

Comments and Responses to the DEIS by Topic with Summaries

Appendix A

R6 Invasive Plant EIS

March 2005

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Comments and Responses by Topic with Summaries

Introduction

This report summarizes all comments received during the 90 day DEIS comment period. Comments from Native American tribes and federal, state, county, and other local agencies are published in total at the end of this report. In total, 286 pieces of correspondence were received.

Organizational Type	Number of Responses	Number of Signatures
Individual	216	245
Academic	2	3
Agricultural Interest	2	2
Timber Interest	2	2
Other Industry or Business Interest	6	6
Tribal Agency or Official	1	1
Government Employee Group	1	1
Federal Agency or Official	4	4
State Agency or Official	6	7
Regional Agency or Official	3	3
County Agency or Official	12	15
Preservation/Conservation Organization	22	60
Place-Based Organization	1	1
Recreation User Organization	8	8
Total	286	358

Most of the correspondence (approximately 250 letters) originated in Oregon and Washington. Approximately 83 letters with 140 signatures were from Lane County, Oregon. Approximately 27 letters with 28 signatures were received from Multnomah County, Oregon. Fewer than 20 pieces of correspondence were received from any other county.

The comments were considered individually and collectively. Comments extracts were categorized based on their subject matter. The Forest Service responded to the comments by:

1. Modifying alternatives – The wording of standards was changed in response to comments. One new standard was added to all alternatives.
2. Supplementing analysis – Several sections of the FEIS include supplemental analysis or clarifying discussions in response to comments.
3. Corrections – Some comments resulted in corrections to the existing analysis.

In some cases, comments did not warrant further agency response. The rationale for why no further action was taken is discussed in the tables below.

The analysis files contain a database linking these comments to the correspondence received. Lists of commenters and detailed demographic information are in the files.

Scope of the EIS

Several letters contained comments about the scope of the EIS. Many people questioned the type of analysis appropriate for a programmatic NEPA document; versus what should be analyzed in future project NEPA documents.

The FEIS contains additional discussion regarding how site-specific projects will tier to the Regional EIS in response to these comments.

Table 2. Comments and Responses about Scope of the EIS	
Comment	Response
How will site-specific EIS [GP, Mt Hood, Gorge] tier to Regional EIS if the latter is behind the former in preparation? NEPA does not allow tiering of two contemporary EIS's to each other. Both EIS area present and/or reasonably foreseeable future actions that must be assessed together.	Invasive plant treatment projects are being planned concurrently with the Regional effort. For instance, target species may be inventoried, site objectives may be defined, and public outreach may be ongoing. The final decision on the Regional EIS will influence the design and development of site-specific projects
[The Nature Conservancy believes] this thorough draft addresses the key issues in a frank, professional manner. Its treatment of the real risks of chemical and biological control treatments is excellent, and provides a good basis for the selection and use of herbicides and other methods described in the Proposed Action. There are also provisions in this EIS to support adequate and appropriate monitoring to detect change due to management actions. This draft EIS takes into consideration potential off-target impacts, especially health and safety issues when using herbicides, and we believe that the Proposed Action strikes the right balance in guarding against the risks to human and environmental health from these methods, and the risks of a failed invasive plant management program.	The FEIS further addresses these considerations. The rationale for the final decision will be in the Record of Decision.

Table 2. Comments and Responses about Scope of the EIS	
Comment	Response
<p>In addition to the important changes to the Standards prior to publication of the DEIS, the scope of the action has also changed. During the early NEPA process, NOAA Fisheries worked with the FS on the development of project design criteria (PDCs). The PDCs were intended to be included in the DEIS for use at the sub-Regional or individual National Forest level. The PDCs were designed to provide clear guidance to FS staff regarding how to conduct invasive plant management actions which avoided or minimized effects on listed species or the ecosystems upon which they depend. At present, there are no PDCs in the DEIS, and no plans to develop them at the Regional level. The FS was concerned that Regional PDCs could not be developed to fit the variation that occurs at the local level. NOAA Fisheries understands this concern and would still like to jointly pursue development of PDCs that can accommodate the variation at the local level. NOAA Fisheries recommends that the FS develop PDCs, or commit to a schedule for future PDC development.</p>	<p>Project design criteria would be established at the project scale depending on potential effects on listed species. The EIS includes appropriate management direction for Forest Plans in the Region.</p>
<p>The ROD and Mediated Agreement called for the Forest Service to "detect and resolve vegetation problems before they cause serious losses or require large correction projects (such as envisioned in the IPEIS). It also directed agency managers to continue to "evaluate and monitor tools and intensity of application" and to monitor research findings about vegetation management methods. Nothing in the IPEIS indicates any of these management directions stipulated in the Mediated Agreement and implemented in the 1988 ROD were clarified or followed on a region wide basis.</p> <p>Headwaters believes that during the past 15 years, the Forest Service has failed to implement the comprehensive direction outlined in the 1988 ROD and Mediated Agreement. It appears the agency is now scrambling to solve an expanding invasive plant problem (created at least in part by failure to implement the 1988 decision) by increasing the use of herbicides and lowering prevention standards. Although the Forest Service has incorporated all pertinent documents (including the ROD and Mediated Agreement) into the existing Region 6 forest plans, only one forest has amended its forest plan to any degree to include specific direction for prevention of invasive plants. This situation is not the fault of the existing documents, but the failure of the Forest Service to take the threat of invasive plants seriously enough to amend all its Region 6 forest plans years ago. The fact is, current management efforts to prevent the spread of invasive plants have failed, not because of inadequate or outdated methodologies, but through a lack of agency will, staff and money to incorporate and implement the specific mandatory prevention direction required by the 1988 ROD to get the job done.</p>	<p>The DEIS emphasized early detection and action so that invasive plants are treated when populations are small. It also included information about monitoring. "Large corrective projects" were "envisioned," to occur infrequently. The 1988 ROD did not focus specifically on invasive plants; it had a broader scope that included unwanted, native vegetation.</p> <p>The Forest Service and wider community has learned a lot about the spread of invasive plants since 1988. The DEIS considered new information in light of the current situation. It addressed the mechanisms of spread that include actions controlled by the Forest Service. This EIS is an indication of the "agency [‘s] will, staff and money to incorporate and implement ...prevention direction."</p>

Table 2. Comments and Responses about Scope of the EIS	
Comment	Response
Also missing is even a rudimentary analysis of how differences in climate, soil, topography and other factors will impact what treatments may be used and how efficacious they will be.	Differences in climate are beyond the scope of the EIS. The discussion in DEIS Chapter 3.2 included potential vegetation groups which are a reflection of climate, topography, elevation, and other factors. The FEIS notes that the effectiveness of any treatment is related to site characteristics and biology of the invasive species. These factors will be considered as a part of project planning.
The DEIS fails to inform the decision maker by making several very serious lapses in the description of the environmental consequences of the proposed program. The primary assumption is that for a programmatic EIS the Forest Service is absolved from analysis of the relative need for any of the means of control. No attempt is made to provide even broad brush strokes of what could be expected of, for example, herbicide usage amounts. The FS can and must come up with, at the very least, pie charts and graphs that illustrate the proportion of each treatment option that may be anticipated to be used in R6. This is not an impossible task, or if it is, why it is impossible should be described in the EIS. How can a decision maker be informed without this basic information?	The DEIS provided extensive discussion about expected herbicide usage for each alternative. The environmental consequences section disclosed the estimated acreage treated by herbicide and non-herbicide methods. The DEIS estimated the annual acreage that various herbicide formulations would be applied at typical and maximum label rates. Pages 4-88 and 4-89 display the estimated, relative mix (percentage) of herbicide formulations. A bar chart displays the relative annual treatment acreage by method, estimated for each alternative.

Comment	Response
<p>Without a description of which species are most problematic, what their response is to various treatment options, what their current and anticipated scope of invasion is or what are the various regional influences, the DEIS fails to provide the evaluation necessary for informing the public and making an informed decision. For all the DEIS tells us regarding the influences of the environment of Region 6 on the program, we could guess that the problem is occurring on Mars, or in the sands of Saudi Arabia, or perhaps in Arizona and New Mexico. NEPA requires more than this of a programmatic EIS. Without adequate description of the problem and the RANGE of responses that may be taken, and with constant assurance that all that's necessary will be described at the more site-specific level in an EA or EIS, it is not possible to gain an adequate vision of what is in store under the various alternatives with the current DEIS. That is not consistent with the demands of NEPA. The analysis cannot be delayed to the future because those future NEPA documents must tier to this one, and without a solid basis in the programmatic EIS, those documents will fail. To put it plainly, such piecemealing is patently illegal under NEPA. The decision maker and the public would have to scramble in the future to read every project proposal and NEPA document that flows from the current EIS to piece together a picture of the extent of the program, the priority given to particular species, the treatment options most likely to be employed, and what effects regional differences may make in the approach to controlling invasive plants. This is the primary failure of the DEIS as it is currently written.</p>	<p>Chapter 3 provided a detailed description of the invasive plant problem in Region Six, described vegetation communities at risk, listed the species of greatest concern, identified treatment priorities, and suggested effective treatment methods. Table 3-6 focused on vegetation conditions in the Region and the susceptibility of specific vegetation types to invasive from non-native species. Chapter 4 estimated acres that would be treated annually, based on treatments that would be effective on priority species. The DEIS adequately disclosed direct, indirect and cumulative effects at this programmatic scale.</p> <p>Appendix N provides a link to the document, "Common Control Measures for Invasive Plants of the Pacific Northwest." This document is available on request for those without internet access. The document discusses how invasive plant species respond to treatment methods.</p>
<p>The DEIS focuses too exclusively on native plant communities - and does not put enough emphasis on Noxious Weeds</p>	<p>A fundamental part of the purpose and need is to prevent or reduce spread of invasive plants so that desired future condition of lands can be attained, thus the DEIS focused on the desired condition of healthy native plant communities</p>

Table 2. Comments and Responses about Scope of the EIS	
Comment	Response
Applicable laws affected by this document should be listed, along with the sections of those laws that are unchanged by this EIS outside of Region 6. It is not clear whether the standards in Appendix F are legal requirements or merely guidelines and recommendations.	No laws would be affected by this document. Forest Plan management direction includes both binding standards and more flexible Goals and Objectives (Chapter 2). The selection of an action alternative would impose standards for invasive plant prevention and treatment. The effect of these standards on land uses was discussed in Chapter 4.
The goal of a control program could be to eradicate completely a plant everywhere, it could be to eradicate it only in a specific area, or it could be to reduce its population to a level that does not significantly displace native flora and fauna. The DEIS does not make this analysis. Furthermore, it does not provide an adequate system for making decisions for each site. How can R6 FS staff prepare NEPA documents in the future when they have no decision making guidance in the programmatic EIS?	Treatment Standards 10 and 11 relate to setting objectives and priorities for invasive plant treatment. Chapter 3 of the DEIS discussed that “an effective [invasive plant treatment] strategy should include: (1) prevention of the conditions that favor invasive plants and encouragement of conditions that resist them (controlling invasive colonization), (2) treatments that not only control the invasive species (controlling invasive species performance), but also purposefully manage for desired vegetation (designing a disruption to the undesired successional pathway). Chapter 3 also stated: “Infestations need to be assessed when developing a treatment strategy as to whether they can be eradicated, controlled, contained, suppressed or tolerated.” ¹ At the site-specific scale, objectives ranging from eradication to suppression to would be established.
Scope of the Programmatic EIS not fully disclosed. Since the proposal is a programmatic EIS, the scope of analysis includes tiered, subsequent project-level decision documents; we asked for the scope of project plans to be limited by the scope of tiered programmatic planning documents. This was only partially disclosed in the section on scoping (p. Summary-5), which proceeds directly to a list of issues without defining the scope of analysis. This is a flaw in the EIS, which will likely lead to the preparation of tiered project documents exceeding the scope authorized by this EIS.	The DEIS stated: “The Record of Decision for this Environmental Impact Statement would add new Forest Plan direction relating to invasive plants, and delete existing Forest Plan direction for invasive plants incorporated from the 1988 EIS, 1988 ROD, and the 1989 Mediated Agreement. The selected alternative would become part of the amended Forest Plans, and provide management direction for project level decisions. Management direction provided by the selected alternative would apply to future projects and activities. . . The action would revise only that portion of existing management direction that addresses prevention, and management of invasive plants, as well as restoration activities associated with the removal of invasive plants. It will not alter current management direction for competing and unwanted vegetation other than invasive plants, or other restoration not associated with invasive plant treatment.” Invasive plant projects would be required to follow applicable management direction incorporated into the Forest Plans.

¹ These terms are defined in the EIS.

Table 2. Comments and Responses about Scope of the EIS	
Comment	Response
<p>Additionally, we are pleased that the DEIS proposes to empower the forest manager to select from the range of approved tools to address the unique and often unpredictable conditions encountered in the field. The alternative approach of dictating specific management treatments by species, places unworkable constraints on forest managers by ignoring the complexity of field conditions and the rapid pace of learning and innovation that is occurring in the weed management field.</p>	<p>Your comments will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>The Summary implies a number of generalities that may not be understood by the general public, but will be taken for granted by anyone in the invasive species business. Some of these are, for example: (1) each site and situation will be dealt with on its own merits, e.g., a new 0.1 acre spot will not be given the same treatment as a 500 acre patch, and some species may be treated with bio-control agents and others species have no known bio-controls. (2) The Region has specialists to provide assistance regarding endangered species, bio-control agents, proper herbicides, rates and timing, and riparian area sensitivity.</p>	<p>The FEIS Summary has been supplemented to state that future treatment choices would be based on the biology of invasive plant species, the site location, condition, and objectives, and the size of infestation. The FEIS summary also states that that project-level decisions would require additional interdisciplinary (NEPA) analysis before being implemented.</p>
<p>The Draft Environmental Impact Statement (DEIS) utterly fails to address prevention in a meaningful way; therefore, the problem of spreading invasive plants will worsen. The DEIS is basically an herbicide spray program, and tragically, even an herbicide spray program will not solve the problem.</p>	<p>This planning effort responds to three needs for action, which are detailed in the DEIS:</p> <ol style="list-style-type: none"> 1. Forest Plan direction that will prevent or reduce the spread of invasive plants. 2. Release from the Forest Plan direction established by the 1988 ROD and 1989 Mediated Agreement so that new practices, technologies, and chemical formulations of herbicides are available for use. 3. An updated list of herbicides available for use by the Forests. <p>The DEIS recognized that herbicides alone will not address this need for action and thus includes a suite of prevention and treatment standards and approves a variety of treatment methods.</p>

Table 2. Comments and Responses about Scope of the EIS	
Comment	Response
<p>In regard to the December 2002 U.S. District Court decision, "Blue Mountains Biodiversity Project v. U.S. Forest Service," CV 01-703-HA, we observe that the current DEIS for Region 6 ("for the Pacific Northwest Region Invasive Plant Program/Preventing and Managing Invasive Plants", hereafter referred to as "DEIS" or "EIS") fails to meet all the Court-ordered Forest Service obligations set by that ruling. In some cases the DEIS fails to meet the spirit of the Court's ruling regarding full disclosure of herbicide effects; in other cases relevant information is simply missing or not incorporated within the EIS itself for NEPA-required accessibility to the public and decision-makers prior to a decision being made (i.e. within the Draft EIS before the public comment period.)</p> <p>Specifically missing from the DEIS is the following Court-ordered information or subsets of that information:</p> <ul style="list-style-type: none"> • evidence of the neuron- and immuno-toxicity of herbicides • specific scientific study results on toxic effects and increased susceptibility of amphibians to herbicide impacts • specific details within the DEIS itself of effects from additives to herbicide full formulations (eg. information on inerts, surfactants, adjuvants, etc. for all the herbicides proposed for use, disclosure of toxic effects of kerosene, ethanol and other known additives within the DEIS document itself) • results of studies (with detail re: effects observed and study citations on metabolites, the break-down products of herbicides. 	<p>These items were addressed at length in the risk assessments. These assessments were adequately summarized and referenced in the DEIS.</p>
<p>We are also concerned that the spirit and letter of Forest Service obligations under the 1989 Mediated Agreement may not be met by this DEIS and may not currently be met by all Forest Service Districts in practice. While not incorporating all new information or changes that should be made, the 1989 Mediated Agreement is nonetheless a good starting point, and as a court-ordered agreement, warrants full respect and adherence.</p>	<p>The 1989 Mediated Agreement was the starting point for the current effort. The DEIS disclosed that the No Action alternative (no change to the 1988 ROD or 1989 Mediated Agreement) has less likelihood of effectively preventing and reducing invasive plant spread than the action alternatives.</p>

Table 2. Comments and Responses about Scope of the EIS	
Comment	Response
<p>The DEIS stated that aquatic invasive plants are beyond the scope of the EIS. The USFS does not appear to have an overall strategy for preventing and managing aquatic invasive plants. There needs to be a more programmatic approach to aquatic, invasive plant management in the National Forests. This could be achieved by development of joint management plans between state and federal entities both of which have legitimate interests in this resource.</p>	<p>Aquatic invasive plants are beyond the scope of this EIS because:</p> <ol style="list-style-type: none"> 1) The purpose and need is focused on the need for invasive plant management within upland and riparian areas; the need to manage aquatic plants is not as evident within Region Six; 2) The conditions, treatments and issues are different for aquatic invasive species; 3) The Forest Service does not have expertise in dealing with aquatic invasive species; 4) Aquatic invasive species are managed by the states. <p>Aquatic invasives are addressed on a case-by-case basis by individual National Forests as needed via coordination with state and other agencies with expertise and responsibility in this area.</p>
<p>The EIS should compare the impacts of the treatment of noxious weeds with the impacts of not treating noxious weeds. It should not compare treatment with no weeds.</p>	<p>Within the DEIS, No Action (current management) was compared with three alternative new approaches to invasive plant management. None of these approaches would result in "no weeds;" however, the DEIS disclosed that all alternatives improve effectiveness in reaching desired conditions as compared to No Action.</p>
<p>NEDC is concerned that the Forest Service plan will leave too much discretion to those individuals implementing the plan on the local level and that, in practice, the more harmful chemicals will be used when the plan permits their use as one of several options.</p>	<p>The alternatives vary in how much discretion is given managers implementing projects. Standards for Alternative B tend to be more prescriptive and allow for less flexibility than other alternatives. This is discussed in Chapter 2 of the FEIS. This comment will be considered and the rationale for the selection of alternative will be in the Record of Decision.</p>
<p>The Forest Service cannot ignore its role as trustee, responsible for managing the nation's natural resources. 42 U.S.C. [section] 4331(b)(1). This duty includes managing natural resources "without degradation, risk to health or safety, or other undesirable and unintended consequences." Id. at [section] 4331 (b)(3). The Forest Service is also responsible for carrying out Congress' promise of providing aesthetically pleasing surroundings for all Americans. Id. at [section] 4331 (b)(2). Moreover, each person at the Forest Service is responsible for contributing to the preservation and enhancement of the environment. Id. at [section] 4331(c). Consequently, Forest Service should not implement a plan that leaves so many factors to the discretion of individual forest managers. Critical analysis, necessary to ensure that these Congressional policies are met, is lacking in the Pacific Northwest Region Invasive Species Plant Program Draft Environmental Impact Statement.</p>	<p>The DEIS stated that consistent application of prevention measures across the region is key to effectively reducing the spread of invasive plants. However, the Forest Service recognizes that local discretion is imperative so that site-specific physical, biological and social conditions can be fully integrated in any project. The Proposed Action includes standards that acknowledge the role of local managers in established desired conditions for each land unit.</p>

Purpose and Need

Comments about purpose and need ranged from those who expressed the purpose and need was biased toward herbicide use (“The purpose and need of the Environmental Impact Statement (EIS) is identified as "making new practices, technologies and chemical formulas of herbicides available for use on National Forest lands in Region Six" rather than preventing, controlling and where possible, eradicating invasive exotic weeds. This narrow definition of the plan's purpose and need is used by the Forest Service to justify their dismissal of proposed alternatives less risky to native plants, wildlife, soil fertility, water quality and human health.”), and others who expressed that the purpose and need did not go far enough to allow early detection and rapid response (“One of the complaints that I personally hear time and time again from County Noxious Weed Control Boards is that the USFS is not able to react quickly to treat small, early infestations. Early Detections and Rapid Response should be implemented whenever possible. It is important that USFS be able to react quickly to an early infestation before it becomes an even larger problem.”).

The purpose and need was edited for clarity in response to these comments. Planning for future projects could be streamlined by tiering to the analysis in this FEIS, but all projects on National Forest would be subject to site-specific NEPA analysis and decision prior to implementation.

Table 3. Comments and Responses about Purpose and Need	
Comment	Response
Your Purpose and Need is identified as "making new practices, technologies and chemical formulas of herbicides available for use on National Forests in Region Six." This is very scary. Our primary concern is the your downplaying "prevention" in favor of "management" which has long been ineffective in stopping the increase in the invasive species. Preventive management should be given more than lip service and chemical alternative used only as the last resort.	The DEIS considered management direction for prevention, as well as treatment and restoration. Alternative B emphasizes prevention; as stated in the DEIS: “Alternative B builds on the Proposed Action by increasing the emphasis on preventing invasive plants by reducing conditions that contribute to their introduction, establishment and spread. Disturbance to intact ecosystems would be avoided where possible. Land uses that contribute to increased risk of spread of invasive plants would be modified or curtailed as needed. Under Alternative B, invasive plant treatment tools associated in the scientific literature with human and/or ecological harm would be avoided where possible and herbicides would be a tool of last resort.”

Table 3. Comments and Responses about Purpose and Need	
Comment	Response
<p>The Forest Service says the existing direction does not provide "adequate tools to effectively respond to the invasive plant threat." The 1988 ROD takes the opposite view stating, "Alternative H (the adopted alternative) makes all tools available while working toward the goal of reducing reliance on herbicides (ROD pg. 5). "All tools manual, mechanical, burning, biological, herbicides and no action are appropriate responses under Alternative H" (ROD 14). In addition, "forest managers will continue to evaluate and monitor tools and intensity of application. Methods will continue to change based on new research, analysis of completed projects, improvements in technology and public need." (ROD pg. 6). It seems the IPEIS needs to clarify which tools are missing, inadequate or inflexible, since the above quotations mirror those in the proposed action except for the use of some additional herbicides. Headwaters believes the Forest Service has the ability to incorporate new tools (such as the Slashbuster in southern Oregon) including herbicides by following Part III of the Mediated Agreement which is a process for incorporating new information. Furthermore, the 1988 ROD establishes policy and direction for subsequent site-specific environmental analysis using the process described by the National Environmental Policy Act (NEPA).</p>	<p>As stated in the DEIS, the 1988 ROD specified and limited the tools available for the treatment of competing and unwanted vegetation, but did not provide administrative mechanisms for adapting their requirements and adopting new technologies. The Forest Service has not been able to effectively address invasive plants under the 1988 ROD. Litigation related to invasive plant management revealed that the Forest Plans in Region Six do not currently provide sufficient management direction or adequate tools for effectively controlling invasive plants.</p>
<p>We believe there is a comma that should not be between the words "prevention" and "and" in Chapter 1-5 second paragraph. If left as is, the meaning of the sentence is quite different and could mean the Forest Service is not going to consider prevention. We can not believe this is the agency's intent.</p>	<p>The FEIS now reads: "The action would revise only that portion of existing management direction that addresses prevention and treatment of invasive plants, along with restoration activities associated with the removal of invasive plants."</p>
<p>You have stated the problem in a general way, presented some evidence of how the problem came about and has been exacerbated, and proposed solutions that if implemented could cost millions of dollars and be unenforceable. In my estimation, you have not addressed all of the contributors to the problem, do not have good scientific evidence of what or who are the major contributors to the problem, and have proposed solutions that may or may not reduce and/or prevent a further extension of the problem. In short, what you propose has not been scientifically proven to be the answer(s) or the solution(s) for the problem of the invasion of non-native plant species in the National Forests of Region 6.</p>	<p>The proposals in the DEIS are based on scientific evidence and scientific experience. The environmental assessment process follows applicable environmental laws.</p>

Table 3. Comments and Responses about Purpose and Need	
Comment	Response
<p>The definition of the plan's purpose is too narrowly defined by the Forest Service. As a result alternatives that are less risky to native plants, wildlife, soil fertility, water quality and human health are all but eliminated.</p> <p>The purpose and need of the Environmental Impact Statement (EIS) is identified as "making new practices, technologies and chemical formulas of herbicides available for use on National Forest lands in Region Six" rather than preventing, controlling and where possible, eradicating invasive exotic weeds. This narrow definition of the plan's purpose and need is used by the Forest Service to justify their dismissal of proposed alternatives less risky to native plants, wildlife, soil fertility, water quality and human health.</p>	<p>The DEIS provided evidence that collectively, the Forest Plans in Region Six do not provide sufficient direction, nor do they provide adequate tools for effectively responding to the invasive plant threat. Thus, Forest Plan direction that will prevent or reduce the spread of invasive plants, and new practices, technologies, and chemical formulations of herbicides are needed. The relative risks of the alternatives, including No Action, are described throughout Chapter 4.</p>
<p>The DEIS fails at the outset to state a firm goal. The Need for Action statement, p. 1-3 states that its goal is to prevent or reduce the spread of invasive plants. A clearer and more meaningful statement would read, "prevent and reduce."</p> <p>There appears to be a typographical error in the Need for Action, p. 1-3. The list of underlying needs omits a statement that there is a need to control invasive plants, and it gives an either/or proposition when two types of needs are both intended to be addressed. Instead, no. 1 states that the need is to, "prevent or reduce the spread of invasive plants". We assume this is a typographical error, and you meant to say, "prevent the spread and reduce the extent of invasive species". Is this correct? Our comments address the need for weed control as well as prevention. Without clarification, the Regional Forester's decision would leave doubts as to the applicability of this document.</p>	<p>The FEIS now states the need as "Forest Plan direction that will reduce the extent and rate of spread of invasive plants and help prevent new infestations."</p>
<p>A better definition and prioritization process for "invasive plants" is needed. Non-native species that are not eradicable or controllable need to be recognized as such. The DEIS does not recognize some of the significant values associated with non-native plants currently well established on the national forests and throughout the west.</p>	<p>The importance of non-native cultural plants was discussed in DEIS Chapter 3. The treatment objective 'Tolerate' is part of the management scheme to deal with non-natives that are beyond control.</p>
<p>It is imperative that the regional EIS helps managers move ASAP from discovery of a new site to treatment. The EIS team should develop standard site evaluation formats (i.e. a flow chart of site conditions that dictate required activities for NEPA and Consultation on new sites and new weeds with the regulation agencies). The EIS should outline the process-and estimated costs and timeframes-for the forest level EIS's, and new site clearance processes in detail.</p>	<p>This programmatic scale decision helps managers move from new site discovery to treatment by 1) addressing weaknesses recognized by the court, 2) establishing standards for treatment and prevention, 3) approving a suite of herbicides based on thorough risk assessment and 4) establishing treatment priorities. Site-specific analysis would still be needed for treatment projects, but the analysis will be streamlined and focused on site-specific issues. Consistent site treatment forms are available.</p>

Table 3. Comments and Responses about Purpose and Need	
Comment	Response
<p>The document does not look at ecosystem function enough; rather, it focuses on the health of native plant communities as it's sole measure of ecosystem health.</p>	<p>Ecosystem health and function is addressed in this part of the purpose and need: "The purpose of the new management direction is to eliminate or control invasive plants so that the desired future condition of lands can be attained." The desired future condition is (partially) defined as: "In National Forest lands across Region Six, healthy native plant communities remain diverse and resilient, providing high quality habitat for a full suite of native organisms." The FEIS also states, "Factors influencing the Regional Forester's decision on selection of an alternative include... the potential effects to human health and the environment, ...and...the associated costs" (see Chapter 1).</p>
<p>The project purpose includes the statements, "Reduced process" and "timely responsiveness" that can lead to failing to take the time necessary to analyze the problem and the proposed solutions in sufficient depth. Once invasive species are present, it is imperative that removal begins as soon as possible but the method must be environmentally safe.</p>	<p>The Forest Service will follow all applicable environmental laws, regulations and policies when implementing projects. NEPA applies to invasive plant treatment projects. The amount of time between detection and treatment would vary depending on a variety of factors including site conditions and objectives, the size of the infestation, the values at risk from the infestation, and other environmental and social considerations.</p>
<p>The stated need that invasive plants are damaging ecosystem integrity, leads to the foregone conclusion that invasives must be reduced. But at what cost, and how will this be changed and how will change be measured? The needs statement could and should be stated better to include both a clause (1) about costs and a clause (2) that invasive species are part of a cycle of decreasing ecosystem integrity which tends to get worse before getting better. By themselves, invasive species are as much of a symptom as a cause. Like treating leprosy with bandaids, the patient is eventually doomed to die. The management of "ecosystem integrity" is the true need for this EIS.</p>	<p>The FEIS has been edited to clarify that "the purpose of the new management direction is to eliminate or control invasive plants so that the desired future condition of lands can be attained" (see Chapter 1).</p> <p>The desired future condition is (partially) defined as: "In National Forest lands across Region Six, healthy native plant communities remain diverse and resilient, providing high quality habitat for a full suite of native organisms." The FEIS also states, "Factors influencing the Regional Forester's decision on selection of an alternative include... the potential effects to human health and the environment, ...and...the associated costs."</p>

Table 3. Comments and Responses about Purpose and Need	
Comment	Response
<p>The Wallowa County Stockgrowers are very concerned that new sites or new species of noxious weeds be treated immediately. The EIS should identify a process that would take no more than two weeks between detection of a site and clearance for treatment. This will reduce the area needed to be treated, reduce the cost of the treatment, reduce the impact on the watershed and stop the spread.</p> <p>One of the complaints that I personally hear time and time again from County Noxious Weed Control Boards is that the USFS is not able to react quickly to treat small, early infestations. Early Detections and Rapid Response should be implemented whenever possible. It is important that USFS be able to react quickly to an early infestation before it becomes an even larger problem.</p> <p>The ROD should outline a process for adding new sites and developing EAs in a timely manner. An example of planning delays is a meadow and orange hawkweed infestation that was first detected on the Mt. Hood National Forest in 1997. This original infestation was less than 1/4 acre in size and the required manual and mechanical control methods proved to be futile. It was not until the spring of 2003 that the EA was completed to allow for use of selective herbicides. Due to the delay in effective treatment options the hawkweed infestation has now expanded to nearly 2000 acres and is threatening a near by Wilderness Area. The new direction provided by Proposed Action in the USFS Invasive Plant DEIS is a positive step forward. The implementation of active prevention and control of invasive noxious weeds as outlined in the DEIS will be a key to the overall protection and restoration of natural resources statewide.</p>	<p>Early detection and timely treatment is emphasized in the Proposed Action and other action alternatives. It is discussed as part of the first goal that would be added to Forest Plans under all action alternatives. The amount of time between detection and treatment would vary depending on a variety of factors including site conditions and objectives, the size of the infestation, the values at risk from the infestation, and other environmental and social considerations.</p> <p>The DEIS stated that the ability to detect and destroy the new, small infestations was crucial to control of invasive species and should be combined with efforts to control established populations.</p>

Table 3. Comments and Responses about Purpose and Need	
Comment	Response
<p>The DEIS addresses the need for control of new invaders (i.e. Chapter 2.4.4, Goal 1, Objective 1.5 and Chapter 3-96, table 3-15) but does not appear to provide a process or mechanism for rapid response to new invading weeds. Adding a standard or incorporating first strike language into the existing standards to address rapid response for new invading noxious weeds would improve the Record of Decision (ROD). Devising a "First Strike Standard" for rapid response and treatment of new invading weeds would permit early treatment and rapid response activities for new small infestations or for high priority listed noxious weeds. This would avoid delays that enable new small infestations to increase and establish on USFS lands. All usual EIS procedures could be followed after the initial treatment has occurred.</p> <p>We recommend the incorporating following criteria into a first strike: - Include high priority weeds listed by the State. - Include invading weeds new to a Forest or Ranger District. - Include the area if the infestation falls within the parameters of certain site types (i.e., roadsides, right-of-ways, stockpiles, designated OHV sites, corrals, or when found outside of known sensitive sites like T&E sites). - Include small sites falling under a defined infestation size (<1 net acre). It is important that NEPA documents are developed in a timely and concise manner to aggressively treat new invader species before they become large-scale problems. It is not clear in the DEIS how this concern will be addressed, and many questions remain unanswered. How are new treatment sites added? Is the decision at the Forest or District level through the Environmental Assessment (EA) procedures? The ROD should outline a process for adding new sites and developing EAs in a timely manner. An example of planning delays is a meadow and orange hawkweed infestation that was first detected on the Mt. Hood National Forest in 1997. This original infestation was less than 1/4 acre in size and the required manual and mechanical control methods proved to be futile. It was not until the spring of 2003 that the EA was completed to allow for use of selective herbicides. Due to the delay in effective treatment options the hawkweed infestation has now expanded to nearly 2000 acres and is threatening a near by Wilderness Area. The new direction provided by Proposed Action in the USFS Invasive Plant DEIS is a positive step forward. The implementation of active prevention and control of invasive noxious weeds as outlined in the DEIS will be a key to the overall protection and restoration of natural resources statewide.</p>	<p>NEPA applies to projects that may affect the human environment; a programmatic EIS cannot anticipate all possible site-specific effects. However, the analysis would be tiered to this EIS, streamlined and focused on site-specific issues; regional issues addressed in this EIS need not be repeated.</p> <p>Treatment sites would be considered at the local level. The scale of future NEPA analysis would depend on the scope of a project and any connected actions.</p>

Table 3. Comments and Responses about Purpose and Need	
Comment	Response
<p>While it is our understanding that the program's intent includes eradication of invasive plant species where possible, the DEIS does not clearly articulate that in the executive summary or elsewhere. Limiting the introduction and spread of invasives is extremely important, but so is the need to eradicate invasive populations wherever possible. Eradication should be clearly identified as the goal, retreating to containment only when the population cannot be eradicated. Eradication will not likely be possible for many species that are already widespread, but it will be possible for localized populations, and this goal should be stated where practicable.</p>	<p>The FEIS summary has been updated to explain that treatment strategies vary between eradication, control, containment, suppression, and tolerance. These terms are defined in Chapter 3.</p>

Desired Future Conditions, Goals and Objectives

Several commenters suggested changes in the wording of desired future condition, goals and objectives and their relationship to the standards and purpose and need for action. The FEIS contains further discussion about the relationship between the purpose and need for action and the goals, objectives and standards proposed. Many of the rewording suggestions are adopted (in spirit if not to the letter) in the FEIS.

Table 4. Comments and Responses about Desired Future Conditions, Goals, Objectives	
Comment	Response
Objective 1.2 is great but there is no implementation monitoring to see if the objective is being achieved. For instance, what percentage of North Bend Ranger District employees recognize knapweed? What percentage of hikers or other National Forest users know what an invasive plant is or understand why invasive plants are a problem? The same hold for Goal 5. Is there implementation monitoring that could help assure the goal is being achieved?	The Forest Service is continually educating its employees in the identification and consequences of invasive plants. The type of monitoring you propose has merit from a program management perspective, but this is not a NEPA issue, and doesn't warrants including in our monitoring framework.
The Forest Service should work to manage forestry and recreational activities in a manner that does not increase the spread of noxious weeds and should reduce herbicide use to the lowest levels possible.	Alternative B emphasizes preventing invasive plants by reducing conditions that contribute to their introduction, establishment and spread. Disturbance to intact ecosystems would be avoided where possible. Land uses that contribute to increased risk of spread of invasive plants would be modified or curtailed as needed. Under Alternative B, invasive plant treatment tools associated in the scientific literature with human and/or ecological harm would be avoided where possible and herbicides would be a "tool of last resort." Treatment projects would be prioritized to favor those projects with the highest likelihood of restoring native plant communities.

Table 4. Comments and Responses about Desired Future Conditions, Goals, Objectives	
Comment	Response
<p>NOAA Fisheries understands that the proposed standards act as management direction for all future invasive plant management projects and activities. However, in their current version, the standards do not provide Regional direction to consider biological diversity and function while prioritizing treatment efforts. This risks potential misinterpretation or disregard of ecosystem protection at the individual Forest- or sub-regional-level. In addition, neither the current standards, nor the goals and objectives address the development of long-term vegetation goals, once again risking misinterpretation or similar disregard for development of a long-term strategy. In sum, without management direction provided by the Region to the Forests, in the form of standards speaking specifically to ecosystem protection, long-term vegetation goals, and inventory and monitoring, no ecosystem-wide strategy would exist which could result in uneven levels of weed management and protection of ESA-listed species and their habitats...If the FS proposed vegetation management programs will not be driven by ecosystem-level protections, the risks to threatened and endangered species and their ecosystems may be underestimated.</p>	<p>Goal 4 in the FEIS has been updated to read: “Maintain biological diversity and function within ecosystems.”</p> <p>Laws, current Forest Plan language, National and Regional policy, Forest Service manual and handbook direction all contribute to attaining the goals and objectives in Chapter 4.2. Conserving biological diversity and ecosystem function is already a legal and ethical responsibility of the Forest Service.</p>
<p>The relationship between the Desired Future Condition, Goals, and Objectives is clearly explained on pages 2-14 through 2-16. However, the connections of individual Standards to the Objectives they are intended to implement are often unclear. In order to further the understanding of the Proposed Action the supporting relationship between the Goals and Objectives and Standards should be made clearer. In addition, the DEIS should identify when Goals and Objectives are not supported by Standards. In some places in Table 2-4, a Standard is present in one of the unselected action alternatives, but is missing from the Proposed Action. Often, that Standard is "addressed" as an Objective. If the Standards are the "binding", implementable part of the Proposed Action subject to analysis in the DEIS (and ESA Section 7 process), how is a non-existent Standard to be considered as "addressed" by an Objective? As stated on page 2-13, "each action alternative contains a unique suite of standards developed so that projects will contribute to meeting goals, objectives, and desired conditions." Thus, it appears that some Objectives will not be implemented due to the lack of supporting Standards. These relationships should be clarified.</p>	<p>Some of the objectives do not have specific standards because these objectives can be met by complying with existing laws, policies and plans. This is discussed in FEIS Chapter 2.4.</p>
<p>It appears that [the Desired Future Conditions], Goals and Objectives center more around the criteria that the tools and plan will need to meet, rather than the actual outcome being pursued. Focus on the method, rather than focus on the real goal, a resilient vegetation community, may hinder achieving that goal.</p>	<p>The DEIS stated the desired condition is for healthy native plant communities that remain diverse and resilient, providing high quality habitat for a full suite of native organisms. The goals, objectives and standards highlight elements of a successful program to achieve the desired condition.</p>

Table 4. Comments and Responses about Desired Future Conditions, Goals, Objectives	
Comment	Response
Table 3-15 Priorities for treatment and Selection of Treatment Methods - Additional "Highest Priority for Treatment" under "Areas of concern" should be waterways including rivers, creeks (live, ephemeral and dry), streams and wetland areas that flood into rivers, creeks and streams under high moisture events.	The Table in Chapter 3 has been corrected to acknowledge that riparian corridors are special areas considered high priority for treatment.
Reducing reliance on herbicides is the core goal of the existing direction for invasive plants and other competing and unwanted vegetation. James Torrance, the Regional Forester who signed the 1988 ROD, heard the concerns of the public. He adopted a program that doesn't pose a health threat to the people who use national forest system land, to the people who work there, or to the agency's neighbors, while at the same time meeting the basic land management goals. That policy was arrived at following extensive and exhaustive efforts to reach a workable consensus. It should be continued. The Forest Service has used herbicides with restraint these past years. It would be folly to open the floodgates of this controversy again. Changing directions to increase reliance on herbicides is not warranted given the fact that there is no credible science to support a conclusion that pouring on herbicides is a safe or effective approach to achieving the Desired Future Conditions outlined in the IPIES.	The intent of this EIS has never been to "increase reliance on herbicides." Rather, the intent is to allow for effective treatments that are not currently allowed. See Goal 3 and Objectives 3.1 and 3.2. The safety and effectiveness of the herbicides considered for use was discussed in detail in the DEIS.
Objective 2.2 will not work for Eastside forests - particularly in light of fuels reduction and thinning for forest health-and therefore should not be a regional standard. Objective 2.2 may not achieve the stated goal. Some invasive plants are capable of increasing in shaded areas. The objective appears to target only certain situations and shouldn't be a regional objective as it may unnecessarily hinder fuels or forest management actions. If resource professionals consider their projects in relation to invasive plants as stated in Goal 1, this objective is not needed.	Objective 2.2 has been reworded to ensure that it consistent with other management objectives Region-wide, such as fuel hazard reduction: "Retain native vegetation consistent with site capability and integrated resource management objectives to suppress invasive plants and prevent their establishment and growth."
Incorporate a cost benefit analysis with Goal #2 so that the benefits of management actions can be weighed against the potential negative impacts	All invasive plant treatment projects would be subject to NEPA, which ensures that the benefits of management actions are weighed against the potential negative impacts. Additional management direction is unnecessary.
Goal #3 is good as it is recognizing that the reduction in herbicide use over time is the result of effective management and not simply a reduction for the sake of negative attitude toward herbicides.	The desired future condition also reflects an emphasis on effective treatment: "The need for invasive plant treatment is reduced due to the effectiveness and habitual nature of preventative actions and the success of integrated treatment/restoration efforts."

Table 4. Comments and Responses about Desired Future Conditions, Goals, Objectives	
Comment	Response
Goal #4 Balance the good objectives of this goal with the impact of ineffective or no treatment that might result from being overly cautious. Objective 4.1 Use the word pollution instead of contamination. As a legal term it is more exact in describing your intended meaning.	In the FEIS, Goal 4 has been amended to read: "Implement effective invasive plant treatment strategies that protect sensitive ecosystem components, and maintain biological diversity and function within ecosystems. Reduce loss or degradation of native habitat from invasive plants while minimizing adverse effects from treatment projects." Objective 4.1 has been amended to read, "Maintain water quality while implementing invasive plant treatments."
Goal #5 is a good goal and should be followed up with funding for cooperative treatment and educational efforts (i.e. CWMA's) across property ownership and jurisdiction.	The Forest Service recognizes that funding will be required to implement proper invasive plant management.

Table 4. Comments and Responses about Desired Future Conditions, Goals, Objectives	
Comment	Response
<p>The DFC needs to be clarified in regards to "healthy native plant communities". The DFC currently reads: "In National Forest lands across Region 6, healthy native plant communities remain diverse and resilient, providing high quality habitat for a full suite of native organisms. The need for invasive plant treatment is reduced due to the effectiveness and habitual nature of preventative actions, and the success of restoration efforts." Native Plant Communities are obviously highly valuable and should be maintained and enhanced to the best of our ability. However, they are hard to define spatially, temporally, and nominally. It is debatable, in some cases, what would constitute "native". To add to the confusion, our ecosystems have been managed, and in many cases radically altered, by human influence since before European settlement in the west. It is possible that we cannot achieve a truly "native" ecosystem ever again. Moreover, we may be experiencing enough climate change that historic Potential Natural Communities may have been altered. Many non-native species have been introduced into the area and have established themselves to a degree that they should be considered "naturalized" for all management purposes. Some of these species provide ecosystem function in terms of forage, habitat structure, nutrient cycling and soil stability - making their presence beneficial. They all provide competition for noxious weeds. The DFC should address non-native plants that can be accepted as naturalized in our systems and ecosystem function should be an integral part of the DFC. To leave out the existence, naturalized state, and in some cases usefulness of "non-native species" in our ecosystems is unreal and may well lead to confusing and unreasonable goals and possible openings for litigation in the future.</p> <p>Goal 1 needs to recognize that maintaining ecologically functional weed free ecosystems-native or non-is essential to the whole system, not just the native communities. "Invasive plant" needs to be broken down into noxious weed, non-native invasive, and non-native and prioritized as such. Risk assessments similar to those used by Oregon Department of Agriculture should be incorporated to allow a priority rating of these weeds.</p>	<p>A DFC is intended to describe how National Forests should look and function in the future. DFC's are optimistic descriptions of what would result from successful plan implementation over time. We recognize, because of certain site conditions and/or past site degradation healthy native plant communities may not be attainable. Standard 13 describes national policy regarding the usefulness of non-native plants.</p> <p>Goal 1 has been reworded to remove reference to native plant communities. It now reads: "protect ecosystems from the impacts of invasive plants..."</p>
<p>The DFC should recognize to some degree or another that mankind and multiple use are integral parts of a USFS vision. The omission of the human role in and benefit from USFS lands is a gross and potentially costly error. We will not invigorate local communities and provide for multiple use with this narrow a definition DFC. The local communities, especially those with a long-term vested interest in the health of the land around them, are the key to maintaining the National Forests in their best possible condition.</p>	<p>This sentence has been added to the Desired Future Condition statement in the FEIS: "Invasive plants do not jeopardize the ability of the National Forest to provide goods and services communities expect."</p>

Table 4. Comments and Responses about Desired Future Conditions, Goals, Objectives	
Comment	Response
The second sentence of the DFC statement should include the idea that effective integrated treatment is part of the equation for decreasing the need for further treatments in the future.	In the FEIS, Goal 4 is: "Implement effective invasive plant treatment strategies that protect sensitive ecosystem components and maintain biological diversity and function within ecosystems. Reduce loss or degradation of native habitat from invasive plants while minimizing adverse effects from treatment projects." Objective 4.1 is now: "Maintain water quality while implementing invasive plant treatments
It is our opinion that the primary goal of this project should be more than "to protect native ecosystems from invasive, non-native plants" but to preserve native ecosystems. Preserving ecosystems will sustain the healthiest and most productive forests, grasslands, and waterways. The animals and plants of the Pacific Northwest are an integral part of a complex biological system that cannot survive disruption by invasive species, chemicals, or methods of control that cause the breakdown of their natural systems.	The Forest Plans in Region Six would be amended to include the new invasive plant management direction proposed in the EIS. The focus of the EIS is limited to invasive plant management, rather than the overall program. The Forest Plans contain detailed descriptions of broad desired conditions for the ecosystems in the region. So while the overall goal for the National Forests may be to preserve sustainable ecosystems, the goal of this EIS is to protect them from invasive plants.
We think it is impossible to devise eradication methods for invasive species as fast as our global economy can introduce them. Therefore, controlling introduction is superior to all forms of eradication in solving the problem.	The DEIS acknowledged that treatment alone cannot effectively slow the spread of invasive plants, thus prevention standards are included in the alternatives.
Our scoping comments were insistent that goals and objectives should follow from clearly stated needs, yet this appears to have been patently ignored in the EIS. We provided the team with a report detailing how invasive species management should occur within a framework of ecosystem management (www.kettlerange.org/weeds/reference/weedmgt.html). As stated, the EIS will allow managers to count their failures as successes. We suggest that if you do not agree with the goals and objectives presented in our scoping comments, that the EIS should at least provide a rationale of why your alternate goals are better.	The goals and objective flow directly from the need stated in Chapter 1.2. They represent our best judgment of how to meet this need. Public scoping input was considered in the development of these goals and objectives. Chapter 2 of the FEIS discusses the relationship between the purpose and need for action and the goals, objectives and standards proposed.
Goal 4 - Please add a third sentence to this goal recognizing there is a negative environmental impact associated with choosing not to treat invasive species. This may also be accomplished by adding an objective recognizing the impact of not treating an invasive plant population.	The second sentence of Goal 4 is: "Reduce loss or degradation of native habitat from invasive plants while minimizing adverse effects from treatment projects." The intent of this sentence is to recognize that habitat loss and degradation may occur if invasive plants are not treated.

Table 4. Comments and Responses about Desired Future Conditions, Goals, Objectives	
Comment	Response
Goal 5 - Good discussion on the role the FS would like to play in collaborative efforts. The FS is already involved in many of these. Perhaps instead of focusing on expansion of efforts, FS should play a more active part in those efforts already existing. Please focus on implementation of higher priority strategies on national forest lands. At present, many collaborative efforts have holes in their agreed upon strategies where Forest Service lands require active treatment.	The Forest Service continues to focus on working with recreation and other user groups to prevent the spread of invasive plants.
Pg 2-14 Desired Future Condition Statement -- We understand that for any vision statement brevity is a must. This is an honorable DFC and we assume the FS is choosing to focus on their currently uninfested lands in relation to this statement. Perhaps by omitting those lands already converted to invasive weeds, this statement is attainable through implementation of aggressive IWM strategies, but the Forest Service must not provide the illusion that all is well in the native plant world on forest lands. In some areas, the invasion is well underway and at present, economically viable technologies for restoration do not exist that can return the plant communities to exclusively native ecosystems. Areas like this are a fact in the Hells Canyon NRA. Perhaps addition of a second DFC statement for those lands already converted to invasive weeds would be a way to address this issue. This statement could focus on an attainable vision for providing a perennial, stable plant community that emulates values provided by the native plant communities that may have existed on that site.	The Desired Future Condition statement has been amended to include damaged ecosystems: “In National Forest lands across Region Six, healthy native plant communities remain diverse and resilient and damaged ecosystems are being restored. High quality habitat is provided for native organisms throughout the region. Invasive plants do not jeopardize the ability of the National Forest to provide goods and services communities expect.”
We also support the DEIS's requirement of setting long-term goals and objectives based on desired future conditions (rather than on amount of weed control conducted) and using an adaptive management process to determine the effectiveness of those prevention, early detection, and management actions in abating the invasive species threat.	The DEIS recognized the fundamental role of monitoring and adaptive management to ensure that management direction is followed and desired conditions are achieved.
What will you do to ensure that herbicides will be the last resort as opposed to the first resort? What factors will cause you to use herbicides besides an inability to get into a certain area? How can you assure, we the public that herbicides will be used as little as possible?	Standard 17 is modified in the FEIS to clarify that the Proposed Action requires managers to provide rationale for using herbicides over non-chemical treatment methods. In Alternative B, managers would have to demonstrate that non-herbicide methods did not work.
Herbicides are not the answer. Though they may be of short-term benefit in certain specific instances, widespread reliance on them does not solve the infestation problem, and it is not good for overall health, human or otherwise. Herbicides are not the solution to this problem. Their negative effects are not worth the cost and the risk (to health), and they do not eliminate the invasives. We are looking for you to develop specific measurable goals in your move to ratchet down the amount of herbicides you apply to the forests.	All alternatives would attempt to decrease the need for invasive plant treatment by increasing the effectiveness of control of current populations and preventing new infestations. Alternative B includes a specific standard related to reducing herbicide use over time.

Table 4. Comments and Responses about Desired Future Conditions, Goals, Objectives	
Comment	Response
The USFS needs to focus on watershed function and watershed health and less on native plant communities - the DEIS and does not put enough emphasis on Noxious Weeds.	DEIS Chapter 3 described a system for prioritizing invasive species based on the potential of a species to cause significant ecological impact, and stated that such a system could be used to direct prioritization decisions on any species. The DEIS makes the point that newly detected species must be assessed for their potential to naturalize, become invasive and alter ecosystem functioning.
The USFS should not focus on pristine conditions. They should recognize the value of non-native species that are providing erosion control, livestock grazing, wildlife habitat, and competition for noxious weeds.	The DEIS did not focus on pristine conditions, rather it stated the desired condition is for healthy native plant that communities that remain diverse and resilient, providing high quality habitat for a full suite of native organisms. Treatment would focus on invasive plant populations that threaten environmental values.

Information Availability

Some people expressed concerns that the risk assessments were not published in the DEIS or posted on the Internet. The Forest Service responded to individual requests and has updated the website to ensure that the risk assessments are available for review.

Table 5. Comments and Responses about Information Availability	
Comment	Response
Risk assessment for all herbicides under consideration in this DEIS were not available or could not be found at the risk assessment website listed in the DEIS. Only information on herbicides currently used in Region 6 could be found when the website was accessed.	This inadvertent oversight was brought to our attention via this comment. It has been corrected for release of the FEIS; risk assessments are now linked to the IP EIS website (www.fs.fed.us/r6/invasiveplant-eis). Risk assessments were provided free of charge on request.

Table 5. Comments and Responses about Information Availability	
Comment	Response
<p>:* all SERA risk assessments for the herbicides proposed for use under any of the alternatives * all material safety data sheets and product specimen labels for: all formulas proposed for use which contain chlorsulfuron, clopyralid, imazapic, imazapyr, metsulfuron methyl, sethoxydim, sulfometuron methyl, triclopyr, and any new formulas (since 1988) under consideration for use containing 2,4-D, dicamba, picloram and glyphosate. * the Pacific Northwest Weed Management Handbook (OSU 2002) *"Common Control Measures for Invasive Plants of the Pacific Northwest Region" (Mazzu 2004)* the Soil Scientist report and any other Forest Service I.D. team reports used in the preparation of the EIS * Spencer and Prevost, 1993; USDA, 2000-APHIS</p> <p>We believe that all of the above listed documents should have been incorporated within the DEIS itself. Although Appendix G is characterized as "a source of information for every herbicide considered for use in this EIS," not everyone has access to the internet or knows how to use it, so putting appendices only on a website limits their availability to the public. Full sources of the Forest Service (FS) information on the new herbicides proposed for use and specific results of studies and risk assessments for these chemical formulas (including additives) should have been disclosed within the DEIS as well as the documents on the "Appendix G" website. All methodology used in risk assessments should have been disclosed in the DEIS, including the basic assumptions underlying the risk assessments and any models used to predict risk.</p> <p>The appropriate timing for full disclosure of the potential impacts of new herbicides proposed for use, including incorporation of specimen labels and Material Safety Data Sheets as well as citations for all research studies used for DEIS information and all available SERA risk assessments within the DEIS. Inclusion within the FEIS is too late for informed decision-making unless another comment period is allowed prior to a decision being made.</p> <p>The Forest Service "Herbicide Information Profile" for triclopyr is not incorporated within the EIS as it should have been.</p>	<p>Information pertinent to this decision was included in the DEIS. Detailed risk assessments, safety data sheets and product label information were incorporated by referenced and summarized to the extent necessary to understand the effects and trade offs associated with the alternatives. Specialist reports include more detail, but relevant information is summarized in the body of the EIS. The FEIS includes some new appendices, including Mazzu's report: Common Control Measures for Invasive Plants of the Pacific Northwest Region.</p> <p>The public was informed of the availability of the detailed assessments and specialist reports and requests for this information were filled in a timely manner. Few requests for this type of information were received during the public comment period.</p>

Invasive Plants and Mechanisms of Invasion

Several comments pertained to how invasive species are classified. Factual corrections were made in the FEIS in response to these comments. Other commenters expressed disagreement with how the Forest Service characterized the potential for land use to exacerbate invasive plant spread. Corrections were made in response to these comments. The Forest Service also modified the Proposed Action by including the proposed rule for travel management as Standard 10.

Table 6. Comments and Responses about Invasive Plants and Mechanisms of Invasion	
Comment	Response
<p>The DEIS provides a list of 107 species, but does not prioritize species with respect to management action. Some species are particularly detrimental and still in relatively localized small patches. Although each forest may have a somewhat different species mix to contend with, it may be helpful to identify a few top priority species for which there is a general "no tolerance" goal, and that will be eradicated with haste, as opposed to monitoring their location for later action. It may also be helpful to indicate in the management program how new invasive species will be listed and treated as they are discovered.</p>	<p>Priority invasive plant species were identified in Chapter 3 of the DEIS. This section was supplemented in the FEIS to respond to this comment.</p>
<p>USFS needs to recognize the value of non-native species that have been introduced or established on their own. These species should be considered naturalized for all management purposes.</p>	<p>One of the treatment objectives is "tolerate"; included to address such species.</p>
<p>The discussion on use of invasive plants for food and cover (paragraph 3) leaves out the fact of comparing the utilization of the invasive plant to utilization of the native plants that have been out competed. For example; 1) Although the Willow flycatcher utilizes saltcedar for nesting, survival and reproduction of the flycatcher is higher when it nests in a native willow. 2) Although Bighorn sheep utilize cheatgrass, native bunchgrass, yields 12 times more forage in a wet year and four times more forage in a drought year. Therefore, for sites where cheatgrass has invaded native bunchgrass, these sites have a lower carrying capacity of Bighorn sheep.</p>	<p>The DEIS Table 3-7 addressed the known effects on invasive plants on wildlife. Change in population through nutritional deficiencies, altered food web, and lack of proper forage quality were all discussed in the DEIS.</p>
<p>I suggest that a reference be made on p.25 to Appendix B Current Invasive Plant Species on National Forests in the Pacific Northwest Region. Reference should also be made on p.25, to the informational paper on control measures, which Linda Mazzu is preparing to provide FS staff with currently available information documented in literature. Presumably supplemental or new information will be provided continually to FS staff. A review of the information provided in Appendix B showed several instances of incomplete information, inconsistencies with statements made in one part of the region, which do not apply in western Washington where I have extensive, lifelong experience.</p>	<p>Appendix B has been revised in the FEIS to address this comment.</p>

Table 6. Comments and Responses about Invasive Plants and Mechanisms of Invasion	
Comment	Response
<p>The heading HABIT is misspelled "habitat". Buddleja davidii, butterfly bush: "Roots may perish in wet soil" might be left out. Since a major concern in Washington is its colonization of gravel bars on rivers, this may be confusing. The gravel bars may dry sufficiently in summer so that they are not truly wet soil. However, some people may interpret them as wet area, and suggest there is no need for control work.</p> <p>Centaurea biebersteinii, spotted knapweed Reference should be included to the information quoted in Chap. 3, p. 28-29: that areas of heavy infestation have more bare ground and soil erosion than uninfested areas, and that soil exposure to sun have higher temperatures by day and lower temperature at night, thus making it more difficult for native seedlings to become established. A short form of this point might be: Infections change soil conditions to the advantage of this species; see Chap. 3, p.28-29. Centaurea diffusa, diffuse knapweed: That it is a tumbleweed should be included under Mode of Reproduction, as is done for several other species on the list. Centaurea debeauxii, meadow knapweed: Add the other frequently used name, C. pratensis, which is used in Linda Mazzu's paper on control measures. Hedera helix, English ivy: Add seed to Mode of Reproduction. Seeds in berries eaten by birds and then dropped in nearby forested areas are the primary way in which ivy is spread into areas of native vegetation. Rubus discolor, Himalayan blackberry: That this species "tends to prefer wet sites" may be true in other parts of the region, but the prevalence of Himalayan blackberry on dry roadbanks all over western Washington suggests this is not true here. Either leave out this phrase or specify the part of the region where this has been reported. Rubus laciniatus, cutleaf blackberry: "Found on disturbed upland sites which get bright sunlight" Leave out "bright sunlight". Seedlings will germinate in partial shade when seeds are dropped by berry-eating birds in places in places such as our family's managed forest which has been thinned and is adjoined by an infested pasture Lewis Co. in sw Washington). Vinca major, bigleaf periwinkle: Add to Mode of Reproduction: Trailing and freely branches. Personal observation in our neighborhood and C.L. Hitchcock and A. Cronquist, Flora of the Pacific Northwest, US Pr. 1973, 1976, p.363: "Branches 1-6 dm, often trailing and freely rooting".</p>	<p>Chapter 3 of the FEIS has been edited in response to this comment.</p>
<p>Chapter 3, page 3-34, Table 3-8. Perhaps italicize the Linnaean names?</p> <p>Table 4-40 at page 4-111. Perhaps italicize the Linnaean names?</p>	<p>Scientific names are italicized where appropriate in the FEIS.</p>
<p>Table 3-1. You might add "ability to hybridize or mutate to become capable of sexual reproduction even if initially only able to spread vegetatively". We see this potential with knotweed species, alarmingly so. You do mention this problem on page 3-47 re Spartina. It needs to be integrated elsewhere. [Grammar error in bullet 11-the word "affects" refers back to plural "compounds" and should be "affect".]</p>	<p>The FEIS has been edited in response to this comment.</p>
<p>Under 3.1.3, page 24 of Chapter 3-you forgot giant knotweed, as much or even more of a problem than Japanese knotweed. And, there are indications these sterile species may be hybridizing into something that can reproduce sexually, but we defer to experts on that. Our remarks are hearsay. [Same problem in last paragraph of 3.2.3 on page 3-37.]</p>	<p>Chapter 3 of the FEIS has been updated in response to this comment to include information about other knotweeds.</p>

Table 6. Comments and Responses about Invasive Plants and Mechanisms of Invasion	
Comment	Response
<p>Because the surveys and evaluations for the presence of invasive plants in the Region 6 provided for the current analysis NFs varies from Forest to Forest -- with some doing a good or even exemplary job, some barely getting by and others in-between -- no adequate determination of a range of values for presence of invasive plants can be made. Indeed, it isn't made, with only lists of invasive plants provided to guide the decision maker and no informative description of where and particularly HOW MUCH of the plants are currently present and how they are expected to spread given current knowledge. By not taking on the challenge of giving broad brush descriptions of this status, the DEIS leaves the future under any of the alternatives subject to uninformed speculation.</p>	<p>The DEIS estimate of 420,000 acres of invasive plants in Region Six was made based on the best information available from the National Forests. See DEIS Chapter 3.1.1. Inventories will continually be updated and concerns regarding the size of infestations would be taken into account when designing treatment projects.</p>
<p>The EIS should state the environmental impacts that could result from the ineffective treatment (or no treatment) of noxious weed populations. What would be the impact of noxious weeds and invasive species if not treated? This is a more appropriate yardstick to compare to the risks of treatments than the simply unintended impacts on native plants from X chemical.</p>	<p>The adverse effects from invasive plants themselves were discussed in Chapter 3 of the DEIS. These are the impacts that will drive the need for action at the project scale. Projects would be evaluated based on their effectiveness in reducing the adverse effects of invasives and restoring native plant communities.</p>
<p>Another new management category should be developed for species such as species with some beneficial uses (particularly escaped pasture grasses, which are appropriate in pastures, but not in Wilderness), and undesirable species, which are nonetheless not very invasive (such as poisonous plants, or some of the cultivars such as "Luna", (an <i>Agropyron</i>) which caused the \$3.5 million Libby South fire when driven across. This category should include invasives with lower priority for invasiveness, but higher risks to degrading ecosystems and forest health. <i>Elymus repens</i> (quackgrass) is on the list, as it should be, but cultivars with this plant such as <i>E. intermedium</i> are not. We recommend that cultivars be included in the list of partly beneficial invasives.</p> <p>Examples of species on the list which need to have a new management category for widespread species needing control but beyond eradication include: <i>Phalaris arundinacea</i>, <i>Melilotus officinalis</i> (used to plant roadsides), and <i>Secale cereal[e]</i>.</p> <p>Examples of species which should be in a new management category for non-invasive, but still undesirable species include <i>Conium maculatum</i>.</p>	<p>The invasive plant list is a listing of those species inventoried by Forest Service botanists and weed coordinators. It is not a static list. If a species is not on the list, it is because no locations have been added to the inventory. Upon addition to the inventory, such species will be added to the species list. The use of management categories would be useful at the Forest level during site-specific NEPA but may not be valid at a regional scale.</p>
<p>Calculation of weed extent uses incorrect mathematics. The calculation of rate of increase of 8-12% made on p. 3-2 is made for the aggregate of all weeds, when it should be for individuals. It should be obvious that the Forests are not going to be 100% weeds in ten years.</p>	<p>The assumptions and methodology of analysis of rate of spread was discussed in Chapter 4.2.</p>
<p>Fire reduces biomass, not plant vigor (p. 3-19).</p>	<p>This statement was corrected in Chapter 3 of the FEIS.</p>

Table 6. Comments and Responses about Invasive Plants and Mechanisms of Invasion	
Comment	Response
<p>The EIS claim that the list of invasive plants was developed by experts should be documented. The list of invasive species has inexplicably had certain plants removed from inclusion. For instance, Kentucky bluegrass was submitted as an invasive species in our scoping comments (in Risky Business, Wooten and Renywck, 2001). The invasiveness of this species was first brought to my attention by Mel Bennett on the Okanogan National Forest, who was noxious weed coordinator during the initiation of scoping for the EIS. So it is hard to understand how this species, which is already considered a problem both inside and outside the USDA, could have been missed unless it was intentionally removed.</p>	<p>The invasive plant list includes those species inventoried by Forest Service botanists and weed coordinators. It is not a static list. If a species is not on the list, it is because no locations have been added to the inventory. Upon addition to the inventory, such species will be added to the species list.</p>
<p>The invasive species list needs to have a means of being updated. The incomplete nature of the invasive plants list highlights the need for the EIS to describe the method of updating the invasive species list as well as updating it. The method of using expert consultation as already done may suffice in the future, provided that the names of the experts are published, and reasons are given for the exclusion of any suggestions. A schedule of planned updates should be listed and the list of experts consulted should not be limited to USDA or agency scientists, but should include academic botanists, noxious weed coordinators, and private botanists.</p>	<p>The invasive plants list reflects only those species located and added to the Region Six database. It is not a static list nor limited to particular experts. The list may be updated as needed.</p>
<p>The use of a special list of National Forest invasive species in Appendix B of the EIS is a good tool. The list is developed using a new set of criteria, rather than borrowing existing lists from the states. There are problems with the list however. For instance, the inclusion of <i>Urtica dioica</i> (nettles) is problematic in that presumably this is the non-native species separate from <i>Urtica lyallii</i>. Nettles are considered an important spring green by many cultures. Many botanists still refer to our native species as <i>U. dioica</i> ssp. <i>lyallii</i>. It is a certainty that the spray contractors will not be able to tell these two apart, with the result that plants will be indiscriminately sprayed with herbicide and wild food gatherers and Indian cultural plant gatherers will be poisoned. Even botanists have a hard time telling these species apart, and indeed, the apparent distinction (which has only recently been recognized, may be an ecotypic variant, rather than a taxonomic one). In an experiment, I planted seed of <i>U. dioica</i> ssp. <i>dioica</i> in eastern Washington, and within one year, the plants were indistinguishable from <i>U. lyallii</i>. The list includes <i>Plantago lanceolatum</i> (lanceleaf plantain), but then omits <i>Taraxacum officinale</i> (dandelion), despite the fact that these two have similar occurrence patterns. * The invasive species list is incomplete. The list does not include <i>Bromus inermis</i>, <i>Poa pratensis</i> (Kentucky bluegrass), <i>Melilotus alba</i> (white sweet clover, used to plant roadsides).</p>	<p>Appendix B was revised to address this comment.</p>
<p>Use of slang botany is confusing. The EIS should be scientifically defensible. On p. 3-9, the use of false brome is confusing. Do you mean slender false brome or purple false brome? Always use the Latin.</p>	<p>Scientific names are used in the Invasive Plant list in Appendix B.</p>

Table 6. Comments and Responses about Invasive Plants and Mechanisms of Invasion	
Comment	Response
Would propose the creation of a Noxious Medicinal Plant database throughout the region, which would track and publicize the locations of infestations of which are also considered to be Medicinal Plants (I see many on your list, including St. John's Wort, please write back if you don't know which noxious weeds on your list are valued for their medicinal properties). With the encouragement of the Forest Service and a permit-free process, preparers of naturalized plant medicines could help the Forest Service mechanically remove noxious weeds that are useful to those practicing natural healing. It will of course be necessary to avoid contaminating medicinal plant sites with chemical or biological agents.	Medicinal plants are addressed under cultural plant discussions, which have been expanded in Chapter 4 of the FEIS. Creation of a Noxious Medicinal Plant database is beyond the scope of this EIS and would not be subject to NEPA.
Justify why mustard, beneficial to soil, must be considered an IP and eradicated with a chemical that is an invasive poison.	Only a few mustard species are identified as invasives; the mustard family is very large and most would not be the target of treatment.
Please explain why St. Johns Wort needs to be eradicated as an invasive plant, what harm it causes and how it is more harmful than the herbicides used to eradicate it.	St. Johns wort may need to be a treatment target to meet long term site objectives. While tolerated in many areas, some native plant communities are threatened by the species.
Interestingly, even though the Draft EIS is not intended to deal with aquatic weeds, there is one invasive, aquatic plant listed in Appendix B- Invasive Plant Species List. That plant is Myriophyllum spicatum (Eurasian watermilfoil) which is an aggressive mat forming species common in the Columbia River drainage and throughout the Pacific Northwest region. The appendix entry for this species is incomplete and the well-documented impacts of M. spicatum infestations throughout the region are not addressed in the Draft EIS.	Corrections have been made to the FEIS to address this comment.
A better definition for "invasive plants" is needed. Its way to inclusive. It should focus on noxious weeds. The EIS should adopt State and County weed lists. They should work in close partnership with State and County entities that prioritize weed control efforts	The list in the EIS was developed to maintain flexibility for Forest Service Managers to respond to new invasives from adjacent states or regions. It also allows managers to treat invasives that may not be on a noxious weed list, but may be a problem in a natural area where intact native plant communities are high priority.
USFS needs to recognize the value of non-native species that have been introduced or established on their own. These species should be considered naturalized for all management purposes.	Not all invasive species would be the target of treatment in any alternative; invasive populations that are not adversely affecting environmental values would likely be tolerated.
Consider hazardous fuels introduction, especially line of fuel management zone creation, affects noxious weed introduction and spread.	Chapter 3 discussed the mechanisms of invasion including from fuels management.

Table 6. Comments and Responses about Invasive Plants and Mechanisms of Invasion	
Comment	Response
<p>Fire suppression [dozer lines, etc] is having a huge impact on the spread of noxious weeds [i.e. Cache Creek, Cache Mountain, McCache, B and B Fires]. How are you going to address this activity? Prevention is not happening here.</p>	<p>The DEIS discussed how current fire suppression activities can lead to spread of invasive plants in Chapter 2 and 3. The standards in all action alternatives would impose specifications about use of native seed and mulch in post-fire rehabilitation.</p> <p>The FEIS acknowledges that the standards would not require prevention practices (such as vehicle washing) during emergency fire situations where this practice would delay response time.</p>
<p>These areas [fire lines] increase ORV use, and another vector for introduction and spread.</p>	<p>Fire/fuels management and OHV use are discussed as vectors of invasive plant introduction, establishment and spread in Chapter 3. The Forest Service modified the FEIS by including the proposed rule for travel management as Standard 10 in the Proposed Action (See FEIS Chapters 2 and 4).</p>
<p>I have personal experience that road construction introduces invasive plants into an area. After ridding my property (5 acres) of tansy ragwort, by hand, and it being tansy free for many years, the spring following a road-building project, one hillside was covered with tansy where a load of rock had been brought in to stabilize a slope. After again eliminating it by hand without the use of any herbicides, it is again tansy free. Please take heed to both these aspects of this problem.</p>	<p>The DEIS acknowledged that road construction may spread invasive plants and includes standards in all alternatives to reduce this mechanism of invasion. Effective manual and mechanical invasive plant treatments would be approved in all alternatives.</p>

Table 6. Comments and Responses about Invasive Plants and Mechanisms of Invasion	
Comment	Response
<p>We are highly disconcerted by the way the FS has dealt with the issue of recreational saddle and pack stock use in the context of the planned invasive Plant Program as described in the July 2003 DEIS. In short, without documentation of scientific information that resulted from either designed experiments or observational data collected in a scientifically disciplined manner, the FS has categorically identified the use of saddle and pack stock as a significant contributor to the spread of invasive plants. It was highly disturbing for us to study EIS Appendix D, Influence of Ungulates on Non-Native Plant Invasions in Forest and Rangelands which concludes that the existing science on the role of ungulates in invasive plant spread is inconclusive, and then find the authors of the body of the EIS are certain that the science demonstrates that saddle and pack stock are significant contributors to the problem. As we follow the statements of the EIS authors and apparent line of logic, we can conclude only that the FS has accepted a dogma against the recreational use of saddle and pack stock on wildlands, and Wilderness Areas in particular. For example, towards the end of the EIS, the authors write: "regardless of choice of alternative, pack stock will continue to be a source of invasive plant spread" (Chapter 4-98) If this is a true statement, the FS should have no trouble validating it with information that is presumably already in hand and showing increased occurrences and rates of spread of invasive plants that are statistically related to the occurrence of and intensity of use of saddle and pack stock. The BCHA position is that until the FS publishes that data in the DEIS, the above assertion is unfounded and has no place in a document as important as an EIS.</p>	<p>Acres for No Action and Alternative D have been factually corrected to show that weed free feed is currently required on at least 2.5 million acres of National Forest land in Region Six. Expanded discussion of weed free feed has been added to Recreation and Recreation Management and Congressionally Designated Areas sections of FEIS Chapter 3 and Chapter 4 includes added discussion of why the was included and how the standard and range of alternatives for the standard were designed.</p>
<p>The DEIS acknowledges the fact that saddle and pack stock usage has declined substantially: "A recent study by the Oregon Parks and Recreation Department (2003) found that between 1987 and 2002.. Activities (of relevance to national forest lands) with declining participation include(d) horseback camping (-38.5 percent), dune buggy driving (-32.7 percent), and horseback riding (-31.5 percent)." (Chapter 3-19) It is very difficult to understand how the conclusion embodied in this document that recreational saddle and pack stock became a major contributor to the problem when our usage is declining and other recreationists' usage is substantially increasing.</p>	<p>The use of livestock is the only recreational use where (potentially weed infested) animal feed is intentionally carried onto National Forest lands. Chapter 3 discussed that livestock can also carry weed seeds internally and deposit them with dung.</p>
<p>The DEIS states that all of the major human caused disturbances, grazing, logging, road building, and prescribed fire can be used to encourage desirable plant communities (Chapter 3-9). We are aware of no instances where road building favors native plant communities over invasive plants, and the DEIS provides no evidence supporting this claim. These activities are generally contradictory to the prevention of invasive plant infestations.</p>	<p>Page 3-9 of the DEIS stated, "<i>Disturbances can create conditions favorable for desired species, depending upon its size, severity, frequency, and timing (Sheley et al., 1996).</i>"</p> <p>This is not intended to imply that "all of the major human caused disturbances, grazing, logging, road building, and prescribed fire can be used to encourage desirable plant communities.</p>

Table 6. Comments and Responses about Invasive Plants and Mechanisms of Invasion	
Comment	Response
Discussion of seed scarification is inadequate on p. 3-11. One of the primary determinants of invasive plant biology is the germination rate and requirements. There is practically no discussion of this topic, except for a brief mention in the specialist paper on grazing animals scarifying seed. Range managers are aware of the importance of seed scarification, and in the case of invasives, the lack of such a requirement. Furthermore, scarification is a common component of timber sale operations. The EIS should also note that scarification typically benefits woody species, and that adventives come in as a side-effect.	Chapter 3 of the FEIS contains further discussion about seed scarification.
Fire initiates primary, not secondary succession (p. 3-18). Thus in general, fire has more potential to increase weeds, at least in the short term, than unburned areas. The conclusion should be that while fire is a good thing, it must be carefully managed to prevent new infestations of invasive plants. This should indicate that cumulative impacts should be avoided, i.e., when an area burns, grazing and logging should be deferred until vegetative recovery.	Chapter 3 of the FEIS now reads, “Fire initiates succession in a plant community.” Fire can initiate primary and/or secondary succession, but this point is not particularly relevant to the discussion. Resting an area after a burn is a prevention measure available to managers in all alternatives.
Table 3-5 (Ch 3-97), gives roadsides only second priority treatment. I feel that roadsides are often the first area of infestation and cooperation between the USFS and the local highway departments is essential in order to catch the invasive weeds before they spread to areas that are much more difficult to treat and are much less noticeable.	The priority for roadsides given in the DEIS is appropriate. The DEIS acknowledged the need for cooperation between the Forest Service and other agencies to reduce the spread of invasive plants.
The Final EIS should display the estimated comparative acreage on which activities that favor invasive species introduction, establishment, and spread take place, e.g.: Livestock grazing Off-road driving for recreational purposes (e.g., for dispersed camping. Roadside ground disturbance (e.g., the acreage based on 15 feet on either side of all roads and motorized routes)o Heavy equipment driving off-road for operations authorized or conducted by the Forest Service Tree-cutting ground disturbance For each of those activities, the standards that are applied to that activity should be displayed. Without such a chart, there is no way for the public to readily see the degree to which Region 6 is addressing invasive species.	The DEIS discussed how various land use activities can contribute to the establishment and spread of invasive plants. The DEIS also evaluated how effective each alternative would be in reducing the risk of this actually occurring. The “estimated comparative acreage on which activities that favor invasive species introduction, establishment, and spread take place” does not necessarily indicate the effectiveness of each alternative because mitigation other than avoiding the activity could effectively reduce risk from the activity. The standards are already explicit in terms of the activities to which they apply.

Table 6. Comments and Responses about Invasive Plants and Mechanisms of Invasion	
Comment	Response
<p>As a general comment, it was hard to compare the effects or reasonableness of each alternative's impacts on land use because the document does not clearly rank which human activities are the greatest threats to the spread of invasive plants. For example, if non-weed free hay used by horse packers is only responsible for a negligible percentage of the weeds in the forests, then placing a restriction on using such hay would seem much more unreasonable than if it is, in fact, a major source of weeds. Similarly, washing vehicles is expensive and inconvenient, but if doing so will save millions of dollars over the long-term because cars are a major source of weeds, then such a measure might be reasonable and cost-effective -or even required for success. While the DEIS is right to propose limitations on human activities that need to be addressed to successfully control weeds (e.g., OHV's, grazing, weed-free hay, general land disturbance, etc.), the problem is that there is little data in the DEIS to support a rationale for choosing one restriction or mitigation over another (if you don't know how bad a certain activity is, how can you determine how aggressively it should be managed?). Therefore, we ask that before proposed land use restrictions are assigned to each alternative (which appears to have been done somewhat randomly in the current document), that the DEIS disclose, according to the requirements of 40 CFR 1502.22 and 40 CFR 1502.24, a baseline level of information on the relative threat levels presented by each human activity so that the public can base its comments on the most relevant data.</p>	<p>The proposed Forest Plan management direction (including DFC, goals, objectives and standards) address mechanisms of invasive plant spread related to land uses and activities under the control of the Forest Service. Section 4.2 discusses the relative effectiveness of the standards (individually and collectively) in reducing risk of invasive plant spread. The standards may result in implementation of mitigation measures that reduce risk but do not eliminate the land use. The effects on land uses must be evaluated against the effectiveness of each standard. The final decision may blend standards from more than one alternative in order to balance the impacts on land use against the effectiveness of a standard in achieving invasive plant management goals.</p>

Integrated Weed (Pest) Management and Non-Herbicidal Treatment Methods

Several commenters addressed the concepts of integrated weed management and encouraged the Forest Service to emphasize non-herbicidal treatment methods.

Literature related to livestock grazing was reviewed and in some cases references have been corrected in the FEIS in response to comments about cultural treatments. Standard 6 was modified in Alternative B in response to comments about grazing.

Discussions about non-herbicidal treatment methods were added to the FEIS to ensure they are given full consideration. Information about biological agents in Appendix H has been updated in response to comments.

Table 7. Comments and Responses about IWM and Non-Herbicidal Treatments	
Comment	Response
<p>Aggressive treatment must take priority. Manual treatment or hand pulling is not very effective. It is like using a squirt gun to try to extinguish a house fire. Biological control methods are a little more effective than manual treatments but the real success will only come by repeated use of effective herbicides. Spraying at the right time with effective herbicides is going to be the only way that you have that you have a chance to get on top of this invasive plant problem. Prevention and awareness programs all help in this battle to fight invasive weeds but will not be the solution to this growing problem.</p> <p>There is no better way to create a healthy growth on national lands than to judiciously use herbicidal controls. Manual and biological controls are fine where they can be cost-effectively used, but herbicidal spraying is easily more effective than those labor intensive measures.</p>	<p>The Preferred Alternative includes emphasis on both prevention and treatment/restoration. None of the alternatives rely on prevention alone or eliminate all herbicide use.</p>
<p>I favor biological controls adequately tested.</p>	<p>Testing requirements for biological controls are addressed in Chapter 3 of the EIS. Nothing that hasn't been tested and approved by APHIS would be used as per Standard 14 in all alternatives.</p>
<p>As determined by water testing on private land right here in Elk River watershed, herbicides sprayed up hill and away from the river produced drift and erosion into feeder streams and testable amounts entering the river. On the other hand, over the last two decades, Elk River's roadside vegetation on many miles of Elk River Road (county road from Mile Post 4 to forest entry and all the way deep into the forest along USFS roads) has been adequately managed by mowing. Don't poison our fish, don't kill our fishing industry. Don't poison our forests, don't kill our tourism industry. IPM works. Use it.</p>	<p>All alternatives incorporate IPM principles and practices. Effective, non-herbicide methods are approved in all alternatives.</p>
<p>We are far too dependent on chemicals. We are still learning about chemicals; how they interact with each other and the environment. Most man made chemicals have only been in use since World War II, which isn't very long. I ask the Forest Service to please use non-chemical means to eradicate weeds in an area that has not seen chemical use. There are no quick and easy fixes. I 'expect' the Forest Service to exhaust all [non] chemical means of control before even contemplating chemical use.</p>	<p>The alternatives include management direction to address this public issue. The Proposed Action would require managers to provide rationale for herbicide use. Alternative B would only utilize herbicides as a last resort. The rationale for the selection of alternatives will be in the Record of Decision.</p>

Table 7. Comments and Responses about IWM and Non-Herbicidal Treatments	
Comment	Response
<p>In the first three paragraphs of the "Livestock Grazing" section on page 3-15, the mechanisms by which cattle grazing contributes to invasive plant establishment and spread are well explained. Immediately following the third paragraph, the statement is made, without any supporting citation, that "prescribed grazing, when properly designed and implemented, can be used as a tool to maintain healthy and vigorous vegetation that is capable of resisting invasion." However, a research study (Sheley et al. 1997) is referred to later in the same paragraph as documenting that "...establishment of diffuse knapweed was enhanced only when defoliation of native bluebunch wheatgrass exceeded 60%; in many undefoliated plots, knapweed density was higher than where moderately grazed. Periodic grazing appeared to favor stronger plants, so long as they were able to fully recover before the next defoliation." There are two substantial problems with using the Sheley et al. (1997) paper to support the assertion that livestock grazing can be used as a tool to resist invasive plant infestations. First, the Sheley et al. paper was based on hand clipping the grasses, livestock grazing was not involved, whereas the DEIS discussion states that it was. The final paragraph of the Sheley et al. paper clearly states that "...disturbances associated with grazing, such as trampling and exposed mineral soil, were not examined." In addition, upon examination of Figures 2 and 4 (which display increases of knapweed with increasing grass defoliation) in the Sheley et al. paper, and a careful reading of the discussion section of the paper, it is clear that the primary conclusion of the study was that "diffuse knapweed successfully established on both the bluebunch wheatgrass and crested wheatgrass sites without grass defoliation," not that clipping of grasses (or grazing) provided any protection from knapweed invasion. Protection of grasslands from knapweed invasion by livestock grazing was not a hypothesis tested in the study. Thus, the interpretation of the Sheley et al. (1997) study does not support the assertion of the DEIS that livestock grazing can be a tool for resisting invasive plant invasion.</p>	<p>Literature related to livestock grazing was reviewed and in some cases references were corrected in the FEIS in response to this comment. Additional citations have been incorporated into the discussion.</p>
<p>NOAA Fisheries is concerned that the discussion of grazing in paragraph two on page 3-16 may lead those using the EIS as management direction (i.e. National Forest managers) to get the mistaken impression that general cattle grazing can be considered as an invasive plant control tool. If livestock grazing is later found not to be an effective tool to control invasive weeds, the FS could increase the use of herbicides and thereby expose ESA listed fish to greater adverse affects than expected.</p>	<p>Herbicide use would not be the assumed response if livestock grazing was expected to be an effective treatment method but was later found ineffective. Cultural methods would be used rarely (estimated at 1 to 5 percent of annual invasive plant treatments) in all alternatives. If these methods were found to be ineffective, a variety of other methods would be available.</p>

Table 7. Comments and Responses about IWM and Non-Herbicidal Treatments	
Comment	Response
The subsequent paragraph in the DEIS notes that "proper" grazing of some invasive plants by sheep and goats is the grazing component of "cultural" treatments considered in the DEIS as an invasive plant control tool. In addition, the paragraph states that grazing treatments are described in greater detail in Chapter 4.1. NOAA Fisheries could not locate any discussion of grazing treatments in Chapter 4.1. However, page 3-82 does contain some information on grazing as a cultural treatment. The more detailed discussion, on page 3-82, made clear that the cultural treatments by grazing animals is intended to be a tool used carefully "...based on selecting the appropriate grazer for the target invasive species." In addition, the ability to manage "...larger infestations on the forest is limited because of the difficulty of maintaining and managing the animals. A long-term commitment to small ruminant grazing is necessary for effective invasive plant management."	Grazing is discussed in the EIS Chapter 3 and in Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants. Corrections have been made to the document to address this comment.
I would live to see more consciousness around invasives, and crews dispatched to problem areas in a timely manner, to pull invasives before they go to seed, and to destroy the young plants with hoes and such before they are as large and difficult to deal with.	This technique is available under all alternatives.
Forest Service Road 3310 that meets the main road at the corner of our property has much less scotch broom in the past as a result of mechanical removal followed by traffic curtailment with water bars. Further control of sun-loving invasive weeds has been accomplished with less general brush removal-some invasive plants are being shaded out by brushy salmonberry, thimbleberry, and vine maple, etc.	Mechanical removal is a technique available under all alternatives. Objective 2.2 addresses retaining shade as well as Standard 5, Alternative B.
We understand that all alternatives propose the use of herbicides (even those untested or known to have deleterious effects on non-targeted insect species) and exotic biocontrol agents. At the very least, each project should be site specific and open to other alternatives for control such as hand pulling, mowing, burning, grazing by goats, etc. Expertise in experimenting with control such as has been gained by the Nature Conservancy should be used in site-specific situations.	The EIS directs site-specific analysis in NEPA documents. Alternatives control measures are discussed in Chapter 3 and in Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants.
Pesticides simplify ecosystems. The healthiest forests are the most complex, biologically. Predatory insects, restrictions on grazing, timed burning or mechanical harvest are better alternatives, dead invasives are not the same as healthy forests.	This subject is adequately covered in Chapter 4. Integrated Weed Management (IWM) philosophies are incorporated into all alternatives.

Table 7. Comments and Responses about IWM and Non-Herbicidal Treatments	
Comment	Response
<p>Please don't rely on herbicides when better methods are available.</p> <p>The EIS should prioritize and emphasize the use of biological controls where effective or potentially effective as part of an integrated control strategy.</p> <p>Integrated pest management needs to be given the highest priority regardless of which alternative is selected.</p> <p>ISDA supports the use of Integrated Weed Management, which is the use of all available and feasible weed control techniques in an organized, coordinated, and mutually supportive manner. Major components of IWM include education, plant inventories and surveys, prioritization of weed problems, review of all available weed control techniques for each weed problem, selection and integration of effective control techniques as necessary. Weed control techniques used in IWM are often categorized as mechanical, such as hand pulling; cultural such as tillage; domestic animal, such as controlled grazing; chemical; and biological. Limiting the availability of tools that may be used to control weeds can severely reduce control activities effectiveness.</p>	<p>Herbicides are one tool of many available. When better methods are available they would be used. Biological controls are included in all alternatives as part of an Integrated Weed Management (IWM) strategy (see Chapter 3 for details). All of the alternatives follow IWM principles and allow a range of effective tools.</p>
<p>I want to see our public agencies take a hands on approach, hire people to manually remove these infestations.</p> <p>There are also great opportunities for the needs of invasive weed prevention and the staggering economy of our region to be united in the great effort of hand pulling.</p>	<p>All alternatives incorporate IWM principles and practices. Effective, non-herbicide methods are approved in all alternatives.</p>
<p>3.3.2 Treatment and Restoration. The section is well written, adequately reviewing the pros and cons of each control method; however, risks of all control methods should have been reviewed in this section. There are environmental risks to hand pulling such as trampling desired species and soil compaction. Environmental risks are associated with use of prescribed burns, including release of invasive species, death of non-target species and wildfire. There are also risks to the environment from mechanical control including spread of invasive species, species shift, soil compaction and environmental contamination by oil and fuel. For the public to fully understand the risk and benefits of the proposed "tools" including herbicide use, the risks of all other control methods should be equally evaluated.</p>	<p>Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants has been added to the FEIS to discuss these effects. The EIS chapters focus on the effects that are of primary public concern.</p>
<p>4.6.6 Tendency for Standards to Affect Range Allotments and Permittees Grazing is an important IPM tool for invasive plant management. In grazed allotment areas, no ability to make suitable changes in grazing locations, timing, intensity and outputs will render all other management tools useless and increase the cost of invasive plant containment while further degrading the environment. Flexibility for adjustment stated in Alternative B is needed. The EIS stated in 3.3 Invasive Plant Management "Moving an undesirable plant community towards a desired state takes a repeated, sequential process of: designing a disruption to the undesired successional pathway". Altering grazing that has become a disruption causing an undesired successional pathway will be key to invasive plant control and prevention.</p>	<p>The grazing standard (6) in Alternative B was adjusted to provide more clarity and implementability. The analysis for Standard 6 has also been edited for clarity in response to this comment.</p>

Table 7. Comments and Responses about IWM and Non-Herbicidal Treatments	
Comment	Response
Recent research on the efficacy of Acetic acid (vinegar) as a weed control have shown poor results for perennial and biennials. In fact the concentrations required to cause any damage at all are high enough to be a health hazard for the applicators and may cause damage to the soil biota. The KC noxious weed control board does not recommend Acetic Acid as an effective weed control tool.	Acetic acid was removed as a tool considered for use in the EIS.
The DEIS does not describe the various methods for controlling the most problematic plant species, whether they are currently or anticipated to become the most problematic. Not all plant groups respond the same to herbicide application, for example. Some may be knocked back only to resurrect in a year or two. Others require considerably more herbicide and stronger adjuvants than "usual" before a dose is lethal. An analysis at the programmatic level, for example, could describe plants by the characteristics that most influence the ability and the means to control it by providing guidance such as the following: "Herbicides will not be the control method of choice for invasive plants that spread by profuse seed production such as purple loosestrife, et cetera (listing other species with this characteristic in R6). These seeds are relatively long-lived and germinate sporadically, therefore the seed bank of an established population of such a plant is at little risk since it is not affected by a control program that removes only the current year's standing crop of growing plants. Plants should be removed before they go to seed and the entire plant including all roots and root tips must be removed. Plant locations should be flagged and rechecked every year."	Discussion was expanded on this subject in Chapters 3 and 4.
Biological Controls cannot be adequately tested. All Action Alternatives support the use of exotic bio-controls. It is believed that since these plants do not have natural enemies, then perhaps we could import these predators as well. The problem with this line of logic is that there are no scientific means to ensure that the imported organism will restrict itself exclusively to the plant in question. One simply cannot devise a setting as complex as a forest ecosystem, nor ascertain that the organism will not threaten native plants as well.	Biological controls have been tested adequately and used effectively for many years by APHIS. Negative effects have occurred and were disclosed in the DEIS, however in many cases benefits outweigh risks.
It is very disappointing to hear that the Forest Service may be turning to herbicides to control invasive plants. Not only is the Forest Service a guardian to what is left of natural habitat it also has the potential to be a powerful leader in invasive species control. Controlling vehicle access & utilizing alternatives to pesticides such as hot sugar foam are examples of actions that could address the invasive problem without using chemicals. I hope that you will do what it takes to be the best guardian possible.	Herbicides are one tool of many available. In the DEIS, controlling vehicle access is discussed as a prevention practice, and use of hot foam is discussed among many other treatment methods.

Table 7. Comments and Responses about IWM and Non-Herbicidal Treatments	
Comment	Response
<p>Integrated Pest Management definition lacking. While Appendix F assists in understanding how the EIS might affect Forest Plans, the Forest Plans themselves are such a hodge-podge of conflicting rules that it is difficult to make sense of the EIS. As an example, consider the statement in the EIS on p. 2-5 that "current policy supports an Integrated Pest Management Approach [IPM]". Which policies, what is meant by support, is there a legal mandate, and what specifically is IPM are all left for guesswork by the decision-maker. The EIS should define IPM in no uncertain terms. It is plainly obvious that the Forest Service is misusing the term IPM to the detriment and confusion of the public. Without a definition of IPM, the EIS lacks authority to propose alternatives. We suggest that you consider using the following definition, which does at least have the merit of some research: True IPM is an interdisciplinary system of techniques for controlling invasive plants that is both practical and environmentally sensitive. Policies and plans should rely on objectives to control invasive species based on a rational decision-making framework, which can reasonably attain stated goals without significant negative impacts. Such a framework could be based on principles of true Integrated Pest Management, and its plant counterpart, Integrated Weed Management, or IWM (Wooten and Renwyck, 2001, Wooten, 1999b): Components of a true IPM program should include (Appendix A): "monitoring" integration of multiple objectives" integrated strategies" periodic re-evaluation. A wide variety of pest control options is considered in true IPM with preference for: " Practicality -programs should be effective and cost-efficient." Environmental sensitivity - programs should reduce environmental risks. Please correct the EIS by defining IPM.</p>	<p>The section on Integrated Weed (Pest) Management has been edited in the FEIS to improve clarity in response to this comment.</p>
<p>Grazing controls are not adequately analyzed. The promise of using grazing to reduce invasive plants was presented in simplistic level, and did not give details about the difference between trained weed-eating goats and a wandering herd of cattle. Lacking was any discussion of breed of goats, or costs, or management requirements and limitations, how long it would take, whether return visits were necessary, how the type of stomach and teeth affect the species. For instance angora goats reduced leafy spurge (<i>Euphorbia esula</i>) biomass by 44% in 3 years in North Dakota (Sedivic and Maine, 1993). The cited references lead one to believe that the Team is not familiar with the details on the use of grazing to reduce invasive plants, and would benefit from consultation with a range manager.</p>	<p>FEIS Chapters 3 and 4 have been edited regarding use of grazing for invasive plant management in response to this comment.</p>
<p>Scoping comments were not considered in the specialist report. It does not appear that the Team gave much consideration to public comments submitted during scoping. A list of about fifty different control methods for invasive species was submitted during scoping was apparently not considered by the Team (www.kettlerange.org/weeds/reference/control.html). For instance, the EIS did not even consider treatments using hot water, steam, infra-red light, tillage (a.k.a. road grading), The description and analysis of the use of fire to impact invasives (both positively and negatively) was too short and didn't give enough information. It certainly didn't have the depth sufficient to conclude, as it did, that only fire combined with herbicide would be effective.</p>	<p>The treatments listed in this comment were considered in the DEIS and supplemental discussion was added to the FEIS about non-herbicidal control methods.</p>

Table 7. Comments and Responses about IWM and Non-Herbicidal Treatments	
Comment	Response
<p>The EIS Team should propose a means of managing widespread invasives more like a maintenance schedule than an eradication schedule. Many weeds are known to follow a lag-log curve in going from minor species to major ones in a landscape. While it is appropriate to try and eradicate weeds in the lag phase, it is economically unfeasible to try and do so for large acreages. However, it may still be worthwhile to control these species in a limited fashion, either within localized areas or by maintaining them as a non-dominant component. We recommend that you consider different management strategies for species in lag phase than in log phase. The appropriate means to determine whether a species is in lag or log phase is to monitor control costs and when these exceed the budget, then remove those (out of control) species to a maintenance schedule. Otherwise you will just be throwing money away. A good example of this is common Crupina along Lake Chelan. The current spending of \$16 million, I believe, is about at the limit of what can be brought to the fight. Beyond this we have to admit defeat in eradicating the plant, but if we succeed, then other species can benefit from that money in future budgets. But even if we lose the battle, there will still be a need to keep Crupina in a maintenance program, to halt its spread and research new methods to control it.</p>	<p>Discussion regarding strategies for invasive plant management considering population dynamics was expanded in the FEIS Chapters 3 and 4.</p>
<p>The use of approved natural enemies as classical biological control agents is encouraged wherever invasive plants are unlikely to be controlled by other methods. Numerous natural enemies are listed in Appendix H that are not approved for use in the U.S. Most of those are accidental introductions, which are not considered as Classical Biological Control Agents of weeds. These should be deleted from the table as they go against the International Code of Best Practices for Biological Control of Weeds (Balciunas and Coombs 2004). Miscellaneous Clarifications: The knapweeds can all be included together, as most of the agents attack both diffuse and spotted knapweeds. The Scotch broom seed weevil has been changed from Apion fuscirostre to Exapion fuscirostre. Tamarix should be listed as salt cedar, and the leaf beetle Diorhabda elongata has only been approved for one site in Malheur County as of 2004. Future release sites are pending USFWS approval.</p>	<p>Appendix H discloses all biological control agents known to occur within Region Six. Table 2-3 lists the criteria for choosing from this table. Appendix H lists primary hosts. Entries for Scotch broom seed weevil, tamarix and salt cedar leaf beetle have been changed to respond to this comment.</p>
<p>The DEIS is lacking needed specific analysis of a complete listing of all biological control agents proposed for use and the exact criteria by which they were selected.</p> <p>The DEIS is lacking needed specific analysis of examples of known biocontrol escapes from management control which affect native plants and food webs, known other effects of biocontrols, knowledge gaps relating to the use of biocontrols--with enough specific detail to draw well-informed conclusions about the potential risks of different biocontrols proposed for use.</p>	<p>All biocontrol agents known in Region Six are listed in Appendix H. Criteria for choosing from these agents are given in Table2-3.</p> <p>The FEIS now contains Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants. Included is an analysis of information gaps and known impacts to non-target plants and food webs from biological control agents.</p>

Comment	Response
For the selected alternative, it will be useful to incorporate a variety of approaches. In particular, it will be helpful to include some biological control techniques or other potentially low impact efforts so that their effectiveness can be better understood. It is likely that herbicides will be needed, but it is also important to study the alternatives to herbicides so that this becomes an iterative process. Thus, over time, management techniques tried in small areas that are found to be less damaging to the environment, can be expanded to larger areas.	The DEIS considered methods other than herbicide. The Proposed Action would require managers to document rationale for use of herbicide and Alternative B requires herbicide use be a tool of last resort. All alternatives would require projects to utilize low risk, effective treatments.

Standards (General)

Many readers provided general comments about the merits of the standards viewed collectively. A common theme is the call for greater emphasis on prevention. One individual asserted: “the least costly and most effective strategy of weed control is to adopt standards aimed at modifying the activities that cause invasive plants to be introduced to USFS lands.” Another common complaint is that the standards are too vague, demonstrating a lack of commitment to the specific prescriptions that will be needed to reduce weed spread resulting from land management activities. Respondents ask for details on how silviculture, timber harvest, fuel reduction projects, monitoring and management for roads, range, wildlife, and fire will be modified to enhance prevention.

The greatest attention was focused on the lack of specific direction regarding livestock grazing, road construction and off-road vehicle use.

NOAA Fisheries criticized the Forest Service for not considering biological diversity and function or developing long-term vegetation goals in the development of standards. They maintained that “without management direction provided by the Region to the Forests, in the form of standards speaking specifically to ecosystem protection, long-term vegetation goals, and inventory and monitoring, no ecosystem-wide strategy would exist which could result in uneven levels of weed management and protection of ESA-listed species and their habitats...If the FS proposed vegetation management programs will not be driven by ecosystem-level protections, the risks to threatened and endangered species and their ecosystems may be underestimated.”

The Forest Service revised several of the standards in response to these comments. The Regional Forester may select an alternative that blends standards from multiple alternatives; the rationale for the final decision will be in the Record of Decision.

Table 8. Comments and Responses about Standards (General)	
COMMENT	RESPONSE
The proposed action and Alternative B do speak to enforceable standards but my reading finds these sections nearly as vague and indeterminate as that of the common alternative language on Desired Conditions. In the Final, I would like to see clear language and firm commitment to specified standards. As a specific example of vague and unenforceable language, the Draft speaks of Forest Service and livestock permittees "cooperating" in deciding what prevention measures (if any) will be implemented.	Several changes were made to the standards in the FEIS to improve their clarity and implementability.
If Standards are said to be "binding", but simply a Forest Plan amendment for individual projects can "modify, remove, or waive application of the standard", then Standards are not binding. The DEIS has made a worthwhile effort to outline Standards and Guidelines for Weed Management, and Standard requirements should remain binding.	Forest Plans may be amended/revised over time to remain up-to-date with new science findings and unanticipated resource situations. This should not imply that the standards are not "binding."
We are discouraged that the DEIS lacks specific prescriptions for reducing and eliminating weed spread from livestock grazing, roads and off-road vehicle use on Forest Service lands and from other activities such as post-fire treatments. It is, in fact, impossible to know whether the minor management requirements that are contained in the document - weed-free feed in Wilderness, washing tires on heavy equipment - will have any impact on reducing invasive species while these landscape-scale activities continue unabated. Region 6 should systematically determine what activities are associated with the most invasive species, how those activities contribute to weed spread, and then develop prescriptions that prevent invasion before more drastic measures are required to control weeds and restore landscapes.	Standards 4, 6, 7, and 10 have been revised to include more specificity in response to this and similar comments.
Add to proposed action: Minimize herbicide use and prohibit broadcast spraying in riparian reserves and in known amphibian habitat (including breeding, rearing, and overland dispersal areas). Avoid use of herbicides with adverse effects on aquatic species and amphibians.	These ideas are included in Alternative B. The Regional Forester has the option of combining elements of more than one alternative in the final decision.

Table 8. Comments and Responses about Standards (General)	
COMMENT	RESPONSE
A saner approach would be to stop the sources of exotic weed introduction and dispersal through comprehensive public education, vehicle inspections and cleaning, less overall disruption of the ground (which encourages exotic invasion), avoidance of heavy equipment/vehicle use in known weed populations, the mandatory use of weed-free feed for pack animals and livestock entering public lands, etc. Numerous alternative methods of exotic weed eradication and control exist, including hand-pulling, pruning, mowing, pruning, grazing by goats, etc. Maintenance and restoration of tree canopy closure and vigorous native plant communities should also be emphasized to discourage exotic weed establishment and spread.	These ideas are included in the range of alternatives. The Regional Forester has the option of combining elements of the alternatives in the Record of Decision.
I urge you to reconsider using pesticides to control invasive plant problems! If you want to solve the problem of invasive plants in our national forests consider changing the way your agency manages livestock grazing, off-road vehicle use, timber harvest and road construction and use - all of which currently encourage invasive weeds on the national forest. Stop the cycle now by good management practices.	These ideas were addressed in Chapter 2.7 of the DEIS.
I want the Forest Service to identify causes of weed infestations, and deal with them, rather than having to deal with the consequences.	The causes of invasive plants introduction and spread were discussed in DEIS Chapter 3.1.
Please help protect our forests from invasive species by keeping livestock and roads out of them. It's dangerous and a waste of our taxpayer dollars to rely on herbicide management.	The purpose of this EIS is not to eliminate grazing and roads from the National Forests, but to improve our ability to reduce the introduction and spread of invasive plants. This topic was discussed in DEIS Chapters 1 and 2.
Please restrict [herbicide] spraying to the minimum required to fix serious problems, and enact management priorities that actively prevent invasions without the further use of herbicides.	These ideas are included in Alternative B.
Proposed Action standards for invasive species management in Region 6 will place no restrictions and will have "No Direct Effect" on "road closures and loss of off-highway vehicle access;" and will place no restrictions and will have "No Direct Effect" on "grazing locations, timing, intensity, and outputs" (DEIS 2-33). In other words, Region 6 is proposing to leave utterly intact the two major causes of the 4,600 acre-per-day spread of invasive species on federal lands in the West, including the PNW forest lands.	Standards 6 and 8 have been rewritten to improve clarity and enforceability. The analyses in Chapter 4 have also been modified.
For example, Alternative B should include under "Prevention Measures" such as: Identify lands at risk to weed invasion, and limit or eliminate livestock grazing in these areas in order to prevent weed invasion and spread. Identify better condition native plant communities, and limit or eliminate livestock grazing in these areas in order to prevent weed invasion and spread.	The Forest Service considered this suggested wording and found it is too subjective to be enforceable as a standard.

Table 8. Comments and Responses about Standards (General)	
COMMENT	RESPONSE
Include clear standards to ensure forest management activities (e.g. grazing, OHVs, roads) do not create conditions conducive to the introduction and spread of weeds. This will by necessity require grazing to be restricted to ensure maintenance of diverse communities of vigorous plants that can best resist invasion by weeds.	Standards 6, 8 and 10 have been rewritten to improve clarity and enforceability. The analyses in Chapter 4 have also been modified.
In vegetation management projects such as fuel reduction projects, retain canopy to suppress weeds, minimize soil disturbance, and avoid new roads.	These ideas are included in Alternative B.
Use concepts of bio-complexity as a tool to prevent invasives (e.g. avoid homogeneity).	This topic was discussed in DEIS Chapter 3.2.
There is not enough detail of which existing management activities do or don't include prevention or management of invasive plants. We infer, but cannot be completely sure, that the EIS intends to modify existing management activities associated with the control and prevention of spread of invasive species, including activities of silviculture, timber management, road management, range management, wildlife management, fire management, and monitoring.	Current direction was discussed in DEIS Chapter 2.3.
We are discouraged that the document lacks specific prescriptions for reducing and eliminating weed spread from livestock grazing, roads and off-road vehicle use on Forest Service lands. Indeed, it is impossible to know whether the minor management requirements that are contained in the document--weed-free feed in Wilderness, washing tires on heavy equipment--will have any impact on reducing invasive species while these landscape-scale activities continue unabated. Region 6 should systematically determine what activities are associated with the most invasive species, how those activities contribute to weed spread, and then develop prescriptions that prevent invasion before more drastic measures are required to control weeds and restore landscapes.	Standards 6, 8 and 10 have been rewritten to improve clarity and enforceability. The analyses in Chapter 4 have also been modified.
On Appendix A-22 you say that reseeded disturbed areas to prevent weeds is not a substantive issue. Please explain how re-seeding is not a substantive issue and how it does not relate to the effect of the proposed action? Isn't the proposed action to eliminate the spread of non native and noxious weeds? And isn't re-seeding after a disturbance a main factor in controlling the problem?	Reseeding to prevent weeds is indeed a substantive issue. Appendix A-22 has been re-written to correct this error.
Mandate that after a logging operation a reseeded program in implemented right away by the timber companies. They must pay for the cost of buying native seeds. If native plants are re-introduced right away they may help deflect the invasive species.	Reseeding is already a requirement of timber sale contracts.

Table 8. Comments and Responses about Standards (General)	
COMMENT	RESPONSE
Alternatives such as prevention (ie roadless rule) avoiding clearcuts, leaving virgin forests or undisturbed forests intact are just some examples that need to be implemented as well as off road vehicles banned in areas where the weeds have been eradicated or have not begun.	The causes of invasive plants introduction and spread are discussed in Chapter 3.1. It is not the purpose of this EIS to eliminate grazing and timber harvest from the National Forests, but to improve our ability to reduce the introduction and spread of invasive plants. This topic was discussed in Chapters 1 and 2.
We propose that road building practices be revised to minimize impact on ecosystems.	Standards 2 and 3 apply to road construction and will help minimize the introduction and spread of invasive plants.
Additional Treatment Standards Recommendations: A rapid response element should be included in any treatment plan. If a small or easily confinable infestation is discovered, the tools should be in place to allow land manager to take care of this situation immediately. This includes spot spraying and all other control methods. This ability will enable land managers to stop new infestations before they are able to entrench and become more costly, destructive long term problems.	Rapid treatment response and prioritization of treatment sites was discussed in DEIS Chapter 3.3.
Weed disposal is not mentioned. Comprehensive disposal plan should be established. Weeds that have been hand pulled should be disposed of in garbage bags and placed in land fill if they are in seed or are known to propagate vegetatively. They should not be added to mulch piles.	Proper disposal of handpulled plants is important. If pulled weeds are not disposed of properly the situation can be exacerbated, rather than improved. It is standard procedure for handpull projects on National Forests to follow this procedure.
Areas controlled must be revegetated to insure success.	Restoration/revegetation of treatment sites was emphasized throughout the DEIS and specifically discussed in Chapter 3.3.

Standard 1: Address prevention of invasive plant introduction, establishment and spread in land management assessments/analyses

Commenters stated they preferred Alternative B and expressed a desire for greater emphasis on prevention. One respondent favored the provisions in Alternative B because “they give the USFS a chance to spell out exactly what is needed for healthy ecosystem management.”

Standard 1 has been expanded to specifically require that vegetation management plans and recreation management plans address the prevention of invasive plant introduction, establishment and spread.

Table 9. Comments and Responses about Standard 1	
COMMENT	RESPONSE
Alternative B requires that USFS documents address the conditions that lead to invasion, and emphasize maintaining and restoring healthy ecosystems as a first line of defense against plant invasions. We support the Alternative B provisions because they give the USFS a chance to spell out exactly what is needed for healthy ecosystem management	All alternatives follow direction contained in Executive Order 13112, Invasive Species, which already directs Federal Agencies to disclose the effects of land management actions on the spread of invasive species. Alternative B further emphasizes this requirement by making it a Forest Plan standard.
The Forest Service must look to stronger prevention-based standards to discourage invasive plants. More funding need to be allotted to monitoring and prevention, not short term, shortsighted use of herbicides.	This comment will be considered and the rationale for the decision will be published in the Record of Decision.
Please consider life and health while you devise invasive weed control programs. Let's practice prevention instead of poison in our forests	Human health and safety is discussed in Chapter 4.5 of the EIS.
As a farmer living amidst commercial and federal timber lands, I am especially concerned with the rampant spread of noxious weeds, knapweed, thistles, scotch broom, ivy & blackberries to name the worst, which spring up in every cut. Personal observation of units that have been "pre-emergent" sprayed with herbicides shows me that spraying does no good. The weeds just do better than the baby trees. Logging companies and recreationists must be held accountable for the spread of weeds on vehicle tires, and must be charged for or forced to do manual release and weed killing.	Standard 1 has been expanded to specifically require vegetation management plans and recreation management plans to address prevention of invasive plant. Standards 2, 3, 4, 5, 9 and 10 also address issues related to logging practices and recreation.
The impact that logging has in spreading invasive plants is not sufficiently documented in the DEIS. Factors that cause logging to be associated with invasive plant outbreaks include increased irradiance at forest floor, soil disturbance, exposed mineral soil, and human and vehicle traffic. Questions that the USFS should answer in regard to this EIS include the following: " What percentage of USFS thinning projects have created a greater than 8% irradiance? " What percentages of USFS thinning projects have created exposed mineral soils " How much mineral soil has been exposed in these thinning projects? " To what extent have increases in mineral soil exposure and irradiance led to invasive plant outbreaks in USFS Thinning projects? " This information is not provided in the EIS. The USFS should try to create standards that translate the best available scientific evidence into policy.	These questions would most appropriately be addressed in site-specific analysis for thinning projects. Standard 1 in all alternatives requires that prevention be considered in vegetation management projects. The DEIS acknowledged that thinning tends to leave more canopy and therefore is less subject to invasive plant establishment than regeneration harvesting. At the project scale, associated activities such as road building would be considered for their increased potential for invasion.
The conclusion that thinning creates less ground disturbance is anecdotal. On Tonasket District of the Okanogan NF, thinning proposals are accompanied by piling and burning, which cause large amounts of soil disturbance. Furthermore, salvage sales and restoration forestry both operate on ground that has already been heavily disturbed. The conclusion should be that forestry and associated road-building is potentially just as damaging to the soil as it has ever been.	

Table 9. Comments and Responses about Standard 1	
COMMENT	RESPONSE
<p>Several concerns arise out of the comparison of the alternatives. First, prevention and treatment are evaluated separately with a much greater emphasis on the effect of treatment (i.e., killing invasive plants) than on the effects of preventative measures (i.e., preventing invasive plant introduction, establishment, and spread)). Thus, the meaning of the phrase "An ounce of prevention is worth a pound of cure" is turned on its head in this DEIS. Here, the bulk of attention is given to the pound of cure rather than the ounce of prevention.</p> <p>Specifically, though there is great emphasis on the success of alternative B in preventing the spread of invasive species it is summarily dismissed as an option because of its limited choice of herbicides. The court in <i>Blue Mountains Biodiversity Project v. US Forest Service</i> held that the EA was insufficient because it failed to look at the impacts of preventative methods. 229 F. Supp. 2d 1140, 1145-46 (D. Or. 2002). The Forest Service clearly has the ability to combine the preventive measures of Alternative B with the treatments involved in the proposed alternative. There is no attempt to balance the effects of prevention and treatment. If there is greater prevention less treatment will be needed over time.</p>	<p>Prevention, treatment, and restoration are all important aspects of effective invasive plant management. These elements are analyzed separately and collectively in Chapter 4.2. The alternatives as structured in the EIS represent a reasonable range of alternatives. We recognize that there are infinite possibilities for mixing or recombining elements of the different alternatives. This approach is addressed in Chapter 4.2. In addition, the Regional Forester has the option of mixing or recombining elements of the alternatives as she chooses in the Record of Decision.</p>

Standard 2: Equipment washing

Most respondents expressed preference for the more stringent provisions in Alternative B. The rationale for the final selection of standards will be in the Record of Decision.

Table 10. Comments and Responses about Standard 2	
COMMENT	RESPONSE
Alt. C -[is preferred] Clarify what is meant by "actions ? authorized by the USFS" what does this include?	“Actions” include all projects conducted by the Forest Service and its contractors: plus activities by the public or permittees authorized by the Forest Service.
While ALB B could be very restrictive, impractical, impossible to monitor and enforce[,] we think the proposed action should be more comprehensive than the present statement.	This comment will be considered and the rationale for the decision will be published in the Record of Decision.
Standard #2 requires cleaning of heavy equipment that will operate off of the "road surface" prior to entering National Forest lands. The DEIS contains no definition of "road surface," and without such a definition, it is unclear whether this applies to vehicles that will travel, for example, on closed roads. Furthermore, the standard does not apply to vehicles such as pickup trucks or SUVs, which might be used to commute to an off-road site, and therefore have a greater risk of spreading invasive seeds as they will be moving over larger areas of the forest. Finally, the standard does not prevent the spread of invasives between sites in the National Forest on heavy equipment. The Forest Service should adopt the stronger language of alternative B, which requires all vehicles that will be used off the road surface to be cleaned whenever entering Forest Service lands, and also requires the cleaning of all vehicles before leaving the project site when operating in areas with a high risk of spreading invasives.	These comments will be considered and the rationale for the decision will be published in the Record of Decision.
Cleaning of public vehicles is great. But logging trucks or any commercial vehicles entering the forest should also be cleaned before and after their job. Education can inform and encourage recreational users to clean and inspect their vehicles. This could be accomplished through the use of newspapers and bulletin boards and leaflets at the trail heads.	This comment will be considered and the rationale for the decision will be published in the Record of Decision.
The Proposed Action leaves intact the policy in Region 6 National Forests to allow all vehicles, whether Hummers, stock trucks, pickups, dirt bikes or RVs, to plow through roadside weeds and off-road 300 feet out (i.e., a football field's length) from essentially every open road for the purposes of camping. Region 6 is having the gnat wash its feet while leaving the elephant stampede unhindered.	These concerns are addressed in Alternative B. The rationale for the decision will be published in the Record of Decision.

Table 10. Comments and Responses about Standard 2	
COMMENT	RESPONSE
<p>We see no problem with having a contractor clean their equipment prior to entering National Forest System Lands, as suggested in the 'Proposed Action', as there is generally better access to the necessary tools and water supply. However, we do have a concern as to whether the public at large will be held to the same standard as the logging and forestry community. Are people who operate ATV's, off-road vehicles or dirt bikes going to be required to clean their vehicles prior to entering National Forest System Lands? Operators of these vehicles, as they are usually outside the limits of the road surface, could spread invasive plant seed or 'vegetative propagules' just as well as a contractors logging equipment. Therefore, we request that the final standard also have provisions that members of the public would be required to clean any motorized vehicle that will be operated outside the limits of the road surface prior to entering National Forest System Lands and not include the provision requiring equipment be cleaned prior to leaving a project site.</p>	<p>These concerns are addressed in Alternative B. Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>[Alternative B equipment and washing standards] would be expensive and difficult, if not impossible to meet due to the logistics of supplying the cleaning equipment of choice (pressure washer) and other supplies, such as a sufficient water supply, to a remote location in order to clean several pieces of equipment and attendant vehicles...if the cleaning requirement ends up in the final iteration, it will create an undue hardship on our members who have to fulfill it.</p>	<p>This comment will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>Require all USFS Vehicles to have their tires clean and include educational opportunities for the public. The proposed alternative does not account for the transfer of invasive plant materials from one site to another within the forest. In order to prevent other USFS vehicles from spreading Invasive plants from one project area to another, more stringent requirements than those listed in the proposed alternative should be adopted. As it states in Appendix D, hundreds of seed have been found on a single car after traveling forest roads. The requirements of Alternative B prevent heavy machinery and other vehicles from spreading invasive plants within the forest by requiring them to be washed between work sites if a high probability of spreading invasive plants exists. In order to accomplish the goal of reducing the spread of invasive plants the Alternative B requirements should be included. The proposal should also carry this logic a step further and include educational opportunities for the public so that the public can also make informed decisions when driving USFS roads.</p>	<p>Your comment will be considered and the rationale for This decision will be published in the Record of Decision.</p>

Table 10. Comments and Responses about Standard 2	
COMMENT	RESPONSE
Standard 2 should not be restricted to heavy equipment. All vehicles have the potential to transport invasive plant seeds, including off-road vehicles. According to Appendix D of the DEIS, hundreds of seeds have been found on a single car after traveling on forest roads. In order to effectively reduce the introduction of invasive plant seeds on Forest Service lands, this standard should address all types of vehicles that leave forest roads.	These concerns are addressed in Alternative B. Your comment will be considered and the rationale for the decision will be published in the Record of Decision.

Standard 3: Use weed-free straw and mulch

An Oregon State official points out that because Oregon does not currently have a weed-free straw program, definitions and guidelines will need to be established and straw suppliers notified. He suggests that Oregon State University Seed Certification program field inspections should be considered an adequate demonstration of meeting the weed-free standard. In response, Standard 3 has been amended for all action alternatives in the FEIS.

Table 11. Comments and Responses about Standard 3	
COMMENT	RESPONSE
The state of Oregon currently does not have a weed free straw program. A set of guidelines will need to be established that defines what "weed-free" means. Straw suppliers will need to be notified of the weed-free standards to insure a readily available supply of weed-free straw. The Oregon State University Seed Certification program does however; inspect seed production fields that are in the seed certification program. These inspection reports should be considered to indicate that material is weed-free and will suffice under weed-free standards.	Standard 3 has been re-written to include language suggesting NAWMA or similar standards for weed-free material. The Forest Service will coordinate with the State Departments of Agriculture in the Region to work out the specifics of implementation for this standard.

Standard 4: Use weed-free feed

Many individuals, county and state agencies, stockgrowers and conservation/preservation organizations asserted that weed-free feed should be required throughout National Forest lands, not just in Wilderness Areas, and that staging areas and corrals should be inspected annually. Several groups called for the adoption of the North American Weed Management Association standards across the west, claiming this would “benefit both producers and the weed control efforts.”

Others asserted that the lack of weed-free certification programs and adequate sources of affordable weed-free feed in Washington and Oregon makes compliance unlikely.

Several people suggested that requiring weed-free feed in Wilderness Areas is a good starting point for the development of a phased-in weed-free hay program on all Region 6 National Forest lands. One group recommended starting with the requirement in Wilderness Areas and expanding it to all National Forest lands within three years to allow appropriate government agencies time to develop certification programs and growers time to produce adequate supplies of feed.

This standard has been amended in the FEIS for the Proposed Action and Alternative B in response to these comments.

Comment	Response
Alt B-[is preferred] Use NAWMA identification standards to make it easily identifiable and enforceable. No current state standard for weed free hay. Annual inspections of every site are too costly, every three years is plenty.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision. NAWMA standards have been added to the Proposed Action and Alternative B.
Weed free hay is not available yet in most areas and pelletized feed can be a real problem for horses if not introduced in advance, etc. You could suggest but not require weed free hay at this time and most horse people would comply.	The alternatives present a range of weed free feed requirements (required on 2.5 million acres in Alternatives NA and D, 4.5 million acres in the Proposed Action, and 24.9 million acres in Alternative B). The EIS contains expanded discussions of weed free feed, detail changes in alternatives, weed free feed importance to Wilderness Areas, and weed free feed standard design amongst the alternatives in Chapters 3 and 4.
I was flabbergasted by the part in the proposed action (is this 1954?) whereby permittees and packers are allowed to bring uncertified (i.e. weed infested) feed onto Forest Service lands for livestock and pack animals. The animals then spread weeds seeds all over the landscape and travel corridors with their dung. This pushes the immense cost of remediation off onto the public whereas it is far more cost-effective to cut off the problem at the source. Permittees and packers need to be held responsible for their impacts to the public lands and the \$1.35 per AUM fee sure wont go very far after the fact. I request a detailed economic cost-benefit analysis in the Final EIS beginning with historic costs of remediation as documented in the Sierra Nevadas, Hells Canyon, or Pacific NW forest data [eg Linton Meadows or PCT, WNF].	Standard 4 has been rewritten to include language suggesting NAWMA or similar standards for weed-free feed. The Forest Service will coordinate with the State Departments of Agriculture in the Region to work out the specifics of implementation for this standard. See recreation, and congressionally designated areas discussions in Chapter 3 and Effects on Land Use in Chapter 4.

Table 12. Comments and Responses about Standard 4	
Comment	Response
Standard #4. This Weed Board believes that you must work into a weed free system for the whole forest for machinery, vehicles and livestock. (464,465) On livestock issues, we have been advised that restricting feed and straw to weed free material will need to be supplemented by a 48 hour confinement period to clear the animal's intestinal tract of viable seed. We believe you should install a weed free system, that little or nothing will be done if you do not have regulations in effect and that the cost to the public of controlling an infestation may be many times the cost to the animal or equipment owner.	Comment addresses the importance of partnerships and collaboration as well as the positive benefits of prevention practices in a successful invasive plant program. Pre-feeding of weed free feeds was considered, but was considered to be an unenforceable practice. Such pre-feeding or “confinement” periods may be encouraged by individual forests and through cooperation with equestrian groups.
We are concerned about how the implementation of the weed-free feed standard will be evaluated with respect to its efficacy. Chapter 4-5 clearly defines "(t)he measuring factors for comparing the alternatives" with respect to efficacy:- "Estimated annual rate of invasive plant spread."-"Estimated acreage of invasive plants treated annually."-"Number of years until invasive plants are controlled. "This suite of measures seems to be appropriate to determining whether or not what you are doing is making a difference in the problem. In contrast, the weed-free feed standard will be evaluated only as described in Chapter 4-96:"The measure of this effect is the acres of National Forest where weed-free feed requirements apply." n other words, to the Forest Service, it really makes no difference whether or not the implemented standard contributes to the control of invasive plants, or at least not enough difference to warrant justification of its continuation.	Weed free feed requirements are a legitimate component of invasive plant prevention and will help bring Region 6 in line with other Nation Forest Regions in the west. The alternatives present a range of weed free feed requirements (required on 2.5 million acres in Alternatives NA and D, 4.5 million acres in the Proposed Action, and 24.9 million acres in Alternative B). The EIS contains expanded discussions of weed free feed, detail changes in alternatives, weed free feed importance to Wilderness Areas, and weed free feed standard design amongst the alternatives in Chapters 3 and 4.
From the perspective of the recreational saddle and pack stock user, this is a major change in management that will substantially and adversely impact recreational stock users for unsubstantiated reasons, and with no intention by the agency to demonstrate the efficacy of the standard in the control of invasive plants. Therefore, we formally contest the stated need for and appropriateness of the weed-free standard as a mandatory standard as described in the July 2004 DEIS for the Pacific Northwest Region Invasive Plant Program.	Parks et al. (Appendix D) state that “Landscape-scale spread of invasive plants can occur when seeds are moved along transportation corridors from infested sites or from infested ungulate forage, attached to or held within infested animals, or attached to vehicles used to transport infested forage or animals.” Weed free feed requirements are a legitimate component of invasive plant prevention and will help bring Region 6 in line with other Nation Forest Regions in the west. The alternatives present a range of weed free feed requirements (required on 2.5 million acres in Alternatives NA and D, 4.5 million acres in the Proposed Action, and 24.9 million acres in Alternative B). The EIS contains expanded discussions of weed free feed, detail changes in alternatives, weed free phase-in enforcement, feed importance to Wilderness Areas, and weed free feed standard design amongst the alternatives in Chapters 3 and 4.

Table 12. Comments and Responses about Standard 4	
Comment	Response
Prevention Standard 4: Alternative A preferred -with the addition of requiring weed free project staging areas, livestock and packhorse corrals and OHV staging areas. Annual timely inspection of the areas should also be required. Surveys should be conducted when suspected or likely invasives are easy to detect. This will enable land manager to detect infestations before they are wide spread. The sites with the greatest use should have the heaviest inspection schedule. Site used less often can be on a less frequent schedule.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
Prevention Standard 4: Alternative A preferred -with the addition of requiring weed free project staging areas, livestock and packhorse corrals and OHV staging areas. Annual timely inspection of the areas should also be required. Surveys should be conducted when suspected or likely invasives are easy to detect. This will enable land manager to detect infestations before they are wide spread. The sites with the greatest use should have the heaviest inspection schedule. Site used less often can be on a less frequent schedule.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
Standard #4: Does not require the use of weed-free feed on all National Forest system land, apparently based on the argument that weed-free feed is not widely available. We performed Google searches for "weed free hay Oregon" and "weed free hay Washington". In less than 5 minutes we had the name and phone number for 17 farmers in Wallowa County, Oregon, 1 farmer in eastern Washington, and nearly 80 farmers in Idaho who sell NAWMA-certified weed free hay. Although a phase-in of a weed-free feed requirement may be advised, particularly for western areas far from sources in eastern Oregon and Idaho, we think the Forest Service would be ill-advised to ignore the growing availability and utility of weed-free feed.	The alternatives present a range of weed free feed requirements (required on 2.5 million acres in Alternatives NA and D, 4.5 million acres in the Proposed Action, and 24.9 million acres in Alternative B). The EIS contains expanded discussions of weed free feed, detail changes in alternatives, weed free feed importance to Wilderness Areas, and weed free feed standard design amongst the alternatives in Chapters 3 and 4.
Why not a wider use of weed free feed than only Wilderness Areas and trail heads.	The alternatives present a range of weed free feed requirements (required on 2.5 million acres in Alternatives NA and D, 4.5 million acres in the Proposed Action, and 24.9 million acres in Alternative B). The EIS contains expanded discussions of weed free feed, detail changes in alternatives, weed free feed importance to Wilderness Areas, and weed free feed standard design amongst the alternatives in Chapters 3 and 4.

Table 12. Comments and Responses about Standard 4	
Comment	Response
If we are required to use "weed free" hay, Oregon needs to have a "weed free certification" program in place.	Pelletized feed is allowed and if state certified feed is not available, sources meeting NAWMA or similar standards can be used. Formal and informal cooperation with State agencies, local landowners, weed control districts and boards, Native American tribes and other Federal agencies in the management and control of noxious weeds are components of a successful integrated weed management program as discussed in Chapter 2.
I believe the weed free hay is a good idea, my concern and questions are many-Who says its weed free hay? Where can we buy it? How do us farmers get our hay certified? As we travel with our horses-where can we buy it? Who sets the rules? Who governs the rules? How will we know each states rules on hay? When will this come into effect?	Pelletized, state certified, NAWMA certified or similarly certified feed will meet the requirement. Certification often coordinated by growers and county/state/weed board members. An example of a certification program can be found on the Wallowa County Haygrowers Association website as shown in Chapter 2 of the EIS. Each state or Region may have specific rules, information and sources will be available on the web, and at Forest Service offices and information centers. Enforcement of weed free feed requirements will be phased in with time to educate users and for weed free feed sources to be located and become reasonably available.
1. Oregon state has no certification program for noxious weed free hay. Agencies which I have contacted have no interest in developing such programs at present. These include the county extension agencies and the Oregon Seed Certification Program.2. Wallowa County uses Idaho's certification. Some hay is available sometimes in Wallowa county. Some alfalfa hay is trucked in from Idaho and available locally in LaGrande. This is very limited availability compared to needs at the many trail heads. No certified grass hay which some of us horsemen feed instead of alfalfa is available that I know of at present.3. Most horsemen will be very reluctant to feed the available pelleted or cubed feed rather than hay at trail heads as equines do not change diets and forms of feed readily. Once in the wilderness area, processed feeds usually are used only to supplement the natural forages as needed. Therefore, I find the requirement of certified noxious weed free feeds unreasonable to implement until certified hay, both alfalfa and grass is commonly available at prices close to good quality noxious weed free hay currently available in the state of Oregon.	The EIS acknowledges that "Weed-free feed requirements increase the cost of using horses and other pack stock because weed-free feed is more expensive to purchase, distribution locations for weed-free feed may be limited, and pack stock users may have to plan ahead to obtain the feed and to allow animals to adjust to new feed types.

Table 12. Comments and Responses about Standard 4	
Comment	Response
I will support a proposal requiring the use of feed free invasive plants and other undesirable plants providing reasonable standards are adopted clearly defining what plants are unacceptable. Also, the FS must be willing to make a commitment to work with other government agencies and producers of livestock feed on the implantation of a certification system that will result in supply of acceptable feed that is reasonably available before imposing feed restrictions.	Standard 4 has been rewritten to include language suggesting NAWMA or similar standards for weed-free feed. The Forest Service will coordinate with the State Departments of Agriculture in the Region to work out the specifics of implementation for this standard. Formal and informal cooperation with State agencies, local landowners, weed control districts and boards, Native American tribes and other Federal agencies in the management and control of noxious weeds are components of a successful integrated weed management program as discussed in Chapter 2.
A simple system needs to be instituted to get the proper certification of hay. For example have the County Agent certify a local farmer's fields. Then a certificate would go with the hay sold off these fields. Many horses can not tolerate the pelleted feed causing colic and behavioral problems.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
I believe the livestock users are willing to use weed free feed if it is available in the State of Washington, but pelletized feed can cause livestock to colic so that doesn't seem to be a good solution. Do hay cubes meet the requirement for weed free feed?	Hay cubes are not necessarily weed free. Hay cubes documented to be made from certified weed free hay (appropriate state, NAWMA or similar standards) will be allowed.
The Proposed Action is minimal, Alternative B is much better. Disturbed areas, such as staging areas and corrals are an introductory site for invasives, and should be inspected annually wherever they are.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
The Proposed Action leaves intact the policy that weed-infested feed can be brought into the Forest and fed to pack animals everywhere except designated Wilderness and Wilderness trailheads. Region 6 is thus failing to spur either Oregon or Washington to finally join the majority of western states which already have certification programs for weed-free feed.	This standard establishes a baseline requirement for weed free feed; individual forests maintain the option to expand weed free feed requirements on additional acres.
The Final EIS should explicitly display the non-Wilderness acreage that will be open for use of weed-infested feed, and the Wilderness acreage that will not be open for use of weed-infested feed.	Acres of National Forest where weed free feed would be required are displayed in Chapters 2 and 4. National Forest acres where weed free feed would not be required can be found by subtracting required acres from 24.9 million. Weed free feed would not be required on 22.4 million National Forest acres under No Action or Alternative D, on 20.3 million acres under the Proposed Action, or on 0 acres under Alternative B. This standard establishes a baseline requirement for weed free feed; individual forests maintain the option to expand weed free feed requirements on additional acres.

Table 12. Comments and Responses about Standard 4	
Comment	Response
Use weed free feed on all National Forest lands Using weed free animal feed is an essential part of containing the spread of invasive plants throughout National Forest lands. Livestock and pack animals already contribute to the spread of invasive plants by causing soil disturbances, selective foraging, seed dispersal, and other mechanisms. In order to control the damage, the USFS should adopt the Alternative B standards regulating weed free livestock feed as well. We also encourage the USFS to monitor project staging areas for livestock, OHV's and pack animals as outlined in Alternative B.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
Require "weed free" feed for all stock throughout the forests (not just wilderness). If necessary phase this requirement in so certification programs can become established.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
Use weed-free feed in all Wilderness Areas and Wilderness Trailheads. If State certified hay is not available, individual Forests should require sources that meet "weed-free" standards or require weed-free palletized feed. WITHIN THREE YEARS OF IMPLEMENTATION OF THIS INVASIVE SPECIES PROGRAM, REQUIRE WEED-FREE FEED ON ALL NATIONAL FOREST LANDS. [add the following in CAPS Standard 4][Standard 4] must apply to all Forest Service lands. At the present time, however, parts of Region 6 lack a weed-free feed certification program and adequate, available sources of weed-free feed. These limitations could make it difficult to require weed-free feed immediately throughout Region 6. However, by phasing in this requirement over the next three years, the appropriate agencies will have time to develop certification programs and growers will have time to produce adequate supplies of feed.	The alternatives present a range of weed free feed requirements (required on 2.5 million acres in Alternatives NA and D, 4.5 million acres in the Proposed Action, and 24.9 million acres in Alternative B). The EIS contains expanded discussions of weed free feed, phase in of enforcement, detail changes in alternatives, weed free feed importance to Wilderness Areas, and weed free feed standard design amongst the alternatives in Chapters 3 and 4.
The Proposed Action (alternative C) recommendation for the use of 'weed free feed", does have WCBCHO's members concerned as there are currently no certifying agents/programs for 'weed free feed" or "weed free hay" available in the state of Oregon. WCBCHO understands and practices the use of "weed free feed" when required. WCBCHO wants the Forest Service to note that before this recommendation should go into effect a system for certifying "weed free feed" that includes hay must be established. The development of certifying system needs to set reasonable standards to reduce the potential of "weed free feed" production becoming too costly for individuals to purchase. If this recommendation became policy before the establishment of available certifying agents it could create a hardship for not only WCBCHO members, but also the many other equine organizations through out the Pacific Northwest Region.	The EIS acknowledges that "Weed-free feed requirements increase the cost of using horses and other pack stock because weed-free feed is more expensive to purchase, distribution locations for weed-free feed may be limited, and pack stock users may have to plan ahead to obtain the feed and to allow animals to adjust to new feed types.

Table 12. Comments and Responses about Standard 4	
Comment	Response
<p>We support the use of weed-free feed in all wilderness areas and at wilderness trailheads. Our primary concern is that the State of Oregon does not have a certified weed-free hay program in place at this time. Pelletized feed has been available for years. The problem is that not everyone can, or is willing to use pelletized feed for their horses. In some cases, horses don't do well on pelletized feed and hay is the only viable alternative. We would like to propose that along with the pelletized feed program, the agencies involved work closely with the State Department of Agriculture and County Extension Agencies to implement a weed-free certified hay program in the State of Oregon. However, if this program becomes law before certified hay is available, it would severely affect the ability of horsemen to comply. In addition, we feel that it is important to make the program workable without excessive guidelines and controls that would discourage farmers and ranchers from producing the feed, or that would make that production, and the final product, prohibitively expensive.</p>	<p>The EIS contains expanded discussions of weed free feed, phase in of enforcement, detail changes in alternatives, weed free feed importance to Wilderness Areas, and weed free feed standard design amongst the alternatives in Chapters 3 and 4. Formal and informal cooperation with State agencies, local landowners, weed control districts and boards, Native American tribes and other Federal agencies in the management and control of noxious weeds are components of a successful integrated weed management program as discussed in Chapter 2</p>
<p>You have stated under the proposed action that recreational stock and pack stock must have weed free feed in order to enter the wilderness areas of Region 6. You do not show any scientific evidence that we are a major contributor to the problem and definitely have not proven that by having weed free feed that the problem will be any less than it already is. By requiring weed free feed, it is not going to stop the spread of non-native plants that are already established and spread by wild birds, wild ungulates, and other mammals including the human hiking population. It would seem that the recreational equestrian community has been singled out to have restrictions placed on it in the wilderness areas when other recreationists who are much greater in numbers have no restrictions whatsoever. You state that the Mt. Baker-Snoqualmie NF has required weed free feed in the wilderness areas but you do not have any scientific proof that it has lessened the problem. Without scientific proof you can not justify and/or legally defend your proposed action. Common sense would tell one that by just singling out the recreational and pack stock the problem is not going to be solved or even begin to be solved. Your inept solution is unenforceable at best and specious at worst with an underlying agenda that is biased against recreational horse and pack stock. We do not dispute the fact that there is a problem of non-native plants growing in amongst the native plants. What we dispute is your answer to the problem that warrants this restriction; especially since you do not have any controlled scientific studies that can be utilized as evidence that the equestrian community is a major contributor. We are demanding that this proposed restriction be deleted from the plan.</p>	<p>Parks et al. (Appendix D) state that "Landscape-scale spread of invasive plants can occur when seeds are moved along transportation corridors from infested sites or from infested ungulate forage, attached to or held within infested animals, or attached to vehicles used to transport infested forage or animals." The EIS acknowledged that wild birds, wild ungulates, and other mammals including the hiking population could spread invasive plants. These vectors of spread however are beyond reasonable management control, whereas weed free feed is, as other Regions have shown, a manageable prevention effort. Weed free feed requirements are a legitimate component of invasive plant prevention and will help bring Region 6 in line with other Nation Forest Regions in the west. The alternatives present a range of weed free feed requirements (required on 2.5 million acres in Alternatives NA and D, 4.5 million acres in the Proposed Action, and 24.9 million acres in Alternative B). The EIS contains expanded discussions of weed free feed, detail changes in alternatives, weed free phase in of enforcement, feed importance to Wilderness Areas, and weed free feed standard design amongst the alternatives in Chapters 3 and 4.</p>

Table 12. Comments and Responses about Standard 4	
Comment	Response
<p>Increased Costs to All... Requiring horse owners to use weed-free feed will clearly increase the cost of using saddle and pack stock because such feed is more expensive to produce and distribution locations are limited, resulting in additional purchase and transportation costs to the riders and stock providers. Under the Preferred Alternative in the DEIS, the amount of area that will be impacted by the weed-free standard is substantial. Although it is confined to Wilderness Areas, it will result in nearly a 500% increase in the acreage involved from the current approximately 1 million acres to 4.6 million acres. This will result in increased costs to the users and will likely dissuade some amount of recreational saddle and pack stock use. This additional requirement will also increase the cost to the FS for enforcement of the weed-free feed standards.</p>	<p>The alternatives present a range of weed free feed requirements (required on 2.5 million acres in Alternatives NA and D, 4.5 million acres in the Proposed Action, and 24.9 million acres in Alternative B). The DEIS incorrectly stated that weed free feed requirements currently are in place on only about 1 million acres of National Forest land in Region 6. The EIS resolves this error by changing that acreage to about 2.5 million acres. The Proposed Action will result in less than a 100% increase in the acreage where weed free feed would be required.</p>
<p>Requiring the use of Noxious Weed Free feed is a useful prevention practice. The required use of weed-free forage on all National Forest System land is preferred.4-94, Standard#10, second bullet - Increases the costs or reduced ability for stock users to access part of the National Forest due to weed free feed requirements for pack stock from Standard#4. After reviewing this section of the document pertaining to Noxious Weed Free Forage/Straw (NWFFS) and pack stock it is not entirely clear why stock users could have a reduced ability to access part of the National Forest if NWFFS may not be widely available or the costs will be prohibitive to recreational stock users and they will chose to recreate elsewhere. Regardless of which plan chosen, Oregon and Washington State must begin statewide NWFFS programs to provide regionally available NWFFS at a reasonable price. In Idaho, NWFFS can cost 10-50% more than non-certified hay. Equine users normally purchase hay in large quantities direct from the grower and pay a commodity price, however, NWFFS is usually purchased in smaller quantities from a local feed store at a specialty item price. Locally available and reasonably priced sources of NWFFS are the key to getting equine users to comply with the plans. Processed forages such as cubed hay, alfalfa pellets, and packer pellets are widely available and met the requirements of NWFFS. Region Four USFS has a closure only on non-certified hay and straw; there is no closure on processed forage.</p>	<p>The EIS acknowledges that “Weed-free feed requirements increase the cost of using horses and other pack stock because weed-free feed is more expensive to purchase, distribution locations for weed-free feed may be limited, and pack stock users may have to plan ahead to obtain the feed and to allow animals to adjust to new feed types. The measure of this effect is acres of National Forest where weed free feed requirements apply. Recreation users may experience additional travel costs to comply with this standard. Animal users may also decide not to use certain National Forest lands if they do not wish to comply with weed free requirements. Thus, some users and use impacts may be displaced to other federal, state, or private lands.” Region Four prohibits use of any non-pelletized or non- weed free certified feed on all National Forest Lands; see Chapter 3.</p>
<p>While the exclusion of "weed-free" feed in Wilderness Areas and Trailheads is a positive initial step, this management standard should be expanded and applied universally across all National Forest System forest and grasslands. There is no biological or scientific reason to use weed-free feed only in designated Wilderness Areas and Trailheads while excluding such restrictions on other national forest and grasslands that are similarly entrusted to public land managers.</p>	<p>The alternatives present a range of weed free feed requirements (required on 2.5 million acres in Alternatives NA and D, 4.5 million acres in the Proposed Action, and 24.9 million acres in Alternative B). (5) The EIS contains expanded discussions of weed free feed, detail changes in alternatives, weed free phase in of enforcement, feed importance to Wilderness Areas, and weed free feed standard design amongst the alternatives in Chapters 3 and 4.</p>

Table 12. Comments and Responses about Standard 4	
Comment	Response
Standard 4 -- We believe that the Forest Service should define this standard such that they will start with requiring weed-free feed in Wilderness Areas and then work with the Bureau of Land Management, Oregon Department of Agriculture, Oregon Department of State Lands, Washington Department of Agriculture, Washington Department of Ecology, Washington Department of Natural Resources, other affected government agencies, and affected grower organizations to design and implement a phased-in weed-free hay program within the states of Oregon and Washington.	Formal and informal cooperation with State agencies, local landowners, weed control districts and boards, Native American tribes and other Federal agencies in the management and control of noxious weeds are components of a successful integrated weed management program as discussed in Chapter 2.
Wallowa County Stockgrowers supports that all forage fed on USFS lands meet the weed free standards of the North American Weed Management Association (NAWMA). This standard needs to be consistent across the west. If the USFS were to step up and adopt this standard it would benefit both producers and the weed control efforts.	Standard 4 has been rewritten to include language suggesting NAWMA or similar standards for weed-free feed. The Forest Service will coordinate with the State Departments of Agriculture in the Region to work out the specifics of implementation for this standard. See recreation, and congressionally designated areas discussions in Chapter 3 and Effects on Land Use in Chapter 4

Standard 5: Maintain native vegetation and forest canopies around project areas

Five individuals commented on this standard. On one extreme was the claim that neither the standard in Alternative B nor Objective 2.2 in the Proposed Action should be considered because these goals are “often unachievable and inappropriate and overly restrictive” and they may “prevent treatment of stands requiring fuels reduction/forest health activities.” Others claimed: “Alternative B still allows flexibility to implement the standard as ‘consistent with other project objectives,’ while providing significantly stronger buffers against non-native invasion.” The Record of Decision will explain the rationale for the final choice of standards.

Table 13. Comments and Responses about Standard 5	
COMMENT	RESPONSE
This standard for Alternative B should not be adopted, nor should Objective 2.2. This standard should be dropped from consideration. Alt B is often unachievable and inappropriate and overly restrictive. On Eastside forests it may prevent treatment of stands requiring fuels reduction/forest health activities.	The effects of implementing Standard 5 for Alternative B was discussed in DEIS Chapter 4.2. Your comment will be considered and the rationale for the decision will be published in the Record of Decision.

Table 13. Comments and Responses about Standard 5	
COMMENT	RESPONSE
Standard #5: The Proposed Action relies on the language in objective 2.2: "When working in vegetation types with relatively closed canopies, retain shade to the extent possible to suppress invasive plants and prevent their establishment and growth." This vague, non-binding objective is not sufficient to insure that projects preserve intact plant communities, which are significantly less susceptible to invasion than disturbed ones. The more specific and binding language in Alternative B still allows flexibility to implement the standard as "consistent with other project objectives," while providing significantly stronger buffers against non-native invasion.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
A proven method of invasive weed control and prevention is competition from desired plants. In addition to canopy shade to prohibit establishment of invasive species, having a mix of deep rooted and shallow rooted desired species is also important. If a root zone is left unoccupied, this leaves room for a shade tolerant invasive plant species to invade. Shading of roads results in increased need for road maintenance because the road stays wet longer. In areas of high traffic, a more effective means of preventing weed spread would be to have tree canopy back far enough to allow quick drying of the road, and plant competitive, low growing plant species from the trees to the road. These plant species should be resilient and competitive enough to not allow establishment of invasive species.	Using competition from desired plants to manage invasive plants is discussed in Chapter 3.
In those vegetation types with relatively closed canopies retain shade to the extent possible to suppress weeds and prevent their establishment and growth. Retain native vegetation in and around project activity to the maximum extent possible consistent with project objectives. Avoid creating soil conditions that promote weed germination and establishment. Minimize soil disturbance to the extent practical, consistent with project objectives. This language, as presented in the "USDA Forest Service Guide to Noxious Weed Prevention Practices," should be added to the standards in the proposed alternative. It is crucial that the adopted standards require the actions specified in the agency's prevention guidelines for timber harvest and fuels management projects because, as the DEIS states, these activities can be an important cause of invasive plant problems. The proposed alternative cannot meet the purposes of the EIS with respect to timber harvest, other vegetation management, and fuels management without modification.	Objective 2.2 in the Proposed Action and Alternative D references the USDA Forest Service Guide to Noxious Weed Prevention Practices as the corollary to Standard 5 in Alternative B.

Standard 6: Manage grazing to reduce the spread of invasive plants

Most respondents expressed preference for Alternative B because “livestock are a major vector for the establishment and spread of [invasive] plants” and “all of [Alternative B’s] practices are known to assist in the recovery of native plants and hold weed invasions at bay.” An opposing viewpoint was expressed by a member of the agriculture industry: “This standard must not become so stringent as to force permittees out of business... Alternative B is simply unacceptable because it is too prescriptive and may open the door to litigation from those opposed to grazing.”

In response to these comments, Standard 6 has been amended to make all alternatives equally effective and implementable.

Table 14. Comments and Responses about Standard 6	
Comment	Response
Prevention Standard 6. Alternative B preferred - key points in this alternative allow the land manager to alter the time when grazing is allowed in certain areas that may have sensitive native species in it, rest areas that have been heavily impacted and are prone to invasive infestations and delaying the reintroduction of livestock after fires to allow native plant communities to recover more fully. All of these practices are known to assist in the recovery of native plants and hold weed invasions at bay.	These comments will be considered and the rationale for the decision will be published in the Record of Decision.
Grazing Management direction in the proposed action lays out the use of Allotment Management Plans and Annual Operating Plans to incorporate prevention of weeds.- This is an important measure for grazing permits as grazing activities do have potential to introduce and/or spread noxious weeds. However, this standard must not become so stringent as to force permittees out of business. Consider an incentive based program to ensure cooperation. Permittees (and all vested forest users) are the best ally the USFS has in weed management. Permittees spend significant time on the ground, are there in various seasons and are very conscious of range conditions and threats to range condition such as noxious weeds. They help find, map, and monitor weed infestations. They are your cheapest and best defense against noxious weeds. Alternative B is absolutely unacceptable because it is too prescriptive and may open the door to litigation from those opposed to grazing. Passive restoration rarely works when invasive plants (noxious or not) are present. Also, several of these policies are already being used and therefore not necessary here.	Standard 6 has been revised in the FEIS. The standard now includes provision that planning and implementation of prevention practices will occur in cooperation with the grazing permit holder.

Table 14. Comments and Responses about Standard 6	
Comment	Response
<p>Specific prevention and recovery measure language might be incorporated into annual [grazing] operating instructions, allotment management plans, and overall grazing regs, for example:-permanent allotment retirement when the land evidently cannot be grazed by any grazing system without becoming/remaining weed-infested, as evinced from current and historical condition-allow permit holders to voluntarily put their allotments into indefinite rest-obligatory resting of other pastures for native plant and rare plant recovery-required changes in livestock movement especially trailing through riparian areas; trucking is preferable-altering or canceling seasons of use according to best interest of public-replanting degraded areas with natives at permittee expense-multi-year required rest after wildfires for cryptobiotic crust recovery</p>	<p>These comments will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>The discussion of cattle grazing throughout the DEIS is confusing, appears to be inconsistent, and in at least one case, potentially inaccurate. NOAA Fisheries is concerned that a weakening of the limits on the use of cattle grazing may impact salmonid habitat....Standard #6, in Table 2-4, states how "invasive plant prevention measures" can be incorporated into grazing allotment management plans. This appears to be an appropriate management approach. However, page 4-12 explicitly stated that "...specific prevention actions are not required. This standard allows the flexibility for grazing managers and grazing permittees to work together to choose effective prevention measures under their specific circumstances." In addition, Table 4-37, on page 4-100, states that "No Direct Effect" on grazing and range management is expected from implementation of the Proposed Action. If this is the case, it appears that the Proposed Action is at best no different from the current direction (the No Action alternative). If National Forests are currently able to incorporate invasive plant prevention measures into grazing allotment management plans, a non-binding Standard (an apparent contradiction in terms, see Standard definition page 2-13) appears as a weakening from the current program. NOAA Fisheries is concerned that this could result in unintended increased risk to listed species and their habitats.</p>	<p>Standard 6 has been revised in the FEIS. The standard now includes provision that planning and implementation of prevention practices will occur in cooperation with the grazing permit holder. As explained in Chapter 2 of the EIS, though not directly required, numerous annual operating instructions and grazing allotment management plans across the Region already include some components of invasive plant prevention measures. Standard 6 is not "a weakening from the current program". Rather, it builds upon what is currently occurring and requires incorporation of invasive plant prevention practices in annual operating instruction and in revision of allotment management plans. Related risks to listed species and their habitats, will likely be reduced when this standard is implemented.</p>

Table 14. Comments and Responses about Standard 6	
Comment	Response
Alt A - [is preferred] This is an important measure for grazing permits as grazing activities do have potential to introduce and/or spread noxious weeds. However, this standard must not become so stringent as to force permittees out of business. Consider an incentive based program to ensure cooperation. Educated permittees (and all vested forest users) are the best ally the USFS has in weed management. Alternative B is absolutely unacceptable because it is too prescriptive and may open the door to litigation from those opposed to grazing. Passive restoration rarely works when invasives (noxious or not) are present. Also, several of these policies are already being used and therefore not necessary here.	These comments will be considered and the rationale for the decision will be published in the Record of Decision.
Standard #6: While the Proposed Action contains a standard for incorporating invasive management into grazing allotment management plans, its language is sufficiently vague to render it unenforceable. In fact, the DEIS states (in table 4-37) that this standard will have no direct effect on grazing and range management. Thus, the proposed standard is inaction. The addition of language describing specific invasive prevention practices (such as found in Alternative B), would still allow flexibility to land managers to incorporate a diversity of strategies, while insuring that appropriate action is taken to implement invasive plant prevention on grazing allotments. In the long run, greater strength of native species would lead to a healthier range, a potential positive effect of the stronger policies in Alternative B that is not examined in the DEIS.	Standard 6 has been improved and analysis adjusted for all alternatives to address this concern. Affects related to this standard have been updated to reflect that “no direct effects” for Proposed Action and Alternative D was misleading and rather, that the effects are currently unknowable as they are dependent on individual forest implementation of practices from the National Guide. Incorporation of such practices is required, where in the No Action Alternative no region-wide requirement exists, so this is not a case of inaction. Additional analysis of Alternative B revealed that a list of “may include” prevention practices was in essence that same as the Proposed Action. Standard 6 is currently the same for all action alternatives. See Chapters 2 and 4. Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
I like alternative B when it comes to cattle grazing. This is a more pro-active approach of stopping the spread of invasive weeds.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
I also think it is particularly important to restrict grazing on areas that are impacted with a noxious weed infestation. Also pastures should not be overgrazed permitting a noxious weed invasion.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
Grazers need to be on notice about the need to adjust public lands grazing practices to reduce costs to the public and effectively maintain native forage condition. I have to believe that it is in the interest of livestock producers to reduce unpalatable or even poisonous weeds from their leaseholds. Concrete standards like those provided by the Restore Native Ecosystems alternative will promote understanding and voluntary compliance as well as be a fair way of allocating burdens of adjustment to all grazing permittees.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.

Table 14. Comments and Responses about Standard 6	
Comment	Response
<p>The Proposed Action is a necessary start and the permittees should be agreeable to these practices, as almost all recognize that invasive plants are detrimental to forage. The proposals and Alternative B should be incorporated as longer term goals, with input from the permittees regarding the best means to accomplish them.</p>	<p>Your comments will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>The DEIS analyzes the impact of standard 6 as currently written and concludes that the standard will have "no direct effect" [DEIS 4-100] on grazing and range management. Therefore, the proposed alternative, according to the analysis in the DEIS, cannot meet the underlying need of the EIS without the modification.</p>	<p>Standard 6 has revised for all alternatives to address this concern. Effects related to this standard have been updated in the FEIS Chapter 4 to reflect that "no direct effects" for Proposed Action and Alternative D was misleading and rather, that the effects are currently unknowable as they are dependent on individual forest implementation of practices from the National Guide. Incorporation of such practices is required, where in the No Action Alternative no region-wide requirement exists, so this is not a case of inaction. Additional analysis of Alternative B revealed that a list of "may include" prevention practices was in essence that same as the Proposed Action. Standard 6 is currently the same for all action alternatives. See Chapters 2 and 4. Your comments will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>With regard to invasive alien plants, livestock are a major vector for the establishment and spread of these types of plants. While Alternative B indicates weed prevention measures will be incorporated into annual operating instructions and allotment management plans, in cooperation with the permittee, this "standard" has little substance. It falls far short of identifying an aggressive program directed at stopping continued introductions and/or allowing for native species recovery. It is totally unclear under the standards put forth in this alternative if livestock management will be changed in any way to reduce the spread of invasive plants. It is totally unclear if areas will be periodically rested from grazing or retired from grazing to assist in the recovery native species. Postfire grazing is another practice that needs to be specifically addressed. Areas that have been burned often need multiple years of rest from grazing to allow native species to reestablish and for protecting intact biological crusts.</p>	<p>Standard 6 has been improved and analysis adjusted for all alternatives to address this concern. The Standard is designed to elevate the importance of invasive plant prevention in livestock grazing management, while allowing the flexibility for grazing managers and grazing permittees to work together to choose effective prevention measures that best suit local allotment conditions, ecology, and desired future conditions. See Chapters 2 and 4.</p>

Table 14. Comments and Responses about Standard 6	
Comment	Response
<p>Standard 6 -- This standard, if fully implemented, will be necessary to enlist the grazing permittees in a coordinated effort to control invasive species. The set of guidelines for what should go into annual operating instructions and allotment management plans should be developed for the region to ensure consistency of that particular tool. The John Day-Snake RAC stands ready to assist with development of such guidelines.</p>	<p>Your comments will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>[for Standard 6 add the wording in CAPS.]Through annual operating instructions, and the revision of grazing allotment management plans, incorporate invasive plant prevention measures that help reduce the spread of invasive plants. CLOSE PASTURES TO LIVESTOCK GRAZING WHEN THE PASTURES ARE INFESTED TO THE DEGREE THAT LIVESTOCK GRAZING WILL CONTINUE TO EITHER EXACERBATE THE CONDITION ON SITE OR CONTRIBUTE TO WEED SEED SPREAD. DESIGNATE THOSE PASTURES AS UNSUITABLE RANGE UNTIL WEED INFESTATIONS ARE CONTROLLED. THROUGH THE ALLOTMENT MANAGEMENT PLAN OR ANNUAL OPERATING INSTRUCTIONS, MANAGE THE TIMING, INTENSITY (UTILIZATION), DURATION, AND FREQUENCY OF LIVESTOCK ACTIVITIES ASSOCIATED WITH FORAGING AND BROWSING TO MAINTAIN THE VIGOR OF NATIVE PLANT SPECIES AND RETAINED LIVE PLANT COVER AND LITTER. MANAGE LIVESTOCK GRAZING ON RESTORATION AREAS TO ENSURE THAT VEGETATION IS WELL ESTABLISHED. THIS MAY INVOLVE EXCLUSION FOR A PERIOD OF TIME CONSISTENT WITH SITE OBJECTIVES AND CONDITIONS. CONSIDER PRACTICES WILDLIFE GRAZING ON THE AREAS IF NEEDED. INCLUDE WEED PREVENTION PRACTICES THAT REDUCE GROUND DISTURBANCE IN ALLOTMENT MANAGEMENT PLANS AND ANNUAL OPERATING INSTRUCTIONS. IN THESE PLANS AND INSTRUCTIONS, CONSIDER FOR EXAMPLE: CHANGES IN THE TIMING, INTENSITY, DURATION, OR FREQUENCY OF LIVESTOCK USE; LOCATION AND CHANGES IN SALT GROUNDS; RESTORATION OR PROTECTION OF WATERING SITES; AND RESTORATION OF YARDIN/LOAFING AREAS, CORRALS, AND OTHER AREAS OF CONCENTRATED LIVESTOCK USE. Plan and implement these measures in cooperation with the grazing permit holder. This language, adapted from the USDA Forest Service Guide to Noxious Weed Prevention Practices," must be added to standard 6 in the proposed alternative in order that the standard has enough specificity to adequately address the purpose and need of this EIS.</p>	<p>Standard 6 has been improved and analysis adjusted for all alternatives to address this concern. The Standard is designed to elevate the importance of invasive plant prevention in livestock grazing management, while allowing the flexibility for grazing managers and grazing permittees to work together to choose effective prevention measures that best suit local allotment conditions, ecology, and desired future conditions. See Chapters 2 and 4.</p>

Standard 7: Inspect stockpiles and quarries

Although a couple of respondents favored annual inspection and treatment of stockpiles, some said annual inspections would be too costly. One county weed coordinator suggested annual inspection for sites that are infested, but only biannual inspections of sites that are found to be weed-free. One respondent felt that the wording in Alternative D was clearer than other alternatives.

Standard 7 was amended in the Proposed Action in response to these comments.

Table 15. Comments and Responses about Standard 7	
COMMENT	RESPONSE
We favor inspecting material sources for the presence of noxious weeds in the planning stages of any project requiring the use of the materials, stripping or avoiding infested material sources and treating infested areas with herbicide, as mechanical methods are probably not effective in those materials.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
Prevention Standard 7. Alternative A with this addition - conduct inspections annually of gravel pits and similar material sources, in a timely manner. Surveys must be done when invasive species are most likely to be found. Then move to a biannual inspection schedule of all sites that did not have invasives in the initial survey. Merely requiring inspection without specifying when they should be done is not optimal for weed detection.	The timeliness of inspections is discussed in Chapter 4.2.
Alt. C -[is preferred] Should add that the "quarry site" should be inspected also. Should be applied to all 3 alternatives. Annual inspections prescribed in Alt B. are too expensive.	Standard 7 has been re-written to include this suggestion.
Alternative B is a better way of handling the problem when it comes to the sand and gravel stockpiles.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
Standard 7 [To further clarify the standard there should be reference in this standard to Appendix E]The Proposed Action would require treatment of infested sources for eradication, and strip and stockpile contaminated material before any use of pit material. Does treatment for eradication mean that infestations will have to be controlled for a period of time before the pit material can be used? Will the stripping and stockpiling of contaminated material allow for immediate use of pit material? The wording in Alternative D is clearer, stating that infested sources are treated before use of pit material. Stripping and stockpiling of contaminated materials could be one of the techniques that are used to treat the infestations.	Stripping and stockpiling contaminated materials is one of the techniques used to treat invasive plant infestations. Standard 7 was revised to address this concern.

Standard 8: Schedule road blading

Many respondents preferred this standard in Alternative B, claiming that it provides more clear direction that can be standardized throughout the Region and that it would go further to reduce the spread of weeds. An environmental resource specialist claimed that the methods stated in all Alternatives for Standard 8 are outdated and should be rewritten in consultation with a road invasive plant management expert. She outlined several specific techniques that minimize the need for blading road shoulders and cleaning ditches, and thus minimize the ground disturbance that favors weed establishment, by first treating weeds along roadsides, shoulders and ditches and then establishing these areas with “resilient, competitive, desirable vegetation that meets the need of the intended use of that site (drainage, parking, etc.).”

These comments did not result in any substantial changes to the FEIS.

COMMENT	RESPONSE
The thinking is correct that a successful prevention measure is to manage infested roadsides and early detection/rapid response is a key element. However, the methods stated in the standard are out dated and un-effective. The standard, for all alternatives and the proposed action, need to be rewritten with a road invasive plant management expert.	This comment did not lead to any specific changes to the standards. The Forest Service does not agree that the roads management techniques listed are outdated.
Purposed Action of blading, brushing and ditch cleaning will result in disturbed sites that will allow establishment of invasive weeds. Treatment first of these sites and than blading, brushing and ditch cleaning, as proposed for Alternative B, may result in control of the invasive plants but will also result in again exposing the site for weed invasion. A number of other more effective options are available and will result in prevention of invasive plant establishment.	Site-specific options will be considered during project-level analysis.
Alternative B is preferred - this is a more comprehensive plan for addressing weeds on the roadside. Cleaning of equipment is essential.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
Alt. C -[is preferred] Alt B doesn't get at the problem. Seed will still be on site after treatment.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
Standard 8 requires that blading, brushing, and ditch cleaning be done in consultation with invasive plant specialists. If the proposed alternative is approved, it is unclear what actual changes would occur on a project level, since no changes are mandated with this prevention standard. Alternative B requires that definite measures be taken to prevent the spread of invasive plants. Requirements such as cleaning road grading equipment and mowers should be standardized throughout region 6.	Cleaning of road equipment will be standardized with Standard 3. Crafting a standard that provides appropriate specific direction for road maintenance for the wide variety of conditions and circumstances that represented in Region Six is more difficult if not impossible. See discussion in Chapter 4.6.

Table 16. Comments and Responses about Standard 8	
COMMENT	RESPONSE
Chapter 2 page 7. We concur that communication is a problem with road management. Despite Olympic National Park, Clallam County, and Quileute Tribe advisories to hold off mowing briefly, some entity (WSDOT? County?) keeps mowing down emerging spring knotweed on the right of way, facilitating spreading before eradication crews can get there. They repeat this throughout the year! Is it also a problem of overlapping and conflicting jurisdiction? Consider that in your final action. Some MOUs may assist matters. But they need to include a chain of action on this point. Most MOUs do not.	These issues are addressed by Goal 5 and Objectives 5.2 and 5.3.
Standard 8: To further clarify this standard there should be reference in this standard to Appendix E.	Appendix E is does not need to be referenced in this standard. There are other guides, such as the 2003 USDA Forest Service “Backcountry Road Maintenance and Weed Management” publication that will also contribute to accomplishing this standard.

Standard 9: Close roads

Most respondents favor the closure of non-essential roads if they are found to serve as vectors for invasion. Standard 9 has been modified in response to the comments to allow administrative access to closed roads for invasive plant treatment and site restoration.

Table 17. Comments and Responses about Standard 9	
COMMENT	RESPONSE
We would suggest that you close no road until the area served is free of invasive plants. High risk, non-essential roads should be closed at the discretion of the FS manager if invasives are present to allow for treatment and to contain the infestation	Standard 9 has been modified to allow administrative access to closed roads for invasive plant treatment and site restoration.
Alt. C - [is preferred] Roads and weed spread are already considered in our programs (i.e. Upper Joseph Creek Watershed Assessment). Leave open the possibility of treating weeds and keeping the road open.	Standard 9 has been modified to allow administrative access to closed roads for invasive plant treatment and site restoration.
Failure to include a standard, such as the one in Alternative B, to close or decommission non-essential roads where roads may be serving as a vector for invasion is a missed opportunity. As described in the DEIS, roads can be a major vector of invasion, and the Forest Service already has a backlog of maintenance on its roads. Road decommissioning in this case creates a win-win situation.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.

Table 17. Comments and Responses about Standard 9	
COMMENT	RESPONSE
Alternative B should be available for consideration in special situations.	Forest Supervisors currently have the option of closing or decommissioning roads for a variety of resource related issues.
Limit use of non-essential roads that are high risk vectors for weeds.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.

Standard 10: OHV use

Almost all commenters to Standard 10 favored the prohibition of cross-country use of OHVs and the establishment of designated routes and areas for their use. Most of the commenters stated that OHVs “significantly contribute to the invasive plant problem in Region 6” by spreading weeds and creating prime weed habitat. One person stated, “People who want to drive-off highway vehicles where they disturb topsoil are using everyone's land as their personal playground. This is not socially acceptable.” One organization called for inclusion of specific “language adapted from the Forest Service's current proposed rule regarding travel management and designated routes and areas for motor vehicle use.” A county noxious weed control board advises at a minimum “prohibiting use of OHVs during key times in sensitive areas: seed set of certain invasives e.g. knapweeds, times when native vegetation is first establishing, when natives are more vulnerable in early spring.”

The EIS has updated its approach to OHV’s in response to these comments by adopting the proposed rule for travel management as Standard 10 in the Proposed Action and Alternative B. (See Chapters 2 and 4).

Table 18. Comments and Responses about Standard 10	
COMMENT	RESPONSE
The Wallowa County Stockgrowers is very concerned that the move of the USFS to limit Off Highway Vehicle (OHV) use to only open roads at the same time that large numbers of roads are being closed. This could limit the effectiveness/cost of noxious weed control in the future. This EIS should identify that OHV's be allowed to be used for weed control on all lands not restricted by Congress.	The EIS has updated its approach to OHV's by adopting the proposed rule for travel management as Standard 10 in the Proposed Action and Alternative B (See Chapters 2 and 4). Section 212.51 of the Proposed Rule allows for limited administrative use by the Forest Service.
Standard #10. We favor adopting the "closed to OHV use unless marked as open". We do not believe that ownership of an OHV conveys any rights to degrade public lands.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
Prevention Standard 10. Variation of alternative B preferred - ideally OHV use would be dramatically cut back as they are known vectors, and their use creates prime weed habitat. As stated in the supporting research in the DEIS, OHV purchase and use has increased dramatically in recent years. The KC Noxious Weed Control Board suggests prohibiting use of OHVs during key times in sensitive areas: seed set of certain invasives e.g. knapweeds, times when native vegetation is first establishing, when natives are more vulnerable in early spring.	The EIS has updated its approach to OHV's by adopting the proposed rule for travel management as Standard 10 in the Proposed Action and Alternative B (See Chapters 2 and 4).
Alt. C -[is preferred] Maintain the ability to permit ATV treatment of noxious weeds on otherwise closed roads and non-roaded areas.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
Standard #10: In explaining the decision to not include a strong standard restricting OHV use, such as the one included in Alternative B, the DEIS makes the statement that a standard is unnecessary because the national OHV policy, currently under development, is likely to restrict OHV use to designated routes and areas. Implementing this standard as part of the invasive plant strategy would insure that OHVs cease to be important vectors regardless of swings in national policy. OHVs are major contributors to the spread of invasives into remote areas, as detailed in the DEIS.	The EIS has updated its approach to OHV's by adopting the proposed rule for travel management as Standard 10 in the Proposed Action and Alternative B (See Chapters 2 and 4).
Close all non-essential roads, prioritizing those where analysis indicates spread of invasive species is inevitable and have the greatest impacts. Stock trucks, firewood trucks, RVs, ORVs, dirt bikes, mtn bikes driving 300 feet off each side of every open road to camp in Region 6? - that is a license to prepare the ground for an exotic invasion. And who is out there to enforce the 300' limit-ORV tracks are everywhere. Keep vehicles including mtn bikes on established open roads.	Standard 10 addresses your comment. The rationale for the decision will be published in the Record of Decision.

Table 18. Comments and Responses about Standard 10	
COMMENT	RESPONSE
<p>People who want to drive-off highway vehicles where they disturb topsoil are using everyone's land as their personal playground. This is not socially acceptable. I would like to see your agency restrict such activities and make specific commitments that can be measured, to reduce your reliance on herbicides.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>OHV's are known to spread invasive plants. Prohibitions of use in infested areas, as proposed in Alternative B, will be a big help in reducing spread of invasives.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>[for standard 10 add the wording in CAPS]PROVIDE FOR A SYSTEM OF ROADSAND AREAS ON NATIONAL FOREST SYSTEM LANDS THAT ARE DESIGNATED FOR MOTOR VEHICLE USE. AFTER THESE ROADS AND AREAS ARE DESIGNATED, MOTOR VEHICLE USE, INCLUDING TH CLASS OF VEHICLE AND TIME OF YEAR, NOT IN ACCORDANCE WITH THESE DESIGNATIONS IS PROHIBITED. MOTOR VEHICLE USE OFF DESIGNATED ROADS AND OUTSIDE DESIGNATED AREAS IS PROHIBITED. WHERE VEHICLE TRAVEL OFF OPEN ROADS IS CURRENTLY ALLOWED, THIS MUST BE TERMINATED BY 2007.This language, adapted in part from the Forest Service's current proposed rule regarding travel management and designated routes and areas for motor vehicle use, should be added to the standards in the proposed alternative. The standard should provide a date when Region 6 will be in compliance with the Forest Service's proposed rule. We also recommend interim retention of some signed dispersed camping routes that can establish the practice of on-route dispersed camping, while the more comprehensive process of designating roads and routes under NEPA-based travel planning process occurs. These additions are necessary to address the purpose and need of this EIS because, as the DEIS states, off-highway vehicles significantly contribute to the invasive plant problem in Region 6.The DEIS analyzes the impact of standard 10 as currently written and concludes that standard will have "no effect" [DEIS 4-101] on off-highway vehicle use. The proposed alternative, therefore, according to the analysis in the DEIS, cannot meet the underlying need of the EIS without modification.</p>	<p>The EIS has updated its approach to OHV's by adopting the proposed rule for travel management as Standard 10 in the Proposed Action and Alternative B (See Chapters 2 and 4).</p>

Table 18. Comments and Responses about Standard 10	
COMMENT	RESPONSE
Chapter 2, Par. 2.7 on page 35, re OHVs. We have treaty obligations and federal court orders to survey for salmonid redds, as do WDFW and other tribes. Be sure when you ban access to certain types of vehicles essential for resource management in difficult and remote terrain, that you recognize these obligations and do not attempt to exclude them under this EIS and its progeny. That kind of oversight can lead to lawsuits and cost everyone a lot of time and money, when a little care in drafting can prevent same. We have found some FS plans re ATVs lump tribal research and public play in the same boat. This is improper. Remember the tribal off-reservation rights to plants, fish, and wildlife? This includes the right and duty of the tribes to manage these; not just the FS.	The EIS has updated its approach to OHV's by adopting the proposed rule for travel management as Standard 10 in the Proposed Action and Alternative B (See Chapters 2 and 4). Section 212.51 of the Proposed Rule allows for limited administrative use by the Forest Service.

Standard 11: Establish treatment priorities

All respondents expressed that prioritization is essential. One individual stated that Alternative D should have a corollary standard. Most commenters recommended that specific direction on how to set priorities be included in the standard. NOAA Fisheries called for consideration of “biological diversity and function of the habitat/areas that are infected” when prioritizing areas for treatment.

These comments did not result in any substantial changes to the FEIS.

Table 19. Comments and Responses about Standard 11	
COMMENT	RESPONSE
Alternative D should have a corollary standard.	Alternative D has been adjusted to incorporate this standard.
With 420,000 acres already infested, prioritization is essential. Prevention of infestation should be the first priority. An ounce of prevention is worth many TONS of cure later. Almost on an equal level is control and eradication of new/small patches and is best thought of as prevention. Use of effective bio-control agents should be a priority for larger infestations of susceptible species. Where to begin with larger infestations may require Regional evaluation and considerable judgment.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
The Proposed Action is not clear about how to prioritize sites. It should include a focus on early detection and rapid response of high priority listed noxious weeds when prioritizing infestations. It should emphasize early detection and treatment of small populations, prioritizing small outlier sites. Prioritization should also emphasize the role of state departments of agriculture and county and other local programs for prioritizing infestations for treatment.	Discussion of criteria for treatment prioritization is included in Chapter 3.3 and Table 3-15.

Standard 12: Develop long-term strategy for restoring/revegetating treated infestations

Commenters suggested ways to improve Standard 12. These comments did not result in any substantial changes to the FEIS.

Table 20. Comments and Responses about Standard 12	
COMMENT	RESPONSE
For infested sites, develop site strategy within 2 years of site identification.	There is no feasible way to enforce a time limit for responding to newly identified sites. The response time would vary according to many factors, including the invasive species itself and potential threats to native plant communities or beneficial uses.
Invasive plants have taken many years to establish to the extent that they have. Control will also take many years. Restoration is a necessary part of long-term control. While a number of invasive species will invade "good condition" native ecosystems, the rate of invasion is much slower and control is easier than "poor condition" native vegetation. "Poor condition" is an open invitation to invasion.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
Add wording in CAPS to Standards 12 Develop a long-term site strategy for restoring/revegetating treated infestations of invasive plants. EACH SITE STRATEGY WILL IDENTIFY HOW PREVENTION MEASURES WILL BE INCREASED AND HERBICIDE USE DECREASED OVER THE LIVE OF THE STRATEGY. THE SITE STRATEGY WILL ALSO PRIORITIZE NON CHEMICAL TREATMENTS WHEN TREATMENTS ARE REQUIRED, UNLESS THEY ARE INEFFECTIVE OR INFEASIBLE.	Standard 17 has been rewritten to help contribute to meeting Goal 3 and Objective 3.2.

COMMENT	RESPONSE
In some cases a long-term site strategy for restoration/revegetation may not be appropriate or needed for all circumstances. There should be a qualifier for the size of the site for this standard. Many sites are very small and a restoration plan is not needed. In some cases it would not be appropriate to have a restoration/revegetation plan. Many weed sites occur on road shoulders, in quarries, stockpiles, rocky outcrops, dry sites or thin soils lacking native vegetation that are difficult to establish maintain vegetation or may not be desirable to have vegetated. Site strategies could include other long-term management planning goals other than restoration (e.g., maintain noxious weed free roadside, parking lots, right-of-ways, administrative sites, trailheads).	A strategy to not restore/revegetate, or to rely on passive restoration could be appropriate under certain circumstances, such as roadside, parking lots, right-of-ways, etc. This topic is clarified in Chapter 3.3 of the FEIS.

Standard 13: Revegetate with native plants

One preservation group favored Alternative B, asserting that “only native plants should be used,” and “any non-native plant has the potential to be a problem.” All other respondents, including county and state representatives (employees?) and individual members of the public, argued that although revegetation with native plants should be a goal, in cases where native plant materials are not available, too costly, or unlikely to establish because of site conditions, “cover with non-invasive exotic species is far better than no cover.” A state official recommended that the revegetation standard should “address obtaining weed-free seed and planting stock.”

These comments did not result in any substantial changes to the FEIS.

COMMENT	RESPONSE
Restoration: We favor the use of plant species that do not invade. We appreciate and favor the use of native plants where native plants are available at a reasonable cost and adapted to the site. We note that the cost of native grass seed is \$14.00/lb & up and may not serve the purpose intended such as roadside seedings where a low growing, long lived plant may be an asset to maintenance.	Your suggestions are consistent with Standard 13 in the Proposed Action. Increasing demand for native seed has increased production and is resulting in lower prices for native seed.
Alt. C -[is preferred] Native should be first consideration but cost and likelihood of success should be added to the list of things that could allow the use of non-natives. Alternative B is not a reasonable option- it will only allow for more invasive plants to establish!	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.

Table 22. Comments and Responses about Standard 13	
COMMENT	RESPONSE
The Proposed Action seems to make the best of a bad situation. Native plant materials certainly should be the first choice for restoration. For large scale events, such as wildfire, these materials may not be available, and cover with non-invasive exotic species is far better than no cover. Also, in some cases, such as soils without an A horizon, or soils contaminated by the allelopath of spotted knapweed, a transition species may be needed before native plants can be established.	Your suggestions are consistent with the intent of Standard 13 in the Proposed Action.
Only Native seed should be used in rehabilitation Prevention Standard 13: This standard applies to what types of plants may be used in re-vegetation projects. We believe, like Alternative B suggests, that only native plants should be used. If actions are taken to reestablish forest, then it only makes sense to use the plants, which are adapted to that stage of succession in that given locale. Any non-native plant has the potential to be a problem plant of the future.	The Proposed Action follows draft Forest Service national policy. This comment will be considered and the rationale for the decision will be published in the Record of Decision.
The Proposed Action requires native plant material be the first choice in revegetation for restoration and rehabilitation where timely natural regeneration of the native plant community is not likely to occur. Borrow pits, Quarries, Stockpile sites, and roadsides typically have had substantial surface disturbance that create environments in which invasive plant species out-compete and overrun native plant communities. The addition of more persistent non-native plant species, as described in Alternative D, may be necessary to out-compete invasive plant species in these instances. The emphasis of this standard should be to develop and restore sites and communities that resist invasion and suppress reestablishment of invasive noxious weeds. Plant materials should be selected on their ability to establish and exclude unwanted species. Actions should be taken to promote establishment of desirable vegetation. Cultural practices that alter the site to favor desirable outcomes could also be considered by the standard (e.g. site preparation, fertility and amendments, site-management changes). The standards (Table 2-4) and the Site Restoration/Re-vegetation section of chapter 3 should address obtaining weed free seed and planting stock. Contaminated seed and planting stock have been documented as sources of initial introduction of noxious weeds. State and federal programs are in place to assure noxious weed free seed stock. Contract language can be suggested for procurement of seed and planting stock. The All States Noxious Weed Test and other testing procedures are available at a low cost to assure purity of seed.	The Proposed Action follows draft Forest Service national policy. The emphasis of this policy and Standard 13 is to develop plant communities that can resist invasive plants. Standard 13 lists several circumstances where the use of non-native plants would be appropriate. The cultural practices mentioned are considered appropriate tools in the EIS (See Chapters 2 and 3). Seed mixes will be subject to NAWMA standards (or other similar certification system).
Standard 13 -- The caveat of "nor economically available" should be added.	This spirit of this comment is reflected under Alternative D. The rationale for the final decision will be in the Record of Decision.

Standard 14: Biological control

A single individual commented, “I oppose the use of bio-controls for which there is inadequate testing for effect to non-native species.” Standard 14 ensures that all biological control agents proposed for use are adequately tested. This comment did not result in any substantial changes to the FEIS.

Standard 15: Licensed applicator requirement

A single county employee stated that standards for “all alternatives equal but needs to be reworded so that they follow state and federal laws. This is more restrictive and will limit partners ability to participate!” Several alternatives go beyond minimum requirements of the law. This may be appropriate for use of herbicides on National Forest. The Forest Service recognizes that this may affect how partners’ participate.

Standard 16: Herbicide formulations available

Several commenters discussed Standard 16 specifically. Some of these types of comments are also reflected in the Herbicide Use comment set below. Commenters to Standard 16 expressed their preference or concern about specific herbicides or herbicide use in general. NOAA Fisheries expressed concern that the Proposed Action allows for an unlimited number of combinations of the ten approved chemicals. Standard 16 has been re-written in all action alternatives to respond to this concern. Several respondents asked the Region to outline the process for approving additional herbicides at the forest and project level. In response, Standard 16 has been amended to address the process for adding new herbicides and herbicide mixtures.

COMMENT	RESPONSE
<p>The Wallowa County Stockgrowers supports the expanded list of chemicals identified in Alternative D. We support Alternative D over the proposed action because it includes Dicamba and 2,4-D. Dicamba and/or 2-4d should be allowed, they may be critical to the successful management of Leafy Spurge, Whitetop, and Rush Skeletonweed. One other important issue is that these two chemicals are many times the most cost effective tools available. Alternative B is unacceptable. It is too restrictive and does not allow for adequate tools to be successful.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>The EIS allows for additional chemicals to be added at the forest and project level. We feel that due to the cost of analysis that the region should primarily be responsible for this process.</p>	<p>This would be a program decision, not a NEPA decision. Risk assessments have been conducted under a national FS contract to perform assessments as needed.</p>

Table 23. Comments and Responses about Standard 16	
COMMENT	RESPONSE
<p>Standard #16 Support of a combination of Proposed Action and Alternative D with changes. The chemical list in the Purposed Action is reasonable and will support a successful IPM program. The addition of dicamba and diflufenzopyr to Proposed Action Standard 16 would greatly enhance control, reduce the use of the majority of herbicides and reduce active ingredient applied to the environment. Eliminating the use of 2,4-D may actually enhance the invasive plant control program because resource managers would be forced to use the effective alternative opposed to the cheap alternative, 2,4-D. Diflufenzopyr has been registered for use in corn and non-crop sites for several years and has recently been granted a rangeland label. Diflufenzopyr is currently only sold in a premix with dicamba, however; label rates of the premix only allow for a low rate of 0.125 lbs ai/acre and a high rate of 0.25 lbs ai/acre dicamba, compared to dicamba alone with a low rate of 0.25 lbs ai/acre and a high rate of 2.0 lbs ai/acre. This decreased rate of dicamba results in less non-target damage due largely to the decreased volatility formulation and the low ai being applied. In addition, the premix is not labeled for aerial application, further decreasing environmental concerns. The premix can be tank mixed with other herbicides to give an overall lower active ingredient applied to the environment without reducing invasive plant control efficacy.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p> <p>Diflufenzopyr is an emerging technology for which effective application techniques are still under development, including data on efficacy in various mixtures, application rates, and nontarget effects in field applications. This chemical may be considered in the future if it complies with management direction for evaluating risks of mixtures, once studies are sufficient to conduct a complete FS risk assessment.</p>
<p>Many invasive plants can develop resistant biotypes when exposed to herbicides. Once this occurs the manager is forced to switch to other chemicals for control. Most herbicides have a limited target species list. Managing a resistant biotype infestation with a limited number of herbicides can greatly reduce the manager's effectiveness. 2,4-D and Dicamba are broad-spectrum herbicides. By having the option of using these chemicals when dealing with a resistant invasive weed population the chances of control can be increased.</p>	<p>Discussions about herbicide resistance have been supplemented in the FEIS. Under the Proposed Action and D the risk of herbicide resistance from available herbicides is minimal; risk increases with limited suites of herbicides in No Action and Alternative B.</p>
<p>Alt. C -[is preferred] but add Dicamba and specific formulations of 2,4-D. Dicamba and/or 2-4d should be allowed by special arrangement (similar to 2,4-D in mitigated agreement) in case alternatives provided are not successful. Dicamba and 2,4-D may be critical to the successful management of Leafy Spurge, Whitetop, and Rush Skeletonweed. Leave flexibility open for each forest to make decisions on application methods etc. Alternative B is unacceptable.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p> <p>The Proposed Action makes available one or more herbicides that will control every invasive plant identified as a hazard to PNW National Forests, including those mentioned in this comment.</p>

Table 23. Comments and Responses about Standard 16	
COMMENT	RESPONSE
<p>Additional application techniques are needed for triclopyr to allow for aquatic broadcast applications in aquatic situations for control of watermilfoil species. No other herbicide on the list will give control of this very invasive group of aquatic invasive plants. Sethoxydim has a good fit in cropland but has a very narrow weed control spectrum for wildlands (Forest, rangeland, non-crop). Of the herbicides listed in No Action and Alternative B, there is not an herbicide that can selectively remove a variety of broadleaf invasive plants from a variety of non-target broadleaf plants or remove a variety of grass invasive plants from a variety of non-target grass plants. There is also no low active ingredient herbicide or soil active herbicide. Loss of any of the four herbicides to add another herbicide that would fill the control voids would result in creating new control voids, where the tools would be lacking for an effective IPM program. Limiting the herbicide list to three modes-of-action/four products will strongly encourage: " a shift in plant species to species only tolerant to these four herbicides. " encourage the development of resistant type weed species. " result in greater herbicide use and weed spread because of the lack of effective control." Invasive plants not controlled effectively by other means or these four herbicides will reduce overall forest biodiversity. Expanding the list to five modes-of-action /10 active ingredients is a great improvement. It allows for best vegetation management practices to be implemented. Low active ingredient herbicides are included reducing the herbicide load to the environment. Having the expanded list will allow for using the most effective herbicide towards the targeted weed which will result in: " Less herbicide applications" Faster regeneration of the treated area" Less injury to non-target plants" Ability to use herbicide that have a no-effect level on insects, birds, mammals and amphibians" Least risk to humans" Lowest cost due to reduced number of applications and quickest control" Little effect on land use due to faster land recovery" Increased biodiversity. The addition of diflufenzopyr + dicamba is needed to further reduce use of chemicals in the Proposed Action.</p>	<p>The control of submerged aquatic invasive plants is beyond the scope of this action.</p> <p>Chapter 4.2 displays the estimated effects of the alternatives including qualitative differences in efficacy of treatment options between Alternatives B and C based on the availability of different suites of herbicides. Diflufenzopyr is an emerging technology for which effective application techniques are still under development, including data on efficacy in various mixtures, application rates, and nontarget effects in field applications. It may be considered in the future if it complies with DEIS standards for evaluating risks of mixtures, once studies are sufficient to conduct a complete FS risk assessment.</p>

Table 23. Comments and Responses about Standard 16	
COMMENT	RESPONSE
<p>The chemical list in Alternative B is severely lacking, giving no control option, with or without IPM control methods for deep-rooted perennial species including whitetop, hairy whitetop, bindweed, yellow nutsedge, Dalmatian toadflax, butter and eggs, leafy spurge, babysbreath, dyer's woad, reed canarygrass, broadleaf bamboo and Japanese, Himalayan and giant knotweed and numerous others (saltcedar, phragmites) that could be introduced in to the forest system. Alternative B also does not allow for long-term control or soil pre-emergence control (more effective and selective than postemergence control methods) of annual and biannual species including common crupina, teasel, kochia, Russian thistle, medusahead, Ripgut brome, and cheatgrass. Clopyralid is a narrow spectrum growth inhibitor and will give little aid to an inclusive wide spectrum invasive weed management program. Glyphosate, although wide spectrum, is also a non-selective herbicide. Glyphosate can require numerous annual to tri-annual applications at high rates to control deep-rooted perennial weeds. During these applications, desirable plant composition is continually decreased. In infested areas with no desirable species, restoration is delayed due to the number of glyphosate applications needed to exhaust the root system and seed source of the invasive plant. Overall use of triclopyr would be limited by the application restrictions.</p>	<p>The effectiveness of the herbicides included in Alternative B are discussed in Chapter 4.2. Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>Treatment: Adopt the standard for Alternative D. 2-4,D and Triclopyr are very effective, economical herbicides and with the restrictions you will have in force in addition to label requirements, there should be little risk. Please note that Garlon 3A is approved for aquatic uses and may be used within the stream buffer zones for noxious weeds. 2,4-D is the most common and effective herbicide sold over the counter for yard and garden use.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>Invasive aquatic weeds have the potential to impact our streams, lakes, and reservoirs. Directly impacting several federally listed aquatic species. The proposed herbicide list contains three chemicals that have an aquatic label, if the target weed cannot be controlled by one of these, management is essentially impossible. There are several 2,4-D formulations that are labeled for aquatic application. This is by no means implies that 2,4-D will control all aquatic infestations but having the option to use it will increase the likelihood that control can be achieved. Invasive weed management in the riparian area is a very difficult task for several reasons. The proximity to water being the foremost. 2,4-D will give managers another tool to manage weed infestations in the riparian area.</p>	<p>The control and management of submerged aquatic invasive plants is not included in the scope of this EIS. To date, reported occurrences of these aquatic invasives on PNW Region National Forests has been very limited, and no control has been initiated. NEPA analysis of infestations would occur at the project level if a need for their control were identified in the future.</p>
<p>Give the local manager the tools he needs to achieve positive results. Limiting which chemicals are available will not reduce the potential ecological damage. Only proper chemical application can reduce the potential for harmful ecological consequences. We are very aware that there will be some collateral damage from herbicide use, but the potential for serious ecological damage exists when nothing is done or the improper management is applied to the problem.</p>	<p>This will be considered and the rationale for the decision will be published in the Record of Decision. The effectiveness of alternative suites of available controls and associated Regional standards is displayed in Chapter 4.2, and potential environmental effects are displayed in Sections 4.1, 4.3, 4.4, 4.5, and 4.7.</p>

Table 23. Comments and Responses about Standard 16	
COMMENT	RESPONSE
<p>2,4-D and Dicamba can be very cost-effective depending on the application rate and target species. With shrinking budgets and rising application costs, eliminating an inexpensive herbicide has the probability of reducing the number of infestations or acreage treated annually. The one two punch of 2,4-D and Dicamba are growth regulating herbicides readily absorbed and translocated from either roots or foliage. These two chemicals are used largely for noxious weed control on County right of ways. 2,4-D and Dicamba have been commonly used by millions of homeowners and landscapers in landscaping situations for many years.</p>	<p>The effects of invasive plant management program costs and projected treatment for a fixed budget are displayed in Chapter 4.6, and effectiveness with and without these 2 herbicides (Alternatives D and Proposed Action, respectively) are displayed in Chapter 4.2.</p>
<p>Standard 16 and the availability of a selective phenoxy herbicide needs attention and amended to allow for more effective and efficient management of invasive brush species (Cytisus, Ulex, and Buddleia) in silviculture practices of Northwest forests.</p>	<p>The effects of alternative invasive plant management program costs and effectiveness with and without the phenoxy herbicide 2,4-D are displayed in Chapter 4.6 and 4.2. All alternatives contain one or more herbicides that are effective against invasive brush species</p>
<p>The EIS should clarify the process for the adoption of new chemicals both at a regional level and on a forest level. The region should take leadership in tracking and evaluating new products and for performing the appropriate risk assessments to make them available to the Forests.</p>	<p>Standard 16 addresses the process for adding new herbicides and herbicide mixtures.</p>
<p>The "No Action" alternative includes dicamba and 2,4-D (the latter as a last resort), whereas the "Preferred Action" alternative prohibits their use altogether. The document does recognize that elimination of these chemicals has the potential impact of increasing the risk of developing herbicide resistance among target species (due to over-reliance on one or two herbicides in the same family). The rationale is that these two chemicals, in a worst case scenario, would have unacceptable affects on wildlife. However, the EIS does not show that this worst case could indeed ever occur, or how it might be prevented from ever occurring, short of total elimination of use of these two herbicides. If on a particular Forest or District, the worst case scenario is quantitatively probable, then the decision to prevent all use of these two chemicals should be made at that level and not for the entire Region. If there are warranted concerns for potential overuse of these two herbicides (2,4-D and dicamba), a better approach would be to place restrictions on their use, such as the following: Selection of the specific treatment or combination of treatments will not be based solely on lowest cost, but on an integrated approach of what is most effective in the long term on the target weed in the environment in which it is growing and the associated vegetation. Herbicides are most effectively used as part of an integrated program or as a "first attack" on newly discovered infestations, preventing seed production/dispersal, thus containing the weed and increasing the chances for local eradication. They are least effective when used without any associated treatments or prevention or management activities to favor the desired plant community.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p>

Table 23. Comments and Responses about Standard 16	
COMMENT	RESPONSE
Reasons for including the full range of herbicides:1) Eliminating 2,4-D and dicamba reduces the number of options for control of given weeds. For example, herbicides recommended for use on Dalmatian toadflax (PNW Weed Management Handbook) are dicamba, picloram, picloram+2,4-D, and chlorsulfuron (Idaho and Washington only). Under the proposed alternative, the only herbicide option in Oregon is picloram alone. This needlessly eliminates options that may be more appropriate for certain situations, especially because picloram should not be used where it can leach to nontarget locations. It also has a longer soil residual, which might make it less desirable if the target species is intermingled with susceptible species.2) Detrimental effects from too heavy reliance on picloram and clopyralid on legumes could be mitigated by use of 2,4-DB and non-residual and short-residual chemicals (2,4-D and dicamba). Not that they would be used in every case, but there may be situations where their use would be advantageous.3) These two herbicides would reduce risk of developing herbicide resistance in target species, by having more options for rotating different chemical families.4) Dicamba and 2,4-D are among the herbicides with lowest risk for developing resistance in target species.5) In some cases, adding 2,4-D in a mix with one of the other approved herbicides greatly increases the effectiveness and allows a lower rate of application, which not only decreases costs, but environmental effects as well.6) Use of a lower cost herbicide may free up more money to be spent on use of native species in restoration work, if there is a fixed budget for a given project.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision. Additional analysis of the potential for development of herbicide resistance in invasive plants for the alternatives is added to Section 4.2 in the FEIS.
I believe that toxic herbicides should only be used as a last resort. I don't think that 2-4D should be implemented at all.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
I urge the USFS to explore alternatives to synthetic herbicides, such as cultural controls, plant competition, and organic herbicides.	All alternative follow an integrated weed management approach that encourages the use of a variety of methods. See Chapter 2.3.
The Proposed Action provides for the use of newer herbicides with different, and in many cases, improved and/or more selective modes of activity. This is commendable. I would strongly suggest that 2,4-D and dicamba be included as they are in Alternative D. They are both still very effective when used with proper expectations, are completely safe when used according to label, and are cheap. However, I understand their exclusion from the Proposed Action, as they carry a lot of emotional baggage from the 1970's, and thus may not be acceptable to the uninformed public.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
As to the major issue - herbicide use - we support the prudent application of the types of chemicals listed in Standard 16, Proposed Action. We also support the addition of new, approved herbicides particularly those that are specific to the target species. As an environmental organization we generally do not favor the use of chemicals in the forest, but we recognize the futility of controlling invasive plants without herbicides, indeed the Forest Service is late in preparing this document and taking action against this massive problem.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.

Table 23. Comments and Responses about Standard 16	
COMMENT	RESPONSE
<p>We recommend against the use of the triazines Chlorosulfuron, Metsulfuron methyl, Sulfometuron methyl . The triazines are extremely resistant to degradation, more so when they enter ground water. Furthermore their narrow range of effective to phytotoxicity will increase unintentional non-target mortality, and harm at-risk populations of endangered fish dependent on cover, shade and bank stability. As the EIS acknowledges, these are new herbicides with potentially unknown effects in ecosystems. I am currently working with Washington State Department of Agriculture to try and explain mortality of conifers which appears to be a synergism between road salt and several cocktails which use different formulations of this class of chemicals. We recommend against the use of hexachlorobenzene (HCB) contaminated pesticides Chlopyralid and Picloram. These should only be used in restricted-use permits. We recommend against the use of pesticides containing nonylphenol polyethoxylate (NPE) or tallow amines and other surfactants which has been demonstrated to change the sex ratio and migratory imprints of anadromous fish, or in the case of polyethoxylated tallow amine, to increase mortality of fry (see Risky Business for a discussion). We recommend against the use of Imazapyr since it is a more selective congener of Imazapic. We recommend against the systemic herbicide Triclopyr. Its toxicity to woody species, higher toxicity in wet environments, and likely toxicity to a large number of mycorrhizal species indicate that it is too risky to use until more information becomes available. Because it is systemic, its ultimate environmental fate or that of its degradation products may bioaccumulate over time. We recommend against the use of Sethoxydim, which does not appear to have very much information and appears to be an experimental chemical with large potential for accidents (inhibition of lipid synthesis could impact other species). Fate of metabolites is likely unknown.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p> <p>The respective FS risk assessment reviews available scientific studies to evaluate the environmental and nontarget hazards associated with each chemical considered in the range of alternatives. Exposures, environmental fate and risks are evaluated in the risk assessments, synthesized by alternative and compared in the Specialist Reports to the EIS, and summarized in Chapter 4 of the DEIS.</p>
<p>Avoidance of use of higher toxicity herbicides such as picloram, 2,4-D, dicamba, triclopyr and other herbicides consistently showing greater likelihood of harm to listed species and amphibians in DEIS tables such as clopyralid, sethoxydim, sulfometuron methyl (table 4-41) and in addition to these, for human health effects: formulas containing NPE, glyphosate (also re: fish & amphibians), chlorsulfuron, imazapic (see tables 4-17 through 4-28.) Another programmatically appropriate means of preventing many worst case scenarios and more significant harm that was not analyzed in an alternative in the DEIS is the complete avoidance of aerial and broadcast spraying. We ask that none of the above listed herbicides be accepted for use in Region 6 and that both aerial spraying and broadcast ground spraying be prohibited for all herbicide applications.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p> <p>The respective FS risk assessment reviews available scientific studies to evaluate the environmental and nontarget hazards associated with each chemical considered in the range of alternatives. Exposures from each application method, environmental fate and risks are evaluated in the risk assessments, synthesized by alternative and compared in the Specialist Reports to the EIS, and summarized in Chapter 4 of the DEIS.</p> <p>The rationale for not analyzing in detail an alternative that prohibits aerial application of herbicides is displayed in Chapter 2.7.</p>

Table 23. Comments and Responses about Standard 16	
COMMENT	RESPONSE
More information is needed on clopyralid and sethoxydim for us to assess their relative risks. We support avoidance of all the other herbicides proposed to be prohibited from use under Alt. B, including 2,4-D, Picloram, Dicamba, sulfonyleurea herbicides and acetolactate synthase-inhibiting herbicides.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision. The FS risk assessments review the available scientific studies, identify any missing information relevant to FS applications, and discuss the importance of missing information and any additional uncertainty factors used in risk estimates to account for missing data,
What is not clear from the EIS document is the manner in which herbicide selection and the use criteria of selected products are to be actually used.	The Forest Service will use available published information and local experience to determine treatment methods. Appendix N provides a link to the document, "Common Control Measures for Invasive Plants of the Pacific Northwest." This document is available on request for those without internet access. The document contains information about effective treatments for known invasive plant species across the region.
Declaring any practice a "Tool of Last Resort" is not an effective strategy. We recommend excluding such language from the alternative that is selected for adoption. Too often, such language actually means that infestations will be studied, and actions delayed, until its too late for any tool, even the "tool of last resort" to be effective. We noted above that 2,4-D is designated a "tool of last resort" in the current direction. Yet, it has not been used for years. We had Forest Service resource managers tell us, during the DEIS development and review process, that they did encounter situations where 2,4-D would have been the best treatment option for certain infestations. But, given all of their other duties, they could not jump through the additional procedural hoops put in place by the "last resort" designation, and so that active ingredient was effectively made unavailable to them.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.
In Table 2-5 under the Proposed Action it says that additional herbicides may be added in the future at either the Forest Plan or project level through appropriate risk analysis and NEPA/ESA procedures. Further, FS/SERA risk assessments are addressed in Chapter 3-90 by the DEIS and the addition of new herbicides is addressed in Standard 16. This is confusing. The process of adding additional products/herbicides should be discussed further in the ROD. We suggest adding a table or diagram to illustrate the analysis process and what is required when adding additional herbicides.	The process for adding additional herbicides in the future is discussed in Standard 16: "additional herbicides may be added in the future at either the Forest Plan or project level through appropriate risk analysis and NEPA/ESA procedures."
Standard 16 - Please consider adding some formulations of 2,4-D to the herbicide tool list. Thank you for allowing all application methods including aerial application.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.

Table 23. Comments and Responses about Standard 16	
COMMENT	RESPONSE
Since it appears other EIS documents will tier from this one before adoption of new strategies can reach the ground, it does not make sense to restrict tools at this level.	Forest Supervisors always maintain the option of adding additional herbicides in the future at either the Forest Plan or project level through appropriate risk analysis and NEPA/ESA procedures.
Use of 2,4-D should be left in the tool box as a "tool of last resort" (see comment 5 [comment 3 in CAET] below) in order to allow cooperation with other state and federal agencies that continue to use the herbicide. While we agree that there are few if any scenarios where 2,4-D is needed over other herbicides, leaving it in the tool box until such time as other agencies decide not to use it will facilitate better cooperation in weed management. We would not anticipate the Forest Service initiating its use, but if a neighboring landowner was going to use the herbicide and some drift could be anticipated, this would allow spraying to occur up to the boundary and/or allow some cost effectiveness decisions to be made.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.

Standard 17: Reduce herbicide use over time

Most respondents, representing preservation and recreation/conservation organizations, a federal regulatory agency, and members of the public, supported Alternative B’s commitment to a reduction of herbicide use over time. Some questioned how this would be enforced. In response to these comments, the Forest Service clarified the objective of reducing herbicide use over time and included a decision protocol for the Proposed Action in the FEIS so that managers can demonstrate their rationale for use of herbicides over other methods.

Table 24. Comments and Responses about Standard 17	
COMMENT	RESPONSE
Support of Proposed Action Standard #17. Herbicide use as a tool should never be singled out as a last resort as in Alternative B. Proper integrated vegetation management will always result in greater control than any single tool. Restricting the use of a tool may mean greater use of another tool that can cause control measures to be needed for a greater length of time. Greater use of these other tool, such as mowing, burning, exotic animals or insects, and cutting or digging can result in undesired results such as species shift, wildfires, injury to desirable species, erosion, and degradation of water quality. There is a risk to every control tool. The best way to reduce chemical use is to use best-known control on established invasive plant populations AND improve prevention and early detection/rapid response.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision.

Table 24. Comments and Responses about Standard 17	
COMMENT	RESPONSE
<p>An important objective of the proposed alternative is to "reduce reliance on herbicide use over time in the Region." (DEIS 2-15) This objective is an integral part of the Desired Future Condition: "the need for invasive plant treatment is reduced due to the effectiveness and habitual nature of preventative actions, and the success of restoration efforts." (DEIS 2-14) As currently drafted, there are no standards in the proposed alternative to address this objective. Language must be added so that this important concept is not omitted.</p>	<p>Standard 17 has been rewritten to help contribute to meeting Goal 3 and Objective 3.2.</p>
<p>NOAA Fisheries is concerned that the pre-2004 Standard #17a has been unnecessarily weakened, causing risks from herbicide exposure to listed fish and their habitat to be continually elevated. The pre-2004 draft Standard #17a required that herbicide use be reduced over time, as consistent with long-term site goals. While that concept is found as an objective of the DEIS, and in the No Action alternative inventory and monitoring requirements, reference to a reduction of reliance on herbicides over time has been removed from the Standards. The Objective relates solely to the Goal of protecting of human health. NOAA Fisheries is concerned that without a Standard specifically designed to reduce herbicide use over time as a means to protect ecosystems, this concept will not be implemented in future Forest (either individual Forest or sub-Regional) invasive plant management actions. Without such assurance, the ESA section 7 consultation would need to analyze the risk to threatened and endangered species and their environment from the standpoint of the highest allowable levels of herbicide over the life of the consultation rather than based on reduced herbicide use over time. NOAA Fisheries recommends reinstating language in the Standards acknowledging a reduction in use of herbicides over time.</p>	<p>Standard language that directs the reduction in use of herbicides over time is included in Alternative B, Standard 17.</p>
<p>Standard #17: The Proposed Action has no binding language requiring a reduction in the use of herbicides over time, and no language encouraging the use of non-chemical methods where possible. Chemical herbicides can be a valuable tool in fighting invasives; however, they also can have significant detrimental impacts, and their use should be minimized whenever possible. We support the stronger language in Alternative B, calling for a long-term reduction in the use of chemical herbicides.</p>	<p>Standard 17 has been re-written for the Proposed Action to include language that requires the consideration of non-herbicide treatments and documentation of the rationale for not selecting non-herbicide treatments.</p>
<p>Please continue supporting the US Forest Services' commitment to reducing reliance on use of herbicides to combat invasive plants. Herbicides used at the lowest effective application rate should be the last resort to fight [invasive plant] spread.</p>	<p>Objective 3.2 addresses the reduction in herbicides in the Region over time; plus, Standard 17 has been re-written for the Proposed Action to include language that requires the consideration of non-herbicide treatments and documentation of the rationale for not selecting non-herbicide treatments.</p>

Table 24. Comments and Responses about Standard 17	
COMMENT	RESPONSE
<p>The Forest Service made an excellent decision two decades ago with the commitment to reduce herbicide use. This recognition that weed invasions are best controlled using techniques that are for the long term health of our forests was the right one. Please don't undo a great insight.</p> <p>It is also very important to reduce reliance on herbicides, as they can have profound adverse impacts on various species including humans.</p> <p>Herbicide use costs money and degrades our forest lands and water quality. The Forest Service should commit to reducing herbicide use by a measurable amount.</p>	<p>Objective 3.2 addresses the reduction in herbicides in the Region over time; plus, Standard 17 has been re-written for the Proposed Action to include language that requires the consideration of non-herbicide treatments and documentation of the rationale for not selecting non-herbicide treatments.</p>

Standard 18: The use of adjuvants

Several respondents called for the public disclosure of adjuvants required in Alternative B. One respondent said that the Proposed Action was too restrictive: “Limiting adjuvants to ones already tested and described in FS documents is backward looking and inflexible.” These comments did not result in any substantial changes to the FEIS.

Table 25. Comments and Responses about Standard 18	
COMMENT	RESPONSE
All "inert" ingredients should be publicly disclosed.	This concern is addressed in Standard 18.
Without information on the identity and effect of an herbicide formula's "inert" ingredients (which are often toxic in themselves and may pose unknown hazards upon combination with the formulas "active" ingredients or when in contact with fire or water), no knowledgeable assumptions about the full risks of that herbicide formula's use can be made and a Finding of No Significant Impact or of "acceptable risk" can not be made justifiably. Therefore the Forest Service should not be allowed to use any herbicide formulas for which the "inert ingredients are not disclosed and their potential impacts are not analyzed, including, but limited to, Garlon formulas ("Garlon 5A", "Garlon 4" and "Remedy").	Standard 18 accomplishes this goal by ensuring that inert ingredients are assessed for their potential effects along with active ingredients.
Standard 18: Does this standard require adjuvants to meet the same standards that are required for herbicides (FS/SERA Risk Assessments)? Is there a process for adding adjuvants in the future and how difficult will it be to add new products? Adjuvant formulations change frequently and different formulations fall in and out of favor. Specific formulations can be difficult to obtain at times. If the proposed standard requires risk assessments for adjuvants, the DEIS should provide a list of approved adjuvants for review.	Standard 18 requires that only adjuvants and inert ingredients that are assessed in herbicide risk assessments be used in invasive plant projects. These assessments may be updated as needed for new adjuvants.
Treatment and Restoration Standard 18. Limiting adjuvants to ones already tested and described in FS documents is backward looking and inflexible. For example, Agri-dex, a surfactant that came on the market in 2004 has much lower toxicity than the widely used LI-700. This limitation prevents managers from accessing the best, lowest risk tools available to them. There is a need to define the future FS risk assessment process to review new products in a timely fashion	Standard 18 requires that only adjuvants and inert ingredients that are assessed in herbicide risk assessments be used in invasive plant projects. These assessments may be updated as needed for new adjuvants.

Table 25. Comments and Responses about Standard 18	
COMMENT	RESPONSE
<p>Changes required so that Forest Plan direction will meet Goal 3, objective 3.2 and objective 4.2 [add wording in CAPS to Standards 12, 18, and 19]</p> <p>Use only adjuvants (e.g. surfactants, dyes) and inert ingredients reviewed in Forest Service hazard and risk assessment documents such as SERA, Inc., 1997a, 1997b; Bakke, D. 2002. FOR EACH HERBICIDE APPLICATION PROJECT CONDUCTED UNDER THIS EIS, PUBLICLY IDENTIFY ALL INGREDIENTS IF SUCH DISCLOSURE IS EITHER ALLOWED BY THE PRODUCT'S MANUFACTURER OR IF THE IDENTITY OF THE INGREDIENT IS REQUIRED TO BE DISCLOSED UNDER THE FREEDOM OF INFORMATION ACT. An important part of meeting Goal 3 with respect to herbicide applications is for health professionals to have quick convenient access to ingredient information so that they can correctly treat any patient whose acute or chronic illness may have been caused or exacerbated by herbicide exposure. The confidentiality of the ingredients in herbicide products is a complex legal issue, but Region 6 can easily make a commitment to public disclosure of as many ingredients as possible.</p>	<p>The suggested language was considered but not adopted in any alternative. The suggested language does not add any substance to the standard. Alternative B addresses the spirit of the comment and its wording may be selected in the final decision.</p>

Standard 19: Reduce effects to water quality and aquatic biota

Several respondents called for more definitive language in this standard, offering suggestions for the specifics of how sensitive situations are identified, how to respond in the event of water contamination, and how to avoid impacts to breeding amphibians and other sensitive species. Standard 19 was amended in all action alternatives to clarify its intent in response to these comments.

Table 26. Comments and Responses about Standard 19	
COMMENT	RESPONSE
<p>Treatment and Restoration Standard 19. Addition to proposed action - time applications to limit impact on breeding amphibians and other sensitive species.</p>	<p>Standard 19 in the Proposed Action has been re-written to specifically mention amphibians, aquatic biota, and terrestrial animals.</p>
<p>The Proposed Action is better than B. Overall prohibition of broadcast spraying in riparian reserves prescribed in Alt B. is unacceptable. "Known habitat" is too poorly defined. These measures are also already required by the labels and law (clean water act) and are therefore redundant.</p>	<p>Your comment will be considered and the rationale for the decision will be published in the Record of Decision.</p>
<p>Rely on soil scientists and biologists to identify sensitive situations, and weed control and herbicide specialists to prescribe treatment methods and which herbicides are appropriate for the sites.</p>	<p>Forest Service Manual 2080.5 already requires an interdisciplinary approach for selecting treatment methods. See Chapter 2.3.</p>

Table 26. Comments and Responses about Standard 19	
COMMENT	RESPONSE
The statement on p. 2-15 that water should be avoided from contamination should state that (1) chemicals will not be mixed on National Forests, and (2) any water contamination will be cause to immediately close the contract with an applicator and assess corresponding damages.	Standard 15 has been updated in the FEIS to address these concerns. Standard 15 now requires that projects include an herbicide transportation and handling plan to ensure that chemical mixing is done in appropriate areas and accidental spills are cleaned up promptly.
The statement on page 4-106 in the second paragraph of the "Direct and Indirect Effects" section that "Standard #19 in all alternatives would preclude the use of glyphosate formulations that could affect fish in riparian areas." This language appears to imply that Standard #19 is meant to prevent the use of any herbicide in any situation that could result in water concentrations that could affect fish. This is inconsistent with NOAA Fisheries understanding of how Standard #19 was meant to be interpreted. Does this statement need to be reworded for clarification?	Standard 19 in the Proposed Action requires managers to consider the potential hazards associated with herbicides and the sensitivity of a site when selecting a particular chemical for use. The one formulation of glyphosate that may harm fish would be avoided in any case where fish may be affected. The formulation of glyphosate that may affect fish could be appropriate for use away from fish bearing streams.
Changes required so that Forest Plan direction will meet Goal 3, objective 3.2 and objective 4.2 [add wording in CAPS to Standards 12, 18, and 19. To reduce or eliminate direct or indirect negative effects to TERRESTRIAL ANIMANS, NON-TARGET NATIVE PLANTS, water quality and aquatic biota form the application of herbicide, use site-specific soil characteristics, proximity to surface water and local water table depth to determine herbicide formulation (e.g. use of aquatic labeled products), size of buffers needed, it any, and application method and timing. MINIMIZE APPLICATION OF HERBICIDES AND PROHIBIT BROADCAST SPRAYING IN RIPARIAN RESERVES AND IN KNOWN AQUATIC AND TERRESTRIAL AMPHIBIAN HABITAT, INCLUDING BREEDING, REARING, AND OVERLAND DISPERSAL AREAS. AVOID APPLICATION OF HERBICIDES WITH ADVERSE EFFECTS ON AQUATIC SPEICES AND AMPHIBIANS. An important objective of the proposed alternative is to "protect native plants and animals from negative effects of both invasive plants and applied herbicides." (DEIS 2-15) In fact, this objective is critical to achieving the Desired Future Condition of a "full suite of native organisms." As drafted in the proposed alternative, Standard 19 fails to provide for protection of important components of this "full suite." According to the DEIS, over 8,000 acres will be treated with herbicides that have a "higher potential to harm non-target plants," (DEIS 4-35) almost 9,000 acres will be treated with herbicides that "could result in harmful doses to birds and mammals," (DEIS 4-54) and one herbicide is approved that "may harm amphibians." Standard 19 must require that these Forest Plan amendments address these hazards in order to meet Objective 4.2. Also unless the management objective of limiting direct and indirect negative effects to terrestrial animals and non-target native plants is included in this standard, such an objective will not have been included anywhere in the entire DEIS.	Standard 19 in the Proposed Action has been re-written to specifically mention terrestrial animals, non-target plants, amphibians, and other aquatic biota

Standard 20: Reduce or eliminate impacts to proposed and listed species and their critical habitat

The comments to Standard 20 did not lead to any substantial changes in the FEIS.

Comment	Response
Standard 20 is already covered by ESA requirements.	Standard 20 provides elements specific to invasive plant treatment that clarify how ESA requirements will be met.
The Standards do not provide environmental protections through the selection of the least impacting treatment method or type of herbicide for invasive plant treatments. Employing a binding standard regarding the use of herbicides with the least toxic effect when all other project attributes are equal, could ensure consistency and assurance of use of avoidance and/or minimization techniques.	The complexity of toxicology and balancing the risks of invasive plants against the risks of treatment precluded the inclusion of a standard that requires the “least toxic” effect. Project level environmental analysis will ensure that herbicide use is appropriate and that environment effects are minimized to the extent possible.
Nest sites and post-fledgling areas of the following species should be avoided (re: disturbance) during reproductive seasons: Bald eagle, Northern spotted owl, Marbled murrelet and Snowy plover. (See Table 4-42).	These design criteria would be established at the project scale.

Standard 21: Buffers

Several respondents suggested modifying the Proposed Action to allow for treatment within the 300-foot buffer, if adjacent landowners authorize it. Standard 21 has been re-written in all action alternatives in the FEIS to respond to these comments.

Comment	Response
Treatment and Restoration Standard 21. Alternative B preferred.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision
Proposed Action could preclude cooperative projects with private landowners for some treatment options. Allow for adjacent landowner cooperation when treating within the 300 feet boundary. Our suggested change is to make an exception to 300 feet buffer for private landowners with consent from adjacent property owner or for cooperative projects with multiple adjacent ownerships. Allow for seamless treatments across ownerships in cooperative projects. In many cases the adjacent landowner will want the invasive plant treated up to or beyond the ownership boundary.	Standard 21 has been re-written to include the language suggested. Decisions on buffers for culturally significant plants and wildlife resources are most appropriately made at the site-specific project level.
Either the Proposed Action or Alternative B appear appropriate, provided that alternative controls are used in the buffer areas. These may include mechanical control, spot spraying, spraying in off seasons and ground spraying.	Your comment will be considered and the rationale for the decision will be published in the Record of Decision

Table 28. Comments and Responses about Standard 21	
Comment	Response
No broadcast spray in riparian or amphibian habitat.	No broadcast spray in riparian or amphibian habitat is included in Alternative B.
Riparian buffers analysis needed. The EIS should have provided an analysis that separated out riparian buffers. Because herbicides are limited in riparian areas to aquatic herbicides the affects of all alternatives will be different if aquatic herbicides are not used. In addition, the known toxicity to fish from common surfactants such as tallow amine and nonoxy phenol will be higher if riparian areas are buffered from herbicides. Finally, Washington state has a protective riparian buffer in place right now, which would place constraints on the EIS.	Standard 19 requires that herbicide formulations consider proximity to water and other site conditions to ensure that aquatic organisms are protected. The distance from streams where this would apply varies by site.

Standard 22: Municipal watersheds

No comments specifically addressed this standard.

Herbicide Use

Many people commented on herbicide use, including comments about specific formulations of herbicides. There is substantial overlap between these comments and the comments about Standard 16 and about the “merits of alternatives.”

Commenters expressed opinions both for and against use of particular herbicides. The rationale for the final suite of herbicides selected will be in the Record of Decision.

These comments led to some changes in the wording of the standards. A standard has been added to the FEIS to ensure that caution is used when using herbicide mixes. Additional information was provided regarding the use of herbicides and the potential for target invasives to develop herbicide resistance.

Table 29. Comments and Responses about Herbicide Use	
Comment	Response

Table 29. Comments and Responses about Herbicide Use	
Comment	Response
All potential uses of more than one herbicide mixed together (with multiple active ingredients) should be disclosed, analyzed for potential effects and be subjected to a risk/benefit analysis within the EIS.	The FEIS includes more information about potential use of chemicals. Standard 16 in all alternatives has been amended to address allowable herbicide mixes. Mixtures of herbicide formulations containing specific active ingredients may be applied where the sum of all individual Hazard Quotients for the relevant application scenarios is less than 1.0. This is a cautious approach based on the Guidance Manual For The Assessment Of Joint Toxic Action Of Chemical Mixtures (US Department of Health and Human Services, 2004).
Contrary to EIS assurances that inert ingredients of proposed use herbicide formulas pose no significant risk, "The material safety data sheet (MSDS) for Garlon 4 (Dow AgroSciences 2000b) specifies that inhalation exposure to Garlon 4 vapors may cause central nervous system effects attributable to kerosene." (Profile p.8 - kerosene is an "inert" ingredient of Garlon 4).	The risks potential health effects associated with kerosene present in Garlon 4 are analyzed and disclosed in the 2003 Triclopyr Risk Assessment.
2, 4-D is another herbicide often used throughout Region 6 and the use of this extremely toxic compound should be immediately stopped throughout the region. This chemical has the same active ingredient that was used in Agent Orange which is likely to have caused, and is still causing, serious health problems to Vietnam Veterans and the people of Vietnam. This compound has been shown to have toxic effects on pollinators under the typical application system (DEIS 4-32).	The suite of herbicides and treatments available is one of the decision points for this EIS – the final decision will consider the trade offs between cost, effectiveness, and potential adverse effects. 2,4-D has not been used in FS PNW Region invasive plant management since 1984.
2,4-D is assessed by its manufacturer as harmless yet the EPA admits it is a carcinogen. But that not enough is known about it to really know if it is a tumor growth factor. Again we are dealing with unknowns.	All publicly available data on the health effects of 2,4-D were reviewed, and screened for relevance. Relevant studies were evaluated by independent PhD scientists (toxicologists) to derive the weight-of-evidence findings on 2,4-D potential health hazards that are used to evaluate the human health risks of alternatives in the DEIS. The findings and estimated health risks are peer-reviewed before final publication.
It is imperative that your final EIS include studies of the herbicides adverse effects supported by research t teams as Tyrone B Hayes University of California - Tel: 510-414-2579. He wasn't even asked for his study of Atrazine, a very important study by the way which would help you make informed decisions about that weedkiller foiled into others.	Neither atrazine nor any closely related herbicides (triazines) are proposed for use in alternatives considered in the EIS. Thus potential effects of atrazine are outside the scope of the analysis and are not considered

Table 29. Comments and Responses about Herbicide Use	
Comment	Response
<p>If the Forest Service is not revealing the "secret" ingredients in pesticides and adjuvant formulations, the public can not comment fully on the DEIS proposing use of such chemicals. The public therefore can not assess the environmental impact, or the validity of the statements made in the DEIS, for that matter of fact, without full disclosure of all the chemicals in the products proposed for use Forest Service is withholding critical environmental information in direct violation of 40 CFR [section] 1500.1(b):40 CFR [section] 1500.1 Purpose.(b) NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.</p>	<p>The DEIS followed accepted NEPA protocols to address incomplete or unknown information. Alternatives were compared and their environmental effects estimated based on peer-reviewed risk assessments. The risk assessments examined EPA Confidential Business Information and potential effects of confidential formulation ingredients. The risk assessments comply with federal regulations that implement FIFRA that require that information obtained with CBI clearance may not be publicly disclosed.</p>

Table 29. Comments and Responses about Herbicide Use	
Comment	Response
<p>The Proposed Action would allow a proven successful control treatment of 1% solution of imazapyr, 1 lb ai/acre, well within the EPA approved rate. Whitetop, Perennial pepperweed and Dyer's woad (<i>Cardaria draba</i>, <i>Lepidium latifolium</i> and <i>Isatis tinctoria</i>)- none of the allowed herbicides under Alternative B will control whitetop or dyer's woad. Annual mowing, several times a year would be needed to manage the weed, and would only slow spread. Biological control will likely not be available because there are many mustard type crops that bugs could cross to and cause economic injury. Dalmatian toadflax and Butter&eggs (<i>Linaria dalmatica</i> and <i>Linaria vulgaris</i>)- None of the herbicides under Alternative B will control these two weeds. Annual mowing will encourage spread by root expansion and encourage a lower growth habit unaffected by mowing. Biological control will reduce spread after 6 to 7 years, assuming the bugs are somehow encouraged to move to new populations. Bugs tend to stay where released if weed population is healthy. Lack of control of Toadflax in the Shoshone National Forest has already caused great economic loss and environmental loss of wild sheep winter range in the Absaroka mountains. The Proposed Action would allow for a 0.188 lbs ae/acre treatment of imazapyr, only needed one time, for initial control with biological control to maintain the population at a no impact level. Medusahead, cheatgrass and Ripgut brome (<i>Taeniatherum caput-medusae</i>, <i>Bromus tectorum</i> and <i>Bromus rigidus</i>) For control under Alternative B an annual or biannual treatment of glyphosate or sethoxydim every fall and/or spring would be needed to contain the weed population. Both these treatments are post-emergence at timings when non-target species would be actively growing and severely injured by the herbicides. This would cause a shift to other weedy plants or severely limit the biodiversity of the plant and animal species in the area. It is unrealistic to believe these weeds could be hand pulled to a no impact level. No biological control is currently available and may not be for over 20 years. Fire further encourages the growth of these fire-loving invasive plants. The Proposed Action would allow for the application of imazapic at 0.023 to 0.188 lbs ai/acre that has proven to selectively remove Medusahead, ripgut brome and cheatgrass from desired vegetation, allow new germination of desirable plants, and give residual control which reduces the number of applications needed to limit the population to a no impact level.</p>	<p>More detail on treatments in regards to specific invasive plant species was added to FEIS Chapter 3 and 4. Appendix N provides a link to the document, "Common Control Measures for Invasive Plants of the Pacific Northwest." This document is available on request for those without internet access. The document contains information about effective treatments for known invasive plant species across the region.</p>

Table 29. Comments and Responses about Herbicide Use	
Comment	Response
<p>Additional analysis should be done to include 2,4-D on the list of herbicides proposed for use with the preferred alternative. There are several points that should be reviewed regarding the benefits of 2,4-D.</p> <ol style="list-style-type: none"> 1. Invasive aquatic weeds have the potential to impact our streams, lakes, and reservoirs. Directly impacting several federally listed aquatic species. The proposed herbicide list contains three chemicals that have an aquatic label, if the target weed cannot be controlled by one of these, management is essentially impossible. There are several 2,4-D formulations that are labeled for aquatic application. This is by no means implies that 2,4-D will control all aquatic infestations but including it on the list of chemicals in the preferred alternative will increase the likelihood that control can be achieved. 2. Invasive weed management in the riparian area is a very difficult task for several reasons. The proximity to water being the foremost. Again the list of proposed chemicals contains only three that can be applied to the waters edge. Including 2,4-D on the proposed alternative's list will give managers another tool to manage riparian infestations. 3. Many invasive plants can develop resistant biotypes when exposed to herbicides. Once this occurs the manager is forced to switch to other chemicals for control. Most herbicides have a limited target species list. Managing a resistant biotype infestation with a limited number of herbicides greatly reduce the manager's effectiveness. 2,4-D is a broad-spectrum herbicide that has a large target species list. By including this chemical on the preferred alternative herbicide list the manager's options when dealing with a resistant invasive weed population will be increased. 2,4-D can be very cost effective depending on the application rate and target species. With shrinking budgets and rising application costs, eliminating a cheap herbicide has the probability to reduce the number of infestations or acreage treated annually. Including this herbicide in the preferred alternative may help those managers that may have limited budgets. We by means are not trying to say that 2,4-D is a cure all herbicide, it has it's limits, drawbacks, and benefits. Our experience tells us that the chemical applied does the harm but the root cause is always the applicator's choice of chemicals, application rates, and timing. We encourage the EIS team to include 2,4-D on the list of approved herbicides. We feel the local manager needs the largest "weed toolbox," including 2,4-D will expand the available "toolbox". 	<p>The management of aquatic invasive plants is beyond the scope of this EIS. Riparian invasives are likely to be controlled with the three aquatic herbicides available in the Proposed Action.</p> <p>The EIS acknowledges that herbicide resistance varies inversely as more herbicides are available for use (Proposed Action and Alternative D). No invasive biotypes are known for which 2,4-D is necessary for control.</p> <p>The Proposed Action avoids 2,4-D because of its more risky environmental and human health profile, and strong public opposition.</p> <p>The rationale for the final decision will be in the Record of Decision.</p>

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The DEIS is lacking needed specific analysis of specific impacts of different herbicide formulas and active ingredients to water quality and extent of potential water contamination at what distance from the application source.	The DEIS considered herbicide effects on water quality from the standpoint of human health as well as from the standpoint of aquatic organisms. The treatment standards require that site conditions including proximity to water and beneficial uses of water (e.g. municipal watersheds, fish habitat) when determining treatment methods.
The DEIS is lacking needed specific analysis of the combined synergistic effects of the use of 1) different ingredients within an herbicide formula and 2) different herbicide formulas used in the same area over time.	<p>Section 5.4 of Appendix Q “Human Health Risk Assessment” discloses accepted scientific principles and analysis for estimating the effects of chemical mixtures, including multiple ingredients within a herbicide formulation, and multiple herbicides applied simultaneously. The rationale for estimating cumulative effects of mixtures is disclosed. Only in those few cases where one ingredient by itself approaches the Hazard Quotient for a toxic effect would the addition of other ingredients pose a risk of exceeding the HQ.</p> <p>Each FS/SERA herbicide risk assessment analyzes the fate of the herbicide in the environment over time. Using decomposition rates, residual herbicide concentrations could be estimated for cumulative effects estimation at the time (at least one complete growing season) of a subsequent herbicide application. As there is always some decomposition over time, the cumulative effects for this last scenario will be less than the effects estimated for simultaneous application of the same two herbicides.</p> <p>The human health and FS/SERA assessments are summarized in the EIS.</p>

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<p>NOAA Fisheries is concerned that the uncontrolled combination of pesticides may pose unintended risks to species and their ecosystem. Pesticides in mixtures can interact with one another and alter the toxicity by additive, synergistic, or antagonistic means. An additive effect occurs when the combined effect of several chemicals is equal to the sum of individual effects of each chemical as if they were alone (Klassen 1986). Synergism, a greater than additive effect, occurs when the combined effect of two chemicals is greater than the sum of the effect of each agent individually (Klassen 1986). Antagonistic effects occur when a mixture contains chemicals that interfere with the action of the other chemical in the mix. Antagonism occurs with chemicals that have different modes of action. When found in mixtures, pesticides with similar modes of action generally interact in an additive manner (Lydy et al., 2004; Faust et al., 2001; Altenburger et al., 2000; Bailey et al., 1997) and occasionally in a synergistic manner (Denton, 2002; Forget et al., 1999; Pape-Lindstrom and Lydy, 1997). Implications of these interactions are not trivial to species or their habitats. Organism responses can be misrepresented and underestimated (mortality, fecundity, behavior, growth, etc.) when analyses are based solely on single pesticides. Without addressing mixture toxicity, it is likely that unintended negative consequences will occur in some locations affected by the proposed action. If the FS proceeds with this uncontrolled combination of herbicide tank mixes, then the effects of all possible combinations on salmonids and their ecosystems should be evaluated through literature searches and subsequent data analyses. This approach highly complicates the Biological Assessment (BA) and Biological Opinion processes under the ESA, and would likely lengthen the NEPA and ESA timelines. NOAA Fisheries recommends that the FS remove the phrase "or more," and limit the list of tank mix options to those combination of formulations that have been analyzed in the existing risk assessments and the open literature and include that list in the FEIS and ESA BA. Additional tank mixes could be employed in the future following appropriate NEPA evaluations and ESA section 7 considerations.</p> <p>Please provide a discussion of how potentially millions of possible combinations of herbicide mixtures are allowed under Standard #16. NOAA Fisheries recommends either fully addressing this complex topic, or changing the Standard to limit the number of mixtures and formulations to that which can be analyzed and discussed.</p>	<p>The FEIS includes more information about potential use of chemicals. Standard 16 in all alternatives has been amended to address tank mixing. Mixtures of herbicide formulations containing specific active ingredients may be applied where the sum of all individual Hazard Quotients for the relevant application scenarios is less than 1.0. This is a cautious approach based on the Guidance Manual For The Assessment Of Joint Toxic Action Of Chemical Mixtures (US Department of Health and Human Services, 2004).</p>

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The DEIS is lacking needed specific analysis of which herbicide formulas, active ingredients and inerts cause exactly what health effects to humans and wildlife species at what concentrations. For instance, I had to guess that picloram and triclopyr are the herbicides that could exceed EPA thresholds for cancer based on the DEIS alone: other health effects are even less defined re: which herbicide causes them.	The disclosure in the EIS is based on complex toxicological risk assessments that are difficult to summarize effectively. Multiple variables combine in risk assessment, not just the herbicide used but the specific formulation, dose, method of application, and other factors influence the results. The authors of the EIS have endeavored to clearly disclose the relative risks and hazards associated with the proposed herbicides.
The DEIS raised concerns that drift from glyphosate could affect long-term sustainability of lichens and bryophytes. Further glyphosate-containing products are acutely toxic to animals, including humans. Laboratory studies have found that all glyphosate containing products include medium term toxicity (salivary gland lesions) long term toxicity (inflamed stomach linings) genetic damage (in human blood cells) effects on reproduction (reduced sperm counts in rats, increased frequency of abnormal sperm in rabbits), and carcinogenicity (increased frequency of liver tumors in male rats and thyroid cancer in female rats) (Cox 1998). People who were occupationally exposed to glyphosate herbicides had a threefold higher risk of hairy cell leukemia, a form of the cancer non-Hodgkin's lymphoma. In addition, glyphosate has been associated with an increase in miscarriages, premature births, and attention deficit disorder. We are concerned that the human population and the wildlife will be exposed to the same health risks.	The FS/SERA risk assessment for glyphosate (2003) identifies the broad susceptibility of non-target plants to glyphosate. This was discussed in DEIS Chapter 4.3. The studies cited in Cox, 1998 were considered in the FS/SERA risk assessment for glyphosate (2003), and incorporated into the DEIS effects analysis. These studies are evaluated within the context of the large body of data on glyphosate effects, and where studies appear sound, they are considered in developing the lowest NOAEL exposure limits and the subsequent characterization of hazard and risk in the FS/SERA risk assessment. This information would be considered in site-specific projects that propose to use glyphosate.
I submit alarming evidence about the possible effect of Round-up increasing the deadly fungus FUSARIUM in soils. (See attachment B- Monsanto's herbicide Roundup linked to deadly fungus.) If it can happen in crops it can perhaps happen in forests. Please address this in you IPEIS. How will you deal with that problem if it arises?	The FEIS has been amended to acknowledge that glyphosate may be an energy source for some soil organisms. Forest soils have much healthier food webs than agricultural soils so fusarium would be less likely to thrive.
The DEIS shows clear and repeated bias toward the use of toxic herbicides and exotic, largely untested biocontrols over the protection of plant and wildlife diversity; soil fertility; water quality; Endangered, Threatened and Sensitive-listed species; rare species; ecological integrity of food webs and inter-species relationships and human health. This bias must be corrected at the programmatic level or all these values are at greater risk due to ill-advised regional direction to Forest Service staff.	The Forest Service attempts to consider and resolve public issues in a non-biased manner. The fact that public comments to the DEIS state that the Forest Service is biased both for and against herbicide use would indicate that the Forest Service approach is balanced.
[The] Journal of Pesticide Reform [states:] "Imazapic is persistent, damaging crops up to 40 months after the application and has chemical properties that make it likely to concentrate water." The same page 10, highlighted in yellow, states it does accumulate in actively growing tissues! Whoever has written up this IPEIS has not done their homework on the potential harm of these herbicides and needs to do so in the final EIS.	The studies cited in the cited journal have been reviewed and incorporated where appropriate in the FS/SERA Imazapic herbicide risk assessment. The concerns raised by the comments are either not supported by the body of scientific literature, or are not expected to result from FS invasive plant treatments within the scope of this EIS.

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Reported half lives for TCP (though its potential effects are not disclosed) range from 8-279 days in 15 soil types. "TMP is another degradation product although it is found less often and in smaller amounts." (Profile p.4) So what are the consequences of human and environmental exposure to TCP and TMP? Apparently these triclopyr degradation products are not even mentioned within the EIS, much less analyzed.	The FS/SERA risk assessment for triclopyr identified any metabolites and degradation products of potential toxicological significance and the DEIS evaluated their potential risks from use of these formulations in FS invasive plant treatments that comply with the standards.
The absence of reported cases of long -term health effects from triclopyr does not mean that there are no long-term effects. Health effects could be experienced by members of the public who had no knowledge that they were exposed to triclopyr (eg. who were exposed to spray drift or consumed contaminated wild edible plants or meat/dairy products from livestock grazing on contaminated forage). Long-term health effects are especially hard to trace back to their source. Such uncertainties should have been discussed within the EIS.	Appendix Q, "Report Human Health Risk Assessment" displays the estimated potential risks to workers and the public, typical and worst-case, for the suite of herbicides and methods for each alternative. The risks are based on Reference doses developed from studies of both short and long-term exposures of mammals to the herbicides, and incorporates any data available from human population studies. The long-term studies and human population studies are intended to account for long-term health effects that may not be immediately expressed or detectable. Finally the Reference dose reduces the threshold dose for potential for toxic effects by at least 99 percent to account for uncertainties such as you describe. The Report also discusses the potential for effects at even lower doses for sensitive individuals in the human population. These findings are summarized in the EIS.
There appears to be no disclosure or analysis of the effects of TCP (3,5,6-trichloro-2-pyridinol), a degradation product of triclopyr, to human health or the environment. This means that triclopyr in any of its formulations should not be used, as there is no way to adequately assess the risks of its use without this information.	All relevant data concerning environmental consequences, human health and ecological risks from FS invasive plant treatment using triclopyr, including those of TCP, are analyzed in detail in the FS/SERA Triclopyr risk assessment (2003) and potential effects were detailed in Appendix Q "Human Health Risk Assessment" and summarized in the DEIS.
What are the potential risks to endangered plant and wildlife species in Region 6 from the use of triclopyr formulations under the alternatives considered?	Chapter 4 of the DEIS described the risks of all herbicides considered including triclopyr to non-target plants and special status species.
An article in Aug. 31, 04 Register Guard quotes your botanist Jenny Lippert as saying you may need to aerial spray herbicide in Eastern Oregon. A June 22, 04 letter from our congressman Peter DeFazio states "the U.S. Congress has banned herbicide aerial spraying on Federal lands." Please make all your staff aware of this legislation. Don't use herbicide poisons on our land!	Congress has not banned aerial spraying on National Forest. Herbicide use is subject to many environmental laws and policies that tend to minimize aerial spraying.

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<p>I am concerned that your analysis has built in additional safety margins on top of theirs [EPA]. You are both federal agencies, and USFS should as such accept EPA safety calculations, and recognize that these products are safe when used as labeled.</p>	<p>The Forest Service is required to fully consider environmental effects of herbicides, even when used as labeled. NEPA requires the Forest Service to consider measures to reduce adverse effects to the human environment.</p>
<p>Herbicides used according to EPA approved guidelines represent the wisest, most cost efficient way to use public funds (tax receipts) for restoring lost and nearly lost precious natural resources.</p>	<p>Newly approved chemicals would need to be evaluated under NEPA for use on the National Forest. The NEPA analysis would tier to and incorporate this EIS as appropriate to avoid redundancy.</p>
<p>We recommend the EIS be written in a manner consistent with the standards the Environmental Protection Agency (EPA) uses in approving a labeled use; not on an individual chemical basis. The EIS should allow newly approved EPA chemicals to be used on an as labeled basis.</p>	
<p>3-86, "Herbicides may control all types of vegetation, or they may kill some types of plants while not affecting other types". This document has been written at a scientific level, however, the above sentence is accurate, however, could be written to sound more scientific/less awkward, i.e. herbicides may be non-selective (controlling all types of vegetation), or they may be selective, selectively controlling only broadleaf or selectively controlling grasses, or very selective in controlling only specific broadleaves or grasses. Or the book could insert a terminology box (i.e. highlighted in gray on 3-85) to explain selectivity.</p>	<p>This paragraph has been edited to read: "...lower concentrations mean smaller amounts of <i>the active ingredients</i> are released into the environment."</p>
<p>Page 3-86 states, "Herbicides may be sprayed from wheeled vehicles with hose sprayers or pump-driven booms using an array of spray nozzles". This sentence is awkward, suggested re-wording. The two most popular methods of applying herbicides via ground vehicles are boom sprayers or hand-gun sprayers. Typically the sprayer pump is powered by an independent gas-powered motor or electric motor. Sprayer pumps are mounted on ATV's, 4WD pickups, and larger vehicles.</p>	<p>The FEIS has been corrected in light of this comment.</p>
<p>Page 4-24, Second to last paragraph. "On the other hand, lower concentrations mean smaller amounts of toxic substances are released into the environment". The word "toxic" seems like a biased exaggeration.</p>	<p>This paragraph has been edited in the FEIS: "...lower concentrations mean smaller amounts of <i>the active ingredients</i> are released into the environment."</p>
<p>[Herbicide spraying] endangers surrounding watersheds, native plant species, wildlife, and most important the health of people living in surrounding communities. Please continue your commitment to refrain from spraying in our national forests.</p>	<p>The DEIS discussed why herbicide use is being considered for invasive plant management in Region Six. However, standards would be adopted in all alternatives to protect watersheds, native plants and wildlife and human health.</p>

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<p>I want to urge you not to resort to spraying herbicides in the national forests. Herbicides may look like a "quick fix" but in reality they only further abuse the forest by harming non-target species, wildlife, the soil and ground water. For the sake of the future health of our forests, please commit to non-herbicide means of controlling invasive plants.</p> <p>I live in a highly forested area and would like to think the air I breathe and the creek I wade in are free of pesticides. But I don't believe it's true. I have neighbors, and what's forested is logged occasionally and sprayed too. I worry about the bees I take care of and my cat and our quality of life in general as part of this beautiful environment that's being unmindfully managed in respect to pesticides. Please continue to keep this reliance to a minimum.</p>	<p>The alternatives vary in their response to public issues about herbicide use. The DEIS took a hard look at the need for and risks involved with herbicide use, and concluded that under certain conditions, herbicide use is appropriate. Rationale for using herbicide would be required under the Proposed Action and non-herbicide methods would also be tried first under Alternative B.</p>
<p>With respect to the National Forests the use of herbicides is an extremely bad idea. I have always noticed that when herbicides are used, noxious weeds of certain types tend to take over the area sprayed within a few years because no herbicide selects for all weeds. The result is that the situation in which one is trying to control weeds because less controllable. Please do not sacrifice our national forests for the sake of very short term gain from herbicide use.</p> <p>The wholesale use of herbicides to control invasive plants is shortsighted at best. The evidence is abundantly clear that pesticides and herbicides lead to long-term environmental and health problems. It makes no sense to me to treat one problem by causing another.</p>	<p>The FEIS further discusses the effectiveness of herbicides in various situations. While no herbicide selects for all weeds, integrated pest management and adaptive management can be applied to treatment areas to ensure that desired conditions are attained.</p> <p>None of the alternatives advocate "<i>the wholesale use of herbicides.</i>" Rather, an integrated approach to prevention and treatment is advocated.</p>
<p>Rare use of aerial spraying needs to be emphasized. As you know, aerial spraying is highly ineffective as a target method of delivery. Only 13% accuracy has been documented by the Forest Service's own research from the days when aerial spraying of National Forest was more common in the Pacific Northwest.</p>	<p>Under the Proposed Action, Standard 16 would restrict aerial applications for the more powerful ingredients of the sulfonylurea group to mitigate effects from offsite drift. It also restricts triclopyr to selective applications, which will also reduce direct effects to woody species. Alternative B includes greater restrictions. The DEIS acknowledged that without these restrictions, effects on non-target species are more likely. The DEIS stated that the lack of restriction on aerial spraying of the sulfonylurea ingredients and glyphosate in Alternative D is the reason it has "relatively higher potential to harm" non-target species.</p>
<p>Chapter 4-16: [H]erbicide resistance by invasive weeds can be reduced by tank mixing two or more herbicides with different modes of action within the plant. Rely on local expertise of professional applicators, chemical manufacturer representatives, university researchers, and chemical distributor representatives.</p>	<p>Standard 16 has been modified in all FEIS alternatives to address the use of herbicide mixes.</p>

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<p>Error: Chapter 3-88 - Imazapyr does not effectively control blackberries in the Pacific Northwest. I helped do some of the research to get this compound registered and found in tests and in field usage that it does not control blackberries. Glyphosate, metsulfuron methyl, and triclopyr are very effective on blackberries.</p> <p>Error: Chapter 3-89 - Metsulfuron methyl "no effects on most woody species" Comment: This is not true; salmonberry, thimbleberry, elderberry, and blackberries are very well controlled. Significant damage will occur to species such as willow, vine maples, and others as well. Most deciduous tree species are not killed, but may be lightly damaged by this product. Most conifers actively growing will be heavily damaged or killed with the labeled rates of metsulfuron methyl.</p>	<p>The FEIS has been corrected to incorporate this information.</p>
<p>4.2.2 Background / Social Acceptability and Effectiveness Paragraph states management actions should be consistent with prevailing social norms. Although people expressed that use of herbicides is not socially acceptable, use of herbicides is the social norm. Millions of people have their lawns treated by Turf companies that use herbicides to control lawn weeds. Golf courses and places of business use herbicides for maintenance. The majority of food crops are grown with the aid of herbicides. County, State and federal agencies use herbicides for vegetation management on sewage ponds, roadways, etc. Power companies use herbicides to maintain power lines to limit power interruption. Railroads use herbicides to limit fires from sparks lighting vegetation and keep tracks clear. The majority of households have a bottle of Roundup or Weed-B-gone in their garage or shed. As much as people hate to admit it, use of herbicides is a social norm.</p>	<p>Herbicide use may be a social norm but the public continues to express concern about their use on National Forests. These concerns are addressed in the EIS.</p>
<p>4.5.2 Direct and Indirect Effects, Comparison of Alternatives - Risks to Workers and the Public From Herbicides, Paragraph 2: The use of streamside no-spray zones would be detrimental to an invasive plant control program. Streams are a major avenue of invasive plant spread and it is important to eradicate invasive plants in this area. As stated throughout these comments and the EIS, there are invasive plants that can be controlled by no means except an IPM program that includes herbicides, for example Japanese knotweed. In this case, aquatic approved herbicide formulations (imazapyr, glyphosate, triclopyr) should be allowed within any streamside no-spray zone.</p> <p>The EIS needs to recognize that all noxious weeds need to be controlled, even those in riparian areas. Weeds close to water are many times most susceptible to spreading quickly. The label should be used as the limiting factor in where chemicals are used.</p>	<p>The FEIS has been edited to state that avoiding aerial spray in municipal watersheds and using aquatic label herbicides near streams would protect drinking water. Riparian zones would not automatically be off limits to invasive plant treatment. The label is one limiting factor among others (for example, presence of special status species, municipal watershed designation).</p>

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Herbicide Section Final paragraph referring to Table 3-12. In reference to the registered EPA uses, 3 of the proposed herbicides have aquatic labels in addition to forestry, right-of-way and rangeland labels. These three are Imazapyr, glyphosate and triclopyr. This fact should not be over looked because aquatic labels may be needed in several situations for control of knotweeds, whitetop, purple loosestrife, water milfoil, reed canarygrass and possible others. This fact was never clearly addressed.	Standard 19 requires that site-specific soil characteristics, proximity to surface water, and local water table depth be considered in determining whether to buffer a creek, use an aquatic label formulation, or adjust application method or timing within riparian areas. Chapter 3 discussed invasive plants such as knotweed that grow near streams.
Herbicide use. In my experience, these have no value even as a last resort. There are a zillion complicated side issues such as non-inert inert, effects on amphibian extinction from atrazine etc, and contamination of public drinking water such as happens on the upper Willamette NF, but my main issue is if Roundup etc really worked - and millions of gallons have been applied to our public lands - why are the roadside and riparian forest lands still full of Himalayan blackberry, scotch broom, and worse? I would like the Final EIS to list specific areas where herbicides have in fact restored native plant populations. If there are none, then the document should specify alternative management techniques that do have potential to achieve lasting results. Herbicides in conjunction with continuing the disturbances that led to invasive plants in the first place.	The FEIS provides further discussion about the utility of herbicides in restoring native plant populations.
Quileute has been applying Monsanto herbicides in the Dickey watershed of the Quileute System in Clallam County, WA. We have seen initially that native and non-native species were impacted adversely. However, the native species reseeded from adjacent land, while the knotweed (so far not a fertile hybrid, though that may change), remained eliminated. So that native regeneration needs to be considered in risk analysis.	Native plant regeneration is included as part of the site restoration/revegetation sections of the DEIS. Further discussion has been added to the FEIS in Chapter 3.
The dependence on herbicides will disrupt native ecosystems and place unnecessary risks on human health. These herbicides will impact plant diversity. As DiTamaso (2001) points out, continuous broadcast of one or a combination of herbicides will select for tolerant plant species. When broadly selective herbicides are used, noxious annual plants such as cheat grass often proliferate. Population shifts can also occur through the repeated use of a single herbicide by reducing plant diversity and nutrient availability. "Herbicides are designed to kill plants, some damage to non-target plant species is probable despite cautious planning and implementation." (DEIS 4-23).	The DEIS explained that due to the nature of herbicides, some effect may occur, but mitigation measures directed through the standards will minimize such effects. DiTomaso suggests the use of a combination of herbicides in an integrated approach, which was emphasized in the DEIS to varying degree by alternative.
The EIS needs to recognize the particular and inherent risk of Riparian Weeds and emphasize that the treatment of non-native invasives in riparian areas is a top priority because of their ability to spread and substantially impact riparian function; and also because of their proximity to aquatic species (particularly T&E species). Add riparian weeds as a priority for treatment to table 3-15 on pg 3-97.	Riparian species were discussed and designated as high priority in Chapter 3 of the DEIS. The FEIS expands this discussion.

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State amount of herbicide use you are planning to use - when, where, why & cost.	These are site-specific questions that would be answered in project-scale analysis. The DEIS disclosed assumptions about how many acres would be treated with herbicide under each alternatives, why herbicides would be used, and the cost of their use.
Our concern is that a proposed eradication solution could create a new environmental problem. For example, the use of herbicides can be just as deleterious to the ecosystem as non-native invasive species. These agents can kill much more than the intended target, "opening the door" for non-native organisms.	This concern is one of the reasons why site restoration/revegetation is emphasized in the EIS; to reduce the chances for invasion from other organisms.
Acquired pesticide resistance should be considered. The EIS should have analyzed a number of plants that are known to have become pesticide-resistant. The use of broadcast treatments of non-specific chemicals over large areas will certainly increase our reliance on stronger chemicals as more plants develop resistance.	Discussion on resistance was consolidated and expanded in Chapter 4.
Non target mortality to plants from herbicides should be minimized. Forest Service contract inspectors should be required to monitor wind and precipitation every day during herbicide applications. The EIS did not provide safeguards against non-target mortality from herbicides. This happens whenever broadcast herbicides are used along roads, particularly if there is wind.	By requiring that herbicides be applied by or supervised by certified pesticide applicators, such safeguards will be instituted. Trained applicators are aware of such basic precautions and are trained to follow EPA labels. Also, Standard 19 was designed to guide the development of such safeguards.
Require all National Forest pesticide applications to account for pesticides through a clause that ensures the Forest Service can determine the actual quantities of herbicides provided to contractors.	Accountability for pesticide use in all NFS herbicide applications is provided through compliance with agency direction (FSM 2150, FSH 2109.14), and with state pesticide reporting regulations
Risk of herbicide spills should be mitigated. The EIS should provide mitigation measures that provide safeguards against herbicide spills.	Several of the treatment/restoration standards are aimed at reducing the risk of herbicide spills.
The DEIS implies that over 8,000 acres will be treated with herbicides that have a "higher potential to harm non-targeted plants," (DEIS 4-35) almost 9,000 acres will be treated with herbicides that "could result in harmful doses to birds and mammals," (DEIS 4-54) and one herbicide is approved that "may harm amphibians." Within the DEIS and most specifically the agency's Preferred Alternative, the following must be corrected: there is no management objective for limiting direct and indirect negative effects to non-target animals and non-target native plants.	Standards 19 and 20 were developed to address these concerns.
The community becomes distraught and divided when herbicide use is proposed by the Forest Service. People will trust the FS much more if a clear "last resort" policy is followed. If the FS is perceived as casually employing herbicide people get very upset and that makes our job of pulling people together much harder.	Social acceptability of treatment methods is discussed in Chapter 4. Partnerships and collaboration are discussed under integrated weed management in Chapter 2, background in Chapter 4, and in Appendix I. Alternative B maintains herbicides as a "tool of last resort".

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<p>Additionally, when public land managers resort to use of pesticides including herbicides, they create a demand that these chemicals be manufactured, transported, stored, and also that waste products from manufacturing and use be disposed of somewhere. Therefore, communities and ecosystems somewhere else are being negatively impacted; the health of the neighboring communities of humans to the manufacturing, use and disposal of these chemicals are made to suffer health effects; and the human environment is significantly affected. The use of chemicals - herbicides and adjuvants - on the Pacific Northwest Region 6 creates the need for an Environmental Impact Statement not only for the locations on Forest Service's lands, but also other locations where the major federal action of using chemicals on these public lands has an additional major federal action of creating the need to manufacture the chemicals, transport, distribute, store, and ultimately dispose of these chemicals which significantly affect the quality of the human environment in communities near the manufacturing, transportation of, storage of, and the disposal of those chemicals. In short, the demand for herbicides and adjuvants by FS Region 6 creates the need for an EIS to address the impacts in other locations in addition to the FS Region 6 lands pursuant to 40 CFR 1502.3. Where is that EIS?</p>	<p>Chapter 4 of the DEIS displayed the projected contribution of FS herbicide treatments (3 percent) toward the estimated total agricultural herbicide use in Oregon and Washington. This small fraction is even smaller, when all herbicide uses are considered. No evidence is presented that the number or production levels of any herbicide manufacturing facilities would be materially affected by alternatives in this EIS, nor does that scenario follow logically from the miniscule fraction that the proposed FS action would contribute to estimated total production of herbicides and any manufacture waste products. Waste products from FS herbicide use are minimal; good handling practices encourage purchase of only the quantity needed, and contracts require that that the applicator retain possession of all leftover herbicide, for which the financial incentive is to use it legally on other projects, not to surplus it as waste.</p>
<p>Project level mitigation is highly variable and often inadequate - it can not be used to guarantee lack of significant environmental or human health risk impacts - especially as it is often not funded and never takes place. Mitigation funding needs to be guaranteed.</p>	<p>The Forest Service is required to implement the mitigation measures approved in NEPA documents. Required measures are funded as part of project implementation.</p>
<p>The following herbicides should be eliminated because they create exposure scenarios that exceed toxicity indices for birds and mammals even under Alternative B: clopyralid, glyphosate, sethoxydim and triclopyr. (see Table 4-11).</p>	<p>Exposure scenarios provide a useful tool to compare the relative risks of each herbicide. Not all exposure scenarios are very plausible in terms of actually occurring due to a field application. The number and type of exposure scenarios that exceed the toxicity indices was used to design the standards in each alternative. The ROD will outline the rationale for including or excluding the particular herbicides chosen.</p>
<p>How will you avoid contamination of rivers, streams and endangered plant species during and aerial spray? Wind factors can change upon the instant! Much of the sprays ability to perform is lost during aerial sprays so massive doses are usually required.</p>	<p>Project specific plans would outline how waterways and habitats would be affected. The projects would be required to comply with the standards intended to minimize adverse effects to non target species, water quality and habitats. Doses would not exceed levels analyzed in the EIS.</p>

Table 29. Comments and Responses about Herbicide Use	
Comment	Response
<p>Please put into your final IPEIS a comparison study of all herbicides to be used in your plan. The comparison study would compare the different science studies on the toxic potentials of each chemical so there is no bias in your plan to justify using that chemical based solely on the studies given by the manufacturer itself on the labs where they have been tested that favor the outcome of the company which employed it. I submit comparison sheets as an example and they directly contradict each other. Please justify in you final IPEIS why your plan will favor one study over another.</p>	<p>Each alternative describes the estimated effects for the herbicides included for invasive plant treatment on National Forest in Region 6. The FS/SERA risk assessments are the basis for the EIS effect analyses. The risk assessments describe and reference all studies used to develop the estimates of effects for that individual herbicide and its relevant formulations.</p>
<p>Newmaster (1999). Further drift from the application of triclopyr could affect the sustainability of populations of lichens and bryophytes. Normal application rates in aerial spraying were found to reduce abundance by 75% (DEIS 4-28). Triclopyr has also been found to inhibit the growth of ectomycorrhizal fungi associated with conifer roots at concentrations of 1000 parts per million. Since science has shown that nearly if not all trees depend on this symbiotic relationship, then the continued use of triclopyr can have serious effects on forest health. Triclopyr has much different documented toxicity.</p> <p>Triclopyr causes an increase in breast cancer, an increase in genetic damage such as dominant lethal mutations, an increased incidence of reproductive problems, and damage to the kidneys. The ester form of triclopyr is highly toxic to fish, inhibits behaviors in frogs that help them avoid predators, and decreases the survival rate of baby birds. Triclopyr also inhibits the growth of mycorrhizal fungi, and with fixation of atmospheric nitrogen. Triclopyr is mobile in soil and readily contaminates wells, streams, and rivers. The major breakdown product of triclopyr (3,5,6-trichloro-2-pyridinol) disrupts normal growth and development of nervous systems and accumulates in fetal brains.</p>	<p>The risks associated with various exposure scenarios for triclopyr were discussed throughout Chapter 4. Standard 16 limits the application of triclopyr to selective techniques so that application to soils and hence mycorrhizae would be minimized.</p>
<p>It would seem that many of the concerns with broadcast application of Triclopyr (non-target impacts, public and worker safety, etc.) could be addressed through site-specific analysis and mitigation at the EA or project level. The Proposed Action could provide standards to limit broadcast application of Triclopyr. Triclopyr is an important and effective herbicide tool for adequate control of many noxious weed species and is the preferred choice for many treatment prescriptions (i.e. gorse, brooms, butterfly bush, Himalayan blackberry, purple loosestrife control) and specific site types. Triclopyr has a riparian and aquatic EPA registration. We suggest having a means to allow some level of broadcast application of Triclopyr even on a limited basis. To minimize or avoid adverse impacts at the EIS level, Forest/EA or project level, standard 20 in Table 2-4 of the Proposed Action should be adopted. The standards should also reduce any associated risk to proposed and listed species and their habitat.</p>	<p>Alternative D allows for broadcast application of triclopyr. The Proposed Action restricts such use. Your comments will be considered and the rationale for the final decision will be described in the Record of Decision. The Regional Forester may combine standards from multiple alternatives in the final decision.</p>

Table 29. Comments and Responses about Herbicide Use	
Comment	Response
The ROD also needs to clarify or define what spot treatment means regarding Triclopyr application; the only indication was the example in Chapter 4-70. From this statement a spot treatment is a backpack, directed stem spray or OHV method of application. Spot spray or directed application could also be made with a spot spray boom, handgun and other application method that directs the application to the intended target.	The list of “approved” spot application methods has been amended in the FEIS to clarify that the intent is to allow triclopyr application methods that minimize non-target exposures.
Although more recent studies are noted to be detailed in SERA (1996), the methodology for these studies and their results are not disclosed in either the current EIS or the Herbicide Information Profile, making it difficult or impossible for the public and other decision-makers to reach a knowledgeable conclusion re: the health risks of triclopyr use. The Herbicide Information Profiles, herbicide specimen labels (not included in the EIS or provided otherwise for public review) and Material Safety Data Sheets are not disclosed in the EIS or otherwise made available to the public for most of these herbicide formulas.	The risk assessments were available on request and are currently posted on the website (www.fs.fed.us/r6/invasiveplant-eis)

Table 29. Comments and Responses about Herbicide Use	
Comment	Response
<p>Known potential impacts of triclopyr formulations not discussed within the EIS include their potential to leave residues in meat and milk (through livestock grazing and hay production) that may exceed EPA standards (profile p.3), potential damage to broadleaf crops, potential spray drift to non-target areas (ibid), the potential to inhibit the germination of soil-stored native plant or crop seed at higher concentrations, greater adsorption of triclopyr in soils that are alkaline with low organic matter (as in much of eastern Oregon, Eastern Washington and Idaho), triclopyr's long persistence in soils (75-81 days in W. Oregon, Norris et al. 1989 - for half lives, and detectable triclopyr residues in soil 477 days after "treatment"!)</p> <p>Other potential impacts and relevant residue transport/vectors not disclosed or analyzed for triclopyr within the EIS include its capacity to leach into groundwater, which exceeds the EPA threshold for solubility, the ability of the metabolite TCP to persist in groundwater (Profile, p.4), triclopyr's detection in runoff in western Oregon 9 months after application, detection of trace amounts of triclopyr in some samples of southern Oregon airsheds, release of toxic hydrogen chloride and phosgene from burning of vegetation sprayed with triclopyr formulations Garlon 3A (hydrogen chloride only [illegible?]), Garlon 4 and Pathfinder II (both), 68% of triclopyr having been recovered intact in smoke under smoldering conditions, possible contamination and injury of nontarget broadleaf plants via "very small amounts of spray" and clippings used as mulch that are contaminated with triclopyr, triclopyr having been found in berries 6 days after spraying, & TCP having been detected in root crops following application of an insecticide that also degrades to TCP. (Profile, p.5).</p>	<p>All relevant data concerning environmental consequences to human health and the environment from FS invasive plant treatment using triclopyr are analyzed in detail in the FS/SERA Triclopyr risk assessments (2003 and 1996) and potential effects were summarized in the DEIS. Identified potential risks resulted in restriction of certain applications of triclopyr in the Proposed Action and Alternative B.</p>

Public Notification of Herbicide Use

Commenters expressed concern that the DEIS did not include a standard for public notification. In response, the Forest Service modified all action alternatives to include Standard 23, which requires that Forests create a plan for public notification and signage if they are using herbicides.

Table 30. Comments and Responses about Public Notification of Herbicide Use	
Comment	Response
<p>To reduce public exposure, however, posting warning signs where spraying is done for either applications would be helpful. Using dates on the signs as to when the application of these sprays is no longer harmful.</p> <p>The EIS should have considered whether to allow a greater degree of protective signage. We recommend providing warning signs for all pesticide applications, for at least two times the expected half-life.</p> <p>How will you warn people that an area has been treated with a certain pesticide or herbicide?</p>	<p>This concern is addressed through the addition of Standard 23 to all action alternatives, requiring that Forests create a public information plan with notification and signage responsibilities (See Chapter 2).</p>

Merits of the Alternatives

Many people commented about the merits of the DEIS alternatives in total or about the merits of elements of the alternatives. The set of comments below require no specific response at this time. The Regional Foresters will consider these comments and document her rationale for the selected alternative in the Record of Decision.

Many people suggested that elements of multiple alternatives be combined for maximum effectiveness. They noted that if prevention standards in Alternative B were combined with the Treatment Standards in the Proposed Action or Alternative D, the overall result would be more effective than any single alternative currently considered. The FEIS includes sufficient discussion about each standard to support a final decision that blends standards from multiple alternatives.

Table 31. Comments about Merits of the Alternatives
Comment
<p>I support the proposed action and particularly like the emphasis on prevention. I believe the proposed action provides adequate and reasonable guidance for on the ground action by the Forest Service on Forest Service lands.</p>
<p>When you incorporate the high costs for herbicide treatments (Table 4-33, which incidentally seem excessively high from my experience), and the fact that you can treat a much greater area effectively in the short time window available annually for many of these weeds, Alt D looks far better. Table 4-34 shows what you can do with fixed dollars for each treatment method, again favoring Alt D.</p>
<p>I believe that Alternative A is unacceptable. The local USFS personnel in Yakima County know that they need to use modern weed control technologies to fight invasive plants. But they are currently unable to use these methods under current policies.</p>
<p>Considering the 4 proposed alternatives, it seems the "No Action" alternative could not accomplish the desired end and to not make best use of the people, expense and planning already expended and in place. It is unnecessarily passive and management restrictive.</p>
<p>[Idaho State Department of Agriculture] supports the adoption of the Proposed Action. ISDA supports the USFS in efforts to efficiently manage noxious weeds. Control of noxious and invasive weeds within the Pacific Northwest Region will benefit the quality of the wilderness and the human environment.</p>
<p>The proposed action recognizes the importance of early detection and rapid response in the treatment of newly detected noxious weed infestations. We believe rapid response to be the most effective means of exercising control while limiting effort, which must be expended to the smallest possible area. Significant portions of the forest within our county are being overrun with noxious weeds because there is not current mechanism to allow for early response. Currently, the time required to conduct a site specific analysis poses a true threat to forest health because the intervening time often allows noxious weed to gain a foothold. Once established, these population are much more difficult to effectively control. In our county weed control, we have found that the earlier the response, the greater the likelihood of achieving long-term success in controlling or even eradication of noxious weed populations.</p>
<p>We also support proposed action C because it allows limited use of herbicides. While we are sensitive to public concern over widespread use of herbicides such as 2-4D, such as it proposed in alternative D, we also recognize that it is unlikely that an effective control program can be implemented without treatment with some herbicide. Alternative C identifies the following advantages It proposes use of herbicides only as a measure of "last resort"; It avoids the use of the most controversial of herbicides; It avoids the fallacy that manual or mechanical treatment alone is always sufficient to control or contain noxious weeds; It is a cost effective and culturally acceptable alternative.</p>
<p>We also object to alternative B, which proposes additional restrictions on grazing, ATV and recreational access and road maintenance activities within the forest. Such proposals are offensive to the custom and culture of the citizens of the county and threaten the economic livelihood and well being of the citizens of this county. They should also be considered as a last result when all other efforts have failed.</p>

<p>Table 31. Comments about Merits of the Alternatives</p>
<p>Comment</p>
<p>I am extremely opposed to the use of toxic herbicides 2,4-D and 2,4,5-T-since they have been proven to adversely impact all wildlife and to pollute the streams and rivers, salmon and to stay in the environment for a lasting negative impact on people. These chemicals have been proven to cause cancer and I for one am extremely opposed to any further destruction of our ecosystems. There are no invasive weeds that warrant the use of such toxic methods.</p>
<p>The Nature Conservancy believes this thorough draft addresses the key issues in a frank, professional manner. Its treatment of the real risks of chemical and biological control treatments is excellent, and provides a good basis for the selection and use of herbicides and other methods described in the Proposed Action. There are also provisions in this EIS to support adequate and appropriate monitoring to detect change due to management actions. This draft EIS takes into consideration potential off-target impacts, especially health and safety issues when using herbicides, and we believe that the Proposed Action strikes the right balance in guarding against the risks to human and environmental health from these methods, and the risks of a failed invasive plant management program. The Nature Conservancy strongly supports the Proposed Action to provide direction and tools to protect National Forest lands from invasive plants in the Region.</p>
<p>I find that the FS alternative is unlikely to adequately protect Public Lands from the continuing invasion and expansion of alien plants. Specific standards...that would provide improved protection from invasive plants are provided in the Restore Native Ecosystem Alternative (Alternative B). Thus, I strongly urge the Forest Service to adopt them in lieu of those provided in the Proposed Action since they are more likely to reduce the spread of alien invasive species on public lands.</p>
<p>4.6.2 Costs of Invasive Plant Treatment Pg 4-94 "Significant potential effects" Bullet points; It should be emphasized and understood that the costs (dollars, time, inconveniencies) of the proposed prevention measures will be far less cost than paying the price of allowing invasive plant establishment, including cost of control, cost to the environment and wildlife, and spread to neighboring land. "Pay now or Pay later" applies here and the cost-benefit ratio is highly weighted towards greater benefit with the proposed Alternative B prevention measures.</p>
<p>A mix of Purposed Action and Alternative B is needed to have an effective management program. One goal of the management plan is to reduce herbicide use. The most effective way to reduce herbicide use is to promote extensive prevention practices at the cost of multiple use and by putting more responsibility on those that work and play in the forest. A combination of the Proposed Action and Alternative B will be most effective in meeting these goals. From Table 2-4 Action Alternatives Standards the most effect combination is implementing Proposed Action standards 3, 11, 12, 13, 14, 15, 17, 18, and 19 as is, with Alternative B standards 1, 2, 4, 6, 7, 9, and 10 as is. Standards that need revision are discussed separately.</p>
<p>The No Action alternative is unacceptable. It does not allow for control of numerous invasive weeds that can reduce biodiversity, cause irreversible economic and ecological damage, in addition to being a source of contamination to surrounding land, costing land owners, both public and private, countless millions of dollars in suppression costs alone, with no hope of eradication.</p>
<p>Considering your stated objectives of reducing the rate of spread of invasive plants within Region Six, increasing the effectiveness of invasive plant management and protecting human health and the environment, the no action alternative which represents no change from the current direction is unacceptable.</p>
<p>Clearly, No Action is unacceptable. The current and past direction of noxious weed control on national forests in the Pacific Northwest has been plagued by a lack of effective control techniques, insufficient preventative practices and inadequate regional coordination. While local USFS personnel in many places are well intentioned and hard working, the most effective weed control technologies are too often made unavailable to them. In our view, the many inadequacies of the current direction made the DEIS process necessary. Given all of the effort that's been put into this process by your staff and the many interested stakeholders, let's not end up back where we started.</p>

Table 31. Comments about Merits of the Alternatives
Comment
<p>Use of the limited herbicides under Alternative B will require annual maintenance treatments or overly high herbicide rates per acre, resulting in plant shifts to only tolerant plant species or opening the area to other invasive weeds that may not be able to be controlled with the limited control options. Allowed mechanical alternatives would require continued disturbance of the site and need annual treatment. These practices will also result in plant shifts to species that can tolerate continued use of these other control methods.</p>
<p>Weeds that have already been shown to trend towards a monoculture, under the No Action alternative are listed below. In addition these invasive plants cannot be eradicated under Alternative B without abusive rates of the allowed herbicides or continued mechanical maintenance treatments (only delaying spread, not controlling the weed). Japanese, Himalayan, Giant knotweed (<i>Polygonum cuspidatum</i>, <i>polystachyum</i>, <i>sachalinense</i>)- needed control method under Alternative B is 5ml injection/stem of triclopyr or glyphosate resulting in greater than 2500 lbs ai/acre herbicide, greatly exceeding label rate of a maximum of 7 lbs ai/acre. Mechanical control or fire results in further spread and encourages re-sprouting.</p>
<p>.Quick, decisive, and proper management be it chemical, mechanical, cultural, or biological on these small infestations have the greatest potential to achieve positive results. But, the first step in any weed management program is to have the proper tools available at the ground level. Alternative D creates the largest "tool box" available to the local manager. We support Alternative D knowing that the main difference between it and the Preferred Alternative is the approved chemical list. Specifically, 2,4-D and Dicamba are included in the Alternative D list and not in the Preferred Alternative.</p>
<p>I support the USFS efforts to come up with an invasive plant eradication strategy. I support the Proposed Action plan with the exception that 2,4-D is not one of the tools available. Since federal tax dollars are not endless, 2,4-D use would stretch the number of treated acres since it is very cost effective on several species of weeds. 2,4-D has been used for over 60 years now and it has been re-registered with the US EPA recently. This re-registration shows that it has satisfied the regulatory agency that it is not a hazard to the applicators, general public, and the environment when used according to label directions. Please include 2,4-D as a tool in this important control effort!</p>
<p>The King County Noxious Weed Control Board supports the proposed action C , supplemented by additional features from other Actions</p>
<p>All of the proposed standards from alternative B should be included in the agencies final decision.</p>
<p>The point of this EIS should be to raise the bar so that all of the different National Forests in our region are doing the same things. Therefore, the more precautionary standards listed in Alternative B: standards 1, 6, and 8, should be adopted.</p>
<p>Alternative B is overly prescriptive and does not recognize multiple use values.</p>
<p>Alternative D is underdeveloped and therefore does not provide reasonable alternatives for more site-specific (forest or district) control but falls out as an obviously uneducated alternative (i.e. no corollary standards offered for Standards 4 and 11).</p>
<p>I feel that the Preferred Alternative (Alternative C) probably provides the best balance of strategies to prevent the spread of invasive plants while also providing effective strategies to treat and control existing infestations.</p>
<p>The Tri-State Weed Management Area fully supports the adoption of the Proposed Action. It provides a balanced option by providing needed tools along with guidance for protection of sensitive resources and concern for sensitive issues. We would like the team to reconsider the exclusion of the entire suite of 2,4-D formulations as a herbicide tool in this alternative. This herbicide is one of the most effective tools in the treatment of white top and other weeds found on the east side of the Region.</p>

Table 31. Comments about Merits of the Alternatives
Comment
<p>In conclusion, the Oregon Invasive Species Council strongly supports the Proposed Action within the DEIS. If implemented with adequate resources to field programs, and within the context of coordinated resource management plans, the programs enabled by this DEIS will dramatically improve natural resource management in our National Forests, and in so doing, will benefit the health of the larger landscapes across Oregon.</p>
<p>This draft EIS takes into consideration potential off-target impacts, especially health and safety issues when using herbicides, and we believe that the Proposed Action strikes the right balance in guarding against the risks to human and environmental health from these methods, and the risks of a failed invasive plant management program.</p>
<p>We believe that the Proposed Action will work to preserve biological diversity and environmental quality, and will also protect agriculture and economic interests by directing resources toward the prevention, early detection and early treatment of invasive plant infestations. The Proposed Action will also allow necessary flexibility in management treatment options to individual National Forests.</p>
<p>We especially appreciate the emphasis in the DEIS on adopting and implementing prevention guidelines and recommendations which will work to reduce the continued transport and proliferation of invasive species by limiting the pathways of invasion. Without strong prevention, the invasive plant threat will continue to proliferate beyond our control.</p>
<p>The active ingredients dicamba and 2, 4-D as listed in Alternative D, should be added to the list of approved chemicals because they control many invasive plant species and are more cost effective to apply. According to Table 4-4, an additional 10,000 acres could be treated annually using these methods. The additional 10,000 acres, along with the projected rate of spread (4%-6%) of the Proposed Action, could mean control of 420,000 acres in 14 to 18 years compared to 21 to 32 years as listed in Table 4-5. We feel that the benefits of adding these two chemicals to the list far outweigh the potential risks associated with using them, and urge their inclusion in the final decision. Both 2,4-D and Dicamba are useful products for invasive plant management. These herbicides can improve efficacy of other herbicide treatments, are used to manage resistance, may be the preferred herbicide in certain treatment prescriptions, and are safe products when used properly. Standard 20 in Table 2-4 of the Proposed Action should also reduce any associated risk to proposed and listed species and their habitat. Some examples of why these chemicals are important include: Early season treatment of rush skeletonweed followed by late season application of Picloram is a preferred treatment option and is one of the few effective treatments for skeletonweed control. Extending treatment windows: Many species are difficult to control or even stop from seeding after reaching certain stages of phenology. Growth regulating herbicides, synthetic auxins, like 2,4-D and Dicamba when added to tank mixes can significantly improve mid and late season control of certain species (e.g. knapweed control at late bud to bloom stage). Improving efficacy: the use of 2,4-D in tank mixes have been shown to greatly increase the percent of control of hard to control species. For example, tank mixing Sulfometuron methyl with 2,4-D increases efficacy when treating white top and perennial pepperweed. Managing herbicide resistance: having multiple herbicides for specific species and site types enables superior rotation of herbicides to manage plant resistance.</p>
<p>We support the USFS Proposed Action because of its strong prevention, inventory and restoration components as well as the broad array of treatment options.</p>

Table 31. Comments about Merits of the Alternatives
Comment
<p>The diverse habitat, distinct vegetation management/restoration projects, and broad geographic area overseen by the Forest Service, juxtaposed with 107 identified weed species on Forest Service lands require effective treatment options. Alternative D would provide the greatest flexibility for an individual Forest/Ranger District to develop efficacious and cost-effective weed control strategies at the local level by maximizing available weed control tools (i.e. twelve herbicides). Specific concerns regarding the safety of using 2,4-D and dicamba would be adequately addressed through the local planning process and NEPA if a Ranger District identified those products as essential to a successful weed control program. In addition, Alternative D would preserve the integrity of how herbicides are applied on Forest Service lands by deferring to their individual, federal product label. Unnecessary, self-imposed restrictions on application techniques, as outlined in the Proposed Action, may create future situations in which the safest, most effective, cost efficient, and environmentally sound method is precluded by the IPEIS. Again, specific concerns regarding application techniques would be addressed by the federal product label and through the local planning process and NEPA. With the IPEIS, the Forest Service is at a critical bureaucratic crossroad. It is imperative that the agency does not repeat the past mistake of preemptively tying their land managers' hands by selecting the Proposed Action and limiting effective weed control tools and techniques. We strongly urge the Forest Service to adopt Alternative D in the final IPEIS.</p>
<p>The [Crooked River] WMA supports the proposed action outlined in the Invasive Plant Draft EIS; it provides a good mixture of tools for prevention, treatment and restoration of weed sites. However, a few areas in the Action Alternative Standards should be discussed more in depth. Discussions on prevention, Standard Number 1, should address conditions that allow the spread of invasive plants, including management decisions that degrade healthy ecosystems. Standard 2 should require the cleaning of light vehicles as they are just as likely as heavy equipment to have traveled through weedy areas and carry weed seeds/parts into work areas. Standard 4 should require the use of weed free hay on all NFS lands. While this standard is harder to enforce, it is much more effective in preventing the spread of noxious weeds. Trailheads, staging areas and corrals should be monitored annually and kept weed free. Standard 16 should include use of 2,4-D. This chemical is widely used on lands neighboring NFS lands. The EIS should also provide a mechanism for implementing early detection and rapid response measures.</p>
<p>The Region has a big job ahead. A combination of the Proposed Action and Alternative B will best accomplish that job.</p>
<p>After reviewing the proposed action alternatives, we are endorsing Alternative D. The flexibility of planning and operational duties may reduce costs and time while improving communication for a more sustainable and achievable eradication of noxious species. It is our understanding that the main difference between the Preferred Alternative and Alternative D is the list of approved chemicals, specifically the inclusion of 2,4-D and Dicamba herbicides.</p>
<p>The inclusion of the [2,4-D and Dicamba] herbicides [in Alt D] would be beneficial to increase the number of "tools" for eradication, prevention of spreading and curbing established plants while deterring the introduction of invasive species.</p>

<p>Table 31. Comments about Merits of the Alternatives</p>
<p>Comment</p>
<p>Additionally, I feel the Proposed Action should be further amended as follows: Standard 16-Herbicides. Adopt the standard from Alternative D. This is in line with the State Weed Board's comments, but they did not specifically mention the inclusion of Dicamba in the "tool box". I feel strongly that both 2,4-D and Dicamba be included in the list of available herbicides. Both are relatively inexpensive and effective on a wide variety of noxious weeds, either alone or in combination with other products. I think the tables listing the potential harmful effects of these products on human health, wildlife and water quality are misleading and exaggerated. Just because the EIS team lists them as having a higher potential to cause human, animal or environmental harm than the other products included in the Proposed Action still does not mean that they are likely to cause harm when used according to product labels. They need to be considered in perspective. Dr. Allen Felsot, noted area toxicologist, points out in his lectures that being able to detect a substance (in water, soil, air, skin, etc) does not mean that it is at a level that is harmful. I believe that all twelve of the herbicides that were reviewed should be included in the "tool box" for use. I understand that public perception is a concern, but each Forest should be allowed to make the determination of which products to use based on need and local public concern. I do not believe that the use of 2,4-D or Dicamba on the Colville district would be a public concern, but it may well be that the Okanogan district, for example, would choose not to use these products based on the current public climate surrounding their use.</p>
<p>Thirty thousand acres will be "treated annually" by the Proposed Action (DEIS 4-15), but the Proposed Action makes no commitment to altering practices that are causing and exacerbating invasive species introduction, establishment and spread on those thirty thousand acres, let alone the hundreds of thousands of PNW Forest acres on which invasive species are spreading and which won't be "treated."</p>
<p>The Proposed Action promises to continue the kinds of management practices (e.g. logging, grazing, road-building, off-road vehicle use) that cause invasive plants to spread. I predict that invasives will soon eclipse uncharacteristic wildfire as the number one threat to native ecosystems and public wildlands. The Forest Service must do all it can to prevent the introduction, establishment, and spread of invasives--this means no more "business as usual" coupled with false promises of "mitigation" or "restoration."</p>
<p>Alternative B is vastly superior to the Proposed Action because "B" wisely applies the precautionary principle to avoid those management actions that lead to the spread of invasives. A strategy of prevention is far more effective and inexpensive than a strategy of mitigation and restoration, which are so far largely unproven in effectiveness and highly costly.</p>
<p>[The DEIS states:] "For herbicide treatments assuming Worst-case (maximum application rates and exposure factors) there would be six worker exposures with HQ=2-10 and five worker exposures with HQ>10. One exposure (picloram) would result in a cancer risk probability of 2 in one million, exceeding the EPA cancer risk threshold of 1 in one million." [This is a] reason not to use picloram.</p>

<p>Table 31. Comments about Merits of the Alternatives</p>
<p>Comment</p>
<p>EPA supports an Integrated Pest Management (IPM) approach and the use of non-herbicide solutions as much as possible. We also recognize that herbicides are a necessary tool for invasive species control and may, in some cases, be the only effective tool available. The risk assessments for the herbicides proposed for use under the alternatives are based on studies that provide a model for assessing risk. The shortcomings of these risk assessments are: (1) the exposure that has been studied is not likely to approximate the level that might be expected in the natural environment. Plants and animals are usually exposed to pesticides and other toxics in pulses rather than at constant levels; (2) the endpoints studied may represent the most toxic effect of a pesticide. For example, the studies required for effects on pesticides on non-target plants does not include the potential effects on flowering or reproduction and this has important implications for the plant community as well as for animals that may require these plants for food. For most animals the toxicological endpoint studied is generally lethality so that potentially important effects are often not considered; and (3) synergistic effects that may arise from exposure to more than one pesticide or from a pesticide plus a natural stressor (disease, drought, etc.) are not well studied or understood. These uncertainties mean that the model for assessing risk to non-target organisms may not be very accurate. Some of these testing and modeling limitations are discussed in the DEIS. It is important here, however, to emphasize that the challenge is to account for these uncertainties explicitly as decisions are made regarding the management of noxious weeds. Alternative B comes closer to incorporating the precaution needed. We recommend that these precautions be embedded in the thought process for making decisions, regardless of whether or not they are incorporated as action requirements. Where herbicides are being used, we recommend the Forest Service review progress on an annual basis toward reducing reliance on herbicides.</p>
<p>The Wallowa County Stockgrowers generally supports the proposed action (Alternative C) of the Pacific Northwest Region Invasive Plant Program, preventing and Managing Invasive Plants Draft Environmental Impact Statement with the following exceptions. Specifically we support the expansion of the available chemicals and the inclusion of aerial application.</p>
<p>NEDC prefers alternative B to the other alternatives listed because it requires more restricted herbicide use. The Forest Service predicts that under Alternative B, the native plants may not be adequately protected against invasive species. However, the Forest Service does not consider the increased protection native plants will receive as a result of the some of the limitations set forth in this alternative. For instance, under the proposed action, the Region 6 forests will continue to allow vehicles to drive cross-country 300 feet out from either side of a road. It is extremely likely that these vehicles will have driven through invasive species infestations before contacting native plant populations. Because Alternative B does not permit this practice, spread of invasive species will be reduced. Notwithstanding the protective functions inherent in Alternative B, NEDC prefers the alternative because it does not give individual project managers as much discretion as they are given in the other alternatives.</p>
<p>NEDC strongly suggests that the Forest Service avoid implementation of Alternative D, as it poses the most risk to non-target plant species. By permitting use of 2,4-D and more aggressive aerial spraying, the Forest Service increases the native plant populations will be harmed. Without implementing a monitoring program required by NFMA, the Forest Service may not become aware of the damage until native plant populations are significantly reduced. In addition, as the Forest Service points out, pollinators may be effected by the application of 2,4- D, which in turn will impact the vitality of the native species populations. NEDC does not believe that the Forest Service should implement a plan that permits use of a chemical that has the potential to reduce pollinator species populations, which in turn reduces viability of native plant populations when the goal of the project is to increase native plant species numbers.</p>

<p>Table 31. Comments about Merits of the Alternatives</p>
<p>Comment</p>
<p>The No Action alternative is not preferable in this case because it includes the use of several chemicals that pose significant risks to non-target plant species. Specifically, as the Forest Service notes in the DEIS, Picloram threatens off site damage to plant communities. NEDC is also concerned about the use of triclopyr in the No Action alternative because the chemical is known to severely impact the survival of lichens and bryophytes. The Forest Service should pay' particular attention to the effects on non-vascular species, as they play a vital role in maintaining forest health and diversity. The use of 2,4-D in the No Action alternative is also of great concern to NEDC. In its description of Alternative D, the Forest Service explains that 2,4-D can harm native plant populations directly and indirectly through pollinators. Because the Forest Service provides little data on the effects of 2,4-D, but admits that use of the chemical can harm rare plants, its use should be limited.</p>
<p>The Proposed Alternative provided by the Forest Service should not be implemented because the Forest Service does not propose to require that the more harmful chemicals be used in very limited circumstances, 'The DEIS suggests that the "toolbox" Will allow it use of more potent herbicides to treat highly aggressive species. Nowhere, however, does the Forest Service prohibit use of such chemicals to treat less aggressive species. By permitting the use of discretion to determine which chemical to use in a particular situation, the Forest Service does not provide a strict standard with which individuals must comply. NEDC does not believe that the Forest Service has done enough to merely suggest that more harmful chemicals may be used more sparingly under the Proposed Alternative. For instance, although the Forest Service has taken a step to limit the use of Triclopyr, NEDC remains concerned that the Forest Service intends to use a product that is known to cause serious harm to nonvascular plant species. "Spot spraying," if not carefully done can impact surrounding species. In addition, the Forest Service does not do enough to limit the use of aerial spraying. "Standard 16 restricts aerial applications for the more powerful ingredients of the sulfonyleurea group to mitigate effects from offsite drift." DEIS at 4-34. NEDC does not believe that aerial spraying should be employed using any of the listed herbicides because all can harm or kill non-target plant species. Because the proposed alternative permits use of aerial spraying and does not establish specific standards to be adhered to by those who implement the plan, the Forest Service should not select this alternative.</p>
<p>NEDC opposes the Proposed Action and finds inadequate support for it in the Pacific Northwest Region Invasive Plant Program DEIS. The DEIS does not require sufficient monitoring to ensure forest health and leaves too much discretion to forest managers to use a host of chemicals and management techniques that pose a risk to humans, plants, animals, and long-term ecosystem health.</p>
<p>I favor the Proposed Action interspersed with several standards from Alternatives B and D. Standard 7 - I recommend adopting the standard from Alternative B. An annual inspection combined with pre-use treatment can more effectively stop new infestations. Standard 9 - I recommend adopting the standard from alternative B on road closures. Standard 10 - Use the standard from Alternative B off highway vehicles need to be regulated. Each year I inspect roads and trails up the Little Naches and Naches Rivers drainage system, invasive plants keep moving deeper into the forest along these off road trails. This is caused by weeds being attached to vehicles and dragged further up the trails. Standard 16 - On herbicide use I think adopting the standard from Alternative D should be used. As an example: There are several small infestations of tansy ragwort on the Little Naches River drainage. Being able to use a product like 2,4-D would most likely eradicate this weed. Being able to use 2,4-D in areas where off road vehicles are used would help in the control of invasive plants.</p>
<p>We favor the Proposed Action with the following changes: Standard 2 - There are invasive weeds present in some Forest Service sites that are not found (or found in limited quantities) in surrounding areas. The spread of invasive weeds needs to be halted both to and from Forest Service lands. Vehicles need to be cleaned before entering and [emphasis] before leaving National Forest System lands. Standard 7 - Adopt Alternative B. Annual inspections are critical to weed control. Standard 10 - Adopt Alternative B. OHV should be restricted to road use to help control the spread of invasive weeds. Standard 16 - Adopt Alternative D. 2,4-D and dicamba are valuable tools to use against some weeds. Forest Service personnel should have option to use them.</p>

<p>Table 31. Comments about Merits of the Alternatives</p>
<p>Comment</p>
<p>For the most part we support the Proposed Action. It addresses the issues and goes a long way toward attaining the desired future conditions identified. We do favor, however, certain provisions of Alternative B as outlined in Table 2-4 Chapter 2-18 Standard 6 - While grazing is not an issue in the Metolius Basin it is in parts of Region 6. The prevention practices in Alt B are sound and should be incorporated in the final Proposed Action. Livestock movement patterns can disturb ground and transport invasive weeds. They should be controlled wherever invasive plants are a problem. Also passive restoration (rest rotation and retirement) is essential and effective in restoring a vigorous native plant community. Standard 9 - Non-essential roads should be closed or decommissioned anywhere in the forest and absolutely in areas where noxious weeds are present. We can think of no reason to maintain non-essential roads particularly where they could contribute to the spread of invasive species. Standard 10 - The provision in Alt B to prohibit cross-country use of OHVs is common sense in any effort to control invasive plants. They both disturb ground and transport seeds.</p>
<p>A strong reason for support of a modified Proposed Action, with 12 herbicides (addition of diflufenzopyr and a reduced rate dicamba) is to reduce herbicide applications and encourage greater diversity of desirable plant species. A greater number of approved herbicides mean the correct herbicide can be used that best fits the treatment site and invasive plant treatment, minimizing environmental impact. The better the fit of the herbicide to the site and the invasive plant and other control methods (IPM), the fewer herbicide applications will be needed. For example, control of Dalmatian toadflax can be accomplished with one application of the selective herbicide imazapic plus bio-control, with recovery of the plant community starting the spring after fall herbicide treatment. Bio-control alone requires approximately 5 to 7 years for adequate control if the bio-control is suited for the ecosystem, delaying the recovery of the plant community and allowing spread during the biological control establishment years. Herbicides in Alternative B and D are not effective on Dalmatian toadflax meaning annual herbicide treatment to reduce spread, biological control or an annual manual or mechanical treatment that will cause a shift in the plant community and still not result in control of the toadflax. The treated Dalmatian toadflax site will recover the fastest to the desired plant community with the combined application of imazapic (Proposed Action) plus bio-control.</p>
<p>The last assumption following Table 4-6 "The most viable treatment options available combined with the most reduction in seed introduction or spread should most effectively reduce infestation size and rate of spread" should be given the greatest weight. This statement suggests that prevention methods in Alternative B must be coupled with the IPM control methods in the Proposed Action (with modifications proposed above for standard #16) to result in the greatest reduction in spread.</p>
<p>Issue 1 seems to pit emphasis of prevention against emphasis of treatment of current infestations. We submit that you cannot separate prevention from treatment and that both must be emphasized i.e. you need to treat the infestations currently on the forest to control and prevent further spread as well as carry out all other prevention standards.</p>
<p>We would encourage the Regional Forester to find that a modified action incorporating the more aggressive elements of the alternatives in Alternative D as well as some of the more restrictive elements of Alternative B would best meet the underlying need for action.(1.3 Decision to be made)</p>

<p>Table 31. Comments about Merits of the Alternatives</p>
<p>Comment</p>
<p>We favor the Proposed Action (Alternative C), amended with several of the most promising elements of Alternatives B and D. Here are the ways in which we recommend you amend Standards and improve the Proposed Action: Standard 7 - Inspection and treatment of gravel pits and similar material sources. Adopt the standard from Alternative B. We are concerned that merely requiring inspection of such materials "before use" may allow such inspections to occur during seasons when infestations are less detectible and/or weeds are harder to identify. Annual inspection, combined with pre-use treatment, can more effectively prevent new infestation in areas where materials are used. Standard 9 - Road closures. Adopt the standard from Alternative B. While we are not anxious to see forest roads closed, local resource managers should have this option available if their analysis indicates that a particular route poses a high risk of spreading noxious weeds. Standard 10 - Regulation of off-highway vehicles. Adopt the standard from Alternative B. Unrestricted use of such vehicles poses many threats, including the spread of noxious weeds. Many other activities have long been regulated on national forests. It is time that forest-use regulations "caught up" with the proliferation of OHVs in recent years. Standard 16 - Herbicides. Adopt the standard from Alternative D. We do not want to see an effective, affordable and selective active ingredient like 2,4-D made unavailable to local resource managers. It is not true that USFS land managers in the Pacific Northwest have not used 2,4-D in recent years because they haven't needed it. The material was effectively made unavailable due to its designation as a "tool of last resort."</p>
<p>A combination of the Alternatives would seem to be the best way to address the current situation. No Action is not acceptable, as it perpetuates the spread of invasives.</p>
<p>If Region 6 were to adopt the prevention measures of Alternative B while also adopting the treatment measures of the Proposed Action, the Forest Service would be expressing at least a modicum of respect for the reality of the invasive species problem.</p>
<p>An adaptive management approach is intended, which we support, but a preventive approach, as advocated in Alternative B, is not fully embraced by the Preferred Alternative C. We agree it is important to eradicate and/or substantially control invasives and we agree that "there may be instances where it is prudent to conduct a project that has a short-term adverse effect, in order to provide a long-term beneficial effect to the habitat" (p.4-129). Yet considering the imperiled condition of so many species, and the risks, uncertainties, and unknowns and associated with use of chemicals, a great deal of precaution should be exercised in any aggressive treatment program using herbicides, including efforts to prevent additional need for their use. We believe that Alternative B or a modified Alternative C can provide for both of these needs. Consequently, we support the precautionary and preventive methods exhibited in Alternative B or, if Alternative C is selected, we recommend that several of the precautionary/preventive standards from Alternative B be incorporated. Many of these standards are prudent, easily doable, and they would further curb the rate of spread, which we believe is essential.</p>

Alternatives Considered But Eliminated from Detailed Study

Many respondents stated that the “Restore Native Ecosystems Alternative” should not have been eliminated from detailed study. Others stated that the “No Herbicides” alternative should not have been eliminated from detailed study. A third alternative that some people said should not have been eliminated from detailed study is stopping all ground disturbing activities that are causes of invasive plant spread. None of the comments addressed directly the reasons the Forest Service provided for dismissing these alternatives from detailed study.

Table 32. Comments and Responses about Alternatives Dismissed from Detailed Study	
COMMENT	RESPONSE
<p>I write to urge the PNW Region to adopt the Restore Native Ecosystems alternative. This alternative incorporates many of the leading elements of invasive species management: 1)block invasion pathways, 2)manage land use to avoid creation of invasive favoring conditions, 3)eradicate, contain and suppress weed infestations using the minimum chemical methods and 4) protect sensitive habitats and species. The provisions of the Restore Native Ecosystems alternative are a reasonable and necessary component to any successful weed management strategy.</p> <p>The undersigned organizations contend that the RNEA prescribed a scientifically based and practicable program for addressing and solving the extensive invasive plant problems that exist in Region 6 of the Forest Service.</p> <p>The "Restore Native Ecosystems" alternative submitted by a coalition of citizens and citizen groups merits serious attention and adoption by the FS as the least ecologically harmful and least risky to human health of any alternative described and obviously includes careful consideration of the full range of prevention strategies, native plant restoration practices, revegetation, monitoring, evaluation, coordination with the Native tribes and public education needed as well as a framework for prioritizing different weed control/eradication means using a precautionary approach. Yet this detailed alternative was dismissed by the Forest Service from further consideration, apparently for being too outside the FS's "business as usual" narrow frame of reference to be deemed feasible.</p>	<p>The DEIS explained that the “RNEA” alternative was dismissed from detailed study because certain components were not reasonably feasible or viable, or duplicative of the alternatives considered in detail. However, many of the main concepts from RNEA, (e.g., proceeding experimentally and cautiously, favoring non-chemical over chemical treatments, reducing the amount of herbicide use over time, and reducing conditions that favor invasive plants) were incorporated into the action alternatives, particularly Alternative B.</p>

Table 32. Comments and Responses about Alternatives Dismissed from Detailed Study	
COMMENT	RESPONSE
<p>We also believe that the USFS did not adequately consider the viable alternatives that are available. Specifically, the USFS fails to adequately consider non-herbicide management techniques. Options such as hand pulling or mowing, which could be of a benefit to the economy and long term forest health are not even considered.</p> <p>The DEIS fails to take the requisite "hard look" and consider the full range of alternatives that could be used to prevent and manage invasive plants in that there is no alternative considered that does not use herbicides and bio-controls while still using prevention methods and mechanical and manual means of control--despite many comments from the public expressing concern over the use of herbicides. The 1988 Noxious Weed FEIS was found to inadequately address important herbicide concerns, so this EIS must remedy that failure by fully disclosing known herbicide impacts and data gaps within the EIS itself and fully addressing significant concerns regarding the use of herbicides. This suggests the need to include a "No Herbicide Use" alternative and consider its adoption in good faith. Without a "No herbicide use" alternative, there is inadequate disclosure of the relative merits and reduction of impacts from other potential approaches.</p> <p>NEDC believes that the Forest Service did not adequately consider the viable alternatives available to it. Specifically, it fails to adequately discuss the impacts and effectiveness of non-herbicide management techniques.</p>	<p>Non-herbicide treatments are allowed in all alternatives and would be integrated, where effective, into site-specific projects. Manual and mechanical treatment alone have not effectively addressed the current invasive plant problem. Section 3.3 stated: "Treatment methods emphasized in this EIS include manual, mechanical, biological, cultural, prescribed fire, and herbicides." Several pages were devoted to the non-chemical treatment methods.</p> <p>The DEIS considered a "no herbicide use" alternative and explained why it was eliminated from detailed study: "large populations of certain invasive species can only be effectively controlled with herbicides... The purpose and need of this EIS includes making new practices, technologies, and chemical formulations of herbicides available for use on National Forests lands in Region Six... Making additional herbicides available for use by National Forests will increase available options for controlling invasive species while protecting native plant communities and environmental quality. National Forests will still be required to do site-specific environmental analysis before using herbicides. By making additional herbicides available, it does not mean that Forests will be choosing to use herbicides over other types of control methods."</p>
<p>That the "Restore Native Ecosystems" Alternative was rejected without the incorporation of many of the concerns and suggestions is very troubling and discouraging for those who are promoting collaborative efforts such as the planning team in the Blue Mountains.</p>	<p>The Forest Service has made a good faith effort to include viable portions of the RNEA into Alternative B and will continue to work with the public to implement good ideas that are within and outside the scope of this EIS.</p>

Table 32. Comments and Responses about Alternatives Dismissed from Detailed Study	
COMMENT	RESPONSE
<p>Headwaters supports the Restore Native Ecosystems Alternative (RNEA) which was prepared by a coalition of citizens and citizen groups. Reading the alternative in full (Appendix L) we can only conclude it is a shame for the agency to not give this alternative full consideration. Furthermore, we do not believe there is a legally valid justification for dismissing it from detailed study. The RNEA is a comprehensive, well thought out alternative that was feasible enough to have the agency incorporate many of the main concepts into the other action alternatives. It remains disconcerting for organizations like Headwaters who periodically submit alternatives for consideration only to have their alternative be dismissed by phrases like, "beyond the scope of this EIS," particularly when it appears that the proposal is designed explicitly to address the identified purpose and need. The RNEA deserves to stand alone as an alternative to be considered fully with a realistic effort to determine if its adoption would best meet the stated project goals.</p>	<p>The DEIS explained specific reasons why portions of the RNEA were outside the scope of this EIS. The Forest Service has made a good faith effort to include viable portions of the RNEA into Alternative B and will continue to work with the public to implement good ideas that are within and outside the scope of this EIS.</p>
<p>Our concern is that endangered species will all be "adversely affected" by the plan as proposed. We request an alternative where no herbicides are used.</p>	<p>Invasive plants themselves may harm endangered species, as well as invasive plant treatments. The DEIS considered an alternative that would not have used herbicides but determined that a non-herbicide alternative would not meet the underlying need for action. The DEIS stated that some invasive plants that infest or can be expected to infest National Forests in Region Six can only be effectively controlled with herbicides. Non-herbicide treatments are allowed in all alternatives and would be integrated, where effective, into site-specific projects. Alternative B minimizes herbicide use compared to the other alternatives. It represents a restrictive approach to herbicides that addresses the underlying need for action and is within the scope of this EIS.</p>
<p>The DEIS did not consider an alternative that would not allow herbicide use, timber cutting and removal, livestock grazing, off-road vehicle use, pile-and-burn or "jackpot" burning, post-clearcut slash burning, and other activities that disturb ecosystems and provide an opening for invasive plants to colonize wherever risk is determined to be significant, thus the analysis failed to uphold provisions of the National Environmental Policy Act requiring consideration of an adequate range of alternatives.</p>	<p>The DEIS explained that the alternative of prohibiting certain land uses and activities was considered but eliminated from further study. Prohibiting these multiple-use activities would be inconsistent with current laws governing the management of National Forest System lands.</p>
<p>We recommend that a No Herbicide Alternative be chosen. If this is not considered, there should at least be a ban on aerial spraying and broadcast spraying due to the countless problems that are associated with drift.</p>	<p>The DEIS explained why a No Herbicide Alternative would not address the purpose and need. The DEIS discussed concerns associated with herbicide drift and included mitigation measures to reduce likelihood of harm.</p>

Table 32. Comments and Responses about Alternatives Dismissed from Detailed Study	
COMMENT	RESPONSE
Strongly opposed to aerial spraying of herbicides. All options contain such spraying, which doesn't seem like an adequate range of alternatives has been prepared.	The DEIS stated that a “no aerial application alternative” would not meet the underlying need for action, which includes making new practices, technologies, and chemical formulations of herbicides available for use on National Forests lands in Region Six. The DEIS explained that aerial application may be necessary in some locations (Hell’s Canyon being the best example), because of scale, topography and/or access. In these rare cases, aerial application of herbicides is the only effective control method. However, the action alternatives include standards that would apply to aerial spraying, for instance, such spraying would be prohibited in municipal watersheds
All of the alternatives are associated with plausible scenarios that exceed the toxicity indices for birds and mammals that eat grass or insects, acres treated that exceed a LOAEL, and herbicides that may adversely affect amphibians." (p.4-44). Why were no alternatives considered for adoption that would avoid these significant harms?	No viable alternatives exist that address the purpose and need would eliminate all plausible scenarios for adverse effects to animals. Under all alternatives, to reduce or eliminate direct or indirect negative effects to water quality and aquatic biota from the application of herbicide, site-specific soil characteristics, proximity to surface water and local water table depth would be used to determine herbicide formulation (e.g. use of aquatic labeled products), size of buffers needed, if any, and application method and timing. Site-specific project design (e.g. application rate and method, timing, wind speed and direction, nozzle type and size, buffers, etc.) would be required to mitigate the potential for adverse disturbance and/or contaminant exposure. These standards are intended to reduce risk of actual harm to species.

Inventory, Monitoring and Adaptive Management

Several commenters queried how the invasive plant program would be monitored. Broad scale monitoring would occur via existing large scale efforts, such as Pacfish/Infish Biological Opinion (PIBO), the Forest inventory and Analysis Network (FIA), and the Forest Health Monitoring plots. Site-specific monitoring would occur at the Forest and project level. Progress will be tracked via the NRIS/Terra database.

Table 33. Comments and Responses about Inventory, Monitoring and Adaptive Management	
Comment	Response
Monitoring-how will this be accomplished? What's funding like for implementation monitoring?	Monitoring occurs at both the regional and Forest level. Funding is allocated annually to complete this work
We fear that if one application of herbicide is ineffective, more will be applied and damage could be done through unexpected cumulative effects. We question that you have state of the art effectiveness monitoring in place to truly curb these chemical alternatives if they begin to do more harm than good. Ecosystems are complex and simple answers are known to be often wrong.	Invasive plant projects would be monitored to ensure that treatments are effective and adverse effects are mitigated as planned. The DEIS acknowledged the complexity of invasive plant management in Region 6. The Proposed Action requires rationale be provided for herbicide use and includes an objective for reducing use. Alternative B further requires a commitment to using other non-herbicide methods before resorting to herbicides.
One element of the PDCs important to defensible NEPA and ESA processes is the development of a monitoring plan. Without the inclusion of a monitoring program the FS and consulting agencies will have no basis to evaluate how the Standards will be applied in the field or whether they will be effective. Passing this responsibility to the sub-Regional level loses effectiveness gained at the broad-scale, risks loss of consistency, and incurs increased cost and added complexity. This could translate into increased risk from the invasive plant management program on ESA listed species and their habitats. NOAA Fisheries reiterates its recommendation that an interagency monitoring program focusing on invasive weed treatment, PDC compliance, and effectiveness be developed and incorporated into both the FEIS and ESA BA.	The Regional NRIS/Terra database and existing large scale monitoring efforts, such as PIBO (Pacfish/Infish Biological Opinion) monitoring, the Forest inventory and Analysis Network (FIA), and the Forest Health Monitoring plots are relied on for the broad-scale perspective. Site-specific monitoring would occur at the Forest or project level. See Appendix M for more information.

Table 33. Comments and Responses about Inventory, Monitoring and Adaptive Management	
Comment	Response
Appendix M (Inventory and Monitoring Plan Framework) of the DEIS does not incorporate several important concepts contained in the No Action alternative. The No Action alternative states that "...Forests are currently required to address...projected need for vegetative management by method, over the next three to five years...how the projected need for treatment can be reduced, and identify the steps that can be taken to reduce the reliance on herbicides and prescribed burning...review progress on an annual basis toward reducing reliance on herbicides and prescribed burning..." These concepts were originally included in the preferred alternative, and then subsequently dropped from the Standards. NOAA Fisheries requests that these concepts be added back into the preferred alternative.	Objective 3.2 (Proposed Action and Alternative B) and Standard 17 (Alternative B) include the concepts of reducing herbicide use. Standards in the Preferred Alternative require that managers document their rationale for using herbicides over other methods.
No inclusion of follow-up/follow-through for management recommendations after herbicide use. This has been the largest single limitation to effective invasive plant treatment on R6 National Forest lands where I have worked. Areas are herbicide-sprayed, 60 to even 95% effective. But there is no effective follow-up planning for residual weeds that will simply reinfest sprayed areas. This is the time to use strategic handpulling. This follow-up would improve site-specific effectiveness, as well as to decreasing the repeat need for economically and ecologically expensive reapplication of herbicides. Some of this follow-up is/will be done at the project level, but, unfortunately, this is not so in many cases. Inclusion of this language and guidance at the EIS level would provide direction for resource managers, especially those who are just beginning to focus on the significant problems and complexities of weed management.	Maintenance of initial treatments would likely be necessary and manual treatments may be used in areas where herbicides may have been used at one time but are no longer needed because the surviving invasive population is small enough to maintain by hand. This would be addressed in site-specific treatment plans. Adequate guidance is included in the Proposed Action to ensure managers would not repeat ineffective or unnecessary herbicide treatments.
Until you can measure and report on herbicide use, you cannot meaningful claim to have a program to reduce pesticide use. The US Forest Service should follow these protocols.	Information on annual herbicide and pesticide use on National Forest is collected and disclosed in monitoring and accomplishment reports.
In regards to the No Action alternative early detection comment, for the above weeds [Japanese, Himalayan, Giant knotweed (<i>Polygonum cuspidatum</i> , <i>polystachyum</i> , <i>sachalinense</i>), Whitetop, perennial pepperweed and dyer's woad (<i>Cardaria draba</i> , <i>Lepidium latifolium</i> and <i>Isatis tinctoria</i>), Dalmation toadflax and butter&eggs (<i>Linaria dalmatica</i> and <i>L. vulgaris</i>), Medusahead, cheatgrass and Ripgut brome (<i>Taeniatherum caput-medusae</i> , <i>Bromus tectorum</i> and <i>Bromus rigidus</i>)] and numerous others (Russian knapweed, field bindweed, leafy spurge), it will not matter how early the population is detected, unless it is found within the first month of establishment, which is unrealistic to expect. Deep rooted perennial species, such as all listed above except annual grasses, are difficult to control and would need to be pulled or dug up before root systems were too large. Any root fragments will result in re-establishment of the weed. The annual weeds must be detected before seedheads are developed and studies have shown that even after clipping cheatgrass 12 times, it still produces a seedhead.	An early detection/rapid response strategy is required under the National Invasive Species Strategy (link to electronic version of this document in Appendix S). While this requires diligence, it is a technique supported by many in the field of invasive species management.
On Forest Service land the public, FS staff, and contractors must be able to unambiguously ascertain from objective criteria provided by the final EIS when standards are met or not met; in the latter case there must be enforcement remedies specified and implementable in a time scale applicable to invasive species situations.	The standards were designed to provide implementable criteria for invasive plant projects.

Table 33. Comments and Responses about Inventory, Monitoring and Adaptive Management	
Comment	Response
<p>8. Chapter 2 page 11: Sometimes process can kill the goose that laid the golden egg. In certain areas, no inventory is needed. You need to get out there and kill the weed because it has clearly taken over. Be careful to not design something wherein one size is deemed to fit all, in terms of process, or you may lose ground and time, critically. An example is knotweed, a scourge of the RMZ, which clearly starts upstream and moves downstream. It carpets the entire RMZ and because it is not dependent on aquatic environments, moves laterally, as well. We have found that if you start upstream and move downstream systematically, and get it laterally where it has spread that way, you can successfully eliminate it in a watershed. For some watersheds with major invasion, no inventory is needed and would just waste time, because everyone with eyes can see where the problem is. Mapping is good where the weeds are "here and there," not where they have taken over the local flora entirely. Again, design your protocol to fit the obvious and the subtle, so you don't lose valuable time with the obvious situation. If you must inventory all things first (we hope things are not that rigid), then include things like flyovers and highlighting areas of aerial maps, as acceptable protocol, so it can be done quickly for what would show up so readily that way. The weeds are not waiting while you map the obvious.</p>	<p>We recognize the urgency of this issue and the trap of "analysis paralysis". The alternatives are intended to streamline the invasive plant project planning process to the extent possible while complying with NEPA and other environmental laws.</p>
<p>The DEIS also needs to have more provisions to guide and support USFS monitoring and research so that this problem can be better understood and dealt with.</p>	<p>Monitoring for this EIS relies on existing sources, Regional NRIS/Terra database and existing large scale monitoring efforts, such as PIBO (Pacfish/Infish Biological Opinion) monitoring, the Forest Inventory and Analysis Network (FIA), and the Forest Health Monitoring plots for the broad perspective. Site-specific monitoring will occur at the Forest or project level. See Appendix M for more information.</p>
<p>Monitoring should be done in areas where no treatment is accomplished as well as where treatment is accomplished. This covers both weed free for new infestation areas as well as rates of spread when treatments are not accomplished for budget or policy reasons.</p>	<p>The Forest Inventory and Analysis Network (FIA) or the Forest Health Monitoring plots can be used to track the spread or reduction in spread of the most dominant invasive plants in treated or untreated areas.</p>
<p>Monitoring accountability should be restated. Several key components of accountability should be required for controlling invasive species infestations. Monitoring should include three critical components during invasive species management projects: (1) measurement of the extent of invasive species populations;(2) measurement of the effectiveness of treatments; and (3) measurement of non-target effects, e.g., incident tracking and measurement of environmental consequences on non-target ecosystems from chemical treatments.</p>	<p>These components are appropriately monitored at the site-specific project level.</p>

Table 33. Comments and Responses about Inventory, Monitoring and Adaptive Management	
Comment	Response
<p>Monitoring - We believe that any monitoring plan should be reasonable and capable of being implemented. Any requirement to monitor every treatment project at all monitoring levels is unreasonable. We believe that a systematic monitoring plan should be designed where implementation monitoring of standards can be done fairly easily, treatment and restoration monitoring can be done at different levels at different intensities, and environmental effects monitoring should be done in statistically sound sampling protocol. Implementation monitoring should be done at least once a year at each district conducting invasive plant control projects. We do have concern that the same level of treatment and restoration effectiveness monitoring being required on every project will become an onerous task and take time away from other activities or not be implemented in a truly useful manner for adaptive management. The monitoring plan should require full effectiveness monitoring at selected sites and a scaled down version at the remaining sites. Full monitoring should be done for a sample of related treatments on similar land types. To be a truly adaptive management monitoring program, it should be implemented across multiple National Forests and coordinated with other federal, state, and county agencies. Thus, the question of "which treatment methods, separate or in combination, are most successful for specific invasive species" can be answered more systematically. The remaining questions on weed distribution and need for follow-up treatment can be assessed much more quickly. The same issue arises for environmental effects monitoring. Unless the treatment is in a highly sensitive area, a sampling protocol across multiple federal, state, and county agencies should be coordinated so that you are not trying to monitor every project for environmental effects.</p>	<p>We recognize the urgency of this issue and the trap of "analysis paralysis." Monitoring in this EIS relies on existing sources, our Regional NRIS/Terra database and existing large scale monitoring efforts, such as PIBO (Pacfish/Infish Biological Opinion) monitoring, the Forest inventory and Analysis Network (FIA), and the Forest Health Monitoring plots for the broad perspective. Site-specific monitoring will occur at the Forest or project level. See Appendix M for more information.</p>
<p>Address in your final IPEIS what places in our National Forests have been sprayed for noxious weeds and what the weed situation is at present.</p>	<p>Chapter 3 of the DEIS addresses the current situation relative to invasive plant management to the level of detail appropriate for a programmatic document.</p>
<p>The Forest Service should implement a monitoring program to ensure that any unexpected impacts on non-target plant populations are identified immediately and are remedied. The National Forest Management Act (NFMA) requires such monitoring. Monitoring "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." 36 C.F.R. [section] 219.12(k).</p> <p>NEDC is concerned with the Forest Service's failure to require monitoring to determine the short and long term impacts of management techniques it proposes. The Forest Service should also create a monitoring program to ensure long term ecosystem health.</p>	<p>Monitoring in this EIS relies on existing sources, our Regional NRIS/Terra database and existing large scale monitoring efforts, such as PIBO (Pacfish/Infish Biological Opinion) monitoring, the Forest inventory and Analysis Network (FIA), and the Forest Health Monitoring plots for the broad perspective of how ecosystem health is affected by management or lack of management. Site-specific monitoring will occur at the Forest and project level. See Appendix M for more information.</p>

Implementation Funding

Commenters expressed that invasive plant programs should be funded. Funding decisions are beyond the scope of this NEPA document and no changes were made to the FEIS in response to these comments.

Table 34. Comments and Responses about Implementation Funding	
Comment	Response
<p>Our contact with and observations of the national forests in southern Oregon indicate they are operating with minimum staff and budgets. Implementing an alternative from this IPEIS would be irresponsible if the agency does not have sufficient funding or staffing to carry out the required treatments, goals and objectives. If the past 15 years is an indication of what's in store budget wise for this program, we would say the prevention and management of invasive plants is in trouble. Do not implement this program unless full funding is assured.</p> <p>I do not have a solution for funding because I feel Taxes and fees are already to high and with the federal government's deficit spending I do not foresee Congress providing more funds for the Forest Service to further implement the Invasive Plant program and the Fee Demo doesn't provide it either.</p> <p>And a sufficient budget will require the commitment of management at all levels, including the Chief's office and USDA. A serious shortfall in one year will set the program back several years.</p>	<p>Management direction to Forest Plans. Projects would be funded on a case-by-case basis. Some of the direction can be implemented without funding. The EIS describes the effectiveness of the alternatives given current budgets.</p>

Cost of Treatment

The comments about cost of treatment were generally framed as questions about how treatment costs were figured and presented in the DEIS. Some people stated that the estimated costs of herbicides were too low, given the adverse effects that may result. Others said the estimated costs were too high, given personal experiences with herbicides on non-federal lands. The relationship between cost and effectiveness was also questioned.

In response to these comments, the EIS was supplemented to address how need for recurring treatment might increase the years estimated to control invasive plants under each alternative.

Table 35. Comments and Responses about Cost of Treatment	
COMMENT	RESPONSE
..the economics need to be reviewed to more closely align with costs experienced by non-federal agencies.	An economic analysis that more closely aligns with costs experienced by non-federal agencies would not be appropriate because federal agencies operate under different policies, laws, controls, etc. that require different operational procedures and subsequently incur different costs.
I realize that in many cases, herbicide use is perceived as the most cost effective solution. However, I believe that this cost-effectiveness is only short term, at best and short-sighted, at worst. The additional costs come as health detriments to ecosystems and those exposed to herbicides.	Effectiveness in meeting the purpose and need and effects from herbicides on human and ecosystem health are discussed throughout Chapter 4. The monetary costs of treatment are discussed separately. Long-term prevention measures are a major component discussed throughout the DEIS.
Sensible, non-chemical strategies will save the Agency money. Social and environmental externalities such as endangered species and water quality issues, will cost public much more in the long-term even if these items are not included by current accounting practices.	Non-chemical treatment strategies are allowed under all alternatives. Effects from herbicides on the physical, biological, and social environment are discussed throughout Chapter 4. The monetary costs of treatment are discussed separately. Long-term prevention measures are a major component discussed throughout the DEIS.
We do not believe the agency has presented adequate data to show that non-chemical techniques are routinely more expensive than herbicides.	Cost of both chemical and non-chemical treatments is discussed in Chapter 4. Estimated costs of a one-time, per acre treatment, show that in many cases non-chemical treatments are less expensive than chemical treatments.
What is estimated money cost of the Proposed Action as compared with Alternatives B and D?	There are many variables including future budgets, new or expanding invasive plant infestations that make it difficult to estimate the total cost of an alternative. Rather, the alternatives are compared by the estimated total acres treated per year based on current budget estimates (see Chapter 4).

Table 35. Comments and Responses about Cost of Treatment	
COMMENT	RESPONSE
<p>Thus, if the DEIS bases its analysis on an assumed 100 [percent] successful treatment rate, this assumption needs to be supported by relevant scientific data according to the requirements of 40 CFR 1502.24. If the assumption is something less than 100[percent] treatment rate, then the DEIS should show the scientific support for whatever the estimated successful treatment rate is for each alternative. It would appear likely that each alternative would have a different successful treatment rate, as much of the DEIS analysis is based on trying to balance the different effectiveness levels of the alternatives. The outcome of such calculations could significantly change the estimates on Table 4-4 for the number of years needed for each alternative to achieve control- and by association, the total cost of each alternative. For instance, in the calculations for "years needed for each alternative," the Forest Service assumes a constant rate of spread over time. The Forest Service should take into account the strong emphasis on prevention in Alternative B, which will reduce the rate of annual spread in the future.. As a general matter, the Forest Service appears to miscalculate acres treated under the plan. It divides the estimated cost per acre (which varies depending on treatment employed) into the estimated total invasive plan budget. Should the Forest Service also take into consideration the administrative costs rather than just assuming that every dollar will be used for treatment?</p>	<p>The cost of treatment is based on a weighted average cost per acre of treatment likely for each alternative, based on the treatments methods allowed. The differences in average cost are from the differences in allowable herbicides and the degree of emphasis on non-herbicide methods. This provides a basis from which to compare alternatives. However, the actual costs will fluctuate, based on site characteristics, objectives and other factors.</p> <p>As noted, the DEIS analysis of years to control is based on an assumption that each acre of treatment equals an acre of control. The FEIS has been supplemented to address how need for recurring treatment might increase the years estimated to control invasive plants under each alternative.</p> <p>Since it is assumed that reapplication requirements, opportunities to use multiple treatment types, and administrative costs would be similar amongst the alternatives, this analysis adequately discloses the relative costs and effectiveness of each alternative.</p>

Table 35. Comments and Responses about Cost of Treatment	
COMMENT	RESPONSE
<p>We ask that this section [4.6] be revised based on the following considerations. Most generally, the cost analysis fails to account for the true long-term costs of implementing each alternative. Because the analysis simply assumes a constant annual cost for each alternative (as Table 4-33 does for per acre herbicide application) the analysis does not reflect the reality that the long-term cost will not be determined simply by annual costs, but by the number of years that the respective annual costs will be incurred -which, in turn, is the total number of years needed to "control" the invasive plants. The problem, however, is that the DEIS's projection of the number of years needed for each alternative to control the invasive plants, given in Table 4-4 Years to Control at Current Funding Levels, has little, if any, scientific data to support the estimates. In order to make such year estimates accurate, it would seem that the DEIS must account for the fact that the effectiveness of each alternative will fluctuate from year to year. In other words, from a practical perspective, the number of new acres treated each year by each alternative will fluctuate based on the prior's year's effectiveness rate: if a proposed action would treat 30,000 acres annually, but would only be 50 [percent] effective, then only another 15,000 acres of new land (not 30,000) can be treated each successive year because 15,000 acres of last year's area will have to be re-treated. Looking at it from another angle, a method that is 80 [percent] effective but costs \$70 per acre may be cheaper over the long-term than a method that is only 50[percent] effective but costs \$60 per acre (so if all you compare is the per acre cost, then the analysis is misleading and incomplete). Incorporating an "effectiveness factor" into the analysis is necessary to make the results credible because it would let the public know how many acres of actual control each alternative offers The DEIS seems to assume (or at least does not clarify otherwise) that each alternative will provide 100 [percent] successful annual treatment (i.e., no re-treatment necessary). This is potentially true, but it is highly unlikely.</p>	<p>Recurring treatments may be necessary to fully eliminate invasive plants at a given site. However, it is not always necessary to fully eliminate invasive plants to meet site objectives. Chapter 3 of the DEIS provides information on integrated invasive weed treatment techniques that would be applied in all alternatives.</p> <p>The cost of treatment is based on a weighted average cost per acre of treatment likely for each alternative, based on the treatments methods allowed. The differences in average cost are from the differences in allowable herbicides and the degree of emphasis on non-herbicide methods. This provides a basis from which to compare alternatives. However, the actual costs will fluctuate, based on site characteristics, objectives and other factors.</p> <p>As noted, the DEIS analysis of years to control is based on an assumption that each acre of treatment equals an acre of control. The FEIS has been supplemented to address how need for recurring treatment might increase the years estimated to control invasive plants under each alternative.</p>

Effectiveness Preventing and Reducing Invasive Plants

Several respondents questioned the assumptions and methodology used to determine how well each alternative would prevent/reduce the spread of invasive plants. Many people asked for clarification and supplementation of this section of the document. Some people expressed disagreement with the conclusions presented in the DEIS.

The analysis was revisited in response to these comments and updated results are in Chapter 4.2.

COMMENT	RESPONSE
4.2.3 Direct and Indirect Effects-The thinking in paragraph 3, percent spread rate under Alternative B is flawed. Although new introductions are reduced, spread from already established invasive plant populations in greatly increased due to the lack of effective available control tools. Spread rate in Alternative B should at least equal, if not exceed the spread rate of the Proposed Action.	The analysis for effectiveness has been reevaluated based on this and similar comments and updated results are in Chapter 4.2.
Table 2-6 - Numbers for Alternative B are poorly thought through, showing a smaller percent of spread yet a longer time to control. Weeds spread at an annual rate of 8% to 12% dependant on the species. With less acres treated, greater spread will occur. The majority of prevention methods sited were effective to reduce new invasions from outside the forest. Spread of established invasive plant populations within the forest are not adequately accounted for because spread of invasive weeds is not solely through humane intervention. With reduced control tools and continued natural process (plant reproductive part movement by wind, water, through scat or on animals, etc) spread of established populations would be greater than 3 to 4%. The reduction in control methods would result in a greater annual rate of invasive spread in Alternative B as compared to the Proposed Action.	Natural processes are important factors in the spread of invasive plants. These are described in Chapter 3. Natural processes are included as an assumption in the analysis for effectiveness. The analysis for effectiveness has been reevaluated based on this and other similar comments and updated results are in Chapter 4.2.
The following weeds [Japanese, Himalayan, Giant knotweed (Polygonum cuspidatum, polystachyum, sachalinense), Whitetop, perennial pepperweed and dyer's woad (Cardaria draba, Lepidium latifolium and Isatis tinctoria), Dalmation toadflax and butter&eggs (Linaria dalmatica and L. vulgaris), Medusahead, cheatgrass and Ripgut brome (Taeniatherum caput-medusae, Bromus tectorum and Bromus rigidus)], in addition to other annuals and deep rooted perennials, would not be controlled within a 3 to 5 year management plan even if detected early without a comprehensive approved list of herbicides such as allowed in the Proposed Action. At best, spread of these species would be delayed under the No Action alternative and Alternative B.	Additional information regarding difficult to control species has been incorporated into Chapter 4.2 of the FEIS.

Table 36. Effectiveness Comments and Responses about Preventing and Reducing Spread of Invasive Plants	
COMMENT	RESPONSE
<p>4.2.5 Methodology Table 4-6 Relative Ranking of Prevention Effectiveness by Alternative</p> <p>In addition to the above comments, Natural vectors of spread appear to be extremely under estimated for Alternative B. The literature I am familiar with states that invasive plants can naturally spread 5 to 20% without intervention by man. Not being familiar with the 1999 USDA FS report by Stemming I have to assume the 8 to 12% he determined was also natural spread. Or at least assume the 8% is natural spread and the 12% includes intervention by man. Therefore, in Alternative B, assuming only 20,000 acres (4.7%) are successfully treated, and assuming no new infestations, meaning 400,000 are left non-treated and spreading at a natural rate of 8 to 12% equals a minimum spread of 7.6% ($420,000 - 20,000 = 400,000 * 8\% = 32,000 / 420,000 = 7.6\%$), double the 3% to 4% estimated in the EIS. Using this same type of reasoning for the Proposed Action, 30,000 acres successfully treated and 390,000 acres spreading by natural vectors gives a minimum spread of 7.4% ($420,000 - 30,000 = 390,000 * 8\% = 31,200 / 420,000 = 7.4\%$). This allows for 840 acres of new introductions to equal the 7.6% spread allowed in Alternative B. With early detection/rapid response action in the Proposed Action, new introductions should be kept below 840 new invasive plant acres. This would mean the Proposed Action would give a greater or equal reduction in spread as compared to Alternative B.</p>	<p>Natural processes are important factors in the spread of invasive plants. The 8-12 percent spread rate estimate in the 1999 USDA FS report represents more than these natural processes. Active management and human induced disturbance ground disturbance and transport has been occurring on the National Forests for decades. It is virtually impossible to separate out the factors that cause or contribute to the introduction, establishment and spread of invasive plants. Rate of spread is complicated by many factors and varies by species. The estimates in the FEIS have been reevaluated and updated.</p>
<p>If we look carefully at the Current Direction and No Action Alternative sections in the IPEIS we see there has been no assessment of specific guidance on a regional basis nor is any data available to measure the yearly success or failure of accomplishments or treatments for each forest. Without this information there is no way to compare alternatives or prove the inadequacy of the current direction. Furthermore, the IPEIS lacks an analysis of any operational results from previous invasive plant treatments and fails to describe the effects of using various treatment tools since 1989.</p>	<p>The alternatives, including No Action are compared and evaluated for effectiveness in Chapter 4.2. Other landowners and other land managers already commonly use the tools proposed in the alternatives. Numerous scientific studies conducted by state, federal and university scientists support the efficacy of these tools for treatment of invasive plants. These studies are synthesized into operational recommendations in the PNW Weed Control Handbook (OSU 2002).</p>
<p>The problem here is that there is no data in the IPEIS showing the inadequacy of the current management direction as to which preventive measures worked and which didn't. Neither are we provided with any data showing the success of the new herbicides now proposed for use. Our observations show that private lands are having the same invasive plant problems as are occurring on federally managed lands (some to a greater extent) even with extensive herbicide availability and use.</p>	<p>Studies on the effectiveness of prevention have been reviewed and synthesized in the PNW white papers (Appendix D). The EPA evaluates effectiveness of new herbicides. This information has been synthesized into operational recommendations in the PNW Weed Control Handbook (OSU 2002).</p>

Table 36. Effectiveness Comments and Responses about Preventing and Reducing Spread of Invasive Plants	
COMMENT	RESPONSE
<p>Table 4-4 (and related table 4-5) contain data that appear to suggest that the preferred alternative will most rapidly achieve "control" of invasives in the Pacific Northwest. These tables, which appear to show that Alternative C contains the Goldilocks "just right" combination of prevention and restoration, were a factor in the choice of Alternative C. Unfortunately, there is no data in the DEIS to support the numbers presented in these two tables. Therefore the choice of Alternative C is arbitrary and capricious, and violates both the Administrative Procedures Act and the Data Quality Act.</p> <p>We are highly skeptical of the claim that the very limited resources allocated by the Forest Service to prevent the spread of invasive species in the Preferred Alternative will result in a reduction in the rate of spread of 50%, as presented in table 4-4. In fact, even if all the measures we propose in our second comment were adopted, we would be skeptical of such an optimistic claim.</p> <p>The tables equate "acres treated" with acreage that has been "controlled," but there is a high probability that aggressive treatments, such as herbicide use and soil cultivation, will not control invasives. The disturbed habitat, empty of canopy cover, which such treatments create, is exactly the sort of environment in which invasive species thrive. There is no data presented in the DEIS relating to the effectiveness of various treatment methods in actually controlling invasives. The definition of control is suitably vague that it includes the possibility that many areas will need to be treated annually, greatly decreasing the potential acreage covered over time. Such data must be gathered as part of the adaptive management process that the proposed rules do not require.</p>	<p>The FEIS discussions of the alternatives' effectiveness have been edited to respond to this and similar comments. No data exists to precisely predict the results of each alternative. Rather, invasive plant specialists devised an analysis methodology that is applied consistently to each alternative so that objective comparisons can be made. In this methodology, specialists used relative values to predict how much prevention practices would actually reduce the rate of spread. Acres of treatment were indeed equated with acres of control as a means of arriving at a relative value for "years to control" for each alternative. This value is not intended to be precise but is intended to help managers and the public evaluate the relative costs, effectiveness and effects of each alternative.</p>

Table 36. Effectiveness Comments and Responses about Preventing and Reducing Spread of Invasive Plants	
COMMENT	RESPONSE
<p>The DEIS fails in its analysis of the effects of the treatments that may be used to combat invasive plants. Evidence exists, for example, that herbicides may create conditions more hospitable to invasive species than were present before the chemicals were used. McDonald and Everest of the USFS Pacific Southwest Research Station found that cheatgrass populations, not observed in the study plots at the beginning of a study (McDonald, Everest. PSW-RN-419-Web. 1996) exploded in an herbicide-treated plot (at 743,667 plants per acre with 22 percent foliar cover) where it was 6 times greater in number of plants and more than 7 times greater in foliar cover than in the control plot (130,300 plants per acre, 3 percent foliar cover) two years after treatment. Of particular interest is that this study was done to consider the most effective means of reducing bearclover, another possibly high priority threat in R6 (we'd know whether bearclover is high priority if the DEIS had made the required analysis), comparing mulch, herbicide and control plots. McDonald and Everest found that the cheatgrass was colonizing bare ground. George Harper of the Canadian Forest Service found similar dynamics in comparable ecological conditions to many parts of R6 in British Columbia. As he notes in his Brush River Brushing Trial site project report (EP1179 http://www.for.gov.bc.ca/research/forprod/fordyn/projects/ep1179/ep1179.htm), "Total number of plant species present varied considerably over all plots, independent of treatment. Total number of species are higher in glyphosate than in other treatments due to the ability of invading plant species to colonize on exposed sites. The initial reduction of shrub and herb cover of naturally occurring species following herbicide application probably allows for the establishment of such 'invaders.'" That herbicides appear to be a disturbance factor that actually encourages invasive species to colonize and spread in herbicide-treated areas clearly must be analyzed in the EIS.</p>	<p>Chapter 4.3 and Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants disclose that treatment of invasive plants by any method may lead to the introduction of other invasive species. Natural vectors are always a factor in re-invasion of sites. That is why site restoration/revegetation was highlighted as an important tool (DEIS Chapter 3.3.2).</p>
<p>A mechanical-treatment-based alternative which also considers ORV use, grazing, and logging, along with appropriate and viable road closures could have a substantial impact on the spread of invasive plants. On the other hand, even the most chemically-intensive response to invasive species that fails to take into account the root causes of plant propagation will fail to succeed. Thus estimates of effectiveness of mechanical-treatment-based response seem to be down-played, while estimates for the chemically-intensive alternative seem to be over-exaggerated.</p>	<p>Mechanical treatment is an important tool in an integrated approach to the treatment of invasive plants (see DEIS Chapter 3). Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants provides additional information. A significant number of invasive plants cannot be effectively treated by mechanical methods because of their physiology and reproductive nature.</p>
<p>[Chapter 2-29-table 2-6, Proposed Action](How can you determine number of years until invasive plants may be controlled. No real data to prove this assumption, please provide your data in this evaluation!</p>	<p>This determination is an estimate used for the purpose of comparing alternatives. It was based on the methodology presented in the DEIS Chapter 4.2. This section has been supplemented in the FEIS.</p>

Table 36. Effectiveness Comments and Responses about Preventing and Reducing Spread of Invasive Plants	
COMMENT	RESPONSE
Please give an example of where in your forest programs herbicide applications have worked permanently so no further application is needed and native vegetation has recovered itself with or without human assistance.	Herbicide use on National Forest is limited under the Mediated Agreement; effectiveness of this use is in FEIS Chapter 4.2.
You haven't addressed the 'resistance' factor plants acquire towards herbicides. How are you going to deal with that reality? How long do you plan to use these chemicals? Do you have any deadlines? What about the possibility of developing 'superweeds' as is the case with farmers now having to contend with across our nations farmlands?	The discussions about herbicide resistance have been supplemented in Chapter 3.3 and 4.2 in the FEIS to respond to this comment.
[Section 4.2] Additionally, the DEIS fails to consider possible ways to integrate some of Proposed Action into Alternative B so that the absurd results predicted would not occur. For example, if there was no way to get local native seed, and seeding was essential, then perhaps alternative B could allow reseeding with a non-persistent exotic in order to prohibit re-growth of the invasive species. The DEIS claims that alternative B would lead to herbicide resistance because some types of herbicides require multiple treatments. However, the DEIS fails to recognize that although alternative B has fewer herbicides it still has a variety of herbicides and thereby can, like the preferred alternative, treat with a diverse combination of herbicides to prevent resistance. Alternative B, like the proposed Action, also allows for consideration of additional herbicides.	Alternative B was developed to respond to issues and suggestions received during scoping, including those received from coalition of citizen's groups. Alternative B lacks the variety of herbicides necessary to treat some of the more aggressive species known in Region Six. A blended alternative that integrates the elements of multiple alternatives may be selected with rationale provided in the Record of Decision.

Table 36. Effectiveness Comments and Responses about Preventing and Reducing Spread of Invasive Plants	
COMMENT	RESPONSE
<p>[Section 4.2] Reliance on broad assumptions and generalized statements provides inadequate information for public comment. The comparison of the effectiveness of each alternative is full of such assumptions. The focus on cost analysis fails to take into consideration the effectiveness of each treatment option. If it is much more expensive but much more effective over time to use hand removal than to have to repeatedly treat with herbicides this should be considered. The limited explanations for how numbers were calculated limits the effectiveness of the tables used comparing the various alternatives. For example, explanation for the creation of Table 4-6 comparing prevention effectiveness states: "following the above assumptions, the team evaluated every standard for individual contribution to reducing spread, and then evaluated these standards as a group for each alternative. Prevention effectiveness was ranked for each group of standards based on effectiveness in reducing invasive plant seed introduction and survival." What does this mean? How did the team "evaluate"? How were the standards ranked? This lack of identification of methods or data used to generate Table 4-6 makes the Table seem unrealistic. Likewise, the explanation for Table 4-4 is only that "given the projected rates of spread and annual treatment area estimates described above, the years to control invasive plants was calculated." How was the calculation done? Does acres treated actually mean there is no more invasive species present? Throughout the section on comparing the alternatives similarly lack sufficient explanation of the methods or data used to generate them giving the overall impression that the Tables are designed solely to support the preferred alternative.</p>	<p>The effectiveness of the alternatives is based on the number of tools and prevention strategies per alternative. The more combinations available for the diversity of species in Region Six, the more effective the alternative. Integrated weed management principles apply to the selection of method, but the more methods available, the more likely their effectiveness.</p> <p>A more expensive treatment is not necessarily more effective. Treatments under all alternatives would be designed to address specific site and species characteristics and include a combination of methods, not just herbicide.</p> <p>The discussions about effectiveness and alternative comparison tables have been updated in the FEIS Chapter 4.2.</p>

Table 36. Effectiveness Comments and Responses about Preventing and Reducing Spread of Invasive Plants	
COMMENT	RESPONSE
<p>[Section 4.2] The projected treatment acreage seems implausible. The sole explanation about the comparative effectiveness of the different proposed alternatives is that "the annual treatment acreage is based on current budgets and the costs of various types of chemical and non-chemical treatments." The cost of treatments says nothing about the effectiveness of a particular treatment and whether or not the acres treated were treated successfully. What is meant by treatment? Does that mean that an area has no more of a particular invasive species? Does it mean that an area has been sprayed by an herbicide but not that the herbicide was effective? Isn't whether or not an alternative is effective over time in restoring vegetation that is resistant to invasive species more important than whether the alternative can "treat" more acreage? The projected treatment acreage seems to be nothing but a smoke screen! Nothing in the analysis shows any real attempt to evaluate the long-term effectiveness of the different alternatives.</p>	<p>Effectiveness in restoring vegetation resistance to invasion is one of the most important aspects of this program. That is why site restoration/revegetation is discussed in Chapter 3 as a treatment method. Effective treatments would be designed to address site objectives, which vary based on the biology of the invasive species and the site conditions.</p> <p>Acreage is a useful factor for comparing effectiveness of alternatives because the more acreage of propagating individuals that have been eradicated, the more reduction in spread. Cost is related to effectiveness in that the greater the cost per acre, the fewer acres that can be treated. Fewer acres treated means more acres available of plants that can produce seeds and/or expand vegetatively. This equates to less long-term improvement in restoration of native or desirable vegetation on Forest Service lands as well as adjacent lands where natural vectors may move propagules.</p>

Table 36. Effectiveness Comments and Responses about Preventing and Reducing Spread of Invasive Plants	
COMMENT	RESPONSE
<p>[Section 4-2] The comparison of the various treatments fails to address the effectiveness of each treatment option focusing instead on the number of tools available and cost and acreage "treated." While there is no doubt that these factors are important in determining the how many acres of invasive plants may be killed, there are other factors that were not discussed. In dismissing Alternative B, the DEIS emphasizes that it has the fewest possible herbicides however it does not discuss the effectiveness of these herbicides nor the effectiveness of non-herbicide methods. Specifically, there is not a thorough discussion or documented evidence of how effective each of the tools available is in (a) treating the targeted species; and (b) contributing to recovery of native vegetation that is resistant to repeated waves of invasive species (and sprayings).. Perhaps some target species are best treated by hand removal and some are best treated by only one spraying of X herbicide whereas the use of Y herbicide would take multiple sprayings in one year. Moreover, a focus on "treatment" (i.e., killing) of invasive plants does not address the effectiveness of herbicides in promoting native vegetation recovery.</p> <p>Table 4-2 is ineffective because it does not discuss all of the potential herbicides that may be used. Furthermore, the comments are vague. For example, the DEIS states that "Formulations of these herbicides may be useful on some aggressive species that have not been effectively treated by other methods or herbicides" What aggressive species does the Forest Service? What other methods have been tried first and have failed?</p>	<p>Chapter 4-2 has been expanded in the FEIS to address these and similar comments. The effectiveness of herbicides in promoting native vegetation recovery is discussed in Chapter 4.3.</p> <p>Every invasive plant species and situation is likely to require a different combination of treatments. Numerous scientific studies conducted by state, federal and university scientists support the efficacy of these tools for treatment of invasive plants. These studies are synthesized into operational recommendations in the PNW Weed Control Handbook (OSU 2002).</p>

Effects on Non-Target Species and Native Plant Communities

Respondents expressed a wide variety of opinions about this section. Some stated that the analysis of effects to non-target plants from herbicides was overstated: “Potential for off-site drift from aerial applications has been greatly reduced over the last 10 years. New application equipment along with lower gallon per acres and drift control surfactants has resulted in very accurate aerial spray applications. This greatly reduces risk to non-target species.” A state agency expressed that “The toxicity to bees seems to be greatly exaggerated as well for most of the formulations considered.”

Other respondents stated that the effects were more significant than the analysis disclosed. For instance, one Environmental Advocacy Organization stated “The long half-lives of some of the chemicals discussed in the DEIS increase the likelihood that there will be harmful cumulative impacts on the native plants community.” Most of the comments about effects on non-target species related to herbicide use, however the point was made that non-chemical invasive plant treatments may also affect native plant communities.

Substantial changes were made to Section 4.3 of the EIS to respond to these comments. Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants provides detailed information about non-herbicidal effects to non-target plants and other environmental components. In addition, Standard 23 was added to ensure that people do not inadvertently harvest medicinal plants that have been affected by herbicides.

Table 37. Comments and Responses about Effects on Non-Target Plant Species	
COMMENT	RESPONSE
4-25, third paragraph, last sentence. "In arid regions, wind erosion if treated soil could also result in damage to non-target plants". Sentence is missing key words or the order is wrong, probably a mistake in copying and pasting. Suggested rewrite: n arid regions, treated soil can be moved off-target from wind erosion and could result in damages to non-target plants. Or on the next page under Metsulfuron methyl and Sulfometuron ethyl there is a statement that could be modified "In arid regions, wind erosion could also result in damage to non-target species"	The FEIS Chapter 4.3 has been edited to correct the sentence about arid regions and wind erosion.
One obvious concern is that harvesters of Medicinal Plants, which are also considered Noxious Weeds, could end up making medicine out of poisoned plant material. Another possibility is that other personal or commercially-harvested plants of medicinal, food, or other value in the vicinity of noxious weeds could inadvertently be contaminated with chemical herbicides.	These concerns are addressed through Standard 23 in the FEIS in all alternatives, requiring that Forests create a public information plan with notification and signage responsibilities (See FEIS Chapter 2.5). Site-specific project plans would consider the usefulness of target and adjacent nontarget species and incorporate strategies that protect human health and the environment.

Table 37. Comments and Responses about Effects on Non-Target Plant Species	
COMMENT	RESPONSE
<p>The toxicity to bees seems to be greatly exaggerated as well for most of the formulations considered. These conclusions appear to be counter to those in SERA documents as well. Given the potential doses calculated for a direct spray scenario, the risks are generally 20 to 100 times under most toxic endpoints for bees. The differential toxicity effects are not consistently presented, the uncertainty in the calculations is not presented. This uncertainty is particularly important when actual usage is to be considered. The reference documents do not seem to support the statement in the EIS.</p>	<p>One herbicide (2,4D) was found to pose a risk to bees at typical application rates. Two other herbicides (glyphosate and triclopyr) pose a risk at the highest labeled application rates. These results are based on FS/SERA risk assessments that incorporate the best available scientific information and have been peer reviewed. Uncertainty of this analysis was addressed in DEIS Chapter 4.3.</p>
<p>4.3.3 Direct and Indirect Effects Herbicide Effects on Non-target Plants Acetolactate Synthase (ALS) Inhibitors Correction: Chlorsulfuron, metsulfuron methyl and sulfometuron methyl are NOT relatively "new" herbicides. Although the technology for these herbicides have been more recently developed than the Synthetic auxin herbicides, these herbicides have been researched for over 20 years and available commercially since the 1980s. This is legally NOT considered a new herbicide.</p>	<p>The statement about "new" herbicides in FEIS Chapter 4.3 has been corrected to respond to this comment.</p>

Table 37. Comments and Responses about Effects on Non-Target Plant Species	
COMMENT	RESPONSE
<p>Non-herbicide treatments can cause substantial harm to non-target plant and plant communities. This should be a significant enough issue to address. Repeated mowing or grazing can substantially harm non-target plant and substantially change, shift plant communities and reduce biodiversity beyond natural regeneration. Prescribed fire can also substantially harm non-target plant and substantially change plant communities greater than changes caused by using the best-fit herbicide correctly. For example, Medicine Bow National Forest has currently restricted prescribed burns in areas prone to cheatgrass invasion because of the lack of ability to control the cheatgrass with an aerial herbicide application. Disturbance and foot traffic from hand pulling can substantially harm non-target plants. This section appears to assume herbicide will be used incorrectly. Under Alternative B best-fit herbicides will not be available.</p> <p>Inadequate Consideration of Each Alternative [Section 4.3] First, the Forest Service fails to adequately consider the environmental consequences of each alternative proposed, as is required by NEPA. "Section 102(2)(C) [of NEPA] requires that an impact statement contain, in essence a detailed statement of the expected adverse environmental consequences of an action, the resource commitments involved in it, and the alternatives to it." <i>Kleppe v. Sierra Club</i>, 427 U.S. 390,401-02 (1976). The FS admits that non- herbicide treatments can also harm native plant species but explains that "the impacts are not substantial and are not a significant issue." DEIS at 4-22. The effects of these treatments are said to be located in the analysis files. The agency cannot simply assert that the impacts are not significant and then fail to back that assertion with findings~ By not providing its analysis to the public, the Forest Service makes it impossible for NEDC members and other members of the public to effectively comment on each alternative. The Forest Service has not made its analysis of the impacts of non-herbicide treatments available to the public in violation of NEPA. To satisfy NEPA's public disclosure requirements, "the public [must] receive the underlying environmental data from which a Forest Service expert derived her opinion." <i>Idaho Sporting Congo V. Thomas</i>, 1.37 F.3d 1146, 1150 (9th Cir. 1998). NEDC asks that the Forest Service provide this analysis in a more accessible form.</p>	<p>The effects on non-herbicide treatments on non-target plants are discussed in Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants. These effects are not the focus of the EIS; these effects are not controversial and would be similar in all alternatives.</p>

Table 37. Comments and Responses about Effects on Non-Target Plant Species	
COMMENT	RESPONSE
<p>4.3.5 Methodology Paragraph 6, Discussion on herbicide persistence: One element to choosing the correct herbicide is evaluating the herbicides selectivity, for both post and pre treatments. If a persistent herbicide is needed, such as for control of cheatgrass, common crupina, medusahead or other annuals, and revegetation or release of desirable plant species is also desired, the weed management team should choose a herbicide that has persistence towards controlling the weed and is selective enough to allow the desired species to germinate. For the invasive plant species example sited above, imazapic would be a better choice over sulfometuron methyl. These annual invasive species are extremely sensitive to very low rates of imazapic, while native perennial grass and forbs are highly tolerant to medium to high rates of imazapic. Imazapic persists long enough in the soil to give long-term control of the annual species, yet is selective enough to allow germination of many native grass and forbs. This gives non-target plants a chance to establish and out compete the annual invasive weeds once the herbicide is degraded. Both the invasive plants and non-target plants have a similar sensitivity to sulfometuron methyl. This results in less selectivity and will not allow germination of the desirable species for the same length of time as the invasive annual plant. Careful selection of the right herbicide "tool" will show persistence as a benefit rather than a risk.</p>	<p>More discussion was added to the FEIS Chapter 4.3 regarding herbicide resistance.</p>
<p>Table 2-6 is very misleading and the "Numbers of herbicides included in each alternative that have a relatively higher potential to harm non-target plants" versus the "Acres of annual herbicide treatment . . ."has flawed reasoning (Section 4.4.3). This portion of the chart should be disregarded because it does not take into consideration the short-term "potential harm causing herbicides" versus the long-term potential harm of doing nothing using other control methods or using an inadequate herbicide for a prolonged period of time. For example: If only the herbicides allowed under Alternative B were available for use, annual treated acres of glyphosate would need to be higher to compensate for the lose of herbicides allowed under the Proposed Action. Application of glyphosate would be 3 to 10 times the number of applications needed to control weeds that herbicides in the Proposed Action are more effective on. Therefore, without these other herbicides available, glyphosate annual acres would need to be increased above the 2031 acres predicted to accomplish the containment (control) of 20,000 acres.</p>	<p>More discussion was added to the FEIS Chapter 4.2 regarding how effectiveness of each alternative was determined.</p>
<p>Table 3-14 Summary of Treatment Methods Herbicides. Potential for off-site drift from aerial applications has been greatly reduced over the last 10 years. New application equipment along with lower gallon per acres and drift control surfactants has resulted in very accurate aerial spray applications. This greatly reduces risk to non-target species. In addition, low volume applications (2 to 5 gallons of mix per acre) can be made where a large majority of spray is intercepted by the target canopy foliage, allowing remnant vegetation to quickly recover under the treated canopy.</p>	<p>The DEIS addressed the potential effects of herbicide drift. The standards associated with all alternatives require that "application rate and method, timing, wind speed and direction, nozzle type and size, buffers, etc." be designed to mitigate the potential for adverse disturbance and/or contaminant exposure due to drift.</p>

Table 37. Comments and Responses about Effects on Non-Target Plant Species	
COMMENT	RESPONSE
<p>Table 4-8 Summary of Effects by Measuring Factors The sentence "Any short-term adverse effects would be largely offset by the long-term benefits to native plant communities from protecting them from invasion of invasive plants." should be emphasized. A point that has not been well covered is the quick recovery of plant communities to properly used herbicides in IPM programs. Use of a herbicide not only will facilitate recovery of the natural state of the treated area, but will also stop the potential harm to yet un-invaded natural plant communities.</p>	<p>Additional discussion regarding beneficial effects of effective invasive plant treatments is in FEIS Chapter 4.3.</p>
<p>Lacking an analysis of the impacts over the long-term that may be expected from the use of various herbicides on non-target plant species composition and abundance, and lacking adequate guidance for which herbicides and other treatment options are suited or not suited for various ecological conditions common within the R6, the DEIS cannot serve as an appropriate tiering document for future decisions regarding invasive species within Region 6 as it is currently written.</p>	<p>Adequate analysis for selection of alternative is in this programmatic EIS. The EIS provides alternative suites of standards that will direct herbicide use, and discloses their relative effects. The EIS also provides guidance on what herbicides are appropriate for a variety of invasive plant species and situations.</p>
<p>The DEIS is lacking needed specific analysis of how each herbicide affects specific native plants - including non-listed plants and the potential for large scale degradation or elimination of more common native plant communities in areas sprayed (particularly relevant to broadcast and aerial spraying, also potentially to water-borne transmission to non-target riparian plants).</p>	<p>More information about effects on non-target plants has been added to the FEIS Chapter 4.3. Effects on specific non-target plant species of concern would be further addressed in project level analysis.</p>
<p>What beneficial plants that are food to wildlife will also be affected by the herbicides lessening the availability of food, which is the very reasoning you use to justify the use of herbicides to get rid of noxious invasive plants? Herbicides will play the same role as noxious weeds do in eradicating plant food sources for wildlife. Plus, they will poison wildlife and the surrounding plant and insect and aquatic life as well. Again - is the cure worse than the problem?</p>	<p>The EIS discusses the relative toxicity of the herbicides considered for use in the alternatives. The standards for herbicide use would ensure that important wildlife habitat is protected during treatments. Site-specific analysis would be required to compare the need for action against the potential effects.</p>

Effects on Worker Health and Safety

Comments about worker health and safety focus on both herbicidal and non-herbicidal treatment methods. These comments did not lead to substantial changes in the FEIS. The FEIS clarifies that the analysis of effects on worker health and safety is not intended to compare human health risks from manual/mechanical treatments against effects from herbicide treatment and characterize one as great and the other as insignificant.

Comment	Response
<p>Despite a well-defined list of the possible injuries that can occur in manual invasive plant removal scenarios the DEIS does not predict in any way how frequently such injuries normally do or would occur. The DEIS states that, "data on accidents related specifically to invasive plant treatment is not available." DEIS at 4-61. In the absence of this data the DEIS alternatively considers in table 4-16 how much acreage will be treated manually and mechanically in each proposed alternative and how many "worker days of exposure" (days necessary to treat the specified number of acres) each alternative entails. Although useful for comparing the amount of manual labor proposed in each alternative, this data alone does not provide for even a rough assessment of what risk to human health manual and mechanical labor poses in each alternative. There is currently an absence of data and agency failure to obtain the required information. If the Forest Service assumes that Alternative B will require more acres of mechanical and manual treatment for the first few years, it should also consider that the acres treated will be reduced as prevention measures become effective in controlling invasive species. Despite the inadequate data the DEIS claims that "the potential for cumulative risks to workers from non-chemical treatments methods is great." DEIS at 4-83. This claim is not only unsupported but requires an inferential leap. Given that manual and mechanical laborers treating invasive species will be working on rough terrain with dangerous tools for x amount of days on y amount of acres, it does not necessarily follow that cumulative health risks are great. The DEIS nonetheless treats the claim as conclusive fact, using it as a basis for comparison against the degree of cumulative hazards to human health that arise out of herbicide treatments. Following the comparison the DEIS finds that "[t]he potential for cumulative human health effects from repeated herbicide exposures, resulting from herbicide use proposed in th[e] DEIS is insignificant" DEIS at 4-83. This conclusion is unreliable not only because it stems from a comparison with a mere theory but also because it fails to consider that many of the very hazards presented in the manual and mechanical treatment scenario are equally likely in herbicide treatment scenarios. Any backpack spraying for example, will also be done on difficult terrain, with a risk of exposure to dangerous plants, animals, insects and adverse weather. These identical risks are irrationally deemed "great" in one instance but "insignificant" in the other.</p>	<p>The DEIS used the indicator of annual worker days to compare the risks to workers from the projected use of manual/mechanical methods among the alternatives. The greater the acreage treated manually, the greater the potential exposure. The relative risks associated with each of the alternatives are not likely to change over time (Alternative B would always include relatively more acreage treated manually than other alternatives).</p> <p>The risks to workers from manual and mechanical treatments versus herbicide treatment are not "equally likely." While some risks are inherent to all "woods work", manual and mechanical treatments are associated with injuries that are cumulative in nature, such as skeletal-muscular strains associated with repeated bending and pulling activity, and carpal tunnel syndrome associated with use of vibrating hand-held machinery such as chain saws. These cumulative injuries are not associated with herbicide application.</p> <p>The statement that worker health effects from repeated herbicide application are not expected to trigger significant effects is based on the toxicology of the herbicides proposed for use and the fact that they do not bioaccumulate.</p> <p>The DEIS analysis was not intended to compare human health risks from manual/mechanical treatments against effects from herbicide treatment and characterize one as great and the other as insignificant. The FEIS has been edited to clarify this point.</p>

Table 38. Comments and Responses About Worker Health and Safety	
Comment	Response
When comparing worker risks of herbicide use vs. manual methods, I believe you do an in adequate job on assessing manual hazards. From my own experience, I know they can be considerable. Even the J Herbert Stone Nursery (USFS) has banned hand weeding because of the physical strain - and this is in open fields. I believe that you could find data on this issue for woods workers from state accident agencies.	Exposure, expressed as acres treated with manual methods, is directly proportional to risk of an accident actually occurring and provides meaningful comparison of alternatives.
For aerial spraying (now proposed in the new action alternatives) "typical" health risks to project workers has now been bumped up from "low" to "moderate", as has the risk to workers for right of way/broadcast foliar spraying, for which "upper" risk levels are now "high". What do "moderate" and "high" risks to workers mean in this context? Permanent impairment? Chronic breathing difficulty? Reproductive disorders resulting in deformed children? Cancer? Premature death?	The derivation and meaning of "moderate" and "high" risks are described in Ch. 4.5.2, and are based on a calculated "Hazard Quotient" (HQ). The HQ is the ratio (comparison) of estimated dose for FS applications, compared to EPA reference doses (RfD). The development of RfD from toxicity tests is more fully described in Appendix Q, "Human Health Risk Assessment."

Herbicide Risk Assessment and Human Health Effects

Several comments were received about the DEIS reliance on herbicide risk assessments to characterize potential effects to worker and public health. Some people questioned the objectivity of the risk assessment specialists. The Forest Service response is to explain that FS/SERA risk assessments incorporate all known scientific information about herbicide effects and are peer reviewed, thus, these represent the best available information for use in the EIS.

The FEIS contains supplemental discussion about interpretation of risk assessments, effects on sensitive people, and the adjuvant NPE in response to these comments.

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
Where are you getting your herbicide data from? What labs?	FS/SERA herbicide risk assessments review the entire body of relevant scientific literature.
[The DEIS states:] "For NPE, only the typical exposure rate for each of the typical and maximum-labeled rate is analyzed for human health risks." Why is maximum exposure to maximum application rate not considered for NPE?	The maximum exposure/maximum application rate will be recalculated for NPE in the FEIS.
Spraying is only temporary and harms too many innocents, including humans. Asthma is on the rise. I now have it from orchard spraying. Our lungs are sensitive organs. Please - no pesticides.	The rationale for selecting herbicides for treatment over other methods will be disclosed and documented in project environmental assessment. The DEIS described why herbicides are necessary as the only known method to effectively control certain invasive plant species. Standards in all alternatives require that National Forests inform people so that they may avoid exposure to herbicides in the vicinity of treated areas during and after application.
I believe the statement from Section 4.5.4, Cumulative Effects, paragraph 3 "The potential for cumulative human health effects from repeated herbicide exposures, resulting from herbicide use proposed in the EIS is insignificant." should be more boldly stated since it is a major concern identified in the scoping comments.	The cumulative effects of repeated herbicide use are discussed throughout these comment responses and the EIS.
Bakke, 2003 is listed as an unpublished report in the IP DEIS Bibliography. This is not the case. This report has been published for over a year and is now cited as USDA 2003 and the full citation is "USDA Forest Service. 2003. Human and Ecological Risk Assessment of nonylphenol polyethoxylate based (NPE) surfactants in Forest Service herbicide applications. Pacific Southwest Region." It has not, however, been published in a scientific publication or been peer reviewed.	The NPE Risk Assessment was peer reviewed by Dr. Patrick Durkin and Dr. Gary Diamond, whose qualifications are described on page vi of the assessment.

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>As a citizen concerned about environmental degradation, my own health and the destruction of wildlife, I strongly urge you to find alternatives to the use of pesticides to deal with invasives. I am worried about contamination of the wild mushrooms that I and countless others enjoy eating.</p>	<p>The FEIS uses FS/SERA risk assessment scenario of consuming berries that have been sprayed as the scenario for consumption of contaminated plant material. The scenario is described in Appendix Q “Human Health Risk Assessment”. The scenario estimates doses from consuming residues on directly sprayed fruit. This scenario would represent the doses from consuming sprayed wild mushrooms. Estimates of hazard quotients for each herbicide, typical and worst-case scenarios from eating berries were displayed in Appendix Q. Experience from forest tree nurseries indicates herbicides do not otherwise affect fungi (Hildebrand, personal communication, 2005).</p>
<p>The proposed action specifies that only adjuvants (e.g. surfactants, dyes) and inert ingredients must be reviewed in Forest Service documents such as SERA, Inc., 1997a, 1997b, and Bakke, D. 2002. In this light, the sections concerning the use of nonylphenol polyethoxylates (NPE) and nonylphenols (NP) seem to misrepresent the conclusions drawn by these references. The stated concern is from the toxicity and/or carcinogenicity of ethylene oxide. Ethylene oxide is one of the reagents used to produce NP and NPE and some low level of residue may be present. The SERA reference indicates residue levels from <3.6 to 12.2 PPM. NP or NPE both have surface action potential and these compounds may be added as formulation inerts. Members of this chemical family area included in US EPA Inert List III Table. NPE is listed as an herbicide in the body of the EIS. In Table 4-7, Chapter 4-31 the presence of NPE as an inert component has been misrepresented (SERA 1997b). This group of surface action agents listed a polyethoxylates are more properly described as alkylphenol ethoxycarboxylates or phosphates. Similar compounds are also used in the form of acids, salts or esters of the basic chemical groups. The alkyl group can vary from 1 carbon to many. The ethoxylated portions are a chain of ethoxy units, from 1 to 10 units in length. The ethoxylated portion does not metabolize to ethylene oxide but as two (2) carbon unit, most likely an alcohol, than further degraded to carbon dioxide and water. If the chemical form were a ketone, the metabolic fate would be removal as carbon dioxide. The alkyl chain attached to the phenol will be cleaved, generally 2 units at a time, then each 2 carbon unit converted to carbon dioxide and water. The initial microbiological action appears to be the cleavage of the phenolic ring followed by the previously described metabolic steps. In short the projected concentrations of ethylene oxide or polyethoxylates are not likely to meet the levels as listed in the EIS. This section clearly conflicts with the SERA documents that were apparently utilized in the preparation of the EIS.</p>	<p>The DEIS incorporated the peer-reviewed analysis of the range of relevant studies on effects of NPE from the FS risk assessment.</p> <p>NP will be studied further and incorporated into an updated risk assessment.</p>

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>The EIS should clearly explain the models used for risk assessments and how they relate to potentially real situations. As it is, the DEIS leaves the reader to wonder about the methods of risk assessment and the reality of their conclusions. A stronger effort should be made to communicate the biological significance of the predicted risks (population level).</p>	<p>The disclosure in the EIS is based on complex toxicological risk assessments that are difficult to summarize effectively. Multiple variables combine in risk assessment, not just the herbicide used but the specific formulation, dose, method of application, and other factors influence the results.</p> <p>The IDT applied the FS/SERA risk assessments to the alternatives considered in detail in the EIS. The use of exposure scenarios to quantify risks to non-target organisms is described in the risk assessments for each herbicide. Further detail about the processes and calculations used to produce dose and risk estimates are in Preparation of Environmental Documentation and Risk Assessments (SERA 2001c).</p>
<p>NPE degradates and other EDs have shown a pronounced tendency to exert influence on the endocrine system at different times in the life cycle of all living things. Since the IP DEIS proposes to apply herbicides and surfactants during the breeding season for most species at risk, it is imperative that this be incorporated into the IP DEIS risk assessment. The importance of understanding timing as a risk assessment parameter is that it once again dispels the risk assessment methodology incorporated in the IP DEIS. The concept of acceptable dose levels (those below the threshold NOAEL x 100) are only appropriate if a) the most sensitive time for exposure is the tested exposure period and b) these studies are long term chronic or multi-generational studies to identify "later in life" or trans-generational effects. Since nonylphenol has shown itself to produce effects in the very low ppb range during the developmental stage of most organisms that have been tested, this would place the risk quotient multiplier in the ppt, which in turn would place all species at serious risk from exposure.</p>	<p>The DEIS incorporated the peer-reviewed analysis of the range of relevant studies on effects of NPE from the FS risk assessment. NP will be studied further and incorporated into an updated risk assessment.</p>

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>The IP DEIS has failed to properly analyze the potential acute, chronic and cumulative effects from both endocrine and non-endocrine effects. The IP DEIS does not even present a clear explanation of the analytical route used in the risk assessment analysis of these effects from NPE based surfactants, other than to mention that standard methodology is incorporated.</p> <p>The IP DEIS is deficient in it's analysis of the risk of endocrine effects from the use of NPE surfactants. In fact, the IP DEIS does not even offer analysis for endocrine effects except a brief mention of public concerns about estrogenic effects to aquatic species. The (Wildlife RA) does little better, as basically it merely passes on misinformation found in USDA 2003.</p> <p>The IP DEIS is flawed in it's assessment of risk from non-endocrine disruption mediated toxicity, similar to failings found in the DEIS concerning EDCs. Scientifically unrealistic threshold levels are used to establish levels of risk.</p>	<p>The FS risk assessment for NPE follows the methodology outlined in SERA, 2001 (cited in DEIS bibliography). The FS risk assessment analyzed the range of relevant scientific studies on the hazards of NPE, metabolites, and impurities including these possible effects and established a Reference Dose, based on the most sensitive effect with applied uncertainty factors. The RfD was determined to account for the risk of any of the potential effects cited in this comment.</p>
<p>Any multiple herbicide mixtures for which the effects have not been disclosed and analyzed in this EIS should not be used by the Forest Service, as there is no opportunity for the public or decision makers to assess the risks of their use.</p>	<p>The potential for synergistic effects from herbicide use in the alternatives was summarized in DEIS Chapter 4.5. A more detailed analysis of the potential for synergistic effects from the herbicides proposed for use and methodologies for assessing the potential effects of chemical mixtures is found in the FEIS Appendix Q "Human Health Risk Assessment". This analysis is based on FS/SERA herbicide risk assessment. Standard 16 now addresses the use of herbicide mixes.</p>

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>Inadequate Testing: Herbicide safety evaluations for wildlife and humans are conducted by the herbicide manufacturing corporation, which has a vested interest in selling their product -- a clear case of the fox in the henhouse. Thus potential impacts of herbicide formulas may be understated or undisclosed. Toxicity testing is also generally for "active" ingredients only, not for the synergistic collective effect of combining two or more active ingredients in an herbicide formula or for the combined effect of "active" and toxic "inert" ingredients, again understating the danger of a formula's use. Further, there has been little or no testing for impacts of herbicides on native plant species, native wildlife, native pollinators, amphibians or humans directly. Usually genetically dis-similar crop plants, domesticated lab animals, honey bees, etc. are used, whose metabolism may differ considerably from non-target wild species and humans at risk.</p>	<p>This analysis is based in detailed reviews of relevant scientific literature for each herbicide in the respective FS/SERA herbicide risk assessment. The DEIS adopts the US-EPA process for acceptable risk (RfD's); however, the underlying FS/SERA herbicide risk assessments review the entire body of relevant scientific literature (not just tests submitted to EPA for pesticide registration) to develop comprehensive and protective RfD's. Both acute and chronic RfD's are estimated and used to identify the most-sensitive effect RfD for calculation of the Hazard Quotient for herbicide applications associated with DEIS alternatives. In establishing RfD's, the risk assessments apply uncertainty factors for intra and interspecies variability in physiological responses and adopt the most conservative realistic approach to best encompass the possible ranges of variability for long-term exposures/doses. The potential for synergistic effects from herbicide use in the alternatives is summarized in DEIS section 4.5.4. A detailed analysis of the potential for synergistic effects from the herbicides proposed for use and methodologies for assessing the potential effects of chemical mixtures is found in the FEIS Appendix Q "Human Health Risk Assessment".</p>
<p>The updated SERA information is from 1996. Why aren't more recent toxicity studies included in the EIS and analyzed? The SERA 1996 risk assessment also used a different approach - "in which the estimated level of exposure is divided by some estimate of acceptable exposure (the RfD)." This approach and its ramifications are not explained further. How are the estimates of "acceptable exposure" derived? Why was the method of comparing predicted levels of human exposure to known highest dose levels for which animals showed no observable effect (NOEL) abandoned?</p>	<p>All FS/SERA herbicide risk assessments used to estimate effects for this DEIS have been updated since 1996 to incorporate new studies, regulations, and information. The RfD is calculated from the NOAEL, with uncertainty factors for inter and intra-specific variation already incorporated into the final RfD value. This process is described in the FEIS Appendix Q "Human Health Risk Assessment", and in greater detail in the individual risk assessments and in SERA background documents (SERA, 2001).</p>

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>There are some differences between the old FEIS toxicity data evaluation and the newer SERA (1996) risk assessments on which this EIS relies for updated toxicity data that are not discussed in the EIS and are not adequately explained in the Herbicide Information Profile for triclopyr. On p.9 of the Profile it is noted that: "The use of the newer NOEL of 0.5 mg/kg/day reduces the margins of safety cited in the FEIS by a factor of five." This seems to be a significant difference and reflects new scientific data indicating greater hazards for triclopyr (and other herbicides?) yet later the Profile assures us that "-the qualitative expression of risk for both workers and the general public is reasonably consistent between the FEIS and the updated (1996) risk assessments".</p>	<p>All FS/SERA herbicide risk assessments used to estimate effects for this DEIS have been updated since 1996 to incorporate new studies, regulations, and information. The risk assessments and specialist reports have been available upon request from the EIS staff.</p>
<p>There is no disclosure in the Profile of the results of studies mentioned that measured actual worker doses of herbicide formulations in typical forestry applications although the SERA 1996 bumped up all application methods from "negligible" to "low" to "moderate risk" for workers (backpack sprayers were already rated at "moderate" risk)- a change based on what information? What does this change mean to the worker?</p>	<p>The IPEIS categorizes risk based on estimated Hazard Quotient (the relationship of the predicted dose to the RfD for the most sensitive effect), with a threshold of 1 for concern. The DEIS describes how HQ that exceed one are categorized, and how categories are interpreted for effects analysis of alternatives on DEIS page 4-65.</p>
<p>I question the assumptions of your use of Reference Dose. Since RfD is an estimate of the daily dose that can cause no health effects over a lifetime, this means there could be exposure at this level 7 days a week, year after year. This is not realistic for real-world herbicide application, which is focused on the growing season. To exceed the RfD occasionally during a spray season should not imply the risks shown. These products would be used as labeled under this weed program, and the science shows that they are safe. I believe your analysis should conclude this as well.</p>	<p>Both acute and chronic RfD's were estimated and used to identify the most-sensitive effect RfD for calculation of the Hazard Quotient for herbicide applications associated with DEIS alternatives. This comment only applies when the most sensitive dose RfD is a chronic RfD. The FS/SERA risk assessments use peer-reviewed evaluation of all scientific studies, based in US-EPA protocols to establish chronic RfD's. The risk assessments acknowledge the uncertainties in intra and interspecies variability in physiological responses and adopt the most conservative realistic approach to best encompass the possible ranges of variability for long-term exposures/doses.</p>

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>How strange it is that the collective memory of the Forestry Department is so shortlived. Remember the hundreds of babies born with Emphaliceil in Guerneville in Sonoma County, California 1976 and 77 from a pesticide spill. Most only survived a short time. Remember A Bitter Fog, the book about pesticides and herbicides in the Five Rivers area of Oregon causing cancers, deformed infants, miscarriages. Is this human toll meaningless now because it was twenty five years ago and we were not the same people made of the same substances as our immediate ancestors. Do not do this to us again! Keep pesticides out of our forests.</p>	<p>All alternatives in the DEIS estimate maximum realistic doses of each herbicide and other substances of toxicological concern. If those doses exceed the respective reference dose based on the dose for the most sensitive effect found in laboratory animals tests, with a reduction in the maximum allowable dose of at least 99% for uncertainty in interpreting lab animal studies to human responses in natural settings. FEIS Appendix Q “Human Health Risk Assessment” describes this mitigation process in detail.</p> <p>To further reduce the risk of human exposures from invasive plant herbicide treatments, notification and signing would be required to advise forest users of area with current and recent herbicide applications. These measures would minimize the risk of anyone receiving a dose from our operations that will cause or contribute to adverse health effects.</p>
<p>As a chemically-sensitive person with Chronic Fatigue Syndrome, my health is harmed by contact with pesticides such as 2,4-D and others. When I go camping or visit national forests for daytrips, I do not want to be forced to return home immediately due to a negative reaction to pesticides being used in our public places. Headaches, nauseas, light-headedness, dizziness and extreme weakness are some of my symptoms that are exacerbated or brought on by exposure to pesticides, including breathing them as they off-gas from the leaves of treated plants. Although other people may not be so sensitive as I am, it is likely that they are experiencing negative health effects also, just not as noticeable.</p>	<p>The FEIS has been amended to state that unusually sensitive individuals may experience effects even when they receive a dose that is less than the Reference Dose for the most sensitive health effect. This section also discusses any known or anecdotal effects reports for all herbicides for sensitive individuals and possible hypersensitive effects. Standards in the alternatives would require that National Forests inform people so that may avoid exposure to herbicides in the vicinity of treated areas during and after application.</p>

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
We cannot continue to accept the risks associated with herbicide use while our mothers, brothers, sisters and friends are dying from environmental-contamination-induced cancers. Please find other ways to prevent/manage invasives.	<p>The rationale for selecting herbicides for treatment over other methods will be disclosed and documented in project environmental assessment. The DEIS described why herbicides are necessary as the only known method to effectively control certain invasive plant species. A comparison of the DEIS alternatives, and the finding of no expected serious health effects to workers and the public from the proposed action are located on DEIS pages Chapter 4-82-83.</p> <p>Standard 23 in all action alternatives require that National Forests inform people so that they may avoid exposure to herbicides in the vicinity of treated areas during and after application.</p>
Although I am not entirely opposed to herbicide use, I am very concerned about indiscriminate and continual use of herbicides. Both known and not-yet-known environmental and human health side-effects from herbicide use are under-estimated by government agencies, the chemical industry, and public members as well. In your own DEIS known and potential herbicide side-effects are down-played or not even mentioned.	The DEIS described the potential effects and risks from alternatives for invasive plant management. A detailed synthesis of human health risks is available in the FEIS Appendix Q “Human Health Risk Assessment”. Details of the review of scientific studies and reported health effects for each herbicide are found in the FS/SERA herbicide risk assessment.
The National Data Quality Act (DQA) and FIFRA mandate that relevant information be provided to determine a cost-benefit analysis for herbicides in this proposal. The lack of such a cost-benefit analysis, coupled with the exclusion of information on proprietary studies, should be cause to fail the requirement for disclosure under NEPA. We recommend that use the DQA and FIFRA to analyze the number of lives that will be lost due to glyphosate treatments on National Forests due to contraction of non-Hodgkin's lymphoma, which has been positively linked to glyphosate.	The risk assessments do not indicate that glyphosate use projected for the alternatives would cause any loss of human life. The DEIS described the costs (environmental consequences) and benefits (effectiveness in meeting the purpose and need) of the alternatives.
Though not listed as carcinogens, NPE and degradates have shown the potential to cause mutations and deformities and are suspected of producing cancer effects through both endocrine and non-endocrine mediated pathways. These concerns should be addressed.	The FS analyzed the range of scientific studies on the hazards of NPE, metabolites, and impurities. The Reference Dose (RfD) is based on the most sensitive potential effect with applied uncertainty factors. The RfD was determined to account for the risk of any of the potential effects cited in this comment.

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>"Estimated Health Risks to the Public" (whatever those risks may be in physical manifestations) go up from "negligible" to "low" (completely undefined terms) for dermal exposure to sprayed plants & "lower" risk exposure to contaminated fruit. What does this mean in quantifiable terms and what are the specific health risks involved?</p>	<p>Quantifiable estimates of health risks for these effects are displayed and described in the FEIS Appendix Q "Human Health Risk Assessment" and associated tables. The specific health risks are identified for the RfD for each individual herbicide or NPE in the respective FS/SERA risk assessment. These results have been summarized in the EIS.</p>
<p>It is also important to challenge the assumption that U.S. EPA standards of "acceptable risk" for human health effects are not based on any kind of popular democratic consensus, but are determined in-house by agency staff.</p>	<p>The DEIS adopts the US-EPA standards for acceptable risk (RfD's); however, the underlying FS/SERA herbicide risk assessments review the entire body of relevant scientific literature (not just tests submitted to EPA for pesticide registration) to develop comprehensive and protective RfD's. The EPA standards were developed through regulatory rulemaking to implement legislation approved by the legislative and executive branches of the federal government.</p>
<p>The surfactant NPE is not the only additive associated with specific risks to human health contrary to the DEIS statement on p. 4-62. Kerosene and ethanol are other known additives of herbicides proposed for use that are associated with known human health risks.</p>	<p>NPE is an adjuvant that may be added to various formulations of herbicide, and it is the only adjuvant considered in the DEIS that is classified by US-EPA as an Inert of Known Toxicity ("List 1"). The other compounds mentioned are inert ingredients, pre-incorporated into specific herbicide formulations; none are on EPA Lists 1 or 2. The known toxicity of publicly-identified inerts is analyzed in the "Adjuvants" section of each FS/SERA herbicide risk assessment. The overall toxicity of the formulation encompasses and discloses any toxicity attributable to the inert(s) acting in combination with the other herbicide formulation ingredients. The FEIS clarifies this distinction.</p>

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>We are concerned about the potential for endocrine disruption and synergistic effects from herbicide use; the DEIS does not appear to plan to avoid these effects despite their potential severity.</p>	<p>The potential for synergistic effects from herbicide use in the alternatives is summarized in the DEIS section 4.5. A detailed analysis of the potential for synergistic effects from the herbicides proposed for use and methodologies for assessing the potential effects of chemical mixtures is found in the FEIS Appendix Q “Human Health Risk Assessment”. This analysis is based in detailed reviews of relevant scientific literature for each herbicide in the respective FS/SERA herbicide risk assessment.</p> <p>The potential for endocrine disruption is analyzed in each herbicide risk assessment, as a distinct effect or as a contributor to reproductive or systemic health effects. NPE surfactant is the only compound for which a potential for endocrine effects has been identified. The Reference dose for NPE incorporates uncertainty factors to be protective from estrogenic and reproductive effects in FS applications.</p>
<p>[Page 4-74 states] There are no exposure scenarios for drinking stream water contaminated by drift for any herbicide in this alternative that exceed the Rfd. (What does this mean? Where's the science to possibly back up this assumption?)</p>	<p>The underlying methodologies for estimating drift from DEIS herbicide applications are described in: “Preparation of Environmental Documentation and Risk Assessments” (SERA, 2001; cited in DEIS). The methodologies used to quantify the concentration of a particular herbicide expected in a described typical forest stream from drift and runoff is described in Section 4.2-Exposure Assessment of each FS/SERA herbicide risk assessment. Every risk assessment received a scientific peer review incorporated into its estimates of dose and risk, including stream contamination from drift.</p>
<p>Please address in final IPEIS, contrary to the IPEIS draft which states no long term health effects will ensue. Please clarify how is light of submitted papers that pesticides and herbicides apparently are accumulative, you can still derive no long term health effects will ensue - Chapter 4-22. Indirect and Direct effects.</p>	<p>Studies of the metabolism of each herbicide and of NPE, including any tendency to bioaccumulate in humans are analyzed in “Pharmokinetics and Metabolism” section of the FS/SERA risk assessment, which is the basis of the DEIS effects analysis and the Specialist report: Human health Risk Assessment. Only NPE was found to bioaccumulate and the potential for long-term effects from NPE exposure is described in the risk assessments.</p>

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>In addition to making unfounded comparisons to reach desired conclusions, the DEIS makes an unsatisfactory attempt to answer scientific questions concerning the likelihood and severity of various herbicide exposure risks. The DEIS provides a number of helpful tables and explanations that layout risk assessment but despite these expansive efforts, the science remains insufficient and questionable. The DEIS acknowledges for example that it chooses a "threshold for serious risks of potential health effect based on professional judgment rather than EPA regulations." DEIS at 4-65. This threshold is defined as a hazard-quotient greater than 10. The hazard quotient is calculated as estimated dose/ RfD, the RfD being the reference dose or EPA target level. These equations indicate that the threshold set out in the DEIS is 10 times the EPA target level. That is an alarmingly high allowance. Granted, the scenarios in which an exposure would cross the threshold are limited but the threshold is nonetheless disturbing because its excess is justified only by unsubstantiated "professional opinion". There is no assurance of "professional integrity, including scientific integrity" as required by 40 CFR 1502.24. In an undefined "professional opinion."</p>	<p>Both components of the Hazard Quotient (RfD and projected dose from FS applications) are based on peer-reviewed scientific analysis and displayed to public review in the FS/SERA risk assessments. The projected doses assume various circumstances for each application scenario, including in max-max projections a number of worst-case assumptions such as maximum hours worked, or 100% body exposure (i.e. naked), and maximum herbicide application rates.</p> <p>EPA does not categorize risks that exceed a HQ of 1. The EIS team adopted as administrative guidance a threshold HQ of 10 to enable the decision-maker and the public to distinguish risks that would be readily mitigated at the project level to below the EPA threshold of concern, from risks that would require extreme scrutiny and effort to achieve mitigation and could be considered for region-wide prohibition or mandatory mitigations in this programmatic EIS.</p> <p>For many of the herbicides, the only HQ's > 1 occur for worst-case assumptions that would not occur in FS operational applications in compliance with state federal and agency law and direction. Project environmental analysis will need to address whether the HQ exceeds 1, and adopt project-specific mitigations or refinement of analysis to ensure that worker and public health will be protected in real-world applications.</p>

Table 39. Comments and Responses about Herbicide Risk Assessment and Effects on Human Health	
Comment	Response
<p>The assessment that human health effects will be insignificant in the case of herbicide treatments is also based on the questionable rationalization that "the quantities of herbicide proposed for use in DEIS alternatives is further diminished in significance of their contribution to potential significant cumulative health effects in the context of all herbicide use in the analysis area." DEIS at 4-84. The DEIS claims that the use of additional herbicides as proposed would only amount to roughly 3 [percent] of the total herbicides used against invasive plants in Oregon and Washington: This drop in the bucket" rationale does not automatically negate the dangers of the proposed herbicide treatments especially when taking into consideration the NEPA standard that "cumulative impacts are the impacts resulting from "past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal)" takes the action. 40 CFR 1508.7. In assessing cumulative impacts it is essential to take into account all contributors. It is unscientific and illogical to conclude that the proposed herbicide use will not notably impact human health simply because other individuals and agencies use herbicides too. Additionally the 3 [percent] statistic appears to be unreliable based on the DEIS' previous claim that the "overwhelming majority of the weed control work occurring off National Forest system lands is with herbicides" but that "an accurate accounting of the total acreage of invasive plant treatment for all land ownerships is unavailable." The limited information that is available is "based on informal discussions with state and county agriculture and weed personnel". DEIS at 4-1. The DEIS does not establish a clearly defined basis for the claim that the proposed herbicide use is "insignificant" compared to all the other anti-invasive herbicide use.</p>	<p>The human health effects analysis disclosed the reasons why the risks of herbicide use in the Proposed Action are not significant, especially in light of the legal and ongoing use of herbicides off National Forest across the two-state region. There is no evidence that the additional use of herbicides as proposed would trigger significant cumulative effects.</p> <p>The direct and indirect effects vary between the alternatives; for instance, Alternative D poses the greatest potential hazard to human health effects of all the alternatives. However, the cumulative effects of all the alternatives are similar because of the use off National Forest is so much larger and does not vary between alternatives.</p> <p>The FEIS has been edited to clarify that there are no significant differences in cumulative effects between alternatives.</p>
<p>What data and methodologies are used to calculate RfD's?</p>	<p>The DEIS adopts the US-EPA process for acceptable risk (RfD's); however, the underlying FS/SERA herbicide risk assessments review the entire body of relevant scientific literature to develop comprehensive and protective RfD's. Both acute and chronic RfD's are estimated and used to identify the most-sensitive effect RfD for calculation of the Hazard Quotient for herbicide applications associated with DEIS alternatives. In establishing RfD's, the risk assessments apply uncertainty factors for intra and interspecies variability in physiological responses and adopt the most conservative realistic approach to best encompass the possible ranges of variability for long-term exposures/doses. This information was in the DEIS.</p>

Effects on Wildlife

Several commenters questioned conclusions in the DEIS wildlife effects analysis. Others accepted the DEIS conclusions, and expressed opinions about the merits of the alternatives given the wildlife analysis. The FEIS contains additional discussions and clarifications to respond to these comments.

Comment	Response
I oppose the potential impacts to wildlife: "The use of herbicides to treat invasive plants may harm free-ranging wildlife. Certain herbicides have the potential, for example, to affect the vital organs of some wildlife species, change body weight, reduce the number of healthy offspring, increase susceptibility to predation, and cause direct mortality. Birds and mammals may ingest vegetation or insects that have been sprayed with some herbicides and potentially experience these types of effects. There is also concern that herbicides may cause some malformities or impacts to amphibians, which are exposed in the event herbicides enter water" (DEIS, p.1-11)	The DEIS disclosed these potential effects of herbicide use. However, the DEIS also stated that adherence to the proposed standards would reduce the risk of these effects actually occurring
Issue no. 3 should be about treatments, not just application of herbicides. In fact the EIS does go on to analyze treatments, but only in a haphazard and incomplete fashion, generally non-quantitative. The August 10, 2004 Specialist's Report, "The Effects of Non-herbicidal Methods of Invasive Plant Treatment on Wildlife, Fish, and Plants", by Bautista, Mazzu and Robbins gave more details in analyzing a number of non-chemical methods, but these seem to have been borrowed primarily from the old Vegetation Management EIS, as witnessed by the use of the same old categories. Furthermore the specialist's report was incomplete, and deserved to be much more thorough. The National Environmental Policy Act is explicit about requiring analysis sufficient to make a reasoned decision. The boiling down of issues was done in an inappropriate manner likely to bias decisions and failing to meet the requirements of NEPA for a disclosure document. Because non-chemical alternatives were not analyzed or were insufficiently analyzed, the decision and the choice of alternatives are biased and baseless.	The effects of non-chemical treatment on wildlife, fish, and non-target plants were not identified as key issues for analysis. These effects would not change regardless of alternative selected. NEPA requires that agencies focus the disclosure on issues of significant concern to the public. Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants is published with FEIS to address concerns about wildlife effects from non-herbicidal treatment methods

Table 40. Comments and Responses about Effects on Wildlife	
Comment	Response
<p>Birds and mammals that eat grass or insects and are most susceptible to herbicide impacts make up a large part of the forest food chain and a base of biological productivity - herbicide impacts to these species are a large problem and should have been analyzed in detail and avoided through specific measures.</p>	<p>A detailed, quantitative analysis of estimated exposure and potential risk to birds and mammals that eat grass or insects was conducted for all herbicides, to the extent permitted by available data (see Appendix P, "Summary of Herbicide Effects to Wildlife"). The evidence and findings from this report are in the EIS. Standards 19 and 20 contain direction to reduce or avoid adverse effects to wildlife, including birds and mammals that eat grass or insects. Specific protection measures will be designed at the project scale, where site information and species presence can best be evaluated.</p>
<p>In the proposed alternative you're using more herbicide and the number for harmful doses is less even though more herbicides will be used! Please explain in IPEIS final how you arrived at this figure?</p>	<p>The FEIS Chapter 4 contains additional explanation of how the herbicide suite included in each alternative influences the number of exposure scenarios that exceed the NOAEL or LOAEL in relation to number of acres projected to be treated with herbicide. Compared to the No Action alternative, the Proposed Action projects more acres treated with herbicide each year, but fewer exposure scenarios that may result exceed the NOAEL or LOAEL. This is due to the availability of herbicides in the Proposed Action that have little or no potential to result in a harmful dose to wildlife. Acres treated with those herbicides do not contribute to the potential number of scenarios exceeding the NOAEL or LOAEL. In addition, the Proposed Action projects many fewer acres treated with picloram, no use of Dicamba, and restricted use of Triclopyr compared to No Action, so the number of scenarios exceeding NOAEL or LOAEL is lower for the Proposed Action, even though the projected number of acres treated is higher (see Tables 4-12 and 4-13 in the DEIS).</p>

Table 40. Comments and Responses about Effects on Wildlife	
Comment	Response
<p>Please address what science you are using to determine the effects of wildlife. How do you know PREY will not be exposed. That is an unproved assumption. Have you tested 'the Prey'? How can you know the effects when such a massive aerial and ground application of herbicides has never been used before? Have you tested 'prey' from previously treated areas where herbicides have been used? And the wildlife? Your broad statements are not based in fact. Where is the data to support your statements?</p>	<p>The DEIS analysis assumed that prey will be exposed and quantitatively estimates, when possible, the dose received by the prey and transferred to the predator (further discussion in Appendix P, "Summary of Herbicide Effects to Wildlife"). Published literature from peer-reviewed journals was reviewed that, 1) measured population changes for common prey species (see for example, Cole et al. 1998; Lautenschlager 1993; Sullivan et al. 1997, 1998), or 2) measured the amount of herbicide absorbed by various species of wildlife and prey after field applications of herbicide (e.g. Newton et al. 1984). These sources of information were used to characterize risk to animals that eat fish, small mammals, or insects.</p>
<p>Your IPEIS states on Chapter 4-122 -129 state that "indirect effects from herbicides used are not likely to occur because the herbicides considered in this EIS do not accumulate or concentrate up the food chain." The science differs from the science of researchers such as Dr. Tyrone Hayes - UC Berkeley. [Atrazine] accumulates enough that frogs develop multiple sex organs in low doses and there is no Atrazine free environment.</p>	<p>The FS is not considering the use of atrazine or any other triazine group of herbicides. The effects of atrazine are beyond the scope of this EIS.</p>
<p>[Section 4.4] The Forest Service fails to adequately compare the toxicity of each recommended treatment (or chemical, or whatever). Both NEP A and the ESA contain strong science and disclosure requirements. 16 U.S.C. [section] 1536(a)(2)(requiring that agencies use "best scientific and commercial data available." "Agencies shall ensure professional integrity, including scientific integrity" in all discussions and analyses in the DEIS. 40 CFR [section] 1502.24. The Forest Service fails, to explain why the chemicals it chooses to use are necessary. In section 4.7.2 the Forest Service discusses the effect of Glyphosate concentration in water. Concentration of this chemical in water is shown to have a harmful effect. However this chemical is included in all alternatives. Is this chemical really necessary in controlling invasive species of plants.</p>	<p>The herbicides included in the Proposed Action were selected to comprehensively address invasive plant species known in the Region. The FEIS describes the control methods appropriate for a variety of target species and site conditions. Alternative D includes 2 additional herbicides that to decrease the costs and increase the effectiveness of herbicide use as compared to the Proposed Action. Alternative B includes herbicides that were suggested by a coalition of citizen's groups interested in prevention and management of invasive plants on National Forest. The herbicides that would be approved in Alternative B have greater social acceptance and are less persistent in the environment.</p>

Table 40. Comments and Responses about Effects on Wildlife	
Comment	Response
<p>Amphibians are also at increased risk for severe long term harm. It has been stated in the DEIS that Glyphosate could put amphibians at a huge risk of severe decline if a large amount were to accumulate in water ways where amphibians are present. The Forest Service states in section 4.4.2 that exposure scenarios for all chemicals have not been created for amphibians in the Forest Service/SERA risk assessment. The Forest Service chose to use fish as a surrogate to amphibian reactions. The Forest Service does not include language as to why it chose fish as an appropriate surrogate or why it has failed to do proper scientific research on the effects of the chemicals on amphibian populations. It is extremely important that the Forest Service assess all scenarios including those involving amphibian populations. Again the Forest Service is obligated under the ESA to use the best science available to them and to present to the public the best information regarding the possible effects of the chemicals used in the proposed action. 16 U.S.C [section] 1536(a)(2). The Forest Service has clearly failed to fulfill its obligations. Also, if there is no other pertinent studies, the Forest Service must carry out their own tests, unless it can be shown that the cost of obtaining such information is too exorbitant, which it has not included.</p>	<p>The FEIS includes further explanation of why fish are used as a surrogate for amphibians in assessing potential effects of herbicides to amphibians.</p> <p>Quantitative exposure scenarios can only be done if adequate toxicity data exists to support the scenario. If there is no amphibian exposure scenario for an herbicide, it is because there was insufficient data on amphibians to support the scenario. In this case, toxicity to fish was used as a surrogate to characterize risk to amphibians. Potential risks to amphibians are discussed qualitatively based on published, peer-reviewed literature in Appendix P, "Summary of Herbicide Effects to Wildlife."</p> <p>It is not feasible to obtain more precise information for various amphibian species prior to making a decision regarding the management of invasive plants. This would require many different laboratory tests, each one of which is costly, and after the tests are concluded there would be significant delays while the results are peer-reviewed and published. In the meantime, we know that invasive plants are adversely affecting wildlife habitat and in some cases contributing to the extirpation of rare amphibian species at specific sites. The uncertainty regarding potential effects of herbicides to amphibians was one factor, which led us to develop Standards 19 and 20, which require consideration of site-specific conditions to develop treatment projects and require measures that will reduce exposure to rare amphibians and other wildlife.</p>

Table 40. Comments and Responses about Effects on Wildlife	
Comment	Response
<p>The DEIS also fails to adequately assess the science used in regards to the herbicides~ potential to harm wildlife and aquatic species. We are forced to extrapolate data from lab animals kept in specific conditions to the effects that herbicides might have on wild free ranging wildlife. The science is inadequate because it fails to show that there are vastly different environmental effects that cannot be adequately assessed from lab conditions. The science used does not assess behavioral or feeding patterns or other patterns of known wildlife in the proposed project area thereby reducing the validity of the information. The DEIS does not adequately address the needed scientific data and fails to ensure the "scientific integrity" of the data it used for the conclusion reached as required by NEPA. 40 CFR 1502.24.</p>	<p>The influence of animal behavior or feeding patterns on the likelihood of exposure was disclosed in Chapter 4.4 of the DEIS. Incomplete and unavailable information, uncertainty and the infeasibility of obtaining more species-specific information was also discussed.</p> <p>The DEIS disclosed that the best science available was used in herbicide risk assessments. The numerous site-specific conditions that influence the likelihood that non-target animals would be exposed to herbicide (e.g. topography, weather, vegetation type, animal species presence, behavior, feeding patterns, etc.) would be evaluated at the project level when and where a treatment is proposed.</p>
<p>The DEIS also list a variety of ways that the Forest Service can avoid some of the potentially harmful effects of the herbicides on the wildlife and amphibian populations. It makes generalized statements about attempts to avoid spraying herbicide at certain times of years, or on certain areas or when and where specific herbicides can be used. It is stated that it can lower the impact of adverse effects by management directions. However, the DEIS does not address how these factors may lower adverse effects on animals. Simply because the Forest Service does not broadcast herbicide sprays when herbivores or amphibians may be more vulnerable does not eliminate the effects that the herbicides will have on them in the long term. Also, it fails to point to specific times of years the Forest Service proposes to lower herbicide spraying and only generalizes ideas to lower risk. The management directives are so vague that they fail to provide any real assurance that the Forest Service can avoid actual adverse effects on the proposed project site. Also, no other alternatives are presented making the Forest Service's claim that there are additional choices to minimize risk unsubstantiated. The Forest Service must be more concrete in informing the public about the methods it will use to minimize risk.</p>	<p>The methods listed lower the potential for adverse effects by decreasing the likelihood of animals being exposed to the herbicide. If an animal is not exposed to the herbicide, it cannot be directly affected by it.</p> <p>Specific protection measures, such as determining the time of year an application would occur in a particular project area, must be designed at the project level, where site conditions, species presence, invasive plant species present, and methods of treatment to be used are best evaluated. It is not feasible or practical to try to dictate specific project design features that could be used on all forests within the two-state region.</p>

Table 40. Comments and Responses about Effects on Wildlife	
Comment	Response
<p>The DEIS also makes generalized statements that the short term adverse effects will be largely offset by the long term benefits to species from protecting habitat from loss due to invasive plants. However, if we look at the science currently available in the DEIS, the Forest Service provides us with a list of potential long term effects that the herbicides it's proposing to use will have on the overall population. For example, triclopyr, an herbicide the Forest Service proposes using, albeit in small doses, still has the potential to cause mortality in birds at acute levels and decreased eggshell thickness at chronic levels. The mortality of not only adult birds but the potential problems associated with weakened bird shells could have a long-term impact on the survival of specific bird species in the area. It could also potential cause a decline in endangered bird species that might be affected such as the northern spotted owl or the snowy plover. Small declines in endangered populations could have enormous impacts on the long term survival of the entire population.</p>	<p>The FEIS Chapter 4 includes a more detailed discussion of the relationship between "hazard identification" and the characterization of risk. Potential mortality and decreased eggshell thickness represent the "hazard identification" portion of risk assessment. The hazard that any chemical may pose must be evaluated in terms of potential for exposure to the hazard identified (usually in terms of dose received). Triclopyr that is broadcast sprayed has some potential to cause adverse effects, but only to the specific individuals exposed in the treatment area, and then only if a specific exposure scenario actually occurs in the field. Triclopyr does not persist in the bodies or animals, nor is it passed up the food chain, so only the individual exposed is likely to experience the adverse effect. The low likelihood that the exposure scenarios would occur as modeled, the typical application methods used for triclopyr, the potential to reduce exposure through application method and timing, and the influence of animal behavior and seasonality, are just a few factors that modify the potential for exposure and serve to reduce actual risk. This will reduce the number of individuals exposed. So, while a potential for an adverse effect to occur remains, the plausibility is low. Some individual birds might be adversely affected, but the likelihood that a project would adversely affect many individuals and therefore influence a population is extremely remote, due to the hazard-reducing factors mentioned above.</p> <p>In addition, Standard 20 for all alternatives requires projects to be designed to reduce or eliminate adverse effects to proposed and listed endangered species. This is relatively easy to accomplish and effective, further ensuring that any adverse effects that do occur would be limited to a few individuals, and not influence an entire population. These potential effects would also only occur after consultation with the U.S. Fish and Wildlife Service has been completed for the proposed project implementation.</p>

Table 40. Comments and Responses about Effects on Wildlife	
Comment	Response
<p>The Forest Service indicates that cumulative adverse effects of herbicides on wildlife are not likely. It states that the herbicides examined in the DEIS do not build up in the animal's body and are not passed up the food chain. However, the Forest Service does not cite where it got this information. It also concludes that the adverse effects would just occur in a "small number" of animals, instead of populations of animals. What constitutes "a small number" would need to be defined.</p>	<p>The FEIS Chapter 4 contains a reference to the Forest Service/SERA risk assessments as the source of information regarding bioconcentration and elimination of each herbicide. The FEIS Chapter 4 has also been corrected to reflect that adverse effects would occur to individual animals rather than populations.</p>
<p>The invasive species DEIS fails to adequately review the impacts of the proposed herbicide use on wildlife and aquatic species. The DEIS proposes in several areas there is limited exposure to wildlife from the spraying either aerially or by ground spraying because of an inferred belief that wildlife with large home ranges will only be in the area for a short amount of time thereby limiting there exposure to potentially harmful herbicides. However, the DEIS fails to point to any scientific research to indicate that the area exposed to the herbicide is or is not preferred habitat for many species. The amount of exposure to wildlife depends largely on uncontrollable factors such as food supply, weather, and behavior patterns. The DEIS fails to do any scientific research into animal behavior in the affected areas which may indicate greater risks to wildlife in the proposed project area than is evident by the science used in the DEIS. Without such information the Forest Services' scientific conclusions that wildlife will only have limited exposure is inaccurate. In effect, the Forest Service fails to ensure that it is managing fish and wildlife habitat to maintain viable populations of existing native and desired non-native species as required by the National Forest Management Act. 36 C.F.R. [section] 219.19.</p>	<p>The analysis of potential impacts to wildlife and aquatic species in the DEIS is conducted at the forest plan scale, and as such, is a general discussion of potential effects. The numerous site-specific conditions that influence the likelihood that non-target animals would be exposed to herbicide (e.g. topography, weather, vegetation type, animal species presence, behavior, feeding patterns, etc.) must be evaluated at the project level when and where a treatment is proposed..</p> <p>Also, the target species for treatment projects (invasive plants) do not provide preferred habitat for wildlife or aquatic species, reducing the likelihood for exposure to herbicides.</p>

Effects on Land Uses

Some commenters expressed that the DEIS should be supplemented to clarify how the proposed standards would affect grazing, recreation, timber management and other land uses and activities. In response to these comments, the FEIS includes further discussion about risk to human health if an area is subjected to wildfire after herbicides are applied. The FEIS also provides further discussion about the weed-free mulch requirements. The standards related to weed-free mulch and feed were also modified.

Table 41. Comments and Responses about Effects on Land Uses	
COMMENT	RESPONSE
Please know that Minerals and Mining are important to the West as are the products of mining, Antimony, Gold, Silver, Stibnite, and etc. Weed removal should not hinder Mining.	The DEIS disclosed that the Forest Service does not anticipate that weed removal (treatment) will hinder mining activities.
It is important that any adopted plans not unreasonably interfere with the historic uses that were recognized as acceptable when areas were designated as wilderness, such as the use of livestock.	The DEIS disclosed that statutory direction provided by congress is not affected by this proposal. No Forest Service regulations or policies for Wilderness Areas are affected. Allotment management plans would be required to address invasive plant prevention in all alternatives.
The Final EIS should compare the estimated annual acreage driven on by equipment that operates off-road for operations authorized or conducted by the Forest Service (for which equipment-cleaning is required) and estimated acreage driven off-road by recreational vehicles (for which no equipment-cleaning is required).	Such acreage estimates are not available as data to base them on does not exist and is not reasonably attainable. See Chapter 4 for calculation of costs to heavy equipment work.

Table 41. Comments and Responses about Effects on Land Uses	
COMMENT	RESPONSE
<p>I am disappointed in the limited data and disclosure of the effects on fire and fuels management from the proposed action. On the one hand, the DEIS states that fuels management projects are expected to increase considerably in number, scale, and complexity; however, the document does not adequately analyze all the likely effects of those anticipated projects in aiding the introduction, establishment, and spread of invasive plants. The FEIS needs much more analysis and disclosure on the role of suppression actions in the spread of invasives. In particular, some of the potential effects of the spread of invasive plants that need to be fully analyzed in the FEIS include: 1. current and anticipated future changes in fire regimes and condition classes (FRCC) due to invasives 2. predicted changes in rate of spread, fireline intensity, fire severity, and fire effects from changes in FRCC 3. increase in suppression costs and health and safety risks to firefighters from changes in FRCC 4. risks to fuelbreak effectiveness and maintenance costs due to invasives 5. risks to firefighters' health from herbicide-treated vegetation burning during wildfires and /or prescribed fires 6. role of suppression actions such as spraying chemical retardants or constructing firelines with mechanized equipment such as bulldozers in the introduction, establishment, and spread of invasive in wildlands 7. empirical evidence of the effectiveness of spraying vehicles 8. data on the validity of so-called "weed-free" mulch used in post-fire rehab actions, and the risk to spread of invasive from post-fire rehab actions. At a minimum, though, in order to make the FEIS legally sufficient under NEPA, more data, analysis, and disclosure of the items listed above must be included in the document.</p>	<p>The level of detail requested is not necessary to evaluate the merits and effects of the alternatives. Invasive plants are not known to have a significant effect on fire behavior, but the EIS acknowledges that fire suppression can affect the spread of invasive plants.</p> <p>The DEIS recognized that fuels management projects within Regional Six are increasing due to action to reduce fire hazard. Chapter 3 discussed how these types of projects might become a mechanism for spread of invasive plants. All action alternatives would require that prevention be considered when planning these projects. At the fuels project level, mitigation measures would be applied and effects monitored. Washing equipment is a logical method that results in fewer invasive plant seeds brought in to disturbed areas.</p> <p>The FEIS includes further discussion about risk to human health if an area is subjected to wildfire after herbicides are applied.</p> <p>The FEIS also provides further discussion about weed-free mulch requirements.</p>
<p>[Section 4.67] The analysis on the impacts of proposed road closures for Alternative B is incomplete. The document does not identify which roads (or road sections) would be closed, or if the closures would be temporary (i.e., until weeds are under control in certain areas) or permanent. Under 40 CFR 1502.22, the DEIS should disclose the nature of unknown data or the vagueness of assumptions based on incomplete information. How can the DEIS make conclusions about the impacts of lost forest access, and the associated cost of lost access, when neither the location nor the duration of the closures is presented? As analyzed, the conclusions about lost access and associated higher transportation costs are so vague that they lack enough substance for the public to evaluate or offer comments or alternatives. More information on the extent of the closures is needed.</p>	<p>Current status of access management and road closures are discussed in Chapter 3. Road analysis would identify roads that are contributing to the spread of invasive plants and recommend how to best manage access to reduce this spread. This programmatic EIS would not directly lead to any specific road closures. The DEIS disclosed that the standards in Alternative B would tend to lead to more access restriction than the standards in the other alternatives.</p>
<p>[Section 4.67] The DEIS seems to conclude that the impacts of grazing on the spread of weeds is already addressed in the individual grazing management plans and so no additional measures are needed as part of this DEIS. No scientific support or other information for this conclusion is given. Does this mean that there are uniform and effective measures to control weeds from grazing disturbances in all parts of Region 6? Please provide the scientific basis, according to 40 CFR 1502.24, on how these grazing plans are controlling weeds in ways that meet the purpose and need of this DEIS.</p>	<p>Current direction on invasive plant management related to livestock grazing is discussed in Chapter 2. The affected environment related to livestock grazing is discussed in Chapter 3. Standard 6 in all action alternatives requires that invasive plant prevention measures be incorporated into annual operating instructions and grazing allotment management plans.</p>

Table 41. Comments and Responses about Effects on Land Uses	
COMMENT	RESPONSE
<p>As a small organic farmer in a residential area very close to the forests I'm always greatly concerned about drift of pesticides. I'm very grateful to the forest representatives who, in the past some years, have seen fit to notify me when spraying is to occur, and to then back pack spray near the area.</p> <p>Stop spraying carcinogenic herbicides on our public lands! By spraying these poisons you're causing cancer and other diseases in humans, especially the forest workers who spray this stuff.- You're poisoning berry pickers, mushroom harvesters, etc.- You're contaminating our watersheds, drinking water, salmon fisheries, and the soil.- The drift from spraying contaminates and can ruin certification for Organic farmers like myself.</p>	<p>These concerns are addressed through the addition of Standard 23 to the FEIS in all alternatives, requiring that Forests create a public information plan with notification and signage responsibilities (See FEIS Chapter 2).</p>
<p>How will landowners be affected? I own 40 acres in E. Washington next to Dept. of Natural Resources land and a 5 acre pond I do not want contaminated with herbicides. Outline in Final IPEIS how landowners can protect their land from potential spraying operations.</p>	<p>This decision would not affect Dept. of Natural Resources lands. Adjacent lands would be considered when planning projects.</p>

Effects on Soils

Respondents expressed concern that the analysis of effects to soils was not adequately disclosed. For example, one Environmental Advocacy Organization stated, “The DEIS is lacking needed specific analysis of details about the toxicity of individual herbicides to soil organisms, information about studies considered in the risk assessment, modeling of individual herbicide movement, and specific information about herbicide properties such as persistence, absorption to soil, and solubility in water.”

These comments did not lead to substantial changes in the FEIS. Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants has been included in the FEIS to answer numerous questions about the effects of non-herbicidal treatment methods.

Table 42. Comments and Responses about Effects on Soils	
COMMENT	RESPONSE
The conclusion that sedimentation will be increased by invasive species applies more so to treatments with herbicides, which add to existing sedimentation by removing ground cover.	The difference between sedimentation from invasive plants and sedimentation from the treatment of invasive plants (including the use of herbicides) is the amount of time that soil is exposed to precipitation or wind that could instigate erosion. Under an integrated plan, new and varied vegetation will be growing in as little as one season. When invasive plants are growing, generally no other vegetation protects the soil during seasons when the invasive plant is dormant, and this effect persists as long as the invasive plant dominates. This information is in the FEIS Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants.
The paper by Lacey (1989) cited on p. 3-28 correlated with bare ground exposure. The observed effects due to knapweed were probably directly due to bare ground, and only indirectly due to weeds. Yet the EIS describes this reference as a conclusion that removing weeds will solve the problem of erosion, when removing the weeds would make the situation worse.	The point of the Lacey reference is that spotted knapweed is associated with more ground exposure than native vegetation. Native vegetation would be encouraged in areas where invasive plants are treated to increase ground cover in the long term. Removing the knapweed would increase bare ground in the short term. This information is in the FEIS Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants.

Table 42. Comments and Responses about Effects on Soils	
COMMENT	RESPONSE
<p>Despite the DEIS's assertion to the contrary, (p. 4-105), soil organisms are not important to the "human environment" only because they can affect soil productivity. What about more subtle changes to soil ph or nutrient levels that could lead to displacement of native plants by exotics or to changes in species composition on the site? What about consequent impacts to other species and the food web?</p>	<p>The DEIS considered effects on pH, nutrient levels, and all the organisms in the complex (and fascinating) food web found in soil as part of "soil productivity".</p>
<p>General statements about picloram's and sulfometuron methyl's toxicity to soil microorganisms (EIS p. 4-103) do not give any indication of the nature, extent or severity or potential ramifications (to native plants, food webs, human health, etc.) of potential contamination of different Region 6 soils by these chemicals under each of the alternatives. For example, what are the physical long-term direct and indirect results of "substantial" "microbial inhibition" from sulometuron methyl at typical forestry application rates? Obviously more specific information answering this question should be possible to extrapolate, given these statements, which must be based on some field or laboratory study/studies. Likewise, with picloram's known toxic effects to microorganisms at "low levels", what does it mean for the ecosystem and human health, exactly, that toxic effects can last "some time" after application?</p>	<p>The risk assessments addressed the nature, severity, and potential ramifications of herbicide contamination. Generally, effects are inferred from effects to soil productivity. In all cases, effects to soil productivity were short-lived. This could be due to a change in the soil ecosystem, where other organisms take over for organisms killed by the chemical, or it could be that the chemical concentration dropped and organisms survived. In some instances, it may be desirable to have an herbicide that persists in soil long enough that further treatment won't be necessary. Also, changing the vegetation from invasive plants will change the soil food web, though this is considered a benefit to the ecosystem.</p>
<p>The DEIS is lacking needed specific analysis of details about the toxicity of individual herbicides to soil organisms, information about studies considered in the risk assessment, modeling of individual herbicide movement, and specific information about herbicide properties such as persistence, adsorption to soil, and solubility in water (as reported to be within individual risk assessments but not disclosed or analyzed fully within the DEIS--see p.4-105, DEIS.)</p>	<p>Herbicide effects to soil organisms were analyzed. The disclosure of effects to soil biota is based on the concept that healthy soil biota are needed for productive soil, so negative effects to soil biota would be expressed as unproductive soil.</p>
<p>The DEIS is lacking needed specific analysis of differential impacts to soil microorganisms according to which soil types are affected (arid vs. moist, clay vs. sand, high organic content vs. low organic content or alkaline, etc.) by different herbicides. What is not very persistent or mobile on the west-side may be very persistent and mobile through soils on the east-side but no distinction is made in the DEIS between east- and west-side typical and worst-case scenarios for herbicide persistence in soils or herbicide mobility through soils, surface water and ground water, leading to wider-spread contamination of soils, water tables, surface water (eg. via run-off in arid flash flood-prone areas) and plants.</p> <p>The DEIS is lacking needed specific analysis of assessment of site-specific scenarios given use of particular formulas proposed on particular soil types with specific native plant and wildlife associations to give examples of possible results of herbicide use in concrete form for better understanding of risks posed.</p>	<p>Site-specific soils analysis would be part of project level planning. Standard 19 requires that site-specific soils characteristics be considered in treatment method selection.</p>

Effects on Aquatic Organisms

Many commenters expressed that the DEIS disclosure of effects to aquatic organisms needed to be reinforced with additional information. The FEIS has been supplemented in response to these comments. In particular, the FEIS addresses concerns expressed by the National Oceanic and A Administration (NOAA) Fisheries Department, the agency responsible for consultation on anadromous fisheries listed under the Endangered Species Act (ESA).

The FEIS clarifies that no direct effects on aquatic organisms would be expected from the invasive plant treatment program, however, invasive plant treatments have the potential to indirectly affect riparian areas, the aquatic food chain, and water quality.

Table 43. Comments and Responses about Effects on Aquatic Organisms	
Comment	Response
<p>Finally, protections for sensitive riparian areas are a necessary component of any IWM strategy. Amphibians and fish are typically more sensitive to chemical exposure and given the presence of numerous sensitive and ESA listed species in those taxa in the PNW Region, the protection of riparian areas that serve as habitat for those species is warranted.</p> <p>It should come as no surprise that herbicides kill more than plants. What guarantee can you give me that every applicator will keep them out of the watersheds, wetlands, and endangered fish habitats? You can't. Salmon are struggling to survive and WA States spends millions of dollars on salmon recovery-don't let one Agency destroy the good work of fish and wildlife people.</p>	<p>Standards 19 through 22 are designed to reduce risks to riparian areas.</p>

Table 43. Comments and Responses about Effects on Aquatic Organisms	
Comment	Response
<p>In the aquatic "cumulative effects" section, on page 4-107, the first sentence of the section states that FS lands in Region 6 are typically upstream from other herbicide applications. The second sentence states that FS use of herbicides is typically a small percentage of the total herbicide use within a given watershed, and references the SERA risk assessments. These statements should be further supported with Federal and non-Federal application rates. The SERA risk assessments were developed at a national scale, where many National Forests have discontinuous ownerships. In addition, the geographic scale of "watershed" is not clear. In Region 6, most FS ownerships tend to begin at the top of drainage basins, extending downstream to boundaries with non-Federal lands (where FS ownerships do become more discontinuous). The NEPA analysis would be more complete to state that in headwater streams and many 5th, 6th, and a few 4th field hydrologic unit code (HUC) watersheds, FS land ownership is at or near 100 percent. In these watersheds, herbicides are typically only applied by counties (roadside applications) and the FS for invasive plant control. The relevance of this clarification is that many 5th, 6th, and a few 4th field HUC watersheds in Region 6, the FS will have considerable discretion over the type, extent, and location of herbicide application, and ESA listed salmonids will be present in many of these watersheds. Therefore, aquatic cumulative effects analysis should be conducted in a manner that addresses these scale and discretion issues, as well as a realistic assessment of applications expected from Federal and non-Federal landowners.</p>	<p>The DEIS explained that use of the herbicides that are considered in the alternatives is widespread in the two-state region. Application rates and annual acreage sprayed were discussed in DEIS Table 4-1, Basis For Cumulative Effects Analysis. Watersheds with high proportions of federal ownership are subject to far less chemical exposure than watersheds with a high proportion of non-federal lands. The small proportion of federal use to non-federal use provides a yardstick to help evaluate the significance of differences between alternatives.</p> <p>This programmatic EIS does not contemplate any site- specific actions. At the project scale, proposed use of herbicides would be quantified and risks within specific HUC's will be more precisely addressed.</p>
<p>NOAA Fisheries does not agree that NOEC levels obtained in acute toxicity studies represent actual concentrations where no data exist for sub-lethal effects. In many cases NOEC levels from acute toxicity tests (or derived from LC50 values) may represent the best information available. Those data, however, should not be considered as definitive documentation of the absence of sub-lethal effects, but rather a reduced risk of lethality. The effects on aquatics would benefit from a more rigorous explanation of sub-lethal effects that examines the current understanding of the limitations of using NOEC levels from acute toxicity tests (and extrapolations of NOEC from LC50)</p>	<p>The DEIS provided the methodology for herbicide risk assessment as it pertains to fish. (p. 4-108). The DEIS stated that the NOEC values that were derived directly would most likely cover concerns for sub-lethal effects, however if NOEC values are derived from mortality studies, then concerns regarding sub-lethal effects would not be fully addressed. NOEC values from mortality studies were used when no other data was available.</p>
<p>Calculation/definition of the "concentration of concern" is defined in the aquatic analysis section as equal to the "no observable effect concentration" (NOEC), and that in some cases the NOEC was estimated using LC50 values. It is stated on page 4-108 of the DEIS that "...there are sound statistical reasons for this approach," (using LC50 values to estimate NOEC) and SERA, 2003- clopyralid is cited as the source. NOAA Fisheries was not able to locate the statistical reasoning within the cited document. NOAA Fisheries recommends that this section be expanded to include the full citation.</p>	<p>The statement referred to the "sound statistical reasons" for using an LC50 to estimate risk of acute mortality, not for using an LC50 to estimate a NOEC. The FEIS has been updated to eliminate confusion.</p>

Table 43. Comments and Responses about Effects on Aquatic Organisms	
Comment	Response
<p>NOAA Fisheries is concerned that the analysis of aquatic effects of herbicide use within the DEIS is overly limited by the modeling results contained in the SERA risk assessments. The DEIS states, in several places, that the only herbicide formulation that could result in negative (e.g. page 4-105) or lethal (e.g. page 1-14) effects to fish is one formulation of glyphosate. Yet, NOAA Fisheries expects that numerous herbicide application and exposure scenarios will occur that were not modeled in the SERA risk assessments, and for which no discussion or analysis of these scenarios is present. For example, the situation of additive toxicity risk occurs when application of several different herbicides takes place within a watershed, and the effect that is likely to accrue to the aquatic community is not adequately addressed. In addition, the influence of simultaneous manual and mechanical vegetation treatments on herbicide delivery resulting from accelerated erosion of herbicide-sorbed soil particles should also be part of this discussion. There should also be some discussion of possible effects caused by herbicide exposure that is expected to occur when the project design will be well outside of what is modeled in the SERA risk assessments. For example, helicopter application to large infestations in remote areas may affect herbicide delivery and exposure for a considerable distance beyond the SERA modeled impact area. While quantitative modeling results may not be available for this application method, a qualitative discussion of effects pathways, vulnerable aquatic species and life stages that may be present, and possible consequences is feasible and appropriate, and, hence, should be disclosed. NOAA Fisheries understands that the above-mentioned project scenarios, which are more complex or extensive than those modeled in the SERA risks assessments, would tier to the Standards amendments proposed in the DEIS during the individual Forest or sub-regional invasive weed management projects. However, it would be preferable if the DEIS aquatic analysis more thoroughly combined the results of the modeling contained in the SERA risk assessments with other specific information when analyzing all potential treatment scenarios.</p>	<p>The aquatic effects analysis has been clarified to respond to this comment. The SERA risk assessments represent the best available information. The interpretation of the risk assessment results is based on professional judgment. While the risk assessments do not necessarily predict the actual effects of herbicide use, they indicate the relative risk and severity of potential effects. The alternatives take the risk assessments into consideration in the selection of herbicides and standards for their use. At the project scale, the actual amount of herbicide use proposed can be specifically analyzed and adjustments made if the risk assessments indicate a cause for concern. The additive effect of multiple substances used in a watershed would be analyzed at the watershed scale when projects are proposed. It is not possible to completely analyze the potential effects of every possible combination at this Regional scale. A standard has been added to the FEIS requiring specific evaluation of mixtures at the project level prior to use. The actual effects are expected to be lower than those estimated in the SERA modeling because the standards require managers to reduce the risk of adverse impacts when selecting appropriate treatment methods. The inherent uncertainty of risk assessments is addressed in the document. Plausible exposure scenarios outside SERA risk assessments are not likely. The exposure scenarios used include herbicide entering water through erosion and run off, so potential risks from herbicide-sorbed soil particles are already accounted for.</p>

Table 43. Comments and Responses about Effects on Aquatic Organisms	
Comment	Response
<p>On page 4-128, the first two sentences of the third paragraph under "Direct and Indirect Effects" appear to be contradictory. The first sentence states that indirect effects to ESA-listed aquatic species would include changes to "...their riparian areas, food chain, and water quality." The second sentence states that "invasive plant treatment will not remove or degrade suitable habitat for any listed species." NOAA Fisheries agrees at least in part with the first sentence (there could be other indirect effects not mentioned), but the second sentence appears to be inconsistent with the first, and deleting it is recommended. Invasive plant treatments clearly have the potential to alter suitable habitat. The last sentence in the third paragraph on the following page makes the correct point - that adverse effects to listed species may occur, but the intended tradeoff is short-term adverse effects for long-term benefit.</p> <p>The first full sentence on page 4-129 is [deleted word] inconsistent with the statement that indirect effects to ESA-listed aquatic species would include changes to "their riparian areas, food chain, and water quality." It is true that the herbicides proposed for use in the DEIS do not tend to bioaccumulate or biomagnify, but that does not mean that other indirect effects will not occur, such as those stated above.</p>	<p>The FEIS has been edited for clarity and accuracy in response to this comment. No direct effects on aquatic organisms would be expected from the invasive plant treatment program. Invasive plant treatments have the potential to indirectly affect riparian areas, the aquatic food chain, and water quality. However, if work is done according to standards proposed in the EIS, these effects are unlikely to result in significant adverse effects. Site-specific analysis will address the potential for these effects to occur, and mitigation will be applied at the project level to minimize any actual effect.</p>
<p>Please provide some discussion of the influence of surfactants and other adjuvants on herbicide (i.e. active ingredient) toxicity to aquatic flora and fauna. This would include adding a discussion of how active ingredients toxicity endpoints are typically modified by surfactants and other adjuvants added to make formulations.</p>	<p>The risk assessments included evaluation of the influence of surfactants on toxicity to aquatic organisms. When surfactant toxicity was a concern, analysis in the risk assessment was conducted using toxicity data from formulations that contained surfactant (e.g. SERA 2003 Glyphosate, p. 4-39). Standard 18 requires that only formulations that have been evaluated in risk assessments may be used.</p>
<p>Public comments expressed concern over potential effects of herbicide application to aquatic species (salmonids as well as other aquatic flora and fauna) and riparian area function. In addition, public concerns were raised about the fact that ESA listed salmon are present on a large portion of streams within National Forest lands within Region 6. Given those public concerns, NOAA Fisheries that "effects to aquatic systems" be considered as an "issue" within the DEIS. This could help consolidate effects and capture issues highlighted in this letter.</p>	<p>The effect of herbicides on aquatic organism is an issue analyzed in the EIS. It is not a key issue because the effects do not vary significantly between alternatives. The evidence for the importance of effects to aquatic biota to the process can be found in the standards, goals, and objectives. Additionally, analysis continues as part of the ESA consultation process.</p>
<p>The "uncertainty" discussion on page 4-108 touches on the topic of effects to aquatic fungi and unicellular organisms but dismisses effects as "...likely to be transient and localized" without supporting discussion or citations. NOAA Fisheries recognizes that this discussion stems from the FS SERA risk assessments, but does not believe that the modeling contained in the assessments fully appreciates the complexity and subsequent aquatic effects of projects that could result form implementation of the Proposed Action.</p>	<p>The FEIS contains additional information about the effects on aquatic organisms. Effects on aquatic fungi and unicellular organisms are not well understood, however no data indicates there is a significant potential effect from the types of treatments contemplated. The SERA risk assessments considered exposure scenarios in both flowing and standing water.</p>

Table 43. Comments and Responses about Effects on Aquatic Organisms	
Comment	Response
<p>The aquatic cumulative effects analysis beginning on page 4-107, provides no discussion of the potential effects of herbicides to aquatic plants (macrophytes, phytoplankton, submerged aquatic vegetation, etc.) and the associated effects to the aquatic community (macroinvertebrates, zooplankton, fish, etc.). However, on the same page, two paragraphs before the "cumulative effects" section, seven herbicides contained within the Proposed Action are identified as potentially affecting aquatic plants. This contradiction should be removed. In addition, a general discussion of how mixtures of selective and non-selective herbicides (and their additives, to the degree known) might affect aquatic ecology should be provided.</p>	<p>The aquatic cumulative effects section of the FEIS contains additional information about the effects on aquatic organisms. The characterization of an herbicide as "selective" or "non-selective," has no relevance to potential effects to aquatic ecosystems, as these indistinct categories pertain to their effects on terrestrial target species. The potential effects of surfactants and active ingredients to aquatic plants and animals are discussed in the FEIS, supporting documents, and project files.</p>
<p>Recent research conducted by NOAA-Fisheries has documented the startlingly significant impact of poor water quality on salmon recovery efforts in small urban streams. A number of agencies have found that streams, particularly those in developed areas, can carry a witch's brew of chemicals, including pesticides, herbicides, hydrocarbon compounds, heavy metals, and pharmaceuticals. This unnatural cocktail can make it impossible to recover salmon and steelhead dependant upon small urban streams, even where significant money has been spent to restore the stream characteristics more typically of interest (e.g., geomorphologic features such as pools, large woody debris, meanders, and riparian vegetation; and such water quality parameters as temperature, dissolved oxygen, and sediment). The same concerns must be considered with respect to increased use of herbicides (and other chemicals) on national forest system lands. Intensive field and laboratory studies by NOAA-Fisheries on Longfellow Creek near Seattle, WA, demonstrated surprisingly large effects on several life stages of coho salmon from degraded storm water in urban streams. The culprit appears to be the oil, grease, pesticides and other pollutants carried in storm water gurgling off streets, parking lots and roofs. Healthy, "ocean-bright" adults suffered significant pre-spawn mortality after entering the creek. Up to 85% of the total adult females in the run died before spawning, after initially exhibiting a loss in their ability to orient to the current and a loss of equilibrium. Preliminary testing of embryos exposed to unfiltered creek water showed a dramatic tendency to develop problems during development of their vascularization network, with a significant number of embryos failing to develop any blood vessels to the mid-brain. Modeling the effects of the adult pre-spawn mortality and embryonic fatalities on population dynamics in an otherwise healthy population of a size typical to many smaller tributary streams (i.e., approximately 300-600 individuals) produced preliminary results indicating that those two factors alone likely would lead to population extinction in 30-50 years. Pesticides can significantly impact fish survival and fitness. Many common insecticides block a brain enzyme called acetylcholinesterase (AChE), which hydrolyzes the neurotransmitter acetylcholine.</p>	<p>The conditions discussed in this comment are unlikely to be affected by any of the alternatives. The use of herbicides to treat invasive plants is unlikely to contribute significantly to urban stream pollution because 1) the extent of herbicide use on National Forest is insignificant compared to the amount of use on private lands near urban streams; 2) monitoring of Forest Service herbicide use projects in the western U.S. has demonstrated that very few projects result in the inadvertent introduction of herbicides into adjacent waterways (Wofford et al. 2001, Rashin and Graber 1993) and 3) most herbicides considered in this EIS would have only transient presence in the aquatic ecosystem.</p> <p>No insecticides are considered for use in this EIS so the discussion of AChE effects from insecticides is beyond the scope of the document.</p>

Table 43. Comments and Responses about Effects on Aquatic Organisms	
Comment	Response
Chapter 4-we don't see a discussion of potential impact on insect larvae in the hyporheic zone (fish food). Perhaps a word or two on whether they are impacted or not would be helpful.	Data on effects to insect larvae in the hyporheic zone is lacking. A summary of potential effects of each herbicide to aquatic invertebrates, based on available data, was included in the DEIS.
I really hate to see the repeated heavy use of herbicides, the residue of which can negatively affect the natural balance under which our forests have thrived over the eons. I'm thinking particularly of our bird & fish populations, in particular the Coho salmon.	Consultation with regulatory agencies has been initiated as required by the Endangered Species Act. Effects on special status species are discussed in the EIS.
Furthermore, riparian zones should be off-limits to herbicide treatments or in compliance with Aquatic Conservation Strategies of the Northwest Forest Plan.	Standards are proposed in all alternatives to ensure aquatic ecosystems are protected. The ACS does not require that riparian zones be off limits to herbicide treatments. The risk of adverse effects to riparian zones from invasive plants would be balanced with the risk from treatments at the project level.
No herbicide should be used in or near water or riparian areas or near or within the high water mark of rivers, streams, irrigation canals and reservoirs. Even glyphosate, assumed to be one of the safest herbicides for riparian application poses known toxicity risks to fish and amphibians.	None of the alternatives eliminate all herbicide use within riparian areas because some invasive plants, capable of degrading riparian habitats, can only be treated successfully with herbicides. Aquatic label herbicides can be used in riparian areas with minimal risks to aquatic species. This was carefully considered in the risk analyses and addressed in the proposed management direction.
One formulation of glyphosate, applied at the highest application rate, could negatively affect fish. (DEIS 4-105). Which formulation? Negatively affect fish to what extent and which fish species? Enough to eradicate a species population or contribute to an up-listing trend? Is the use of the highest application rate possible either unintentionally or through an accidental spill? What is the threshold rate of application for negative effects? For lethal effects? Most critically, why is no alternative designed to avoid use of this glyphosate formula and thereby avoid these negative effects to fish? By not analyzing such issues in detail, public and decision-maker's knowledge of risks at stake is impaired and choices are not made obvious or available that could lead to a better decision. The NEPA process is intended to lead decision-making results that prevent potential environmental harm, not just mention a risk in passing.	The FEIS has been supplemented in response to this comment. The formulation of glyphosate that could negatively affect fish is any formulation that includes POEA surfactants. With enough exposure (concentration and length), this formulation can be lethal to fish, thus a large chemical spill could harm listed fish. Alternative formulations of glyphosate that do not contain this surfactant are readily available and are labeled for aquatic use. These formulations are much less toxic to fish and may be used near streams. (See Standard 19.)

Table 43. Comments and Responses about Effects on Aquatic Organisms	
Comment	Response
<p>[Section 4.4] The Forest Service states that the concentration of several different chemicals (chlorsulfuron, dicamba, imazapic, imazapyr, metsulfuron methyl, picloram, sulfometuron methyl, triclopyr, and 2,4 D) could all reach harmful levels. The different alternatives include a different number of these harmful chemicals, with Alternative B only using one of the above named chemicals and only treating the smallest percent of the riparian areas. However, the Forest Service concludes that even with the difference with respect to number of chemicals used and areas treated between the four alternatives, there would be no significant difference in the levels of risk to aquatic organisms. This conclusion does not follow logically because it only makes sense that the alternative that uses the least amount of chemicals on the smallest area of land would pose the least threat[.]</p>	<p>Clarification has been added to the FEIS that the exposure scenarios that generated the list of herbicides that may adversely affect aquatic plants do not account for such factors as application method, timing, and site-specific conditions. Standard 19 requires consideration of these factors to eliminate or reduce potential adverse effects for all alternatives. Alternative B has less potential for adverse effects in riparian areas, but all alternatives estimate minimal treatment within riparian areas, so potential adverse effects are not expected to vary significantly between alternatives.</p>
<p>In section 4.4.1, the Forest Service states that many of the invasive plant treatment sites are less, than one acre in size. However, in the discussion of each alternative the total acres of projected treatment areas greatly exceed this number. Alternative B, which calls for the least amount of treatment with herbicides, calls for 2,539 acres treated annually. In addition, the Forest Service states that the spraying of these 2,539 acres poses only a negligible risk to wildlife in relation to the 24.9 million acres in the project area. The same conclusion was reached in the other three alternatives as well. This, conclusion however does not accurately measure risk. Instead, the cumulative effects of herbicide spray on the wildlife living in the area to be treated must be examined. The Forest Service again states in section 4.4.4 that a three percent increase in land treated with these herbicides in the project area will not cause a significant increase in adverse effects to wildlife. However, the animals that live exclusively in the areas treated with herbicide need to be considered. If the Forest Service fails to consider this, these animals run a high risk of being adversely affected.</p>	<p>Direct, indirect and cumulative effects from invasive plant management on wildlife are discussed in the EIS. The total acres of herbicide use are for the entire two-state region. No animals are known to live exclusively in areas inhabited by target invasive plants.</p>
<p>The Forest Service also has not included any information as to the likelihood of one of the worst-case scenarios to occur. Within the DEIS the Forest Service generalized that it is unlikely that a worst case scenario accident would occur but it does not adequately present any estimation as to how unlikely that specific scenario actually is. When the Forest Service discuss alternative D it includes a statement regarding the potential for a huge mortality in amphibian populations if an accidental spill were to occur due to the lethal dose of 2,4-D an herbicide proposed for use in Alternative D. It fails, however, to calculate the possibility that an accident is likely to occur. It is important that the Forest Service assess all potential occurrences when it works on a proposed action that could have serious consequences for large populations of aquatic species.</p>	<p>Accidental spills are unpredictable and their likelihood was not quantified. Standards are proposed to reduce the risk and severity of a spill. The potential for adverse effects to wildlife is one reason certain herbicides would not be approved for use in the Proposed Action and Alternative B.</p>

Table 43. Comments and Responses about Effects on Aquatic Organisms	
Comment	Response
Also not discussed in the EIS is the moderate to high toxicity of triclopyr BEE (eg. Garlon 4) to aquatic species, based on test results for toxicity to frog tadpoles, trout, salmon, bluegill and daphnia, at least four of which exist as native species in Region 6 that could be affected (see Profile, p.6). The lack of tests for acute and chronic toxicity of triclopyr to wildlife mammals was also not considered in the EIS. (Profile p.6).	The toxicity, dose/response data, and potential for exposure of triclopyr BEE to aquatic organisms were assessed in the SERA 2003-triclopyr. The risk assessments used data from laboratory tests and field studies. The DEIS accurately reported the results of the triclopyr risk analysis.

Effects on Species Listed under the Endangered Species Act

Several commenters mentioned the Endangered Species Act (ESA) and effects on listed species. In response, the FEIS clarifies the difference between anticipated adverse effects from project implementation and the “likely to adversely affect” determination required by the ESA. Some factual corrections were made to the FEIS analysis in response to comments.

Table 44. Comments and Responses about Effects on Species Listed Under The ESA	
Comment	Response
Why is the Forest Service not considering specific herbicide application restrictions to protect TES species as the EPA requires? (See p.4-110, last par.)	Standards 19 and 20 provide appropriate management direction at the Regional Scale. Design criteria would be developed at the project scale protect special status species that may be affected by specific projects
The Invasive Plant DEIS incorrectly states that Arabis macdonaldiana (protected under the Endangered Species Act) is not likely to be affected because its habitat (on ultra-mafic soils) is not prone to the introduction of invasive species. This may not be correct if the habitat is subject to disturbance such as fire or off highway vehicles.	The ESA determinations are subject to the biological assessment and opinion process. Site-specific consultation documents would more accurately reflect threats at the project scale.
A biological assessment should have been completed and incorporated within the DEIS. NEDC is particularly concerned about the potential impact on rare plant species mentioned in the DEIS. DEIS at 4-35. The DEIS lists 14 federally listed plant species. The Forest Service requested a list of threatened or endangered plants and animals pursuant to Fish and Wildlife Service regulations, but the agency does not discuss whether it completed formal or informal consultation, as required by the Endangered Species Act. 16 U.S.C. [section] 1536(a)(2); 50 C.F.R. [section] 401.12. The agency notes that invasive species are currently adversely affecting threatened and endangered plants and animals, but makes no determination whether the invasive species plan itself will affect these species. DEIS, 3-52. Further, the Forest Service fails to determine the effect of the plan on critical habitat. 50 C.F.R. [section] 402.12(f). Failure to complete at the very least a biological assessment, if not a biological opinion due to the duration and potentially wide-ranging effects of this proposal, violates the Endangered Species Act.	The biological assessment (BA) is a consultation document required under the Endangered Species Act. It is on a different timeline than the EIS, by definition, a preferred alternative must be identified before a BA can be completed. Thus, the BA was not complete by the time the DEIS was available for comment. However, information relevant to the NEPA process from the BA was in the DEIS.

Table 44. Comments and Responses about Effects on Species Listed Under The ESA	
Comment	Response
<p>It is clearly stated in the Invasive Species Plan DEIS that the Forest Service is lacking available research into listed species under the ESA. The uncertainty regarding herbicide exposure or proximity of disturbance prevents the Forest Service from making any determination regarding the effects of the proposed project on the listed species. The ESA requires that the best available scientific and commercial data be used to assess the impacts of the proposed project on these sensitive species. 16 U.S.C [section] 1536(a)(2). The Forest Services is required to show that it has used the best science available to them including surveying the area for the species that are of particular concern, studying the impacts that use of herbicides could have on habitats and systems of the listed species, and the overall impact to the species themselves. The Invasive Species Plant DEIS fails to do any of the above and therefore has not followed through the requirements under the ESA.</p>	<p>The DEIS properly used and identified the best science available for assessing risk to wildlife, including federally listed and proposed species. Analysis in the DEIS was conducted at a scale appropriate to the scale of the decision to be made (e.g. the plan level). Appropriate determinations regarding potential effects to listed species were made, supported by scientific information, and reviewed by consulting agency personnel.</p>
<p>There are major concerns that endangered fish species are all listed as "likely to be adversely affected" by the proposed action.</p> <p>We should not risk our forest health to an onslaught of chemicals with such telling facts as all endangered fish species are listed as "likely to be adversely affected" by the proposed alternative.</p> <p>We are very concerned that all federally listed aquatic species are "Likely to be Adversely Affected" (Table 4-45) and that habitat for all commercially important fish species may be adversely affected (Table 4-47)! We are also concerned that almost all sensitive-listed fish species may have individuals adversely affected. We are not satisfied that this would not lead to a trend toward federal listing. (re: Table 4-46).</p>	<p>The FEIS clarifies the difference between anticipated adverse effects from project implementation and the "likely to adversely affect" determination required by the ESA. Actual adverse effects during project implementation are expected to be rare, therefore adverse effects will be minimal. However, even one adverse effect for one future project results in the "likely to adversely affect" determination statement. The frequency and scale of adverse effects anticipated is further discussed in the Biological Assessment. This determination statement is appropriate at the Regional scale because all alternatives have potential to affect listed and sensitive species. However, at the project scale, potential effects will be more precisely analyzed and adverse effects will be avoided or minimized as required by Standards 19 and 20. The risk of adverse effects to fish and other wildlife from invasive plants would be balanced with the risk from treatments at the project level.</p>

Table 44. Comments and Responses about Effects on Species Listed Under The ESA	
Comment	Response
<p>The Draft EIS does discuss negative impacts of riparian weeds on the threatened aquatic plant <i>Howellia aquatilis</i>, but no mention is made of likely, severe, direct impacts caused by infestations of aquatic, invasive weeds. If this species is to remain viable, then such infestations need to be prevented and/or detected early enough that appropriate management techniques can be implemented.</p>	<p>Aquatic invasive plants are beyond the scope of this EIS because:</p> <ol style="list-style-type: none"> 1) The purpose and need is focused on the need for invasive plant management within upland and riparian areas; the need to manage aquatic plants is not as evident within Region Six; 2) The conditions, treatments and issues are different for aquatic invasive species; 3) The Forest Service does not have expertise in dealing with aquatic invasive species; 4) Aquatic invasive species are managed by the States. <p>Aquatic invasives are addressed on a case-by-case basis by individual National Forests as needed via coordination with state and other agencies with expertise and responsibility in this area.</p>
<p>The habitat type listed for <i>Howellia aquatilis</i> in Table 3-8 is "vernal wetlands." This term is not generally used on the west coast and thus needs clarification. The more commonly used term is "seasonal wetland." Use of the term "vernal wetlands" could lead to confusion with a unique type of wetland found only on the west coast of the US, the vernal pool. Vernal pools are seasonal, depressional wetlands that occur under the Mediterranean climate conditions of the west coast. They are covered by shallow water for variable periods from the winter to spring, but may be completely dry for most of the summer and fall. Vernal pools are underlain with bedrock or a hard clay layer that helps keep water in the pool. They are home to a suite of unique plants and animals many of which are rare endemics.</p>	<p>Corrections have been made to this table in FEIS Chapter 3.</p>

Cumulative Effects

This set of comments relate to how cumulative effects were addressed in the document. Most of the comments questioned whether repeated use of the same or different herbicide formulations might accumulate in the human body or in the ecosystem.

These comments resulted in further explanation supporting the conclusion that the herbicides considered for use in the alternatives do not bioaccumulate.

Table 45. Comments and Responses about Cumulative Effects	
COMMENT	RESPONSE
Cumulative effects about fire. There should include a statement about multiple disturbances in the same place, i.e., fire and salvage will increase invasive plants more than either alone.	The DEIS addressed this in Chapter 3.1.2 under the section entitled, "The Role of Disturbance in Invasion."
The EIS should have analyzed cumulative effects on streamside vegetation. Cumulative effects analysis is a requirement of NEPA and riparian areas get the highest use of both wildlife and recreationists.	The DEIS discussed the effects of invasives and invasive plant treatments on riparian habitats and aquatic organisms in several places in Chapters 3 and 4.
Cumulative effects need to be fully analyzed re: the multiple exposures and multiple herbicide exposures possible across multiple ownership boundaries for far-ranging federally and state-listed species. (see p.4-121) Chapter 4-55: "Even the highest use estimates of herbicide from Alternative D would amount to only about three percent of the total acres treated with herbicides in Oregon and Washington." As our experience now shows, the use of the proposed chemicals, including 2,4-D do not currently exhibit any direct adverse wildlife effects in the Pacific Northwest. Therefore, a 3% increase in use will not increase any adverse effects.	Cumulative effects are discussed throughout Chapter 4 of the EIS. Potential effects from off National Forest do not vary between alternatives. The likelihood that animals would also be exposed to chemicals used on National Forest is low because the extent of treatment proposed in all alternatives is comparatively small (estimated at 3 percent or less of total acres of herbicide use). Application of Standard 20 at the project scale would reduce the risk of cumulative exposure on and off National Forest.
[The DEIS states:] "Herbicide exposure from invasive plant projects is unlikely to add to, or accumulate with herbicide exposures from other projects." Why not?	Each herbicide was evaluated for its ability to accumulate within the bodies of exposed animals by reviewing the bioconcentration factor and the time required to eliminate an administered dose. No herbicides considered in the DEIS are stored in fatty tissue, they do not accumulate up the food chain, and they are eliminated from the body very rapidly (often within hours of exposure). Since an exposed dose is eliminated from the body within hours of exposure, the likelihood that another exposure would occur to that animal before the herbicide is eliminated is remote.

Table 45. Comments and Responses about Cumulative Effects	
COMMENT	RESPONSE
The DEIS also fails to address the cumulative impacts of repeated herbicide use, Forest Service use of herbicides on top of private herbicide use and herbicide use impact in combination with other impacts to wildlife and native plants (especially Endangered, Threatened, Sensitive and rare species) or to human health and drinking water and crops (affected by accidental spills, worker and public exposure, toxins leaching through soils into the water table and aerial spray drift contamination, etc.)	The cumulative effects analysis considers use of herbicides on and off National Forest.
The DEIS is lacking needed specific analysis of chronic and long-term effects of repeated use of herbicide formulas in the same area over time--especially cumulative effects on native plant, insect, amphibian, aquatic and terrestrial wildlife populations and soil fertility and productivity over time--including use of multiple formulas over years. For instance, the DEIS acknowledges planned annual use of herbicides in riparian areas but does not analyze the effects from annual application as opposed to single, one-time application.	The cumulative effects of repeated use of herbicides are discussed in Chapter 4. If an area needs re-treatment, herbicides would no longer be active in the soils. The herbicides considered in the alternatives do not bioaccumulate or remain active in the soil over a period of years.
Based on the information provided, we [EPA] are rating the DEIS as EC-2 (Environmental Concerns-Insufficient Information). The Forest Service has done a good job of organizing and presenting information on this complex, multi-dimensional subject. Generally, the DEIS discloses the uncertainties and shortcomings of the state of knowledge about invasives control, particularly via chemical means. In light of the uncertainties, the DEIS may not adequately support some of the stated conclusions regarding lack of effects from herbicide treatments, such as soil productivity, and the cumulative effects over time resulting from continued herbicide applications.	Precise impacts cannot be predicted at this programmatic scale. In light of uncertainties, the Forest Service has taken a cautious approach to the use of herbicides. This caution is demonstrated through selection of herbicides and strict standards for their use. The effects analysis considers worst case scenarios, management direction that would be adopted in the Forest Plans would tend to reduce the actual effects.

Table 45. Comments and Responses about Cumulative Effects	
COMMENT	RESPONSE
<p>[Section 4.3] In addition to failing to provide scientific data to support its conclusions, the Forest Service also fails to consider the cumulative impact herbicide use will have on non-target plant species. Cumulative impacts are the impacts resulting from "past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal)" takes the action. 40 CFR 1508.7. Herbicides have been used historically by the Forest Service (the No Action alternative would simply work as a continuation of its herbicide intensive historical management techniques) and by landowners. The long half-lives of some of the chemicals discussed in the DEIS increase the likelihood that there will be harmful cumulative impacts on the native plants community. For instance, glyphosate has a half-life of between 3 and 130 days, according to a fact sheet prepared for the U.S. Department of Agriculture and the Forest Service. (Available at infoventures.com). Picloram has a half-life of 30 to 90 days, according to the same source. Both of these chemicals are part of the proposed alternative. To comply with NEPA, the Forest Service must take steps, including consideration of the persistence on each chemical in the environment, to consider the cumulative impacts that these chemicals will have on non-target plant communities. The Forest Service cannot simply consider the impact of one application of an herbicide on a particular species.</p>	<p>The DEIS considers cumulative effects adequately to determine the effects of alternative management direction. The evidence based on detailed risk assessment does not support a conclusion that "there will be harmful cumulative impacts on the native plants community."</p>

Table 45. Comments and Responses about Cumulative Effects	
COMMENT	RESPONSE
<p>Cumulative Impacts [Section 4.2] This section fails to adequately consider the cumulative impacts of each of the alternatives. Wouldn't alternative B for example better address potential cumulative impacts of road construction than the proposed action?</p> <p>If the decorative use of invasive plants by people living adjacent to the forest will impact the effectiveness of the alternatives, why do none of the alternatives consider public education on the effect of invasive species on forest health?</p> <p>What about the cumulative impact of continued use of the same herbicides or the use of multiple herbicides? Doesn't the cumulative impact depend on types of herbicides used? How would the preventive measures of Alternative B reduce cumulative impacts of repeated sprayings?</p>	<p>The DEIS acknowledged that Alternative B has the greatest potential to reduce the spread of invasive plants. Closing or decommissioning roads, minimizing the construction of new roads and minimizing the improvement or widening of existing roads are viable means of preventing invasive plants because these measures would reduce ground disturbance and eliminate the potential for vehicles to spread seed.</p> <p>The DEIS addressed public education as a Forest Plan objective in all alternatives. Public education programs are not subject to NEPA.</p> <p>The DEIS addressed the effects of repeated use of herbicides. It disclosed that Alternative B would result in fewer potential direct, indirect and cumulative effects to human and animal health from herbicides. The DEIS also disclosed that Alternative B would reduce the rate of spread, and therefore the amount of acreage needing treatment. The FEIS further discusses the cumulative effectiveness of Alternative B, finding that: Alternative B is the most effective in the use of prevention standards to reduce rate of spread, but the limited number of herbicide options would make control of the current infestation impossible without a significant reduction in the rate of spread (50% or more). It is unlikely that the suite of prevention standards proposed in Alternative B would have a greater impact on the spread of invasive plants.</p>

Table 45. Comments and Responses about Cumulative Effects	
COMMENT	RESPONSE
<p>The DEIS works around weak science again when it states that "[b]ecause of data gaps: [risk] assessments rely heavily on extrapolation from short-term effects to conclusions about long-term effects." DEIS at 3-94. Such extrapolation is the basis for the conclusion in the DEIS that the risk of cumulative effects on human health is negligible because "most of the [proposed] herbicides do not bioaccumulate in humans... and they persist in the environment for a relatively short time (generally less than 1 year)." DEIS at 4-81. The vague terms like "most," "relatively" and "generally" in this statement, undermine the scientific thrust and the "explicit reference by footnote to the scientific and other sources relied upon for the conclusions in the statement" required by NEP A. 40 CFR 1502.24 appears to be lacking. Absolute certainty is impossible but the need for more than assumptions and limited extrapolation as to the cumulative effects is necessary in such a situation where repeated sprayings of herbicides in varying combinations are projected to last a minimum of 18 years depending upon the chosen alternative. DEIS at 4-17. The DEIS is too quick to conclude that the impacts of the proposed herbicides on human health will be "insignificant." It relies heavily on unreasonable comparisons to other unreliable issues and not heavily enough on scientific data.</p>	<p>Use of risk assessments is not considered weak science. The DEIS acknowledged the uncertainty in risk assessment and extrapolation, however no other viable approach exists.</p> <p>The rationale behind the cumulative human health effects analysis is clearly disclosed and does not rely on unreasonable comparisons or unreliable issues. The agency used accepted scientific practices to analyze the risks associated with the alternatives.</p>

Partnership, Coordination and Public Education

Many people expressed interest in collaborating with the Forest Service in addressing the invasive plant problem in the Northwest. Commenters recognize that the weeds do not respect political boundaries and landowners and agencies must work together to be successful.

The Forest Service welcomes opportunities to work with groups such as those mentioned in these comments. Public information programs, publications, and other educational efforts would complement all alternatives in the EIS. The Forest Service strongly endorses and supports partnerships and collaboration and agrees that coordination with states, tribes, other landowners, and others will be necessary for success of the projects developed and implemented under any alternative. Educational programs are not subject to NEPA and are thus not the specific focus of the analysis. The decision whether or not to employ volunteers (or others) to accomplish work is also not subject to NEPA.

Comment	Response
Even though the Oregon Department of State Lands (ODSL) may technically have jurisdiction over navigable waters within the state, the US Forest Service has typically not recognized the state of Oregon's claims to submerged lands, which lie within National Forest boundaries. Further, the ODSL must do a navigability study before ownership can be asserted or denied. ODSL currently has no funds specifically identified or allocated for aquatic weed removal. These lands and, thus, the aquatic habitat they provide appear to be in limbo as far as coordinated management of aquatic weeds.	Treatment of aquatic weeds is outside the scope of this EIS (see Chapter 1, what is not included). Aquatic invasives would be addressed on a case-by-case basis by individual National Forests as needed via coordination with state and other agencies with expertise and responsibility in this area.
Even though the proposed action in this Draft EIS applies only to on the ground actions on Forest Service lands, I am somewhat concerned about the Forest Service going it alone on this document since one of the most critical factors in the war on invasive plants is coordination between all affected agencies at all levels of government and the public. As pointed out in the document, invasive plants are unaffected by property lines. Implementation will certainly require consultation, cooperation, and coordination among various agencies and the public. It could even be confusing to the public that some agencies have noxious weed programs while others have invasive plant programs. I hope it is not meant to be a comprehensive plan for halting invasive plants on Forest Service lands because it is not. Most notably it does not discuss Forest Service interagency efforts.	FEIS Appendix I addresses the Regional strategy for supporting invasive plant management on State and private lands. Goal 5 for all action alternatives would expand collaborative efforts between the Forest Service, our partners, and the public to share learning experiences regarding the prevention and control of invasive plants, and the protection and restoration of native plant communities. The Forest Service will continue to work with other agencies and groups to educate and communicate with the public and reduce confusion. Section 4.2 of the DEIS specifically discussed interagency efforts, partnership and collaboration.

Table 46. Comments and Responses about Partnership, Coordination and Public Education	
Comment	Response
<p>There should be a single interagency "noxious weeds hotline" or website so the public can report invasive plant occurrences because the eyes of all public employees are not enough when it comes to trying to track the spread of invasive plants.</p> <p>Education and notices at trailheads can make more people aware of the problem. Even going as far as putting leaflets on windows shields can go a long way in helping with the education of invasive weeds.</p> <p>Public education into this problem and how weeds are spread is an important aspect.</p> <p>Similarly the F.S needs to educate "users" as to the factors that encourage invasive weeds on Nat. Forest Lands.</p>	<p>The Forest Service welcomes opportunities to work with groups such as those mentioned in these comments. Public information programs, publications, and other educational efforts would complement all alternatives.</p> <p>Educational programs are not subject to NEPA and are thus not the specific focus of this EIS.</p>
<p>It is important that all governmental agencies address this problem on an ongoing cooperative basis i.e. the National Forest, BLM, Indian Reservation Lands, county, city government as well as the National Park system. If weeds are not controlled in all areas it makes a patchwork system of control ineffective.</p> <p>Working with neighbors is an important part of the program. These may be private landowners with inholdings, county weed control authorities and state weed control authorities (Washington State Noxious Weed Control Board and the Oregon Department of Agriculture).</p>	<p>Goal 5 for all action alternatives would expand collaborative efforts between the Forest Service, our partners, and the public to share learning experiences regarding the prevention and control of invasive plants, and the protection and restoration of native plant communities.</p>
<p>Uniform policies need to be implemented on all national forests within the region and the individual forest plans need to be updated for the use of effective herbicides. The region will have to instruct and review to make sure this will be done. Again, private, state/county, and federal land landowners or agency representatives need to join hands and co-operatively work together.</p> <p>Remember the general public is a major source of the problem in the spreading of invasive weeds on private land. Private landowners shouldn't have to pay the price when their lands are open for use by the general public. Federal grants, partnership funding, etc. should be used to provide funding for many projects on private lands being used by the public. Many of these lands join one another. You fight a losing battle if only one party is involved in treatment of these invasive weeds.</p>	<p>The DEIS acknowledged the value of standards that would be applied consistently across the region. Goal 5 for all action alternatives would expand collaborative efforts between the Forest Service, our partners, and the public to share learning experiences regarding the prevention and control of invasive plants, and the protection and restoration of native plant communities.</p>

Table 46. Comments and Responses about Partnership, Coordination and Public Education	
Comment	Response
<p>Establish educational programs (pamphlets, signage) targeted at OHV users enabling them to be more aware of the impact they cause would also be key in preventing further infestations and habitat degradation. We suggest developing these materials with input from the targeted audience. Information should be posted at trailheads and staging areas re the importance of cleaning your boots, clothing and coats of pets and livestock. The same for OHV staging areas and campgrounds.</p>	<p>Education of the workforce and the public and effectively working with neighboring landowners in all aspects of invasive plant management are among the goals common to all action alternatives. These programs are not subject to NEPA.</p>
<p>Locally, a weed pull that started with coffee for all and ended with free lunch was extremely successful in terms of number of weeders and amount of weed pulling. If there's any way the Forest Service could use volunteers in such a manner, it might make it less likely that chemicals would be used.</p> <p>Volunteer resources such as the Youth Conservation Corps, the boy scouts and girl scouts, interested non-profit organizations, local community groups and others including appropriate high school and college class field trip opportunities should be suggested with contact information by state and local area to aid in finding adequate numbers of people for the manual labor involved. Otherwise overburdened resource managers are not likely to take the time to familiarize themselves with the specific control parameters of the invasive plants or to find adequate labor to consistently do manual control.</p> <p>The FS is already involved in many [collaborative efforts]. Perhaps instead of focusing on expansion of efforts, FS should play a more active part in those efforts already existing. Please focus on implementation of higher priority strategies on national forest lands. At present, many collaborative efforts have holes in their agreed upon strategies where Forest Service lands require active treatment.</p>	<p>The Forest Service welcomes opportunities to work with groups such as those mentioned in these comments. Development of volunteer programs and local partnerships would complement all alternatives. These programs are not subject to NEPA and are thus not the specific focus of this EIS.</p>
<p>Also, back in your collaboration paragraph (see right above), you do mention states. It would seem good to have a program that coordinates with state (and state-governed private) forest lands, as well. And let us not forget tribes with major timber holdings right on their reservations, like Yakima or Quinault. Let us not have a crazy quilt of plans that go back and forth with land ownership. The weeds don't respect political boundaries. We look at Par. 2.5 wherein the service will likely make an internal response to "Under what circumstances and management restrictions should herbicides be used to treat invasive plant infestations?" If you make that decision unilaterally, you may drag heels or take a course of action that adversely impacts adjacent or downstream lands. That is an illustration of how it becomes imperative to have a viable working relationship with neighboring entities.</p>	<p>Coordination with Native American tribes, other federal and state agencies, neighbors and other groups and individuals will be necessary for success of the projects developed and implemented under any alternative.</p>

Table 46. Comments and Responses about Partnership, Coordination and Public Education	
Comment	Response
<p>The proposal to use state contracting authorities is a recipe for poor compliance. The state does not have either the ecological expertise or the authority to control contractor spraying on the National Forests as described in the EIS, other than to require that label directions be followed. Furthermore, the Department of Agriculture (DOA) offices are located many miles from the Forest, and it is unlikely that the myriad problems associated with controversial projects will be resolved in a timely manner. While there is some merit in the idea to use DOA authority for investigations and enforcement, as stated in the EIS, the proposal to transfer and dilute your authority to lower state standards is not a good idea. Instead, what is really needed is oversight authority that insures interagency compliance.</p>	<p>The Forest Service would retain primary responsibility to comply with applicable laws, regulations, policies, standards and guidelines. None of the alternatives would “dilute Forest Service authority” or “lower standards.”</p>
<p>To improve the overall effectiveness of the proposed action, it should include cooperation with state departments of agriculture, county weed control programs and weed districts to address statewide and local invasive plant issues. It should also reference state listed noxious weeds.</p> <p>The emphasis on working cooperatively with local, state, and other federal programs must remain strong regardless of the alternative selected.</p> <p>Efforts on prevention and education are included in Appendix I. We recommend strengthening the alternatives by explicitly including these and other efforts. A large number of publications are available from Noxious Weed Boards, etc., that could probably be cooperatively distributed without the need to develop new materials. Information on invasive plants can be provided in visitor centers, at trailheads and other locations.</p>	<p>The Forest Service strongly endorses and supports partnerships and collaboration. Coordination with Native American tribes, states, other landowners, and other agencies will be necessary for success of the projects developed and implemented under any alternative.</p>
<p>It [the proposed action] doesn't discuss education and public involvement. Education of all Forest Service employees, and the public, in invasive plant identification is very important. There has been a knapweed infestation in the Asahel Curtis picnic area on the Mt. Baker-Snoqualmie NF for several years but nothing has been done even though Forest Service employees walk through the knapweed, possibly daily, to empty trash cans and perform other maintenance. The picnic area is used by many people as a rest area, so it is acting as a seed distribution site.</p>	<p>This comment acknowledges the need for education and raising awareness of Forest Service employees as well as others to prevent spread of invasive plants. This should occur regardless of alternative selected. Training of employees is not subject to NEPA and thus is not the focus of this EIS.</p>

Tribal Concerns

A spokesperson for Native American tribes reviewed the EIS and commented about the way tribes were discussed. These comments led to corrections in references to Native American tribes in the FEIS. Native American tribes are considered as important partners, neighbors, and stakeholders in invasive plant management on National Forest lands. The tribes were not referenced in some important places in the DEIS; this inadvertent omission has been corrected in the FEIS.

Table 47. Comments and Responses about Tribal Concerns	
Comment	Response
Chapter 1 Page 15. In conflict with later sections (fortunately, see paragraph on 3-71), this paragraph on tribal/treaty rights fails to mention the off-reservation treaty rights of the tribes with Stevens Treaties-most of Western Washington and large areas of Eastern Washington. The off-reservation rights and ownership in fish, plants, and wildlife are derived from the treaty as well (and are legally alive and well), but are not part of trust lands (a special category of land comparable to a reservation even if not contiguous), so not covered by the paragraph on 1-15. We are attaching a map that is a little out of date (some tribes have since negotiated larger areas through evidentiary hearings); however, it illustrates well just how far the off-reservation rights extend beyond the relatively small reservations or trust property. Note that there is a huge overlap of tribes' ceded areas (with treaty rights) with USDA FS lands. The federal courts consider the forest service lands to be "open and unclaimed" for purposes of tribal exercise of off-reservation treaty rights. This page 1-15 paragraph occurs before that of page 3-71 and makes the first impression. Few will know it is wrong and will begin reading with the thought that tribal rights are limited to reservation and trust lands. We are very concerned about distribution of misinformation. It is so hard to undo. This misperception must get corrected in the EIS. However, to educate the non-tribal readers, it would be good to flag that correction with a comment in your cover letter to the EIS.	The FEIS Chapter 3 was revised to address this concern.
Chapter 2, page 5: In Table 2-2, your IPM strategies do not appear to include tribal planning pursuant to EO13175. It looks as if once again, tribes are lumped with the general public (see first bullet). Yes, tribes are smaller governments, but they have treaty rights and such preliminary involvement is the law. Remember that tribes have local biological knowledge, as well. They are often experts in local plant life; perhaps, in some circumstances, beyond the local FS expertise. Tribes also have expertise in the local fishery and wildlife issues, and can help greatly in planning actions regarding herbicides. Consulting them in a timely fashion (before general public action) can only benefit both parties, even if this were not the law (but it is).	Native American tribes are considered as important partners, neighbors, and stakeholders in invasive plant management on National Forest lands. The FEIS has been revised to address this concern.

Table 47. Comments and Responses about Tribal Concerns	
Comment	Response
Chapter 3, page 1, definition of "weed," as a plant growing where not "wanted," even when native. Not wanted by whom? Only the landowner? Remember those tribal off-reservation rights. We have a real problem with this one. If a culturally important and increasingly rare plant like bear grass grows where someone does not want it, would you authorize removal? For a document of this magnitude, we suggest you find a better definition. Something needs to be added about exceptions, in your developing protocol. Landowners must not be autocratic about this.	The term "weed" is defined in comparison to "exotic," "alien," "non-native," "invasive plant," and "noxious weed" to help the reader better understand the meanings behind the words and how terms are used or misused. This EIS is an invasive plant program, thus the strategies and analysis are based on the given definition for "invasive plant" and not that of "weed." Tribal consultation would occur at the site-specific treatment level to ensure that culturally important plants are considered.
Chapter 3, page 3-71. This Treaty Rights paragraph is politically correct and the rest of the document needs to be in line with it. [How did you get such disparity? Different authors?] However, also recognize, technically (as you do in other parts of this DEIS), that invasive plants don't just "influence" fish/wildlife "behavior". In some cases, they can ultimately severely harm it by killing the RMZ or replacing food preferences. We would change "influence" to "impair" or "harm" or something stronger. And change "behavior" to "population numbers." More than behavior is impacted.	Wording adjustments have been made in the EIS to address these concerns. The disparity was inadvertent.
Table 3-11 on off-reservation rights. Just a legal technicality, but you may want to rename the table as "Tribes and Off-reservation Rights," rather than "Tribes and Treaty Rights" because, e.g., Colville's off-reservation rights are by Executive Order, not Treaty. Not sure why you have "of the Quileute Reservation" after the name "Quileute Tribe." To our knowledge, that is added language. What is the source? Also, typo: delete "Tribe" in number 28, as an extra word.	Wording adjustments have been made in the EIS to address these concerns. Tribal names were provided by the Regional Tribal Government Staff Assistant.
Chapter 2 Page 16, Objective 5.2: How can you talk about collaboration with federal, state, local and private land managers, and leave out tribes, when talking about native plants? We find it amazing that the FS would talk things over with cities, however small, but not tribes. (Or did the drafters think tribes were "local governments" and thereby covered? Local governments are subsets of the state, and tribes are not subsets of the state.)	Native American tribes are considered as important partners, neighbors, and stakeholders in invasive plant management on National Forest lands. The DEIS inadvertently left off mention of the tribes. This oversight has been amended in Chapter 2.
Chapter 2, Page 16, Par. 2.4.2: Are the drafters of this DEIS aware of other monitoring protocols out there, developed by REO with the tribes, for example, and even local MOU's (such as with Olympic National Forest and Quileute), regarding monitoring? This DEIS needs to be sure it integrates with such other documents appropriately.	The drafters of the DEIS were aware that other monitoring protocols and agreements exist. This was addressed in DEIS Appendix M under "Assumptions."

Table 47. Comments and Responses about Tribal Concerns	
Comment	Response
<p>Chapter 1 page 9: There are references throughout the document to scoping with tribes. We frankly do not recall a time when the FS came out to our tribe [Quileute Indian Tribe] and said that the agency was about to do a DEIS on weeds, and ask our opinion. We got the CD ROM in its completed form. As required under Executive Order 13175, preliminary consultation is required, for actions of federal agencies that can impact tribes. Please recognize: Tribes are not members of the general public. Mostly around 1855 in Washington State, the US took quite a sizeable package of land, from which it later benefited hugely, in the case of each western Washington tribe. In return, besides the relatively small and exclusively held reservations, tribes reserved (this means kept as part of the trade; these interests never passed to the US) off-reservation rights to natural resources, including wildlife and vegetation of cultural and/or subsistence value. All court cases we have seen include the federal forests in these off-reservation lands wherein tribes have legal (treaty) rights to the living resources (not just fish). These off-reservation rights make the applicable and affected Stevens Treaty Tribes co-owners of these resources (depending on the particular forest concerned). Because of 1) the co-manager relationship and 2) the EO 13175, tribes need to be brought in at the earliest planning stage. This is a co-tenancy; all co-tenants must be involved in the planning stage, before general public viewing.</p> <p>The emphasis on working cooperatively with local, state, and other federal programs must remain strong regardless of the alternative selected.</p>	<p>Native American tribes are considered as important partners, neighbors, and stakeholders in invasive plant management on National Forest lands. Native American tribes of the Pacific Northwest were sent initial project scoping letters during August of 2002. Follow up contacts were pursued by the Invasive Plants EIS Team in July and August of 2003. Additional efforts to include tribes in invasive plant treatment efforts that may tier to this EIS are currently being pursued.</p>

Glossary

One invasive plant professional reviewed the glossary and suggested several changes. These changes were generally adopted in the FEIS.

Table 48. Comments and Responses about the EIS Glossary	
Comment	Response
Glossary: "Fungi" are not usually classified as "plants" these days, except by members of the public or authors for field guides for that audience, re mushrooms and bracket fungi. You may want to be taxonomically more up to date. This is not a document for the general public, right?	The FEIS glossary has been updated in response to this comment.
Glossary: "Zooplankton" definition is more properly stated as "tiny aquatic animals that provide an important source of food for fish." So many other animals depend on them, too; not just fish.	The FEIS glossary has been updated in response to this comment
Glossary: Here and there are singular definitions for plural words and plural definitions for singular words. One area is "Enzymes" and see also "Controls".	The FEIS glossary has been updated in response to this comment.
Glossary: Some rhetorical fixes, such as changing "is" to "are" in line 6 of Allotted Lands ("acres are"). Under "Mitochondria", change "this" to "that" for the definition to make sense.	The FEIS glossary has been updated in response to this comment
Glossary: You do not define "plant", even though you use terms for agents that kill "plants" and refer to them under "Flora" and "Threatened Species". This is a tough one, but do you want to make a definition for this DEIS purpose only, and then say so? The popular conception includes mushrooms and fungi. Do you want to exclude fungi et al. from a plant definition and say why? You need to come up with something re "plants", and explain the exclusions or inclusions.	The FEIS glossary has been updated in response to this comment.
Glossary: "Mollusks". Fifty percent of your example does not have a calcareous exterior, and of those, slugs (no shell) are gastropods along with the snails. As you must know, Mollusca has a huge number of no-shell representatives (we think of not only of slugs, but also octopi, squids, and nudibranchs, for starters), so "usually" with respect to shells is probably not accurate, when speaking of mollusks overall (which you must be, since you refer to squids). Why not restate it as a "Phylum (major taxonomic group) of unsegmented, invertebrate animals, some types having a calcareous external shell; representatives in the USDA FS include snails, slugs, and clams."	The FEIS glossary has been updated in response to this comment.
Glossary: "Sink" The DEIS discusses a biological sink wherein native bird species could be lured to nest, with negative impact, in areas of strong presence of certain non-native plants. You may want to add that to your definition here.	The FEIS glossary has been updated in response to this comment

Miscellaneous Other Comments

The following set of comments did not fit neatly into any other category and were placed together in this miscellaneous category. In general, these comments generated explanations but no substantive changes to the EIS.

Table 49. Miscellaneous Other Comments and Responses	
Comment	Response
I am concerned that you have structured your alternatives with a bias against 2,4-D.	The Forest Service attempts to consider and resolve public issues in a non-biased manner. The fact that public comments to the DEIS state that the Forest Service is biased both for and against herbicide use would indicate that the Forest Service approach is balanced.
Site Restoration/Revegetation Paragraph 4. Discussion on the definition of 'local'. A point that is left out as a negative in utilizing genetically similar seed is the genetic inferiority of the plant. More diverse genetics will result in more robust plants. More genetically similar populations run a greater risk to losing the entire population to a single disease or ecological change. Greater diversity in the genetics would allow a greater chance of the plant species to adapt to changes in the ecosystem, such as those caused by invasive plants.	Direction on the use of native materials follows draft national policy. Discussion on genetically similar seed can be found in Chapter 3 of the EIS or the FEIS Appendix J, The Effects of Non-Herbicide Methods of Invasive Plant Treatment on Wildlife, Fish and Plants.
Your draft mentions cost transfer to users of National Forest lands, including grazing adjustments, feed specifications, and vehicle access restrictions. I believe that is the only just way to protect these lands from invasive plants. It would not be fair to allow these users to shift costs to others-such as to me or to my grandchildren's generation-for the harm caused by users' activities. As an occasional visitor to National Forest lands, including "wilderness," I don't mind paying taxes to support agency efforts to prevent invasive plants from spreading.	Your comments will be considered and the rationale for the decision will be published in the Record of Decision.
Chapter 2 Page 3: Despite earlier remarks in your text, we think it would clarify the headings to also call "No Action" in Table 2-1 "Alternative A", underneath or above "No Action", and to call "Proposed Action" also "Alternative C". It is particularly jarring to the reader presently, since you show B and D after C on the table. Someone should be able to look at the table and get the picture at a glance and as the columns are headed presently, they cannot.	The reference to Alternative A as No Action and Alternative C as the Proposed Action was intended to explain why other action alternatives are B and D. The tables in the EIS generally refer to No Action, Proposed Action, Alternative B and Alternative D. The order of alternatives in the tables may vary depending on the information presented in the table.
Table 2-6 re Environmental Effects. We hope someone will have the expertise to review this table adequately. It makes some pretty sweeping conclusions; however, we are not saying they are wrong. We just think they need external review.	The DEIS comment process allows for external parties, including agency representatives and invasive plant professionals, to review our findings and conclusions. Appendix A demonstrates that the Forest Service has considered and responded to all substantive comments about the effects analysis.

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The Forest Service should [revise] the components of the Alternative B, better incorporates ICBEMP science, such as "Source Habitats for Terrestrial Vertebrates of Focus in the interior Columbia Basin: Broad-Scale Trends and Management Implications" and includes many more protection measures. The [revision] should evaluate a wide range of restoration-type alternatives that will serve to effectively protect vegetation communities from weed invasion.	The DEIS provides direction on restoration in order for more site specific techniques to be considered at the Forest level during site-specific NEPA
A description of so-called "Experimental herbicide trials conducted by EPA" (p. 1-5), which was exempt from this EIS, should be given so that there is no doubt of when or where such experiments are or are not occurring.	Herbicide testing occurs as part of EPA's program of work and is beyond the scope of this EIS. No herbicide trials would occur on National Forests in Region Six.
The EIS did not provide the monetary value of benefits of weed control to compare with the costs, otherwise known as a risk-based, or cost-benefit, analysis. While the EIS is commendable for the use of risk-based analyses for herbicidal risk to safety, the same standard of cost-benefit analysis is not applied to the costs versus benefits of control and prevention of invasive plants. This leaves the decision-maker's choice of alternative up to creative guesswork.	The effects of invasive plants on ecosystems were discussed at length in the DEIS Chapter 3, demonstrating that action is needed to control these plants. The effectiveness of each alternative in reaching objectives was also considered. This analysis was partly based on herbicide formulations that would be approved.
Why is there no risk/benefit analysis in the EIS weighing the benefits of herbicide use against the risks? This should be done for each individual herbicide and its formulations so that decision-makers and the public can evaluate the "pros" and "cons" of using each herbicide and formula proposed for use.	The costs of the prevention and treatment standards were discussed both in monetary and other terms. The monetary and non-monetary effects of the alternatives will be considered in the decision making process. The cost, relative effectiveness, and potential adverse impact of various herbicides would also be considered in project-level analysis that can incorporate site-specific information.
The EIS should describe incentives for managers to actually control weeds, otherwise what is to prevent contractors from merely going out into the forest and randomly spraying herbicides and calling it a job well done?	The EIS describes the goals for invasive plant management. Projects would be evaluated regarding their contribution to reaching goals and objectives. Thus, random spraying would not be approved because it would not contribute to goals as well as careful, targeted treatments.
The EIS should have analyzed the production of dust produced from bare soil caused by herbicide treatments. Bare soil with adsorbed herbicides has the potential to increased after herbicide use, and later becoming inhaled, particularly during spring thaws. Without this analysis, there will be no way of knowing whether inhaling herbicides is impacting wildlife and human health. Furthermore, this is a type of translocation that is technically illegal for certain restricted-use pesticides like Picloram. We recommend against using picloram and other leach-prone pesticides for this reason.	Each FS/SERA herbicide risk assessment evaluates inhalation toxicity and estimates exposure from liquid drift and/or vapors. The risk assessment estimates the range of proportions of the applied herbicide that might be present in wind-blown dust. For all the herbicides considered, the potential dust inhalation exposures are much lower than exposures to off-site drift from ground applications; therefore the potential risks to non-target organisms are adequately encompassed in analysis of risks from drift.

Table 49. Miscellaneous Other Comments and Responses	
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<p>The Okanogan National Forest conducted a ten-year \$1.5 million program to "reduce noxious weeds". The EIS does not propose a weed control solution that would substantially change the way of doing business. The business of weed reduction began with a map of weed infestations, which was essentially a map of Okanogan National Forest Roads. Even though the map was poorly drawn and contained many weed-free areas, the next step was to give the map to a local contractor and require them to spray a 10-foot wide shoulder for every inch of the roads, regardless of whether there were weeds or not. This resulted in miles of completely native and sometimes riparian areas being indiscriminately treated, at great waste to the public, and great cost to the Forest's image. A better goal would have been to manage for ecosystem integrity. In that case a poorly drawn map of weed infestations would not necessarily result in indiscriminate herbicide spraying, but instead with a restoration program that considered a suite of ecosystem management tools.</p>	<p>The FEIS desired condition statement is not simply to reduce noxious weeds. Rather, the focus is on ecosystem integrity as shown in the italicized portion of the statement: " In National Forest lands across Region Six, healthy native plant communities remain diverse and resilient and damaged ecosystems are being restored. High quality habitat is provided for native organisms throughout the region. Invasive plants do not jeopardize the ability of the National Forest to provide goods and services communities expect. The need for invasive plant treatment is reduced due to the effectiveness and habitual nature of preventative actions and the success of integrated treatment/restoration efforts."</p>
<p>The statement on p. 3-1 that, "The effects [of] sic invasive plants should be changed to the effects of treatments.</p>	<p>The commenter apparently misinterpreted the sentence. Chapter 3 is about the effects of invasive plants on other resources; effects of alternative treatment standards are discussed in Chapter 4.</p>
<p>This thorough DEIS addresses all of the key issues in a frank, professional manner. Its treatment of the real risks of chemical and biological control treatments is excellent, and provides a good basis for the selection and use of herbicides and other methods described in the Proposed Action.</p>	<p>The rationale for the final decision will be in the Record of Decision.</p>
<p>The phrase "tool of last resort" needs to be carefully defined in the EIS.</p>	<p>The FEIS defines "tool of last resort" in the glossary.</p>
<p>Furthermore, when the Forest Service applies herbicides on public land where the public is present (even at some distance from the application), the Forest Service is, in fact, performing an illegal test by exposing the public (testing) in direct violation of 7 USCA [section] 136j:7 USCA [section] 136j. Unlawful acts (a) In general (2) It shall be unlawful for any person-(P) to use any pesticide in tests on human beings unless such human beings (i) are fully informed of the nature and purposes of the test and of any physical and mental health consequences which are reasonably foreseeable, and(ii)freely volunteer to participate in the test; The Environmental Protection Agency (EPA) collects Pesticide Incident Reports, but according to Dr. Karl Arne of EPA Region X, nothing is typically done with them. So the injury caused by public land managers of the non-consensual exposure, which is a form of illegal testing, is compounded by the insult of not reviewing the harm done so that it will not be repeated!</p>	<p>These concerns are addressed through the addition of Standard 23 to the FEIS in all alternatives, requiring that Forests create a public information plan with notification and signage responsibilities (See FEIS Chapter 2).</p>

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Another significant impact of an inadequate range of alternatives is the disproportionate impacts to American Indian and Hispanic people. No choice or mitigation is offered to eliminate this environmental justice discrimination. This is unacceptable. Allowing more toxic herbicides and more harmful methods of application to be used (eg. backpack sprayers, aerial spraying) increases this injustice and may lower effectiveness of later mitigation. (See pp. 4-133-135)	The section on Environmental Justice discusses that there may be disproportionate effects to American Indians and Hispanic people, however no discernable differences between alternatives were found at the Regional Scale. There is a range of alternatives in terms of human exposure scenarios; the Proposed Action and Alternative B have fewer harmful scenarios than No Action.
It is unclear whether the full text of alternative B has been made available in tables 2-4, 2-5 and 2-6. The exact wording of the management direction can be key to whether it is enforced and is critical to informed decision-making on this EIS.	The full text of standards were included in the DEIS. These have been edited in the EIS to respond to public comments.
Please compare the harm of herbicides to the harm of noxious weeds in such a case as a frogs in the final EIS. Evaluate why the weed is more important to exterminate that the potential harm the herbicide will produce in frogs and other wildlife potentials ie animals, and insects as well as fish. If the weed is less dangerous than what the herbicides will potentially harm then it is better to leave the weeds alone until other methods can apply.	The Record Of Decision will consider the risks and benefits of the alternatives and provide rationale for the final decision. The harm of noxious weeds is discussed in Chapter 3. The harm of noxious weed treatment is discussed in Chapter 4. The relative risk of these effects occurring would be considered in decision making at all levels.
Solution? Employ Permaculturists into your program to help you evaluate the best methods available in eradicating invasive plants without the use of pesticides and herbicides. One of the most renowned Permaculturists in the world is Sepp Holzer of Austria. He can be contracted at krameterhof@aon.at. Another Permaculturists is Richard Huhnel in Sandpoint Idaho. His number is 208-255-2440. Permaculturists have an uncanny ability to understand relationships between plants, animals, insects and their compatibility with one another. Please address the advisability of using Permaculturists in your final IPEIS. An example of the above would be, for example, removal of knapweed in a certain area and re-seeded with Vetch, which is highly competitive with knapweed. Vetch is also beneficial to soils and good foraging for animals. Along with Vetch would be other native seeds thrown into the mix so they all help each other.	The scientists and ecologists involved with the development of this EIS are familiar with the philosophy and principles of permaculture and plant ecology.
I hope it is not meant to be a comprehensive plan for halting invasive plants on Forest Service lands because it is not. Most notably it does not discuss Forest Service interagency efforts.	Section 4.2.of the DEIS specifically discussed interagency efforts, partnership and collaboration. FEIS Appendix I addresses the Forest Service's Regional strategy for supporting invasive plant management on State and private lands.