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COMMENTS RE: DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT & PROGRAMMATIC ENVIRONMENTAL REPORT, VEGETATION TREATMENTS USING HERBICIDES ON BUREAU OF LAND MANAGEMENT LANDS IN 17 WESTERN STATES

The Natural Resources Defense Council (NRDC), on behalf of its more than 550,000 members nationwide, and the National Wildlife Federation (NWF), on behalf of its four million members, supporters, and affiliated wildlife organizations in 47 states and territories submit~~s~~ these comments on the DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT, VEGETATION TREATMENTS USING HERBICIDES ON BUREAU OF LAND MANAGEMENT LANDS IN 17 WESTERN STATES & PROGRAMMATIC ENVIRONMENTAL REPORT (PER). We and our members have a long history of interest in and involvement with Bureau of Land Management (BLM) policies and decision making related to our federal public lands. We and our members are intensely concerned for the welfare of the federal lands, and the natural values that they still harbor. Thank you for this opportunity to comment.

By itself, the goal of eradicating weeds and invasive species that threaten the health and vitality of the public lands administered by the BLM is admirable. Some fuels reduction work and weed eradication, if administered on a case by case and site-specific approach, in non-sensitive, non-unique locations, should be conducted legitimately. However, the wide-open alternatives in the DPEIS are reckless, inadequately substantiated in the record, and contrary to the goal of achieving sustainable ecosystems. The NRDC & NWF asks that the BLM withdraw the current DPEIS & PER.

The broad programmatic approach that the BLM has chosen to embrace in the DPEIS is overarching in its scope, involving large scale measures to be implemented over the breadth of seventeen states. The DPEIS is extremely vague throughout—from the proposed actions to their predicted impacts, notwithstanding the fact that all vegetation treatments are site-specific in their effects and, moreover, must be selected from among definitive options. We also advise that, prior to undertaking any programmatic or specific

initiative, BLM must substantiate its predicted effects with a record of site-specific analysis and monitoring that ensures that the act of vegetative eradication does not bring about significant adverse impacts alone or together with similar projects—a standard that the current proposal woefully fails to achieve.

The current analysis only provides general and formless observations that do little to describe the potential cumulative effects. Given the inadequacies of this DPEIS, the current proposal could well have the opposite effect from the desired result. Indeed, it is NRDC's & NWF's conviction that the current alternative proposed in the DPEIS will likely cause a variety of collateral harms to the physical environment. Given that the proposed actions in the DPEIS incorporate such large scale measures and involve such an extensive geographic area it is evident that the BLM has not been able to adequately ascertain the extent of the impacts in this document.

In summary, the proposed action discussed in this DPEIS covers activities whose impacts are not only highly uncertain, but also can be seriously harmful to the resources of the public lands. Vegetative thinning, fire treatments, and gross herbicide application individually and in combination with each other will result in a matrix of possibilities that are inherently uncertain.

THE AGENCY'S NEPA DOCUMENTATION IS ENTIRELY INADEQUATE

The DPEIS is Conceptually Flawed.

On October 11, 2002, the BLM published a Federal Register Notice of Intent, notifying the public that the agency was going to prepare an Environmental Impact Statement "on the treatment of vegetation on BLM-administered lands in the western U.S." Two other successive federal register notices and the scoping process established that the BLM's intent was to analyze <u>all</u> of the impacts associated with the spread of invasive plant species. And consequently that the agency would consider adopting the full range of strategies and methods to inhibit or prevent their spread within the lands it administers.

In addition, the scoping process generated a number of comments that advised:

> that the EIS consider how the full range of land use impacts has led to the decline of native species and ecosystems, either directly, indirectly, or cumulatively, through factors including: fire suppression, energy exploration and development, livestock grazing, logging, mining, roads, motorized vehicles, and recreational activities. Removing the underlying causes of noxious weed spread and preventative actions, rather than treatments, should be the focus of the EIS. (Scoping 3-1)

Given the parameters established by the scoping process and the nature of the comments solicited within that process, it would be expected that the BLM would have produced a DPEIS consistent with these goals. Instead what the BLM has produced is—for the lack of a better description—a manual to apply herbicides.

BLM arbitrarily has published a document that is completely inconsistent with its stated objectives. Three and a half years after scoping was concluded, BLM has surprisingly asserted that the "primary issue of controversy" is its "continuing and proposed increase in the use of herbicides in vegetation treatment problems needed to implement the *National Fire* Plan and related initiatives." (ES-2). This was not a priority identified in scoping by the BLM nor was it a priority that manifested itself in the comment period. One commentator called for better coordination of treatment strategies with the *National Fire Plan*, but one isolated observation hardly meets the standard of being a "primary issue of controversy." Somewhere in this process, the BLM inexplicably altered the scope of the program from one that was looking at methods and strategies to deal with the noxious weed problem to a program fixated on justifying the use of herbicides regardless of other sensible and viable alternatives.

The Subjugation of Non-chemical Treatments to the PER is Invalid.
BLM's decision to abolish consideration of mechanical and vegetative treatments to a non-NEPA document is without merit or justification. The definition of a programmatic EIS (PEIS) is a "document in which the Agency considers a number of related actions or projects being decided within one program. As such, a PEIS looks to the environmental consequences of a program as a whole. One of its purposes is to assess the impact of connected and cumulative actions under one programmatic umbrella in order to determine significant impacts to the environment. In it, the analysis of environmental impacts is tied to a specific program and the individual and cumulative effects of each project individually, and all projects together, are analyzed in a way which allows senior level decision makers to examine the implications of their programs."[1] BLM has composed a document that fails in this regard— a document whose singular nature is to analyze treatments of invasive species via the use of chemical applications.

The DPEIS fails to consider seriously alternatives that do not focus primarily upon chemical treatment. The one alternative that does not include chemical treatments as the primary action is relegated to the PER. The very fact that traditional vegetative treatments are relegated to what BLM considers a second

[1] NOAA. 2001. Memorandum for: William Hogarth, Assistant Administrator for Fisheries, from Craig R. O'Connor, Acting General Counsel, for Fisheries Guidance on Programmatic Environmental Impacts Statements.

tier NEPA document is proof that the agency has not considered the broad options that a PEIS requires an agency to explore.

BLM asserts that one of the primary reasons for the DPEIS' proposed action is to deal with the exorbitant increase in the spread of noxious plant communities on agency lands. BLM's findings are that noxious plant communities are the "dominant vegetation on an estimated 35 million acres of public lands" (1-1). In order to combat that troubling conclusion, the DPEIS "assumes that vegetation treatments would occur on approximately 6 million acres annually." This would be a 4 million acre increase from the current treatment level (ES-1).

Despite the dramatic increase in acres to be treated, BLM decided in this case that past NEPA[2] analyses were sufficient enough to split analysis of mechanical and other traditional vegetative treatments from the main focus of the DPEIS, which looks exclusively at herbicide treatments. The agency claims that past EISs are sufficient to obviate the need for any further analysis of treatments other than the herbicide issue:

> The BLM last assessed its use of vegetation treatment methods during the late 1980s and early 1990s, by preparing Environmental Impact Statements (EISs) and Record of Decisions (RODs) that covered vegetation treatment activities in 14 western states in the continental U.S. (all states shown on Map 1-1, except Alaska, Nebraska, and Texas; USDI BLM 1985a; 1987a, b; 1988a, b; 1989a; 1991a, b; 1992a). The previous EISs primarily focused on vegetation control of competing and unwanted vegetation for resource enhancement (forestry and rangelands), noxious and invasive weed control related to surface use activities (oil and gas, rights-of-way [ROW]), and reduction of hazardous fuels to protect resources at risk from wildfire damage. These EISs evaluated the environmental impacts associated with vegetation control and modification on approximately 500,000 acres of public lands a year in the western U.S. (PER 1-1)

As stated before, BLM's attempt to segregate herbicide action from mechanical treatments is simply impermissible under the definition of a programmatic EIS.

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[2] -Northwest Area Noxious Weed Control Program (Oregon State Office, December 1985).
-Supplement to the Northwest Area Noxious Weed Program (Oregon State Office, March 1987).
-Final EIS California Vegetation Management (California State Office, August 1988).
-Final EIS Vegetation Treatment on BLM Lands in Thirteen Western States (Wyoming State Office, May 1991).
-Appendices: Final EIS Vegetation Treatment on BLM Lands in the Thirteen Western States (Wyoming State Office, May 1991).
-Final Record of Decision: Western Oregon Program-Management of Competing Vegetation Final EIS (Oregon State Office, August 1992).

This is particularly self-evident when BLM itself states the reason for *this* DPEIS is that so many historical factors have significantly changed in relation to the management of the noxious weed problem. In scoping, the BLM stated the reasons for initiating the DPEIS are:

> -The analyses in the EISs are over a decade old.
> -The BLM has implemented new policies and programs to manage vegetation.
> -New information on vegetation treatment methods and impacts has become available during the past decade;
> -The BLM vegetation management objectives and number of acres that must be treated have changed substantially during the past 10 years.
> (Scoping 1-1)

On one hand BLM is claiming that the ecological conditions have changed so dramatically in respect to the noxious weed issue that new studies and consequently new management direction is necessary. Compounding the problem, according to BLM, is the fact that past EISs dealing with this issue "are over a decade old" (Scoping 1-1). But on the other hand, BLM states that past EIS guidance is sufficient enough to provide for future management decisions on mechanical treatments - so much so, the agency has decided not to integrate mechanical treatments into the DPEIS analysis. BLM cannot have it both ways.

Given that:

- noxious weeds are spreading within the ecosystems managed by the agency;
- past practices have been inadequate in sufficiently slowing the spread of noxious weeds;
- the agency proposes to increase treatments from 2 million acres annually to 6 million acres a year (ES-1) [But the agency has only comprehensively analyzed treatment for 500,000 annual acres (1-1)]; and
- the last comprehensive analysis dealing with this issue was fourteen years ago(1-1),

It is not within BLM's purview to literally exile treatments and strategies other than the herbicide alternative to a non-NEPA document that exists outside the scope of the DPEIS. The agency has offered an EIS that is singularly fixated on one aspect of the issue; an EIS that fails to consider legitimate alternatives other than the preferred strategy of employing chemical based herbicides as the sole means to combat the spread of noxious and invasive species on the public lands of the West.

BLM must go back and analyze all strategies, impacts, and activities that either contribute to or diminish the problem associated with the spread of noxious weeds on BLM lands. The very nature of a PEIS requires that the BLM take a 'hard look' at all of the activities that occur on BLM land. Grazing, mining, cross-country travel, vegetative treatments, and herbicide treatments all have been shown to be contributing factors to the spread of noxious weeds. It is not BLM's right to conveniently ignore these facts. Nor can it ignore legitimate alternatives other than chemical based herbicides to combat the spread of noxious and invasive species.

The DPEIS Obfuscates the Number of Acres to be Treated.
The DPEIS states that traditional vegetative treatments along with an expansion of herbicidal treatments will be used upon approximately 6 million acres. But the DPEIS does not indicate whether these approaches are to be used on the same lands, during the same periods of time, for how many years, the rate of recurrence of treatments on the lands, and what combinations of treatments will be applied. The DPEIS' lack of specificity is in direct contrast to the requirements of NEPA. BLM needs to provide accurate and unambiguous numbers on the acres to be treated and provide the context of when, how long, and in what combinations these treatments will take place. Without this information, BLM's "analysis" of environmental impacts is little more than wishful thinking.

BLM Neglected to Analyze the Reasons for the Spread of Invasive Species.
BLM has failed to fulfill the most basic requirement of NEPA which is to scientifically analyze the subject at hand. The agency is proposing a solution before it has documented the nature of the problem. Any rigorous scientific analysis cannot occur unless there is an identification and subsequent examination of the phenomena. BLM did not take a look (let alone a 'hard look') at the phenomena associated with the spread of invasive species that are central to the problem of invasive species.

The Bureau fails to address the contributions that activities such as livestock grazing, building and maintenance of roads and trails, and motorized recreation make to the establishment and spread of invasive plant species on the public lands. These activities transport seeds and other propagules onto the land, then create ideal conditions for the invaders' establishment by disturbing the native vegetation and soil. Under Executive Order 13112, Sec. 2, paragraph (3), the Bureau is obliged to avoid authorizing, funding, or carrying out "actions that it believes are likely to cause or promote the introduction or spread of invasive species ... unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."

Of all of the activities that contribute to the spread of invasive species, livestock grazing is paramount. But the DPEIS barely investigates the relationships that livestock grazing and the spread of noxious weeds share. BLM asserts that analysis of livestock grazing is outside the scope of the DPEIS (PER 1-6). Arbitrarily excluding the examination of known relationships between the spread of invasive species and an activity on BLM lands that directly contributes to the spread of invasive species is not permissible under the dictates of NEPA.

Given that it is BLM's regulatory responsibility to facilitate multiple use on its lands, BLM should be critically analyzing solutions to the invasive species issues that benefit multiple use activities such as livestock grazing. Sustainable grazing can benefit from strategies that recognize that overgrazing can lead to significant infestations of invasive species. Overgrazing invites invasive weeds to consume the range, ultimately hindering the potential forage capacity of the range and the success of a livestock grazing enterprise.[3] On the other end of this approach, BLM choose in the DPEIS/PER to promote livestock grazing as a "tool" for the suppression and elimination of noxious weed communities (PER ch.4). Clearly BLM is promoting the activity of livestock grazing without also looking seriously at the harmful relationship between livestock grazing and the spread of invasive species like *Downy Brome.*[4] If the BLM was serious about complying with NEPA and thoroughly examining the problem of invasive species, it would have identified the vectors that lead to the spread of these communities. And it would have paid special attention to the ecological relationship that livestock grazing has with the invasion of cheatgrass, which is threatening to eliminate many opportunities for sustainable livestock grazing in the West.[5]

This perspective is also confirmed by BLM's own biologists who reported their findings to BLM for the *Proposed Revisions to Grazing Regulations EIS* – 2004:

> Livestock grazing operations have also been responsible for the introduction and transport of invasive species such as cheatgrass,

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[3] Anderson, J.E., and R.S. Inouye. 2001. Landscape-scale changes in plant species abundance and biodiversity of a sagebrush steppe over 45 years. Ecological Monographs. 71(4): 531-556.

see also

Baum R.E., and M.J. Germino. 2006. Disturbance histories increase variability in remotely sensed indices of sagebrush-steppe over the past ca. 20 years. Department of Biological Sciences, Idaho State University. http://giscenter.isu.edu/research/techpg/nasa_weeds/to_pdf/ms_ecolapp_baum.pdf.

[4] Morrow, L. A. and P W. Stahlman. 1984. The history and distribution of downy brome (Bromus tectorum) in North America. Weed Sci. 32:2-6. Pavlick, L. E. 1995. Bromus L. of North America. Victoria, BC: Royal British Columbia Museum. 160 p.

[5] Young, J.A., and D.D. Clements. 2003. History of the Great Basin, Cumulative Impacts, Livestock and Weeds. Society for Ecological Restoration Symposium. P. 63.

and

Young, J.A., and D.D. Clements. 2004. Cheatgrass In The Great Basin. Meeting Abstract.

> which in most cases forever changes the dynamics of the ecology of the native plant community. Overgrazing has caused a decline in diversity and abundance of native plant communities. Ecological decline from overgrazing is a gradual, long-term process. [6]

BLM should also consider additional steps not referred in the DPEIS that would be beneficial in slowing the spread of invasive plants on public lands. Many plant species that are invading natural systems in the West are not yet designated as "noxious"; these plants will escape regulation under this provision. Examples of species not now designated as noxious weeds that could be transported in hay, straw, or mulch include cheat grass and other *Bromus* species, various wheatgrasses, several *Setaria* grasses, and spreading knotweed. The agency should identify plant species invading its lands that are not now listed as "noxious" and work with state agricultural and transportation officials, including existing Invasive Species Councils; with the agricultural industry; with conservation organizations; and with public land users and ranchers to curtail the inadvertent spread of these plants, as well.

The Singularly Most Effective Strategy is Not Even Considered—Prevention. The BLM in the DPEIS ignores almost without exception "prevention" as a primary mean to address the spread of invasive species. The most effective treatment within the realm of Integrated Pest Management is preventing the spread of invasive species to begin with—biologically and economically.

In contrast to the BLM, the Forest Service has chosen to address the problem of invasive species by embracing prevention as the single most important tool in fighting the invasive species problem. In fact the Forest Service has adopted policy guidelines which acknowledge that prevention is the most fundamental tool an agency has at its disposal:

> National, regional and local concern about noxious weeds and their impacts on public lands is increasing. Experience has shown that Integrated Weed Management (IWM) is most effective. IWM combines coordinated weed prevention strategies, vigilant monitoring and prompt control of new infestations. By the time a weed is perceived as a "problem" in a particular area, the opportunity for prevention is lost, eradication is difficult, control is costly, and impacts on wildland ecosystems and uses are severe.[7]

This recognition is reflected in the Forest Service's latest comprehensive EIS which attempts to address strategies to deal with the invasive species problem. In fact the title of the Forest Service EIS emphasizes prevention as a principal

[6] Suppressed BLM document now on file with the BLM. Submitted to BLM by NRDC & NWF in 2005.
[7] USFS Noxious Weed Strategic Plan, 1999.

strategy. Moreover, in the Forest Service's 2005 draft EIS for the "Pacific Northwest Region Invasive Plant Program: Preventing and Managing Invasive Plants EIS" there are alternatives that explore prevention as fundamental to combating invasive species.

Given that the Record of Decision for this Forest Service EIS was released in 2005, it provides the most up to date analysis available outside BLM's DPEIS. It also provides a direct contrast to the alternatives proposed by the BLM. The Forest Service analysis at least attempted to analyze the effectiveness of prevention strategies (Although we have serious objections about the chosen plan of action in the Record of Decision for a number of reasons, at least the DEIS made more than a minimal attempt to analyze prevention as one of the core strategies). The Forest Service FEIS made over eighty individual references to prevention in discussing different courses of action to combat the spread of invasive species. BLM's DPEIS mentions prevention strategies only twice. It bears repeating, the DPEIS does not seriously explore strategies that deal with the invasive species problem—it is a manual for applying herbicides.

The Lack of Monitoring Ensures this Proposal Will Not Succeed.

The current DPEIS does not even begin to analyze the crucial role that monitoring should and would play in the implementation of any sound and responsible vegetative management program. Past history has clearly revealed that the BLM does not have the institutional resources to properly manage and employ a monitoring program that can correctly assess what is actually occurring on the agency's rangelands. There is even noticeable agreement within BLM that the agency does not have the means to successfully monitor rangeland conditions. We again cite the suppressed analysis formulated by BLM scientists for BLM's proposed new grazing regulations in regards to monitoring efforts on the BLM lands:

> "The exact extent of such [*BLM rangelands*] is not well known since monitoring is always deficient."
>
> "BLM, in fact, lacks sufficient funding and staffing to perform adequate monitoring."
>
> "Present BLM funding and staffing levels do not provide adequate resources for even minimal monitoring…."[8]

Nearly identical concerns were provided to the BLM by a Fish & Wildlife Service scientific assessment of BLM's efforts on rangeland monitoring:

[8] Suppressed BLM Document, ibid.

> The Service is consistently told by the BLM that they lack time, sufficient personnel, and adequate funding to implement even the most basic monitoring (i.e., stubble height) even in cases where the take of a listed species is at issue. Our experience shows that monitoring of rangeland standards is not being completed in a timely, effective manner under current requirements due to funding and staffing limitations.

And:

> by their own admission, the BLM lacks both adequate staff and funding to implement the most basic of monitoring programs. The Final EIS should assess and disclose the impacts of the monitoring requirement on the BLM's ability to take timely action in order to effectively implement conservation strategies…[9]

This state of affairs is readily apparent from the DPEIS itself: it does not provide any statistical or quantitative information obtained over the past twenty years of BLM vegetative management. A 1991 BLM vegetation treatment FEIS stated that "rangeland treatments would have studies established in them to monitor treatment effects on vegetation as well as on other resources such as wildlife or water quality… "(p. 1-37). There is no evidence that BLM has followed up with any subsequent monitoring data from that EIS, nor is such data evident in the DPEIS. It is our contention that the lack of data in the DPEIS is proof that the BLM simply lacks the institutional capabilities to monitor long term effects on the range. Given that the BLM cannot comprehensively assess what is occurring in the present, proposing to expand the use of herbicides and vegetative treatments is simply inconsistent with the agency's obligation to monitor the effects of these treatments.

BLM Disregards its Statutory Mandate to Use Integrated Pest Management. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requires that: "Federal agencies shall use Integrated Pest Management techniques in carrying out pest management activities and shall promote Integrated Pest Management through procurement and regulatory policies, and other activities." 7 U.S.C. § 136r-1. The term "pest" is defined in FIFRA to include weeds and invasive species. 7 USC §§ 136(t) ("The term 'pest' means any . . . weed") & 136(cc) ("The term 'weed' means any plant which grows where not wanted."). BLM therefore must promote IPM in its regulatory policies generally, and is obligated to use Integrated Pest Management (IPM) in carrying out all weed eradication in particular. The proposed DPEIS disregards this statutory

[9] Suppressed document, submitted to the BLM by Fish & Wildlife Service. An additional copy was provided to the BLM by NRDC & NWF via correspondence sent in 2005.

obligation by failing to include IPM as a basic limit on chemical herbicide use in *all* of the alternatives.

BLM Fails to Adequately Consider Adverse Impacts on Endangered Species. Section 7(a)(2) of the Endangered Species Act requires that "each federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an 'agency action') is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary . . . to be critical." 16 U.S.C. §1536(a)(2). To ensure compliance with this statutory mandate, federal agencies must consult with the appropriate fish and wildlife agency whenever their actions "may affect" an endangered or threatened species. *See* 50 C.F.R. § 402.14. This interagency consultation process assists federal agencies in complying with their duty to ensure against jeopardy to listed species or destruction or adverse modification of critical habitat.

To guide agencies in making a "may affect determination," the Endangered Species Consultation Handbook defines "may affect" as "the appropriate conclusion when a proposed action may pose *any* effects on listed species or designated critical habitat." Fish & Wildlife Service and NOAA Fisheries Service, *Endangered Species Consultation Handbook*, at xvi (March 1998) (emphasis in original). If the action is likely to adversely affect the listed species or its critical habitat, the agency must conduct a formal consultation. The Consultation Handbook defines "is likely to adversely affect" as *any* adverse affect that *may* occur as a direct or indirect result of the federal action that is not discountable, insignificant, or beneficial. *Id.* at 3-13. To initiate formal consultation, an agency must assess the impacts of the action on listed species and their habitat and provide all relevant information about such impacts, including the best scientific and commercial data available, to the expert fish and wildlife agency. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14. The end product of formal consultation is a biological opinion in which the Services must determine whether the action will jeopardize the survival of a listed species or will adversely modify the species' critical habitat. 16 U.S.C. § 1536(b). In preparing the biological opinion, the Services must review all relevant information and provide a detailed evaluation of the action's effects on the listed species and critical habitat, including the cumulative effects of federal and nonfederal activities in the area. 16 U.S.C. § 1536(b)(3)(A); 50 C.F.R. § 402.14(g)-(h).

BLM initiated informal consultation with the Fish and Wildlife Service and NOAA Fisheries in 2001. *See* DPEIS at 5-2. The proposed massive use of herbicides across federal lands in the west is likely to adversely affect dozens of listed species and their critical habitat. BLM must therefore initiate formal

consultation with the Services to prevent jeopardy to threatened and endangered species. BLM's failure to do so violates the ESA.

BLM Improperly Proposes to Increase Use of Highly Toxic Herbicides.
BLM states that this DPEIS has two primary objectives:

- To determine which herbicide active ingredients are approved for use on public lands in the western U.S., including Alaska, to improve the agency's ability to control hazardous fuels and unwanted vegetation.
- To develop a multi-agency, state-of-the-science human health and ecological risk assessment methodology that will serve as the initial standard for assessing human health and ecological risk for herbicides that may become available for use in the future.

See BLM Vegetative Treatments EIS and Environmental Report Overview, available at http://www.blm.gov/nhp/spotlight/VegEIS/. In framing these objectives, BLM improperly assumes that chemical herbicide use is necessary to control fuels and unwanted vegetation. In particular, BLM is inappropriately considering hazardous and highly toxic herbicides for use on public lands throughout the west, which would result in widespread environmental contamination, ecological harm, and threats to human health.

BLM proposes to use 18 herbicides annually on nearly 1 million acres in 17 western states. This would more than triple the acreage that BLM currently treats with herbicides. *See* DPEIS Executive Summary-1. One of the BLM-selected herbicides included in the Preferred Alternative (as well as alternatives A, D, and E) is 2,4-D, which is especially inappropriate for the proposed use because of its toxicity, existing scope of contamination, and threats to the environment and public health.

2,4-D (2,4-dichlorophenoxyacetic acid) is one of the first pesticides ever registered in the United States. Agricultural uses include pasture land, wheat, corn, soybeans, barley, rice, oats, and sugar cane. About 30 million pounds of this chemical are used each year in the U.S., primarily in the Midwest, Washington State, and Louisiana. 2,4-D has a soil half-life of about one week. However, when tracked indoors, 2,4-D has been reported to persist in carpets for months or even a year.[10] This herbicide is found as a contaminant in about half of all surface water samples, and has also been detected in groundwater.

[10] Nishioka MG, Burkholder HM, Brinkman MC, Gordon SM. Measuring lawn transport of lawn-applied herbicide acids from turf to home: Correlation of dislodgeable 2,4-D turf residues with carpet dust and carpet surface residues. Environmental Science and Technology 30: 3313-3320, 1996.

Numerous epidemiological studies have strongly implicated 2,4-D in non-Hodgkin's lymphoma among farmers.[11] Several studies in household dogs have also reported an association between exposure to 2,4-D and canine malignant lymphoma.[12] 2,4-D causes significant suppression of thyroid hormone levels in ewes dosed with this chemical.[13] Similar findings have been reported in rodents, with suppression of thyroid hormone levels, increases in thyroid gland weight, and decreases in weight of the ovaries and testes.[14] The increases in thyroid gland weight are consistent with the suppression of thyroid hormones, since the gland generally hypertrophies in an attempt to compensate for insufficient circulating levels of thyroid hormones. Thyroid hormone is known to play a critical role in the development of the brain. Slight thyroid suppression has been shown to adversely affect neurological development in the fetus, resulting in lasting effects on child learning and behavior.[15]

2,4-D causes slight decreases in testosterone release and significant increases in estrogen release from testicular cells.[16] In rodents, this chemical also increases levels of the hormones progesterone and prolactin, and causes abnormalities in the estrus cycle.[17] Male farm sprayers exposed to 2,4-D had lower sperm counts and more spermatic abnormalities compared to men who were not exposed to this chemical.[18] In Minnesota, higher rates of birth defects have been observed in areas of the state with the highest use of 2,4-D and other herbicides of the same class. This increase in birth defects was most pronounced among infants who were conceived in the spring, the time of greatest herbicide use.[19] BLM has failed to consider the epidemiological data on adverse reproductive outcomes and the data on steroid hormone disruption

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[11] Zahm SH. Mortality study of pesticide applicators and other employees of a lawn care service company. J Occup Environ Medicine 39: 1055-67, 1997; Fontana A, Picoco C, Masala G, Prastaro C, Vineis P. Incidence rates of lymphomas and environmental measurements of phenoxy herbicides: ecological analysis and case-control study. Arch Environ Health 53 :384-7, 1998; Zahm SH, Blair A. Pesticides and non-Hodgkin's lymphoma. Cancer Res 1992; 52:5485s-5488s; Morrison HI, Wilkins K, Semenciw R, Mao Y, Wigle D. Herbicides and cancer. J Natl Cancer Inst 992; 84:1866-74.

[12] Hayes HM, Tarone RE, Cantor KP. On the association between canine malignant lymphoma and opportunity for exposure to 2,4-dichlorophenoxyacetic acid. Environ Res 1995; 70:119-25.

[13] Rawlings NC, Cook SJ, Waldbillig D. Effects of the pesticides carbofuran, chlorpyrifos, dimethoate, lindane, triallate, trifluralin, 2,4-D, and pentachlorophenol on the metabolic endocrine and reproductive endocrine system in ewes. J Toxicol Environ Hlth 54:21-36, 1998.

[14] Charles JM, Cunny HC, Wilson RD, Bus JS. Comparative subchronic studies on 2,4-dichlorophenoxyacetic acid, amine, and ester in rats. Fundamental & Applied Toxicol 33:161-165, 1996.

[15] Haddow JE, Palomaki GE, Allan WC, Williams JR, Knight GJ, Gagnon J, O'Heir CE, Mitchell ML, Hermos RJ, Waisbren SE, Faix JD, Klein RZ. Maternal thyroid deficiency during pregnancy and subsequent neuropsychological development of the child. New Eng J Med 1999; 341(8):549-555.

[16] Liu RC, Hahn C, Hurtt ME. The direct effect of hepatic peroxisome proliferators on rat leydig cell function in vitro. Fundamental & Applied Toxicol 30:102-108, 1996.

[17] Duffard R, Bortolozzi A, Ferri A, Garcia G, Evangelista de Duffard AM. Developmental neurotoxicity of the herbicide 2,4-dichlorophenoxyacetic acid. Neurotoxicology 16(4):764, 1995.

[18] Lerda D, Rizzi R. Study of reproductive function in persons occupationally exposed to 2,4-D. Mutation Research 262:47-50, 1991.

[19] Garry VF, Schreinemachers D, Harkins ME, et al. Pesticide appliers, biocides, and birth defects in rural Minnesota. Environ Hlth Perspect 104:394-399, 1996.

in the Preferred Alternative and the other alternatives incorporating use of 2,4-D in the DPEIS.

2,4-D also interferes with the neurotransmitters serotonin and dopamine. In young organisms, exposure to 2,4-D results in delays in brain development and abnormal behavior patterns, including apathy, decreased social interactions, repetitive movements, tremor, and immobility.[20] Females are more severely affected than males. Rodent studies have revealed a region-specific neurotoxic effect on the basal ganglia of the brain, resulting in an array of effects on critical neurotransmitters and adverse effects on behavior.[21] A peer-reviewed, developmental neurotoxicity study demonstrated severe neurotoxicity in young rats exposed to 2,4-D from postnatal days 12 to 25 at doses of 70 mg/kg/day. These pups showed decreases in GM1 level, diminution in myelin deposition and alterations in all behavioral tests at all doses.[22] This herbicide specifically appears to impair normal deposition of myelin in the developing brain.[23] The neurotoxic and anti-thyroid effects of 2,4-D make it highly likely that fetuses, infants, and children will be more susceptible to long-term adverse health effects from exposure to this chemical.

Young animals can also be exposed to 2,4-D through maternal milk. Recent research has revealed that 2,4-D is excreted in breast milk, thereby resulting in potentially significant exposures to the nurseling. The researchers detected 2,4-D residues in stomach content, blood, brain and kidney of 4-day-old neonates breast-fed by 2,4-D exposed mothers.[24] When maternal exposures stopped, the chemical continued to be excreted in maternal milk for a week. Thus, postnatal exposures to this chemical during the critical period for development of the infant brain are of serious scientific concern.

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We appreciate your consideration of the enclosed comments. If you have any questions, our contact information is provided below.

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