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February 10, 2006

Mr. Brian Amme, PEIS Project Manager
Bureau of Land Management
P.O. Box 12000, Reno, NV 89520-0006
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Same as EMC-0649

Dear Mr. Amme:

1 Thank you for the opportunity to submit these twenty-two pages as official comments to the BLM draft Programmatic Environmental Impact Statement –PEIS for Vegetation Treatments Using Herbicides as the Preferred Alternative on 932,000 acres of nearly 262 million acres in seventeen Western States including Alaska, Nebraska and Texas. The Preferred Alternative B, applying four new and fourteen previously approved herbicides annually is not my preference, Alternative C, no herbicide use is.

2 My comments focus on a number of assumptions, omissions, lack of documentation of testing on new and in use herbicides for endocrine disrupting aspects, and use of so called scientific studies by USEPA referenced in the PEIS. I fail to be convinced that your proposed methods would met the stated goals: "...reduce the risk of catastrophic wildfires by reducing hazardous fuels, restoring fire-damaged land, and improving ecosystem health by 1) controlling weeds and invasive; and 2) manipulating vegetation to benefit fish and wildlife habitat, improve riparian and wetlands areas, and improve water quality in priority watersheds." Herbicides would be contraindicated in achieving the majority of these goals and would in fact be very harmful in the long term. Specifically cheat grass, a perennial, which is opportunist with cattle grazing.

3 I find the PEIS estimates of exposure to herbicides by Native American receptors and human receptors living and working outside in areas to be sprayed grossly lacking in a realistic understanding of the amount of time subsistence living in gathering native plants and berries, fishing and such activities as sheep herding actually involve time spent and contact with vegetation and water in the proposed spraying areas. The PEIS estimates of low exposure rates combined with proposed use of herbicides that are proven endocrine disruptors is a plan for the extinction of Native American Receptors (i.e. humans) rather than a plan to reduce wildfires.

4 My comments are referenced with three pages of footnotes. My year of college chemistry, education as a nurse, applied research in beating cancer, five years of immersion in educating the public on vegetation control using herbicides and research of peer reviewed scientific studies on this topic uniquely qualify me to submit this minority report requesting BLM to choose Alternative C, no herbicide use.

5 Thank you for your kind consideration of my comments,
Theresa Marie K. Gandhi

Theresa Marie K. Gandhi

Encls. Comments on draft BLM-PEIS with footnotes.

New and currently used herbicides with Endocrine Disruptor aspects noted.

Agriculture and Land Degradation (cheat grass) Oregon State University, 2004.

cc: Governors and Law Makers in the 17 states.
Electronic and print media.
Alternatives to Pesticides not for profit organizations.

February 10, 2006

6

Comments on: Draft Programmatic Environmental Impact Statement –PEIS for Herbicide Treatments on 932,000 acres of BLM Managed Public Lands to prevent wildfires and control invasive species of land and water vegetation.

7

Submitted by: Theresa Marie K. Gandhi, P.O. Box 437, Clinton, WA 98236, on behalf of 2,000+ signers of petitions to request that Island County, Washington State Department of Transportation -WSDOT, Department of Agriculture, Ecology and Bureau of Land Management to end all use of herbicides, pesticides, and all other toxic chemicals to control vegetation along Island County's Roads, State Highways, Forests, Shorelines and Public Lands.

Mr. Brian Amme, PEIS Project Manager
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Howdy Brian,

8

I have spent the past five years researching and writing about herbicides, their "inert" secret ingredients and the peer reviewed scientific studies focused on the enzymatic and hormonal effects of this class of chemicals. I share this information with you in the hope that you may respect my time, research and knowledge and include my comments in the final document and the decision making process. I could have spent this past month working to publish seven manuscripts, one based on five years of educating the public, Island County, WSDOT and public decision makers on the long term effects of herbicides (often called pesticides) and especially their Trade Secrets, i.e. so called "inerts". Island County ended roadside vegetation control with herbicides in 2002 and WSDOT reduced their use on Whidbey Island in 2005 by 85%.

9

It did cost more in the short term for the County and WSDOT to do Integrative Vegetation Management –IVM, but in the long term the cost was worth it and 2,000+ people let the decision makers here know, via petitions, letters to Editors and decision makers and by showing up with standing room only at public meetings to stop spraying.

10

The limited number of column inches the PEIS devoted to Alternative "C", that "the BLM would not treat vegetation using herbicides and would not use new chemicals that are developed in the future"(1a), that are not taken up by saying how it couldn't work make it obvious which alternative is preferred.. "Alternative B – Expand herbicide use and allow for use of new herbicides in 17 Western States is the Preferred Alternative." (1b) The 17 states include Alaska, Nebraska and Texas and would apply herbicides to approximately 932,000 acres annually. The majority of the treatments would occur in Nevada, Idaho, Oregon and Wyoming. The PEIS is being done to fulfill legal requirements. I do understand that the BLM has a huge responsibility in managing six million acres. I do understand that if decision makers with the BLM really knew the extent of the harm done by the proposed herbicides, especially aerial applications, that the cost benefits analysis might look different. My purpose in this comment is to bring to your attention to omissions, assumptions, lack of exact science used and to increase BLM's awareness of the costs not counted or planned on and how the choice of Alternative B came to be the preferred method of vegetation control. "Restore Native Ecosystems Alternative" in Volume 2: Appendix G does give me some hope. (1c)

11

In reading through your very professional, ten pound draft PEIS I found a number of omissions, assumptions and lack of scientific documentation. I found no history of the methodologies of past actions taken to prevent the causes that would have BLM use herbicides on nearly a million acres of public land. I would think that there would be better ways of fire prevention than killing brush, prairie lands and forest under story that then becomes dead, dry wildfire fuel.

12

Using cheat grass as a reason to apply herbicides annually to prevent wildfires does not get at the root cause of the presence of the cheat grass and its spread through out 73% of leased public lands, 270 million acres, in western states used for cattle grazing. Approximately 2000 large ranchers have leases that cover about 74-78% of federally leased grazing lands (data from a 1992 US Government Accounting Office study). Rather the cattle grazing, pulling up native species (such as bunch grasses) by the roots, breaking up the biotic soil crusts (lichens and algae), which cover much of soil in native systems, get trampled, churned up, and decline which worsens conditions for the native perennial grasses further, and also make it more difficult for seedlings of these species to establish. (7c) Herbicide treatments will fail until the root cause, large ranchers grazing cattle, is eliminated. Should BLM continue the grazing leases, then any plan to eliminate cheat grass will fail, short of ranchers switching to buffalo and restoring native soil and plant species as a condition of their leases.

13

I'll start with the science BLM used in the draft PEIS. So called "scientific studies" produced by USEPA and included in the PEIS are not "verifiable science". Science relies on observation and classification being verifiable by other scientists. If you do not publish something in a sufficiently complete way that an independent scientist can replicate results and is peer reviewed, it is not acceptable science by any reputable scientist. No one can replicate an experiment or testing involving secret substances. The United States pesticide (includes herbicides) regulatory system, i.e. USEPA and BLM's PEIS fail to meet basic criteria of the scientific method: ability to be verified and reproduced with 0.95 of original study by other scientists and this submitted for peer reviewed scientific study.

14

Assuming that the data submitted by Chemical Corporations to the USEPA to secure registration ® of chemical formulations to be true, complete and adequately tested is risky and proven to be unreliable. One million documents secured from Chemical Corporations using the Freedom of Information Act –FOIA and Public Disclosure Act –PDA established that lies, omissions, collusion, omitting studies that showed harmful results were submitted or not to the USEPA to obtain Chemical® Registration. Studies submitted to USEPA are Public Relations Creations that are not valid science and all registration of toxic chemicals needs to be canceled until true "scientific" studies can be conducted and independently peer reviewed. The history of this is contained in a transcript from "Trade Secrets", a PBS-TV special broadcast March 26, 2001. (7a)

15

As a result of a lawsuit filed by Northwest Coalition for Alternatives to Pesticides -NCAP in collaboration with the National Coalition Against the Misuse of Pesticides, a federal court ruled in 1996 that inert ingredients do not meet the statutory definition of a trade secret, and can only be protected as confidential on a case-by-case basis. The court also ruled that inerts did not have special protection under FIFRA, the national pesticide law. Failure to disclose "Trade Secret" chemicals is no longer protected by law.

16

An example is RoundUpPro®, a proven endocrine disruptor, with a half life of forty-seven days has as one of its "Trade Secret" "inerts", POEA – polyethoxylated tallowamine that is more toxic and lasts longer than USEPA studies claim for the glyphosate formulation.

17

The PEIS can not be trusted to protect the public, wildlife, aquatic life, birds, cattle and other range animals and the vegetation these species feed upon because peer review scientific tests were not done on the Endocrine Disruption aspects of herbicides used by BLM. This omission eliminates the possibility that results of the so called "scientific studies" included in the BLM PEIS are reliable and can be trusted to protect the public.

18 Although short term tests for cancers were included I did not find any test results for endocrine disruption on the proposed chemicals in the PEIS. The chemical family tree of organophosphates, chlorinated hydrocarbons, organochlorines, furans, dioxins and PCBs are proven endocrine disruptors. That means that the chemicals disrupt the body's hormonal system, be that human, bird, aquatic, livestock or wild life, i.e. wild horses (the last of them) or collaterally damaged vegetation. Omitting and or ignoring the peer reviewed scientific studies of the endocrine disruption aspects of herbicides proposed to be used by BLM threatens the extinction of all life species down stream and proposed areas of application by interfering with hormones necessary to reproduction.

19 Erect penile dysfunction, testicular atrophy, decreased sperm counts, elimination of male genital, congenital anomalies, miscarriages, depression and violence in children have been proven by peer reviewed scientific studies to be directly connected to hormonal imbalances brought about by disruption of the endocrine system. Additionally peer reviewed scientific studies have linked herbicides as causal in asthma, lymphoma, non-Hodgkin lymphoma, Parkinson's disease, Multiple Chemical Sensitivity –MCS, and Multiple Sclerosis.

20 Scientists are attempting to understand why sperm counts worldwide have dropped by 50% in the past 20 years. Exposure to endocrine disruptors made by chemical corporations and not tested for by the USEPA is suspected. "Laboratory experiments have demonstrated that exposure of fetuses to endocrine-disrupting chemicals can profoundly disturb organ differentiation (10, 11) because they can act as hormone agonists or antagonists. In both sexes the external genitalia, brain, skeleton, thyroid, liver, kidney and immune system are also targets for steroid hormone action and are thus potential targets for endocrine-disrupting chemicals, although these chemicals may have multiple modes of action, in addition to acting as hormone agonists and antagonists, in different target tissues. (11-15) ... The possibility thus exists that chronic, low-level exposure to estrogenic chemicals in the environment after maturity can have effects in humans similar to those observed in laboratory animals administered estrogen. (19)

21 ... In Wildlife exposure to endocrine-disrupting chemicals in the environment has been associated with abnormal thyroid function in birds (20) and fish (21); decreased fertility in birds (22), fish (23), shellfish (24), and mammals (25); decreased hatching success in fish (26), birds (27), and turtles (28); demasculinization and feminization of male fish (29), birds (30), and mammals (31); defeminization and masculinization of female fish (32, gastropods (33), and birds (30); and alternation of immune function in birds (34) and mammals (35). These deleterious health effects have been observed in many areas where the presence of multiple man-made chemicals, such as byproducts of industrial chemical synthesis (chemical waste) and pesticides (36), has been established.

22 ... Because endocrine-disrupting chemicals are in most cases neither mutagens nor acute toxicants at ambient concentrations, they may be released without proper caution into the environment. This may be partially remedied by screening for hormone agonistic and antagonistic activity using hormone-responsive cells in culture; this procedure identifies compounds that are endocrine disruptors because they are hormonally active. (8) It is also essential to continue to examine transgenerational effects in animal studies because some pollutants require metabolism *in vivo* to exert hormonal effects and because neurobehavioral and other developmental effects cannot be addressed with *in vitro* models (96, 97)."

23 BLM's plan to remove wild horses during herbicide application did not seem practical. What is the plan for the 240,000 antelope in Wyoming, the endangered prairie dogs, bison and migrating birds that can not read the herbicide labels, accepting liability in deciding to eat herbicide contaminated food sources that have been safe in the past? This is a big assumption.

24 "As of 1995 researchers have identified at least fifty-one synthetic chemicals – many of them ubiquitous in the environment – that disrupt the endocrine system in one way or another. This tally of hormone disruptors includes large chemical families such as the 209 compounds classified as PCBs, the 75 dioxins, the 135 furans, organophosphates, polychlorinated biphenyls,

chlorinated hydrocarbons and organochlorines which have a myriad of documented endocrine disruptive effects. Damage to the liver from chlorinated compounds can also disrupt normal hormone production.” (2a)

25 There are at least one hundred different chronic health problems that Americans have that, until demonstrated otherwise, must be assumed to make them more affected by an herbicide than the average rat-model American. Medications taken for these health problems have not been tested for interactions. It is now known that Beta blockers, like Proplsid™ taken for acid reflux disease, blocks enzymes in the liver that when taken combined with exposure to Roundup® and then mowing the lawn resulted in death. The suicide agent of choice in Japan is ¾ of a cup of Roundup®. Children exposed to herbicides before the age of 1 were 10 times more likely to develop early persistent asthma than controls. (3)

26 Assuming that applying “control”, i.e. herbicides, would provide more local jobs did not mention that an herbicide applicator’s license is needed to do this part of the work; at least it is the law in Washington State. Nor was it clear how the dead brush from the herbicides would be removed before becoming fuel for the wildfire danger you propose to eliminate as a reason for BLM’s proposed preferred Alternative B action. The money would be better spent educating the public that decides to live in or near wilderness how to manually remove the wildfire fodder, create fire breaks and replant invasive plants with native plant species.

27 I did not find a history of previous “control” applications in areas where noxious or invasive weeds have taken root. Could past use of herbicides by various parts of BLM and agriculture have contributed to the soil being open to invasive species? With trees and animals migrating north could some of the increased problems with fires be the result of changing weather patterns? One hundred plus days of no rain in Phoenix and the ongoing drought could be more than just a part of the cause. Clear cutting forests changes weather patterns, justifying more cutting to prevent fires and a downward spiral makes the problem huge.

28 Looking at the history of how an annual multi-billion dollar chemical “control” system took root in America and the world takes us back to World War II. Like the public relations put out by the War Department on radiation in the name of “National Security” we get a clue. We have been told and sold that there is “No Apparent Danger” from radiation and this is not true. As a Hanford Downwinder with a history of radiation related diseases, part of a huge cancer cluster, with three of five of my family and eight of my friends from Junior High School dead from cancer, I’m alive today because of my excellent health care, researching and applying *Experimental Radiation Remedies*(4a), using complementary medicine and consuming organic nutrition.

29 German researchers in 1930 knew that organophosphates were nervous system toxins and used parathion and malathion in concentration camps. After the war German Chemical Companies and scientists that had made gas chamber chemicals and gun powder wanted to continue to profit. To win the coming Cold War with the USSR our State Department enabled the Germans to come here and continue to use the same ingredients, i.e. gas chamber chemical warfare poisons to win the “War on Insects”. During the war farmers and their eldest sons as “soldiers of the soil” were enrolled in winning the war as “Food Fights for Freedom”. In 1946 the message to farmers, i.e. “Soldiers of the Soil” was that The War wasn’t over and “new weapons” were provided to increase production to feed Europe. Farm Journals had ads in the late 1940’s for new chemical weapons to win the War on Insects. (4b)

30 No where did it say that the weapons would kill the soil, a lot of farmers, birds and livestock. Using chemical warfare on agricultural lands and for control of invasive vegetation puts nature out of balance and necessitated the continued use of even more potent toxic chemicals in an upper spiral of use as what it didn’t kill required more toxic chemicals be used. The ends justified the means in selling war to produce food, as war became a metaphor for successful farming. After World War II the U.S. became a National Security State and making war on insects, nature, weeds, cancer and drugs as our culture because engulfed in the “making war

paradigm". The U.S. is the largest maker and exporter of arms and pesticides (several billion pounds a year) in the world. (4b)

31 Because our National Security depended upon increased food production and experimentations with radioactive materials, inaccurate data was produced. Testing for harmful effects was very limited and questions discouraged. Chemical Corporations gave hundreds of millions of dollars to politicians and to Land Grant Colleges, where material supplied by the Corporations was taught in Chemical Agriculture, establishing a mind set and belief in "No Apparent Danger". In 1962 *Silent Spring* was published, written by Rachel Carson with a B.S. in Biology magna cum laude and a Masters degree in Zoology.

32 Since 1962 U.S. Pesticide use on farms alone has doubled to 1.1 billion tons a year and production of these dangerous chemicals have increased by 400%. This leaves no way to find a pure lab rat American or toxic free environment in the Western States. The agricultural run off from the grain belt feeds a "dead zone" in the Gulf of Mexico. "The USEPA was established in 1970 in part because of Rachel Carson's testimony before Congress. Congress called for the establishment of review, registration and information standards for pesticides several times. These calls continue to be ignored, postponed and eroded. The statue that regulates pesticides, fungicides and rodenticides sets far looser standards than those that regulate food and drugs and are more difficult to enforce." (3).

33 All a ® registration of a chemical from the USEPA means is that the maker was given a license to kill. "Cide" is a suffix signifying killer. USEPA registers ® chemicals to kill, be they insect, fungus, pest or herb. Killers do not stay where you put them. Toxic, killing chemicals bio-accumulate each rung up the eating ladder until humans ingest the unintended consequences. A study in 1960 showed that .05 parts per million of an herbicide in a pond ends up as 2500 parts per million in a fish, then birds, bears and humans at the top of the food chain bio-accumulate the greatest concentrations. The BLM-PEIS plan to apply herbicides to nearly one million acres is making an assumption that can only results in decreased fertility and deaths to more than BLM target receptors.(5b)

34 Assuming that "Native American receptors (adults and children) are assumed to be potentially exposed to herbicides via dermal contact with spray, dermal contact with sprayed foliage, ingestion of drinking water from sprayed ponds, ingestion of berries containing spray, dermal contact with water in sprayed ponds and ingestion of fish from sprayed ponds" (6a) is just wrong. Then to assume that "Native American receptors will experience exposure only three hours a day of subsistence activities in gathering berries" (6b) obviously knows very little about subsistence activities and has grossly underestimated exposure. Assuming contact with foliage for two hours a day is not realistic for sheep herders or others who work and play outside. Harming the living spaces, hunting, gathering places and in general the environment of Native American Reservations is economic and racial injustice and potential genocide.

35 As one who has gathered berries for native seeds I have never gone out picking for less than three hours a day. Other pickers with better health pick from dawn until dark. BLM assumptions are greatly underestimated. The PEIS underestimates on Native American receptors could be taken as a plan for genocide. Endocrine disruption from herbicides decreases fertility, sperm counts and quality of health, especially when it comes from the air on to the land, prairies, deserts and Continental Divide Basin (the largest unfenced land mass in the United States), vegetation, multiple wildlife and aquatic species into ponds, lakes, streams, aquifers and groundwater. This is a gross violation of human rights and class injustice to poison the vegetation, land, water, air, aquatic and wildlife where Native Americans make their homes.

36 The history of fifty years of chemical control, researched and written in peer reviewed scientific studies proving that chemical control has unintended consequences is not included in the PEIS. The BLM chemical tool box may contain herbicides too new to have been specifically studied but that does not change a highly probable future. Herbicides keep getting more potent as

resistance from targeted receptors builds and human receptors unable to build up resistance fail to reproduce, sicken and die.

37 Technology is legislating when hugely profitable chemical corporations will spend whatever it takes to make a profit, even stopping effective regulation, testing and independent review. Telling the truth, as the PBS-TV “Trade Secrets” proved, is contrary to profit making. The liability, states the Chemical® labels, is with the buyer. Should BLM choose to purchase chemical control herbicides the liability for the rippling circles of sickness, collateral damage and death from “cides” will be with the BLM.

38 Please do not choose to use Alternative B, using herbicides. Keeping birds, antelope, elk, wild horses and aquatic life from ingesting herbicides on their food sources is impossible with the BLM plan. Teaching multiple wildlife species to read the label or BLM spray notification signs is more realistic than assuming wildlife won’t ingest normal food sources; bi-accumulation won’t occur; streams, aquifers and rivers won’t be seriously, irreparably impacted and damaged by BLM applying herbicides. Continued and expanded applications of herbicides on public land would do harm that could not be reversed and would contribute to probable, eventual multiple species extinction.

39 The BLM PEIS fails to include: available valid “scientific” studies; studies on the endocrine disrupting aspects of proposed and current use herbicides; realistic estimates for human receptors; and the bio-accumulation of toxic chemicals on food and water sources. The PEIS grossly under estimates the exposure by Native American receptors and other human receptors that make their living and or spend most of their time outside. The PEIS relying on USEPA for their so called scientific studies does not provide a basis of “exact science” upon which to make any claims that BLM has followed the “scientific method” in evaluating herbicides. Failure to include available peer reviewed “scientific” studies on the endocrine disrupting aspects of herbicides makes BLM - PEIS case for using herbicides invalid.

40 For the survival of the seventh generation of all species of life in BLM’s six million acres of land and 932,000 acres of proposed treatment areas please choose Alternative C, no herbicide use now or in the future.

References

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- 5b. *Silent Spring* by Rachel Carson 1962

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The following footnotes 8 through 97 are referenced from:

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BLM-PEIS New Chemicals needing approval, one of the reasons for the PEIS

Dicamba is a.i. (active ingredient) in Overdrive® a post emergence herbicide for annual and perennial broadleaf weeds and annual grassy weeds

Chemical class - a benzoic acid herbicide a.i.

Used with phenoxyalkanoic acid or other herbicide, dicamba is used in pastures, rangeland and non-crop areas. It is water soluble and mobil. The EPA says it has unacceptable risks to birds from many application scenarios.

A Class III – slightly toxic.

Used with

Diflufenzopyr in Overdrive® made by BASF. Used as dicamba above,

“ “ acts by inhibiting auxin transport creating abnormal accumulation of auxins in meristematic shoot and root regions. (i.e. disrupts plant hormone balance and protein syntheses)

Chemical class – urea and semicarbazones (?).

Toxicity Category III and Category IV.

Not expected to pose a risk of groundwater contamination (USEPA 1999b)

Diquat is a.i. in Reward® by Syngenta, a general herbicide to control weeds in non-crop and aquatic areas. Diquat dibromide is non selective algicide, desiccant and defoliant. Used in seed crops and potatoes.

Toxicity class II

Chemical class – quaternary ammonium.

Acts by interfering with photosynthesis within green plant tissue.

BLM will use Reward® only in aquatic areas

Fluridone is the a.i. in Sonar®A.S. made by SePRO is a selective systemic aquatic herbicide for management of aquatic vegetation in fresh water ponds, lakes, reservoirs, drainage canals and irrigation canals. Maximum application rates are harmful to workers.

Absorbed by roots of aquatic vascular plants from hydrosol, where it must be in contact for forty-five days. Inhibits the formation of carotene, thus chlorophyll is destroyed and chloroplasts are disrupted in sunlight, causing cellular bleeding.

Chemical class - pyridazone

Toxicity class II, IV

Imazapic is a.i. in Plateau® by BASF. To provide weed control and/or turf height suppression on pastures, rangeland, federal Conservation Reserve Program (CRP) land and non-cropland including areas that may be grazed or cut for hay.

For post-emergence applications, a surfactant is added.

Translocated through out plants with accumulation in meristematic regions.

Imazapic is an acetolactate-synthase (ALS) inhibitor, acts by inhibiting an enzyme needed for essential amino acids –valine, leucine and isoleucine - synthesis.

Chemical class imidazolinone

Toxicity Category III or IV

Sulfometuron Methyl is a.i. in Oust® by DuPont to control many annual and perennial grasses and broadleaf weeds in forestry and non-crop sites. It is non selective.

Chemical class sulfonyl urea herbicide.

Mode of action for a Sulfonyl urea class is an ALS inhibitor – inhibits an enzyme needed for essential amino acid synthesis.

Oust® control weeds by both pre-emergence and post-emergence activity.

Herbicides Evaluated and/or Already Approved and Used on Public Lands by the BLM.

2,4-D	Esteron-99®; DMA-4® Dioxin has been found in 2,4-D formulations. <u>Endocrine disruptor.</u> Worker risk.
2,4-DP	Worker risk.
Ammonium sulfamate	
Amitrole	
Asulam	Inhibits mitosis.
Atrazine	Inhibits photosynthesis. <u>Endocrine disruptor.</u> Worker risk.
Bromacil	Non-selective, inhibits photosynthesis. Worker risk.
Chlorsulfuron	Inhibits enzyme activity. Maximum dose is worker risk.
Clopyralid	Selective - Mimics plant hormones. (ED?)
Dalapon	
Dicamba	by Banvel® Growth regulator. <u>Endocrine Disruptor (ED)?</u>
Diquat	Worker risk.
Diuron	Preemergent control. Worker risk.
Fosamine	Inhibits bud and leaf formation. Worker risk.
Glyphosate	Rodeo® Aquatic formulation of Roundup® by Monsanto. Non-selective, grasses, broadleaf weeds, sedges and trees. <u>Endocrine disruptor.</u>
Hexazinone	Inhibits photosynthesis. Worker risk.
Imazapyr	Non-selective; preemergent and postemergent uses
Mefluidide	Growth inhibitor suppresses seed production grasses, brush and trees. Worker risk. (ED?)
Metsulfuron methyl	Selective; postemergent; inhibits cell division in roots, shoots. a.i. in Oust® inhibits ALS, i.e. acetolactate synthase. (ED?)
Monosodium methanearsonate	
Picloram	Tordon 2K®, Tordon22K®. Mimics plant hormones. (ED?)
Simazine	Inhibits photosynthesis. Worker risk.
Sulfometuron methyl	Inhibits cell division
Tebuthiuron	Worker risk.
Triclopyr	Growth regulator; broadleaf weeds and woody plants. Maximum application rates are worker risks.

Source: BLM-PEIS Vol.2 Appendix, Human Health Risk Assessment, Toxicity Profiles.

Endocrine disruptor means it is known. (ED?) Suspected endocrine disruptor.

- (1) National Academy of Sciences found 2,4-D and other herbicides with traces of Dioxin - (a common problem) linked to three cancers: soft-tissue sarcoma, non-Hodgkin's lymphoma and Hodgkin's disease.
- (2) U.S. production of carbon-based synthetic chemicals topped 435 billion pounds in 1992 or 1,600 pounds per capita. Pesticide use in U.S. alone amounts to 2.2 billion pounds a year, roughly 8.8 pounds per capita. Forty million pounds of banned chemicals known to be endocrine disruptors were exported.
- (3) 15,000 synthetic chlorinated compounds are under attack because of their persistence and a record of causing health and environmental problems.

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