegetation composition and structure (Keane et al. 2002). In some alpine ecosystems, fire was never an important ecological factor. In some upper subalpine ecosystems, fires were important, but their rate of occurrence was too low to have been significantly altered by the relatively short period of fire suppression (Keane et al. 2002). For example, the last 70 to 80 years of fire suppression have not had much influence on subalpine landscapes with fire intervals of 200 to several hundred years (Romme and Despain). Consequently, it is unlikely that fire exclusion has yet to significantly alter stand conditions or forest health within Rocky Mountain subalpine ecosystems.

Whitebark pine seedlings, saplings and mature trees, present in subalpine forests proposed for burning, would experience mortality from project activity. Whitebark pine is fire intolerant (thin bark). Fire favors whitebark pine regeneration (through canopy opening and reducing competing vegetation) only in the presence of **adequate seed source** and dispersal mechanisms (Clarks Nutcracker or humans planting whitebark pine seedlings).

White pine blister rust, an introduced disease, has caused rapid mortality of whitebark pine over the last 30 to 60 years. Keane and Arno (1993) reported that 42 percent of whitebark pine in western Montana had died in the previous 20 years with 89 percent of remaining trees being infected with blister rust. The ability of whitebark pine to reproduce naturally is strongly affected by blister rust infection; the rust kills branches in the upper cone bearing crown, effectively ending seed production.

Montana is currently experiencing a mountain pine beetle epidemic. Mountain pine beetle prefer large, older whitebark pine, which are the major cone producers. In some areas the few remaining whitebark

that show the potential for blister rust resistance are being attacked and killed by mountain pine beetles, thus accelerating the loss of key mature cone-bearing trees.

Whitebark pine seedlings and saplings are very likely present in the subalpine forests proposed for burning and logging. In the absence of fire, this naturally occurring whitebark pine regeneration would continue to function as an important part of the subalpine ecosystem. Since 2005, rust resistant seed sources have been identified in the Northern Rockies (Mahalovich et al 2006). Due to the severity of blister rust infection within the region, natural whitebark pine regeneration in the project area is prospective rust resistant stock.

Although prescribed burning can be useful to reduce areas of high-density subalpine fir and spruce and can create favorable ecological conditions for whitebark pine regeneration and growth, in the absence of sufficient seed source for natural regeneration maintaining the viability and function of whitebark pine would not be achieved through burning. Planting of rust-resistant seedlings would likely not be sufficient to replace whitebark pine lost to fire activities.

Comment #44 *What surveys have been conducted to determine presence and abundance of whitebark pine re-generation? If whitebark pine seedlings and saplings are present, what measures will be taken to protect them?*

Comment #45 *Please include an alternative that excludes burning in the presence of whitebark pine regeneration (consider 'Daylighting' seedlings and saplings as an alternative restoration method).*

Comment #46 *Will restoration efforts include planting whitebark pine? Will planted seedling be of rust-resistant stock? Is rust resistant stock available? Would enough seedlings be planted to replace whitebark pine lost to fire activities?*

Comment #47 *Have white pine blister rust surveys been accomplished? What is the severity of white pine blister rust in proposed action areas?*

Project Area

Comment #48 Since the project's goals are to reduce the chances that fire will destroy private structures, and harm people, the current fuel/fire hazard situation on land of all ownerships within the WUI (at least the WUI that's relevant to this area) must be displayed on a map. More importantly, the fuel/fire hazard situation post-project on land of all ownerships within the WUI must also be displayed on a map. Based on this mapping of current and projected conditions, please accurately disclose the threats to private structures and people under those scenarios, for all alternatives. It must be discernable why some areas are included for treatment and others are not.

Comment #49 The FS must have a detailed long-term program for maintaining the allegedly safer conditions, including how areas will be treated in the future following proposed treatments, or how areas not needing treatment now will be treated as the need arises. The public at large and private landowners must know what the scale of the long-term efforts must be, including the amount of funding necessary, and the likelihood based on realistic funding scenarios for such a program to be adequately and timely funded.

Comment #50 The FS must assess the fuel and fire risk situation across land ownership boundaries to understand, and disclose to the public, the likely fire scenarios across the area's landscape. Only then can the context of your proposal be adequately weighed on its merits and evaluated on its merits.

The FS (Cohen, 1999) reviewed current scientific evidence and policy directives on the issue of fire in the wildland/urban interface and recommended an alternative focus on structure ignitability rather than extensive wildland fuel management:

> The congruence of research findings from different analytical methods suggests that home ignitability is the principal cause of home losses during wildland fires… Home ignitability also dictates that effective mitigating actions focus on the home and its immediate surroundings rather than on extensive wildland fuel management.

> [Research shows] that effective fuel modification for reducing potential WUI fire losses need only occur within a few tens of meters from a home, not hundreds of meters or more from a home. This research indicates that home losses can be effectively reduced by focusing mitigation efforts on the structure and its immediate

> surroundings. Those characteristics of a structure's materials and design and the surrounding flammables that determine the potential for a home to ignite during wildland fires (or any fires outside the home) will, hereafter, be referred to as home ignitability.

> The evidence suggests that wildland fuel reduction for reducing home losses may be inefficient and ineffective. Inefficient because wildland fuel reduction for several hundred meters or more around homes is greater than necessary for reducing ignitions from flames. Ineffective because it does not sufficiently reduce firebrand ignitions (Cohen, 1999)

That research also recognizes "the imperative to separate the problem of the wildland fire threat to homes from the problem of ecosystem sustainability due to changes in wildland fuels" (Ibid).

Comment #51 Please consider that thinning can result in faster fire spread than in the unthinned stand.

Graham, et al., 1999a point out that fire modeling indicates:

> For example, the 20-foot wind speed[3] must exceed 50 miles per hour for midflame wind speeds to reach 5 miles per hour within a dense Stand (0.1 adjustment factor). In contrast, in an open stand (0.3 adjustment factor), the same midflame wind speeds would occur at only a 16-mile-per-hour wind at 20 feet.

Graham, et al., 1999a also state:

> Depending on the type, intensity, and extent of thinning, or other treatment applied, fire behavior can be improved (less severe and intense) or exacerbated." … Fire intensity in thinned stands is greatly reduced if thinning is accompanied by reducing the surface fuels created by the cuttings. Fire has been successfully used to treat fuels and decrease the effects of wildfires especially in climax ponderosa pine forests (Deeming 1990; Wagel and Eakle 1979; Weaver 1955, 1957). In contrast, extensive amounts of untreated logging slash contributed to the devastating fires during the late 1800s and early 1900s in the inland and Pacific Northwest forests.

In their conclusion, Graham, et al., 1999a state:

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[3] Velocity of the wind 20 feet above the vegetation, in this case tree tops.

> Depending on intensity, thinning from below and possibly free thinning can most effectively alter fire behavior by reducing crown bulk density, increasing crown base height, and changing species composition to lighter crowned and fire-adapted species. Such intermediate treatments can reduce the severity and intensity of wildfires for a given set of physical and weather variables. But crown and selection thinnings would not reduce crown fire potential.

Comment #51 continued Since the scientific literature suggests that your thinning activities will actually increase the rate of fire spread, you need to reconcile such findings with the contradictory assumptions expressed in your scoping letter.

Also, Hessburg and Lemkuhl (1999) suggest that prescribed burning alone can be utilized in many cases—possibly here—where managers typically assume mechanical fuel reductions must be used.

Comment #52 The FS must disclose its transparent, well thought-out long-term strategy for old-growth associated wildlife species viability in a properly-defined cumulative effects analysis area.

Comment #53 Even though ecological restoration is not the project's priority, the NEPA document must at least identify all the existing ecological liabilities caused by past management actions. This includes poorly located or poorly maintained roads, high-risk fuel situations caused by earlier vegetation manipulation projects, wildlife security problems by open motorized roads and trails plus those that are closed but violated—and include all those impacts in the analyses.

Any desire to keep a road in the project area WUI must be in harmony with the alleged priority goals (again, to reduce the chances that fire will destroy private structures and harm people), not driven by timber production goals. The analysis must show how all roads will in fact be in harmony with the priority goals.

Comment #54 Proposed activities could artificialize the forest ecosystem. Lodgepole pine is particularly subject to blowdown, once thinned. And any forest condition that is maintained through mechanical manipulation is not maintaining ecosystem function. The proposed management activities would not be integrated well with the processes that naturally shaped the ecosystem and resulted in a range of natural structural conditions. Thus, the need for standards guiding both the delineation of zones where artificializing fuel reduction actions may take place, and that also set snag and down woody debris retention amounts.

Veblen (2003) questions the premises the FS often puts forth to justify "uncharacteristic vegetation patterns" discussions, that being to take management activities to alter vegetation patterns in response to fire suppression:

The premise behind many projects aimed at wildfire hazard reduction and ecological restoration in forests of the western United States is the idea that unnatural fuel buildup has resulted from suppression of formerly frequent fires. This premise and its implications need to be critically evaluated by conducting area-specific research in the forest ecosystems targeted for fuels or ecological restoration projects. Fire regime researchers need to acknowledge the limitations of fire history methodology and avoid over-reliance on summary fire statistics such as mean fire interval and rotation period. While fire regime research is vitally important for informing decisions in the areas of wildfire hazard mitigation and ecological restoration, there is much need for improving the way researchers communicate their results to managers and the way managers use this information.

Comment #55 Since disruption of fire cycles is identified, the HNF needs to take a hard look at its fire policies. The development of approved fire management plans in compliance with the Federal Wildland Fire Policy was the number one policy objective intended for immediate implementation in the Implementation Action Plan Report for the Federal Wildland Fire Management Policy and Program Review. In general, the FS lags far behind other federal land management agencies that have already invested considerable amounts of time, money, and resources to implement the Fire Policy. Continued mismanagement of national forest lands and FS refusal to fully implement the Fire Policy puts wildland firefighters at risk if and when they are dispatched to wildfires. This is a programmatic issue, one that the current Forest Plan does not adequately consider. Please see Ament (1997) as comments on this proposal, in terms of fire policy and Forest Planning.

Many adverse consequences to soil, ecological processes, wildlife, and other elements of the natural environment are associated with thinning. (Ercelawn, 1999; Ercelawn, 2000.) For example: “Salvage or thinning operations that remove dead or decayed trees or coarse woody debris on the ground will reduce the availability of forest structures used by fishers and lynx.” (Bull et al., 2001.)

Comment #56

For every project proposal, it is important that the results of past monitoring be incorporated into planning. All Interdisciplinary Team Members should be familiar with the results of all past monitoring pertinent to the project area, and any deficiencies of monitoring that have been previously committed to. For that reason, we expect that the following be included in the NEPA documents or project files:

- A list of all past projects (completed or ongoing) implemented in the proposed project area watersheds.
- The results of all monitoring done in the project area as committed to in the NEPA documents of those past projects.
- The results of all monitoring done in the proposed project area as a part of the Forest Plan monitoring and evaluation effort.
- A description of any monitoring, specified in those past project NEPA documents or the Forest Plan for proposed project area, which has yet to be gathered and/or reported.

Comment #57

Please disclose the names of all other past projects (implemented during the life of the Forest Plan) whose analysis area(s) encompass the areas to be "treated" under this proposal.

Comment #58

Please disclose if the FS has performed all of the monitoring and mitigation required or recommended in any NEPA documents, and the results of the monitoring.

Comment #59

For the proposal to be consistent with the Forest Plan, enough habitat for viable populations of old-growth dependent wildlife species is needed over the landscape. 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 projects simultaneously across the HNF makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992). Also, temporal considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has never been done by the HNF. It is also of paramount importance to monitor population 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).

The U.S. District Court ruled in Native Ecosystems Council vs. Kimbell on the Keystone Quartz project that the Forest Service presented no hard data to support or demonstrate the biological impact on old-growth species viability across the forest of further reducing Douglas-fir old-growth habitat below minimum forest plan standards, which themselves may be inadequate in light of more recent scientific information. Species in the Northern Region, including the HNF, thought to prefer old-growth habitat for breeding or feeding include northern goshawk, flammulated owl, pileated woodpecker, black-backed woodpecker (after wildfire or beetle epidemic), fisher, marten, Canada lynx, and wolverine.

For the Helena N.F., sensitive old-growth dependent species include the northern goshawk and flammulated owl. According to official FS policy, the HNF "must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by the forest plan or a proposed project." FSM 2670.45. These strategies would address the forest-wide and range-wide conditions for the affected species, allowing site-specific viability analysis to be tiered to the forest-wide viability analysis, and would establish quantifiable objectives for the affected species. These strategies must be adopted prior to implementation of projects that would adversely impact sensitive species habitat. FSM 2622.01, 2670.45.

Comment #60

Please demonstrate that this project will leave enough snags to follow the Forest Plan requirements and the requirements of sensitive old growth species such as flammulated owls and goshawks. Loggers are required to follow OSHA safety standards. Will these standards require snags to be cut down? After snags are cut down for safety for OSHA requirements will there still be enough snags left for old growth sensitive species?

Specifically how will the Stonewall Project affect Flammulated owls, cavity-nesters usually associated with mature stands of ponderosa pine and Douglas-fir? Among other habitat characteristics, flammulated owls benefit from an abundance of large snags and a relatively dense under-story. The flammulated owl is a sensitive species in Region One, and is largely dependent on old ponderosa pine forests. According to a 2002 Region-wide assessment, not referenced in the 2003 FEIS for the Project, such forests only occur at 12-16% of their former, pre-fire suppression/pre-logging (that is, "historic") levels, and thus species viability has been determined to be at risk. The Northern Region also recognizes that its strategy for restoring habitat for the flammulated owl and found in the Island South project that "in no way guarantees that flammulated owls will be restored to viable levels."

Snag densities recommended by experts to support cavity-nesting birds range from 2.1 to 11 snags per acre of greater than 9" dbh. Please note that the fact that more recent science has called into question the lower snag densities cited in the earlier research, and the more recent science implies that about 4 snags per acre may be the minimum required to insure viability.

Comment #61

The Project is also designed to reduce under-story density through thinning. What surveys has the HNF specifically designed to detect flammulated owls? The FS has not developed a conservation strategy for the flammulated owl in the HNF, or in the Northern Rockies. Absent an appropriate landscape management strategy for insuring their viability, based upon the best available science, it is arbitrary and capricious to dismiss potential impacts on the ground where the FS has failed to conduct the kind of comprehensive surveys that would reveal their presence.

This convenient excuse for not protecting for a species that is becoming exceedingly rare, a strategy of managing for extinction (since protection premised on detection affords greatest protection to the species that least need it) has been condemned by the FS's own leading expert in the northern region, Mike Hillis:

> With the exception of the Spotted Owl…, the U.S. Forest Service has not given much emphasis to owl management. This is contrary to the National Forest Management Act of 1976 (NFMA) which mandates that all wildlife species be managed for viable populations. However, with over 500 vertebrate species this would be difficult for any organization. Recognizing the absence of detailed information on owl habitat, the apparent association of owls with snags, mature, and old-growth timber (both rapidly

> declining), it seems inconsistent that the U.S. Forest Service has placed little emphasis on owl management. One might conclude that the agency's painful experiences with the Spotted Owl in Oregon and Washington have evolved into a 'hear no evil, see no evil' approach for other forest owls as well.

Holt and Hillis, "Current Status and Habitat Associations of Forest Owls in Western Montana" (1987).

State-of-the-art conservation biology and the principles that underlie the agency's policy of "ecosystem management" dictate an increasing focus on the landscape-scale concept and design of large biological reserves accompanied by buffer zones and habitat connectors as the most effective (and perhaps only) way to preserve wildlife diversity and viability (Noss, 1993).

The FS has stated: "Well distributed habitat is the amount and location of required habitat which assure that individuals from demes,[4] distributed throughout the population's existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible." (Mealey 1983.)

[4]Subpopulations.

Comment #62

The FS has acknowledged that viability is not merely a project area consideration, that the scale of analysis must be broader:

> Population viability analysis is not plausible or logical at the project level such as the scale of the Dry Fork Vegetation and Recreation Restoration EA. Distributions of common wildlife species as well as species at risk encompass much larger areas than typical project areas and in most cases larger than National Forest boundaries. No wildlife species that presently occupy the project area are at such low numbers that potential effects to individuals would jeopardize species viability. No actions proposed under the preferred alternative would conceivably lead to loss of population viability. (Lewis and Clark NF, Dry Fork EA Appendix D at p. 9.)

The FS should firmly establish that the species that exist, or historically are believed to have been present in the analysis area are still part of viable populations. The analysis must cover a large enough area to include a cumulative effects analysis area that would include truly viable populations. Analysis must identify viable populations of MIS, TES, at-risk, focal, and demand species of which the individuals in the analysis area are members in order to sustain viable populations. Since Forest Plan monitoring efforts have failed in this regard, it must be a priority for project analyses. Identification of viable populations is something that must be done at a specific geographic scale.

Comment #63

Unfortunately, region-wide the FS has failed to meet Forest Plan old-growth standards, does not keep accurate old-growth inventories, and has not monitored population trends in response to management activities as required by Forest Plans and NFMA (Juel, 2003).

Please disclose how stands to be treated compare to Forest Plan or Regional old-growth criteria. In order to disclose such information, please provide all the details, in plain language, of these areas' forest characteristics (the various tree components' species, age and diameter of the various tree components, canopy closure, snag density by size class, amounts of down logs, understory composition, etc.).

Comment #64

Since almost all of the proposed project is within management area 20 (MA-20) which is to managed to be maintain and enhance grizzly bear habitat, please show how this project will benefit grizzlies bears and how it will negatively impact them.

Comment #65

Please do the same for lynx.

Comment #66

Please examine how this project will affect all ESA listed, MIS and sensitive species.

Comment #67

One of the biggest problems with the FS's failure to deal forthrightly with the noxious weed problem on a forest wide basis is that the long-term costs are never adequately disclosed or analyzed. The public is expected to continuously foot the bill for noxious weed treatments—the need for which increases yearly as the HNF continues the large-scale propagation of weeds, and fails to monitor the effectiveness of all its noxious weed treatment plans to date. There is no guarantee that the money needed for the present management direction will be supplied by Congress, no guarantee that this amount of money will effectively stem the growing tide of noxious weed invasions, no accurate analysis of the costs of the necessary post-treatment monitoring, and certainly no genuine analysis of the long-term costs beyond those incurred by site specific weed control actions.

Comment #68

Our goals for the area include fully functioning stream ecosystems that include healthy, resilient populations of native trout. The highest priority management actions in the project area are those that remove impediments to natural recovery. We request the FS design a restoration/access management plan for project area streams that will achieve recovery goals. The task of management should be the reversal of artificial legacies to allow restoration of natural, self-sustaining ecosystem processes. If natural disturbance patterns are the best way to maintain or restore desired ecosystem values, then nature should be able to accomplish this task very well without human intervention (Frissell and Bayles, 1996).

Comment #69

Please utilize the NEPA process to clarify any roadless boundary issues. It is not adequate to merely accept previous, often arbitrary roadless inventories—unroaded areas adjacent to inventoried areas were often left out. Additionally, there is a lot of public support for adding unroaded areas as small as 1,000 acres in size to the roadless inventory.

Comment #70

We request a careful analysis of the impacts to fisheries and water quality, including considerations of sedimentation, increases in peak flow, channel stability, risk of rain-on-snow events, and increases in stream water temperature.

Comment #71

Please disclose the locations of seeps, springs, bogs and other sensitive wet areas, and the effects on these areas of the project activities.

Comment #72 Where livestock are permitted to graze, we ask that you assess the present condition and continue to monitor the impacts of grazing activities upon vegetation diversity, soil compaction, stream bank stability and subsequent sedimentation.

Comment #73 Please disclose in the NEPA document the results of up-to-date monitoring of fish habitat and watershed conditions and how this project will affect the fish in the project area.

Comment #74 It is extremely important the FS disclose the environmental baseline for watersheds. Generally, this means their condition before development or resource exploitation was initiated. For example, the baseline condition of a stream [This] means the habitat conditions for fish and other aquatic species prior to the impacts of road building, logging, livestock grazing, etc. Therefore, proper disclosure of baseline conditions would mean estimates of stream stability, pool frequency conditions, and water temperature range—essentially the values of Riparian Management Objectives along with such parameters as sediment levels. When such information is provided, comparison with the current conditions (after impacts of development) will aid in the assessment of cumulative effects of all alternatives.

Prescribed fires and mechanical treatments may adversely affect soil productivity. NFMA requires the FS to "not allow significant or permanent impairment of the productivity of the land." [36 C.F.R. § 219.27(a)(1).] NFMA requires the Forest Service to "ensure that timber will be harvested from National Forest System lands only where—soil, slope, or other watershed conditions will not be irreversibly damaged." [16 U.S.C. 1604 (g)(3)(E).]

Lit Reviews The Sheep Creek Salvage FEIS (USDA Forest Service, 2005a) states at p. 173:

Noxious weed presence may lead to physical and biological changes in soil. Organic matter distribution and nutrient flux may change dramatically with noxious weed invasion. Spotted knapweed (Centaurea biebersteinii D.C.) impacts phosphorus levels at sites (LeJeune and Seastedt, 2001) and can hinder growth of other species with allelopathic mechanism. Specific to spotted knapweed, these traits can ultimately limit native species' ability to compete and can have direct impacts on species diversity (Tyser and Key 1988, Ridenour and Callaway 2001).

Comment #75 Please disclose how the productivity of the land been affected in the project area and forestwide due to noxious weed infestations, and how that situation is expected to change in the coming years and decades.

Harvey et al., 1994 state:

> The ...descriptions of microbial structures and processes suggest that they are likely to provide highly critical conduits for the input and movement of materials within soil and between the soil and the plant. Nitrogen and carbon have been mentioned and are probably the most important. Although the movement and cycling of many others are mediated by microbes, sulfur phosphorus, and iron compounds are important examples.
>
> The relation between forest soil microbes and N is striking. Virtually all N in eastside forest ecosystems is biologically fixed by microbes... Most forests, particularly in the inland West, are likely to be limited at some time during their development by supplies of plant-available N. Thus, to manage forest growth, we must manage the microbes that add most of the N and that make N available for subsequent plant uptake. (Internal citations omitted.)

Lacy, 2001 examines the importance of soils for ecosystem functioning and points out the failure of most regulatory mechanisms to adequately address the soils issue. From the Abstract:

> Soil is a critical component to nearly every ecosystem in the world, sustaining life in a variety of ways—from production of biomass to filtering, buffering and transformation of water and nutrients. While there are dozens of federal environmental laws protecting and addressing a wide range of natural resources and issues of environmental quality, there is a significant gap in the protection of the soil resource. Despite the critical importance of maintaining healthy and sustaining soils, conservation of the soil resource on public lands

> is generally relegated to a diminished land management priority. Countless activities, including livestock grazing, recreation, road building, logging, and mining, degrade soils on public lands. This article examines the roots of soil law in the United States and the handful of soil-related provisions buried in various public land and natural resource laws, finding that the lack of a public lands soil law leaves the soil resource under protected and exposed to significant harm. To remedy this regulatory gap, this article sketches the framework for a positive public lands soil protection law. This article concludes that because soils are critically important building blocks for nearly every ecosystem on earth, an holistic approach to natural resources protection requires that soils be protected to avoid undermining much of the legal protection afforded to other natural resources.

The article goes on:

> Countless activities, including livestock grazing, recreation, road building, logging, mining, and irrigation degrade soils on public lands. Because there are no laws that directly address and protect soils on the public lands, consideration of soils in land use planning is usually only in the form of vaguely conceived or discretionary guidelines and monitoring requirements. This is a major gap in the effort to provide ecosystem-level protection for natural resources.

> The rise of an "ecosystem approach" in environmental and natural resources law is one of the most significant aspects of the continuing evolution of this area of law and policy. One writer has observed that there is a
>
> > fundamental change occurring in the field of environmental protection, from a narrow focus on individual sources of harm to a more holistic focus on entire ecosystems, including the multiple human sources of harm within ecosystems, and the complex social context of laws, political boundaries, and economic institutions in which those sources exist.
>
> As federal agencies focus increasingly on addressing environmental protection from an holistic perspective under the current regime of environmental laws, a significant gap remains in the federal statutory scheme: protection of soils as a discrete and important natural resource. Because soils are essential building blocks at the core of nearly every ecosystem on earth, and because soils are critical to the health of so many other natural resources—including, at the broadest level, water, air, and vegetation—they should be protected at a level at least as significant as other natural resources. Federal soil law (such as it is) is woefully inadequate as it currently stands. It is a missing link in the effort to protect the natural world at a meaningful and effective ecosystem level.

> … This analysis concludes that the lack of a public lands soil law leaves the soil resource under-protected and exposed to significant harm, and emasculates the environmental protections afforded to other natural resources.

(Emphasis added.) The problems Lacy (2001) identifies of regulatory mechanisms exist in Regional and Forest-level standards and other guidance applicable for the proposed project.

Comment #76 Please provide estimates of current detrimental disturbance in all previously established activity areas in the watersheds affected by the proposal.

Comment #77 Please disclose the link between current and cumulative soil disturbance in project area watersheds to the current and cumulative impacts on water quantity and quality. Please disclose if there are any WQLS streams or TMDL streams in the project area.

Comment #78 Please disclose measures of, or provide scientifically sound estimates of, detrimental soil disturbance or soil productivity losses (erosion, compaction, displacement, noxious weed spread) attributable to off-road vehicle use.

Comment #79 Please disclose the results monitoring of weed treatments on the HNF that have been projected to significantly reduce noxious weed populations over time, or prevent spread. This is an ongoing issue of land productivity.

Comment #80 Please disclose how the proposed "treatments" would be consistent with Graham, et al., 1994 recommendations for fine and coarse woody debris, a necessary consideration for sustaining long-term soil productivity.

Comment #81

It has been well-established that site-specific Biological Evaluations (BEs) or Biological Assessments (BAs) must be prepared for all actions such as this. Further, the Forest Service Manual requires that BEs/BAs consider cumulative effects. The Forest Service Manual states that project BEs/BAs must contain "a discussion of cumulative effects resulting from the planned project in relationship to existing conditions and other related projects" [FSM 2672.42(4)]. "Existing conditions" obviously are the current conditions of the resources as a result of past actions.

Comment #82

Published scientific reports indicate that climate change will be exacerbated by logging due to the loss of carbon storage. Additionally, published scientific reports indicate 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 Stonewall restoration and Fuels Project may have a significant adverse effect on the environment, and the latter undermines the central underlying purpose of the Project. Therefore, the Forest Service must candidly disclose, consider, and fully discuss the published scientific papers discussing climate change in these two contexts. At least the Forest Service should discuss the following studies:

Lit Reviews

- Depro, Brooks M., Brian C. Murray, Ralph J. Alig, and Alyssa Shanks. 2008. Public land, timber harvests, and climate mitigation: quantifying carbon sequestration potential on U.S. public timberlands. Forest Ecology and Management 255: 1122-1134.

- Harmon, Mark E. 2001. Carbon sequestration in forests: addressing the scale question. Journal of Forestry 99:4: 24-29.

- Harmon, Mark E, William K. Ferrell, and Jerry F. Franklin. 1990. Effects of carbon storage of conversion of old-growth forest to young forests. Science 247: 4943: 699-702

- Harmon, Mark E, and Barbara Marks. 2002. Effects of silvicultural practices on carbon stores in Douglas-fir – western hemlock forests in the Pacific Northwest, USA: results from a simulation model. Canadian Journal of Forest Research 32: 863-877.

- Homann, Peter S., Mark Harmon, Suzanne Remillard, and Erica A.H. Smithwick. 2005. What the soil reveals: potential total ecosystem C stores of the Pacific Northwest region, USA. Forest Ecology and Management 220: 270-283.

- McKenzie, Donald, Ze'ev Gedalof, David L. Peterson, and Philip Mote. 2004. Climatic change, wildfire, and conservation. Conservation Biology 18:4: 890 - 902.

Comment #83 Please evaluate all of the costs and benefits of this project. Please include a detailed list of all the costs to the agency and the public.

Comment #84 The EA claims that an alternative with no temporary roads was not developed because it would not be economically viable (EA at 2-7). If all of the action alternatives lose money how is that economically viable?

They certainly aren't for taxpayers.

Comment #85 Thank you for your attention to these concerns. Please keep us on your list to receive further mailings on the proposal.

Sincerely,

/s/

And on behalf of:

Michael Garrity

Alliance for the Wild Rockies

P.O. Box 505
Helena, Montana 59624
406-459-5936

Sara Johnson

Native Ecosystems Council

P.O. Box 125
Willow Creek, MT 59760

And for

Steve Kelly, Executive Director
Montana Ecosystems Defense Council
P.O. Box 4641
Bozeman, MT 59772
Tel: (406) 586-4421

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06/11/2013 Garrity, Johnson, Kelly Letter

Comment #	Response	Topic
1	An environmental impact statement is being prepared for the Stonewall Vegetation Project. Current watershed and fish population conditions are disclosed in the DEIS as well as project effects to them. Salvage of dead trees in the RHCAs is permitted by INFISH; design criteria to protect floodplains and allow for large woody debris recruitment to streams are included in the project design. Improvements to the project area are planned with the project and include culvert upgrades and road maintenance to reduce erosion and sediment input to streams.	NEPA/Fisheries
2	A biological assessment for Section 7 consultation with the Fish and Wildlife Service will be prepared prior to signing of a Record of Decision (ROD). A viability assessment for western cutthroat trout is included in the DEIS.	Fisheries – bull trout FWS
3	Effects of proposed activities, which include activities identified by the SW Crown of the Continent, are discussed in chapter 3 of the FEIS and in the project Biological Assessment (BA).	Wildlife - grizzly
4	A project specific Biological Assessment (BA) that evaluates effects to threatened and endangered species including grizzly will be prepared prior to signing of a Record of Decision (ROD). Should the BA document adverse effect on listed species, formal consultation would be initiated. The BA and concurrence letter from the US Fish and Wildlife Service will be included in the project record.	Wildlife - grizzly
5	While the DEIS recognized that open road density would increase during implementation, it did not provide specific road density changes. Changes in open and total road density during project implementation have been added to the FEIS and the moving windows analysis has been updated with this information. Effects to grizzly have been updated, including changes in TMRD, OMRD and Core are discussed in the wildlife section of chapter 3 of the FEIS.	Wildlife – road density
6	See response to comment 4.	Wildlife - grizzly
7-1	The National Fire Plan and the Tri County Fire Working Group Regional Community Wildfire Protection Plan are outside the scope of this analysis. This project analysis tiers to the FEIS completed for the Helena National Forest, Forest Plan as amended, and incorporates by reference the Forest Plan (see Forest Plan II/33-34, III/35, Appendix R for fire management). The Forest Plan, as amended, provides the direction for land management activities. Actions proposed with this project to reduce fuels within the wildland urban interface areas were designed to address Forest Plan direction, as amended.	NEPA

Comment #	Response	Topic
7-2	See response to comment 7-1	NEPA
7-3	Figure 44 displays the fire risk ratings for the WUI with the project area. Providing details of home locations on lands adjacent to National Forest System lands is outside the scope of this analysis.	Fire/Fuels – WUI map
7-4	See response to comment 7-1	NEPA
7-5	US Fish and Wildlife consultation regarding the National Fire Plan and the Tri County Fire Working Group Regional Community Wildfire Protection Plan are outside the scope of this analysis. Part of the analysis process for this analysis is consultation with the US Fish and Wildlife Service.	NEPA
7-6	Consultation pertaining to the Forest Plan level NRLMD is outside the scope of this project. The Forest Service is completing project specific consultation with the USFWS for effects to listed species. Updated analysis information has been added to the threatened and endangered section in the wildlife section of chapter 3 of the FEIS. Upon further consideration of additional information since release of the DEIS, the project analysis for lynx has been updated. The updated analysis resulted in a May effect – likely to adversely affect determination for lynx. The FS is conducting formal consultation with the United States Fish and Wildlife Service and the Biological Opinion will address lynx and lynx critical habitat.	Wildlife – lynx
7-7	The revision of the Helena Forest Plan is beyond the scope of the Stonewall Vegetation Project analysis. Noxious weeds are discussed in the DEIS (main discussion at pages 493-502). Forest plan direction and other relevant information have been considered and incorporated into project design features to address areas of concern (pages 7, 46-47).	NEPA
7-8	As noted in the noxious weeds analysis ground disturbance increases the susceptibility of an area to weed invasion (DEIS pg 502). As noted in the soils analysis, (DEIS pg 517) "…forestry practices have generally become more effective in limiting the amount of area affected by detrimental soil disturbance to comply with the Forest Plan measure of soil variability(i.e. 20%) since adoption of forestry Best Management Practices (BMPs) in 1988.	Noxious weeds
7-9	As noted in the noxious weeds analysis (DEIS pg 496) a variety of factors contribute to the spread of noxious weeds. Roads are a major factor because the soil disturbance involved during construction increases the susceptibility of weed invasion and because roads become a vector for spread of existing infestations and the introduction of new weeds as seeds and plant parts are carried on vehicles.	Noxious weeds
7-10	Creating a Forest Plan amendment to include binding legal standards that address noxious weeds is beyond the scope of this analysis. Forest plan direction, the *Final Environmental Impact Statement: Helena National Forest Noxious Weed Treatment*	Noxious weeds/NEPA

Comment #	Response	Topic
	Project and accompanying *Record of Decision (*USDA Forest Service 2006d) and other relevant information were considered for this project analysis. Noxious weeds are discussed in the DEIS (main discussion at pages 493-502). Appropriate measures were incorporated into project design features to address areas of concern (See DEIS pages 7, 493-502, 514; project design features at 46-47).	
7-11	Noxious weed infestations are detrimental to native fauna and flora and present the greatest large-scale threat to native ecosystems that exist in the Nation's wild lands today (DiTomaso 2000; Lodge and Shrader-Frechette 2003; Lonsdale 1999; Mack et al. 2000; Pauchard et al. 2003) (DEIS page 493).	Noxious weeds
7-12	The *Federal Noxious Weed Act* (1974) provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health. The Act requires that each federal agency: develop a management program to control undesirable plants on federal lands under the agency's jurisdiction; establish and adequately fund the program; implement cooperative agreements with state agencies to coordinate management of undesirable plants on federal lands; establish integrated management systems to control undesirable plants targeted under cooperative agreements. The Forest Plan for the Helena National Forest (USDA Forest Service 1986) has outlined noxious weed management objectives and control measures: Page II/22, which state: • Implement an integrated weed control program in cooperation with state of Montana and County Weed Boards to confine present infestations, and prevent establishing new areas of noxious weeds. Noxious weeds are listed in the Montana Weed Law and designated by County Weed Boards. • Integrated Pest Management, which uses chemical, biological, and mechanical methods, will be the principal control method. Spot herbicide treatment of identified weeds will be emphasized. Biological control methods will be considered as they become available. • Funding for weed control on disturbed sites will be provided by the resource which causes the disturbance. Prevention and control measures are required by Forest Service Manual (FSM) 2081.2 - Prevention and Control Measures (FSM 2080). The *Helena National Forest Noxious Weed Vegetation Treatment Environmental Impact Statement* and the accompanying ROD	Noxious weeds

Comment #	Response	Topic
	(USDA Forest Service 2006) provide environmental standards and guidelines for control and management of noxious weeds.	
7-13	Related project impacts have been analyzed and project design features incorporated, along with incorporation of appropriate best management practices.	Noxious weeds/NEPA
7-14	Northern goshawks within the Blackfoot landscape have been monitored for over 15 years and as described in the FEIS, includes both historical use (1995), as well as more recent activity. There are two known active nests within the project area which have been monitored annually since 2009. Survey efforts have varied and have included project area surveys, as well as surveys of known nests. Pileated and hairy woodpeckers have been documented as part of the Region 1 landbird monitoring program between 1994 and 2008. The Stonewall project area includes three transects, which have documented use by both the pileated and hairy woodpecker. Pileated woodpecker use of the project area has also been documented through observations of foraging activity. Use of the Blackfoot landscape by marten (which includes the Stonewall project area) has been confirmed by historical and recent trapping records, through winter hair surveys conducted by Forest Service personnel in 2011 and 2012 and by recent tracking surveys by Wild Things Unlimited in 2009/2010.	Wildlife – MIS
7-15	Effects of big game resulting from changes in elk security and thermal cover have been updated in the wildlife section of chapter 3 of the FEIS. Big game populations and wolverine foraging habitat are discussed. See response to comment 4, related to formal USFWS consultation.	Wildlife - elk
7-16	Fire proofing as suggested by the commenter is not proposed, although as discussed throughout the FEIS and in the project fuels report, proposed treatments would reduce risk of large-scale wildfire and re-introduce fire to the landscape. Proposed treatment would also promote habitat conditions that more closely approximate historical conditions. Effects of treatment and changes in habitat are discussed in the wildlife section of chapter 3 and will result in benefits to some species, whereas habitat would be reduced for others. Because treatment would promote historical habitat conditions, while reducing effects to wildlife through implementation of project design features, it is expected that habitat would be maintained for all wildlife species that utilize the project area.	Wildlife -
7-17	See response to comment 7-16.	Wildlife -
7-18	Effects of timber harvest on vegetation diversity and structure, which affect wildlife habitat and long-term forest health are discussed throughout chapter 3 of the FEIS. /while treatment would reduce habitat for some species, proposed actions would	Wildlife -

Comment #	Response	Topic
	also enhance or restore declining wildlife habitats, promote historic vegetation conditions at both the stand and landscape level and reduce the risk of large-scale wildfire due to removal of MPB mortality. These anticipated benefits are based on effects of similar treatments and existing research referenced throughout the FEIS.	
7-19	The historic role of mixed severity fire, including changes and benefits to wildlife habitat are discussed throughout chapter 3 of the FEIS, as well as in the project wildlife, fuels and silviculture reports. Anticipated changes in vegetation and wildlife habitat resulting from mixed severity fire are based on effects of similar treatments and research referenced throughout these documents.	Wildlife -
7-20	Existing conditions and anticipated effect from the project when considering direct, indirect and cumulative effects are discussed in the DEIS, chapter 1 and chapter 3 by resource topic.	NEPA
7-21	Existing conditions and anticipated effect from the project when considering direct, indirect and cumulative effects are discussed in the DEIS, chapter 1 and chapter 3 by resource topic. Analysis of many millennia is outside the scope of this analysis.	NEPA
7-22	The DEIS addressed forest plan direction pertaining to insect and disease management, and discussed mountain pine beetle, Douglas-fir beetles and spruce budworms in chapter 3 (pp. 110-112). Additional discussions of insect (presence, role, impacts) could be found throughout the summary and DEIS (for an example of some of the discussions, see DEIS pages i, xi, 18-22, 27, 37, 68-69, 120-121, 131, 141-142, 147, 155-156, 298, 342, 364, 428, 468, 540, appendix B 98-104 among others). These discussions were carried forward into the FEIS. Many beetle related research items were considered during this analysis that included background information.	Silviculture
7-23	Determining if the forest can survive without beetles is outside the scope of this analysis. See response to 7-22 regarding discussions of insects.	Silviculture/NEPA
7-24	The hydrology section discloses there were no water quality listings in the Lincoln Creek, Beaver Creek or Keep Cook Creek watersheds on the Montana 303(d) list (DEQ2008). See discussions at DEIS pages 535 to 536.	Hydrology
7-25	The Stonewall project area does not include management of areas that have experienced stand replacing fire. Part of the purpose and need is to create a more resilient forest, and management actions are designed to leave adequate numbers of mature trees to provide desired species seed sources to regenerate stands, or planting may be considered to ensure desired reforestation on National Forest System lands.	Silviculture
7-26	Although improving watershed health is not a direct part of the	Hydrology

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	purpose and need, improvements to area roads through implementation of best management practices is anticipated to result in a decreased level of sediment delivered from roads (DEIS, table 139). Additional analysis of hydrology resources was disclosed in the DEIS at pages 529 through 552. The purpose and need for action for this project is noted in chapter 1 of the EIS: Improve the mix of vegetation composition and structure across the landscape that is diverse, resilient, and sustainable to wildfire and insects. • Enhance and restore aspen, western larch, and ponderosa pine species and habitats. Modify fire behavior to enhance community protection while creating conditions that allow the reestablishment of fire as a natural process on the landscape. Integrate restoration with socioeconomic considerations. • Utilize economic value of trees with economic removal. Action is needed to reduce insect mortality related fuels within the wildland urban interface and move the landscape towards desired conditions described in the Forest Plan. This action responds to the goals and objectives outlined in the Forest Plan for the Helena National Forest, and helps move the project area towards desired conditions described in that plan (USDA Forest Service 1986).	
7-27	Anticipated effects of proposed actions on snags and dead wood, including effects on species such as flammulated owls and goshawk that prefer late successional forest conditions are discussed in chapter 3 of the FEIS. While proposed harvest would reduce snags, with implementation of project design features that require retention of large diameter snags, snag recruitment trees and a minimum of 2 snags per acre in harvest units, and retention of snags greater than 12 inches d.b.h in burn units, Forest Plan standards for snags will be met. While it is recognized that snags per acre will vary, and that a range of conditions will exist, because of the widespread availability of snags in all size and decay classes within all project area drainages, retention of snags within treatment units, and recruitment of new snags due to on-going MPB mortality and high stand density within unaffected stands, snags will continue to be distributed across the project area and habitat would continue to be available to support cavity dependent species.	Wildlife
7-28	See response to comment 7-27.	Wildlife
7-29	See response to comment 7-10 regarding analysis of noxious weeds.	Noxious weeds
7-30	The comment does not address the merits of the proposed action,	Silviculture carbon

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	alternatives, or the adequacy of the analysis of environmental effects. The following topics related to the comment were discussed in the DEIS: Carbon storage relative to the Stonewall Vegetation Project was discussed in the DEIS at pages 176-177. Old growth forest conditions were disclosed in the DEIS at pp. 215-219, 222-240. No designated old growth in 3rd-order drainages would be logged with this project and other existing old growth habitat would maintain old growth characteristics. Forest Plan old growth direction would be met. (DEIS p. 240).	
7-31	The comment does not address the merits of the proposed action, alternatives, or the adequacy of the analysis of environmental effects. Carbon storage relative to the Stonewall Vegetation Project was discussed in the DEIS at pages 176-177. Analyzing the effects of National Forest logging on U.S. carbon stores is beyond the scope of the Stonewall Vegetation Project analysis	Silviculture carbon
7-32	The proposed action and its action-alternative are aimed at long-term forest conservation and management consistent with national forest policy and local plans and agreements. The DEIS at pp. 176-177 discusses non-significant effects of the proposed action and alternatives to carbon storage or release, consistent with current national environmental policy. Therefore the Forest Service will not include in the final EIS any modification in response to the comment. See also response to comment 7-26 for the purpose and need for this project.	Silviculture carbon
7-33	The project design features in chapter 2 note the visual quality items, to meet forest plan standards, and note the units where the design feature applies.	Visuals
7-34	Ground vegetation: general reference to vegetation present on the forest floor below the shrub layer. Revegetated: returning a site to a vegetated state, e.g., through planting seeds to encourage growth of desired vegetation species. “Restablishes” in reference to trees being reestablished on a site is not specifically stated in the visual quality standards. Trees are considered reestablished when seedlings are present in quantities sufficient to be considered stocked. Stocking criteria would be established for each unit based upon site conditions, treatment objectives, and Forest Plan direction and would be documented in silvicultural prescriptions developed for the project. Regeneration treatments would be monitored (FSM 2472.4) to access treatment success and schedule additional corrective work if the units are not	Visuals

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	adequately proceeding toward desired stocking guidelines. The temporal boundaries used in the Scenery analysis were disclosed as follows: short-term: The temporal boundary used varied from immediate upon project completion up to 5 years after project completion long term: up to 20 years. Twenty years is used as the long-term timeframe because it could take 20 years before new vegetation fills in created openings allowing areas to blend back into the landscape.	
7-35	See response to comment 7-14. Additionally, wolverine and Canada lynx use of the area has been documented during track surveys conducted by Wild Things Unlimited (2009 and 2010) as well as historic and recent documentation from Montana Natural Heritage records and from recent lynx documentation in Squires et al (2013). While there have been no formal surveys for grizzly, as described under affected environment, use of the project area by bears has been documented, including recent use along the Blackfoot River.	Wildlife - goshawk
7-36	See response to comment 7-14 and 7-35. Project area white-bark pine has been documented during recent surveys (since 2008) within stands proposed for treatment (stand diagnosis reports).	Wildlife
7-37	See response to comment 7-14 and 7-35.	Wildlife
7-38	Removing roads in the project area is outside the scope of actions proposed for the Stonewall Vegetation Project. The cumulative effects of ongoing travel management efforts were considered for this analysis.	Transportation/NEPA
7-39	Consultation with the USFWS is ongoing and will be completed prior to a decision on this project.	Wildlife/Fisheries
7-40	The final Biological Assessment (BA) addressing federally listed species along with other project reports (e.g., Biological Evaluation), will be available on the Forest project website.	Wildlife/Fisheries/NEPA
8	Limitations of habitat models used in the analysis are discussed under wildlife assumptions in the FEIS. As described, wildlife habitat conditions are based on R1-VMAP (satellite imagery) as well as Intensified Grid Data, which is based on on-the-ground plots. Models described in Samson (2005, 2006) and summarized in Criteria for Wildlife Models on the Helena National Forest (USDA FS 2009a) are based on point of detection data that have been successfully utilized to predict habitat relationships.	Wildlife
9	The Forest process for identifying and designating old growth is discussed under methodology in chapter 3 of the EIS and in the project old growth report. As described the HNF incorporated definitions provided by Green et al. (1992) in Old Growth Forest types of the Northern Region into the Forest Plan. Green et al. (1992) describes minimum stand characteristics for old growth for	Wildlife/Silviculture

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	various forest types and habitat type groups. Additional characteristics such as snags and dead wood are used to describe habitat quality. The Forest Plan 3rd order drainage standard is an attempt to provide spatial distribution areas to be managed as existing and future old growth, although the need to maintain old growth outside these areas was recognized. As a result in addition to providing 592 acres of old growth within 3rd order drainages, 175 acres of verified old growth and 436 acres of stands with the potential to be old growth are being maintained outside 3rd order drainages. The old growth analysis has edited for clarity in the FEIS. The importance of old growth to wildlife and biological diversity is discussed in the Management Indicator Species (MIS) section of the FEIS. The importance of old growth to late successional species including the pileated woodpecker and northern goshawk are recognized and discussed in the wildlife section of chapter 3 of the EIS. A recently active goshawk nests occurs within a designated old growth stand. Consequently maintaining Forest Plan old growth would help to provide habitat for late successional/old growth species. The analysis for both species also includes an evaluation of landscape conditions, which include an assessment of snags and dead wood, as well as the availability of nest stands, or patches of suitable closed canopy forest preferred by goshawk. So while it is suggested that the HNF ignores regional old growth direction to the detriment of wildlife, based on analysis presented in the FEIS, Forest and regional direction for old growth are being met. This is expected to help to maintain or promote habitat for late successional/old growth associated wildlife species.	
10	The Forest Plan requires that monitoring of old growth MIS take place in order to "measure the effect of management activities on representative wildlife habitats with the objective of ensuring that viable populations of existing native… species be maintained (Forest Plan II/17). The Northern goshawk was chosen as an MIS species for old growth due to the diverse prey base and nesting habitat commonly found in late successional forests. Pileated woodpeckers were chosen as an old growth MIS because they are the largest primary cavity excavator on the Forest and because they have the most restrictive requirements in terms of snag size and their feeding requirements for large snags and down logs, important structural component of late successional forest. Forest-wide monitoring for these species are summarized in the Forest monitoring and evaluation reports and have included species and habitat monitoring as suggested, including project and old growth goshawk nest surveys, snag and downed wood availability, monitoring associated with the Forest landbird program, and Forest-wide availability of suitable goshawk and pileated	Wildlife

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	woodpecker habitat (Samson 2006 a and b). This information, as well as on-going re-assessment of intensified grid data on lands affected by mountain pine beetle mortality is collectively used to meet Forest Plan objectives and monitoring requirements. Finally, based on monitoring data, habitat requirements for old growth MIS as prescribed in the Forest Plan are being met (USDA FS 2009).	
11	This comment is noted. Field validation of project area habitat conditions, including validation of wildlife habitat models was completed during field review of treatment stands and included biologist field work, elk hiding and thermal cover surveys conducted during the 2013 field season, lynx multi-story habitat surveys (USDA FS 2009), and field documentation of elk hiding cover conditions following mountain pine beetle mortality. See also response to comment 8.	Wildlife
12	This comment is noted. Forest and project area goshawk monitoring was conducted according to the Goshawk Field Inventory Methods Helena National Forest 2009 and the Northern Goshawk Inventory and Monitoring Technical Guide (USDA FS 2006),. Pileated woodpecker data was collected according to the Birds and Burns Point Count Protocol available at http://www.rmrs.nau.edu/wildlife/birdsandburns/. Both of these are accepted protocols and include landscape level survey. See also response to comment 8.	Wildlife
13	See response to comments 8 and 9.In addition to satellite imagery data, intensified grid data and stand diagnosis reviews were used to estimate snags, downed wood and the size and density of forest cover.	Wildlife
14	See response to comments 10, 11 and 13.	Wildlife
15	See response to comments, 10-13.	Wildlife
16	Forest –wide monitoring for marten is summarized in the Forest monitoring reports (USDA FS 2009). As described, monitoring has included habitat monitoring using satellite imagery and intensive grid data and carnivore winter track surveys (Wild Things Unlimited 2009).	Wildlife
17	Effects from proposed activities on the Northern goshawk are discussed in chapter 3 of the FEIS and include; effects of timber harvest and recent wildfire, changes in nesting, foraging, post-fledgling habitat and prey availability, and potential changes in competition. The need to maintain active nest sites nests was recognized and project design features are in that would restrict activities around known nests, restrict activities during the post-fledgling period, and maintain structural conditions within 180 acres of active nests. Anticipated effects are based in part on Samson (2006a), who summarized recent (2000 and newer) studies on the effects of vegetation treatments on northern	Wildlife

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	goshawks and indicate that; the majority of goshawk pairs move from nest stands when stand structure is modified by more than 30%; (2) human disturbance is not a factor if 70% of the nest stand structure is maintained and timber management operations are time restricted during the nesting period; (3) timber harvest has no effect on goshawk breeding area occupancy, nest success, or productivity 1 to 2 years after treatment; and (4) no difference in the productivity of northern goshawks occurs in logged versus unlogged areas. Based on this research and with implementation of PDF's that restrict activities during the nesting/post-fledgling season and retain structure around nests, implementation of alternatives 2 and 3 are not likely to cause a local or regional change in habitat quality or population status for the northern goshawk.	
18	The analysis on goshawk presented in chapter 3 of the FEIS includes recommendations provided by Clough (2000) in western Montana, as well as those of Reynolds et al (1992). Also it was recognized that goshawks prefer mature forests with large trees and relatively closed canopies for nesting (Reynolds et al 1992, Hayward and Escano 1989, Squires and Reynolds 1997, Clough (2000). While the commenter suggests that 20 to 50 percent old growth within nesting areas need to be maintained , in their review of the status for this species, the U.S. Fish and Wildlife Service (1998) found no evidence showing that goshawk are dependent on large, unbroken tracts of "old growth " or mature forests or specifically selects for old growth. The need to maintain the integrity of goshawk nest sites was recognized and with implementation of project design features, there would be no timber harvest within 180 acres of active nests. Also while burning would occur during within the 180 acre buffer of the Stonewall East nest, there would be no activity permitted within 40 acres, treatment would occur outside the nesting and Post-fledgling period and proposed low-severity burning would not remove large diameter trees or reduce canopy closure. Consequently proposed treatments are consistent with recommendations by Reynolds et al (1992) and the integrity of active nesting territories would be maintained. Finally, the analysis also recognized the recent debate in the literature between Greenwald eta l (2005) and Reynolds et al (1992), although Reynolds et al (2007) findings were consistent with the U.S. Fish and Wildlife Services review of the species (USDI Fish and Wildlife Service 1998).	Wildlife
19	Additional analysis of fragmentation including effects to species such as the northern goshawk that prefer closed canopy interior forest have been added to the FEIS. While the commenter suggests that home range activities and sizes proposed by Crocker Bedford (1990) be implemented, in their status review for this	Wildlife

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	species, the US Fish and Wildlife (1998) found no evidence showing the goshawk is dependent on large, unbroken tracts of "old growth " or mature forests. This is also substantiated at a more local level by Clough (2000) who, in a random sample of available vegetation types in west central Montana, found goshawks selected for nest stands of mature and older forest that were approximately 40 acres in size, surrounded by a mix of younger forest and non-forested openings. The analysis presented in the FEIS follows more local research by Clough (2000), as well as research by Reynolds et al. (1992), which has been determined by the courts to be the best science. See also response to comment 18.	
20	The analysis considered the population status of the fisher, citing important genetic research done in Region 1 by Vinkey (2003), and the wildlife analysis also considered recommendations by Wittmer et al. (1998) (see wildlife section of chapter 3 of the EIS,) and both action alternatives maintain riparian habitat and associated travel corridors, retain existing old growth, and maintain restrictions on public access. Changes to fisher habitat resulting from proposed actions were identified and are discussed in the wildlife section of the EIS. While both action alternatives would reduce fisher habitat, as described, snags and downed wood would be provided within sites treated and across the landscape, riparian habitat and preferred travel corridors would be maintained and habitat would continue to be available to accommodate fisher use. The need to provide closed canopy mature forest by species such as fisher was also recognized and the FEIS includes an alternative that would reduce wildfire risk and promote the retention of large diameter trees and snags, while maintaining 86 percent of the existing fisher habitat. Because the fisher is not yet listed or proposed for listing, formal or informal consultation with the USFWS will not be initiation for fisher. See response to comment 4.	Wildlife
21	The wolverine is now a proposed threatened species, per findings of the USDI Fish and Wildlife Service for the Distinct Project Segment (DPS) occurring in the contiguous United States, dated February 4, 2013 and found at http://federalregister.gov/a/2013-048. As described in the FEIS, the USFWS concluded that the primary threat to the contiguous U.S. population is risk of eventual habitat and range loss due to climate warming. Other impacts identified In their finding on the wolverine DPS included human use and disturbance, dispersed recreational activity, infrastructure development, transportation corridors and land management. See the wildlife section of the EIS for information on wolverine and details of how proposed activities associated with this project	Wildlife

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	would affect wolverine or their habitat. As described, because harvest occurs at lower elevations that lack deep persistent snow cover, den and dispersal habitat would not be affected. Also public access would not change, there would be no increase in permanent road corridors or increase in trapping pressure and remote security habitat would be maintained. Finally, the available scientific information does not indicate that land management activities similar to that proposed pose a threat to the DPS. As a result none of the alternatives would jeopardize the wolverine. See response to comment 4 related to Fish and Wildlife Service consultation.	
22	Please refer to the wildlife section of the EIS related to effects of treatment on the black-backed woodpecker, Forest-wide habitat and snag retention. We have disclosed that some impacts to individual black-backed woodpeckers may occur. While there would be a reduction in lower quality habitat, high quality burned habitat would be unaffected. We also disclose that recently burned habitat is abundant and well distributed on the HNF and across Region 1. In addition we believe that there is abundant insect infested forest habitat on the Lincoln Ranger District , the HNF and across Region 1 and that this habitat, in addition to recently burned forests provides abundant habitat for this species.	Wildlife
23	See response to comment 22.	Wildlife
24	Flammulated owls and their habitat on the HNF and in the project area are discussed chapter 3 in the wildlife section of the FEIS. Monitoring for flammulated owls has occurred on the Blackfoot landscape and flammulated owls have been documented at nine locations near the project area. While it is recognized that the project area does not provide high quality flammulated owl habitat, considering this documentation, the increased availability of large diameter snags, the predominance of ponderosa pine/Douglas-fir at lower elevations, and presence of suitable habitat, it is likely the project area is utilized for foraging if not nesting. As described in the FEIS, large diameter ponderosa pine snags have been declining and if increases in stand stocking continue, large diameter ponderosa pine and flammulated owl habitat would continue to decline. The management strategies proposed would promote structural conditions preferred by flammulated owls (Hayward and Verner 1994, PIF 2000) over the long-term, including maintenance of large diameter ponderosa pine. Also when viewed across the landscape, the resulting habitat conditions will better represent historic or reference conditions. As a result treatments proposed under the action alternatives would improve stand and landscape level conditions	Wildlife

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	characteristics preferred by the flammulated owl. Finally, because owls have been detected near the project area, it is likely that the preferred habitat created would be utilized.	
25	Boreal toads and their habitat are discussed in the wildlife section of chapter 3 of the FEIS. The analysis considered the best science available for Region 1 (i.e. Werner et al 2004) and recognizes documentation within the project area. The analysis recognized that mortality is possible and that there would be a reduction in suitable habitat under both of the action alternatives. It was also disclosed that implementation of project design features would reduce the likelihood that breeding individuals would be affected, that breeding habitat would be maintained within treatment units and across the landscape, that proposed burning would promote riparian vegetation and foraging habitat preferred by boreal toads and that suitable habitat would continue to be available to support local populations.	Wildlife
26	Effects of proposed actions on critical lynx habitat, including changes to primary constituent elements have been updated and are discussed in the wildlife section of chapter 3 of the FEIS. Upon further consideration of additional information since release of the DEIS, the project analysis for lynx has been updated. The updated analysis resulted in a May effect – likely to adversely affect determination for lynx. The FS is conducting formal consultation with the United States Fish and Wildlife Service and the Biological Opinion will address lynx and lynx critical habitat. Watershed conditions would be improved with road maintenance to reduce surface erosion that contributes sediment to streams channels. Culverts are also planned to be replaced to reduce the risk of failure and allow for 100 year flood flows.	Wildlife/Fisheries
27	A Biological Assessment will be submitted to the USFWS with determinations for listed species, including lynx, and will be available for review. Concurrence from the USFWS will be in place prior to issuing a decision on this project. See also response to 7-40 pertaining to the availability of the Biological Assessment. See the wildlife section of chapter 3 of the FEIS for an updated discussion on lynx effects and discussion on policy. The Northern Rockies Lynx Amendment, which is referenced in the FEIS, amended the Helena Forest Plan and a subsequent Biological Opinion has been issued on the NRLA and covers “take” on Forests included in the NRLA. See response to comment 26 regarding the updated lynx analysis discussed in the FEIS.	Wildlife/NEPA
28A	DEIS Appendix B (pp. 77-93) included tables noting Helena National Forest Plan requirements related to timber harvest and prescribed fire and disclosed Project compliance.	NEPA

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28B	Available information of past, current, and reasonably foreseeable activities is disclosed in Appendix C of the EIS. The resource analysis provided in chapter 3 discusses activities by resource section.	NEPA
28C	The Montana Department of Fish, Wildlife, and Parks were included in the scoping efforts for this project and their input considered. Scoping comments received were distributed in Appendix A of the DEIS (see letter 77). The FEIS includes comments and responses from the review of the DEIS.	NEPA
28D	The Montana Department of Fish, Wildlife, and Parks were included in the scoping efforts for this project and their input considered. Scoping comments received were distributed in Appendix A of the DEIS (see letter 77). The FEIS includes comments and responses from the review of the DEIS.	NEPA
28E	The hydrology section discloses there were no water quality listings in the Lincoln Creek, Beaver Creek or Keep Cook Creek watersheds on the Montana 303(d) list (DEQ2008). See discussions at DEIS pages 535 to 536.	Hydrology
28F	A Biological Assessment will be submitted to the USFWS with determinations for listed species and will be available for review. Concurrence from the USFWS will be in place prior to issuing a decision on this project. Specialist reports, including the final Biological Assessment will be posted on the Forest project website. See the wildlife section of chapter 3 of the FEIS for updated analysis discussions on listed species.	Wildlife/Fisheries/NEPA
28G	See the wildlife section of chapter 3 of the FEIS for discussions on sensitive and management indicator species. Analyses for deer and elk have been updated to consider new information. Specialist reports, including the final Biological Assessment will be posted on the Forest project website.	Wildlife
28H	Snags are discussed under the Habitats of Special Concern section in chapter 3 of the EIS. This section discusses the methodology for the snag analysis.	Snags
28I	The existing, during project activities and post-project road densities within the project area were considered for affected resources. The road information was reviewed and updated between the release of the draft EIS and the final EIS. See wildlife analysis for road densities in the project area.	Wildlife
28J	Evaluating the Helena National Forest's record of compliance with State best management practices regarding stream sedimentation from ground-disturbing management activities is beyond the scope of the Stonewall Vegetation Project analysis. Periodic monitoring reports prepared by the Helena National Forest are available on the forest website, and were considered in	Forest Monitoring

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	this analysis.	
28K	Evaluating the Helena National Forest's record of compliance with its monitoring requirements as set forth in its Forest Plan is beyond the scope of the Stonewall Vegetation Project analysis. Periodic monitoring reports prepared by the Helena National Forest are available on the forest website, and were considered in this analysis.	Forest Monitoring
28L	Evaluating the Helena National Forest's record of compliance with the additional monitoring requirements set forth in previous DN/FONSIs and RODs on the Helena National Forest is beyond the scope of the Stonewall Vegetation Project analysis. Periodic monitoring reports prepared by the Helena National Forest are available on the forest website, and were considered in this analysis.	Forest Monitoring
28M	See the plant section in chapter 3, the discussion under methodology discloses the information considered for the analysis, including information from field surveys.	Plants
28N	Noxious weeds are discussed in chapter 3 of the EIS. Methodology is discussed and available information was considered.	Noxious weeds
28O	Chapter 3 of the DEIS disclosed the estimated impacts from noxious weeds from proposed activities.	Noxious weeds
28P	Information on existing detrimental soil disturbance was displayed in the soil section of the DEIS on pages 520-523 and summarized in tables 125, 129, and 130 The soils analysis was reviewed and has been updated for the FEIS.	Soils
28Q	Information on projected detrimental soil disturbance after treatments was displayed in table 129 (alternative 2) and 130 (alternative 3) of the DEIS. The soils analysis was reviewed and has been updated for the FEIS.	Soils
28R	Information on projected detrimental soil disturbance with mitigation was displayed in table 129 (alternative 2) and 130 (alternative 3) of the DEIS. The soils analysis was reviewed and has been updated for the FEIS.	Soils
28S	The soils section in chapter 3 of DEIS discussed research that supports maintaining, and where lacking, increasing soil organic matter levels is critical for sustaining forest health and productivity (Jurgensen et al. 1997); the recommended amount of CWD for the project area is 5 to 20 tons per acre, outlined from Brown et al. (2003) and Graham et al. (1994) for maintaining soil quality while minimizing fuel hazards; The Region 1 technical guide for soil detrimental disturbance analysis (USDA Forest Service 2009) states, *"…new activities would be designed so that they do not create detrimental soil disturbance (DSD) on more than 15% of an activity area (R1 Supplement to FSM 2554.03). In other words, existing DSD plus the DSD predicted for proposed activities would*	Soils

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	not exceed 15% of a given activity area. In areas where more than 15% DSD exists from prior activities, the cumulative detrimental effects should not exceed the conditions prior to the planned activity and should move toward a net improvement in soil quality." This therefore sets the threshold value for DSD at 15 percent. The soils analysis was updated to consider updated monitoring information, see the soils section in chapter 3 of the FEIS.	
28T	The anticipated timeline for implementation has been updated. Timber harvest and cutting treatments are estimated to occur between 2015-2020, with burning activities anticipated to occur after harvest and cutting treatments when conditions are appropriate.	NEPA
28U	The funding sources for implementation is not known at this time and may vary. Some activities may be funded from program funds (e.g., fuels reduction, wildlife habitat enhancement), some activities may be funded as stewardship projects, other activities may be funded from Knutson-Vandenberg funds.	Economic/NEPA
28V	The current level of old growth forest in each third order drainage in the project area is disclosed in the Habitats of Special Concern section of the DEIS chapter 3 at pp. 215-219.	Old growth
28W	The DEIS disclosed the methodology and assumptions pertaining to the old growth analysis at pages 215-217.	Old growth
28X	Available information was considered for the analysis of old growth forest conditions in the project area, and disclosed in the Habitats of Special Concern section of the DEIS chapter 3 (pp. 215-219).	Old growth
28Y	Forest Plan direction is designed to address species viability. Providing habitat viability of populations is a Forest Plan level analysis, beyond the scope of this individual project analysis. Forest Plan direction regarding old growth direction would be met, see DEIS chapter 3 at pp. 215-219 for existing conditions; no old growth is proposed for harvest and old growth characteristics would be maintained in old growth habitat within the project area after proposed activities pp. 222-240. The wildlife section discusses effects on species associated with old growth forest habitat.	Old growth
28Z	The current level of old growth forest in each third order drainage in the project area is disclosed in the Habitats of Special Concern section of the DEIS chapter 3 at pp. 215-219, no designated old growth is proposed for harvest and old growth habitat characteristics would be maintained in old growth habitat within the project area after proposed activities pp. 222-240. The FEIS contains these discussions as well.	Old growth
28AA	The current level of old growth forest in each third order drainage	Old growth

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	in the project area is disclosed in the Habitats of Special Concern section of the DEIS chapter 3 at pp. 215-219, The wildlife analysis in chapter 3 of the DEIS discloses habitat information related to old growth associated species.	
28BB	The current level of old growth forest in each third order drainage in the project area is disclosed in the Habitats of Special Concern section of the DEIS chapter 3 at pp. 215-219, no designated old growth is proposed for harvest and old growth habitat characteristics would be maintained in old growth habitat within the project area after proposed activities pp. 222-240. The DEIS disclosed impacts to old growth MIS including northern goshawk and pileated woodpecker (pp.289-299). Terminology has been edited in the FEIS to clarify the categorization of field validated old growth, and other stands outside third order drainages are discussed as other old growth.	Old growth
28CC	Old growth in the project area is disclosed in the Habitats of Special Concern section of the DEIS chapter 3 at pp. 215-219, the methodology used to identify old growth is located on pp. 217-219. The DEIS disclosed impacts to old growth MIS including northern goshawk and pileated woodpecker (pp.287-299). Terminology has been edited in the FEIS to clarify the categorization of field validated old growth, and other stands outside third order drainages are discussed as other old growth.	Wildlife/Old growth
28DD	The analysis of existing big game hiding cover, winter range, and security has been updated to incorporate updated information. The updated analysis is disclosed in the big game analysis in the wildlife section in chapter 3 of the FEIS.	Wildlife big game
28EE	The analysis of big game hiding cover, winter range, and security during implementation has been updated to incorporate updated information. The updated analysis is disclosed in the big game analysis in the wildlife section in chapter 3 of the FEIS.	Wildlife big game
28FF	The analysis of big game hiding cover, winter range, and security after implementation has been updated to incorporate updated information. The updated analysis is disclosed in the big game analysis in the wildlife section in chapter 3 of the FEIS.	Wildlife big game
28GG	The analysis of big game hiding cover, winter range, and security has been updated to incorporate updated information. Methodology used is discussed in the big game analysis in the wildlife section in chapter 3 of the FEIS.	Wildlife big game
28HH	This comment pertains to a review of the Forest Plan and is outside the scope of this project analysis. Sensitive and Management Indicator Species are discussed by habitat type in the wildlife section in chapter 3 of the FEIS. Old growth forest conditions were disclosed in the DEIS at pp. 215-	Forest monitoring – sensitive species

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	219, 222-240. No designated old growth in 3rd-order drainages would be logged with this project and other existing old growth habitat would maintain old growth characteristics. Forest Plan old growth direction would be met. (DEIS p. 240).	
28II	Known actions within and adjacent to the project area were considered in cumulative effects analyses and are disclosed in the affected resource sections in chapter 3 and appendix C of the FEIS. The anticipated effects of the proposed activities are disclosed by resource in chapter 3 of the FEIS.	Private land
28JJ	The Fire and Fuels analysis in chapter 3 of the FEIS discusses methodology used for analysis and the anticipated future fire behavior potential by flame length and fire type.	Fire/Fuels
28KK	The Helena Forest Plan (USDA Forest Service 1986), as amended, identifies management actions appropriate to be considered by management area. Decisions made regarding the overall management of the Helena National Forest are beyond the scope of this project analysis. The purpose and need for the Stonewall Vegetation Project is discussed in chapter 1 of the FEIS.	NEPA
28LL	The Helena Forest Plan (USDA Forest Service 1986), as amended, identifies management actions, e.g., timber harvest and prescribed burning, appropriate for use as tools to move vegetation conditions towards desired conditions. Forest-wide level conditions are appropriate to be discussed and analyzed in forest plan revision efforts, and beyond the scope of individual site specific project analyses. The Stonewall Vegetation Project FEIS considers past, present and reasonably foreseeable actions and discloses cumulative effects analyses by resource topic in chapter 3 and appendix C of the FEIS.	NEPA
28MM	The analysis discusses how this project complies with the Roadless Rule. Inventory and evaluation of roadless areas takes place at the forest plan level. Unroaded areas adjacent to IRAs that overlap with proposed treatment areas were evaluated for potential impacts to their roadless and wilderness characteristics.	Inventoried Roadless Areas
28NN	Climate change was discussed in the following DEIS chapter 3 sections: vegetation (includes ramifications of a changing climate), fire and fuels, habitats of special concern, wildlife, noxious weeds and plants. The DEIS (page 90) noted the anticipated impact of climate change: "Climate changes will most likely bring about some change in site characteristics leading to climax plant community changes and so Biophysical Setting changes, but the direction and magnitude of the changes are unknown and would be very small within the time frame of this analysis."	Climate change
28OO	The DEIS discussed carbon storage at pages 176-177. The following excerpt is from the Atmospheric Carbon Report for this analysis found in the project file (Amell and Klug 2013): The Forest Service has reviewed scientific papers attached to this	Silviculture - Carbon

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	comment and other pertinent literature concerning forest carbon stocks, and the general, broad-scale relationships between forestry operations, atmospheric carbon exchange and global climate concerns. All literature submitted or cited by commenters is listed in a report titled, "Literature and Citations Received from Scoping for the Stonewall Vegetation Project," located in the project record. That report includes interdisciplinary-team determinations of relevance or applicability to the project of each literature item listed. With regard to the [comment], we recognize, as [asserted in the] second point, [that] variance or actual change in climate—past, present and future—potentially affects current and future conditions of the Helena National Forest. These facts are considered and addressed in the formulation of project objectives and the design of proposed and alternative actions. Through these, we seek to culture forest conditions in the Stonewall area that are resilient as possible to disturbance-events, processes, or trends that can—when sufficiently large, intense, or long term—detract from national forest conservation and the delivery of public benefits specified in law and policy. … In [the Atmospheric Carbon Report] we discuss further the first topic raised by [the comment]: the effects of proposed treatments on carbon storage versus no action. The topic is relevant to effects analysis because it identifies an environmental condition the Stonewall Project could change. The Forest Service recognizes that by manipulating forest vegetation through [various means including] silviculture, management of hazardous fuels, and fire, carbon is added to or removed from the earth's atmosphere; the manner and degree to which this happens as a result of the actions proposed can be at least qualitatively analyzed and described in comparison to no action. [These qualitative effects are discussed in DEIS Chapter 3 under Carbon Storage, pp. 176-177.] Concerning possible indirect climate effects from project-caused carbon release or storage, the Stonewall Project NEPA process will not attempt to make such an analysis. This position is based upon the fact that questions about whether or how to analyze effects to climate resulting from federal land and resource management are still under consideration by the White House Council on Environmental Quality (CEQ). Currently, CEQ has issued no operative guidance on this, as explained more thoroughly [in the Atmospheric Carbon Report (Amell and Klug 2013)] in the … section, "Regulatory Direction and Guidance on Consideration of Climate Change in Project Related NEPA Analysis."	
28PP	The soils and hydrology sections in chapter 3 of the FEIS disclose the affected environment, direct, indirect and cumulative effects on soil and hydrology resources. As discussed in the analysis, WEPP modeling was used to analyze erosion and sedimentation by drainage.	Hydrology/Soils
28QQ 1-10	1-5. This comment requested maps of the area to show several elements. Appendix C includes a map of the recorded past, present and reasonably foreseeable actions; this map was updated and analyses reviewed for the FEIS. The analyses consider impacts from past, present and reasonably foreseeable actions, including	NEPA

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	timber harvest, livestock grazing, recreation, roads, fire as well as insect and disease mortality. The discussion of direct, indirect and cumulative effects are located under the various resource sections in chapter 3 of the DEIS and FEIS 6. Figure 44 of the DEIS on page 188 displayed the Wildland Urban Interface within the Stonewall Project boundary. Displaying the existing or future density of human residences within 1.5 miles from the project unit boundaries was determined not necessary for the disclosure of analysis effects from proposed activities. Cumulative effects analysis considered activities occurring on National Forest System lands as well as lands of other ownership, and is discussed by affected resource in chapter 3 of the DEIS and FEIS. 7.The analysis of big game hiding cover has been updated to incorporate updated information and is discussed in the big game analysis in the wildlife section in chapter 3 of the FEIS 8. See response to 7-30 regarding old growth forest. The DEIS included maps of old growth forests in the habitats of special concern section in chapter 3 of the DEIS (See DEIS figures 57 and 64). These maps have been updated in the FEIS to clarify terminology. 9.The analysis of big game security areas has been updated to incorporate updated information and is discussed in the big game analysis in the wildlife section in chapter 3 of the FEIS. 10. The Stonewall Vegetation Project area does not contain any recognized moose winter range. Effects to dry forest habitats, where moose are noted to occur, are disclosed in the wildlife section in chapter 3 of the FEIS.	
29	No wetland areas were observed during field reviews of the locations of roads to be built then obliterated after timber harvest. Water features identified in the forest GIS database are displayed in maps provided in the FEIS.	Hydrology
30	The DEIS and FEIS include project design features, near the end of chapter 2, to minimize the spread of noxious weeds. The Forest will continue to address noxious weeds as per the Helena National Forest Noxious Weed Treatment Project (USDA Forest Service1996). Noxious weeds are discussed in chapter 3 of the FEIS.	Noxious weeds
31	An alternative that eliminates units that have noxious weeds present on roads within units from fire management proposals was considered (DEIS pages 62-63).	Noxious weeds
32	See response to comment 7-10 regarding analysis of noxious weeds.	Noxious weeds
33	See DEIS page 494, Figure 82 General location of noxious weeds in the Stonewall Vegetation Project area.	Noxious weeds

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34	See response to comment 7-10 regarding analysis of noxious weeds.	Noxious weeds
35	Noxious weed treatment will continue to occur in accordance with the requirements specified in the Final Environmental Impact Statement: Helena National Forest Noxious Weed Treatment Project and accompanying Record of Decision (DEIS page 495).	Noxious weeds
36	Any seeding that occurs will be done in compliance with Forest Plan standards. Recommended certified weed free native seed mixtures that are in compliance with the Forest Plan are included as a project design feature. (Englebert 2012a)	Noxious weeds
37	Table 3 of the Noxious Weed Specialist Report indicates the following units have mapped noxious weed infestations: 1, 3-9, 11-36, 38, 42, 43, 46-65, 67-71, 73-75, 78-82, 84-86	Noxious weeds
38	The remaining units either do not have mapped occurrences or they have no treatment proposed under this project. (Englebert 2012a)	Noxious weeds
39	Forest plan direction *Final Environmental Impact Statement: Helena National Forest Noxious Weed Treatment Project* and accompanying *Record of Decision (*USDA Forest Service 2006d) and other relevant information have been considered and incorporated into project design features to address areas of concern (pages 7, 493-502, 514; project design features at 46-47).	Noxious weeds
40	There are no threatened, endangered or proposed plant species known to occur on the Helena National Forest (USDI Fish and Wildlife Service 2011b) (DEIS page 475). Whitebark pine is the only sensitive plant species known to occur in the project area (DEIS page 475-477).	Botany
41	Effects to rare plants and their habitats and project design features intended to minimize or avoid effects are discussed in Chapter 3 (DEIS page 480-493).	Botany
42	See comment 41	Botany
43	Burn plans will be prepared to conduct burning during timeperiods favorable for meeting burn objectives.	Fire – prescribed burning
44	Presence of whitebark pine, effects expected, and project design features for the protection/promotion of whitebark pine are discussed in the Plants section of the DEIS on pages 491 & 492 and in the Vegetation section. Design feature SILV-2 was developed to protect/promote whitebark pine.	Silviculture/Botany
45	The no action alternative excludes burning in the presence of whitebark pine regeneration. The action alternatives includes prescribed burning treatments in prescription Groups 6, 7, and 8, described at DEIS pages 36-37; they are conditioned by design feature SILV-2 shown at DEIS page 49. The proposed treatments and project design features are intended to conserve whitebark pine habitat, increase the presence of the species, and benefit wildlife species that are ecologically	Silviculture- WBP

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	associated. The suggestion of not burning but rather 'daylighting' around pine seedlings—which we infer means removing competing vegetation—is actually an option that may be employed in selected areas as follows. The Forest Service will prepare a detailed burn plan prior to prescribed burning. At that stage the project design feature SILV-2 would apply to identify areas to be excluded from burnin, and specify the means to keep fire out or minimize its intensity, methods could include 'daylighting' around pine seedlings. The design feature to avoid or limit the degree of possible adverse effects to whitebark pine communities. Whereas the treatments with mitigation are not predicted to result in any intense or severe effects to the whitebark pine resource (The DEIS discussed effects to whitebark pine at pages 141 and 154-155), the Forest Service declines to include in the final EIS an alternative course of action that would more uniformly exclude burning from such areas.	
46	The comment concerns the possible merit and feasibility of reforesting whitebark pine habitat through tree planting. Conservation and improvement of whitebark pine habitat, and regenerating the species in that habitat, are among the desired conditions toward which the project is designed to make progress (DEIS p. 18). Therefore, the Forest Service will, at the completion of prescribed fire activities in whitebark pine habitat, determine whether there is a need for artificial reforestation treatments to complement the natural reforestation processes that are expected to occur. Where needed and feasible, artificial reforestation in this case might involve tree planting or possibly direct seed placement, using available, site-suitable rust-resistant seedlings or seed. All such considerations would be made through on-site diagnoses and prescriptions prepared or reviewed by a certified silviculturist. To incorporate these elements into the proposed action and its action-alternative, the Forest will include in the final EIS an additional, corresponding project design feature.	Silviculture- WBP
47	Forest and Inventory Analysis data for the Helena NF recorded white pine blister rust on about 19 percent of the live whitebark pine trees in the plots. However, blister rust surveys of whitebark pine in two stands south of the Stonewall project area on the Helena National Forest done in 2007 and 2009 found 74 and 97 percent WPBR infection levels (see WBP Survey_granite.xls and WBP Survey_redmtn6253.xls in project records). Given that the purpose of the blister rust surveys was to closely examine trees for the presence of blister rust, we suspect infection levels within the project area to be closer to the survey values than that shown in FIA data. Also, given the widespread presence and impacts of the disease throughout the Intermountain West (appendix B), there is no reason to believe that the condition is not similar to other	Botany/Silviculture-WBP

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	places in the state (DEIS page 113).	
48	The process for the development of the proposed action was described in chapter 1 of the DEIS. Gathering vegetation data on all ownerships is beyond the scope of this analysis. Available forest GIS information was considered. The Fire and Fuels analysis in chapter 3 of the DEIS discussed methodology, including use of available R1 VMAP vegetation data, and the anticipated future fire behavior potential by flame length and fire type.	Fire/Fuels – WUI, NEPA
49	The Forest Plan provides a framework for management actions. Individual projects are proposed to cover discrete areas. Future management proposals will undergo appropriate analysis based on the conditions present at that time. Speculating future funding and environmental conditions for a potential future course of treatment is beyond the scope of this analysis.	Fire/Fuels
50	The fire analysis included in chapter 3 of the DEIS discussed the anticipated effects over time. The noted research papers were reviewed during the literature review and that and other information considered in the Stonewall analysis.	Fire/Fuels
51	The fire analysis included in chapter 3 of the DEIS discussed the anticipated effects over time. Hessburg and Lemkuhl (1999) was reviewed during the literature review completed, and was considered along with other information during the Stonewall analysis.	Fire/Fuels
52	Project area old growth was discussed under the Habitats of Special Concern section of the DEIS (pages 68-69, 215-219, 222-240). DEIS tables 55 through 57 (pages 222-224) display the existing stands with old growth characteristics. The DEIS disclosed at page 240 that the Forest Plan direction regarding old growth would be met. The existing old growth stands within the project area would continue to provide old growth habitat. The maps of old growth have been updated in the FEIS to clarify terminology. The DEIS disclosed effects on pine marten (pages 302, 326, 444-448), northern goshawk (page 294-297, 325, 428-436), pileated woodpecker (pages 297-300, 325, 436-442) and migratory birds (pages 315-318, 327, 348-354, 474-475). Analyses of these species are found in the respective areas in the wildlife analysis in chapter 3 of the FEIS. The analysis presented also identifies the cumulative effect analysis area used and provides rationale for its selection.	Wildlife – old growth
53	The effects of the past management actions, including roads, were considered in the Stonewall Vegetation Project analysis of existing condition and cumulative effects analyses and are discussed under the separate resource topics in chapter 3 of the FEIS.	Transportation

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	The Stonewall Vegetation Project does not propose changes to the permanent travel management within the project area. Travel management was analyzed and addressed in separate efforts and outside the scope of the Stonewall Vegetation Project analysis.	
54	The Forest Service understands this comment as essentially arguing that fuel reduction actions "artificialize the forest ecosystem" to the detriment of "ecosystem function" and therefore such activities must be restricted and mitigated. The comment points to literature cautioning land managers against generalizing or over-projecting to any particular location scientific findings about historical fire regimes and thereby possibly concluding in error that "uncharacteristic vegetation patterns" have resulted from past fire suppression and exclusion. The Forest Service concurs that past fire suppression and exclusion have affected vegetation patterns. The activities proposed are responsive to land and resource management objectives of the Forest Plan. The Forest Plan embodies the public laws, regulations, and policies governing management of the Helena National Forest. Achieving Forest Plan objectives, of which hazardous fuel reduction is one, requires the manipulation of forest vegetation, or silvicultural practices. So also does the improvement or replacement of timber stands—treatments that are also proposed and related to fuel reduction in this case. The DEIS presents the project in the context of moving towards desired conditions identified in the Forest Plan. The DEIS shows how the proposed action is informed by local collaborative partnerships, current forest conditions, ecological amplitudes, historical reference conditions, environmental quality assurance, and operational and financial feasibility. The proposed activities were designed to satisfy policy that requires treatment of current conditions—to reduce fuel hazards and improve or replace timber stands, while also operating within the environmental standards and feasibility factors. We considered public input and comments from with the involved stakeholders. All of this together makes up our resource-management job, as contrasted with avoiding or limiting "mechanical manipulation [that does not maintain] ecosystem function." The Forest Service understands the concern regarding blowdown as pertaining to mature lodgepole stands that have developed under high-density conditions over many decades. We wish to clarify that under this project we are not thinning or improvement-cutting any such stands. All of the mature lodgepole pine stands in the project area, and the mature lodgepole components of mixed stands, are highly to severely affected by mountain pine beetle. Thus we are improvement-cutting only those stands that have sufficient components of other species such as Douglas-fir or larch,	Silviculture – FP direction

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	to be the retained growing stock (Treatment Group 1). Where lodgepole is predominant, regeneration-harvest cuttings are proposed to replace these highly damaged stands (Treatment Groups 3 and 4). Veblen (2003) was reviewed during the literature review and that and other information was considered in the Stonewall analysis.	
55	Programmatic issues such as development of fire management plans and policies are outside the scope of the Stonewall Vegetation Project analysis. Developing programmatic forest-wide policies and fire management plans is more appropriate during revision of the land and resource management plans. This project analysis tiers to the FEIS completed for the Helena National Forest, Forest Plan as amended, and incorporates by reference the Forest Plan (see Forest Plan II/33-34, III/35, Appendix R for fire management). The Forest Plan, as amended, provides the direction for land management activities. Actions proposed with this project to reduce fuels within the wildland urban interface areas were designed to address Forest Plan direction, as amended. Ament (1997) was reviewed during the literature review and that and other information was considered in the Stonewall analysis as considered	Fire/Fuels
56	The methodology sections under each resource area notes the information used in analysis (e.g., survey, monitoring or other) and cumulative effects analysis information. Past project effects are discussed by resource area in chapter 3. See also appendix C for cumulative effects information. Available Forest monitoring information was considered for this analysis and noted where cited in the DEIS and FEIS.	NEPA
57	Appendix C included available information from past, present, and ongoing projects relevant to the cumulative effects with this project. Each resource discussion in chapter 3 identified the boundary used for cumulative effects analysis.	NEPA
58	Evaluating the status of Forest level monitoring and monitoring or mitigation required or recommended in any NEPA document is beyond the scope of this analysis. Available Forest monitoring information was considered for this analysis and noted where cited in the DEIS and FEIS.	Forest Monitoring
59	Forest and regional viability of late successional/old growth species are discussed in the management indicator species section, by forest type in the wildlife section in chapter 3 of the FEIS and as described, viability analyses are based on the Northern Region Viability Protocol, the Draft White Paper on Managing for Viable Populations (USDA FS 2001), in a Conservation Assessment for the Northern Goshawk, Black-backed woodpecker, Flammulated Owl,	Wildlife

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	and Pileated Woodpecker in the Northern Region and USDA Forest Service Habitat Estimates for Managing Viable Populations of the Northern Goshawk, Black-backed Woodpecker, American Marten, and Fisher(Samson 2006), which summarizes the status and viability of these species within the Region and on the Forest. Cumulative effects to wildlife, including rationale for selection of the analysis area boundary are discussed in chapter 3 of the FEIS. See response to comments for Forest-wide monitoring of late successional wildlife.	
60	See response to comment 7-27 related to snag availability for late successional/old growth species and Plan compliance. See response to comment 59 related to Forest and Regional conservation assessment for the flammulated owl and response to comment 24 related to flammulated owl documentation and effects of treatment.	Wildlife
61	See response to comment 24 for flammulated owl surveys conducted near the project area, whereas comment 60 summarizes the Forest strategy used to ensure viability of this species. .	Wildlife
62	Forest and Regional availability of suitable habitat for the pileated woodpecker, flammulated owl, northern goshawk, black-backed woodpecker, American marten and fisher are discussed by species in the wildlife section in chapter 3 of the FEIS. It was also recognized that for some species analysis beyond the project area is needed. Consequently elk were evaluated at the herd unit scale, grizzly across Bear Management Units and Lynx across Lynx Analysis Units, analysis and cumulative effect boundaryies are discussed by species. The analyses for grizzly bear, Canada lynx and big game have been updated in the respective species analyses in the wildlife section of chapter 3 of the FEIS.	Wildlife
63	This comment was submitted in response to scoping. The requested analysis and documentation was provided in the DEIS and supporting reports. Current and future old growth resources of the project area, and predicted non-significant effects of the alternatives to those resources, are fully discussed in the Stonewall Vegetation Project Old Growth and Snag Analysis (Amell 2012) located in the project record, and incorporated into the DEIS at pages xi-xii, 68-69, and 215-240. Terminology was updated and the information has been carried forward into the Habitats of Special Concern section in chapter 3 of the FEIS.	Wildlife/Silviculture – old growth
64	See DEIS Table 2, Management areas (DEIS page 9). No management area 20 exists in the project area. Effects to grizzly bear were analyzed and discussed in chapter 3 of the DEIS (see especially pages 269-275, 322, 348, 352). The grizzly bear analysis has been updated to incorporate updated road	Wildlife – grizzly bear

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	information. See the updated analysis for grizzly bear in the threatened and endangered portion of the wildlife section in chapter 3 of the FEIS.	
65	The lynx analysis has been updated to incorporate updated information. See the updated analysis for lynx in the threatened and endangered portion of the wildlife section in chapter 3 of the FEIS.	Wildlife - lynx
66	The lynx analysis has been updated to incorporate updated information. See the updated analysis for lynx in the threatened and endangered portion of the wildlife section in chapter 3 of the FEIS.	Wildlife - lynx
67	Noxious weeds are discussed in the analysis. Noxious weed treatments costs related to the Stonewall project activities were considered in the site specific economic analysis. The 2006 Record of Decision and accompanying EIS for treating weeds on the Helena National Forest (USDA Forest Service 2006c) was discussed in the analysis and direction incorporated into the proposed action and project design features. Addressing noxious weeds on a forest-wide basis is beyond the scope of this project analysis.	Noxious weeds
68	The Forest Service goal is also functioning stream ecosystems that include healthy, resilient populations of native trout. Improvements to the road system associated with this project would reduce effects to the watersheds by reducing sediment, improving drainage and fish passage. Additional road improvements including several miles of decommissioning and storage are being analyzed in the Blackfoot Travel plans that would greatly reduce impacts of roads on streams.	Fisheries - trout
69	Inventory and evaluation of roadless areas takes place at the forest plan level. Unroaded areas adjacent to IRAs that overlap with proposed treatment areas were evaluated for potential impacts to their roadless and wilderness characteristics. See DEIS page 595-603 and Table 154 and 155.	IRA boundary
70	Analysis of impacts to fish and habitat were included in the DEIS (pages 552-567).	Fisheries
71	Effects to water resources were discussed in the Hydrology section of the DEIS (pages 529 through 552). DEIS page 532 disclosed the geographic information system data used for the analysis. Hydrologic features were displayed in DEIS figure 83. Effects to water resources are discussed in the Hydrology section in chapter 3 of the FEIS.	Hydrology
72	The existing conditions are discussed by resource area under affected environment in chapter 3 of the FEIS. Effects of ongoing livestock grazing were considered in the analyses of vegetation, soils, and hydrology discussed in chapter 3 of the FEIS.	Livestock Grazing monitoring

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	Monitoring identified for this project is listed near the end of chapter 2 of the FEIS. Range condition monitoring related to livestock grazing activities are managed under allotment management plans and beyond the scope of this analysis.	
73	Current conditions of fish populations and habitat are disclosed in the DEIS as well as effects of the project.	Fisheries
74	See also responses to comments 7-20, 56, and 57 regarding direct, indirect and cumulative effects analysis.	NEPA
75	The Forest Service recognizes that land productivity is reduced by noxious weed infestations. That issue is addressed Forest-wide under the *Final Environmental Impact Statement: Helena National Forest Noxious Weed Treatment Project* and accompanying *Record of Decision (*USDA Forest Service 2006d). The analysis completed for this project discloses how noxious weeds are expected to respond under the different alternatives, what the environmental consequences are and incorporated practices designed to minimize or avoid potential adverse effects particular to this project.	Plants
76	Current and cumulative soil disturbance was disclosed in the DEIS for each individual treatment unit. The soils analysis has been updated in the FEIS.	Soils
77	Current and cumulative soil disturbance was disclosed in the DEIS for each individual treatment unit. The soils analysis has been updated in the FEIS. Sediment modeling was also completed to assess the possibility of sediment delivery to streams. Assessments of water quantity affects from disturbances were done by the project hydrologist. See the soils and hydrology sections in chapter 3 of the FEIS.	Soils - Sedimentation
78	Soil disturbance from off-road vehicle use was taken into account when formulating the current conditions and estimating current detrimental soil disturbance. The soils analysis was updated according to regional protocol considering disturbance in stands with records of past disturbance. See soils section in chapter 3 of the FEIS.	Soils
79	See comment 75. This project includes monitoring for and treatment of noxious weed infestations that may occur as a result of the proposed activities.	Noxious weeds
80	Soil productivity is discussed in the soils section in chapter 3 of the FEIS.	Soils
81	A project wildlife report and Biological Evaluation was prepared for the Stonewall project Cumulative effects evaluated in these documents are disclosed in the sensitive species discussion in the wildlife section in chapter 3, and appendix C of the FEIS discloses past, present and reasonably foreseeable future activities.	Wildlife

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82	The interdisciplinary team reviewed the literature noted above for consideration in the analysis. The literature review document is available in the project file. The soils analysis addresses carbon storage. (Jurgensen et al. 1997; Page-Dumroese and Jurgensen 2006) We recognize that variance or actual change in climate—past, present and future—potentially affects current and future conditions of the Helena National Forest. These facts are considered and addressed in the formulation of project objectives and the design of proposed and alternative actions. Through these, we seek to culture forest conditions in the Stonewall area that are resilient as possible to disturbance-events, processes, or trends that can—when sufficiently large, intense, or long term—detract from national forest conservation and the delivery of public benefits specified in law and policy. The Forest Service recognizes manipulating forest vegetation through silviculture, management of hazardous fuels, and fire, carbon is added to or removed from the earth's atmosphere; the manner and degree to which this happens as a result of the actions proposed can be at least qualitatively analyzed and described in comparison to no action (DEIS Chapter 3 under Carbon Storage, pp. 176-177). Concerning possible indirect climate effects from project-caused carbon release or storage, the Stonewall Project NEPA process will not attempt to make such an analysis. This position is based upon the fact that questions about whether or how to analyze effects to climate resulting from federal land and resource management are still under consideration by the White House Council on Environmental Quality (CEQ). Currently, CEQ has issued no operative guidance on this, as explained more thoroughly [in the Atmospheric Carbon Report (Amell and Klug 2013)] in the … section, "Regulatory Direction and Guidance on Consideration of Climate Change in Project Related NEPA Analysis."	Silviculture – climate change, carbon storage
83	Pages 632-644 of the DEIS disclosed the economic analysis for this project. The economic analysis will be updated for the FEIS based on current market and stand conditions, and also to reflect any changes in the alternatives. Financial efficiency is just one tool that is used to evaluate the costs and benefits of a project. Many non-market values associated with natural resource management are best handled apart from, but in conjunction with a more limited financial efficiency framework. These nonmarket benefits and costs associated with the project are discussed throughout the various resource sections of the DEIS.	Economic
84	The Stonewall Vegetation Project analysis is an EIS. All scoping comments received for this project were included in appendix A of the DEIS. Scoping comments did not include comments to consider	NEPA

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	an alternative with no temporary roads. Alternatives considered but eliminated from detailed study were included in chapter 2 of the DEIS. The Stonewall Vegetation Project analysis did not consider an action alternative with no temporary roads since that suggestion was not raised for this project. The no action alternative addresses an alternative that does not include construction of roads that would be obliterated following activities.	
85	Commenters will be included on future mailing regarding this project.	NEPA