

Grass Field Burning And Public Health

The 2004 Burn Season White Paper



Safe Air For Everyone

EXECUTIVE SUMMARY
SAFE AIR FOR EVERYONE
2004 GRASS FIELD BURNING REPORT

1. Smoke management plans in 2004 failed to protect the health and safety of North Idaho citizens. Once again, grass smoke engulfed private homes and harmed a large number of citizens. On numerous days, field burning smoke from the Rathdrum Prairie and Coeur d'Alene Reservation failed to rise, and instead was transported along the ground where it was inhaled by thousands of citizens. Moreover, there were several instances where smoke from field burning activities impacted public roads. Idaho law requires no warning to the public driving on public highways of impending smoke hazards.
2. Despite urgings from the U.S. Environmental Protection Agency, when determining the worthiness of alternatives to field burning the Idaho State Department of Agriculture (ISDA) **still** refused to consider the costs of public health and welfare impacts such as visits to doctors/hospitals, work days lost and school days missed, and impacts on tourism in the area in their field burning analysis. A similar study conducted by Washington State University for neighboring Washington State concluded that public health benefits from cleaner air outweighed increased costs to the grass seed industry for bailing their fields by nearly \$3 million a year.
3. The Idaho State Department of Agriculture held no public hearings on the deleterious economic effects of field burning on other local industries such as tourism, marinas, gardeners, or laborers. Although it allowed written input, much of the impact on public health was not given proper weight. Important public policy regarding the health and welfare of Idaho citizens was conducted behind closed doors and for the economic benefit of a small number of growers.
4. Environmental impacts associated with field burning such as loss of nutrients and moisture in the soil has still not been considered by the ISDA in making field burning determinations. Many of the studies cited as evidence that burning was the only "economically viable alternative" relied on old studies or studies irrelevant to the crop.
5. The public announcement system in place to notify citizens of field burning days utilizes a telephone hotline, website, one Spokane-based television station, and three Spokane-based radio stations. Other than the hotline, this system does not reach individuals outside of the broadcast area who do not have cable access or computer/internet capabilities. The existing system continues to fail often and was inaccurate, unreliable, and did not work on many days burning was scheduled.
 - a. Radio ads continue to be spoken too rapidly to be understood clearly;
 - b. Burn calls were made without enough lead-time to evacuate citizens;
 - c. No warnings were given to motorists of smoke encroaching on local roads and there were instances of public roads being blocked without notice;
 - d. There is no system in place to warn boaters of smoke approaching on local lakes;
 - e. Updated announcements of the final burn decisions were not made.

6. Several SAFE members complained that they were unable to leave anonymous messages on the Complaint Hotline. In addition, numerous individuals advised SAFE that they were unable to get through to the hotline to make a grievance about a smoke incursion. Moreover, the Complaint data was often not provided to the State in a timely manner. Given that it is essential for the State of Idaho to understand the impacts of the previous day's burn before burn calls are made, this issue is a major issue of concern.

7. Citizens are warned by the State Department of Health and Welfare to avoid strenuous exercise when visibility is limited to one mile or less because of smoke from wildfires, and older persons or those with respiratory or heart disease have even more strict limitations, but no warnings are issued when residents are exposed to grass fire smoke. This is a significant omission given that individuals are often exposed to greater levels of particulate matter from field burning than forest fires, due to the proximity of the fire.

8. Illegal burns occur and there are not enough state resources to investigate them. In fact, the two-tiered system of smoke rules contributed to the death of 77-year-old Lyle Tanner in September when a field was burned illegally in southern Idaho.



Photo taken September 1, 2004, on the Rathdrum Prairie. This photo demonstrates the failure of the smoke to rise, instead being transported along the ground where the public will experience maximum adverse health impacts.

History and Mission of Safe Air For Everyone

Safe Air For Everyone was incorporated in October 2001 after another damaging year of grass field burning had significant impacts on the health of hundreds of Bonner County residents. Local physicians, seeing the impacts on their patients, were no longer content to wait for the state to act on this urgent medical need in their community. Added to a burn season in which indoor smoke alarms went off, smoke overwhelmed the ventilation system at Bonner General Hospital, and the use of headlights in broad daylight became necessary for many, Governor Kempthorne hosted the Western Governors' meeting and his staff ordered that there would be no grass burning during the event. Clearly, local residents felt betrayed. For nearly 30 years they had been the targets of this practice that had taken the lives of at least two beloved community members. By giving this order, the Governor acknowledged the danger and obvious inconvenience of the grass smoke. Surely, if the Governor could call off burning, why couldn't the people who were targets of grass smoke do the same?

Fall of 2001 saw 1,791 calls to the Complaint Hotline, nearly double the previous year's tally. Many people described visibility of less than 50 feet. The health effects were serious; people had to seek medical help for an agricultural practice. Grass burning had been outlawed in Washington and significantly reduced in Oregon due to the health effects it created on the population. There were many citizens in Bonner and Kootenai counties who had to flee for their lives, unable to tolerate smoke incursions where roughly PM 2.5 particulate rates climbed to dangerous levels.

Dr. Scott Burgstahler got the ball rolling. Circulating a letter to fellow physicians in Bonner County to send to the North Idaho Farmers' Association, he asked them to stop burning, just as the governor had done. Dr. Burgstahler was trying to make a point: requests to stop burning should not only be honored for the politically powerful, but also for the people who permanently live and work in the area and suffer from the practice.

Nearly all of the physicians in the county signed on. Kootenai County physicians, also seeing an increase in patient load and ER visits, created their own letter and joined in the call to end grass burning permanently, as did physicians in Latah and Whitman counties. The total number of physicians calling for an end to burning stands at 140.

The issue also received national attention with the September 3 publication of "Fields of Fire," an article in *U.S. News and World Report* by David Whitman, detailing how, according to the coroner, Marsha Mason died from an acute asthma episode caused by grass burning.

SAFE was incorporated as a non-profit organization in October of 2001 and had its first membership meeting in November of 2001. The mission of SAFE is to compile and study health-related scientific research showing harm from breathing particulate matter, to educate the public and to increase awareness of the dangers from field burning, and to work with both the public and the political process to end grass field burning in order to promote public health and safety.

Efforts to work within the political process. In November 2001, we presented testimony before the Board of Environmental Quality concerning the proposed rule changes for smoke management. SAFE highlighted the threat to human health posed by field burning and provided evidence that the proposed 100 microgram limit for PM 2.5 was inadequate to protect public health.

The current law in Idaho states that grass field burning may only occur after a certification process has taken place demonstrating that no other alternatives are available to burning. The Director of the Department of Agriculture Director, Pat Takasugi, continues to certify that no alternatives exists, and supports his decision with a small number of studies. In sharp contrast, across the boarder, Washington state blue grass growers have been using mechanical means to remove stubble on their Kentucky bluegrass fields since 1998, with no change in acreage harvested or significant yield reductions since that time. In fact, acreage of this crop actually increased in the state, even without burning. Over 40,000 pages of documents are publicly available, demonstrating the efficacy of mechanical alternatives and cost-benefit analysis, yet the State of Idaho has refused to even examine these.

By January 2002, SAFE's membership had grown to 700 members. SAFE developed a partnership with the Idaho Medical Association and the American Lung Association of Idaho and Nevada to call for an end to grass field burning. We announced our intentions to seek a legislative solution to the problem in the 2002 legislative session on January 4. At the same time, we asserted that we were serious about ending grass burning this year and would seek other actions as necessary to protect the lives and health of north Idaho residents.

As part of the political process, SAFE began to explore incentive-based solutions to the field burning controversy. SAFE attempted to put together a package of economic incentives that would result in the "buy out" of the growers' rights to burn grass fields. Since grass growers in Washington had already been successful in growing grass without the use of fire, these incentives were sought to hasten the transition in Idaho to proven non-burning technologies and to provide a level playing field with other grass growers in the Northwest.

SAFE sought private funding from nationally known conservation organizations and local industries. We worked with legislators behind the scenes to craft tax and other incentives, which would make a buy-out attractive to growers. Trading carbon credits was explored with a group involved in carbon sequestration for energy companies. However, in the post-September 11th budget crisis that hit most states and businesses, funding became impossible. The state and federal sources of funding were no longer available, and the private organizations had concerns of their own and were unable to commit the resources to complete the "buy out" package.

By spring, the membership of SAFE had swelled to 1200 members.

Litigation begins after attempts at a political solution fail. When it became clear that a buy-out would not be possible, SAFE announced the intent to litigate the matter under the Resource Conservation and Recovery Act. Letters of intent to sue, requiring a 60-day advance notification before suit was filed, were sent to individuals who had burned Kentucky bluegrass in Kootenai and Benewah counties in 2001. These letters invited growers and/or their representatives to sit down and discuss the situation so that litigation could be avoided. In addition, state officials including the governor and the directors of the Idaho Department of Environmental Quality and Idaho State Department of Agriculture were notified. The state was asked to consider playing a role in getting the parties to sit down and negotiate. The state never acted upon this important opportunity prior to the start of litigation.

When no response to negotiate was received from any growers or their representatives during the 60-day notice period, SAFE proceeded to file suit to protect the health of citizens targeted by grass smoke in north Idaho. Expert witnesses were retained to demonstrate that grass residue met the legal definition of agricultural waste as defined by RCRA; that the smoke which was making people sick was, in fact, originating from growers' fields; and that the high particulate readings on air quality monitors were correlated with the symptoms seen in the general public complaint records. Air modeling was done to demonstrate how the clouds of smoke travel in the region and impacted thousands of people. Grass growers using mechanical means to grow grass on the Rathdrum prairie were sought out to explain how they had made the transition to non-thermal management. Agronomic experts demonstrated that Kentucky bluegrass could be grown for at least a four-year rotation without burning and without drops in yields.

On July 19, 2002, Judge Edward Lodge, of the Federal District of Idaho, ruled that grass seed residue did not meet the definition of a waste product under the Resource Conservation and Recovery Act (RCRA). Judge Lodge subsequently dismissed the case and SAFE appealed to the United States Court of Appeals for the Ninth Circuit Court of Appeals. On July 1, 2004, the Court of Appeals affirmed the trial court's decision and concluded that the grass seed residue was not a "solid waste as defined by RCRA." Given the importance of this issue to the residents of North Idaho, SAFE has chosen to petition the United States Supreme Court to review the decision of the Ninth Circuit Court of Appeals on February 2, 2005. SAFE is presently awaiting word on whether the U.S. Supreme Court will address this case, or just allow the Ninth Circuit decision to stand.

Other notable actions in the legal arena took place. Kelly McAnally, a nurse at Kootenai Medical Center, was overcome by a plume of grass smoke in 1996 and spent time in the intensive care unit due to injuries from breathing the grass smoke. The Idaho Supreme Court allowed her to proceed to sue the growers responsible for the damages to her health. While the terms of the settlement remain confidential, insurance companies for the growers did make a cash settlement with Ms. McAnally.

Also in 2002, eight plaintiffs sued individual growers under nuisance and trespass laws for damages to their health and the inability to safely use their homes during grass burning season. Judge Mitchell, of the 1st District of Kootenai County, certified this case as a class action.

Judge Mitchell issued a ban on burning in 2002 until fields were first baled and a monetary bond was posted. Growers appealed the decision and two weeks later, the Supreme Court of Idaho stated that the judge had overstepped his authority and overturned the ban, although the Idaho Supreme Court refused to elaborate on exactly how Judge Mitchell had exceeded authority.

In April of 2003, the Idaho Legislature passed HB 391, an emergency measure designed specifically to shield growers from liability on nuisance or trespass claims. This HB 391 essentially relieved field burners of any liability resulting from the burning of their fields. Judge Mitchell ruled that the “immunity” provision was unconstitutional as an illegal taking of private property in conflict with both the state and federal constitutions.

The grass growers appealed Judge Mitchell’s decision to the Idaho Supreme Court, and the Idaho Supreme Court reversed Judge Mitchell’s ruling two weeks later. Unfortunately for the thousands of individuals whose health is adversely impacted by the field burning, the United States Supreme Court recently refused to review the Idaho Supreme Court’s decision, thus allowing it to stand.

The case will now be returned to Judge Woodland of Pocatello, who replaced Judge Mitchell after the field burners found a legal method to successfully remove Judge Mitchell from the case. The only issue left for adjudication on this matter is whether the filed burners are liable to the plaintiffs for damages for nuisance and trespass prior to the passage of HB 391 in 2003.

A wrongful death lawsuit was also filed by the family of Marsha Mason, who died after heavy incursions of smoke in Rathdrum in September of 2000. This lawsuit named individual growers who had burned their fields prior to Ms. Mason’s death. Apparently this matter resulted in a settlement to Ms. Mason’s family, although the terms of the settlement are confidential.

The passage of HB 391 also required that the Director of the Idaho State Department of Agriculture (ISDA) certify that, “no economically viable alternatives to burning exist” before any field burning could commence. Various public interest groups, including SAFE, requested that the ISDA develop a public process making this decision, but Director Takasugi refused to allow for public participation until 2004. Only written comments were allowed, and he denied a request for a public hearing in North Idaho where most tourist businesses suffer economic consequences from grass burns.

Together with the American Lung Association of Idaho/Nevada and the Idaho Conservation League, SAFE filed suit against the Idaho Department of Agriculture to challenge the lack of public input under the state Administrative and Procedures Act. In February of 2004, Judge Woodland dismissed the case and ruled that the ISDA had not violated the Administrative Procedures Act in concluding there were no alternatives to burning.

In 2004, no public hearings were held although public comments were accepted in writing, and, for the second straight season, the ISDA Director Pat Takasugi declared that

there was no viable financial alternative to field burning for Panhandle grass seed growers, even though grass growers in Washington have increased crop production without burning since the 1998 burn ban there.

HB 391 also has a “special immunity” provision, which prevents those who have been harmed by field burning smoke from bringing suit against the growers responsible for the damages. However, on June 4, 2003, Judge Mitchell ruled that this provision was clearly unconstitutional, and as described by the *Spokesman Review* on June 5:

“The new law, HB 391, ‘cannot survive a constitutional analysis,’ Mitchell ruled.

By abolishing nuisance and trespass claims against farmers in 10 North Idaho counties, the Legislature rendered citizens powerless to fight back in court, Mitchell said.

The law amounts to an unconstitutional ‘taking’ of private property because it allows smoke to intrude into people’s homes without compensating them for damages, Mitchell said.”



Photo taken August 4, 2004, in Post Falls, Idaho. This photo illustrates that the smoke was transported along the ground, maximizing adverse health impacts to the public and impacting residents in the Spokane Valley of Washington as well.

SAFE's Recommendations for 2005 Grass Burning in Kootenai and Benewah Counties

If state regulators continue to ignore the pressing health hazards of releasing millions pounds of hazardous pollutants from these two counties alone, more injuries and deaths will occur.

The State of Idaho and Coeur d'Alene Tribe, however, will likely decide to maintain the policy of allowing the poorest and most rurally dispersed populations to absorb the brunt of the injuries and burn thousands of acres when the fire danger is at its most extreme. If the State of Idaho and the Coeur d'Alene are unwilling to change the status quo, then SAFE makes the following recommendations:

1. The State of Idaho must tell local residents exactly where the burns will occur on any given day. This allows those who live in close proximity to burns (sometimes less than 100 yards away) to flee for their own safety. "Privacy" of farmers is secondary to the health and safety of local citizens.
2. The State of Idaho must improve the public warning system to include methods of warning tourists who may not be aware of the impending hazards. Warnings must be posted on local roads and highways when smoke may impact local driving, and, furthermore, every effort should be made to warn boaters and those renting vacation properties of the impending hazards. Hospitals and schools should receive warnings as well for safety planning.
3. The contractor for the Idaho Department of Environmental Quality (IDEQ) complaint hotline must have the ability to compile all complaint calls and convey them to state agencies and the public in a reliable and timely manner. Furthermore, anonymous complaints should be accepted because the heated nature of the debate in local areas has spawned fears of retribution by growers.
4. The State of Idaho must assess not just what happens on local monitors, but also more intense local effects of grass smoke upon nearby populations. Warnings similar to the "Air Quality Alerts" for wildfire smoke should also be issued for neighborhoods, which will be impacted by grass field burning. Just as local Department of Health and Welfare officials might investigate several cases of local food poisoning, they have a duty to investigate the concentrated local effects of toxic grass burning upon local populations.
5. To lessen the chance of serious injury and more deaths, the State of Idaho should not be allowing grass burning to occur when wildfire smoke has caused elevated particulate matter levels. People with heart and lung disease cannot absorb that much pollution in such a short period without serious health effects, and may need weeks of recovery time.
6. Taxpayers of Idaho should not have to bail out any liability incurred by individual grass burners who clearly can grow grass without burning, as is done in neighboring

Washington State and in Oregon. Special interest legislation to bail out the business interest of a few growers at taxpayer expense is a foolish use of state resources when Idaho schools and public funds are being squeezed by budget shortfalls.

7. The State of Idaho must have a consistent smoke management program across the entire state. The lack of such consistency has resulted in yet another death this year from agricultural burning, this time in southern Idaho. Lyle Tanner, age 77, was killed when his car was overcome with smoke from an illegal agricultural burn and crashed. The crash also injured others. The EPA and the Idaho State DEQ agree that a consistent smoke management policy is critical for the state to implement to prevent further deaths and injuries. In fact on February 16, 2005, Robert Wilcosz of Idaho Department of Environmental Quality stated at the House Agricultural Committee Hearing for HB 33, "Knowing what we know about smoke management from North Idaho, this accident was preventable."

8. Burning on Reservation Lands should not be conducted when public schools are in session in close proximity to the schools. SAFE observed burns occurring as school buses were transporting children through the smoke in 2004.

Medical Evidence Linking Increases in Particulate Air Pollution to Health Effects

- As particulate concentrations increase, there is an almost direct proportional increase in the death rate, according to the 1993 Six Cities Study conducted by Harvard researchers. They followed the health of more than 8,000 people in six small cities for 14 to 16 years.

Source: An Association Between Air Pollution and Mortality in Six U.S. Cities, *New England Journal of Medicine*, 1993.

- A 1995 American Cancer Society study reported an association between fine particle air pollution and premature death by cardio-pulmonary and other causes in a study group of over half a million people in 151 U.S. cities.

Source: Reanalysis of the Harvard Six Cities Study and the American Cancer Society Study of Particulate Air Pollution and Mortality, *Health Effects Institute*, July 2000.

- Dr. C. Arden Pope, III of Brigham Young University estimated decrease in life expectancy at one to three years, depending on the age at which the exposure to particulate air pollution begins.

Source: Epidemiology of Fine Particulate Air Pollution and Human Health: Biological Mechanisms and Who's at Risk? *Environmental Health Perspective*, 2000.

- The National Morbidity, Mortality and Air Pollution Study (NMMAPS), a study of the effects of particulate pollution in the 90 largest U.S. cities, found strong evidence linking daily increases in particulate pollution to increases in death. On average, overall deaths increased by 0.5 percent for every 10 microgram per cubic meter increase in PM₁₀ measured the day before death. The effect was slightly greater for deaths due to heart and lung disease than for total deaths.
- In addition, in a study of 14 U.S. cities, including Spokane, NMMAPS found strong and consistent associations between particulate air pollution and hospital admission among the elderly.
- A portion of the study was published in the *New England Journal of Medicine*. The article concludes, "There is consistent evidence that levels of fine particulate matter in the air are associated with the risk of death from all causes and from cardiovascular and respiratory illness. These findings strengthen the rationale for controlling the levels of respirable particles in outdoor air."

Source: Fine Particulate Air Pollution and Mortality in 20 U.S. U.S. Cities, 1987-1994, *New England Journal of Medicine*, December 14, 2000.

- A Montreal study found strong associations between air pollution and emergency room visits for patients over 64 years of age during 1993. A positive association was reported for PM_{2.5} at air pollution levels well below the U.S. air quality standards. The elderly are especially susceptible to the effects of air pollution.

Source: Effects of Air Pollution on Emergency Room Visits for Respiratory Illnesses in Montreal, Quebec, American Journal of Respiratory and Critical Care Medicine, 1997.

- The Children's Health Study led by the University of Southern California, which monitored levels of major air pollutants in dozens of southern California communities and tracked the effects on more than 3,000 school-aged children, concluded that "the results suggest that exposure to air pollution may lead to a reduction in maximal attained lung function, which occurs early in adult life, and ultimately to increased risk of chronic respiratory illness in adulthood."

Source: Association Between Air Pollution and Lung Function Growth in Southern California Children, American Journal of Respiratory and Critical Care Medicine, 2000.

- University of Washington researchers found significant associations between pediatric hospital visits for asthma and increased daily concentrations of particulate matter and carbon monoxide in Seattle. Significantly, exacerbation of asthma was evident even when daily PM_{2.5} concentrations were substantially below the level of the newly adopted National Ambient Air Quality Standard of 15 ug/m³ annually.

Source: An Association Between Fine Particles and Asthma Emergency Department Visits for Children in Seattle, Environmental Health Perspective, 1999.

- A clear link has been established between small airborne particles and health, particularly for an at-risk population of people with existing cardio-pulmonary conditions such as asthma, emphysema, chronic bronchitis, or heart disease.

Source: Estimated of the Benefits and Costs from Reductions in Grass Seed Field Burning, Washington State University Department of Agricultural Economics, December 27, 1996.

- The study of the historic air pollution episodes reveals that those people most subject to the mortality effects of exposure to ambient PM_{2.5} are the elderly with pre-existing cardio-pulmonary lesions.

Source: U.S. Environmental Protection Agency, 1996.

Quick Facts on 2004 Burn Season

Acres burned on the CDA Reservation lands:

2002: 23,403
2003: 24,422
2004: 17,859.2

Acres burned on the Rathdrum Prairie:

2002: 4,800
2003: 3,818
2004: 2,330

Total grass burn acres in Kootenai and Benewah for 2002: 28,203 acres

Total grass burn acres in Kootenai and Benewah for 2003: 28,240 acres

Total grass burn acres in Kootenai and Benewah for 2004: 20,159.2 acres

Number of hotline complaints: 245

Number of burn days on the Rathdrum Prairie: 5

Number of burn days on the CDA Reservation lands: 27