



2003 ANNUAL REPORT

WASHINGTON STATE AGRICULTURAL BURNING PROGRAM

Agricultural Burning Program Overview

The Washington State Department of Ecology (Ecology) agricultural burning program is administered by a team of four people in the Eastern Regional Office (Spokane), and three people in the Central Regional Office (Yakima). While these individuals have many other duties, they are primarily responsible for regulating all outdoor burning with the exception of silvicultural (forestry) burning. This responsibility applies to all counties east of the Cascades, excluding Spokane, Yakima and Benton counties, which have local air pollution control authorities.

Agricultural burning consists of the burning of vegetative material from agricultural operations, fields, piles and /or spots for disease or pest (weeds, disease, and insects) control and removal of excess residue.

Ecology's regulation of the agricultural community includes: approving or denying permits for agricultural burns, making the daily burn decision, conducting field reviews, providing technical assistance and enforcing permit requirements.

Ecology administers the program with the assistance of local county permitting authorities, usually conservation districts. Please see page eight for a list of the 2003 permitting offices.



The permitting program has been in effect since the early 1990s, but has evolved substantially over the years.

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2003 Quick Facts:

1,227	Permits Issued
144,565	Total Acres Permitted all crop types
129,301	Total Acres Permitted cereal grain only

2003 Summary



Washington State Law says that all agricultural burning requires a permit with the exception of annual orchard prunings, fence rows, ditch banks and tumble weeds. RCW 70.94.650



In Washington's diverse agricultural community, burning occurs for many different reasons and takes place during nearly every month of the year. Ecology's agricultural burning permits are classified into three different categories: field, orchard removal, and spot burn.

During 2003, there were 1,227 permits issued, which included 664 field permits, 98 orchard removal permits, and 304 spot burn permits (including 11 bale burn permits).

For tracking purposes, the calendar year is broken into two separate burn seasons:

- Spring burning season takes place from January through the end of June, with the majority of field burning taking place during the months of March and April.
- Fall burning season spans July through December, with the majority of the field burning occurring in September and October.
- Orchard removal burning generally occurs over the winter months of November through April.

The most prevalent field residue burned in Washington is cereal grain stubble, which accounts for nearly 89 percent of the total acres burned in the state. See page six for additional information on cereal grain field burning.

Other crop residues that are also burned include alfalfa for seed, timothy hay, corn, asparagus, beans, and turnips. The complete list of "other crops" can be obtained from Ecology. These "noncereal" crops accounted for 8,641 permitted acres or 4 percent of the total field burning for 2003.

In the orchard industry, only orchard tear-out or removal requires an agricultural burning permit. Annual prunings can be burned without a permit. In 2003, there were 98 permits issued for 1,240 acres of orchard tear-out.

Another type of burning that is allowed with an agricultural burning permit is Conservation Reserve Program (CRP) renovation. In 2003, 5,383 acres of CRP were burned under 47 permits.

Why do we regulate agricultural burning?



Smoke from agricultural burning has long been an air quality and public health concern. Although Washington's Clean Air Law states that agricultural burning is allowable, it does not allow smoke from fires to adversely affect people.

An estimated 2,000 tons of particulate air pollution comes from agricultural burning in Washington. Smoke from agricultural burning includes particulate matter, carbon monoxide, and volatile organic compounds. These pollutants can aggravate heart and lung disease, irritate eyes, throat, and sinuses, trigger headaches and allergies, and increase the severity of pre-existing health problems such as asthma, emphysema, pneumonia and bronchitis.

During the mid-1990's, hundreds of complaints were received every year regarding smoke from agricultural burning. The number of complaints decreased substantially after Ecology implemented the burn day approval process, though a few complaints are still received each year. While complaints stemming from agricultural burning have declined, the number of complaints regarding other types of "outdoor burning" has increased.

Air Quality and Smoke Complaints

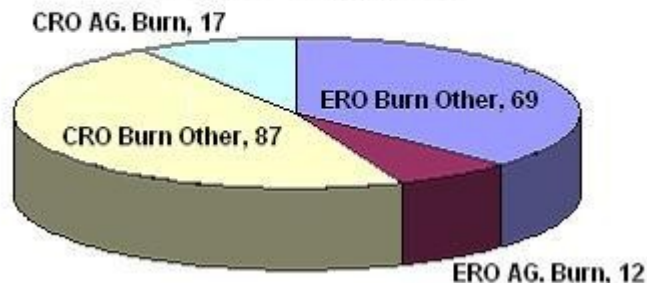
If you see someone you think is burning illegally or if you are being affected by smoke, contact Ecology at:

1-866-211-6284

-or-

www.ecy.wa.gov/programs/air/aginfo/smokecomplaints.html

Agricultural and Other Burning Complaints received by ERO and CRO during 2003
Total 185 Complaints



During 2003 the Eastern Regional Office (ERO) and the Central Regional Office (CRO) received 29 agricultural smoke complaints.

Agricultural Burning Health Effects & Emissions Research

The following studies were either in progress or completed in 2003:

- Quantifying Emissions from Cereal Grain Field Burning
- Quantifying Emissions from Grass Seed Field Burning
- Exposure and Health Assessment from Agricultural Burning
- Farmer Exposure Study

Please contact Ecology for further information regarding these studies.

Agricultural Burning Practices and Research Task Force

The Agricultural Burning Practices and Research Task Force (Task Force) was established by section (RCW) 70.94.650 of the Washington Clean Air Act. The goal of the Task Force is to work toward a reduction in air pollution emissions from agricultural burning.

The Task Force, which is chaired by the Department of Ecology, has representation from diverse interests. The representatives include Eastern Washington local air authorities, the agricultural community, the Department of Agriculture, local universities or colleges, public health, and the Conservation Districts (CD's).

This group is empowered by the Clean Air Act to develop best management practices (BMP's) to reduce air emissions from agricultural activities, determine the level of permit fees, and identify beneficial research opportunities.

The Task Force met three times in 2003 and recommended awarding \$165,000 in grant money to projects identifying alternatives to agricultural burning.

Task Force Members:

Grant Pfeifer, Chair	Department of Ecology
John Cornwall	Agricultural Community
Jay Penner	Agricultural Community
Mark Wagoner	Agricultural Community
Sally Liu	Public Health
Bob Gore	Department of Agriculture
Michael Bush	Universities or Colleges
William Johnston	Universities or Colleges
Larry Cochran	Conservation Districts
Dave Lauer	Local Air Authorities

For additional information about Task Force membership, ongoing and completed research, or information about Task Force meeting schedules, log on to:

http://www.ecy.wa.gov/programs/air/aginfo/Task_force.htm

or contact Ecology at 509-329-3574.

A portion of the money that growers pay when obtaining a permit is set aside for research into alternatives to burning. The Task Force reviews research proposals and recommends projects for funding.

Research Projects funded in 2003:

Straw Management and Crop Rotation Alternatives to Stubble Burning (WSU/Cunningham Farm)

Direct Seeding into Heavy irrigated Stubble as an Alternative to Burning (WSU/Lind Farm)


Utilization of Wheat Straw and of Bluegrass and Alfalfa Seed Grass Straws for Production of Paper and Molded Products (Lewis Engineering)

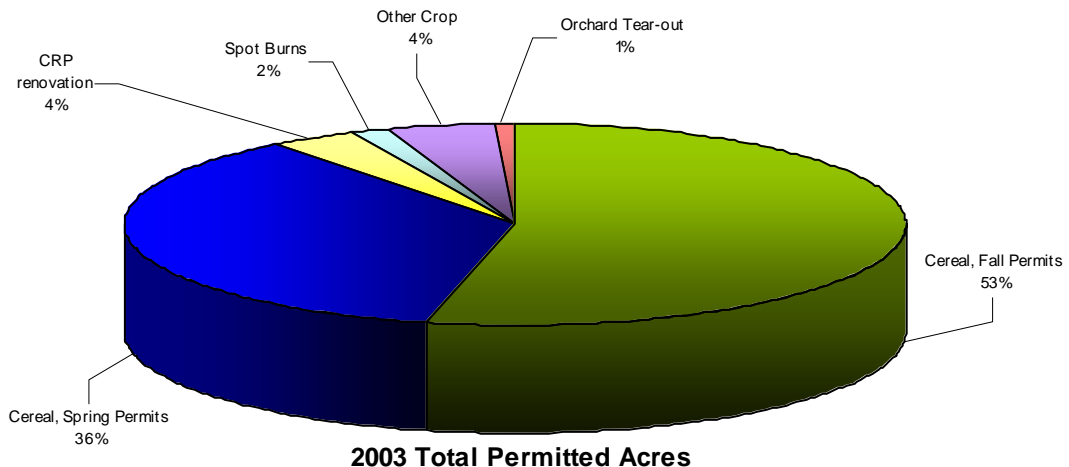
Development of High Yielding Turf-type Kentucky Bluegrass Varieties for Non-thermal Management in Washington State (WSU)

Ag Burn Research- 2003



Agricultural Acres Permitted for burning in 2003, County/Crop type Summary

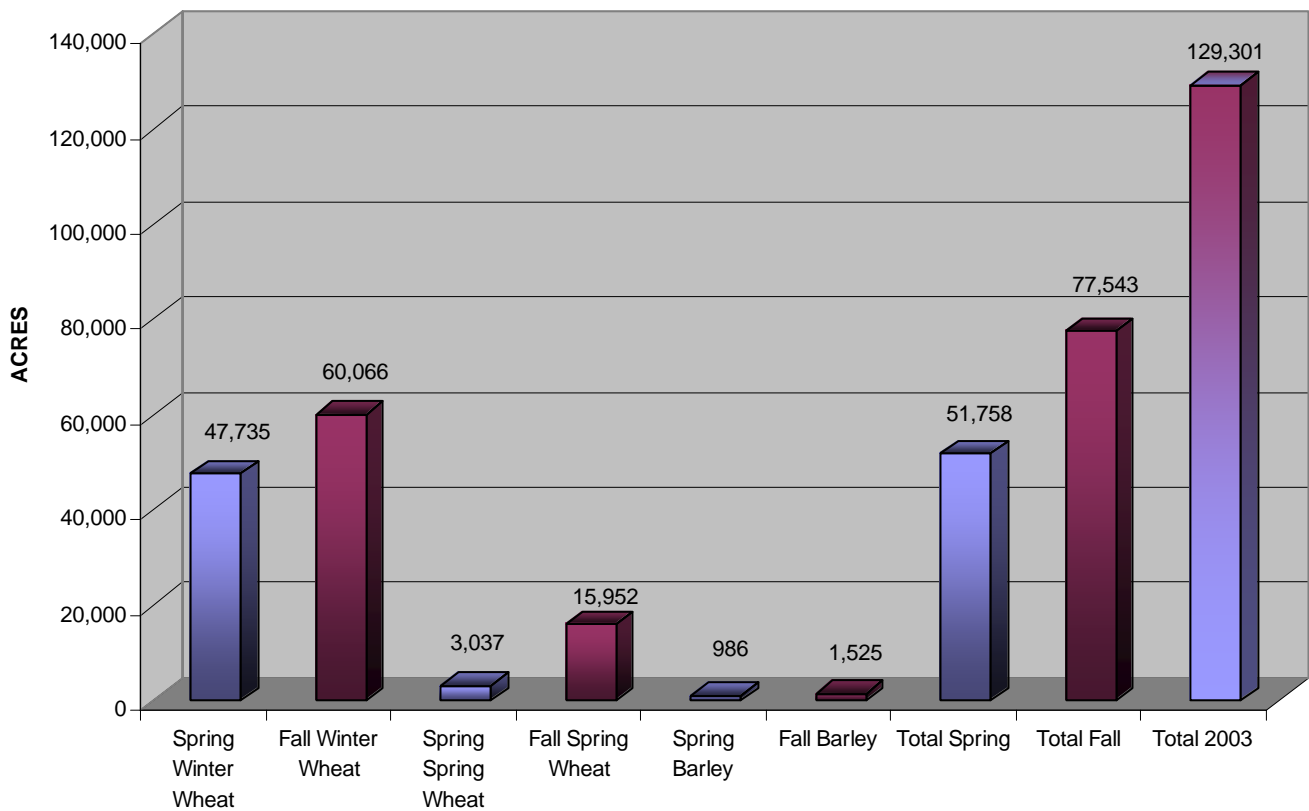
County	Cereal Grain (Fall & Spring)	CRP (Conservation reserve program)	Orchard Tear-out	Other Crops (including spot burns)	Total Acres
Adams	3,663	1,212	-	448	5,323
Asotin	98	80	-	60	238
Benton	782	-	109	127	1,018
Chelan	-	-	83	-	83
Columbia	37,876	100	5	288	38,269
Douglas	489	-	221	48	758
Franklin	8,319	65	323	204	8,911
Garfield	9,716	653	-	259	10,628
Grant	4,963	-	370	794	6,127
Kittitas	-	-	55	258	313
Lincoln	2,072	-	-	167	2,239
NWAPA (Whatcom, Island Skagit ,counties)	-	-	3	798	801
Okanogan	-	-	63	-	63
Spokane	-	-	-	11	11
Walla Walla	31,859	2,794	8	3,765	38,426
Whitman	29,464	479	-	1,414	31,357
TOTAL 	129,301	5,383	1,240	8,641	144,565



Cereal Grain Burning

The burning of cereal grain (wheat, barley) residue makes up by far the largest number of acres of agricultural burning in Washington. The Palouse and Columbia Basin regions grow some of the highest yielding wheat in the world, and the straw (stubble) from these crops is difficult for farmers to manage without the use of fire. In 2003 Columbia County had the highest number of cereal acres burned, followed by Whitman and Walla Walla. (See table on pg. 5)

2003 Total Cereal Permitted Acres



Cereal Grain Summary– Calendar Year 2003

<u>Spring 2003</u>	<u>permitted acres</u>	<u>Fall 2003</u>	<u>permitted acres</u>
Winter Wheat.....	47,753	Winter Wheat.....	60,066
Spring Wheat.....	3,037	Spring Wheat.....	15,952
Barley.....	986	Barley.....	1,525
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Total spring cereal.....	51,758	Total fall cereal.....	77,543

Cereal Grain Burning Emissions Reduction Agreement

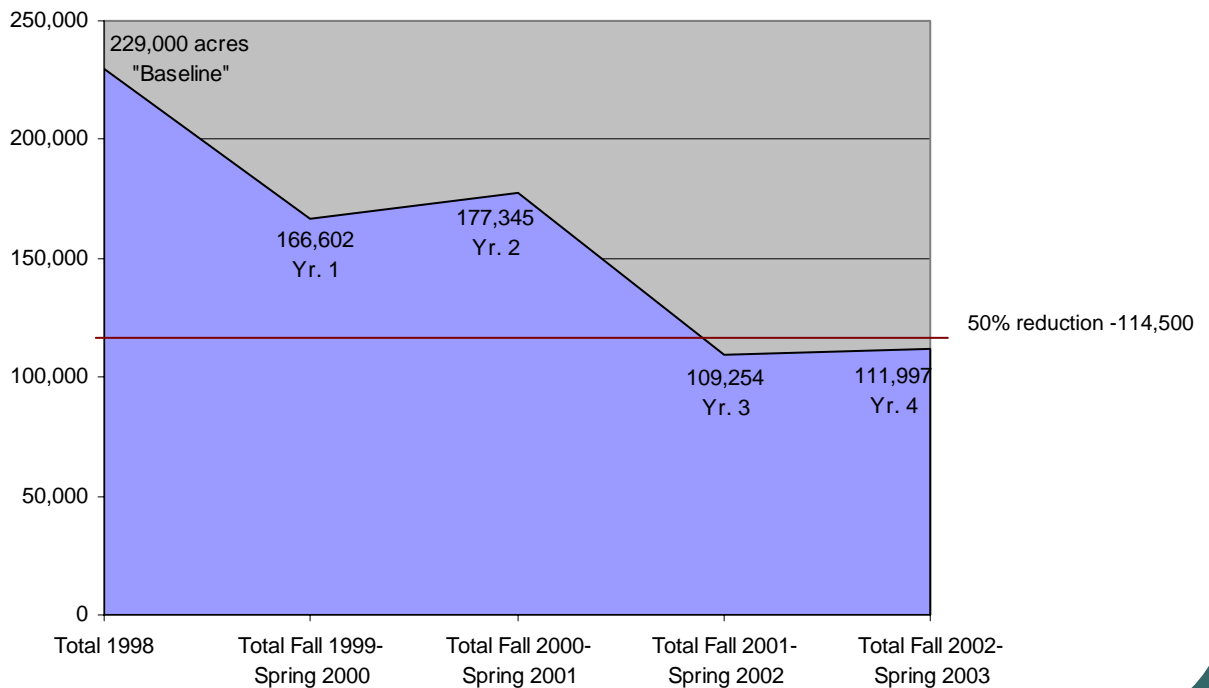
A Memorandum of Understanding (MOU) between Ecology, the Department of Agriculture and the Washington Association of Wheat Growers (WAWG) was signed in early 1999. This voluntary agreement outlined a plan to reduce field burning by 7 percent per year, with the goal of reducing emissions from cereal grain field burning by 50 percent by 2006.

The MOU baseline of emission reduction was based on total acres permitted for burning of cereal grain during the calendar year 1998. The actual reductions, however, are based on crop year total (fall/spring). This is due to the fact that the burning occurring in the spring season is actually burning of the previous fall's residue.

The graph below depicts the annual reductions from the established baseline of 229,000 burned acres. The 50 percent reduction goal was achieved by year three of the agreement.



MOU STATUS



section 090303

Adams	Adams Conservation District	(509) 659-1553
Asotin	Asotin Conservation District	(509) 758-8012
Benton	Benton Clean Air Authority	(509) 943-3396
Columbia	Columbia Conservation District	(509) 382-4773
Franklin	Franklin Conservation District	(509) 545-8546
Garfield	Pomeroy Conservation District	(509) 843-1998
Grant	Upper Grant Conservation District	(509) 754-0195
Spokane	Spokane County Air Pollution Control Authority	(509) 477-4727
Walla Walla	Walla Walla Conservation District	(509) 522-6340
Whitman	Palouse-Rock Lake Conservation District	(509) 648-3680
	Palouse Conservation District	(509) 332-4101
	Pine Creek Conservation District	(509) 285-5122
	Whitman Conservation District	(509) 397-4636
Yakima	Yakima Regional Clean Air Authority	(509) 574-1411
Chelan, Douglas, Kittitas, Klickitat, Okanogan	Department of Ecology– Central Region	(509) 575-2490
Lincoln, Stevens, Ferry, Pend Oreille	Department of Ecology– Eastern Region	(509) 329-3400

Outdoor Burning Other than Agricultural — Basic Information

The permitting offices listed above can issue all types of agricultural permits– for all other types of outdoor burning (except for commercial forest burning), you must contact Ecology .

- The only material that can be burned in an outdoor fire is natural vegetation.
- Many types of outdoor burning require a written permit, – Please contact Ecology to find out if your fire requires one.
- You must notify your fire protection agency prior to lighting any outdoor fire.
- Burn barrels are *illegal* in the state of Washington.
- Some counties administer their own land clearing permitting programs and use Ecology’s daily burn/no burn decision, i.e. Chelan, Okanogan, and Walla Walla.

For further information, contact Ecology Offices in Yakima or Spokane, depending on your county:

Central Regional Office:
Chelan, Douglas, Kittitas, Klickitat, & Okanogan

Eastern Regional Office:
Adams, Asotin, Columbia, Franklin, Garfield, Grant, Ferry, Lincoln, Pend Oreille, Stevens, Walla Walla, & Whitman

Special Burn Permits, 2003
These permits range from habitat rehabilitation, fire training to land clearing. Ecology issued 77 special burn permits, in Eastern Washington.

Ecology's Daily Agricultural Burn Decision

Ecology makes daily burn decisions in order to allow burning to occur only on days when smoke is most likely to disperse without affecting people.

The main types of information Ecology uses to make these burn/no burn decision are:

- Current and forecasted weather, and wind direction.
- Existing air quality, from both air quality monitors and local observations or complaints.
- Permitted acreage by location, taking into account those permits with special needs such as being near roads, towns, schools, and other smoke sensitive areas.

To learn more about how Ecology makes these decisions, or to sign up to receive the daily burn decision, please see Ecology's Agricultural Burn Website at:

http://www.ecy.wa.gov/programs/air/aginfo/agricultural_homepage.htm

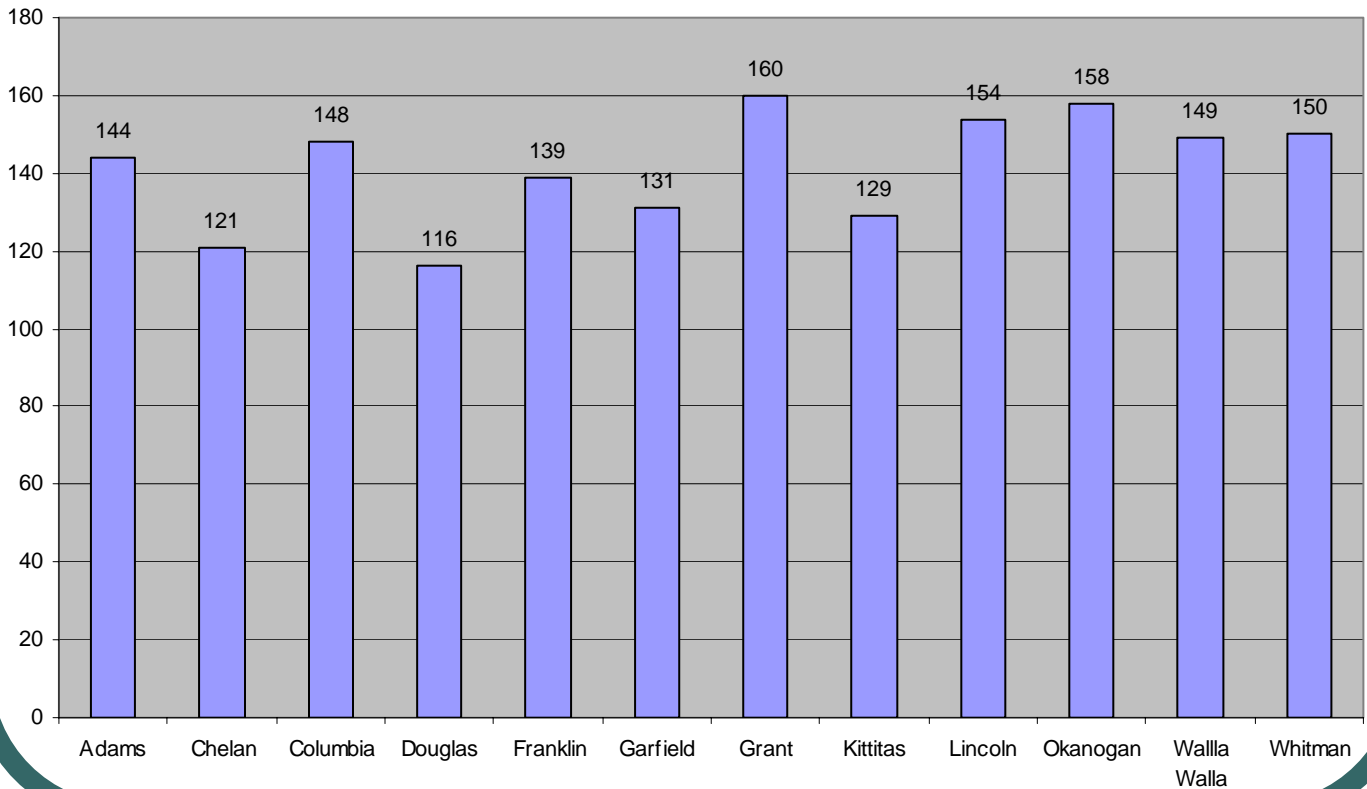


Poor smoke dispersion as viewed from the summit of Steptoe Butte in Whitman County

Burn Days 2003

The chart below illustrates the number of burn days per county, in 2003. Burn days include all four types of daily burn decisions: open, limited, metered, and special.

Burn Days in 2003 by County



BURN DECISIONS AND MONITORS

Types of burn calls (decisions):

No Burn: Absolutely no burning allowed, with the exception of harrow piles/ straw dumps, etc. that are impeding progress

Burn: Burning allowed with Ecology and fire-district approval during hours listed and with local wind conditions taken into consideration. Burning of all permitted acreage is allowed during specific hours and in specific locations.

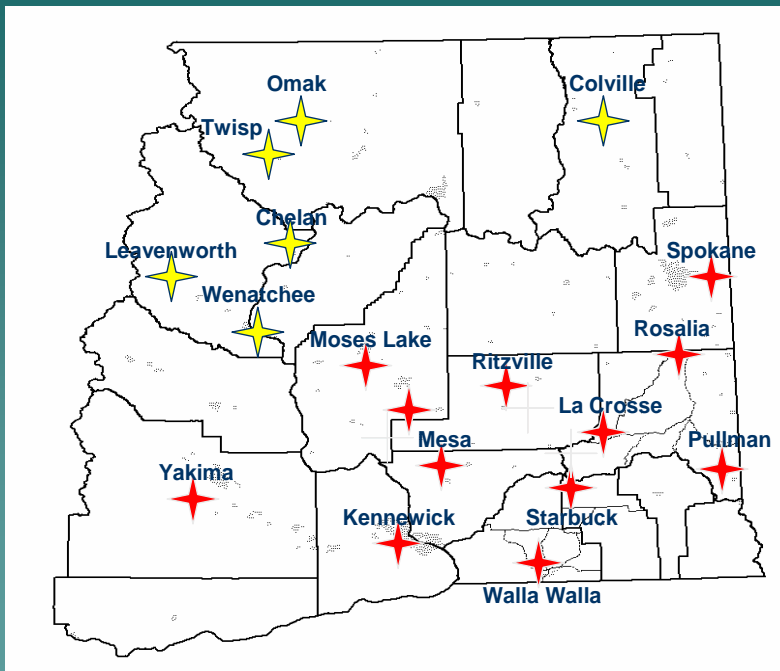
Limited: Acreage per grower listed and/or by specific location during specific hours with fire district approval.

Metered: No burn unless directly contacted by Ecology or permitting authority with specific permission and specific ignition time. On a metered call a set amount of acres per zone or specific geographical area will be distributed to various growers on a staggered ignition schedule, with fire district approval.

Smoke Impact Monitors

Ecology Operated:

- Spokane
- Kennewick
- Yakima
- Ritzville
- Pullman
- Walla Walla
- Moses Lake
- Mesa
- Starbuck
- La Crosse
- Rosalia



U.S. Forest Service Operated:

- Wenatchee
- Leavenworth
- Chelan
- Twisp
- Omak
- Colville

These air quality monitors measure particulate matter 2.5 microns or less. Our Eastern Washington monitoring network is used to inform the public about our air quality, protect public health, understand air pollution impacts, and track federal air quality standards in Washington state.