

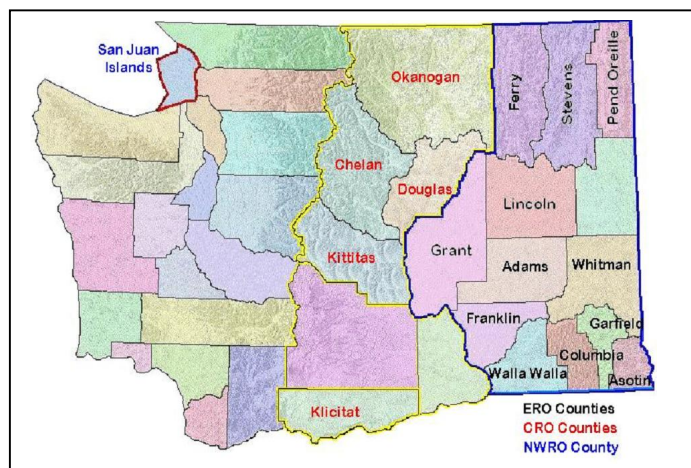


A Look at Agricultural and Outdoor Burning - 2005

Smoke from agricultural and outdoor burning can cause bronchial problems, asthma flare-ups, and increase the risk of dying from heart and lung disease. It also affects the environment by harming soil, water, crops, forest, wildlife, and visibility. Ecology's Air Quality Program Agricultural and Outdoor Burn Program dedicates itself to reducing the toxic effects of smoke on Washington residents. We do this through permitting programs (both Agricultural and Special Burn Permits), building strong working relationships with our city and county counterparts, and working closely with citizens and industries. This report summarizes the amount of agricultural burning allowed in Washington during 2005.

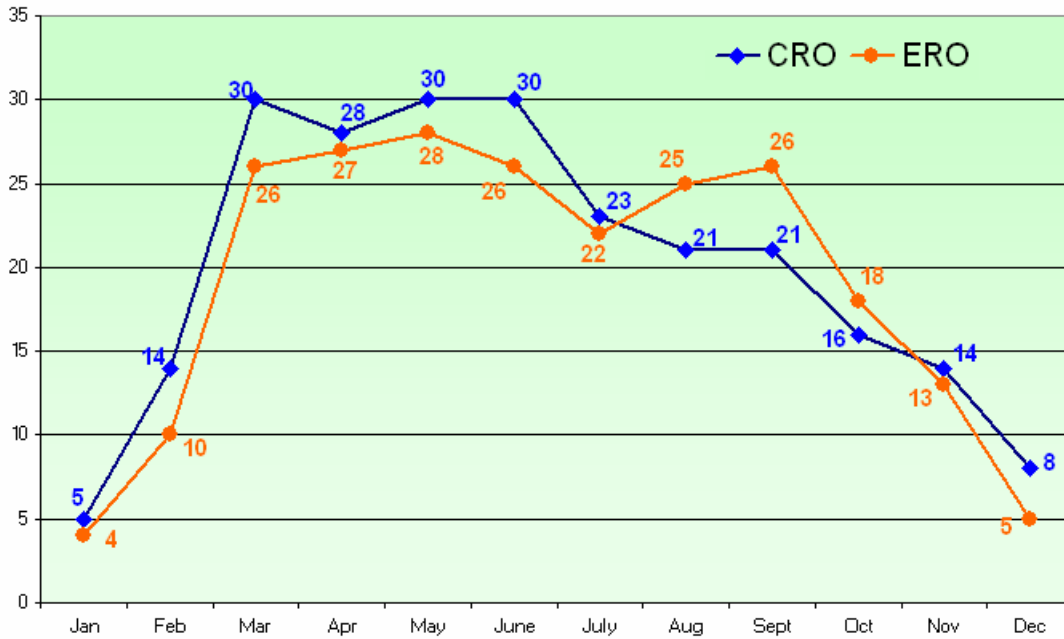
The goal of the Agricultural and Outdoor Burn Teams, as part of Ecology's Air Quality Program, is voluntary compliance -- persuading people and businesses to follow the law without imposing enforcement. We do this by talking with citizens, attending county meetings, and distributing Technical Assistance publications. The burn teams strive for compliance with the law through education and technical assistance; however, when these programs don't work, the Air Quality Program has the authority to issue penalties of up to \$10,000 per day for each violation.

The Agricultural and Outdoor Burn Teams regulate air quality throughout Washington. In counties with designated air authorities, the air authority performs the same function as Ecology. On the west side of the Cascades, the Northwest Regional Office (NWRO) regulates the San Juan Islands. Local air agencies regulate the other 22 counties in Western Washington. In Ecology's Central Region (CRO), two of the seven counties have local air authorities; the Air Quality Program is responsible for the other five. 12 of the 13 counties making up Ecology's Eastern Region (ERO) are regulated by Ecology. Spokane County has its own designated air agency.



The Air Quality Program's Central and Eastern Regional Office burn teams work with conservation districts, fire departments, growers, and the public throughout the year. During the two main agricultural burn seasons, the burn teams are responsible for helping growers get their permitted acres burned while preserving air quality.

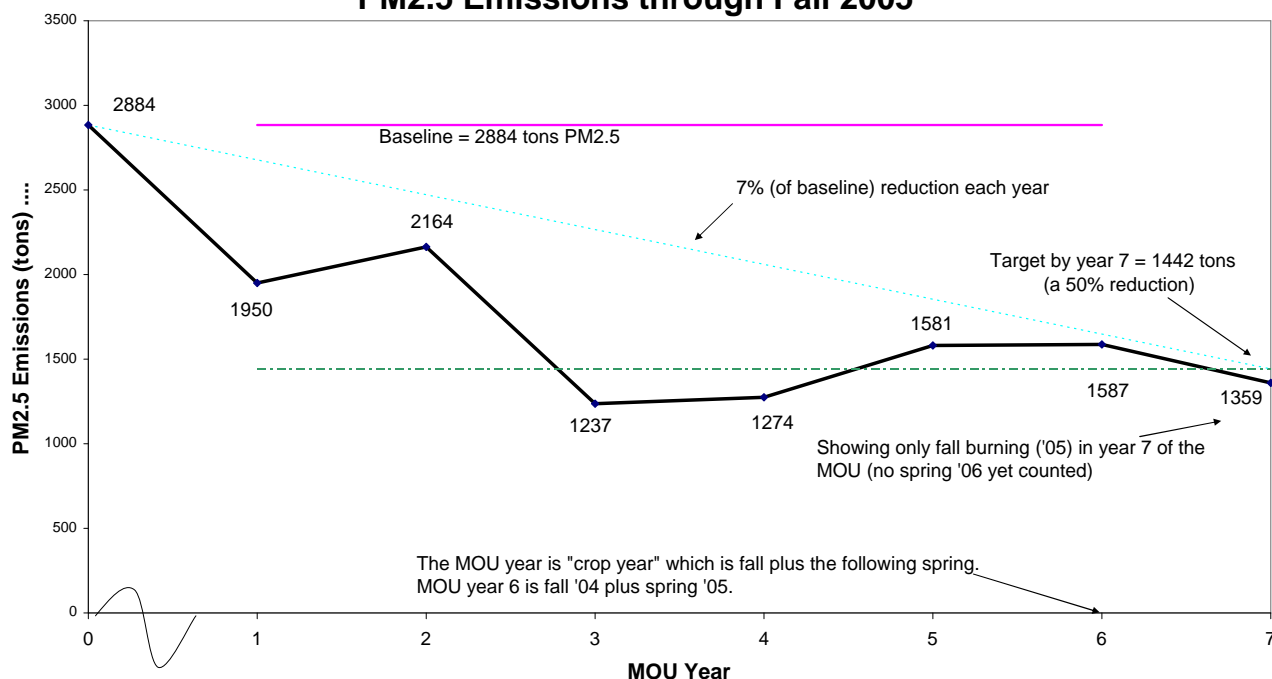
2005 Quick Facts
2005 Number of Days Burning Was Allowed By Month and Region



Agricultural Acres Permitted by County in 2005

COUNTY	Spot Burns	Bale Burns	Cereal Grains	Other Crops	Orchard Tear Out	CRP	TOTALS
Adams	82	10	4,831	133	13	406	5,475
Asotin	60	0	85	0	0	0	145
Chelan	0	0	0	0	101	0	101
Columbia	350	0	24,510	78	0	708	25,646
Douglas	14	0	5	320	228	0	567
Ferry	0	0	0	138	0	0	138
Franklin	20	8	10,698	691	165	1,516	13,098
Garfield	270	0	8,844	0	0	789	9,903
Grant	1	43	2,111	2,346	428	0	4,929
Kittitas	1	0	0	275	115	0	391
Klickitat	0	0	0	0	0	0	0
Lincoln	255	0	1,512	10	0	66	1,843
Okanogan	0	0	0	0	50	0	50
Pend Oreille	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0
Walla Walla	444	18	28,191	2,468	6	439	31,566
Whitman	1,552	0	41,702	2,854	0	605	46,713
TOTALS	3,049	79	122,489	9,313	1,106	4,529	140,565

Cereal Stubble Burning in Central and Eastern Washington PM2.5 Emissions through Fall 2005



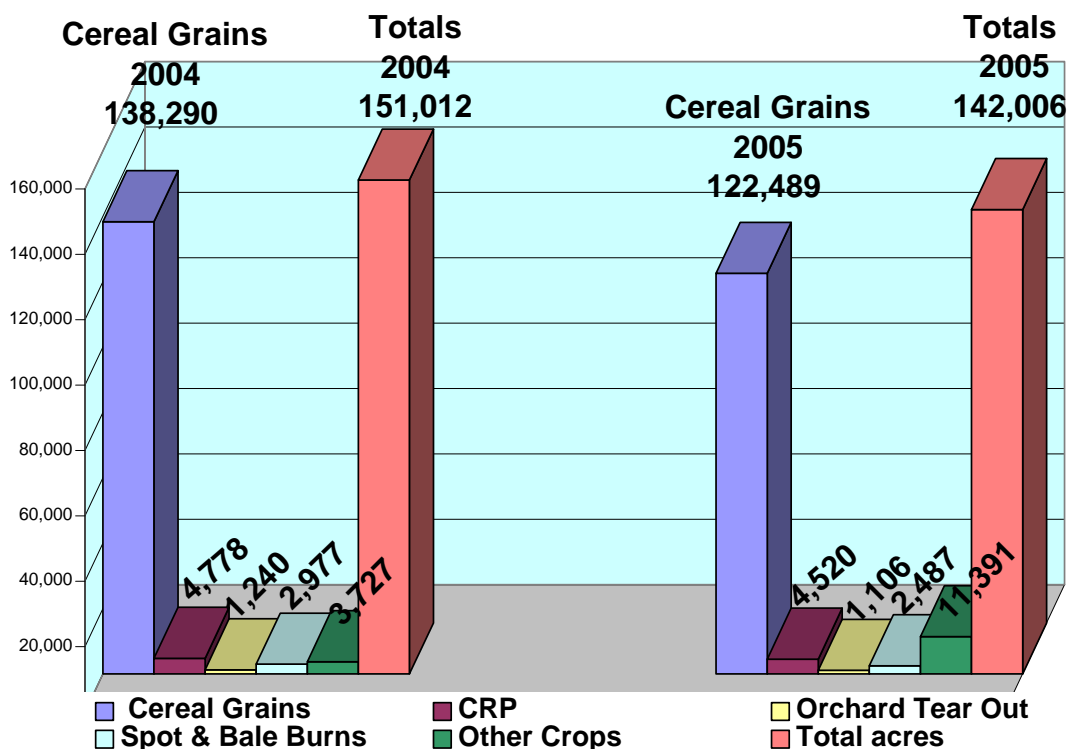
Comparing Acres Burned 2004 - 2005

The emissions reduction in cereal grain represented in the chart above is the result of a voluntary agreement between Ecology, the Washington State Department of Agriculture, and the Washington Association of Wheat Growers (WAWG). The goal of the agreement is to reduce field burning by 50 percent by 2006. Wheat growers met the agreed-to reduction in year three of the agreement. The number of burned acres rose in 2004, but decreased by nearly 4000 acres in 2005. The number of acres burned fluctuates from year to year. This is due, in part, to crop rotation and nature.

Although cereal grain stubble makes up the majority of burned acres, agricultural burning also includes acres of Conservation Reserve Program acres (CRP), Orchard Tear-Outs, Spot and Bale Burns, and Other Crop residue. In 2005, 140,897 agricultural acres were burned. Although stubble burning decreased by 15,801 acres from 2004 -2005, burning of Other Crop residue was up by 7,644 acres.

- Cereal grain stubble burns decreased by 15,801 acres .
- Conservation Reserve Program (CRP) acres decreased by 258 acres.
- Orchard Tear-Out burn acres were down by 134 acres.
- Spot and Bale Burns went down by 490 acres.
- Other Crops (all other agricultural crops) increased by 7,664 acres.

A Comparison of Burned Acres 2004-2005



Monitoring the Daily Air Quality and Sending Out the Daily Burn Decision

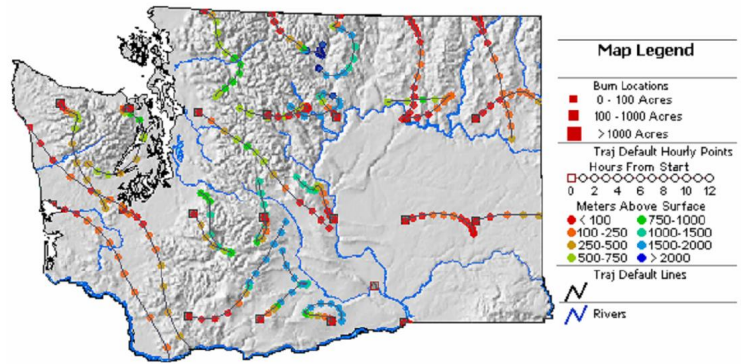
Ecology's air monitoring system is one of the important tools we use every day to help evaluate air quality. Staff ensure the air monitors are working correctly, providing data about air quality in locations throughout central and eastern Washington. In addition to the permanent monitors, we have two mobile monitors. These monitors are transported to areas where we think problems exist. The monitors gather data used to evaluate air quality. The information helps Ecology figure out ways to ease air quality problems in that area.

Every morning, a member of the burn team prints out the data from each monitoring site and uses this to make the daily burn decision. The monitors tell us where air quality is good as well as show us areas impacted by wildfire smoke so we don't contribute more smoke to the area. This information is available to the public on the Ecology web site at <https://fortress.wa.gov/ecy/aqp/AgBurn/burncall.shtml>, and can help people plan their daily activities.



One of Ecology's air quality monitors

Burn Team Members also use *BlueSkyRains* and *ClearSky* computer models. *BlueSkyRains*, created by the U.S. Forest Service, identifies the locations of current wildfires and predicts wildfire smoke movement. *ClearSky* helps predict where smoke from agricultural burns will go the next day. Through a set of calculations, *ClearSky* utilizes the best available data, allowing Burn Team members to create scenarios the afternoon before they are needed.



Example of BlueSky Information showing paths of wildfire smoke.

The next morning, Burn Team members evaluate the scenarios and decide where burning is allowed. Burn Team members use these tools along with the air monitoring network, the MM5 computer ventilation models, National Weather Service information, and their professional judgment to determine if or how much smoke is allowed in an airshed while still protecting people from the detrimental effects of smoke.

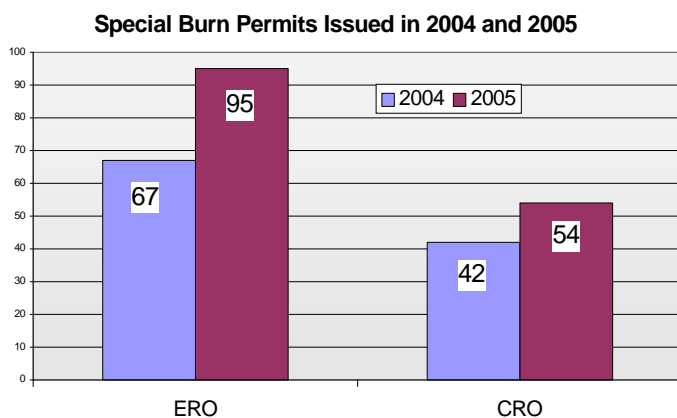
Non-Agricultural Burning Permits

In addition to agricultural burning, Ecology issues special burn permits for other kinds of burning such as land clearing, fire training, and slash piles. When an area needs to be cleared and no other reasonable alternative is available, Ecology may issue a land clearing or special burn permit. This allows Ecology to control other kinds of burning and the emissions they produce.

All permit holders must obey the daily burn decision as part of their permit conditions. This allows Ecology to factor smoke from other sources into each day's burn decision. Special burn permits include those:

- not considered agricultural;
- not regulated by a residential burn program;
- specifically exempted by law.

Prohibited materials are not allowed to be mixed in with natural vegetation.



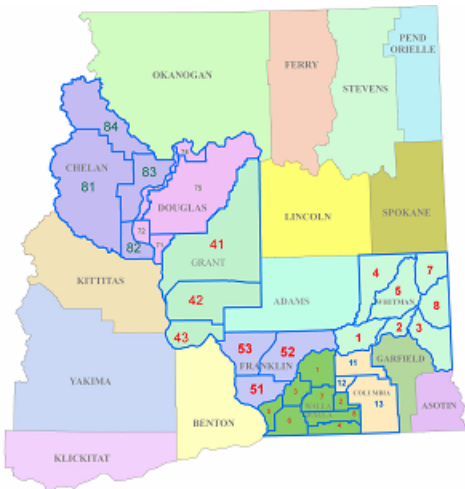


This was described as natural vegetation in a Special Burn Application. Ecology denied the permit based on the discovery of prohibited materials in the pile.

Metered Burning

Ecology has increased the acres and days that we meter. Metering affects those with agricultural and special burn permits. Metering occurs when Ecology limits the number of acres to be burned in specific county burn zones or geographic locations. Ecology limits burning based on field location and size, wind speed and direction, ventilation, air monitor readings, and other factors. Metering is accomplished three ways:

- The grower calls Ecology before 10:30 a.m. to get permission to burn a specific number of acres. The grower is given start and end times for burning as well as wind direction.
- Ecology contacts growers in specific locations and gives them permission to burn. This includes the number of acres they can burn, burn times, and wind direction. (In a few counties, the conservation district meters out acres based on the number of acres and locations Ecology gives them.)
- Ecology limits the number of acres each grower is allowed to burn. We also determine start and end times for burning as well as wind direction.



Metering is most helpful during the peak agricultural burn seasons when many growers need to burn. Several counties are divided into zones. This is another way to refine the burn decision. The geography and density of growers, town locations, prevalent wind directions, and irrigated versus non-irrigated fields have an affect on the burn decision. During the busy season, there are many days where different zones within a county have different decisions.

Metering also allows limited burning on marginal days. Working with the growers, Ecology has helped maintain and improve air quality compared to the pre-metering days.

No Burn Days

Burn team members also assign no burn areas when ventilation is poor or smoke from other sources, such as wildfires or prescribed fires, create elevated air monitor readings. Ecology works closely with city fire departments, county fire districts, county governments, and other state agencies with control over land. During the summer when fire danger is high, if a fire protection agency calls a burn ban, then no burning is allowed.

Responding to Smoke Complaints

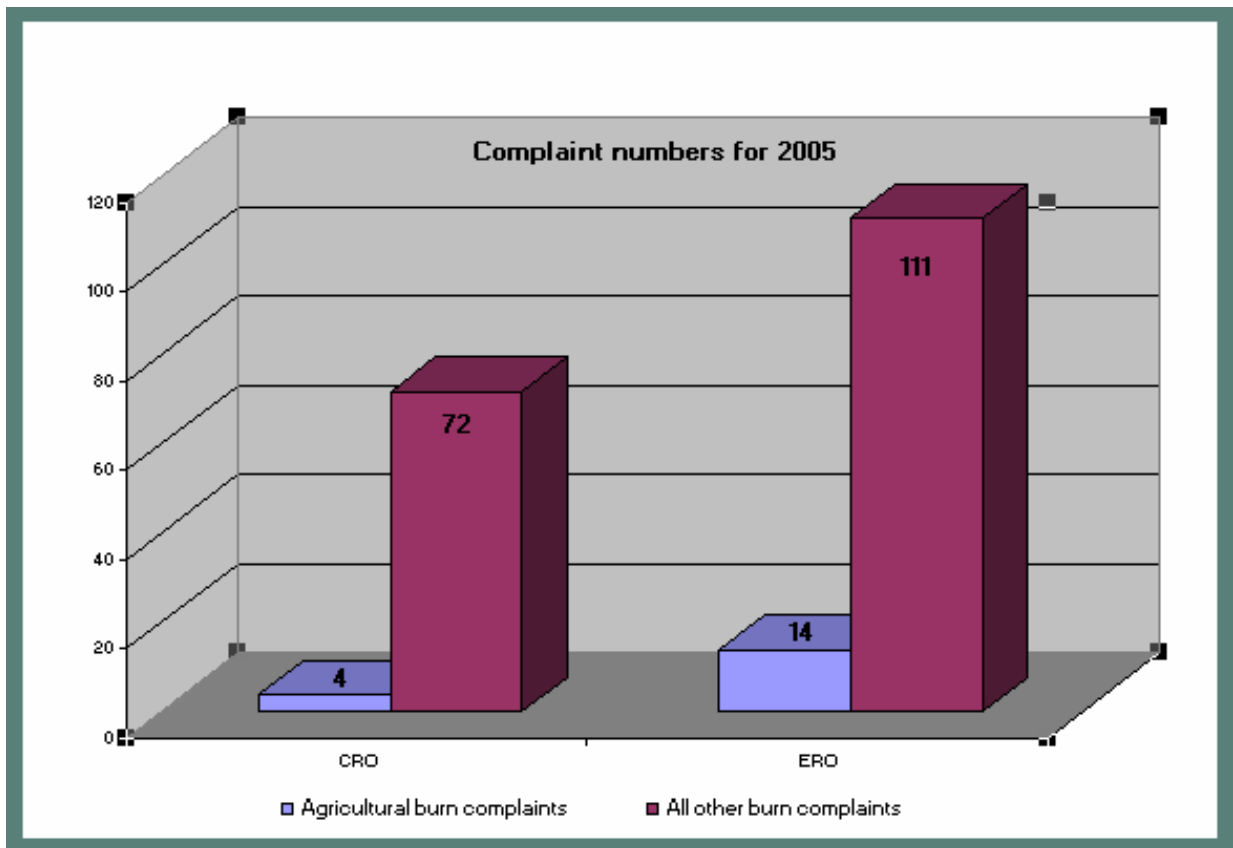
Another important function of the burn team is to respond to smoke complaints. Smoke complaints are received by e-mail, postal mail, phone calls directly to the burn team and to the complaint line, and in person. The toll-free smoke complaint phone number is 1-800-406-5322.



The School Fire was the largest wildfire in the lower 48 states in 2005. It started when a pine tree fell on an electric transformer, sparking a grass fire. Between August 2 and August 19, 2005, the fire burned nearly 52,000 acres in Columbia and Garfield Counties. Over 1600 firefighters fought the fire. While no one was killed, more than 100 homes and 100 outbuildings were burned.

All calls to the complaint line are routed to an ERO burn team member. ERO refers the complaint to the appropriate agency or Ecology region, or enters the complaint into the environmental reports tracking system (ERTS). All complaints are responded to. Many times, a complaint is an opportunity to inform the public while at the same time educating the burner concerning about the burning legally. For those who burning illegally, documentation of complaints and responses, including technical assistance, provide supporting information for enforcement.

The burn team receives more complaints about outdoor burning (burn barrels, prohibited materials, nuisance smoke, prescribed burns, and wildfires) than about agricultural burning. The following chart shows the difference in complaints for agricultural burning versus other types of burning.



Agricultural Burning Practices and Research Task Force

The Washington State Clean Air Act established the Agricultural Burning Practices and Research Task Force (aka Agricultural Task Force) in RCW 70.94.650. The goal of the task force is to reduce air pollution from agricultural burning. Agricultural Task Force meetings are open to the public. Anyone interested in agricultural burning is welcome to present their concern during a meeting. Task Force members are the decision-makers. Members include:

2005 Agricultural Task Force Membership

Name	Representing
Grant Pfeifer- Chair	WA State Department of Ecology
Gretchen Borck	Agricultural Community
Michael Bush	Academia (Tree Fruit)
Larry Cochran	Conservation Districts
John Cornwall	Grass Seed Industry
Bob Gore	WA State Department of Agriculture
Michael Ingham	Agricultural Community
William Johnston	Academia (Soil and Crop)
Dave Lauer	Eastern Washington Local Air Authorities
Sverre Vedal	Public Health

The Agricultural Task Force meets four times a year to:

- review and establish permit fees,
- identify and provide grant money for research about alternatives to burning,
- review, develop, and adopt Best Management Practices (BMP's) for growers.

Four BMPs have been adopted by the Task Force:

- Cereal Grains
- Non-Cereal Grains
- Orchard Tear-Outs
- Bale and Spot Burning

All Task Force-related documents are available on the Agricultural Task Force web site:
http://www.ecy.wa.gov/programs/air/aginfo/Task_force.htm

If you need this document in another format, please contact Tami Dahlgren at (360) 407-6800. If you are a person with a speech or hearing impairment, call 711, Or 1-800-833-6388