

# Brazilian Burning Season Starts

By Liana John

## Fire Uses and Monitoring

The Southern Hemisphere winter is the dry season in almost all Brazilian territories. The only two regions that get rainfall in this season in the country are the northeastern coastline and the far North Amazon (that, in fact, is in the Northern Hemisphere). With the dryness of the vegetation comes the burning season. The fire is an agricultural tool in Brazil to prepare the soil, control pests and weeds, renew pastures and facilitate some crops, such as sugar cane. Therefore, fires are started by farmers all over the country (and not only in the Amazon Basin) from June until October or November, when heavy rainfalls do not allow the burning anymore.

Sometimes the burning gets out of control and also burn natural vegetation — especially the savannah-like vegetation — and planted forests. The uncut rainforests — such as the Amazon and the Atlantic forests — are very seldom burned. Those kinds of forests are normally too humid to burn and only catch fire after a very serious drought that doesn't happen frequently. If burning occurs on pristine rainforest areas, it usually means a deforestation has taken place on that site.

Concerned about all the bad environmental and economical effects of the burning, a monitoring system has been set by the National Institute for Space Research, INPE, since 1988, using NOAA satellite images to spot the fire points. The data is converted in digital maps by the Environmental Monitoring Center, NMA, and sent to governmental agencies and the press, so controlling measures can be taken and the general public knows what is happening. Those maps and their interpretation are distributed by Agencia Estado News Wire Service every week, from June to October. Those maps and text will also be available at BBS and e-mail this year. The English version will be sent to FireNet monthly.

## Very Low Records this June

During the first month of burn monitoring this year the records have been extraordinarily low, if compared with the last two years. The NOAA satellites have registered 1,856 fire points all over Brazil. This equals only 28% of the 6,635 fire points detected in June of 1993 and 35% of the 5,363 fire points registered in June of 1992. Each fire point is one fire front that can have many

sizes, so that data cannot be translated into area, but gives an idea of fire concentrations and number of farmers using fire (either if authorized or not).

Although those low records are good news to environmentalists, researchers fear they will not remain low in July and August. The fire points shall skyrocket on Brazilian South and Southeastern regions due to a frost that hit plantations, pastures and natural vegetation. "With leaves and branches dried by the frost all over, the fires will have more fuel, will reach broader areas, earlier this year and can get out of control easily", says Dr. Evaristo Eduardo de Miranda, Ecology Agronomist and ECOFORCE researcher.

During June, the main fire points concentrations occurred in the Southeastern and Center-West Brazilian regions, with some records also in Southern Amazon Basin. On the first two regions the major part of the burning occurred on sugarcane plantations and on agricultural areas being prepared for winter crops (rye, oat, wheat and irrigated beans). In the Center-West region, the fires also hit planted and natural pastures, in some cases spreading to the savanna vegetation, locally called "cerrado". In Sao Paulo State, the

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only state in Brazil where the environmental agency is organized to control burning, fire on cotton plantations and sugar cane plantations is authorized to control pests and facilitate harvesting. All the other burning is punished with fines and controlled with the aid of satellite data and forest guards. Despite the control, satellites registered 466 fire points in Sao Paulo this June. According to the State Environmental Agency 55% of these were sugar cane plantations, 12% native vegetation, 11% pastures or roadside grasses and 7% planted eucalypts and pine forests.

In the other states the forest police is not mobilized and there are no statistics of the vegetation burned. The only records available from sat-

ellite. The kind of vegetation burned is deduced by comparison of NOAA images with Landsat images, where the different land uses can be identified.

Last June, besides the Sao Paulo sugar cane plantations, main fire point concentrations occurred in the Tombador and Roncador Mountain Chains and around Cuiaba, in Mato Grosso State; at far Northwest and Southeast Goias State; at the Mangabeiras highlands, Bananal Island and Araguaia National Park, in Tocantins State. At all those sites the main vegetation is cerrado, with agricultural lands and pastures. The far West Bahia state also burned. This is a degraded area, with lots of pastures.

Some isolated firepoints were detected in inland Amazonas, Para and Rondonia States. The records were very low, but those places usually do not burn until September or October, so those records could be signals of newly deforested areas, especially the ones spotted at the Guapore Valley, at Rondonia, a preserved area on the Brazil-Bolivia border.

*Liana John is a writer for the Agencia Estado News Wire Service. This article is based on NOAA satellite data processed by the Brazilian National Institute of Space Research (INPE) and the Brazilian Environmental Monitoring Center (NMA) with the data interpretation of the non-governmental organization ECOFORCE researchers.*