

*Oregon Chapter Sierra Club  
Asante Riverwind  
Eastern Oregon Forest Organizer  
P.O. Box 5534  
Bend, Oregon 97708  
(541) 322-4065  
[asante.riverwind@sierraclub.org](mailto:asante.riverwind@sierraclub.org)*

August 7, 2009

John Allen, Forest Supervisor,  
Deschutes National Forest Headquarters  
1001 SW Emkay Drive  
Bend, OR 97702

**Comments on the Deschutes and Ochoco National Forests, and Crooked River National Grassland Invasive Plant Treatments Draft Supplemental EIS**

The Oregon Chapter Sierra Club appreciates this opportunity for review and comments on the Deschutes and Ochoco National Forests, and Crooked River National Grassland Invasive Plant Treatments DSEIS. We have reviewed the DSEIS and in addition to these comments, our organization also joins in the comments on this DSEIS by the League of Wilderness Defenders – Blue Mountains Biodiversity Project. As we have significant ecological concern and legal issues with the proposed treatments as developed in the DSEIS, we offer assistance in helping develop a comprehensive ecologically responsible program to protect wildlife and aquatic species habitat, restore rare native plants, and reduce the extent and spread of invasive plants in the Deschutes and Ochoco National Forests and the Crooked River National Grassland.

The Oregon Chapter Sierra Club represents over 20,000 members throughout Oregon, including over 1,000 members throughout eastern and central Oregon. Nationally, the Sierra Club represents well over one million members. We have reviewed the current DSEIS analysis and concerning proposed Invasive Plant Treatments. Our organization is deeply concerned regarding the proposed use of known toxic and unknown new chemical herbicides as well as potentially problematic biocontrols. We have requested that Karen Coulter, Director of the Blue Mountains Biodiversity Project, add our organization on as a signatory to LOWD-BMBP's DSEIS comments concerning the agency's proposed invasive plant treatments, and herein reference LOWD-BMBP's comments as part of and supplementary to these comments. Additionally, we again recommend that the Deschutes, Ochoco, and CRNG personnel responsible for developing this proposed Invasive Plant Treatment DSEIS thoroughly review the following information from the LOWD-BMBP et al appeal of the Region 6 Invasive Plant Program FEIS, as much of the proposed action treatments still fail to responsibly incorporate legal and ecological concerns that are raised therein.

The proposed Invasive Plants Treatments DSEIS directly and significantly affects the members and volunteers of the Oregon Chapter of the Sierra Club. Members and volunteers of our organization regularly use the region's public lands throughout the affected analysis area for hiking, camping, work, recreation, medicinal and edible plant gathering, wildlife observation, photography, ecological study, and other forest-related activities. Implementation of the Invasive Plant Treatments DSEIS as proposed would adversely affect the Oregon Chapter Sierra Club

because the proposed herbicide and biocontrol activities, and the inclusion of unproven new technologies and unspecified additional herbicides in the future, would result in degradation of fish, plant, and wildlife habitat, and natural ecological integrity and functioning throughout the affected areas of the Deschutes and Ochoco National Forests, the Crooked River National Grassland, and adjacent and downwind lands and downstream watersystems, with high potential of significant adverse impacts to native plants, wildlife, fish, soils, water quality, native biodiversity and ecological integrity, and human health and safety. The Oregon Chapter Sierra Club has a long-standing and well-documented interest in the management of the Deschutes and Ochoco National Forests, and the Crooked River National Grassland where the Invasive Plant Treatments as disclosed in the DSEIS are proposed.

In general concept, we support the basic concepts founding the four goals for invasive plant management added to the Forest Plan by the R6 2005 Invasive Plant Program ROD:

- Protect ecosystems through an integrated approach (however “integrated” as interpreted by the DSEIS has become an exceptionally amorphous phrase open to far too wide discretion, especially in regards to the planned use of toxic formulations over proven natural, preventive, and manual methods);
- Minimize the creation of conditions that favor invasive plants (especially restricting and/or eliminating root causes and sources);
- Protect the health of people (which should clearly mean restricting or prohibiting the use of known and/or suspected toxins and carcinogens, and protecting the health of not only the general public, but those who work in the forests and implement the IPT as well);
- Implement treatments that protect ecosystems (working with nature, rather than against, is the most time-proven method of accomplishing this goal).

As such, it is legally and scientifically deficient that the Draft SEIS largely does not provide additional site-specific prevention measures other than those already included in Appendix E of the Regional Invasive Plant Program EIS and ROD. Yet prevention is perhaps the most important component in the control of invasive plants. The revised DSEIS should emphasize and expand upon measures that prevent invasive plants from entering and spreading on the National Forests and Grassland. Livestock grazing, and soil disturbance activities including logging, thinning, roads, ORVs, etc. must be addressed and curtailed, helping to effectively address invasive plants issues at their source of introduction and spread.

The failure to sufficiently address the effects of motorized vehicles, timber management, and livestock grazing on the introduction and spread of invasive plants within the DSEIS violates the expert, reasonableness, and scientific requirements of the NEPA, and if implemented would violate the NFMA, MBTA, and CWA. These activities degrade natural ecosystems and set the conditions for the introduction and spread of exotic invasive plants. This is well-documented in scientific literature. While the Guide to Noxious Weed Prevention Practices included in the regional EIS Appendix E, and Appendix G of the DSEIS provides selected prevention techniques, these rely largely on severely flawed Best Management Practices which clearly have failed more often than not (or there wouldn't be an exponentially growing invasive exotic plant problem). Additionally, the identified provisions inadequately address effective implementation and monitoring in the field. It is of utmost importance that weed prevention and treatment

activities be effectively incorporated into individual projects and carried out under the regulation and guidance of these programs. Monitoring projects for effective prevention of invasive weeds is essential.

Education is an important element of invasive weed prevention. National Forest and Grassland visitors and the region's communities should be educated about the problem and what can be done to help prevent the spread of invasive plants. The DSEIS must develop clear effective provisions for public education and prevention programs.

Herbicides are a dubious and often dangerously toxic component of the DSEIS proposed integrated approach for control of invasive weeds. However, avoidance of known and suspected herbicide toxins, favoring biological control and manual / cultural treatments should be utilized, researched and developed in effectiveness, recognizing that the harmful impacts of toxic herbicides most often negate any potential initial control benefits they may be attributed. Herbicide spraying alone will not solve invasive plant problems, and without addressing prevention and natural control methods, long-term cumulative ecological harms and synergistic impacts will incrementally occur across the region, with as yet unforeseen consequences to the ecological integrity of natural ecosystems, native species biodiversity, and human community health and well-being. Often, the use of herbicides creates additional problems, as well as compounding existent ones. The management approaches advocated by the DSEIS are likely to result in irreparable and unlawful adverse impacts from herbicides upon human health, fish and wildlife, and non-target native plants. The proposed management actions failures to effectively address and curtail the sources of introduction and spread of invasive plants will ensure that the use of harmful toxic herbicides is not only perpetual, but incrementally such use will increase over time. This underscores concerns about the cumulative effects of herbicides over time, as well as potential unknown effects from combinations of different chemicals and adjuvants. The Forest Service must make a specific measurable commitment and clear prohibitions significantly reducing or eliminating the use of known and suspected toxic herbicides.

We support the prohibition of broadcast spraying of herbicides in riparian areas and strongly request this be extended to prohibit broadcast spraying anywhere.

The restoration of treated sites is an essential part of invasive exotic plant control. Native plant species that belong to the local plant community should be used to re-occupy the site and reduce the risk of re-infestation by invasive exotics. Seed and other plant propagation materials should be native and collected as locally as possible. Species diversity is not only beneficial – but is essential. Native forbs as well as native grasses must be utilized, and non-native botanical species must not be employed.

Specifically:

- We ask that you directly address specific measures that do not involve toxic formulations or practices to prevent invasive exotic plants on the region's affected public lands and describe how they will be implemented. Relying on the Region 6 plan, and the DSEIS's proposed use of harmful formulations, fails to comprehensively address forest-level invasive plant

problems, their root causes, and substantial but as yet largely unaddressed cumulative and synergistic impact harms.

- Incorporate invasive exotic plant prevention, treatment and monitoring into all National Forest program activities. Program activities such as logging, grazing and motorized vehicle use should be modified, restricted, or prohibited as necessary in order to prevent the spread of invasive exotic plants and to prevent conditions favorable to their establishment.
- Given that certain Forest Service projects are treated as categorical exclusions and not analyzed under environmental assessments or impact statements, we request that the DSEIS address invasive plant concerns for categorical exclusion projects as well as unauthorized activities and their impacts. Management activities proposed as categorical exclusion projects should be assessed in light of their effects upon invasive plant prevention. Similarly, as the agency is largely incapable of effectively enforcing ORV use regulations, the cumulative impacts from actual and predicted use levels and harms must be assessed. Similarly, BMP provisions for logging, thinning, and other management actions are at best only partially attained. Actual impacts, rather than speculative assumptions, must be ascertained, disclosed, and assessed in light of the full cumulative impacts and synergistic harms of the proposed treatments. The potential for real-life worst case scenario occurrences must be addressed, rather than unrealistic Polly-Anna assumptions that generally fail NEPA's expert advice, accuracy, and high quality analysis requirements.
- We ask that the Forest Service make a specific measurable commitment to reducing reliance on herbicides, and prohibiting the use of known and suspected dangerous toxic formulations.
- Monitoring needs to be a priority. Small control study areas should be assessed prior to large scale treatments, to assure the effectiveness and assess the adverse impacts of proposed treatment methods.
- Effective cultural / mechanical and biological treatments must be considered in all situations and utilized in preference to chemical treatments.
- Treatments should not be utilized in areas where the root source of past and continuing introduction and spread of invasive plants has not been curtailed first.
- Herbicides should not be sprayed in aquatic and terrestrial amphibian habitat, or in any areas with habitat and/or presence of biodiverse species of concern. Ribbon grass in particular is considered difficult to remove and control with non-herbicide formulations. However, our organization participated in an all too brief demonstration project on manual removal of ribbon grass in the Metolius River. In only two brief actual working hours (as much of the time was spent in travel, discussion, and initial preparation) a significant portion of one island area of ribbon grass was cleared. If instead of harmful herbicide pollution of the Metolius (which is considered to be one of the most naturally pure watersystems in the area),

- Herbicide should not be broadcast sprayed anywhere.
- Invasive plant concerns should be a priority during transportation planning on the Forest. All motorized travel should be limited to designated routes, cross-country motorized use must be eliminated, and unnecessary roads must be effectively closed. ORVs should be prohibited from interior wildlands and ecological areas of importance and/or concern.
- Opportunities should be explored to engineer and provide washing stations to prevent the spread of exotic plants by vehicles. (For example, designs exist for in-road “cattle guard” style friction wash basins, with recoverable seed traps, at the entry points to public lands.)
- We ask that the Forest Service begin a proactive role in having a forb component in native seed mixtures to accurately reflect the plant communities on the Forest.
- We further ask that the DSEIS address the region’s increasing populations of *Ventenata dubia* and *Bromus tectorum*.
- We also ask the Forest be proactive in addressing non-herbicide and other treatment methods of *Phalaris arundinacea*. Many of the listed methods are not effective because generally Reed canarygrass is located in riparian areas.
- Education should be a key component to invasive exotic plant prevention and we ask that the DSEIS make specific plans for public outreach and participation in invasive plant prevention and eradication efforts.
- Require that all feed for horses and livestock is certified as “weed free” throughout all National Forest lands and not just within wilderness areas.

The best defense against invasive exotic plants is a healthy native plant and soil community. Prevention of site disturbance and prevention of the dispersal of invasive seeds is paramount. We encourage the responsible management and stewardship of the affected regional National Forests and Grassland in order to prevent the spread of invasive exotic plants.

We recommend that the proposed IPT DSEIS project be revised to be consistent with the Administrative Procedures Act, Clean Water Act, Endangered Species Act, National Environmental Policy Act, National Forest Management Act, these statutes’ implementing regulations, and the amended region’s Forest Service Land and Resource Management Plans, as well as credible scientific research concerning invasive plants, and the known and potential

adverse impacts resulting from the utilization of toxic herbicides and harmful biocontrols. We submit the following information as part of our comments on the DSEIS, as it is pertinent to this proposed landscape scale management IPT project, and elaborates more fully upon our concerns:

From LOWD-BMBP's Appeal of the Region 6 Invasive Plant Program:

Appellants are appealing the Record of Decision for the Pacific Northwest Region Invasive Plant Program because of the lack of sufficient evidence that the adopted Proposed Action would adequately achieve the stated purpose and need of the program, the program's significant adverse environmental effects, and the flawed analysis of the EIS and ROD. Appellants' reasons for the appeal are included below and in the comments. Appellants submitted on the Pacific Northwest Region Invasive Plant Program Draft EIS.

Given both the significant impacts of this project and the lack of evidence supporting the statements that there will be no significant impacts from the Invasive Plant Program, the decision to approve the Proposed Action (with modifications) is arbitrary and capricious and violates the Administrative Procedures Act. The Invasive Plant Program would also violate the Clean Water Act, the Endangered Species Act, the National Environmental Policy Act, the National Forest Management Act, and the Pacific Northwest Region's amended National Forest Land and Resource Management Plans (Forest Plans).

I. The Pacific Northwest Region Invasive Plant Program Does Not Meet the Stated Purpose and Need of the Program.

The *Pacific Northwest Region (PNR) Invasive Plant Project (IPP) Environmental Impact Statement (EIS)* states that the purpose and need of the project is

to improve the ability of the National Forests to prevent and manage invasive plants. Updated and more comprehensive direction would replace existing direction for the prevention and management of invasive plants. Invasive plants are currently damaging biological diversity and ecosystem integrity of lands within and outside the Pacific Northwest. Invasive plants create a host of adverse environmental effects, including: displacement of native plants; reduction in habitat and forage for wildlife and livestock; loss of threatened, endangered, and sensitive species; increased soil erosion and reduced water quality; and reduced soil productivity...The economic impact of invasive plants is substantial...costing Oregon citizens about \$100 million per year (2000)...This EIS responds to an underlying need that currently exists on all National Forest System land in Region Six for: (1) Forest Plan level management direction that will reduce the extent and rate of spread of invasive plants and help prevent new infestations; (2) Release from the Forest Plan direction established by the 1988 ROD and 1989 Mediated Agreement so that new practices, technologies, and formulations of herbicides are available for use; (3) An updated list of herbicides available for use by the Forests.

*Pacific Northwest Region Invasive Plant Program Final Environmental Impact Statement (EIS)*, p. 1-1-3. While Appellants agree that invasive plants harm native forest biodiversity, we firmly believe that this program will not fully resolve the threat posed by exotic plant species.

While unstated in the purpose and need section of the EIS, the PNR-IPP must also comply with all applicable environmental laws. As demonstrated *infra*, the program does not comply with all applicable laws and should not go forward. Additionally, the program does not meet the stated purpose and need and therefore should be abandoned. In the alternative, the Pacific Northwest Region Forest Service should prepare a new or supplemental Environmental Impact Statement fully disclosing and analyzing the range of likely and potential impacts from the proposed action.

A. The PNR-IPP Does Not Sufficiently Address the Underlying Cause of the Spread of Invasive Plants on the Forest.

The selected invasive plant management project focuses too much on the symptoms of the spread of invasive plants -- i.e., the increasing number of populations of weeds -- rather than the underlying causes of these increases. Appellants raised this issue during the public comment period, but the USFS failed to adequately respond to our concerns. *See Appendix A -- Public Comments to EIS – Paraphrased Comments Submitted by Blue Mountains Biodiversity Project*. Such causes include the extensive road network in the forests, inordinately high levels of ground-based logging, off road vehicle use, and widespread livestock grazing on national forest lands.

The National Environmental Policy Act (NEPA) and its implementing regulations require the Region to address the *causes* of invasive plants and to design alternatives around eliminating the introduction of them. 40 C.F.R. § 1508.25 (scope of the proposed project). Case law in the Ninth Circuit also requires this analysis. *Thomas v. Peterson*, 753 F.2d 754 (9<sup>th</sup> Cir. 1985). Seriously considering alternatives to herbicide and biocontrol methods of curtailing the spread of invasive plants would meet the purpose and need of the proposed project, which is ostensibly to control the spread of invasive plants across the forests. Disregarding viable alternatives that would meet the purpose and need of the project is inconsistent with NEPA's requirement that a range of alternatives be thoroughly considered in an environmental analysis. *California v. Block*, 690 F.2d 753 (9th Cir. 1982). NEPA requires that the Forest Service take a "hard look" at the problem it is trying to solve and at all reasonable alternatives to determine the best way to protect and promote environmental quality. *See generally Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372 (9th Cir. 1998). Without addressing these causes of the introduction of invasive plants -- and, in fact *refusing* to take a "hard look" at these causes -- the PNR-IPP cannot hope to meet the stated purpose and need of the project and it should be abandoned. Invasive plants have the potential to recolonize the areas treated under this project unless additional measures are taken to stop the reintroduction of these plants.

B. The Forest Service Improperly Excluded Project Alternatives Based on the Stated Purpose and Need of the EIS.

The Forest Service may not adjust the stated purpose and need of the project or the project alternatives to meet its own ends. Such inappropriate intent is made evident in both the EIS and the ROD:

Collectively, the Forest Plans, as they are currently written, do not provide sufficient direction, nor adequate tools for effectively responding to the invasive plant threat. Thus, I identified the need for: (1) Forest Plan level management direction that will reduce the extent and rate of spread of invasive plants and help prevent new infestations; (2) Release from the Forest Plan direction established by the 1988 ROD and 1989 Mediated Agreement so that new practices, technologies, and formulations of herbicides are available for use; (3) An updated list of herbicides available for use by the Forests.

*Record of Decision, Pacific Northwest Region Invasive Plant Program*, p. 1-2. The Forest Service seems focused on experimenting with new chemical treatments of invasive plants, to the exclusion of other alternatives. However, the Council on Environmental Quality (CEQ) advises that

in determining the scope of alternatives to be considered, the emphasis is on what is ‘reasonable’ rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.

CEQ, *Forty Most Asked Questions Concerning CEQ’s NEPA Regulations*, No. 2a. The Forest Service has manipulated the purpose and need of the project in order to actualize its desires to experiment with new methods of vegetation management. In doing so, the Forest Service has illegally limited the range of alternatives analyzed in the EIS. Rather, the range of alternatives should be developed based on the statutory goals and requirements of NEPA, NFMA, and the ESA. 40 C.F.R. § 1502.2(d) (analyses shall state how alternatives will or will not achieve the requirements of NEPA and other environmental laws and policies); *Westlands Water District v. U.S. Dept. of Interior*, 376 F.3d 853, 872 (9th Cir. 2004).

## II. The Record of Decision (ROD) and Environmental Impact Statement Violate the National Environmental Policy Act, the National Forest Management Act, the Clean Water Act, and the Endangered Species Act.

The PNR-IPP ROD/EIS violates the National Environmental Policy Act and its implementing regulations. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370d (1994 & Supp. III 1997); 40 C.F.R. § 1500–1508.28 (1998). The decision notice is arbitrary and capricious in violation of the Administrative Procedures Act. Administrative Procedure Act, 5 U.S.C. §§ 551–559, 701–706, 1305, 3105, 3344 (1994 & Supp. III 1997).

### A. The PNR-IPP EIS Does Not Include a Reasonable Range of Alternatives.

NEPA mandates that an agency “shall to the fullest extent possible: use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize

adverse effects of these actions upon the quality of the human environment.” 40 C.F.R. § 1500.2(e). However the PNR-IPP ROD fails to adopt the most environmentally sound and arguably the most effective alternative offered, Alternative B, which is noted in the FEIS as the most environmentally protective alternative in numerous references under descriptions of standards (see comparisons of different alternatives re: standards 5, 6, 7, 8, 9, and 10, pp. 4-11-4-14 ) and fails to implement the most environmentally protective and most effective alternative designed (but not offered in the EIS), the Restore Native Ecosystems Coalition alternative. None of the alternatives offered in the PNR-IPP EIS avoid the highest risk herbicide treatment scenarios in sensitive areas.

The greatest likelihood of effects to PETS species and their habitat is associated with ‘high risk’ treatment projects in sensitive areas. High risk projects are defined as projects that are treated with aerial herbicide applications, treated with broadcast herbicide applications (e.g. backpack or boom spray), the use of heavy equipment in riparian areas, and indirect treatment of water corridors (i.e. ditches) directly feeding streams with federally-listed aquatic species or critical habitat.

(FEIS pp.146-147). Significantly, none of the alternatives offered prohibit the use of aerial or broadcast spraying, the use of heavy equipment in riparian areas or indirect herbicide treatment of water corridors directly feeding streams with federally-listed aquatic species or critical habitat. Therefore a reasonable range of alternatives was not offered to avoid or minimize adverse effects. NEPA requires the USFS to “study, develop, and describe appropriate alternatives to the recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources as provided by section 102(2)(E) of 40 C.F.R. § 1501.2 (c).” *Id.* The requirement to evaluate all reasonable alternatives is not simply procedural; the Council on Environmental Quality (CEQ) has stated that the alternatives analysis is “the heart” of the NEPA analysis, the purpose of which is to “provid[e] a clear basis for choice among options by the decision maker and the public.” 40 C.F.R. §1502.14; 42 U.S.C. §§4332(2)(E); 40 C.F.R. §1507.2(d). Thus, the Forest Service must “rigorously explore and objectively evaluate all reasonable alternatives” to the proposed action. *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1310 (9th Cir. 1990). The proposed action involves multiple conflicts among alternative uses of available resources regarding threats to the viability and vitality of federally-listed aquatic organisms, native plants, and wildlife, as well as to human health and safety. These could have been resolved with additional alternatives.

The PNR-IPP, however, fails to give a comprehensive evaluation of alternatives to the proposed action. Reasonable and practicable alternatives to the proposed action exist and have been identified in earlier comments by Appellants and other commenters. *Appendix A -- Comments Submitted by Blue Mountains Biodiversity Project*. The alternatives considered in the EIS, however, were unreasonably narrow and did not allow a meaningful discussion of other means of achieving the purpose and need of the project. There are numerous admissions in the FEIS that the alternatives provided do not differ significantly in their effects to wildlife, fish, and other natural values. For example: “The environmental effects to Forest Service Sensitive Species do not vary between the alternatives.” (FEIS p.4-140). This suggests that a broader range of alternatives could have avoided some impacts which are otherwise locked in as inevitable by the lack of significantly different options offered. The restricted range of

alternatives evaluated and considered violates the very purpose of NEPA's alternative analysis requirement, which is to foster informed decision-making and full public involvement. 42 U.S.C. §§ 4331, 4332(2)(E); 40 C.F.R. § 1508.9(b). *See also Tenakee Springs*, 915 F.2d at 1310; *Robertson v. Methow Valley Citizen's Council*, 490 U.S. 332, 349 (1989).

NEPA requires the agency to include a no action alternative as the environmental baseline for a project. 40 C.F.R. § 1502.14(c). However, NEPA also requires the agency to "rigorously explore and objectively evaluate all reasonable alternatives." *Id.* § 1502.12(a). In this case, the agency has clearly failed to explore all reasonable alternatives. As indicated previously, the USFS could have proposed other methods of achieving the stated purpose and need of the project. For example, the USFS could have proposed to control the introduction and dispersal of invasive plants: (1) without the use of herbicides and/or without the use of biocontrols; (2) without the use of the herbicides still planned for use which are most toxic to various resources such as aquatic organisms, most sensitive and listed wildlife, soil integrity, etc.; (3) without the use of aerial or broadcast spraying, which cause the most unintended overspray and drift ; and/or (4) with the use of more comprehensive preventative measures such as proposed in alternative B and the Restore Native Ecosystems Alternative.

It is inappropriate for the Forest Service to avoid taking a "hard look" at faults in its Selected Alternative by setting up "straw man" alternatives for comparison; alternatives completely at odds with policy objectives of protection and enhancement of natural resources. *Blue Mountains Biodiversity Project v. US Forest Serv.*, 229 F.Supp.2d 1140, 1146-47 (9th Cir. 2002). Disregarding other viable alternatives that would meet the purpose and need of the project is inconsistent with NEPA's requirement that a range of alternatives be considered in an environmental analysis. *California v. Block*, 690 F.2d 753. The existence of a viable but unexamined alternative ultimately renders an EIS inadequate. *Alaska Wilderness Recreation and Tourism v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995).

#### B. The PNR-IPP EIS Does Not Adequately Consider the Impacts of this Program.

The PNR-IPP EIS does not provide enough information to determine the extent of indirect, direct, or cumulative environmental impacts associated with the proposed action. Moreover, the EIS does not furnish substantive and quantitative evidence showing this program will not cause serious and irreversible damage to soils, forest productivity, plant diversity, water quality, and wildlife habitat. In fact, the evidence strongly suggests that the program will cause significant impacts to these resources that preclude the implementation of the proposed program. NEPA requires disclosure of relevant environmental considerations "that were given a 'hard look' by the agency" so that there can be "informed public comment on proposed action" and "choices or alternatives that might be pursued with less environmental harm." *Lands Council v. Powell*, 395 F.3d 1019, 1027 (9th Cir. 2005).

NEPA requires that an EIS contain "high quality information and accurate scientific analysis...If there is incomplete or unavailable relevant data, the [EIS] must disclose this fact" up-front. *Id.* at 1031-32 (citing 40 C.F.R. § 1502.22). The EIS must include a description of methodologies it relies on, setting forth any shortcomings that are relevant in light of the environmental impacts the methodology is used to analyze. *Nez Perce Tribe v. NOAA et al.*,

Memorandum Decision and Order in Case No. CVO4-299-C-EJL dated September 21, 2005 (D. Id.).

The FEIS and ROD insinuate that this is just a programmatic decision, and that any potential impacts will be addressed and assessed in later NEPA processes for specific IPP projects. However, it is clear that the authorization of this program -- including its lack of specified regional methodology, monitoring and responsible oversight, and its approval of the use of known harmfully toxic herbicides -- will indeed have impacts. In fact, the FEIS readily admits the impacts of this programmatic decision in several instances. On page 4-136, the EIS states: "Determinations are based on the possibility of adverse effects at the project level, when the standards in this EIS are implemented, rather than only on the effects of the standards themselves. The uncertainty regarding herbicide exposure or proximity of disturbance prevent making a determination of 'not likely to adversely affect' (NLAA) for some species." Thus the FEIS admits that decisions made in this programmatic EIS will have on-the-ground effects which must be taken into consideration in the FEIS, rather than judging only the effects of the standards themselves. This is again admitted on page 4-146: "For the purposes of this EIS, effects to listed aquatic species are determined by using a worst case scenario, which leads to an adverse affect determination based upon the possibility of an adverse affect at the project scale."

The agency cannot have it both ways, claiming no significant environmental effects because this is a programmatic EIS, but basing the effects determination on consequent adverse effects on the project level that directly stem from decisions made in this EIS and ROD. Further, the FEIS admits that the programmatic nature of the EIS should lead to a more precautionary approach to effects determination, not more assurance that there will be no significant effects: "Because this EIS does not include project-level information, there is not significant information on how these herbicides will be applied to determine that there would be no effect whatsoever on PETS species and their habitat." (FEIS, page 4-146). As such the EIS should have more thoroughly disclosed and analyzed the full range of likely and potential impacts which will result from approval of this programmatic EIS and its implementation across the Pacific Northwest region. As the NEPA process failed to do this, the ROD and EIS must be withdrawn and a new process conducted which provides the decision maker and the public with this necessary information.

1. The PNR-IPP EIS fails to adequately consider the cumulative environmental impacts of the proposed project and past, present, and future Forest Service and private activities.

The PNR-IPP EIS fails to fully disclose and adequately evaluate the cumulative impacts of the program. In determining whether a project will have significant impact on the environment, an agency must consider "[whether] the action is related to other actions with individually insignificant but cumulatively significant impacts." 40 C.F.R. §1508.27(b)(7). Under NEPA, "significance exists if it is reasonable to anticipate cumulatively significant impacts on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts." *Id.* 40 C.F.R. § 1508.27(b)(7). Furthermore, NEPA requires the agency to evaluate "cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts," and to discuss them in the same impact statement. *Id.* § 1508.24(a)(2). The PNR-IPP EIS does not consider the cumulative impacts of this program

combined with other past, current, and foreseeable future projects, including timber projects, livestock grazing, herbicide use, mining projects, off-road vehicle use, and other management activities that could contribute to the introduction and spread of noxious weeds.

a. Cumulatively significant impacts on the environment.

“The general rule under NEPA is that, in assessing cumulative effects, the [EIS] must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment.” *Lands Council* 395 F.Supp. at 1028. Vague or general statements of impact are not sufficient; impact from projects must be discussed on an individualized basis. *Id.* Without detailed or quantified information, “neither the courts nor the public, in reviewing [a] decision, can be assured that the Forest Service provided the hard look that it is required to provide.” *Cuddy Mountain* 137 F.3d at 1379. The disclosures and analysis on the cumulative impacts of the PNR-IPP is inadequate and fails to meet NEPA’s requirement for high quality scientific analysis that would satisfy the “hard look” standard. *Robertson*, 490 U.S. at 353; *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208 (9th Cir. 1998) *cert. denied*, *Malheur Lumber Co. v. Blue Mountains Biodiversity Project*, 119 S.Ct. 2337 (1999). The disclosures and analysis also fail to meet the requirement for high quality scientific analysis as required by 40 C.F.R. § 1502.22.

The FEIS just lists potential cumulative effects of herbicide exposure without analyzing the potential consequences from these cumulative exposures. For instance, in the cumulative effect section on FEIS pp. 4-89-90, numerous relevant questions have not been investigated and answered, such as: How many cancers could be caused by these herbicide exposures? What type of cancers could result? Would chronic nerve damage be caused to exposed people? How many people could be affected? There is a consistent bias in the FEIS toward under-stating potential consequences of planned herbicide exposures by identifying them as a small percentage of total herbicide applications across the affected states while not clearly identifying the potential cumulative impacts of the proposed herbicide use in combination with other herbicide use and other sources of habitat degradation and impacts to species.

The USFS failed to analyze other non-federal projects and/or programs adjacent to and in the vicinity of Regional National Forest lands. For example, the ROD/EIS notes that the PNR National Forests receive grazing use, and that timber sales are proposed across the region’s National Forests. Similarly, not only the Forest Service but also State and County governments, Federal and State transportation departments, agricultural operations (including corporate and private timberlands) are currently carrying out invasive plant control projects utilizing herbicides on Forest lands and adjacent ecosystems. The FEIS acknowledges that: “All the federally listed species in the project area, except Oregon Silver Spot butterfly, migrate or move large distances across multiple ownership boundaries, potentially increasing the likelihood that they would be exposed to multiple uses of herbicide and other chemicals, as well as several instances of disturbance.” (FEIS p. 4-139). Yet there is no analysis about the potential consequences of such multiple exposures to the species under discussion.

Despite the disclosure that there are other herbicide application projects occurring at the same time as the proposed program, the EIS fails to discuss the environmental effect of all known and potential herbicide projects occurring at once, *in conjunction with* timber sales and grazing over the same, or adjacent, lands. The lack of an adequate cumulative impact analysis is especially problematic given the cursory admissions throughout the administrative record that the Region's National Forest lands have been highly impacted by past logging and other management activities. For instance, the cumulative effects section for sensitive-listed wildlife species not only fails to include any qualitative or quantitative assessment of the consequences that have been listed, but also fails to consider cumulative effects to these species' habitat and reproductive success other than herbicide use. Such relevant impacts may stem from logging, mining, road construction, hunting, trapping, ozone depletion, human development of habitat, etc. over past, present and future time scales. Mere disclosures do not relieve the USFS of its NEPA obligation to address the synergistic effects of all programs occurring at once. NEPA requires this analysis, and the failure to provide it violates the law. 40 C.F.R. § 1508.7. The agency must address in its NEPA analysis all foreseeable cumulative actions, "regardless of what agency (Federal or non-Federal) or person undertakes such other actions." *Id.*

b. Cumulative, direct, and indirect impacts on water quality.

According to the Clean Water Act (CWA) Section 313, all federal agencies "shall comply with all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution, and federal actors must comply with all record keeping, recording and permitting requirements." 33 U.S.C. § 1323(a). The Ninth Circuit has interpreted this provision to mean that the U.S. Forest Service must comply with all state water quality standards when carrying out its road-building and logging activities. *Northwest Indian Cemetery Protective Ass'n v. Peterson*, 795 F.2d 688 (9th Cir. 1986). This means that the Forest Service cannot claim that the agency's own policies and regulations supersede state water quality standards. In *Northwest Indian Cemetery*, the Forest Service claimed that its BMPs were the only water quality standards applicable; the Ninth Circuit held that adherence to BMPs did not automatically ensure that state water quality standards were met. *Id.* at 697. The Ninth Circuit recently reiterated this standard. *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214 (9th Cir. 1998), *cert. denied*, *Malheur Lumber Co. v. Blue Mountains Biodiversity Project*, 119 S.Ct. 2337 (1999). Furthermore, if BMPs have already failed – as determined when taking a hard look at the environmental impact of past management activities -- they cannot be relied upon to prevent further water quality degradation.

Accordingly, the Forest Service must describe how the selected alternative for the PNR-IPP complies with regional State water quality standards. In fact, however, the EIS does nothing to indicate how the PNR-IPP – in addition to the cumulative effect of other projects in the area – will meet water quality standards. The USFS merely mentions cumulative effects from the proposed project, apparently believing that this scant attention relieves the agency of the duty to address the impacts on water quality of this project in conjunction with other past, present, and reasonably foreseeable agency, state, and/or adjacent private lands actions. NEPA simply does not allow the agency to forgo a comprehensive cumulative impacts analysis. 40 C.F.R. §§ 1502.16 (environmental consequences), 1508.7 (cumulative impact). This analysis "must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past,

present, and future projects.” *Klamath-Siskiyou Wildlands Center*, 2004 U.S. App. LEXIS 22435 #9, (quoting *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 361 F.3d at 1128). The disclosures and analysis also must meet the requirement for high quality scientific analysis as required by 40 C.F.R. § 1502.22.

Yet cumulative effects to aquatic PETS species are just listed, not analyzed as to potential consequences to the listed species. As typical with other cumulative effects sections, there is also no consideration of other types of impacts to critical riparian habitat such as livestock grazing, road construction and logging near streams. Likewise, there is no analysis of the effects of combined exposures to clorpyrifos and triclopyr other than to fish, although adverse effects to aquatic native plants, algae and invertebrates could affect listed fish and mollusks. There is also no analysis of the consequences to listed species of cumulative exposures to hexachlorobenzene (see FEIS p. 4-158). Another example of insufficient cumulative effects analysis pertaining to water quality is the Forest Service acknowledgement that detectable levels of 2,4-D and triclopyr were found in streams in the Klamath River watershed and that triclopyr, 2,4-D and glyphosate were found in surface water following aerial application (FEIS p. 4-123). Yet, the Forest Service has failed to analyze what existing levels of triclopyr and glyphosate in surface waters and *more* chemicals from the proposed action would do to aquatic organisms and fish -- or the combined effects of these herbicide concentrations, logging near streams, livestock grazing in riparian areas, road building near streams, etc. on aquatic life. NEPA does require the agency to identify and explain future projects that may adversely affect the environment. NEPA requires the USFS to disclose the adverse affects from past and present actions as well.

The PNR-IPP EIS suggests that there would be significant cumulative impacts from the IPP in conjunction with other weed control projects, timber sales, and grazing activities in the region. Numerous streams in the region’s forests are water quality limited for temperature and biological parameters. Section 3.2.2 (“Water Quality”) of the FEIS Vol. 1 (p. 3-35) states “every National Forest within the region has water bodies that are water quality limited... in Oregon and Washington, the most common water quality limiting parameter is elevated summer stream temperatures. ...Sediment is the most common water quality limiting parameter in California and Idaho.” Since many streams in the region already do not meet federal and state standards, how can the USFS offer a program that may exacerbate current conditions by introducing herbicides into aquatic systems and thereby impairing the beneficial uses of those waterways? Does the Pacific Northwest Region USDA-Forest Service possess an exemption from the Clean Water Act?

The EIS and ROD fail to adequately address water quality issues, or to reasonably substantiate that the IPP will not result in further impairment and/or degradation of existent water quality limited water bodies. Unless and until credible data is available and disclosed which comprehensively substantiates that the region’s water quality limited water bodies will not be further impaired, the IPP must be withdrawn. 40 C.F.R. § 1500.1(b); 36 C.F.R. § 219.14(2). The water quality issue should be studied in a new or supplemental EIS.

- c. Cumulative impacts from repeated herbicide treatments.

The EIS states that that the PNR-IPP ROD will be incorporated into Forest Plans for each National Forest in the Pacific Northwest Region, and that “over time decision makers for individual National Forests may modify the decisions that result from this EIS.” (ROD p. 3). The PNR-IPP ROD apparently has no time limitations or sunset clauses, essentially authorizing herbicide treatments across the region in perpetuity, while at the same time striking many of the provisions of the Mediated Agreement intended to protect the region’s ecological integrity, wildlife, aquatic systems and species, native botanical biodiversity, and human health from repeated excessive use of harmful herbicides. Additionally, the IPP authorizes regional Forest Plan changes which will result in separate site-specific treatment decisions throughout the region, subjecting regional watersheds, ecosystems, and surrounding human communities to a growing number of herbicide, biocide, and other treatments over time, without adequately addressing the cumulative impacts of these treatments, and the impacts resulting from dropping portions of the Mediated Agreement which require the agency to: (1) restrict the use of herbicides and limit repetitive use; (2) monitor and disclose the cumulative impacts of herbicide use upon area ecology, aquatic systems and human communities; and (3) work towards employing manual, least toxic, and other alternative methods to herbicide use.

During program implementation throughout the region, numerous applications of herbicides may be employed in attempts to control invasive plants. Despite the ROD authorizing this, the EIS fails to sufficiently address the cumulative effects of repeated herbicide applications – both to the same areas – as well as cumulatively across the region’s integrated aquatic systems, complex interwoven ecosystems, and nearby/downstream/down-wind human communities. The ROD initiates a region-wide sorcerer’s apprentice style of disparate herbicide projects. However the ROD fails to incorporate any required district level recording and reporting of these (potentially) many herbicide and other treatments to a regionally central program. Yet it would take just such a central program to effectively track the use of these harmful toxins and adequately assess the growing potential for adverse cumulative impacts from repeated multiple use of herbicides and other treatments throughout the region. By striking or dropping provisions of alternative B and/or the Mediated Agreement requiring Region Six to responsibly and centrally monitor the use of these toxins across the region, the ROD fails entirely to provide for the ongoing protection of the region’s ecosystems and human communities from the cumulative impacts of the PNR-IPP. As such the IPP becomes akin to the fabled sorcerer’s apprentice – setting in motion a growing litany of herbicide projects without adequate controls or awareness of its consequences.

The EIS fails to adequately address or disclose the full potentials regarding the cumulative toxicity of herbicide applications across the region in violation of the NEPA. 40 C.F.R. §§ 1508.7 (cumulative effects), 1508.8 (direct and indirect effects). The EIS and ROD must be withdrawn and a new or supplemental EIS conducted which reasonably and responsibly addresses these issues. This does not satisfy the “hard look” standard set forth in *Cuddy Mountain*, 137 F.3d 1372. Nor do the disclosures and analysis meet the requirement for high quality scientific analysis as required by 40 C.F.R. § 1502.22.

- d. Cumulative impacts from the application of multiple herbicides to a site.

Similar to the failure to address the cumulative impacts from repeated herbicide treatments, the EIS fails to comprehensively address the synergistic impacts of applying more than one herbicide to the same treatment areas, the same watersheds, and/or the many interconnected watersheds of the region. Portions of chapter four of the EIS briefly mention potential synergistic effects from multiple chemicals, but fail to effectively address this critical issue, or to enact effective monitoring provisions to ensure potential harms from multiple herbicide use and chemical combinations do not irreparably harm area ecosystems, aquatic resources, and/or human communities.

It is critical that the USFS address how multiple applications of multiple chemicals will affect the treatments sites and the plants, animals, and aquatic resources found in those areas, and how these multiple chemicals may infiltrate area soils and water systems, accumulating, migrating and combining throughout the region's ecological systems. The FEIS acknowledges that there can be adverse synergistic effects of applying more than one chemical at a time, but the EIS fails to effectively address what these impacts may be – especially when utilizing new formulations and/or chemicals - and how the agency intends to protect all forest users (human and non-human) from these effects. Failing to include centralized regional reporting and monitoring of the ongoing IPP treatments throughout the region for the extensive duration of this program, irresponsibly leaves open – and increases – the likelihood of significant adverse harms resulting from the accumulation and synergistic interaction of multiple chemicals over time. The EIS and ROD fail to sufficiently address this crucial issue, evidencing a level of negligence which could result in unforeseen consequences as dire as those which resulted from past USFS utilization of DDT or other chemical follies – where the supposed “cure” was worse than the ills it set out to correct.

For example, if adjacent district IPP projects were to occur within the same greater watershed over a two year period (the time it takes for some chemicals to more completely biodegrade), infiltration into the areas soils and waterways, as well as overspray drifts, could likely result in unforeseen synergistic recombinations of various chemicals. It is well known that biodegradation and bioaccumulation of chemicals is affected by differing combinations of chemical substances, some of which can increase chemical duration in area soils and waters (as well as within living organisms), just as it is well known that differing chemical combinations can increase the toxicity, bio-duration, and impacts of otherwise relatively benign individual chemical components. The PNR-IPP authorizes the use of diverse chemical formulations, including formulations which are new or yet to be invented – and thus largely untried, unproven, and unknown – and this decision is based upon district level design and implementation of chemical treatments without regional reporting or oversight. When also considering the lack of experienced toxicologists in each district, the utilization of both known and unknown chemical toxins, and the potentials for harmful synergistic chemical combinations, it is apparent that a Pandora's box is opened that contains unforeseeable harms which the EIS has failed to sufficiently address by providing effective and responsible mitigation and project supervision. This failure violates the most basic tenets of NEPA. The Ninth Circuit has held that “general statements about ‘possible’ effects and ‘some risk’ do not constitute a ‘hard look’” at the problem and proposed solutions at hand. *Cuddy Mountain*, 137 F.3d at 1380. The disclosures and analysis must meet the requirement for high quality scientific analysis as required by 40

C.F.R. § 1502.22; high quality science is meticulous and thorough. *Lands Council*, 395 F.3d at 1027.

If implemented, the IPP would likely result in serious violations of the CWA, NFMA, and ESA over time, and may result in serious adverse human health impacts to area communities as well. The IPP decision and EIS must be withdrawn, and a new process begun which effectively addresses these serious issues, and which incorporates provisions which can responsibly and effectively address and mitigate these significant concerns.

The EIS notes that the No Observed Adverse Effect Level (NOAEL) as well as the Lowest Observed Adverse Effects Level or LOAEL) for this project was calculated for each herbicide. However, neither NOAEL or LOAEL apply to multiple chemicals in the same watershed over the length of time it may take for these chemicals to biodegrade, a period of up to two years or more. Moreover, neither NOAEL or LOAEL include other herbicide application projects carried out by the Forest Service, states, counties, corporations or private individuals. The failure to adequately address this issue violates NEPA. 40 C.F.R. § 1508.7. Without detailed or quantified information, “neither the courts nor the public, in reviewing [a] decision, can be assured that the Forest Service provided the hard look that it is required to provide.” *Cuddy Mountain*, 137 F.3d at 1379.

- e. Significance cannot be avoided by breaking it down into small component parts: thus cumulative actions must be discussed in the same EIS.

Under NEPA, “significance exists if it is reasonable to anticipate cumulatively significant impacts on the environment. Significance cannot be avoided by terming an action temporary or breaking it down into small component parts.” 40 C.F.R. § 1508.27(b)(7). The impacts from other past and present logging, grazing, and weed control activities will significantly impact numerous resources including water quality, soil health, fish, and wildlife. The supporting documents for this program note that there *are* other activities planned in the Pacific Northwest Region and its watersheds, and that other activities have occurred there in the past. Yet the cumulative effects section for TES-listed plants is typical in that it admits potential for adverse effects but makes no attempt to quantify or qualify what the results of the proposed action would be to TES native plants or to evaluate whether adverse effects of herbicide use would outweigh beneficial effects of herbicide application. The FEIS also fails to evaluate any other cumulative effects endangering TES plants in the past, currently, or from future actions. Such unconsidered cumulative impacts include livestock grazing and trampling, logging, mining, road-building, development, recreational-related soil disturbance, adjacent land chemical spraying (private/corporate lands, other Ranger District projects across the region, etc.), cultural collection practices, climate changes, etc. Consequently, there are multiple site-specific significant cumulative impacts of these activities that were not adequately considered in the PNR-IPP EIS.

The law requires the agency to address the impacts of this project and the effects of past, present and reasonably foreseeable future projects in a single environmental document. *Thomas* 753 F.2d 754; 40 C.F.R. § 1508.7. The USFS is also obligated to include an assessment of all connected actions of the proposed project in a single environmental document. The PNR-IPP

EIS, however, fails to fulfill both of these mandates because it neither addresses the impacts of other management activities across the region, nor details all aspects of the proposed program such as mitigation, monitoring, and risk plans. Until these defects in the EIS are cured, the PNR-IPP must be withdrawn.

2. The PNR-IPP EIS/ROD does not have adequate survey data to support its findings.

NEPA requires that an EIS contain “high quality information and accurate scientific analysis...If there is incomplete or unavailable relevant data, the [EIS] must disclose this fact” up-front. *Lands Council*, 395 F.3d at 1031-32 (citing 40 C.F.R. § 1502.22). The EIS must include a description of methodologies it relies on, setting forth any shortcomings that are relevant in light of the environmental impacts the methodology is used to analyze. *Nez Perce Tribe v. NOAA et. al.*, Memorandum Decision and Order in Case No. CVO4-299-C-EJL dated September 21, 2005 (D. Id.).

Region Six National Forests have failed to survey for sensitive and listed plant and animal species and therefore lack the necessary information on which to base its ROD for the PNR-IPP. Appellants do not believe that the Forest Service has to survey for every species that may be present across the program area in order to sign a ROD. However, surveys for sensitive, listed, and management indicator species that have been reported or are likely to utilize the program areas should be conducted if reliable population estimates are not available. Such monitoring is required under NFMA, and NEPA requires the agency to use only high quality science and to obtain data when it is missing yet necessary to make an informed decision. 36 C.F.R. § 219.27(a)(6); 40 C.F.R. §§ 1503.24 (scientific accuracy), 1502.22 (incomplete or unavailable information). The failure to complete such monitoring means that the data is not collected, and the approximate population levels or trends of species on the region’s forests are unknown. Without such data, the PNR Forest Service lacks the informed ability to issue a ROD, in violation of NEPA. 40 C.F.R. § 1500.1; *Sierra Club v. Martin*, 168 F.3d 1 (11<sup>th</sup> Cir. 1999).

The lack of information about listed and sensitive plant species in treatment sites is especially problematic because several of the herbicides to be applied are not species-specific, and will kill non-target species as well as target species (e.g. glyphosate). Acting without necessary information violates NEPA, unless the agency explains why it has decided to act without the requisite data. 40 C.F.R. § 1502.22. The Ninth Circuit has held that Forest Service may not rely on mere conjecture or agency claims without presenting the background and supporting data for those conclusions. *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1998). Agencies must “identify any methodologies used and...make explicit reference by footnote to the scientific and other sources relied upon for conclusions” used in any EIS statement.” *Id.* (citing 40 C.F.R. § 1502.24). In this case, the agency has not provided an explanation for why proper plant surveys did not precede the signing of the ROD. Consequently, the program violates NEPA’s implementing regulations and is unlawful.

3. The PNR-IPP does not contain adequate information upon which the decision maker and public may base a reasonable decision regarding the proposed program.

NEPA procedures are meant to “ensure that the agency...will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger [public] audience.” *Robertson*, 490 U.S. at 349. NEPA “emphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure informed decision making to the end that ‘the agency will not act on incomplete information, only to regret its decision after it is too late to correct.’” *Blue Mountains v. Blackwood*, 161 F.3d at 1216. NEPA requirements also ensure that the public will have a detailed, factual basis from which to draw a conclusion regarding the environmental impact of a proposal. *Id.*

There were many pieces of critical information that were missing from the EIS and supporting documents that prevent the decision maker and public from making a reasoned decision regarding the proposed project. First, the EIS and supporting documents lack a series of detailed maps of the program area and the location of known invasive plant treatment sites. Without such information, it is impossible for the public and the decision maker to determine if the application of the proposed herbicides is appropriate based on the location of the sites across the region. For example, some sites might occur on shallow soils with high water tables, making the application of picloram inappropriate. Similarly, the use of manual control methods might be better suited for some locations currently slated for herbicide treatments. The IPP fails to give sufficient mandated guidance concerning these issues, leaving far too much project design and implementation open to inconsistencies and potentially severe errors. This could have serious consequences, given that specific project implantation of the IPP will fall to individual ranger districts -- most of which lack toxicologists and qualified levels of professional expertise concerning herbicide use and alternatives, impacts, and environmental and public safety.

Second, while this is a programmatic EIS, it is obvious from a reading of the document that the Forest Service has already assessed known invasive plant locations and determined their preferred control methods for each site. At a minimum, some of these representative sites could have been described and mapped with explanation given as to how the Forest Service decided which herbicide or other control method to use. The lack of a range of comprehensively detailed maps in the EIS precludes the public and decision maker from cross checking this program with other projects proposed on the Forest, such as grazing allotments and timber sales. Both the public and the decision maker are prevented from “ground truthing” the statements made in the EIS and supporting documents with the on-the-ground situation. Without this information, it is impossible for the agency and the public to adequately assess the direct, indirect, and cumulative impacts of this and other projects. Allowing the public and decision-makers to see what site-specific factors the Forest Service takes into consideration for determining control methods could potentially build public trust in agency judgment. Without detailed or quantified information, “neither the courts nor the public, in reviewing [a] decision, can be assured that the Forest Service provided the hard look that it is required to provide.” *Cuddy Mountain* 137 F.3d at 1379.

Additionally, although Appendix P provides herbicide information sheets with regards to wildlife, the USFS did not include copies of the actual herbicide labels and application requirements of the proposed herbicides as required by the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §§ 136–136y (1998). The Forest Service response to our Freedom of

Information Act request, herbicide information profiles, SERA risk assessments, Material Safety Data Sheets, and herbicide labels should all have been included as appendices to both the DEIS and FEIS to fully disclose potential environmental and human health risks. Otherwise undisclosed risks and toxicity information from Forest Service I.D. team reports (effects summaries) should have been incorporated within the FEIS rather than edited out.

While Appellants appreciate the information contained in Appendix P, it fails to meet NEPA's requirements. As a specific example, the appendices failed to include pertinent information necessary for a fully informed consideration of the toxicity of specific herbicides to aquatic systems and species. The agency has the audacity to "include" in the appendices Appendix G "Herbicide Risk Assessment Locator," which fails to provide the public or the decision maker with NEPA mandated information found in the SERA prepared risk assessments for each of the herbicides proposed for use by the USFS. This information, which is of paramount importance to the legality of the decision made, and which could have easily been included or paraphrased within the Appendices, was instead withheld from ready available public access. It was kept in the Region Six Portland Oregon office and posted in a time-consuming website, making access to this information unreasonably difficult. As this and related information is essential to understand the full likely impacts of the IPP, our organization undertook the difficulty of obtaining these and other pertinent documents via FOIA.

In addition to the SERA reports irresponsibly and illegally missing from the public NEPA documents, our organization acquired other reports which also should have been disclosed in the EIS and its Appendices. These included the "Human and Ecological Risk Assessment of Nonylphenol Polyethoxylate-based (NPE) Surfactants in Forest Service Herbicide Applications," which discloses significant data gaps, otherwise undisclosed adverse effects to liver and kidneys, and otherwise undisclosed information about a carcinogenic and mutagenic impurity contained in NPE surfactants. (Bakke, 2002) -- Summary, p. 8 (pages not numbered). These "(NPE) surfactants are commonly used as an additive in Forest Service herbicide applications." (Draft 7/2004, p.7). Failure to provide such necessary information to the public and the decision maker violates the NEPA. The law requires disclosure of relevant environmental considerations "that were given a 'hard look' by the agency" so that there can be "informed public comment on proposed action" and "choices or alternatives that might be pursued with less environmental harm." *Lands Council*, 395 F.3d at 1027. Absent this hard look, the EIS and the ROD must be withdrawn and a new EIS conducted which meets NEPA's explicit legal requirements concerning disclosure and analysis.

There are numerous other examples of information contained in original Forest Service summaries which were not included in the DEIS, the FEIS or its appendices. This information concerned the negative effects of herbicides on different resources (e.g. to wildlife, soils, aquatic organisms) and risk assessments (e.g. for NPE surfactant) that would be of great concern to the public and of significance for informed decision-making. This violates NEPA requirements for full public disclosure. Examples of significant missing information that we discovered in two of these internal Forest Service I.D. team reports (effects summaries) which were not disclosed in the FEIS or its appendices are listed below (from "Summary of Herbicide Effects to Aquatic Species", Draft 7/2004 and "Summary of Herbicide Effects to Wildlife," Draft, August 31, 2004, prepared by Shawna L. Bautista, Wildlife Biologist, U.S. Forest Service, Region 6

Regional Office, Portland, Oregon). These examples are not exhaustive of all the significant information in internal Forest Service effects summaries and risk assessments (which we received through a Freedom of Information Act request) that was not disclosed in the FEIS and its appendices:

- (1) quantitative levels of toxicity for studied species (found only in SERA risk assessments and the aquatics and wildlife effects summaries)
- (2) site-specific design criteria advisories
- (3) some of the known gaps in aquatic toxicity data
- (4) some sub-lethal herbicide effects not named in the FEIS – e.g. reductions in prey capture ability and swimming ability for fish
- (5) risk assessments discussing the effects of inert ingredients to aquatic biota
- (6) the toxicity of naphthalene, a toxic ingredient in some herbicide formulations
- (7) undisclosed data gap for sub-chronic and chronic toxicity for fish for NPE (Bakke, 2002 p.8).
- (9) the potential for Hexachlorobenzene (a carcinogenic impurity in clopyralid and picloram) to bioaccumulate in fish is not disclosed in the FEIS, which professes that none of the herbicides proposed for use bioaccumulate.
- (10) the FEIS also fails to disclose which of the herbicides proposed for use contain Hexachlorobenzene even though the SERA 2003 risk assessment identifies clopyralid and picloram as containing HCB.
- (11) the FEIS and summary do not identify known metabolites or analyze potential consequences from some of them being more toxic or persistent than the associated herbicides (see summary, p.9)
- (12) the following mitigation advisory is apparently found only in the FOIAed summary instead of the FEIS, even though it applies to most of the herbicides proposed for use: “Due to potential adverse effects to aquatic macrophytes at plausible exposures, chlorsulfuron will need a site-specific buffer.” This warning is also applied to metsulfuron methyl, sulfometuron methyl, imazapic, imazapyr, picloram and triclopyr, ( with some modifications to include impacts to fish and aquatic invertebrates for picloram and to algae for some of the herbicides) in the aquatic effects summary, but none of this buffer requirements are disclosed in the FEIS or specified in the ROD.
- (13) half-lives for the herbicides proposed for use in surface waters and aquatic sediments are only given in the aquatic effects summary, not the FEIS, even though this and other information not disclosed in the FEIS is valuable for determining which herbicides would be most destructive of aquatic life.
- (14) the information that sulfometuron methyl has been detected in streams after rainfall.
- (15) the quick dismissal of the potential for cumulative effects from herbicides in the FEIS would be less credible if certain information from the summary was disclosed in the FEIS, such as that hexachlorobenzene bioaccumulates and: “imazapic is a relatively new herbicide and no information about quantities used is available. It can be assumed that Forest Service use of imazapic will be locally important. Inerts, adjuvants, and impurities in imazapic formulations have not been publicly identified.” (SERA, 2003, Imazapic) (as reported in “Summary of Herbicide Effects to Aquatic Species,” Draft 7/2004).

(16) significant data gaps regarding imazapic's concentration in the environment; inert, adjuvants and impurities that have not been publicly identified; and its effects to aquatic microorganisms that were not disclosed in the FEIS.

(17) statements indicating risks with the use of clopyralid which were not disclosed in the FEIS: "Evaluation of a site-specific riparian buffer for use of clopyralid needs to consider lack of information about fish toxicity." (SERA, 2003, Clopyralid) (Aquatic Effects Summary, p. 12). "The half-life of clopyralid in water is about 260 days. Clopyralid does not degrade anaerobically in aquatic sediment. Concern for water contamination is increased because clopyralid is not tightly bound to most soils and has a tendency to leach into groundwater. This concern is decreased by the relatively rapid degradation of clopyralid in soil." Id.

(18) specific sub-lethal effects of picloram to fish are not disclosed in the FEIS as quoted below in the Summary p.13: "sub-lethal effects of picloram include decreased growth of cutthroat trout; reduced length and weight of rainbow trout larvae; reduced lake trout fry survival, weight and length; and yearling Coho salmon damage to the liver and gills." (NOAA, 2002). Such specific known effects are more likely to inform the public as to the downside of using picloram than vague pronouncements of "likely to adversely affect" fish with reassuring statements that exposure scenarios were conservative, which is typical of the EIS.

(19) the half-lives of both triclopyr and its common metabolite, TCP, were not disclosed in the FEIS even though TCP "is relatively toxic to aquatic biota" and "the half-life of TCP in aquatic sediment is about two years." (Aquatics Summary, p. 13). This implies potential for significant adverse effects from the use of triclopyr that could have influenced public sentiment and decision-making regarding the inclusion of triclopyr for use by Region Six. Table 6 of the Summary also does not appear in the FEIS even though it represents the only admission that triclopyr has been found in surface waters despite buffers for the herbicide spraying projects involved -- for both aerial and ground-based spraying. This information undercuts the Forest Service argument that planned standard mitigations of buffers, nozzle/droplet size control, etc. would be sufficient to protect surface waters from contamination regarding other herbicides and that spot application of triclopyr will necessarily prevent non-target impacts.

(20) more undisclosed information about the triclopyr metabolite, TCP: "Levels of TCP could reach harmful levels if triclopyr is applied at high rates in areas prone to runoff (SERA, 2003, Triclopyr). Site-specific modeling and monitoring would be useful to ensure and verify TCP concentrations do not reach harmful levels." (Aquatics Summary, p.14). It would be appropriate at the programmatic stage of planning to require that triclopyr not be used in areas prone to runoff and that site-specific modeling be done at the project level to ensure adherence to this required mitigation. Yet this was not done and this information was not disclosed in the FEIS.

(21) likewise, the FEIS does not require avoidance of glyphosate formulas with POEA surfactants in riparian areas despite the reasons for this expressed in the aquatics summary (but not disclosed in the FEIS): "Toxicity to aquatic species varies considerably between formulations of glyphosate and toxicity is increased with the addition of POEA surfactants. Formulation and use of surfactants need to be considered when using glyphosate in riparian areas." (SERA, 2003, Glyphosate) (Aquatics Summary, p.15).

(22) “sethoxydim -- the formulation Poast contains 74 percent petroleum solvent that includes naphthalene. The EPA has placed naphthalene on List 2 (‘agents that are potentially toxic and a high priority for testing’). Petroleum solvents and naphthalene depress the central nervous system and cause other signs of neurotoxicity (SERA 2001)...POAST is much more toxic to aquatic species than sethoxydim.” (Wildlife Summary, p.7). This information about the Sethoxydim formula POAST indicates that toxicity assessments for sethoxydim in the FEIS may have significantly understated sethoxydim’s toxicity to aquatic organisms if the POAST formula was used, since most assessments are based on the main ingredient, not on effects of whole formulas (with toxic ‘inerts’ and adjuvants) that are actually used in the field.

(23) “Triclopyr-Formulations contain ethanol (Garlon 3A) or kerosene (Garlon 4), which are known to be neurotoxic.” (Summary, p.7).

(24) “Polyglycol 26-2, used in picloram, will impact mitochondrial function *in vitro*, but information is insufficient to evaluate risks to wildlife *in vivo* from field applications at plausible levels of exposure (SERA, 2003, Picloram).” (Summary p.8).

(25) “NP and NPE have been studied for effects to aquatic organisms...In the aquatic environment, the breakdown products NP1EC and NP2EC are likely to be present also. These two metabolites are known to affect vitellogenin (a precursor for egg yolk) production in male fish...” (Wildlife Summary, p.8).

(26) “Mann and Bidwell (2000,2001) tested several Australian frogs and *Xenopus* for effects to NP8E...Similar to studies with herbicides, the LC50 values for the frogs are comparable to those for fish (USDA FS 2003). NP8E inhibited growth at concentrations as low as 1 ppm (Mann and Bidwell, 2001). Mild narcosis of tadpoles can occur at EC50 values as low as 2.3 ppm, and reduced dissolved oxygen content in the water lowered the EC50 values by about half as compared to normal oxygen levels...overspray or accidental spills could produce concentrations of NP9E that could adversely affect amphibians, particularly in small stagnant ponds.” (Wildlife summary, p.9).

(27) “POEA surfactant used in Roundup and Roundup Pro contains 1,4-dioxane as an impurity, which has been classified by EPA as a possible human carcinogen.” (Wildlife Summary, p.9). The public should be informed that use of these glyphosate formulas pose the risk of human cancer. The ROD could have prohibited the use of Roundup and Roundup Pro at the programmatic level just as the ROD prohibits the use of 2,4-D and dicamba by the Forest Service in Region Six due to their highly toxic effects; instead the FEIS does not disclose or address this threat.

(28) “Triclopyr contains an impurity, 2-butoxyethanol (aka EGBE)...It is known to cause fragile red blood cells in rodents (Borrecco and Neissess 1991)...Data on toxicity of EGBE to birds was lacking...” (Wildlife Summary, p. 10).

(29) “Sulfometuron methyl can cause malformations in amphibians (SERA , 2003, Sulfometuron).” (Wildlife Summary, p. 11).

(30) “Some of the herbicides analyzed in this document have been investigated for possible synergistic effects and no evidence of synergy has been found (eg. picloram). However, data on this potential effect is incomplete and not likely to be obtained in the foreseeable future: the sheer number of potential combinations of contaminants, environmental stressors, and wildlife species make it unfeasible to investigate thoroughly...some studies have found different results for some chemicals, the study of synergistic effects is extremely

complicated, and there can be substantial uncertainty in the risk characterization for chemical mixtures (ATSDR 2004, USEPA 2000).” (Wildlife Summary, p. 11).

(31) “Most toxicity testing utilizes surrogate species...However, caution should be taken when addressing ecological risk and the use of surrogates when analyzing those ecological risks. Some herbicides demonstrate more variation than others in effects among different species, and very limited numbers of species have been tested.” (Wildlife Summary, p. 12).

(32) “Triclopyr TEA and BEE are somewhat more toxic to birds than triclopyr acid...Triclopyr can be acutely lethal only at very high doses. However, indications of adverse effects to the kidney can occur at very low doses, at least in dogs.” (Wildlife Summary, p.87).

(33) “Neither the published literature nor the EPA files include data regarding the toxicity of chlorsulfuron, clopyralid, imazapic, imazapyr, metsulfuron methyl, picloram, or sethoxydim to amphibian species.” (Wildlife Summary, pp. 90-91).

(34) “There is a substantial limitation to this risk characterization in that no chronic toxicity studies on aquatic animals are available for either sethoxydim or POAST (SERA 2001, Sethoxydim).” (Wildlife Summary p. 91). This certainly throws a different light on the lack of impacts noted in the FEIS for sethoxydim for aquatic organisms. Disclosure of this data gap could lead to a different decision regarding the use of sethoxydim in riparian areas.

(35) “The RoundUp formulation containing POEA surfactant was 700 times more toxic than glyphosate IPA. POEA surfactant alone was more toxic than the RoundUp formulation.” (Wildlife Summary, p. 91).

(36) “The effect of sulfometuron methyl to amphibians was investigated in one study using *Xenopus* (Fort 1998; cited in SERA 2003 Sulfometuron methyl). Results of the study found that sulfometuron methyl exposure can cause moderately severe malformations in these frogs, including miscoiling of the gut, incomplete eye lens formation, abnormal craniofacial development, and decreased tail resorption.” (Wildlife Summary, p. 92).

(37) “Berrill et al. (1994) conducted toxicity studies on eggs and tadpoles of leopard frog (*Rana pepiens*), green frog (*Rana clamitans*), and bullfrog (*Rana catesbeiana*) exposed to technical grade triclopyr BEE...Tadpoles were more sensitive; all bullfrog and green frog tadpoles exposed to 2.3 and 4.6 ppm triclopyr a.e. died. Leopard frogs were more tolerant and few died, but all were unresponsive to prodding at 2.3 and 4.6 ppm a.e. About half the bullfrog and most green frog tadpoles became unresponsive to prodding when exposed to 1.1 ppm a.e...At the highest application rate, acute exposure from runoff could adversely affect responsiveness of some tadpoles, increasing the risk of predation. Despite the difference in toxicity, the conclusion is the same for triclopyr BEE, due to the difference in estimated water concentration.” (Wildlife Summary, p. 93).

(38) “Effects of chlorsulfuron to terrestrial invertebrates have been studied using a leaf beetle (*Gastrophysa polygona*), large whitebutterfly (*Pieris brassicae*), and nematodes (SERA 2003 Chlorsulfuron). Direct spray of first-instar larva and feeding of larva on treated plants did not produce significant changes in mortality, but did delay development of those feeding on treated plants. Placing eggs of the leaf beetle on treated plants significantly decreased survival (Kjaer and Elmegaard 1996; cited in SERA 2003 Chlorsulfuron).” (Wildlife Summary, p. 94).

(39) “Hassan et al. (1994) provided a summary of several bioassays and field trials using a variety of terrestrial invertebrates. Clopyralid produced some mortality in insect parasites, predatory mites...” (Wildlife Summary, p. 94).

Additionally, Appendix P has its text obscured throughout with each page stamped diagonally with large dark bold letters across the entire page stating “**Draft,**” rendering significant portions of the text illegible and making thorough understanding of the toxicity of these herbicides impossible. Finally, the agency failed to update this section from a draft form to a final comprehensive form for the FEIS and before the decision was made, or – in the absence of this – to meet the required disclosures as to why this was not possible, in violation of the NEPA. NEPA requires that an EIS contain “high quality information and accurate scientific analysis...If there is incomplete or unavailable relevant data, the [EIS] must disclose this fact” up-front. *Lands Council*, 395 F.3d at 1031-32 (citing 40 C.F.R. § 1502.22). The EIS must include a description of methodologies it relies on, setting forth any shortcomings that are relevant in light of the environmental impacts the methodology is used to analyze. *Nez Perce Tribe*, Memorandum Decision and Order in Case No. CVO4-299-C-EJL dated September 21, 2005 (D. Id.).

Finally, Appellants have some concern over the Forest Service’s reliance on NOAEL/LOAEL calculations to justify the proposed program. NOAEL/LOAEL are parameters for immediate exposure to fish, not for accumulation of herbicides and toxicity for a watershed and its ecological components. Additionally, the USFS has expressed some concern that the studies used to derive the NOAEL for several herbicides that will be applied under this project are inadequate. Without adequate information regarding the impacts of the proposed project on the environment, NEPA precludes the agency from proceeding with it. 40 C.F.R. §§ 1500.1, 1502.22.

In sum, the USFS has failed to provide enough information for the decision maker or the public to make a reasoned decision based on the record. The Administrative Procedure Act requires such a reasoned decision. 5 U.S.C. § 706(2)(A). Because there is not enough information to support the decision maker’s decision, the ROD and EIS should be withdrawn.

### III. The PNR-IPP Inadequately Analyzes the Impact to Aquatic Systems.

Although NEPA requires that an EIS contain “high quality information and accurate scientific analysis (40 C.F.R. § 1502.22), the analysis of existing conditions of the creeks and rivers in the region is not based on high quality science, fails to adequately describe the current conditions of these aquatic systems, and does not accurately represent the impacts on these systems from the proposed action. The PNR-IPP EIS acknowledges that the water quality, quantity, and timing within the region’s many watersheds have been altered. As mentioned previously, the EIS conducts little analysis of the actual and likely site-specific impacts from the PNR-IPP. In fact, it is likely that the proposed program will result in the further degradation of stream conditions and riparian habitat throughout the region.

In general, the EIS conducts insufficient analysis on the expected and potential impacts of the proposed program on aquatic systems. Instead, the EIS and supporting documents merely state that an herbicide, manual, and biocontrol program will be implemented on the region’s National Forests, and that PETS species would not be pushed toward uplisting despite acknowledged

potential adverse effects to many PETS species, especially fish. Bald assertions are not adequate. 40 C.F.R. § 1502.24 (requiring the agency to “make explicit reference by footnote to the scientific and other sources relied upon for the conclusions in the statement”). The Forest Service may not rely on mere conjecture or agency claims without presenting the supporting data for those conclusions. *Idaho Sporting Congress*, 137 F.3d at 1150.

Further, there are significant data gaps regarding the impacts of herbicides proposed for use to aquatic species. The FEIS admits that

studies of effects to aquatic fungi or unicellular organisms are generally not available. Herbicide effects to these organisms are likely....Similarly, information about herbicide effects to amphibians is limited....Contamination of water by herbicides and changes in water chemistry and temperature all increase stress on fish. Although herbicides are widely used in forestry, their overall impact on water quality, and fish breeding and survival has not been studied thoroughly....Information about sub-lethal herbicide effects to fish is also limited.

(FEIS p. 4-124). The lack of significant hard data for testing the predicted effects derived from models gives reason for adopting the precautionary approach and dropping planned use of the herbicides most toxic to aquatic organisms and fish. These and other information gaps about the effects of herbicides are also reasons to consider a non-herbicide use alternative.

Although it is good these information gaps were disclosed, the spirit and requirement of NEPA is not just to list problems but to use the acknowledgement of problems as a catalyst toward resolving them directly, through informed decision-making, not just relying on “business as usual” “best management practices.” Represented by the standards, in this case, “best management practices” have already resulted in toxic contamination which is often unmonitored and largely unquantified as well as known cases of surface water contamination (as reported specifically in the aquatic effects summary but not in the FEIS) and well and ground water contamination (which has been reported for dicamba).

Another example of inadequate analysis is the FEIS’ failure to consider reported dramatic declines in amphibian populations, which have been attributed to herbicide use as well as to other factors such as habitat loss, competition from introduced species (e.g. bull frogs) and ozone depletion. There is no analysis regarding the potential of this program to contribute to amphibian decline and potential uplisting or extirpations in the Northwest.

Similarly, the EIS states that there are Oregon and other state water quality standards that must be met by the program. However, none of the supporting documents indicate what these standards are, whether or not the program will in fact meet those standards, and how the program will affect the beneficial uses associated with Oregon’s and other states’ standards. These types of non-analysis are prohibited by NEPA’s implementing regulations. *See generally* 40 C.F.R. § 1500.1. Generalized statements do not constitute the hard look required by NEPA. *Cuddy Mountain*, 137 F.3d at 1380.

A. Baseline Data on Stream Conditions is Lacking.

The EIS does not indicate whether the USFS is conducting stream monitoring on any streams across the region, or whether such stream monitoring would be required for areas where the IPP would be implemented on a project level. The fact that there is no baseline against which to gauge the effects of the proposed program is problematic for several reasons. First, the lack of data is inadequate to serve as the baseline against which the impacts of the PNR-IPP may be gauged, and does not allow a reasoned decision to be made regarding the impacts of the IPP. Consequently, the USFS does not possess the amount of data that is necessary to issue a ROD. If adequate baseline data is missing, NFMA requires the agency to obtain it. 36 C.F.R. § 219.12(d). The Ninth Circuit has also held that “general statements about ‘possible’ effects and ‘some risk’ do not constitute a ‘hard look’ absent a justification regarding why more definitive information could not be provided.” *Cuddy Mountain*, 137 F.3d at 1380. Without adequate data, the effects of a project are highly uncertain and involve unknown risks. *Klamath-Siskiyou Wildlands Center*, 373 F.Supp.2d at 1081.

As the PNR-IPP is a regional programmatic decision, it must include guidance, methodology, and requirements to which specific projects implementing this decision must adhere. Included in this are baseline data on stream conditions, necessary to gauge and assess the effects of specific implementation of IPP projects. The failure of the EIS and ROD to adequately specify requirements and methodology concerning obtaining adequate baseline data violates both the NEPA and the NFMA. Additionally, Oregon state water quality standards requires that state listed 303(d) streams not be further impaired. Failure of the PNR-IPP to address obtaining the necessary baseline data before project level implementation has resulted in a program that would violate state water quality standards across the region, in violation of state and federal laws.

Second, Appellants note that the USFS also has an obligation to physically survey the reaches of the creeks, streams, and tributaries adjacent to the treatment sites in the region in order to determine the number of pools, riffles, down woody debris, and other features that are present. Neither the FEIS/ROD nor other supporting documents state whether the streams that will be affected by the proposed program are currently meeting PACFISH/INFISH standards, nor is adequate guidance given regarding specific project design and implementation in areas where streams fail to meet PACFISH/INFISH and/or state standards. Without this key information, the PNR is precluded from making any determination regarding the significance of the proposed program. When such information is lacking or when there are significant questions regarding the impacts of programmatic project, the USFS has an obligation under NEPA to obtain the missing information. 40 C.F.R. § 1502.22 (duty to obtain missing information or state why it could not be obtained). *See also Lands Council*, 395 F.3d at 1031.

Until the PNR develops programmatic protocol concerning the missing information on stream conditions, the PNR-IPP must be withdrawn. In the alternative, the USFS should prepare a new or supplemental EIS to fully disclose and discuss the impacts to the environment from the proposed program. The failure to follow one of these courses of action will violate NEPA.

**B. The PNR-IPP EIS/ROD is Flawed Because it Does Not Include Adequate Mitigation Measures for Aquatic Systems.**

Although the EIS includes several mitigation measures for the PNR-IPP, the measures which are required are insufficient to prevent degradation of aquatic habitat and/or trends towards uplisting of aquatic organisms. Guidance for project level mitigation, which is key, is left fatally vague and open to interpretation by district staff less trained in the complex nuances of toxicology. Further, the PNR-IPP EIS/ROD fails to disclose how it intends to ensure compliance with the measures if they are in fact required, or whether these measures will be effective. Moreover, the EIS does not indicate how enforcement will be funded or what the agency will do if it discovers that the BMPs are not properly functioning. NEPA requires the USFS to include in the environmental analysis a discussion of all aspects of a proposed project, including mitigation plans. 40 C.F.R. § 1502.14(f).

An omission of a reasonably complete discussion of possible mitigation measures would undermine the “action forcing” function of NEPA. *Robertson*, 490 U.S. at 348. “In evaluating the sufficiency of mitigation measures, the court considers whether they constitute an adequate buffer against negative impacts that may result from the activity.” *National Parks & Conservation Ass’n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001). The courts have held that the USFS is obligated to detail in an EA/EIS the mitigation measures for the project. *Robertson*, 490 U.S. at 353. An agency’s mere listing of mitigation measures, without analytical data, is insufficient to support a finding of no significant impact. *Id.* A decision will not be upheld where the Forest Service provides no more than a list of its mitigation measures. *Klamath-Siskiyou Wildlands Center*, 373 F.Supp.2d at 1085.

Standard 16 simply allows: (1) the use of certain herbicides; (2) all herbicide application methods except aerial spraying of chlorsulfuron, metsulfuron methyl and sulfometuron; (3) application methods other than spot application for triclopyr; and (4) the addition of future, unspecified herbicides with only project-level analysis. Standard 18 only references adjuvant and inert ingredients used in herbicides reviewed in Forest Service hazard and risk assessment documents. It does not mitigate effects to aquatic organisms from the use of herbicides of concern. Standard 19 does not prohibit aquatic or riparian use but only specifies factors to be considered with no specific prohibitions to protect aquatic organisms -- creating potential loopholes in practice. Standard 19 simply specifies to consider only herbicides registered for aquatic use, which includes glyphosate, already noted to be a problem for fish at higher allowed application rates. Standard 20 only directs design of invasive plant treatments to “reduce” or eliminate adverse effects to known species and critical habitats listed under the Endangered Species Act, not other species, including aquatic species. This does not fully mitigate harm to aquatic organisms that form the basis of the aquatic food chain. (See FEIS, pp. 2-21-22, Table 2-2.)

The FEIS and ROD do not claim to avoid adverse impacts (which are left unquantified and unspecified as to severity) to aquatic organisms. The highest impacts to aquatic organisms are posed by chlorosulfuron, imazapyr, metsulfuron methyl, sulfometuron methyl and triclopyr of the herbicides planned for use under the proposed action. However, glyphosate, imazapic and picloram are also problematic at the highest allowed application rates. Only “acute exposures of clopyralid and sethoxydim are less than the estimated or measured NOEC for all representatives of the aquatic community.” (FEIS p. 4-117). These herbicides not exceeding toxicity thresholds may be more due to a lack of data on their effects to aquatic organisms than to a lack of impacts,

judging by the aquatic effects summary I.D. team report. The FEIS admits that “the Forest Service cannot conclude with certainty that the levels of chemicals that could potentially reach streams with aquatic organisms will be zero” (FEIS p.4-119), especially since riparian zone spraying (including broadcast boom and ATV spraying) and aerial spraying (with more potential to drift) are planned.

Toxic levels for algae and vascular plants may be of concern because they form a food supply, habitat, or both for aquatic organisms. Aquatic plants are a natural, and important, component of aquatic communities. Aquatic plants, especially phytoplankton, are consumed by small invertebrate animals, which are in turn consumed by larger animals such as birds or fish. Phytoplankton can also be consumed directly by certain fish....Any impact to a component of the aquatic community may have a ripple effect on the food web.”

(FEIS p.4-119).

Mortality of fish due to herbicide use is also not mitigated by the PNR-IPP FEIS and ROD. As the FEIS acknowledges, “high concentrations of herbicides could wash into streams from rainfalls shortly after herbicide application along road ditches or other surfaces that rapidly generate overland flows, or as a result of an accidental spill. In such instances, localized fish kills are plausible in small tributary streams of small, enclosed water bodies where contaminated flows would not be readily diluted.” (FEIS pp. 4-119-120). Further, mortality to fish could occur due to disruption of necessary survival behavior and reproduction from sub-lethal effects of herbicide use described in the FEIS and the aquatic effects summary.

Again, an omission of a reasonably complete discussion of mitigation measures would undermine one of NEPA’s important functions – “action forcing.” *Robertson*, 490 U.S. at 348. In evaluating the sufficiency of mitigation measures, the court will consider whether they constitute an adequate buffer against negative impacts that may result from a project. *National Parks*, 241 F.3d at 734. Here, there is no significant mitigation of the negative impacts of herbicide application.

#### C. Riparian Habitat Conservation Areas and Riparian Management Objectives Will Be Compromised as a Result of the PNR-IPP.

The EIS states that some invasive plant sites proposed for treatment are located in riparian areas. Because the program necessarily requires entries into Riparian Habitat Conservation Areas, the agency is required to state how this program will be consistent with Riparian Management Objectives. However, in this case, the EIS fails to indicate how entries into RHCAs will specifically affect associated values such as water quality and wildlife habitat. Simply stating that these areas will be entered does not substitute for a discussion of how they will be affected by the entry. NEPA was intended to ensure that an agency has carefully and fully contemplated the environmental effects of its action, so that “important effects will not be overlooked or underestimated only to be discovered after resources have been committed to the die otherwise cast.” *Robertson*, 490 U.S. at 349. The Forest Service may not rely on mere

conjecture or agency claims without presenting the supporting data for those conclusions. *Idaho Sporting Congress*, 137 F.3d at 1150.

#### D. Wetlands and Other Aquatic Features.

The EIS is flawed because it does not give adequate protection to wetlands and other important aquatic features. It is well-known that there are seeps, springs, and wetlands across the PNR lands, and that the PNR-IPP ROD/EIS authorizes IPP management that will occur in these areas, however, the PNR-IPP does not adequately address these areas or specify comprehensively effective measures to protect them. For example, the EIS does not specify how -- or even if -- attempts to locate and protect small wetlands will be made. All wetlands should have been required to be described and mapped in the project level NEPA process, and the proposed level of protection should have been disclosed in the PNR-IPP so that the decision maker and the public would have a meaningful understanding on the potential impacts the implementation of the PNR-IPP across the region will have. This failure to adequately address and describe wetlands impacts makes it highly likely that wetlands will be overlooked and not given the protection required by the CWA.

Similarly, with the failure of the PNR-IPP to adequately address protection and mitigation requirements concerning acreage and location of wetlands under an acre that exist within the region, it is likely that the impact the PNR-IPP would have on these areas could be significant, both locally and potentially regionally as well. The protections are meant to mitigate impacts to these areas, but without strictly specified site-specific evaluation requirements concerning these wetlands areas and mandated mitigation measures, it is unreasonable to find that there would be no significant impacts to this sensitive resource. Failure to adequately address this issue violates NEPA, and IPP implementation would likely violate the CWA as well. To reiterate, NEPA was intended to ensure that an agency has carefully and fully contemplated the environmental effects of its action, so that important consequences will be recognized before irreversible action has been taken. *Robertson*, 490 U.S. at 349 (1989). By not carefully analyzing the effect of the Selected Alternative and its mitigation measures on wetlands and other aquatic features, the Forest Service has not met the hard look standard called for by NEPA. *See generally Cuddy Mountain*, 137 F.3d 1372.

#### E. Potential for Ground Water Contamination.

As mentioned previously, there is very little analysis in the record regarding the potential effect of the proposed project on water quality; indeed, the USFS seems to believe that there are no environmental impacts whatsoever from pesticide application. However, if an EIS contains virtually no reference to any material in support of or in opposition to its conclusions, it is inadequate. *Blue Mountains v. Blackwood*, 161 F.3d at 1214. Yet, the EIS states that picloram is soluble in water and moves with surface waters, hence there is reasonable concern that picloram use may result in groundwater contamination in some cases, i.e., where it is applied on permeable soils or on shallow water tables. There is no indication where in Region Six these conditions exist and whether picloram will be used on these locations. Because the USFS failed to include any maps, adequate site-specific analysis requirements, project level guidance and methodology concerning picloram and other herbicide use, and/or examples in the record

regarding the nature of each proposed treatment site, it is impossible to assess whether groundwater contamination is a concern for some treatment sites, though it appears this is likely so. Again, the lack of information regarding the program's effects violates NEPA, and compels the decision maker to withdraw the EIS/ROD.

#### IV. The PNR-IPP EIS/ROD Inadequately Analyzes the Impact to Plant and Animal Species.

The PNR-IPP EIS conducts an inadequate review of impacts to wildlife from the proposed program. The EIS fails to specifically identify specific impacts that the program would have on a number of wildlife species including threatened, endangered, and sensitive species.

Based on the FEIS assessment of effects to TES wildlife, it appears that the Bald eagle and Oregon Silver Spot butterfly may be the most subject to significant effects. However the reasons given for lack of significant adverse impacts to woodland caribou are extremely shaky given that it is assumed that herbicide treatment of meadows used by caribou in the spring never occurs until later in the year, with no supporting evidence and based only on one "personal communication." If Woodland caribou were to wander into Region Six, it is likely no one would know and Standard 20 would not be applied to the project with caribou in mind. Woodland caribou are more likely to be significantly affected by herbicide use than Grizzly bears, Gray wolves, or Canada lynx because they could directly eat more plants contaminated by herbicides than would be likely for predators. Further, exposure scenarios exceed the toxicity index for Woodland caribou for glyphosate, picloram, sulfometuron methyl, triclopyr and NPE -- all planned for use under the proposed action. For triclopyr and NPE, toxicity indices are exceeded even at typical application rates, as well as at highest allowable application rates. Woodland caribou are extremely rare, so this level of risk to them, given their endangered status, should rate more than a "Not Likely to Adversely Affect" determination and trigger more preventative mitigation, given the significant uncertainties involved. The ROD for this program could have assured greater protection for the Woodland caribou and many other species and values such as water quality by eliminating the use of triclopyr, NPE surfactants, glyphosate, picloram and sulfometuron methyl.

Glyphosate, triclopyr and NPE are also identified as problematic for the Oregon Silver Spot butterfly in exposure scenarios in Table 4-43, p. 4-136: "Potential effects to butterfly larvae or eggs, or food plants, may occur from herbicide use in their habitat. Sucoff et al. (2001) found that spraying eggs of Karner blue butterfly (*Lycaeides elissa samuelis*) with a glyphosate-triclopyr mixture reduced egg hatching...."(FEIS p. 4-135). The "Likely to Adversely Affect" determination for the Oregon Silver Spot butterfly is undefined and leaves this butterfly open to potential eradication. The basis for this butterfly being thought to not be sensitive to disturbance is based on one personal communication. (FEIS p. 4-132). The FEIS admits that "herbicide use may affect food plants or larvae." (FEIS p. 4-138). Yet the FEIS does not describe the nature of these effects or their ramifications for the butterfly. Likewise, the FEIS admits that "mowing, other machinery, foot traffic, or other cultural methods have the potential to trample butterfly larvae" (FEIS p. 4-132), but does not analyze what this could mean to the survival of this threatened butterfly in the region or suggest any specific mitigation to avoid such impacts. Failure to require specific mitigation in critical habitat or to avoid use of herbicides known to

adversely affect this federally-listed species is a violation of the ESA. Additionally, there are several other rare Lepidoptera species of concern throughout Region Six public lands (Johnson's Hairstreak among others), however, the EIS fails to disclose this information or to analyze potential adverse impacts to these species which could result in their uplisting under the ESA, in violation of the NFMA as well as the NEPA. The EIS and ROD must be withdrawn and new NEPA documents completed which fully disclose and analyze potential impacts to listed, rare, and species of concern Lepidoptera and other species.

Table 4-43 apparently is not fully conclusive as to potential adverse effects to Bald eagles from herbicides proposed for use, given other FEIS statements such as:

- (1) "Little research has been done on the direct effects of specific herbicides, NPE, or other control techniques on listed species....some uncertainty remains for potential effects from mixtures....It is not known which mixtures, if any, will be used during project implementation." (FEIS p. 4-133);
- (2) "Bald eagles could ingest fish that have been exposed to herbicide that entered the water through runoff or accidental spill." (FEIS p. 4-135);
- (3) "The uncertainty regarding herbicide exposure or proximity of disturbance prevent making a determination of "not likely to adversely affect" (NLAA) for some species" (FEIS p.4-136). This evidently includes Bald eagles, which are federally listed as threatened.
- (5) "Minimal herbicide and NPE exposure is possible for bald eagle, for projects conducted under this EIS. However, the herbicides in this document are excreted rapidly and do not accumulate up the food chain...reducing, but not eliminating, the potential for cumulative effects from exposure." (FEIS p. 4-139). Yet there is no discussion following this statement as to what these cumulative effects might be and what the consequences would be for bald eagles.

Could these combined effects lead to uplisting for this species? This is a region-wide EIS, leaving room for impacts over a very large area with numerous known habitats for bald eagles. What is the population status of bald eagles for these occupied and potential habitats? What is the viability threshold for bald eagles for survival? How close are bald eagles to this threshold? What about the cumulative effects of these herbicide impacts plus impacts from logging, fishing, agricultural runoff contaminated with pesticides, human development of suitable habitat and other factors affecting habitat and reproductive success? None of these questions are asked or answered in the FEIS, leaving a "Likely to Adversely Affect" determination undefined as to consequences to the species in violation of the ESA and NEPA analysis requirements.

Our concern regarding potential adverse effects to TES species is also substantiated by the number of herbicide exposure scenarios that exceed toxicity indices for sensitive-listed species groupings under the proposed action. For instance, according to Table 4-46 (FEIS pp. 4-143-145), the following "worst case" potential exposures exceed the toxicity index (i.e. would have an adverse effect of unspecified severity) for the following groups of sensitive-listed species (identified in Table 4-45 pp. 4-141-142) for the following herbicides proposed for use:

- (1) Large herbivorous mammal (e.g. Rocky Mountain bighorn sheep) -- glyphosate, sulfometuron methyl, triclopyr and NPE surfactant if broadcast sprayed. Worst case herbicide exposures are more likely for selective herbicides – e.g. Triclopyr. (Sulfometuron methyl is an extremely potent herbicide, so it may also have a more pronounced effect.)
- (2) Small herbivorous mammals (e.g. Pygmy rabbit) -- NPE if broadcast sprayed.
- (3) Carnivorous mammals (e.g. California wolverine, Pacific fisher) -- triclopyr and NPE.
- (4) Insectivorous mammals (e.g. Townsend’s big-eared bat, Pacific shrews, etc.) -- clopyralid, glyphosate, picloram, sethoxydim, sulfometuron methyl, triclopyr and NPE if broadcast sprayed.
- (5) Herbivorous birds (e.g. Greater sage grouse, Columbian sharp-tailed grouse, etc.) -- clopyralid, glyphosate, sethoxydim, sulfometuron methyl, triclopyr, and NPE, if broadcast sprayed (more likely for selective herbicides).
- (6) Insectivorous birds (e.g. Gray flycatcher, Green-tailed towhee, Upland sandpiper, Bufflehead and Harlequin ducks, etc.) -- clopyralid, glyphosate, picloram, sethoxydim, sulfometuron methyl, triclopyr, and NPE if broadcast sprayed. Worst-case herbicide exposure is plausible for grassland species on large projects.
- (7) Predatory birds (e.g. Northern goshawk, American peregrine falcon, Great Gray owl, Greater sandhill crane, etc.) -- sethoxydim, triclopyr, and NPE if broadcast sprayed.
- (8) Amphibians (e.g. 12 species of salamanders, Northern leopard frog, Columbia spotted frog, etc.) -- applications or accidental spills of glyphosate and triclopyr “could harm or kill amphibians. NPE is likely to harm amphibians only in an accidental spill. (USDA FS 2003).”
- (9) Insects (e.g. Mardon Skipper) -- worst-case exposure exceeds the toxicity index if directly sprayed with glyphosate and triclopyr. “Data is insufficient to evaluate risk from NPE. Herbicides could kill larval food plants and/or adult nectar plants.”
- (10) Mollusks (e.g. multiple species of slugs, Chelan mountain snail, Blue-gray tailedropper, Crater Lake tightcoil, etc.) -- “specific data is lacking. Risk from herbicides is largely unknown.” (FEIS p. 4-145, Table 4-46).
- (11) Reptiles (e.g. California mountain king snake, Northwestern pond turtle, Painted turtle, etc.) -- “Insufficient data to determine potential risks from herbicides.”

The FEIS admits potential adverse effects from planned herbicide use for all categories and species of sensitive-listed wildlife except fish-eating birds. These potential adverse effects are not quantified or qualitatively described, leaving the MINL determination “may impact individuals, but not likely to lead to a trend toward federal listing” unsupported. Some of the speculative reasoning given to support the MINL determination also does not stand up to scrutiny. For example, carnivorous mammals (California wolverine and Pacific fisher) and predatory birds (e.g. Northern goshawk and American peregrine falcon) may only consume one prey animal for a day’s diet, making worst-case herbicide exposure more plausible than suggested in the determination in Table 4-46 (FEIS p. 4-143). Likewise, existing sharp declines in Greater sage grouse populations are not taken into account when making the determination that “effects from isolated invasive plant treatments are not likely to lead to a trend toward federal listing.” (FEIS p. 4-143, Table 4-46). Sage grouse are already being proposed for federal listing. Further impacts to their populations could result in uplisting. Similarly, the potential for

pushing species of insectivorous birds toward federal uplisting is also underestimated, as the sensitive species in this category include neotropical songbirds already experiencing sharp declines from the cumulative impacts of habitat loss through logging and livestock grazing and potentially from already existing herbicide use, making uplisting due to additional impacts more plausible. There is insufficient research data to support the conclusion of only adverse effects to individuals (MINL) for both amphibians and reptiles. The status of reptile and amphibian populations is largely unmonitored and unknown for these sensitive species in Region Six, so basing a conclusion of “not likely to lead to a trend toward federal listing” on the species being “wide-ranging, occurring in several states” for reptiles and on treatment areas being “very small relative to species distributions” for amphibians is biased and unsupported. Such a rosy conclusion for amphibians ignores the widely acknowledged current global declines in amphibian populations which have been attributed to habitat loss, ozone depletion and, significantly, herbicide and pesticide use.

Consequently, the USFS cannot ensure that it is providing for the viability for the species in the region as required by the National Forest Management Act (NFMA) and its implementing regulations. 36 C.F.R. §§ 219.19, 219.26.

It appears as though the Forests did not survey at all for threatened, endangered, or sensitive species. This is problematic for several reasons. First, it is impossible for the agency to conclude that there are no significant impacts to listed or proposed species when it fails to gather baseline data for indicating the significance of the program’s impacts to these species. Simply pretending that these species are doing fine in the region does not alleviate the agency’s duties under the Endangered Species Act.

The Endangered Species Act (ESA) requires the USFS to use the best available scientific and commercial data in assessing the impacts to species, which logically includes surveying for them. 16 U.S.C. § 1536(a)(2). Since population studies are lacking for the PNR-IPP region, the USFS is precluded from determining that the project is not likely to adversely affect the listed species under Section 7 of the ESA. *Id.* § 1536(b). Basing a ROD on “non-information” is unreasonable and violates the Administrative Procedure Act (APA). 5 U.S.C. § 706.

The PNR-IPP would cause non-listed species to trend towards listing, and listed species to trend toward jeopardy. Region Six National Forests lack adequate information on a myriad of listed and non-listed species to conclude that the proposed project would not make their populations trend towards listing or up-listing, in violation of the ESA. *Sierra Club*, 168 F.3d 1. Despite the lack of information on these and other species, the EIS erroneously concludes that species populations will remain stable. However, the USFS fails to adequately analyze cumulative impacts to the region’s wildlife. Indeed, the facts suggest that many of these species may be adversely affected in the short and long term as the impact determination tables in the FEIS suggest.

#### A. Management Indicator Species.

NFMA requires the Forest Service to provide animal and plant diversity in the national forests. 16 U.S.C. § 1604(g)(3)(B). USFS regulations implementing this requirement direct the Service to manage forests for viable populations of native vertebrate and desired non-native species. 36 C.F.R. § 219.19. The regulations define viable populations as populations which have “the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area.” *Id.*

To ensure that viable populations are maintained, the Forest Service regulations also require that the Service identify management indicator species (MIS) and that “[p]opulation trends of the management indicator species will be monitored and relationships to habitat change determined.” 36 C.F.R. § 219.19(a)(6). This monitoring is “essential to verify and, if necessary, modify the forest plan’s assumptions about the effects of timber harvesting and other management activities on wildlife...In order to meet the monitoring requirement, planners will need to obtain adequate inventories of wildlife populations and distribution.” Charles F. Wilkinson and H. Michael Anderson, *Land and Resource Planning in the National Forests*, 304 (1987). The only circumstance in which population surveys are not required is if no appreciable habitat disturbance will occur. *Klamath-Siskiyou Wildlands Center*, 373 F.Supp.2d at 1087. The Selected Alternative would result in habitat disturbance.

The Ninth Circuit has stated that the duty to ensure viable or self-sustaining populations “applies with special force to “sensitive” species.” *Inland Empire Public Lands Council v. United States Forest Serv.*, 88 F.3d 754 (9<sup>th</sup> Cir. 1996) citing *Oregon Natural Resources Council v. Lowe*, 836 F.Supp 727, 733 (D.Or. 1993). NFMA clearly directs the Forest Service to create regulations to “insure research on and (based on continuous monitoring and assessment in the field) evaluation of the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land.” 16 U.S.C. § 1604(g)(3)(C); *Sierra Club*, 168 F.3d 1.

In light of this direction, NFMA’s regulations require inventorying and monitoring on the National Forests under 36 C.F.R. §§ 219.12(d) and (k) as well as 36 C.F.R. §§ 219.19(a)(6), 219.26, and 219.19(a)(2). The regulations state that “each Forest Supervisor shall obtain and keep current inventory data appropriate for planning and managing the resources under his or her administrative jurisdiction.” *Id.* § 219.12(d). Missing or stale data is flawed data, and also insufficient under NEPA. *Lands Council*, 395 F.3d at 1031. The regulations further require that “at intervals established in the plan, implementation shall be evaluated on a sample basis to determine how well objectives have been met and how closely management standards and guidelines have been applied.” *Id.* § 219.12(k). To ensure biological diversity, the regulations specifically require that “[i]nventories shall include quantitative data making possible the evaluation of diversity in terms of its prior and present condition.” *Id.* § 219.26.

The multiple mandates in NFMA and its implementing regulations requiring population monitoring and surveying are clearly unmet by the USFS in Region Six National Forests. Because of the difficulty in monitoring all the species on the region’s forests, NFMA regulations recognized that management indicator species (MIS) could be used as surrogates for other species with similar habitat needs. Region Six forests, however, have failed to meet even the minimal requirement to monitor MIS.

The PNR-IPP EIS and supporting documents fail to assess how the program will affect management indicator species. Once again adequate requirements for project level implementation of the programmatic IPP are woefully and illegally lacking from the EIS and ROD. Given the legal importance and protection of MIS, the agency is required to conduct such surveys or risk noncompliance with NFMA. The Eleventh Circuit recently held that NFMA clearly directs the Forest Service to “insure research on and (based on continuous monitoring and assessment in the field) evaluation of the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land.” *Sierra Club*, 168 F.3d 1; 16 U.S.C. § 1604(g)(3)(C).

#### B. Fish and Other Aquatic Species.

FEIS analysis of how the proposed herbicide program will affect fish and their habitat across the region is inadequate due to its failure to provide any substantive indication of consequences to fish populations, aquatic habitat and other aquatic organisms in qualitative or quantitative terms. FEIS statements are inadequate because they do not indicate the potential for herbicide over-spray and drift into riparian and aquatic areas, the consequences of spraying herbicides directly into riparian corridors as the program proposes, the possible cumulative effects to aquatic species as the result of herbicide application or potential consequences to TES fish and other aquatic organism populations. The FEIS is dominated by vague and unspecific language such as “likely to adversely affect,” “should minimize risk,” etc. that gives no clear picture of the extent of ecological damage that could result, including which federally-listed species would be most likely to be moved toward uplisting or extirpation and what the risk of this is, based on hard data.

The FEIS and ROD fail to ensure that aquatic PETS species will not trend toward uplisting due to planned exposure of riparian habitat to herbicides and related surfactants, toxic “inert” ingredients, metabolites and impurities. The FEIS notes that “(m)ost direct effects from all of the alternatives on PETS species are likely to be from sub-lethal herbicide effects, rather than from direct mortality as a result of herbicide exposure. Sub-lethal effects are considered under the ESA to constitute “take”, if the sub-lethal effect ‘harms’ a listed aquatic species (50 CFR 222.102).” (FEIS p. 4-147).

By not providing detail sufficient to describe the direct, indirect, and cumulative effects of the proposed action on various aquatic species, the EIS fails to take the requisite hard look at the circumstances surrounding the project. *See Cuddy Mountain*, 137 F.3d at 1379. While the FEIS assures us that application of herbicides under all the alternatives “is not *expected* to result in mortality to aquatic PETS species” (FEIS p. 4-147, emphasis ours), there is no adequate justification for this assumption. On the contrary, the FEIS clarifies that the ecological significance of sub-lethal effects pertains to their ability to influence behavior essential to the survival and reproductive potential of individual listed species. The FEIS further cautions: “Sub-lethal effects are not readily apparent. When small changes in the health of individual fish are observed (e.g. a small percentage change in the activity of a certain enzyme, an increase in oxygen consumption), it may not be possible to infer a significant loss of essential behavior patterns of aquatic PETS species in the wild.” (FEIS p. 4-147). In other words, the wild

environment of Region Six is not a laboratory where subtle sub-lethal effects can be detected, monitored, or tracked to their potential final results of mortality through behavioral changes which led to failed reproduction or inability to survive. This means that where sub-lethal effects are anticipated which could lead to mortality or failed reproduction, as they are with implementation of this program, there is no way to know for sure if mortality resulted or to know the amount of mortality that did result -- no way to ensure that there are no significant impacts or trends toward uplisting or extirpation. The only mitigation suggested for the major population-affecting problems of sub-lethal effects to listed aquatic PETS species is vague, unspecified, open to broad interpretation and therefore extremely fallible: "To address uncertainties relating to sub-lethal effects, project-level planning documents should incorporate additional mitigation or conservation measures." (FEIS, p. 4-159). *What* additional mitigation or conservation measures? How will district staff know what mitigation could possibly be sufficient to prevent all sub-lethal effects? There is no way to ensure consistency and adequacy of additional mitigation measures without providing more specific guidance in the programmatic EIS, based on the best available science.

Further FEIS warnings suggesting the need for a more precautionary approach in regards to herbicide use in aquatic areas include the following:

Product formulations sometimes include unspecified inactive ingredients and adjuvants with unknown toxic effects to listed fish. For example, the combination of POEA surfactant and glyphosate has been shown to cause inflammation of fill tissue in fish, and to reduce survival rates especially for young fish (Folmar et al., 1979; Servizi, 1987). Roundup is known to have the POEA surfactant and is therefore toxic to fish, while the product Rodeo, which contains the same active ingredient (glyphosate), but no surfactants, has very low toxicity.

(FEIS p. 4-148). Nowhere in the FEIS does there appear to be any requirement not to use herbicide formulas with surfactants, "inert" ingredients or impurities toxic to fish. Thus the FEIS and ROD fail to ensure that these sources of aquatic toxicity would not lead to a trend toward uplisting or extirpation of listed aquatic species. This failure to protect listed species and their critical habitat is a violation of the ESA.

The FEIS also acknowledges an unquantified high risk potential to aquatic PETS species from aerial and broadcast herbicide spraying allowed in all alternatives including the proposed action: "The risk of direct effects from drift as a result of 'high risk' broadcast spray applications (aerial, boom, and backpack) from overspray is likely to occur in small streams and stream margins, and small, enclosed water bodies. Higher herbicide concentrations can result from overspray/drift exposure. Thus, direct exposure of stream or lake margins to overspray or drift can result in a high risk potential to vulnerable aquatic PETS species life stages." (FEIS p. 4-148).

Indirect effects to federally-listed fish, mollusks and their critical habitat described in the FEIS are numerous and raise significant concerns but remain unquantified and with cumulative consequences for aquatic organisms undefined. Acknowledged indirect effects from herbicide use include chemical toxicity of surface water, increased nutrient loading and depleted oxygen in

water, increased summer water temperatures and lack of moderation of radiant heat loss from streams in the winter due to removal of riparian plants, potential increases in turbidity and fine sediment in streams, changes in in-stream habitat and riparian structure and alterations of aquatic food chains -- all of which can threaten the survival of listed fish species and mollusks, and smaller aquatic organisms that form the basis of the food chain. Some of these indirect effects could also threaten amphibians and other aquatic life such as insects. The description of the nature of these potential impacts on FEIS pp. 4-148 through 4-151 does not include estimation of potential consequences to particular species, consideration of the significance of numerous unknown and interacting factors that could determine the severity of effects to aquatic PETS species or evaluation of cumulative effects -- including non-herbicide impacts (e.g. livestock grazing, mining, road construction, and logging in riparian areas) to critical habitat and species viability. There is also no consideration of the more aggravated consequences of "localized, short term" effects to already stressed listed species. There is no determination that these impacts would not lead to uplisting of these species. Instead, all listed fish species except three and one listed snail are determined to be "likely to be adversely affected" -- that is, twenty species of fish, including the majority of commercially important species and one threatened snail would all be likely adversely affected to an unknown degree, potentially leading to uplisting in violation of the ESA. Only two fish species have been determined unlikely to have their continued existence jeopardized. (See Table 4-48, p. 4-157). The value of using highly toxic chemicals and aerial and broadcast spraying in riparian areas to control invasive weeds should not outweigh the continued existence of twenty listed and commercially important fish species. Subjective assurances that "most" potential adverse effects will be eliminated or "minimized" through application of current management direction and equally weak Forest Plan standards proposed in this EIS are not substantiated -- especially in light of the fact that multiple listed salmon runs and Bull trout populations are already extirpated or undergoing sharp declines under current management direction. A blanket write-off of federally-listed aquatic species is not only unethical, but illegal under the ESA.

The IPP-FEIS and ROD appear to violate the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), which "established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a Federal fisheries management plan." (FEIS p. 4-161). The FEIS concludes that "activities under all of the alternatives may result in short-term adverse effects to a variety of habitat parameters," that "(e)ssential fish habitat could be impacted in the same manner as critical habitat," and that "potential effects on habitat include:...[p]otential introduction of herbicides into water bodies through atmospheric deposition, spray drift, surface water runoff, percolation, groundwater contamination, and direct application." (FEIS p. 4-162). There is no explanation or justification for the assumption that these effects would be "short term," no definition of the length of time implied by "short term" (which often means 10-30 years in Forest Service Environmental Assessments for timber sales), and no analysis as to whether these short term adverse effects could result in the uplisting or extirpation of a fish species. Fish species already in decline could be pushed over the edge to extinction even by "short term" adverse effects -- especially if "short term" means years and results in sub-lethal effects that impair future reproduction, or in short-term accidental spills that exterminate large numbers of fish -- yet this possibility is not even discussed. The FEIS does clearly state that: "All alternatives are expected to adversely affect EFH for Pacific Salmon species listed in Table

4-50.” (FEIS p. 162). Of the ten species of salmon listed in Table 4-50, only one is not federally listed as Endangered or Threatened or proposed for listing. Upper Columbia River Spring Chinook, one of the ten, is listed as endangered, six species are listed as threatened, and two species are proposed for listing. The Magnuson-Stevens EFH determination for all ten species is “may adversely affect habitat.” This is a clear violation of the Endangered Species Act as well as a violation of the spirit, if not the letter, of the Magnuson-Stevens Fishery Conservation and Management Act. Adverse effects are only claimed to be avoided “or minimized to the extent possible” through application of Standards 18 through 22 and unspecified “additional mitigations at the project scale.” (FEIS p. 4-162). Minimization of impacts “to the extent possible” and undefined, non-guaranteed mitigations at the project level do not guarantee that the listed and proposed salmon species will not be pushed toward uplisting or extirpation in violation of the ESA. Other alternatives could have been designed and adopted to avoid this legal violation and the potential loss of biodiversity and commercially important fish species, in keeping with the intent of the ESA and the Magnuson-Stevens Fishery Conservation and Management Act.

“Under current Forest Service management direction (NWFP Aquatic Conservation Strategy (ACS) and PACFISH/INFISH)...site-specific projects cannot have a negative impact, in the long term, on riparian-dependent resources or ecological processes on the watershed scale. Each site specific project must maintain or restore the physical and biological processes required by riparian dependent resources at the watershed scale or broader to comply with ACS and PACFISH/INFISH. Management direction prohibits activities in riparian areas that retard or prevent attainment of these objectives.” (FEIS pp. 4-153-154). Based on risk analysis in the FEIS and the lack of specific mitigation guidance for project-level implementation, there is no guarantee that this program will meet requirements of the Northwest Forest Plan Aquatic Conservation Strategy and PACFISH/INFISH. Instead, there is significant substantiation for our contention that the IPP would contribute to uplistings and extirpations of listed fish. Negative impacts to riparian-dependent resources and ecological processes at the watershed scale seem plausible given the region-wide scope of the program, the allowed targeting of riparian areas for herbicide use, the allowed use of aerial and broadcast spraying, and admitted potential adverse impacts at typical and allowed herbicide application rates. Fish would not only be impacted, but also aquatic invertebrates, algae, and aquatic plants (Table 4-47, FEIS p. 4-152), the basis of the riparian food chain. Given the whole discussion of indirect effects to aquatic ecological processes and riparian-dependent resources on FEIS pp. 4-148-151 and as described elsewhere, long-term negative impacts to riparian-dependent resources and ecological processes seem likely. Reproductive consequences due to chemical toxicity of surface waters may have long-term ramifications -- especially to listed aquatic species already stressed by other impacts to their habitat. Potential depletion of oxygen in a stream could also have multiple and long term effects to aquatic organisms and could be difficult to restore to viable habitat conditions: “Herbicides leaching into surface water can result in indirect effects to aquatic PETS species via adverse effects to phytoplankton, algae, rooted aquatic macrophytes, and other aquatic plants. A significant reduction of primary productivity or aquatic plants and algae could decrease oxygen levels and indirectly impact aquatic PETS species and their critical habitat.” (FEIS p. 4-149).

The FEIS analysis does not include much information from the aquatic effects summary and is insufficient to disclose the potential effects to listed fish species and other aquatic species, especially since the viability thresholds and toxicity thresholds for many of these species have

not been calculated. Without this information, it is impossible to address the impacts on fish species as a result of this project. NEPA prohibits going forth with a project unless the impacts can be verified. 40 C.F.R. § 1502.24 (requiring the agency to “make explicit reference by footnote to the scientific and other sources relied upon for the conclusions in the statement”). NFMA requires that the USFS provide for species diversity, and NEPA requires the USFS to consider the impact of its activities on all aspects of the environment. 36 C.F.R. § 219.26; 40 C.F.R. § 1508.25. Until this analysis has occurred, the PNR-IPP EIS is incomplete and must be withdrawn. Allowing the Forest Service to base its project decisions on expert opinions that lack the hard data to support them is a violation of NEPA requirements for “high quality information and accurate scientific analysis.” *Idaho Sporting Congress*, 137 F.3d at 1150; *Lands Council*, 395 F.3d at 1031 (citing 40 C.F.R. § 1502.22).

### C. Plant Species.

Clearly the proposed project is meant to eradicate unwanted vegetation in the planning area. However, the EIS and supporting documents give scant attention to the potential of destroying desirable native plants, including sensitive and listed plant species. The potential for over-spray is a common problem with herbicide applications, which may destroy desirable vegetation. Similarly, indicating that staff will be properly trained in herbicide application does not assuage the general distrust that the general public has for Forest Service projects, especially given the questionable safety of some of the herbicides proposed for use in this project.

The summary of direct and indirect effects to Region Six sensitive-listed plants offers no support for FEIS conclusions that the proposed alternative may impact individuals but will not “likely” lead to a trend toward federally listing any Sensitive plants. Just saying it is so does not make it so. There is insufficient analysis to support an MINL determination. The NEPA requirement for careful consideration of a project’s environmental effects and informed decision-making are legally binding standards; failing to take a hard look at proposed actions violates federal law. *See generally Cuddy Mountain*, 137 F.3d 1372. The courts also have held that generalized statements about “possible” effects and “some risk” do not qualify as the hard look required by NEPA. *Id.* at 1380.

Based on the FEIS analysis, the species of endangered and threatened-listed plants most likely to be adversely affected by the proposed action are Showy Stickseed, MacFarlane’s Four O’Clock, Spaulding’s Catchfly, and to a lesser extent, Wenatchee Mountain Checkermallow, Gentner’s fritillary and Kincaid’s lupine. Aerial spraying seems to be the biggest threat to all these listed plants with the exception of Showy Stickseed, which is also threatened by manual control or manual herbicide application. The FEIS acknowledges that: “All action alternatives are likely to adversely affect some listed species.” (p. 4-126). This could have been avoided in all cases except perhaps that of Showy Stickseed if there was an alternative avoiding the use of aerial spraying or herbicides in general. The FEIS substantiates this idea by saying: “Aerial spraying... would tend to make adverse effects more plausible.” (page?)

Damage to Kincaid’s lupine from herbicide spraying has already been documented under its Federal Register listing (USDI FWS, 2000-Erigeron). Some of the sulfonylurea group of herbicides, known to be harmful to commercial onions (members of the lily family), may more

readily affect Gentner's fritillary, also a member of that family." (FEIS p. 4-126). Eliminating use of the sulfonylurea group of herbicides as a modification of the proposed action in addition to eliminating aerial spraying would more effectively protect native and listed plants as the sulfonylurea herbicides are extremely potent and can impair seed and fruit production, which also has ramifications up the food chain for wildlife, yet these modifications or alternatives were not considered. Especially incomprehensible is the Forest Service's neglect in not requiring adherence to the EPA's voluntary herbicide use restrictions for two areas of Wallowa County to protect the Threatened-listed MacFarlane's Four O'Clock. Why is there no discussion of the advisability of respecting the direction of another federal agency to protect a TES plant? This is an especially glaring oversight in that the FEIS notes that this direction may become a requirement in the future. This illustrates the lack of a precautionary principle and failure to choose the most environmentally protective alternative in this FEIS and ROD in general and with regard to TES species in particular.

Other inadequacies of TES plant species impact analysis include: (1) no population numbers provided or estimated for these species; (2) no percentage given for what proportion of these listed plants' populations might be adversely affected; and (3) no viability threshold calculated to indicate at what point genetic diversity and distribution would be insufficient to support these plants' survival as species. In other words, there is no guarantee that this decision to allow the use of toxic herbicides known to kill such plants and aerial and broadcast spraying, which make it difficult to avoid drift and overspray impacts to non-target plants, would not have the effect of pushing these already rare plants to ESA uplisting, local extirpation or extinction.

There is ample reason given in the FEIS for concern that the more numerous plant species on the Regional Forester's Sensitive plants list could be pushed toward uplisting or extirpation by the PNR-IPP's planned herbicide use:

Species within the sunflower, legume or mustard family may be the most sensitive to herbicide treatment in general. Numerous genera from these families occur on the list including Arabis, Erigeron, and Astragalus. Species in the lily family may be more sensitive to some of the sulfonylurea herbicides. The lily family is a large component of the Region Six sensitive species list. The genus Calochortus (or Mariposa Lily) alone has eight species on the list. Any species along roadsides or where activities occur that disturb native plant communities will be threatened by not only invasive plants, but by invasive plant treatments....Recently, 80 fungi and non-vascular (lichens and bryophytes) plants have been added to the regional sensitive species list. Some species and their communities could be negatively affected by herbicides known to affect soil mycorrhizae (sulfometuron methyl, picloram, glyphosate, triclopyr), but studies are laboratory based and results difficult to extrapolate to field situations...

(FEIS p. 4-130) While fungi and non-vascular plants are usually associated with late successional forest ecosystems less subject to invasive plant dispersal, there has been increasing fragmentation of this successional stage by logging across the region, introducing significant edge effects and dispersal vectors such as logging roads, clearcuts, ATVs, and especially on the east-side of the Cascades, livestock. Drier, more open east-side forests are especially vulnerable to invasive weeds with these incursions.

The EIS is also flawed because it does not address the potential cumulative impacts on listed and non-listed desirable plant species. “The general rule under NEPA is that, in assessing cumulative effects, the [EIS] must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment.” *Lands Council*, 395 F.Supp. at 1028. Vague or general statements of impact are not sufficient; impact from projects must be discussed on an individualized basis. *Id.* Without detailed or quantified information, “neither the courts nor the public, in reviewing [a] decision, can be assured that the Forest Service provided the hard look that it is required to provide.” *Cuddy Mountain*, 137 F.3d at 1379. The EIS only states that

All past, present, and reasonably foreseeable projects must be considered together when assessing the cumulative impacts on a given resources that is at issue in a project. 40 C.F.R. § 1508.7. In this case, the viability of sensitive plants is at issue, but the USFS does not assess how grazing, timber harvest, and road building will impact sensitive plants located at treatment sites. The agency must address in its NEPA analysis all foreseeable cumulative actions, “regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” *Id.* The environmental analysis for this project is incomplete without this discussion.

#### V. The PNR-IPP EIS Inadequately Analyzes the Impact to Soil Resources and Productivity.

The proposed project also violates NFMA because it will permanently impair the productivity of the area due to degradation of soil productivity. 36 C.F.R. §§ 219.14 (a)(2); 219.27(a)(1). There is no scientific support in the EIS that these impacts would be adequately mitigated. The courts have held that the USFS is obligated to explicitly describe in an EIS the mitigation measures for the project. *Robertson*, 490 U.S. at 353. An agency’s mere listing of mitigation measures, without analytical data, is insufficient to support a finding of no significant impact. *Id.* A decision will not be upheld where the Forest Service provides no more than a list of its mitigation measures. *Klamath-Siskiyou Wildlands*, 373 F.Supp.2d at 1085. Like environmental impact, mitigation measures must be described with specificity. Therefore, the project must be withdrawn until compliance with NFMA can be obtained.

Appellants are extremely concerned that the EIS and supporting documents did not adequately discuss the potential for chemical contamination of the soil in the treatment locations. As noted in our comments on the proposed program, soil contains many living organisms that may be irreparably harmed as a result of the proposed project. The Forest Service failed to fully respond to our concerns, so we raise them again here. How will herbicide application affect the living organisms found in the soil? How will repeated herbicide applications – not just from this project, but from other federal, state, and local herbicide application projects, timber sales, and private project – affect the living nature of the soil at the treatment sites? How will productivity be affected? The EIS claims that “none of the herbicides under consideration has notable effects to soil productivity,” yet fails to qualify or quantify what this means. Additionally, the EIS acknowledges that “information about specific herbicide effects to each of the myriad of soil organisms is not available,” but fails to state why this is not available, or what steps may be

taken to acquire this missing but essential information, as required by the NEPA. Without understanding impacts from herbicides to soil organisms, which are the foundation of soil productivity, it is implausible that the agency can claim that soil productivity will not be adversely affected. The NEPA requirement for careful consideration of a project's environmental effects and informed decision-making are legally binding standards; failing to take a hard look at proposed actions violates federal law. *See generally Cuddy Mountain*, 137 F.3d 1372.

A. Mycorrhizae.

The PNR-IPP EIS failed to adequately address how past logging, grazing, and other projects have affected mycorrhizae in areas across the region's forests. Without a discussion on the impacts to soil mycorrhizae, the Appellants and the decision maker are precluded from making an informed decision regarding the proposed project, and the USFS cannot assert that there will be no permanent impairment of the soil. 30 C.F.R. §§ 219.27(a)(1), 219.14(a)(2) (prohibiting activities unless technology is available to prevent impairment of soil or water resources). Failure to thoroughly analyze project impacts on soil microorganisms is a failure to take the hard look required by NEPA. *See generally Cuddy Mountain*, 137 F.3d 1372.

B. Burning.

Appellants have concerns over the potential for adverse effects if any type of burning occurs after herbicide treatments. It has been shown that irritating vapors may be produced when dicamba and triclopyr are burned. The Mediated Agreement Mitigation Measure Number 34 (which the EIS and its Appendices fail to provide, in violation of the NEPA) prohibits "the burning of vegetation in the same year in which it has been treated with herbicides." Due to the fact that fire is a natural part of eastside ecosystems, that there are numerous projects where the agency is involved in re-introducing fire back into the region's ecosystems, and that slash from timber sales as well as other national forest acreage may be burned after herbicide applications, it is possible that toxic vapors and other hazardous by-products may be produced. The Forest Service did not adequately address this potential problem, or how it would mitigate any adverse effects of burning slash or forest areas that have been treated with herbicides. Again, failure to thoroughly analyze project impacts on both the environment and human health is a failure to take the hard look required by NEPA. *See generally Cuddy Mountain*, 137 F.3d 1372.

C. Grazing.

The EIS notes that grazing is an ongoing activity in the region, and that it will continue. The fact that grazing will continue both during and post-program should have been addressed more completely within the EIS. The EIS should have addressed how continued livestock grazing will affect the ecosystem in which the proposed program is to take place.

Other than the admission that grazing will continue in across the region, there is inadequate analysis on the cumulative effect of grazing and invasive plant control on the same parcels of land. While it is clear that grazing has occurred in the region, the EIS does not adequately describe the extent and nature of grazing throughout the region. For example, the EIS does not

include maps of active grazing allotments, fails to compare these areas with corresponding areas of invasive plant populations, and does not discuss the combined impacts of logging, burning, grazing, and herbicide application, on specific project levels, watershed levels, and on region-wide eco-scape levels. Moreover, the EIS does not sufficiently discuss and address the likelihood that grazing will contribute to the spread of invasive plants across the region, a problem that the USFS admits already exists. Appellants request that the agency consider the recent report, *Livestock Grazing and Weed Invasions in the Arid West* (Belsky & Gelbard, 2000), and amend or cancel the PNR-IPP accordingly.

The failure to adequately address current grazing practices and their effects in the region violates NEPA, which requires the USFS to evaluate all past, present, and reasonably foreseeable future actions undertaken by Federal and non-Federal actors, and to disclose the effects on the environment to the public. 40 C.F.R. §§ 1508.7 (requiring a cumulative impacts analysis); 1500.1 (requiring public notice of agency actions and their effects). Failure to do so is a failure to take the hard look required by NEPA. *See generally Cuddy Mountain*, 137 F.3d 1372.

The fact that currently the region is used for grazing and will be used both during and post-program is at least an indirect (if not direct) effect of the proposed program that should have been considered in the EIS. For example, the EIS should have comprehensively considered how the grazing of sheep and cattle in the region may introduce additional populations and species of invasive plants, and how continued grazing will affect soil and aquatic resources in the area. Simply acknowledging grazing use does not comply with NEPA's requirements to evaluate the cumulative, direct, and indirect impacts of this program combined with livestock grazing. Until these questions are answered and an adequate analysis of grazing impacts across the region is completed, the PNR-IPP must be withdrawn in compliance with the law.

#### VI. The PNR-IPP EIS Inadequately Analyzes the Effects of Herbicides.

The majority of this appeal has focused on the herbicide application portion of the proposed project, because Appellants maintain that this type of invasive plant control agent has the greatest potential to do environmental damage. This concern is supported by the supporting documents for the EIS. Although the EIS and appendices recite some studies regarding the impacts of herbicides on various species (although those studies were generally considered to be “inadequate” or “marginal”), these species are much more sensitive than lab-raised animals. Therefore, it is inappropriate to extrapolate the results of herbicide applications in agricultural trials to forest ecosystem use. This does not meet the NEPA requirement that an EIS contain “high quality information and accurate scientific analysis...If there is incomplete or unavailable relevant data, the [EIS] must disclose this fact” up-front. *Id.* at 1031-32 (citing 40 C.F.R. § 1502.22). The EIS must include a description of methodologies it relies on, setting forth any shortcomings that are relevant in light of the environmental impacts the methodology is used to analyze. *Nez Perce Tribe*, Memorandum Decision and Order in Case No. CVO4-299-C-EJL dated September 21, 2005 (D. Id.). Here, inappropriate extrapolation is a shortcoming of the scientific analysis.

There is inadequate information to support the conclusion that picloram and triclopyr do not bioaccumulate in target vegetation or the animals that may feed on it. In addition to the fact that the FEIS does not disclose adequate information regarding the bioaccumulation potential for hexachlorobenzene, the EIS does not adequately analyze the cumulative consequences of past, present, and future projects also involving herbicide applications that contribute to bioaccumulation. The failure to address these issues violates NEPA's requirement for high quality information in environmental analyses. 40 C.F.R. § 1502.24. The hard look standard required by NEPA has not been met. *See generally Cuddy Mountain*, 137 F.3d 1372.

Significant impacts suggested by the NPE risk assessment are not disclosed or analyzed in the FEIS. These concerns include data gaps limiting the knowledge of cumulative effects of NPE and other estrogen-like compounds and on endocrine effects from NPE, specific information about NPE's high potential for aquatic toxicity, NPE's high water solubility, NP and NPE's adverse effects to liver and kidneys based on sub-chronic and chronic testing of laboratory animals, and potential carcinogenic and mutagenic effects of ethylene oxide, a contaminant of NP9E.

Inert ingredients found in Garlon 4 are "Pennsylvania Hazardous Substances" and "New Jersey Workplace Hazardous Substances." *See generally, Material Safety Sheets – Garlon*. The fact that at least two states have found inert ingredients to be hazardous would seem to require the agency to completely disclose and discuss the use of Garlon 4 and other formulas with toxic "inert" ingredients for the proposed program. Without this information, the proposed project fails to meet the NEPA's full disclosure requirements and should not go forward.

Finally, the EIS does not discuss the potential for toxicity and persistence of herbicides in soil and water resources due to more than one application of only a single chemical. The program will authorize repeated regional applications over the course of many years, and many sites often require multiple applications of multiple chemicals. Moreover, the information on toxicity and persistence should have appeared fully in the EIS, and not have been hidden as a report in the analysis file, as was done with the SERA reports. This information is important, because it is possible that the concentrations across the watersheds may in fact indicate that toxicity and persistence levels are much more dire than the USFS indicates. This does not satisfy the "hard look" standard set forth in *Cuddy Mountain*, 137 F.3d 1372. Nor do the disclosures and analysis meet the requirement for high quality scientific analysis as required by 40 C.F.R. § 1502.22. The USFS is obliged to present concrete, detailed information for the decision maker to carefully consider, and to the public for scrutiny and comment before commencing this project. *Robertson*, 490 U.S. at 349.

## VII. The PNR-IPP EIS Inadequately Analyzes the Effects of Biological Control Methods.

The Forest Service proposes to introduce exotic species into the forest ecosystem to control invasive plants sites throughout the Region Six Forests. This method of invasive plant control is not necessarily ideal. The USFS must address the potential adverse affects of introducing non-native parasites into ecosystems that have already been disrupted due to extensive ecosystem manipulation. Appellants have several concerns.

First, other than stating that biocontrol will be used, the EIS does not address the potential downsides of using this method of weed control. For example, the EIS does not discuss the potential that biocontrol agents will become exotic invaders themselves, and has presented no studies that show that biocontrol methods have been effective in the past and will be effective in this case. Although the EIS states that biocontrol methods have been “tested extensively,” the EIS does not indicate what the results of those tests were, and does not provide references for those studies. The law requires this type of analysis. 40 C.F.R. § 1502.24 (requiring the agency to “make explicit reference by footnote to the scientific and other sources relied upon for the conclusions in the statement”). The “hard look” standard set forth in *Cuddy Mountain* must be satisfied. *See generally Cuddy Mountain*, 137 F.3d 1372. Disclosures and analysis need to meet the requirement for high quality scientific analysis as required by 40 C.F.R. § 1502.22.

Second, similar to the lack of adequate studies for the effects of herbicides on forest ecosystems, the supporting documents for this project indicate that there are no studies regarding the effects of biocontrol on wildlife. NEPA and the APA require the agency to make a reasoned decision, but such a decision is impossible without studies discussing the impacts of the proposed treatment method on wildlife. Until this information is gathered, the agency is prohibited from going forward with the proposed project. The USFS is obliged to present concrete, detailed information for the decision maker to carefully consider, and to the public for scrutiny and comment before commencing any project. *Robertson*, 490 U.S. at 349.

Finally, similar to the lack of studies regarding the effect of biocontrol agents on forest ecosystems, the EIS does not disclose which types of biocontrol agents will be used for the proposed program. Instead, the EIS simply states that any of the many biocontrols approved by APHIS could be used, but fails to identify what these are, which are more likely to be used in this region, what their effectiveness -- or lack thereof -- is, and what adverse impacts may result from their use. The lack of this crucial information violates NEPA, and precludes the decision maker from making an informed decision regarding the proposed program. This lack of information is a crucial piece of information, without which the decision maker and the public are precluded from making an informed decision regarding the proposed program. For example, it is impossible to determine whether the type of agent that the USFS plans to use for this project will target other native species once the target species is exhausted, whether it will become an invasive species itself, or whether it poses a threat to existing native plant populations. The failure to identify the actual agent used for this project is akin to failing to disclose whether the Forest Service intends to use ground-based equipment, helicopters, or skyline cables to log a timber sale. Until this information is presented to the public for comment, the EIS and ROD are not supported by the record, and violate the APA. 5 U.S.C. § 706. Again, this constitutes a failure to meet the hard look standard affirmed by the Ninth Circuit. *See generally Cuddy Mountain*, 137 F.3d 1372.

#### VIII. The Invasive Plant Program FEIS Inadequately Analyzes the Effects to Environmental Justice and Native Treaty Rights.

The FEIS reports that: “Executive Order 12898 ordered federal agencies to identify and *address* the issue of environmental justice the issue of environmental justice (i.e. adverse human

health and environmental effects of agency programs that disproportionately impact minority and low income populations). Executive Order 12898 also directs *agencies to consider patterns of subsistence hunting and fishing when an agency action may affect fish and wildlife.*” (FEIS p. 4-163, emphasis ours). Clearly this FEIS and ROD are planning a program which will affect fish and wildlife, so patterns of subsistence hunting and fishing should have been analyzed and considered. This information is available from the Native Nations of Region Six, who were contacted regarding this program, according to the distribution list in the FEIS. The FEIS simply failed to *address* the issue of environmental justice in that addressing a problem such as cultural plants and subsistence fish and hunting species being adversely affected by planned herbicide use (which is likely, based on the FEIS analysis) requires finding solutions to the problem, not just stating that it could exist and then ignoring it.

Indeed, the FEIS admits that in response to scoping letters sent to Native American groups,

(i)mpacts to cultural plants were of specific concern...Concerns, specifically related to environmental justice of treatments were focused on water quality; namely, that invasive plant treatments should not degrade or compromise water quality for salmon and steelhead fisheries, which are an important part of Native American tradition and a major source of food and income for many Native Americans in the Pacific Northwest and elsewhere.

(FEIS, p. 4-164). Yet the Region Six IPP program’s most definite impacts from herbicide use involve the killing of native plants (which include native cultural plants) and degradation of water quality and fish runs, including salmon and steelhead trout. These impacts could be lessened and avoided on the programmatic level by prohibiting use of the herbicides most toxic to fish and other aquatic organisms in riparian areas, prohibiting aerial and broadcast spraying (which are most likely to result in accidental contamination of surface waters), and mapping and specifying avoidance of herbicide use in areas of Native traditional cultural plant use, which are well known by the Native Nations in the region. Such programmatic restrictions would do far more to assure that Native treaty rights and environmental justice rights are not abrogated than leaving the whole issue up to District staff with no specific regional guidance. Project-level planning does not always successfully avoid or adequately mitigate adverse effects to traditional uses, treaty rights and environmental justice rights. Since the FEIS admits that “implementation of the standards may affect natural resources on which the tribes depend” (FEIS p. 4-164), there is a responsibility at the programmatic level, where these standards were devised, to thoroughly analyze and address these foreseeable impacts to natural resources on which the Native Nations depend. NEPA requires the agency to evaluate “cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts,” and to discuss them in the same impact statement. 40 C.F.R. § 1508.24(a)(2). Failure to do so in sufficient detail is a failure to take the hard look at the proposed programs as required by law. *See generally Cuddy Mountain*, 137 F.3d 1372. The proposed program should avoid negative impacts to these resources from the programmatic level as much as possible. Thus the FEIS and ROD are in violation of Executive Order 12898.

Other foreseeable environmental justice transgressions should also have been more thoroughly analyzed and addressed, such as Hispanic workers being exposed disproportionately to toxic herbicides: “Hispanics may be more likely, than the general population, to be injured

during manual treatments or by exposure to chemical treatments, because they may be disproportionately represented on some work crews.” (FEIS p. 4-163). Although the FEIS claims that at the programmatic level disproportionate impacts to minority and low income populations “are difficult to identify and quantify,” the FEIS authors did identify at this level some of these disproportionate impacts and affected communities, including mushroom pickers and “those who hunt, fish or ingest wildlife or fish harvested on or near National Forest System lands.” (FEIS p. 4-163). Thus the responsibility to analyze and address these impacts at the programmatic level as well as at the project level is triggered. There are many low income and ethnic minority people across Region Six who hunt, fish, and gather edible plants and mushrooms on Forest Service lands that may be disproportionately affected by herbicide exposure through their consumption of wild foods. Disproportionate impacts to their health and rights may be disregarded at the project level, where racism is often rampant in small (largely white) towns, a cultural bias which could spill over into largely white District Forest Service staff who are under pressure to meet quotas for acres sprayed and other quantitative measurements of work performed each year.

IX. The ROD for the PNR-IPP EIS is Inconsistent with Applicable Laws and is Arbitrary and Capricious in Violation of the Administrative Procedure Act.

The Administrative Procedures Act requires reviewing courts to “hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law.” 5 U.S.C. § 706(2)(A). “An agency’s action is arbitrary and capricious if the agency fails to consider an important aspect of a problem, if the agency offers an explanation for the decision that is contrary to the evidence, if the agency’s decision is so implausible that it could not be ascribed to a difference in view or be the product of agency expertise...or if the agency’s decision is contrary to governing law.” *Lands Council*, 395 F.3d at 1026 (citing *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)). The court will look to see if in consideration of important aspects of the problem, the USFS made its decision “based on a consideration of the relevant factors... Moreover, it must engage in a ‘substantial inquiry’ into the facts, one that is ‘searching and careful.’” *Northern Spotted Owl v. Hodel*, 716 F.Supp 479, 482 (W.D. Wash. 1988), quoting *Ethyl Corp. v. EPA*, 541 F.2d 1, at 34 (D.C. Cir.), *cert. denied*, 426 U.S. 941(1976). The ROD and EIS for the PNR-IPP were not based on a consideration of relevant factors, or the product of such searching inquiry.

Notably, the EIS failed to consider the cumulative impacts of the proposed program. Without detailed or quantified information, “neither the courts nor the public, in reviewing [a] decision, can be assured that the Forest Service provided the hard look that it is required to provide.” *Cuddy Mountain*, 137 F.3d at 1379. For example, although the EIS notes that grazing will occur in the region during and after the proposed program, the EIS does not discuss how grazing will affect the region and specific project-program areas and the continued and potentially exacerbated spread of noxious weeds. Similarly, the EIS does not address the nature of state and private lands that are adjacent to programmatic planning areas and how activities on those lands will influence the resources in the region (and in the region’s specific project areas). In addition, while the EIS noted that timber harvest has occurred in the past in the region’s numerous watersheds, it does not indicate how future timber harvest will affect the region and

the control of invasive plants. The analysis in the EIS violates NEPA, which requires all relevant information to be compiled in a single environmental document. *Thomas*, 753 F.2d 754; 40 C.F.R. § 1508.7.

The failure to thoroughly consider all relevant environmental impacts in the EIS is arbitrary and capricious. This decision contravenes the clear intent of NEPA as well as NEPA's implementing regulations that require the USFS to fully consider the direct, indirect, and cumulative impacts of this project in conjunction with other past and future impacts in the area. 40 C.F.R. §§1500.1(b), 1508.25(2), 1508.27(b)(7); *Sierra Club*, 843 F.2d at 1193.

Lastly, it is both the height of management folly, as well as seriously legally questionable, for the agency to propose herbicide treatments which may exceed EPA target levels for "worker and human health risks." However, the EIS indicates that this is exactly what this program may result in. On pages 4-74 and 4-80 the EIS discloses that the programmatic use of 2,4-D, dicamba, triclopyr, adjuvant nonylphenol ethoxylate, and picloram are likely to exceed the EPA target levels and for picloram the EPA cancer rate benchmark. Despite the seriousness of these disclosures, the EIS does nothing to address the questions of legality or to develop responsible controls and standards to rectify this likelihood.

#### X. The FEIS Fails to Disclose Crucial Information Concerning Agency Compliance with the Mediated Agreement

The Mediated Agreement of 1989 stipulated a series of requirements with which the Region Six USFS agreed to comply. Among the requirements were yearly reports concerning herbicide use, effectiveness of herbicide programs, research into toxicity of herbicides used and impacts to areas where they were utilized, instances of worker and other human health impairment resulting from herbicide use including accidents, the development of non-chemical proactive methods of preventing the spread of invasive plants and identifying root causes of their introduction and spread, etc. General consensus among many organizations which monitor USFS activities in Region Six is that the agency has generally failed to comply with its agreed upon obligations as clearly mandated by the Mediated Agreement, and has initiated this EIS in part to escape from its obligations.

As the Mediated Agreement (MA) plays a crucial foundational legal role in this NEPA process, NEPA requires that this information be disclosed to both the decision-maker and the public, and that the effectiveness and compliance -- or lack thereof -- of and with the MA be assessed. Instead, the EIS obfuscates and evades this essential information, and seeks to displace the many effective and reasonable requirements of the MA with an Invasive Plant Program which fails to responsibly develop, implement and require regional monitoring and reporting of the IPP projects across the region. Before the MA can be replaced it is imperative that both the decision maker and the public be given information concerning its effectiveness and shortcomings, and that agency actions during the past 15 plus years under its mandates be disclosed and assessed. If, as it appears, the agency has failed to comply with the letter and intent of the MA during this time-period, what reasonable assurances are there that the agency will comply with any of its standards and guidelines concerning the PNR-IPP region-wide

program and projects? Failure to disclose and analyze this crucial information violates NEPA and the ROD, as such, violates the APA.

### CONCLUSION

The Pacific Northwest Region's National Forests provide important aquatic and terrestrial habitat for a multitude of species. However, for the reasons described within, Appellants believe that there is ample evidence that the EIS and supporting documents for the PNR-IPP are inadequate and do not meet the requirements of NEPA or NFMA, and that the ROD for the project is arbitrary and capricious. These shortcomings are very similar to those that were reported in a study conducted by the U.S. Department of Agriculture's Office of Inspector General that concluded Forest Service environmental assessments for timber sales were deeply flawed. This document should be reviewed in considering this appeal since it substantiates many of the inadequacies described within this appeal.

It was only several decades ago that the Forest Service sprayed DDT across thousands of acres of forest to suppress insect populations, claiming that there would only be minimal environmental effects. Today, the Forest Service proposes to spray several herbicides which, despite their widespread agricultural use, have not been adequately tested for forest use. Indeed, the USFS has stated that the tests for glyphosate, triclopyr, and picloram and their effect on wildlife are largely "inadequate." Many significant adverse effects and gaps in effects data related to the use of the herbicides proposed for use were not disclosed or analyzed in the EIS or its appendices. In addition, the use of exotic biocontrols which have not been tested for their destructive impacts on native plants is proposed. There are many historical cases of exotic species being released in wild environments with disastrous results -- from mongoose in Hawaii extirpating native birds to exotic invasive weeds spread from corporate globalization shipping and increased penetration of wild lands by livestock, heavy equipment used in logging, off-road vehicles and other vectors causing the problem at hand. Yet the risks posed by releasing exotic species to control invasive plants are not considered in this EIS. Furthermore, comprehensive and effective measures to control the introduction and dispersal of invasive plants were suggested in both the Restore Native Ecosystems Alternative and Alternative B that were rejected in the proposed action adopted. Some of these rejected prevention measures are critical to stopping the rapid spread of invasive plants across Region Six that we are now experiencing. As a result, the benefits of the proposed project are both speculative and ill-defined, while the only effects that appear to be certain are negative.

### **Deschutes and Ochoco National Forests, and Crooked River National Grassland Invasive Plant Treatment Draft Supplemental EIS Comments**

#### ***Conclusion***

The Oregon Chapter Sierra Club requests that the National Forest withdraw and significantly revise the DSEIS. We strongly recommend the agency withdraw the potential and/or proposed use of known and suspected toxic herbicides, and new as yet unproven chemical and biocontrol formulations, many of which are specifically addressed in the above regional appeal which we incorporate in these comments. We recommend the agency prioritize natural, manual, and where appropriate (already significantly disturbed areas such as roadsides) mechanical removal and control of invasive exotic plants. Among the effective management

methods to remove already existent invasive plants are fire, seasonal strategic interruption of seeding, direct extraction, and maintaining healthy native soils, hydrology, vegetation, biodiversity, and natural ecological disturbance cycles and patterns.

At core, the agency must proactively address root causes of invasive plant introduction and spread. Paramount among these are livestock grazing, roads, logging, riparian degradation, and off road vehicles. Soil disturbance, soil and vegetative community degradation; altered hydrological patterns, riparian and watersystem degradation; and excessive road densities, use, access, and ecosystem fragmentation from these activities are the primary root sources and causal conditions fomenting widespread exponentially growing invasive exotic plant spread, and the concurrent declines in the populations and distribution of native plant biodiversity and abundance.

Curtailing the root causes of the introduction and spread of invasive exotic plant species is essential to achieving a measure of control and success in stemming the spread of invasives. Prohibiting ground based logging; utilizing only light-on-the-land machinery and methods, and small diameter strategically limited scientifically-founded thinning; and effectively protecting subsurface soil communities and native vegetation from logging-thinning harms and disturbance is a necessary management step. The severely harmful impacts to soil and vegetative communities from logging-thinning projects such as Lava Cast, East Tumbull, Five Buttes, Oz, GW Fire, and others in the Deschutes, to Spears, West Maury, Cougar Salvage, and others in the Ochoco must be rectified, with such heavy machinery and widespread logging-thinning practices prohibited in future projects. Eliminating and/or significantly reducing livestock grazing in both problem areas and intact native plant community locations is essential as well. Halting widespread ORV use on public lands, prohibiting ORV cross country travel and use in interior wildland eco-zones is a necessary beginning step. Restricting or prohibiting ORV travel in areas where invasives are established and spread is an issue, and prohibiting ORVs in intact areas to prevent environmental degradation and invasive introduction is also requisite.

The DSEIS fails to reasonably and effectively address root causes of the introduction and spread of invasive plants, while proposing to utilize dangerously toxic and as yet unproven chemical and biological formulations. Such legally and environmentally flawed planning only serves to compound existent problems with significantly serious new ones. Cumulatively, utilizing toxic compounds; failing to address root causes; developing and authorizing additional logging thinning, ORV system, new road including so-called “temporary” new road construction, continued livestock grazing, and other harmful management practices; can only exacerbate the ecological restoration problems already inherent in forest conditions and management, leaving subsequent generations the onerous and largely increasingly infeasible task of attempting to correct the many management harms of this and past eras. The DSEIS fails the NEPA requirements to address these cumulative impacts and synergistic foundational issues, and as such must be withdrawn and significantly revised. In the interim while the SEIS is being developed anew, as invasive plants are a serious management issue, we recommend a comprehensive strategic action focus on preventing root causes of spread and introduction, and utilizing natural and manual methods upon existent invasive plant locations.

The revised DSEIS must analyze the proposed Invasive Plant Treatments and the cumulative and synergistic effects of past, recent, current, known, and likely future federal and adjacent non-federal timber sales, livestock grazing, road use and management, recreation, mining, ORV systems and use patterns (authorized and unauthorized), and other non-federal weed control projects in the region that utilize herbicides and biocontrols (state, county,

municipal, agriculture, railway, and private). The DNF, ONF, and CRNG should begin surveys of MIS, listed, and sensitive species on a forest-wide basis, determining population and distribution trends, and areas of significant concern, and reassess their invasive plant treatment plans incorporating maintenance and recovery objectives for the area's imperiled species of concern. The NEPA process should be used to choose the most environmentally protective alternative through a rigorous analysis of the best available science, full public disclosure, serious consideration of public comments, and complete awareness of the full impacts of proposed project treatments. Again, the Oregon Chapter Sierra Club appreciates this opportunity to comment, and we offer our assistance in helping to develop a comprehensive ecologically responsible program to protect wildlife and aquatic species habitat, restore rare native plants, and reduce the extent and spread of invasive plants throughout the region's public lands.

For the Natural Heritage of Us All,

A handwritten signature in black ink that reads "Asante Riverwind". The signature is written in a cursive style and is positioned above a horizontal line.

Asante Riverwind, Eastern Oregon Forest Organizer,  
Oregon Chapter Sierra Club  
P. O. Box 5534  
Bend, Oregon 97708  
(541) 322-4065 Office  
(541) 306-7737 Field  
asante.riverwind@sierraclub.org