

Grass Field Burning and Public Health

The 2003 Burn Season White Paper



Safe Air For Everyone

A copy of this report is available in PDF format at

www.safeairforeveryone.com

EXECUTIVE SUMMARY
SAFE AIR FOR EVERYONE
2003 GRASS FIELD BURNING REPORT

1. Once again, smoke management plans in 2003 failed to protect the health and safety of north Idaho citizens. Grass smoke engulfed public highways and private homes and harmed a large number of citizens. Legislative changes in registration of fields and payment of a minimal fee did nothing to stop the widespread health effects upon the public. Passage of the immunity provision in HB 391 is a step in the wrong direction. If upheld as constitutional, it would assure that the public is unable to hold polluters accountable for the harm done to their health, their homes, lives, and their businesses.
2. Although the state of Idaho was awarded a grant from EPA to improve public notification of impending burns, the system failed often and was inaccurate, unreliable and did not work many days burning was scheduled.
 - a. radio ads were spoken too rapidly to be understood clearly
 - b. the web site was broken and inaccessible on at least 9 days
 - c. burn calls were made without enough lead time to evacuate citizens
 - d. no warnings were given to motorists of smoke engulfing local roads
 - e. no system exists to warn boaters of smoke approaching on local lakesSee "Burn Days for CDA Tribe and Rathdrum Prairie," Page 12
3. This year, area residents were exposed to nearly 15 million pounds of total pollutants from Benewah and Kootenai county grass burning alone. Of this amount, over 1.3 million pounds were toxics such as benzene, formaldehyde, toluene, methyl chloride and other known and suspected carcinogens. This exposure is not consistent with the policy of "minimizing harm to the public." For detailed information on how these pollutants are calculated, see "Air Pollutants in Grass Field Burning," page 7.
4. While the addition of an air quality monitor in the Hope/Sandpoint area was welcomed, there is still no way for the public to access real-time monitor data to make informed decisions about their exposure to toxic particulate pollution from grass burning.
5. Burning was authorized following serious smoke incursions from local wildfire effects the week of September 2 to 5, which compounded air pollution effects upon public health. It is not good public policy to authorize grass burning when wildfire smoke has already filled the airshed and affected the health of local residents.
6. Complaint hotline: Citizens told us the hotline would not take anonymous complaints. Many callers fear retribution to family businesses or other concerns if they leave their name. Complaints should be taken regardless of the ability of the caller to leave their name. In addition, the contractor was unable at times to provide the state with the information it required in a timely manner. Given that the state should be able to see what the effects of smoke are on the local population before making the next day's burn decision, this is a serious concern.

7. Double standard by the state: The State Department of Health and Welfare warned citizens to avoid strenuous exercise when visibility is limited to one mile or less because of smoke from wildfires, and advised that those older adults or persons with respiratory or heart disease should limit physical activity even when visibility is greater than one mile. However, no such warnings are issued for residents exposed to grass fire smoke which create similar conditions locally. (See photos page 5-6 and Air Quality Advisories p. 18-23).

8. State officials touted the new acreage registration requirements for the northern 10 counties as an improvement to smoke management efforts, but in fact, this did nothing to protect the public. Moreover though the State knew where burns were to take place, they refused to let the public know of the locations of these burns in advance, citing grower "rights to privacy" in order to protect growers from disclosing who was burning and the specific locations of burns conducted each day. This created a secret pollution scheme that was unprecedented in recent decades.

9. Even as burned acres are reduced on the Rathdrum prairie, the numbers of health related complaints have increased significantly since 1990. The burning of large amounts of toxic pollutants in close proximity to homes and schools has devastating effects on local communities. (See "Rathdrum Prairie Acres burned" and "Number of Complaint Calls by Year," page 17).

10. The State Department of Agriculture, which is mandated by HB 391 to determine that "no economically feasible alternatives to burning exist" before permitting any burning in the state, made this determination with little or no public input. The department ignored the fact that grass is grown without burning successfully in neighboring states, and even ignored experiments done on the Rathdrum Prairie in 1992 that showed sustained yields without burning, and determined that there were no alternatives to burning grass.

Furthermore, the Idaho Department of Agriculture refused to conduct an open, public process for this important certification by the Director. Once again, important public policy affecting the health and welfare of thousands of Idaho residents was conducted behind closed doors and for the economic benefit of a handful of growers. In spite of an earlier Attorney General's opinion which stated that the Director must compile a clear record to support any decisions on this certification effort, the department did little to gather, examine and conduct a serious study of the evidence available to it.

See Idaho Attorney General Opinion 01-3 at http://www2.state.id.us/ag/ops_guide_cert/2001/Op01-03.pdf

The Department of Agriculture also made the ludicrous determination that no alternative to burning is feasible if the alternative reduces grower's profits in any way.

SAFE Recommendations for 2004 Grass Burning in Kootenai and Benewah Counties

If state regulators continue to ignore the pressing health hazards of releasing nearly 15 million pounds of pollutants from these two counties alone in a period of just 25 days, more injuries and deaths will occur.

The state, 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 so, then several safety precautions are essential.

1. The state must tell local residents exactly where burns are to take place 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 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 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 state complaint hotline must have the ability to compile all complaint calls and get 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 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 should not be allowing grass burning to occur when wildfire smoke inundates the area. People with heart and lung disease cannot absorb that much pollution in such a short period without serious health effects. They 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.

This photo demonstrates that burns do not “go up in the air and dissipate” as asserted by the grass growers and the state smoke managers. We often observe these plumes crashing to the ground and heading for populated areas which may or may not have air monitors nearby. This was taken on Aug 26, 2003 at 11:23 am.





Some homes and subdivisions are completely engulfed in smoke. There is no warning system in place which will tell residents that burning will occur in such close proximity to their homes.

Air Pollutants in Grass Field Burning 2003 data

Emission factors taken from Idaho State Emission Inventory, 1999 by public record request

		CDA Reservation	Rathdrum	Total Pollution
Acres Burned in 24 days 2003		24,422	3818	
Total tons of residue burned (3.5T/acre)		85,477	13,363	
Pollutant	Emission factor			
Primary PM	16	1367632	213,808.00	
Carbon Monoxide	101	8,633,177.00	1,349,663.00	
Methane	4.5	384,646.50	60,133.50	
NMOC	15	1,282,155.00	200,445.00	
Total		11,667,610.50	1,824,049.50	13,491,660.00
TOXICS				
1,3 Butadiene	0.22	18,804.94	2,939.86	
Acetaldehyde	0.42	35,900.34	5,612.46	
Acrolein	0.43	36,755.11	5,746.09	
Benzene	0.6	51,286.20	8,017.80	
Formaldehyde	1.35	115,393.95	18,040.05	
Methyl Chloride	10.1	863,317.70	134,966.30	
Toluene	0.59	50,431.43	7,884.17	
Xylenes	0.25	21,369.25	3,340.75	
n-hexane	0.02	1,709.54	267.26	
Total Toxic component		1,194,968.46	186,814.74	1,381,783.20
		597 tons	93.4 tons	690.89 tons
Total pollutants in pounds		12,862,578.96	2,010,864.24	14,873,443.20
		6,431 tons total	1005 tons total	7,436 tons total

Residue loads per acre were taken from the study "Quantifying Emissions from Kentucky Bluegrass Burning" by WJ Johnson and MD Schaaf 2003 GSCSSA Progress Reports. The lowest possible residue load sampled from this study, 3.5 tons/acre, was used even though higher loads in Worley were found.

History and Mission of Safe Air For Everyone

Safe Air For Everyone was incorporated in October of 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 Governor's meeting and his staff made it clear that there should be no grass burning during this event. Clearly, local residents felt betrayed. For nearly 30 years they had been the targets of this practice which had actually taken the lives of at least 2 beloved community members. The governor clearly recognized the danger and inconvenience of grass smoke and had the power to call it off. 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 line; 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 in the population. There were many citizens in Bonner and Kootenai counties who had to flee for their lives, unable to tolerate smoke incursions where hourly 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 Farmer's 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 US News and World Report by David Whitman, detailing how Marsha Mason died from an acute asthma episode caused by grass burning, according to the coroner.

SAFE was incorporated as a non-profit organization in October of 2001 and had its first membership meeting in November, 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, 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 law requires that burning may only occur after a certification process has taken place which demonstrates that no other alternatives are available. No such certification, other than a brief letter from Department of Agriculture director Pat Takasugi, had ever taken place. The letter by the director simply stated that he finds no alternatives exist. However, Washington state growers have been using mechanical means to grow Kentucky bluegrass 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 analyses, yet the state of Idaho has refused to even examine these and simply asserts that “they don’t exist.”

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 sought out the expertise of Roy Eiguren, partner at Givens Pursley, to assist in putting together a package which would consist of economic incentives to “buy out” 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 out 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 11 budget crisis that would hit most states and businesses, funding became impossible to put together. The state and federal sources which might have been available now faced new funding cutbacks, and the private organizations had concerns of their own and were unable to commit the resources needed to get the job done.

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 commence under the federal Resource Conservation and Recovery Act. Letters of intent to sue, requiring a 90 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 90 day notice period, SAFE proceeded to file suit against growers 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 ill was in fact originating from grower's 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.

Judge Edward Lodge heard the case and on July 19 ruled that grass seed residue did not meet the definition of a waste product under RCRA. He dismissed the case, and SAFE appealed to the 9th circuit court of appeals. The motion for hearing the appeal on an expedited basis was granted and was heard Nov. 4, 2003 in Seattle before a three judge panel of the Ninth Circuit Court of Appeals. The Idaho Medical Association and the American Lung Association of Idaho/Nevada filed amicus briefs supporting SAFE. A decision is expected later this year.

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 and trial is scheduled for June of 2004. (CV-97-5634)

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 certified this case as a class action. Growers found new third party defendants, and under Idaho law, were able to bump Judge Mitchell from the case. The case will now be heard by Judge Woodland of Pocatello, after the Supreme Court rules on the constitutionality of HB 391. HB 391 was passed as an emergency measure on April 23, 2003 by the Legislature, specifically to shield growers from any new lawsuits based upon nuisance or trespass. 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 and the grass growers have appealed that decision to the Idaho Supreme Court, which has not yet decided the matter.

Judge Mitchell issued a ban on burning in 2002 until fields were first baled and a 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 they refused to elaborate on exactly how he had exceeded authority.

The family of Marsha Mason, who died after heavy incursions of smoke in Rathdrum in September of 2000, also filed a wrongful death suit against individual growers. (No. CV-02-5918)

Finally, the passage of HB 391 required that the director of the Idaho Department of Agriculture certify that “no economically viable alternatives to burning exist” before any field burning can commence. Various public interest groups, including SAFE, asked the ISDA what type of process the director would establish to make this important decision, and asked him to allow public input. The director refused to establish an open process, but did allow SAFE about two and a half days to submit materials for consideration. Other groups were refused when they asked to submit materials for the director’s consideration. As a result, the director made the certification for the burn requirement and allowed burning to begin on July 22, 2003.

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. The case is pending before Judge Woodland. (No. CV 2003-01459)

HB 391 also had 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.”

Grass growers appealed Mitchell’s decision to the Idaho Supreme Court, which has yet to hear the case.

Other litigation is pending in Washington state by individual plaintiffs seeking a class action suit against Idaho growers who send smoke to Washington and damage the health of plaintiffs in that state.

Burn days for CDA tribe listed in **Blue; Burn days for Rathdrum in **Red**.**

<u>Date</u>	<u>Website working?</u>	<u>Inaccurate or confusing info?</u>	<u>Web info available for next day?</u>
July 22	No	None available at all	No
July 23	No	Hotline says it is a burn day Web says no burn on CDA tribe lands	No
July 24	No	Radio says it is a burn day in Bonner, Boundary Benewah and Kootenai Counties; Web says no acres approved; hotline has no information available.	No
July 25	Yes	Web says it will be a burn day in Kootenai, CDA tribe, and Benewah at 7:25 am, but it is not a burn day.	No
July 27	No	A check of web on Sunday for Monday's call shows the web info won't load.	No
July 28	No	Benewah, Kootenai and CDA tribe given "conditional" status .Web times differ from radio announcement times. Web check at 8:30 pm shows website down completely.	No
July 29	No	County filter won't work on website. Web says there will be burning on CDA tribal lands as well as Benewah, Kootenai but in fact they did not burn.	Yes
July 30	Yes	Web says burning in Kootenai/Benewah on Reservation; update is promised by 9 am but by 9:15, it is not available. Web states it is "no burn" in Benewah Co. Notes Creston fires. Tribe approved for 136.7 acres.	Yes
July 31	Yes	Web says 500 acres on CDA tribal lands in both Kootenai and Benewah Co. Hunter Creek fire at Priest Lake was up to 432 acres; Moscow Mtn fire has burned 5 houses and 190 acres, and Hatton Rd fire south of Creston has been contained. Toboggan fire 12 miles NE of Wallace showing extreme behavior with crowning; Interagency fire center rates fire danger as "5" most extreme.	Yes

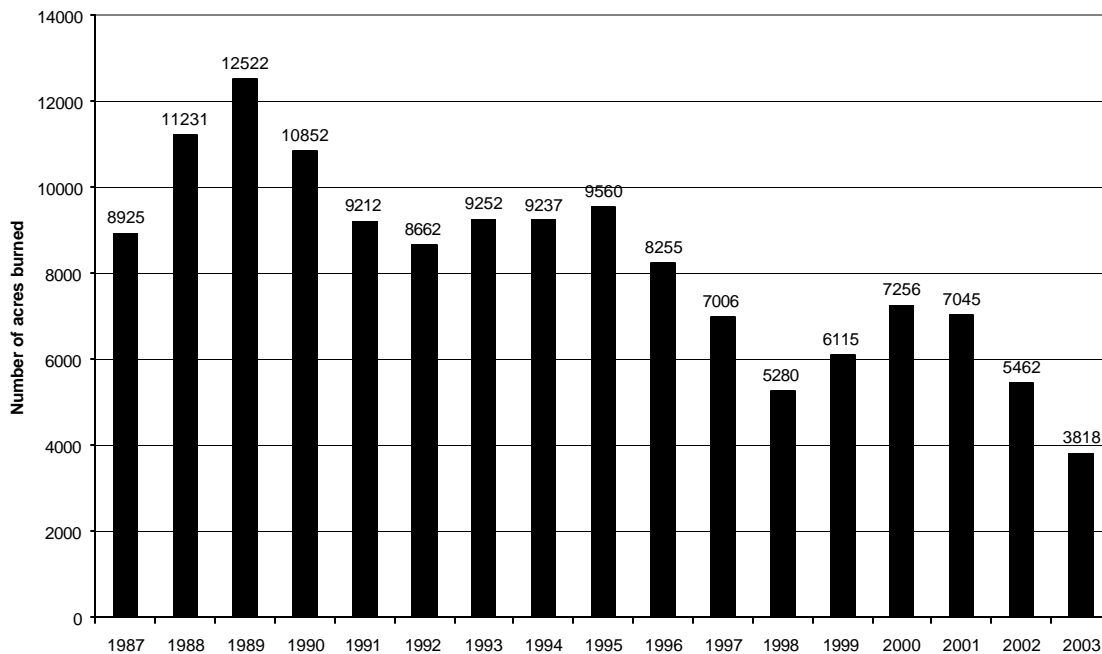
Date	Website working?	Inaccurate or contradictory info?	Web info available for next day?
Aug 1	Yes	No daily comments on site. No burn.	N/A
Aug 3	Yes	No info posted for Monday Aug 4	No
Aug 4	Yes	Radio says there will be burning in S. Kootenai, Benewah, 10-2. Web Says CDA tribe is no burn, but Kootenai Co is listed as allowing 750 acres. Tribal email at 8:40 am calls for a no burn day due to moisture. Acreage listed by web changed at 4 pm from 750 in Benewah and Kootenai to 1500 Kootenai, 1500 CDA tribe.	Yes, by 6 pm
Aug 5	Yes		Yes
Aug 6 Aug 6	Yes	Total of 2,000 acres for tribal areas and 1,000 acres for Kootenai co listed. Rathdrum prairie burned only 127 acres and CDA tribe authorized 1,000 acres.	Yes
Aug 7	Yes		N/A
Aug 11 Aug 11	Yes	Unable to reach hotline for info at 7:15, 7:40 am. Radio says N. Kootenai and S. Kootenai are 1,000 acres each, 11-3; Benewah 1,000 acres 11-3. Tribal email at 10:10 am lists total 1500 acres. Website said Benewah approved (conditional) for 1,000 acres, CDA tribe (conditional) for 1500 acres; Kootenai approved 1,000 acres.	No
Aug 12 Aug 12	Yes	Web lists burning in Benewah at 1,000 acres, CDA tribe as 2,000 acres, and Kootenai as 1200 acres possible .Hotline phone information differs totaling 3200 acres. Web info for Aug 13 says there will be up to 500 acres on Rathdrum and up to 1,000 acres on CDA reservation tomorrow.	Yes
Aug 13	Yes	40 acre Beacon Hill Fire in Spokane causing haze.	Yes
Aug 14	Yes	Website says up to 3,000 acres on reservation areas on Aug 13; Tribal email on Aug 14 calls for 500 acres in Zone 1.	N/A

Date	Website working?	Inaccurate or confusing info?	Web info available for next day?
Aug 18	Yes	No burn day in northern 10 counties due to weather.	N/A
Aug 19 Aug 19	Yes	Web calls for “Kootenai: up to 2,000 in the north and Up to 1,000 in the South and Benewah Co up to 2,000 acres.” Notes smoky conditions in Pullman from Milepost 59 fire near Kamiah on Monday. A total of 2809 acres were burned today on the Rathdrum and CDA tribal areas.	Yes
Aug 20 Aug 20	Yes	Web calls for 2,000 acres on Reservation and 1,000 acres On Rathdrum. Tribal email update calls for no burn in Kootenai. Website on Aug 21 confirms no burning on Rathdrum prairie took place.	Yes
Aug 21	Yes	Website at 7:50 am calls for burning in Kootenai Co and Benewah; later email from tribe and EPA say no burning will be allowed.	No
Aug 25	Yes	Web says 500 acres allowed on both CDA tribe and Rathdrum areas, but email from tribe at 8:30 am says there will be no burning. Multiple burns on Rathdrum.	No
Aug 26 Aug 26	Yes	Web says early in morning no burn in Benewah, 400 acres on Rathdrum and 1,000 acres on CDA reservation, 11-3. Tribal email states the tribe is burning 3,000 acres today. Rathdrum finished.	N/A
Aug 27	Yes	Website says Benewah and Kootenai County on CDA tribal areas will be allowed 2,000 acres each. Later, tribal email increases acres from 4,000 to 6,000 total acres allowed.	N/A
Aug 28	Yes	No burn in Kootenai and Benewah. Unclear about Boundary Co due to conflicting info on website.	N/A
Aug 29	Yes	Heavy smoke in the air today. No burn in Kootenai And Benewah, but 1800 acres allowed in Boundary	N/A
Sept 1	No	ISDA website not working again.	No
Sept 2	No	Website working, but no information posted at 7:45 am. By 8 am, burning listed for S. Kootenai, Benewah, 500 acres each. By 9 am, all burning cancelled. DEQ issues a “Moderate Air Quality Advisory” for Kootenai, Boundary, Bonner Co.	N/A

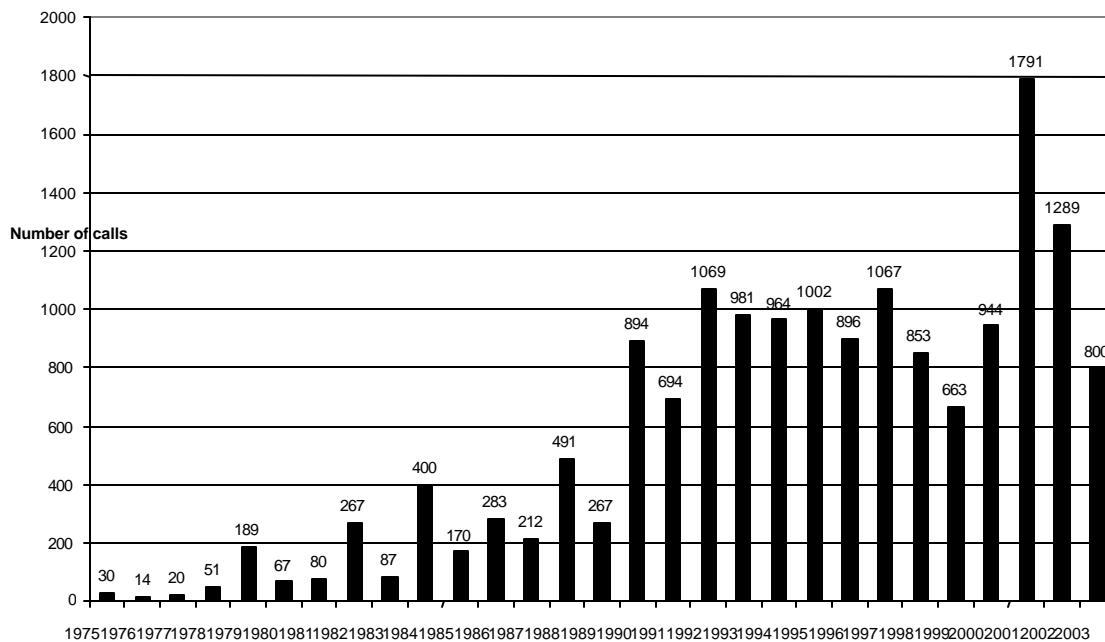
<u>Date</u>	<u>Website working?</u>	<u>Inaccurate or confusing info?</u>	<u>Web info available for next day?</u>
Sept 3	Yes	Air Quality Advisory issued for Boundary Bonner, Kootenai, Benewah Counties by DEQ for Moderate Air Quality. Web allows burning in Boundary Co for 1900 acres.	N/A
Sept 4	Yes	Air Quality Advisory issued for Boundary, Bonner, Kootenai and Benewah Counties.	N/A
Sept 5	Yes	Boundary county allowed to burn 1700 acres with a local wildfire burning. At 11 am, DEQ issues an Air Quality Advisory for Boundary, Bonner, Kootenai, Shoshone and Benewah Co. for Moderate Air Quality.	N/A
Sept 8	Yes	Burning authorized for Benewah, 2,000 acres And CDA tribe in Kootenai for 2,000 acres on web. Email from tribe says no burning allowed today. At 8:50 am, hotline still says there'll be burning today.	N/A
Sept 9	No	Burning is authorized but no requests to burn have been made due to excessive moisture.	N/A
Sept 10	Yes	Web allows 2,000 acres in Benewah and 1500 in Kootenai Co under CDA tribal authority. Tribal email says 500 acres in S. Kootenai Co and 2000 in Benewah.	N/A
Sept 11	Yes	(Burning authorized for up to 6,000 acres on CDA Reservation.)	N/A
Sept 15	Yes	Web authorizes burning in Benewah for 1,000 acres and S. Kootenai for 4,000 acres. Later, tribal email halts all burning due to poor conditions by 1 pm.	Yes
Sept 16	Yes	(Web authorizes burning for Benewah, 1,000 acres And Kootenai, 2,000 acres.)	N/A
Sept 17	Yes	(Web authorized burning for 500 in Benewah, 1,000 in Kootenai for CDA tribe.)	
Sept 18	Yes	(Web authorized 1,000 acres Benewah and 2,000 in Kootenai Co. for CDA tribal areas)	N/A

<u>Date</u>	<u>Website working?</u>	<u>Inaccurate or confusing info?</u>	<u>Web info available for next day?</u>
Sept 22	Yes	(Web authorized 1,000 acres Benewah and 4,000 acres in Kootenai Co for CDA tribal areas.)	N/A
Sept 23	Yes	(Web authorized 2,000 acres in Benewah and 2,000 acres in Kootenai for CDA tribal areas.)	N/A
Sept 24	Yes	(Web authorizes burning in Benewah for 250 acres and Kootenai Co for 250 acres for CDA tribal areas.)	N/A
Sept 25	Yes	(Web authorizes 1500 acres in Benewah and 200 for Kootenai Co for CDA tribal areas.)	N/A
Sept 29	Yes	(Web authorizes 500 acres in Benewah and 500 acres in Kootenai for CDA tribal areas.)	N/A
Sept 30	Yes	(Web authorizes 250 acres in Benewah and 250 acres in Kootenai for CDA tribal areas.)	N/A

**Rathdrum Prairie Grass Acres Burned
From Public Records Request to Idaho Dept. of Environmental Quality (DEQ)**



**Number of Complaint Calls by Year
Data from Public Records Request to DEQ**



Air Quality Advisory - Issue

Time / Date:	2:21 pm Friday August 15, 2003
Location:	Sandpoint, Bonner County Area
Action:	Open Burning Prohibited. Stage One Forecast and Caution
Cause of Air Pollution:	Wildfires
AQI and AQI Category:	MODERATE
Pollutant (s):	Particulate Matter, PM2.5
Restrictions in Effect Until:	Saturday August 16, 2003
Next Update:	Saturday August 16, 2003
Contact:	<Dan Redline, or Mark Boyle, 769-1422

What is the Air Quality Index?

AQI	Category	Cautionary Statement
0-50	Good	None
51-100	Moderate	Unusually sensitive* people should consider limiting prolonged outdoor exertion.
101-150	Unhealthy for Sensitive Groups	Everyone should limit exertion outdoors.
151-200	Unhealthy	Everyone should limit exertion.
201-300	Very Unhealthy	Limit any exertion.
301-500	Hazardous	Stay indoors and avoid any exertion.

* Sensitive groups include children, the elderly, those with existing health conditions, and people who have high exposure (those who work, exercise, or spend extensive time out of doors).

For more detailed information about the AQI, visit:

<http://www.epa.gov/airnow/aqibroch/aqi.html#5>

Air Quality Advisory - Lift	
Time / Date:	11:28 Saturday August 16, 2003
Location:	Bonner County, Sandpoint
AQI and/or AQI Category:	UNHEALTHY**
Pollutant (s):	Particulate, PM2.5
Contact:	Dan Redline, or Mark Boyle 208-769-1422

**See below for copy of web site discussion.

What is the Air Quality Index?

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151-200	Unhealthy	Everyone should limit exertion.
201-300	Very Unhealthy	Limit any exertion.
301-500	Hazardous	Stay indoors and avoid any exertion.

* Sensitive groups include children, the elderly, those with existing health conditions, and people who have high exposure (those who work, exercise, or spend extensive time out of doors).

For more detailed information about the AQI, visit: <http://www.epa.gov/airnow/aqibroch/aqi.html#5>

**The wildfire smoke in the area is finally being removed by the highly anticipated low-pressure system. Air quality is currently reported in the MODERATE or UNHEALTHY category in many areas due to yesterday's smoke impact effects on the long-term 24-hour reporting average. Currently, conditions are returning to more normal levels and are expected to continue to improve throughout the day. Expect air quality to return to the GOOD category and remain good through Monday. The State Burn Ban has been lifted in Bonner County however, open burning remains banned in most areas by local fire protection district rules due to the high fire danger. This message will be updated Monday August 18, or if conditions deteriorate.

Air Quality Advisory - Issue

Time / Date:	2:00 pm September 2, 2003
Location:	Boundary, Bonner, and Kootenai Counties
Action:	Health Advisory
Cause of Air Pollution:	Wildfires
AQI and AQI Category:	MODERATE—likely to persist in the moderate category through Wednesday afternoon before improving with winds forecasted from the west.
Pollutant (s):	Fine Particulates, PM2.5
Restrictions in Effect Until:	None
Next Update:	9/3/03
Contact:	Dan Redline or Mark Boyle at 208-769-1422

What is the Air Quality Index?

AQI	Category	Cautionary Statement
0-50	Good	None
51-100	Moderate	Unusually sensitive* people should consider limiting prolonged outdoor exertion.
101-150	Unhealthy for Sensitive Groups	Everyone should limit exertion outdoors.
151-200	Unhealthy	Everyone should limit exertion.
201-300	Very Unhealthy	Limit any exertion.
301-500	Hazardous	Stay indoors and avoid any exertion.

* Sensitive groups include children, the elderly, those with existing health conditions, and people who have high exposure (those who work, exercise, or spend extensive time out of doors).

For more detailed information about the AQI, visit:

<http://www.epa.gov/airnow/aqibroch/aqi.html#5>

Air Quality Advisory - Issue

Time / Date:	9:00 am September 3, 2003
Location:	Boundary, Bonner, Kootenai, and Benewah Counties
Action:	Health Advisory
Cause of Air Pollution:	Wildfires
AQI and AQI Category:	MODERATE—likely to persist in the moderate category through Thursday afternoon before improving with winds forecasted from the west.
Pollutant (s):	Fine Particulates, PM2.5
Restrictions in Effect Until:	None
Next Update:	9/4/03
Contact:	Dan Redline or Mark Boyle at 208-769-1422

What is the Air Quality Index?

AQI	Category	Cautionary Statement
0-50	Good	None
51-100	Moderate	Unusually sensitive* people should consider limiting prolonged outdoor exertion.
101-150	Unhealthy for Sensitive Groups	Everyone should limit exertion outdoors.
151-200	Unhealthy	Everyone should limit exertion.
201-300	Very Unhealthy	Limit any exertion.
301-500	Hazardous	Stay indoors and avoid any exertion.

* Sensitive groups include children, the elderly, those with existing health conditions, and people who have high exposure (those who work, exercise, or spend extensive time out of doors).

For more detailed information about the AQI, visit:
<http://www.epa.gov/airnow/aqibroch/aqi.html#5>

Air Quality Advisory - Issue

Time / Date:	10:00 am September 4, 2003
Location:	Boundary, Bonner, Kootenai, and Benewah Counties
Action:	Health Advisory
Cause of Air Pollution:	Wildfires
AQI and AQI Category:	MODERATE—likely to persist in the moderate category through Friday or the weekend before clearing out.
Pollutant (s):	Fine Particulates, PM2.5
Restrictions in Effect Until:	None
Next Update:	9/5/03
Contact:	Dan Redline or Mark Boyle at 208-769-1422

What is the Air Quality Index?

AQI	Category	Cautionary Statement
0-50	Good	None
51-100	Moderate	Unusually sensitive* people should consider limiting prolonged outdoor exertion.
101-150	Unhealthy for Sensitive Groups	Everyone should limit exertion outdoors.
151-200	Unhealthy	Everyone should limit exertion.
201-300	Very Unhealthy	Limit any exertion.
301-500	Hazardous	Stay indoors and avoid any exertion.

* Sensitive groups include children, the elderly, those with existing health conditions, and people who have high exposure (those who work, exercise, or spend extensive time out of doors).

For more detailed information about the AQI, visit:

<http://www.epa.gov/airnow/aqibroch/aqi.html#5>

Idaho Department of Environmental Quality • September 5, 2003 • For Immediate Release

Air Quality Advisory - Issue

Time / Date:	11:00 am September 5, 2003
Location:	Boundary, Bonner, Kootenai, Shoshone and Benewah Counties
Action:	Health Advisory, see MODERATE Caution statement below.
Cause of Air Pollution:	Wildfires
AQI and AQI Category:	MODERATE—likely to persist in the moderate category through Sunday when a cold front is forecasted to move into the area and improve ventilation.
Pollutant (s):	Fine Particulates, PM2.5
Restrictions in Effect Until:	None
Next Update:	9/7/03
Contact:	Dan Redline or Mark Boyle at 208-769-1422

What is the Air Quality Index?

AQI	Category	Cautionary Statement
0-50	Good	None
51-100	Moderate	Unusually sensitive* people should consider limiting prolonged outdoor exertion.
101-150	Unhealthy for Sensitive Groups	Everyone should limit exertion outdoors.
151-200	Unhealthy	Everyone should limit exertion.
201-300	Very Unhealthy	Limit any exertion.
301-500	Hazardous	Stay indoors and avoid any exertion.

* Sensitive groups include children, the elderly, those with existing health conditions, and people who have high exposure (those who work, exercise, or spend extensive time out of doors).

For more detailed information about the AQI, visit:

<http://www.epa.gov/airnow/aqibroch/aqi.html#5>

Why use Bonner County as a “Smoke Target?”

According to the Idaho Center for Vital Records and Health Statistics Data (1997)

- The **Idaho asthma mortality rate is 2.6 deaths per 100,000 population while the national asthma mortality rate is 2.1.**
- This rate (2.6) is an increase of 44% since 1984.
http://www2.state.id.us/dhw/asthma/fact_sheet.htm

Fourth leading cause of death in Idaho: Chronic Lower respiratory diseases;

Bronchitis, emphysema, asthma; other chronic lower respiratory diseases

<http://www.idcancer.org/annual%20reports/cancer%20in%20idaho%202000%20-%20color.pdf>

Idaho Health district with highest incidence of Lung and Bronchus Cancer:

District 1: The Idaho Panhandle with 74.1 per 100,000. This district has a higher than expected rate of lung and bronchus cancers (Expected: 105.4, Observed: 140)

Source: <http://www.idcancer.org/annual%20reports/cancer%20in%20idaho%202000%20-%20color.pdf>

Numbers of Bonner and Kootenai county residents without health insurance: 25-29%

Number of uninsured residents in Idaho who are in working families: 80%

Source: <http://www.idahouninsured.org/ispg10.30.pdf>

Bonner County residents living below the poverty line: 15.5% (1999 data) US Census

<http://quickfacts.census.gov/qfd/states/16/16017.html>

37.7% of all Bonner county resident households make an annual income of \$24,999 or less. Source: <http://censtats.census.gov/data/ID/05016017.pdf#page=3>

Medical Evidence Linking Increases in Particulate Air Pollution to Health Effects

- As particle concentrations increase there is an almost direct proportional increase in the death rate, according to the 1993 Six Cities Study conducted by Harvard University 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. 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: Estimates 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 2003 Burn Season

Acres burned on the CDA Reservation Lands:

2002: 23,403

2003: 24,422

Acres burned on the Rathdrum Prairie:

2002: 4800

2003: 3818

Total Grass Burn acres in Kootenai and Benewah for 2003: **28,240 acres**

Total Grass Burn acres in Kootenai and Benewah for 2002: 28,203 acres

Number of burn days on the CDA Reservation: **23**

Number of burn days on the Rathdrum Prairie: **7**

Total pounds of pollutants burned in 23 days in Kootenai and Benewah County:

14,873,443.20

Total pounds of toxics emitted during 23 days of burning in Kootenai and Benewah Co:

1,381,783.20

Number of Hotline Complaints: **791**

Date Most burning occurred:

August 27 with 6,817 acres burned

Weeks with highest level of Burning:

August 25 with 11,537 acres burned

September 3, with 9712 acres burned (And Air Quality Advisories issued for wildfire smoke)

September 22 with 11,635 acres burned

(Source: Spokesman Review, Nov. 9, 2003, "B.C. Fuming After Summer of Smoky Skies")