



Montana's War On Weeds

Dow Chemical influences Forest Service shift to its herbicides

By John Kepner

Near the Broadway I-90 cutoff, on the east side of town, travelers stop to read the story of Missoula, Montana's bloody Hellgate Canyon Indian ambushes. There on a carved roadside plaque they learn the origin of "Missoula." It is derived from *l-Sul*, an American Indian sound for *horrible surprise*, describing the terrible battles, the bones, and the skulls scattered within the narrow, rocky passageway that leads to a closed in place. Horrible surprise indeed...

At the outskirts of the city, Missoula's heavy air begins to ooze through the car's ductwork, weighing on lungs, burning eyes and nose. Soon we're enclosed within the stagnant Missoula valley, squatting grounds of the Smurfit-Stone pulp mill that burns tons of plastic "hog fuel" every day; the poisonous Borden urea formaldehyde resin factory; Roseburg Corporation's nearby particle board mill, where the resins are mixed with sawdust and heated; and, the unmistakable, deadly smell of herbicide vapors. It is summer. There's a sign: Welcome to *The War On Weeds In the West*. It's not cowboys and Indians in Montana. It's chemical warfare. And local activists believe that Dow Chemical is pulling the trigger.

Activist successes and the Lolo National Forest pitfall

Weed management hasn't always been as chemically dependent in Missoula. Activists striving to protect human health and the environment from pesticides have historically been very strong in and around the rural Montana town throughout the

past quarter century. In the 1980's, scientists, activists and concerned policymakers successfully put an end to herbicide spraying on the federal lands that surround Missoula. Then in the early 1990's, a group of students and community activists joined forces and stopped a University of Montana proposal to poison campus lawns, hammering out a compromise with university officials that significantly reduced the pesticides used on campus. Similar grassroots pressure in the mid-1990's convinced the Missoula public school system to adopt an integrated pest management (IPM) program that allows pesticides to be used only as a last resort.

But then there's the issue of noxious – or non-native, invasive – weed management in the Lolo National Forest, the public lands that surround the town limits of Missoula. When the U.S. Forest Service (USFS) stopped spraying herbicides in the Lolo National Forest during the 1980's, it did not adequately address the potential spread of invasive weeds with an alternative approach. During this time, invasive weeds took hold and began to spread through the Lolo Forest. Reacting after years of a "do nothing" approach, USFS reintroduced herbicides into the Lolo National Forest for the first time in 1992, as part of its weed management program.

Aerial herbicide application for weed control has become a common practice in Montana, and the Lolo National Forest is no exception. USFS uses ground and aerial herbicide applications, as part of a program that also includes public education, biological controls, and revegetation. However, USFS believes that the most effective program must include



Herbicide damage visible on the hillside of Mt. Jumbo (left), Hellgate Canyon (right), and the Clark Fork River (front).

What is a Noxious Weed or Invasive Species?

Legally speaking, noxious weeds are exotic (non-native) plants regulated by law that are aggressive, difficult to manage, and invasive. Most of these weeds were imported to the U.S. in the late 1700's through the early 1900's from Europe and Asia. In their native habitats, these weeds are harmless. However, due to lack of predators and ability to withstand environmental stresses, many introduced species have spread like wildfire. Many of today's problem species tend to spread in distressed and developed areas, such as along roadways, utility rights-of-way, overgrazed areas and recently logged portions of forests. Many are concerned that invasive species have the potential to displace or significantly alter native plant communities and ecosystems. In any event, many non-native species have established themselves in the U.S. and therefore eradication strategies are generally believed to be unattainable.

the use of herbicides. The chemicals of choice include Tordon 22k (picloram), Transline (clopyralid) and 2,4-D. "While there are other integrated pest management tools like hand pulling and sheep or goat grazing in the weed management tool box, our experience indicates that a combination of weed education and prevention programs, biological controls, ground and aerially applied selective herbicides and revegetation are most effective and economical on the Lolo," National Forest supervisor Deborah Austin said in a July 16, 2004 proposal memo. Ms. Austin also said that she emphasizes aerial and/or ground herbicide spraying in areas of concentrated public use, areas that are currently weed-free and the roads, trails and trailheads that lead into these areas, administrative sites, areas that border private landowners with active weed control programs, and bunchgrass on big game winter ranges. These areas of herbicide

use currently cover approximately 5,000 acres of the forest, but USFS has plans to triple the treated acreage.

On August 4, 2004, USFS published in the *Federal Register* (Vol. 69, No. 149) its proposed plan to increase the maximum area of land sprayed with pesticides in the Lolo National Forest to 15,000 acres. Currently, the acreage undergoing herbicide spraying has already been authorized by decisions under the *National Environmental Policy Act* (NEPA). However, the proposed plan, would authorize USFS to spray up to 15,000 acres outside of existing project areas that have been reviewed under NEPA decisions. Ms. Austin describes the present plan as not working and explains that the proposed expansion of herbicide use is the best way to deal with noxious weeds. "[E]fforts have not been sufficient to contain, control or reduce existing and new populations of weeds over a wide variety of sites. From a forest-wide perspective, existing weed control decisions only authorize the use of herbicides on a small portion of the forest. On the areas covered by these decisions we have been very effective...We need the ability to respond more rapidly to new and relatively small weed infestations."

This latest decision to increase the use of poisons in Montana's forests in the name of environmental protection has left many local activists wondering how the management of these lands surrounding Missoula got to this point.

Is Dow calling the shots?

Given the region's strong environmental track record, many local activists thought there might be more behind the Forest Service's decision to go ahead with a toxic herbicide spray plan that has such strong public disapproval. An investigation into the USFS management plan in the Lolo National Forest finds that three of the herbicides used on the Lolo National Forest are turning a profit for Dow AgroSciences, the pesticide division of the Dow Chemical Company. While it is impossible to say for sure what kind of influence Dow has on the Forest Service, local activists from Missoulians for a Clean Environment, a group instrumental in many of Missoula's environmental victories of the 1990's, have uncovered documents which point in that direction.

The depth of Dow's connection to the spray strategy first came to light through two documents linked to University of Montana's Division of Biological Sciences researcher Peter Rice, PhD, who serves as director of the Invaders Database Project. The first is a January 1996 memo from Dr. Rice to Mary Halstvedt, a Dow field representative in Estes Park, Colorado. In it, Dr. Rice updates Ms. Halstvedt on his weed control research in the Bitterroot National Forest, which he describes as a project that will "help convince other Forest Service land managers to make more aggressive use of herbicides." The memo also explains his plans to expand the scale of his research and asks for Dow's input regarding his research and plan for the Bitterroot.

The second document is a court transcript from a District Court, Boulder County, Colorado proceeding on May 7, 1996 that ties Dr. Rice to payments from Dow while researching the company's herbicide, Tordon 22K, which is now one of the

herbicides being used in the Lolo National Forest. The court document reveals that as of the date of the hearing, Dr. Rice had received \$25,700 from Dow – \$20,000 as payment for his testimony on behalf of Dow over a four year period and \$5,700 for examining a computer database on forest systems.

Dow's formal relationship with the Forest Service

On January 4, 2001, the relationship between USFS and Dow AgroSciences became official, when the two parties, along with the Bureau of Land Management (BLM), signed a "Memorandum of Understanding (MOU) to Collaborate on Invasive Weed Research." According to the MOU, its purpose is to "provide a general framework of cooperation between the parties concerning research, education, technology development, training and management of exotic, invasive noxious weeds. Such cooperation will increase the available knowledge on management, containment and control of these exotic species both on public and private lands, thereby benefiting both parties and the public."

Aside from providing a general framework for combined weed management projects, the MOU requires that no party to the agreement publish any data, test results or publication

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materials without approval of the other parties. The agreement gives Dow the opportunity to provide trainings to federal employees on the "proper use of herbicides" as part of an integrated weed management program. Local environmentalists report being barred entry to at least one of these trainings.

The 2001 MOU was written to expire unless renewed in 2002, and presently no official action has been taken. However, this does not mean that the relationship with Dow has ended. "While the document was never officially renewed, Dow still has an agreement with the federal government to continue the experimental plots," BLM Senior Weed Specialist Gina Ramos told Beyond Pesticides. She continued by saying she does expect the agreement to be officially renewed in the near future.

PHOTO BY RON WHEELER.



The herbicide-scorched North Hills rising above the Missoula County Court House.

Dow's Toxic Trio

Tordon: USFS's most commonly used herbicide in the Lolo National Forest, Dow's Tordon 22K, contains the active ingredient picloram. Tordon has been associated with a number of human poisoning incidents and because it is very stable, has been linked to groundwater contamination. Picloram was formulated with 2,4-D to form the defoliant Agent White, used widely during the Vietnam War, and still commonly used today. A National Cancer Institute study found picloram to cause cancer in rats, but EPA does not classify it as a carcinogen.

Transline: Used to control knapweed in the Lolo National Forest, Dow's Transline herbicide contains the active ingredient clopyralid. Clopyralid use has recently been banned and restricted in several states due to concerns about its persistence in the environment. EPA tests show that clopyralid causes reproductive problems, including reduced fetus weight, skeletal abnormalities, and hydrocephaly (accumulation of excess fluid around the brain).

2,4-D: Dow is currently the world's largest and only U.S. producer of 2,4-D. This phenoxy herbicide is an endocrine disruptor, which can interfere with hormone function and can contribute to breast and testicular cancer, birth defects, and learning problems. Several studies have linked 2,4-D to non-Hodgkin's lymphoma.

Missoula chooses similar path, but treads lightly

The city of Missoula, which is surrounded by public lands, manages its lands under a policy similar to the Forest Service policy. They both have management plans that call for a combination of herbicides, mechanical controls, bio-controls (weed-eating insects), replanting and grazing. The city also opts for the same herbicide of choice, Tordon, for the majority of its spraying. And, the city even cooperates with USFS, allowing it to manage test plots on city property. Furthermore, the plan is run by a team led by Marilyn Marler, PhD of the University of Montana's Division of Biological Sciences. Despite all these connections and similarities, the differences between the city and the Forest Service are in the details of the implementation.

The city has an active volunteer program that organizes a few weed pulling events each year. While this covers a very limited number of acres, it serves as a source of education, and the land is typically in areas of concentrated public use, where environmentalists feel herbicide use must be restricted. Missoula has successfully used weed-eating insects as bio-controls. The city also grazes goats for weed control, covering 313 acres last season, compared with 240 sprayed with pesticides. When the city uses herbicides, it only applies from the ground. While the pesticide products are the same, the USFS plan drops the

chemicals from helicopters, which studies show, allow pesticides to drift miles from their intended target.

Conclusion

Activists say it is not a coincidence that the Forest Service has expanded an herbicide spray program that utilizes, almost exclusively, Dow AgroScience's products. Documents confirm that Dow has supported research and had relationships with decision makers who influence weed management in Montana and possibly other western states. The facts speak for themselves. Small plot studies have been expanded. A three-fold expansion in land area that can be sprayed with Dow's herbicides is a matter of policy. Huge swaths have been burned into Missoula's hillsides by herbicides that are known to leach and contaminate water. Water runs down hill, and Missoula sits over a sole source drinking water aquifer. The Missoula airshed is thick with herbicide vapors. People living below the poisoned hillsides complain of burning eyes and throats, a strange flu-like malaise, and depression. It is *l-sul* in Missoula, Montana's dirty secret. Welcome to *The War On Weeds In the West*.

John Kepner is project director at Beyond Pesticides. Jay Feldman, executive director of Beyond Pesticides, and Will Snodgrass, an environmental advocate and resident of Missoula, contributed to this article.

True Integrated Weed Management: Pesticides as a last resort

By David Pimentel, PhD, Cornell University

Safe, effective management and control of established exotic-weeds requires input from and the joint effort of scientists from several distinct disciplines, including biological control specialists, chemical control specialists, wildlife ecologists, animal science specialists, economists, and the public. The basic premise of IPM centers on employing first biological and other non-chemical pest controls, with the use of chemical pesticides only as a last resort. Since pesticide effects on public health and the environment cost the United States a conservatively estimated \$9 billion per year, this should be a much welcome change.

There are some safer, though less widely used, options for weed control. In some cases, the use of biological control agents, like insects, can selectively remove one weed species from a pasture, range, and/or natural ecosystem with minimal ecological effects. Biological pest control using natural enemies in the U.S. provides an estimated \$12 billion/year in benefits. Not only is the use

of biological controls economical, but once established, these insect species provide permanent, effective control of the weed.

Finally, in some situations, selective grazing by various livestock species can be an effective method of weed control. The introduction of a particular livestock animal, like geese, goats, cattle, and sheep, can reduce pest weeds and make the pasture and/or range land more productive.

USFS has tried some alternatives in the Lolo National Forest, such as limited beneficial insect use, but local activists feel that its use of pesticides is not a last resort. Forest Service officials cite mountain lions as the reason they have not employed grazing strategies.

Excerpt from Dr. Pimentel's talk at Beyond Pesticides' 19th National Pesticide Forum at the University of Colorado, Boulder, May 19, 2001.