



INTERNATIONAL FOREST FIRE NEWS

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United Nations

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EDITORIAL

Looking into the 1990s: A decade of challenges

"One should never declare victory over forest fires" - this statement, made by the French correspondent to this newsletter in his report on the fires of 1989, is obviously realistic. Indeed, the past year was especially troublesome in the Mediterranean region where fires were fanned by the dry Mistral in Southern France and were out of control for a while along the Atlantic region of Western France, Northwestern Spain and Portugal which suffered an extreme drought. In these regions alone more than 500 000 ha of forests and other lands were ravaged by fire in 1989.

There was another "hotspot" in 1989. In Yucatan, Mexico, the stage was set already in 1987 by Hurricane Gilbert. Early in the year the stormfelled rain forest trees were dry enough to carry a fire which was already well established in May - when wildland fire scientists from throughout the tropics were holding the first meeting on "Fire in the Tropical Biota" at Freiburg (FRG) - through to July when the international community of fire policy-makers convened at the Conference on Global Wildland Fire Challenges in Boston (USA). The Yucatan fire devastated a total of about 90 000 ha of tropical forests and other vegetation.

We seem to be helpless, unable to cope with extreme fire situations. Are all these meetings and conferences just welcome escapes for the wildland fire scientists, policy-makers and managers? Are they as useless as the good old fire breaks? Do we still need to discuss the old, well known issues on fire, if we are not able to cope with the wildland fire problem, despite all the technological progress? Is there anything new?

The smoke of the large wildfires of 1987 in Northeastern China and Southern Siberia (on 3 to 4 million hectares) and of 1988 in North America (on about 2.3 million ha in the USA alone) seems to have dispersed. But most of it is now in the atmosphere, and more is continuously being added: the smoke of tropical savanna fires, probably covering between 0.5 and 1.0 billion hectares each year, is in addition to the emissions of large-scale forest conversion and burning activities in the tropics. The smoke is not just a problem of visibility and delayed airplanes. The trace gases emitted by the tropical fires add to the impact of fossil fuel burning on the climate. Only a part of it returns to the terrestrial ecosystems, the rest builds up in the atmosphere and increases the expected greenhouse effect and the likelihood of global climate change.

Are these ecological impacts of wildland fires new phenomena or are such considerations just another example of environmental hysteria? Obviously wildland fires have been a fact of life since prehistoric times. Long-term and short-term climatic changes and oscillations during the Pleistocene have greatly influenced glaciations, sea level, flammability of vegetation - and wildland fire regimes. There have been times since the late Quaternary when parts of what are tropical rainforest today were drier and more flammable than now. Fire history reveals that natural fire has been the major driving force in the development and dynamics of almost all forest biomes of the temperate and boreal zone. We know that man has been using fire for at least 1.5 million years, and many of the valuable forests and savannas of the world have developed under the influence of human-caused wildfires. Atmospheric carbon dioxide content has varied with temperature and global burning processes during the past; so, what is new about the fires and the smoke?

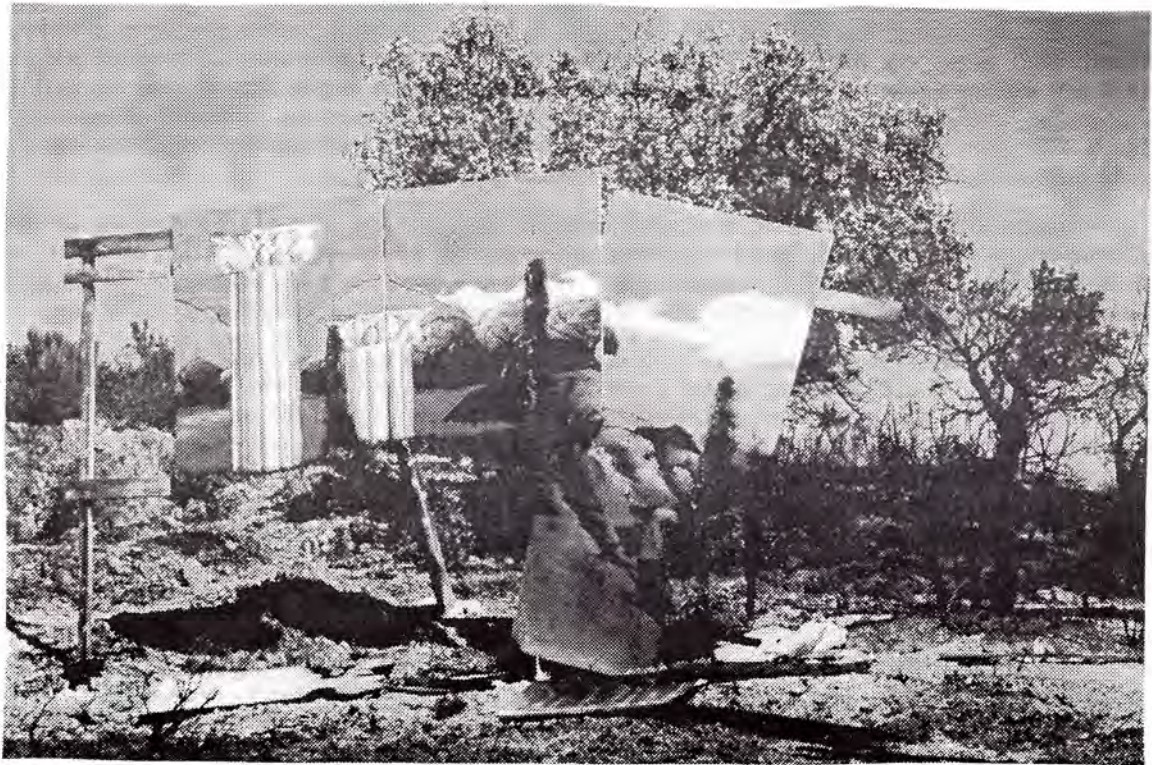
There is nothing new with the nature of fire and fire effects, except the fact that the habitability of the globe for the dramatically increasing human population is deteriorating. There are multiple links between the expected global changes and forests. Forests fulfill a variety of "ecological tasks", one of which is to store carbon. Thus forests are one of the buffers between the atmosphere and the excess carbon injected into it in the form of trace gases from fossil fuel burning. If more forests are burnt and degraded to less productive sites and deserts, then there will be an additional input of greenhouse gases and, at the same time, a loss of the buffer, the carbon sink.

Scientists and governments have been becoming increasingly aware of this problem. With the establishment of the Intergovernmental Panel on Climate Change (IPCC), under the auspices of WMO/UNEP, it was decided to prepare a report for the Second World Climate Conference which will be held in Geneva in November 1990. At present the report is being prepared by three working groups dealing with the scientific assessment of climate change, the expected impacts and the policy responses to climate change. Within Working Group III "Policy Response", three subgroups were formed to elaborate reports on tropical, temperate and boreal forests. All of the reports which have meanwhile been drafted recognize forest degradation and biomass burning as an important element in the context of global change. Adequate policy responses are proposed, among which protection of forest resources from fire and fire management issues play a crucial role.

The future is challenging. The 1990s have been declared as the International Decade for Natural Hazard Reduction which is aimed at preparing better for confronting global natural disasters. In the 1990s, international programmes such as the International Geosphere-Biosphere Programme (IGBP) and the International Global Atmospheric Chemistry Programme (IGAC) will become operational, all of them having a strong wildland fire-related component. The success of these programmes is not just a question of funding. It will largely depend on the inputs from the community of wildland fire policy-makers, scientists and managers.

Let's meet the challenge!

Johann G. Goldammer (Editor)
(address on cover page)



The Mediterranean Wildfires: Burning Nature and Culture to Ashes

COUNTRY NOTES

AUSTRIA

Forest fire statistics for 1988

During 1988 a total of 124 wildfires burned on 87 ha of forest land. It is interesting to note that 59% of the fires were caused by lightning. Most of the lightning fires (60) occurred in the State of Kärnten during the summer months. The average area affected by the forest fires in Kärnten was less than a quarter of a hectare.

Forest Fire Statistics, Austria
(1978-1988)

Year	Number of fires	Forest area affected (ha)	Lightning	Railways	Fire causes (%) Negligence	Arson	Unknown
1978-87 (mean)	130	184	20	5	49	3	23
1988	124	87	59	-	31	1	9

Source: Forstliche Bundesversuchsanstalt, Seckendorff-Gudent-Weg 8, A-1131 Wien.

FRANCE

The 1989 forest fire season

One should never declare victory over forest fires. The area affected by wildfires was reduced considerably in 1987 and 1988. But 1989 was again a disastrous year, the worst after the forest fire season of 1976. The provisional data available by the end of October 1989 reveal that a total of 70 000 ha of forests and other wooded land were burned, of which 55 000 ha were in the Mediterranean zone of the country. The severity of the fires was mainly due to the extreme drought in Southern France and along the Atlantic coast. Almost all of the area affected was burned during a handful of days of strong dry Mistral winds. In the Department of the Landes (Southwestern France) one fire ravaged about 4 000 ha of pine forests, and in the Mediterranean region the famous forests of Sainte-Victoire, Sainte-Beaume and Forêt du Dom were destroyed.

Starting in fall 1989 an emergency action plan by the government was initiated in order to speed up the rehabilitation and reforestation of certain burned areas and to intensify preventive measures.

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Ancient forest fires in France

Under the auspices of CEMAGREF, a study on forest fires in France during the past three centuries was conducted by Henri Amouric. A long list of wildfires which occurred in Provence reveals that the causes of ancient fire and the methods of fire prevention and control were the same as today, although the 20th century has brought tremendous technological improvements.

During the past century approximately 1 million hectares of forests have been burned. Nevertheless during the same period the area permanently covered by forests increased from 2 million ha to 4 million ha. The availability of land for afforestation was mainly due to the abandonment of agriculture in the Mediterranean Zone. The increasing forest cover fulfills now an important role in protecting the landscape and covering the needs of society.

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B.P. 31, F-13612 Aix-en-Provence

GERMAN DEMOCRATIC REPUBLIC

The extent of forest fires

The forest land of the German Democratic Republic lies in a region of Central Europe with a high wildfire hazard. Approximately 53% of the forested area is covered by stands in which pine (*Pinus silvestris*) predominates. However, legal regulations and high standards in forest fire prevention, detection and control measures and organization have resulted in a continuous decrease of fire damage during the past 45 years (see below).

Average per year

<i>Decade</i>	<i>Number of forest fires</i>	<i>Area affected by fire (ha)</i>	<i>Average area per fire (ha)</i>
1946 ... 1950	1 869	7 627	4.08
1951 ... 1960	1 761	3 667	2.08
1961 ... 1970	1 454	2 685	1.85
1971 ... 1980	1 084	1 503	1.39
1981 ... 1988	929	1 221	1.31

In 1988 a total of 1 038 fires affected 2 245 ha of forest land and caused damage to a value of about 18 million Marks. Among the causes were negligence 25%, arson 5%, lightning 3%, other causes 31%. 36% of the fires were of unknown causes.

From: Karl Missbach

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NORWAY

Forest fire insurance

In order to cope with the economic losses from forest fires, a group of Norwegian forest owners established a special insurance company "SKOGBRAND". The company, which celebrated its 75th anniversary in 1987 is still working on the original basis, as a mutual company owned by the forest owners. Lately the activity has expanded to cover also storm damage.

The insurance system is based on statistical data on forest fires and weather conditions influencing fire and storm occurrence. It gives each forest owner the possibility of insuring his forest for a very reasonable premium.

In addition, the company serves as a credit institution for the forest owners, stimulates and coordinates the efforts in forest fire prevention and gives economic support to local forest fire brigades, especially for the acquisition of equipment.

The responsibility for forest fire prevention and fighting in Norway lies at the community level. In large conflagrations the local fire brigades are supported by military and other civil forces.

This year SKOGBRAND has taken the initiative of arranging coordination meetings before and after the forest fire season. These meetings focussed on large-scale forest fire catastrophies.

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P.O. Box 57, N-2401 Elverum

PORTUGAL

The 1989 forest fire season

In 1989 the General Directorate of Forests concentrated much of its efforts on forest fire prevention. In Portugal most of the forest land is owned by small forest holders (0.5 to 2.0 ha). Public information campaigns, supported by TV spots, highlighted the forest fire risk.

Forest rangers were integrated in fire patrol and attack brigades and equipped with all-terrain vehicles. Besides their fire detection task, the brigades are employed for calling the attention of the public to the prohibition of using fire within the forests. 161 water sources (tanks, dams) were constructed within forest areas to provide water for fire fighting operations. Several legislative steps were taken in 1989 in which the forest fire season and the necessary preventive rules and sanctions are defined. Furthermore, there was a change in the constitution of the Specialized National Commission on Forest Fires and the establishment of management rules on burned land in protected areas.

Wildland and Forest Fire Statistics, Portugal
(1989)

Number of fires	Forest		Area affected by Fire (ha)		Total
	public	private	public	Other land private	
16 791	12 163	42 705	4 379	44 661	103 908

From: Directorate General of Forests
Address: Ministry of Agriculture, Fisheries and Food
Av. de Joao Crisóstomo 26-28, P-1000 Lisbon

SPAIN

The 1989 forest fire season

In 1989 the North and the West of the Iberian Peninsula suffered the worst drought ever recorded. Precipitation in Galicia and the cornice of Cantabria was 50 to 70% below average. The driest periods were January to March and July to October. The Mediterranean regions, in contrast, received average rainfall and even had flooding problems in September and October.

The fire data (1 January to 29 October 1989) reveal that more than 19 000 fires burned a total forested area of 152 000 ha and a further 229 000 ha of other land. The small average size of forest fires (less than 8 ha) is to be interpreted as a result of improved initial attack capabilities.

Numerous wildfires were started by brushland and pasture burning in which 9 campesinos lost their lives. Two fatalities occurred during fire suppression activities. The fire fighter Pascual Sánchez was killed by a high-voltage power line which had caused the fire. The other accident was a take-off crash of a Thrush Commander air tanker in which the pilot, Luis Antonio Galán, was killed.

Wildland and Forest Fire Statistics, Spain
(1983 - 1989)

Year	Number of fires	Land area affected by fires (ha)		
		Forest	Other land	Total
1983-1988 (mean)	8 328	83 288	134 562	218 350
1989 (first ten months)	19 405	152 162	228 999	381 161

Source: ICONA.

Modernization of the amphibious air tanker fleet

The average age of more than 12 years of the Spanish fleet of amphibious CL-215 air tankers and the growing shortage of spare parts for the old piston engines require a complete modernization programme of the fleet. Between 1989 and 1992 ten new CL-215 air tankers with turboprop engines will be purchased. Five of the airplanes in service will be equipped with new turboprop engines. Until the termination of the programme 8 of the piston engine planes will be grounded.

From: ICONA

Address: Servicio de Defensa contra Incendios Forestales
Gran Vía de San Francisco 35, E-28005 Madrid

Special forest fire issue of MONTES

The forestry journal MONTES (edited by the Associations of Professional Foresters of Spain) dedicated its May 1989 issue to the forest fire problems and activities in Spain. Copies of the special issue which give a complete panoramic view of present fire prevention and control activities can be obtained from:

Revista MONTES
General Arraudo 38, E-28010 Madrid

UNITED STATES OF AMERICA

1989 fire season highlights

In its 1989 fire season statistics and summary the Boise Interagency Fire Center reports a total of 48 635 fires on 703 126 ha of Federal land. Fire activities began in mid-February in the Okefenokee National Wildlife Refuge (Florida) in the Southeastern U.S.A. Dry conditions kept the Southeast and the Southwest busy until June. In July seven C-130s with Modular Airborne Fire Fighting Systems (MAFFS) were activated in Arizona and dropped about 700 000 litres (l) of retardants. In late July and early August 8 C-130s equipped with MAFFS delivered about 30.7 million l of retardants in Southern California. The support of two battalions of the 6th Army was requested in Oregon and in Idaho.

Altogether the 1989 fire season was less severe than the previous year's. The fire statistics table shows the 1979-1988 data (number of fires and hectares burned) of Federal, State and private lands; the figures for 1989 relate to Federal and State lands.

Wildland and Forest Fire Statistics, USA
(1979-1989)

Year	Number of fires	Land area affected (ha)
1979	163 196	1 209 901
1980	234 832	2 129 056
1981	249 267	1 948 309
1982	174 755	964 100
1983	161 649	2 056 100
1984	181 466	1 229 887
1985	138 521	2 125 529
1986	138 696	1 291 448
1987	147 146	2 017 058
1988	153 662	2 315 227
10-Year Average	174 319	1 728 653
1989	48 635	703 126

The 1979-1988 data refer to Federal, State and private lands. The provisional 1989 data refer to Federal and State lands.

NEWS FROM ECE/FAO

ECE/FAO Forest Fire Statistics 1987-1988

The information presented in this table is an extract of the 5th Edition of the ECE/FAO Forest Fire Statistics which will be published soon by the Joint FAO/ECE Working Party on Forest Economics and Statistics (ECE/TIM/51). Most of the data are based on the latest enquiry by the FAO/ECE secretariat and are obtained from official national sources (1988 data preliminary). Some of the data were adjusted by the editor on the basis of country reports to the newsletter.

Number of fires and total area of forest and other land burned in Europe and North America in 1987 and 1988

Country	Number of fires		Area burned (ha)	
	1987	1988	1987	1988
Austria.....	98	124	53	87
Bulgaria.....	76	140	508	544
Cyprus.....	62	86	1550	4083
Czechoslovakia.....	249	515	265	387
Finland.....	285	621	153	289
France.....	2115	2200	10393	5174
German Dem. Rep.		1038		2245
Germany, Fed. Rep. of.....	484	559	319	282
Greece.....	1266	1650	46315	100000
Hungary.....	393		1349	
Ireland.....	721		840	
Israel.....	1035	1334	3782	14430
Italy.....	11972	13542	120697	186405
Luxembourg.....	5	7	2	3
Netherlands.....	90	79	115	80
Norway.....	286	305	335	391
Poland.....	1222	2781	1454	3063
Portugal.....	6977	9678	76268	25829
Spain.....	8679	9262	145793	126968
Turkey.....	1310	1372	10746	18210
Canada.....	11304	10303	1085629	1320273
United States.....	147146	153662	2017058	2315227

Remarks: France: Operation Prometheus Zone only; Ireland: State forests; Canada: National Forests; USA: protected Federal, State and private land.

Following a recommendation of the Joint FAO/ECE Working Party on Forest Economics and Statistics, forest fire statistics will be collected annually, beginning in 1990, instead of biennially. It will thus be possible to publish more up-to-date statistics in the International Forest Fire News.

ESSAY

Perspectives on Wilderness Fires

Wilderness has been described as an American invention, a state of mind, represented by millions of hectares of land scattered throughout the United States. These lands have been set aside by the U.S. Congress as pieces of presettlement America to preserve natural wonders, native plants and associated organisms, in areas where the effects of humans are minimal. They represent priceless remnants of the American past preserved for the future.

The Greater Yellowstone Area (GYA) is roughly 5.2 million hectares composed of two National Parks, lying in three states, including six National Forests in 12 counties. The centerpiece of the GYA is Yellowstone National Park, the first National Park in the U.S., established by the Yellowstone Act of 1872. The GYA is considered to be about the size necessary to observe processes at the ecosystem level.

It is well known that in 1988 fires burned in the GYA within a perimeter encompassing about 552 000 hectares. Over a hundred million U.S. dollars were spent fighting the fires by suppression forces consisting of 25 000 firefighters and support personnel, hundreds of fire-engines, aircraft, etc. The magnitude of these fires has greatly confused the concept of prescribed natural fire. Prescribed natural fires are those that burn under predetermined biophysical, social and political conditions to meet a specific wilderness management objective. Many people are fascinated by the notion that fire is an important element in ecosystem dynamics, and in the need of American resource managers to consider its role in National Park and wilderness areas. Yet it is often difficult for people to understand prescribed natural fire, especially in light of the fires of 1988.

But the fires of 1988 were only unique because the world watched them on the evening TV news, and because we tried to suppress them. The coincidence of mountain pine beetle mortality, drought, lack of rain, winds and rolling topography have occurred before in the early 1700s and again in the 1850s to produce fires of the type observed in 1988. And they will coincide again as the cycles that are nature are replayed with endless variety.

In America there is the opportunity to preserve remnants of presettlement wilderness. Fire is a fundamental part of this wilderness and must be permitted to occur as it always has. We have many modern social and political realities to consider, to be sure. Perhaps fires of the scale of those in the GYA in 1988 are unacceptable, however natural the fire ecology community considers them to be.

But what is the alternative? Those who suggest categorically that we suppress all wildfires are ignorant of extreme fire behaviour. The biggest fires in the western U.S. in 1988 were not in the GYA. They were wildfires, fought from the beginning with a highly sophisticated, well-equipped and highly-trained wildland fire suppression organization. The two largest, most costly fires in the GYA were man-caused wildfires which burned more or less at will until the weather changed. Firefighters waged heroic efforts to protect structures, towns and human lives, but did little to affect the final burn perimeter. The American public can not afford the \$300 million price tag for fire suppression any more than they can afford to watch Old Faithful Inn burn to the ground on television.

The National Fire Policy Review Team has published their findings. Most notable was their support of the concept of prescribed natural fire and the objectives of wilderness managers who seek to permit fire to play its natural role. American fire policy has undergone a broad reformation in a very short time. We have accepted the fact of the positive, beneficial effects of fire in wilderness and have recognized that fire suppression has become much too expensive.

So where are we? The answers to this question represent the challenges of fire management in the future.

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INTERNATIONAL COOPERATION

SPAIN

International courses on forest fire management: Report on the 1989 courses

In 1989 the first of two international courses on forest fire management were held in Spain, 29 May to 10 June 1989. It was jointly sponsored by FAO and ICONA and took place in Madrid (classroom training on fire behaviour; fire prevention, detection and suppression; fire management planning) and in Central Spain (field training in prescribed burning, communication, ground and airborne equipment). This course which was taught in Spanish and French was directed to forest engineers from Algeria, Morocco and Tunisia.

The second course was held in October 1989 and was directed to forest engineers of Latin America. The participants came from Argentina, Bolivia, Brazil, Chile, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Dominican Republic and Venezuela. This course was jointly sponsored by the Ministry of Agriculture, ICONA and the Iberoamerican Institute of Cooperation.

Announcement of the 1990 courses

The first course in 1990 will be directed to forest engineers and technicians of the Mediterranean countries. The course is sponsored by the International Centre for Advanced Mediterranean Agronomic Studies (C.I.H.E.A.M.) and ICONA and will be held from 21 May to 8 June 1990 in Saragossa and in the Province of Guadalajara. Teaching languages will be Spanish and English.

Detailed information on the course, including possibilities for obtaining travel support, may be obtained from:

Instituto Agronómico Mediterráneo
Apartado 202, E-Zaragoza
Telex: 58672

The course for Latin American forest engineers and technicians will be held in the National Centre for Environmental Education in Nature (CENEAM) in Valsain (Segovia) and in the forests of Central and Southern Spain from 1 to 26 October 1990.

The programme (in Spanish) will be as follows:

1st week	Ground and airborne fire suppression
2nd week	Fire behaviour
3rd week	Prescribed burning
4th week	Fire prevention (silviculture and public education)

Detailed information on the course may be obtained from:

ICONA, Servicio de Defensa Contra Incendios Forestales
Gran Vía de San Francisco 35, E-28005 Madrid
Tel.: +34-1-266 5104
Fax : +34-1-265 8379
Telex: 44683

USA

Disaster Assistance Support Program

In its August to October 1989 summary of activities, the US Disaster Assistance Support Program (DASP) reports on three joint wildfire-related activities of the U.S. State Department, Office of U.S. Foreign Disaster Assistance (OFDA), and the U.S. Forest Service, International Forestry.

In July 1989 three fire specialists and one contract pilot were sent by OFDA to an emergency wildfire assignment in Baja Norte, Mexico. The objectives of the mission were to make a wildfire assessment and advise Mexican officials on appropriate strategy and tactics to control the fire that was threatening a national observatory. Another 10-day wildfire assignment in Mexico was conducted for OFDA by two U.S. Forest Service fire specialists on the Cancun fire in the State of Quintana Roo in Mexico. The Cancun fire was actually a composite of more than 25 fires that had been burning since March 1989 in forests damaged by Hurricane Gilbert in September 1987. The fires burned approximately 90 000 ha.

The Disaster Assistance Support Program arranged and scheduled a two-week tour for eleven fire training specialists from Brazil's National Fire Academy. The specialists visited the National Advanced Resources Technology Center (Marana, Arizona), the Boise Interagency Fire Center and the Aerial Fire Depot and Intermountain Fire Sciences Laboratory (Missoula, Montana). The group also attended the annual conference of the Society of American Foresters in Spokane.

Colonel Renato Ferreira Guimares presented a paper highlighting the forest fire problems in the Amazon Basin, the government's concern regarding those fires, and the role of the National Fire Academy in Brasilia to develop a new wildland fire training program.

From: USDA Forest Service

Address: International Forestry Disaster Assistance Support Program
P.O. Box 96090, USA-Washington, D.C. 20090-6090

MEETINGS HELD IN 1989 AND PLANNED FOR 1990

PORTUGAL

Prescribed Fire Research Workshop

As previously mentioned, the workshop was held in Vila Real, 9-12 November 1989. The meeting was attended by participants from seven countries. Contributions and discussions focussed on fire behaviour and effects of both wildfire and prescribed fire. The workshop proceedings and recommendations will be available from:

Prof. Francisco Rego
Universidade de Trás-os-Montes e Alto Donro
P-5000 Vila Real

USA

International Wildland Fire Conference

The international conference "Meeting Global Wildland Fire Challenges" was held in Boston, Massachusetts, 23-26 July 1989. The conference was attended by over 400 participants representing 33 countries from around the world. Information on the conference report which is in press will be given in the next issue of International Forest Fire News.

USA

Chapman Conference on Global Biomass Burning, 19-23 March 1990, Williamsburg, Virginia

The Chapman Conference on "Global Biomass Burning: Atmospheric, Climate, and Biospheric Implications" will consider biomass burning as a driver for global change. Conference sessions will assess global biomass burning as a source of chemically active and radiatively active gases ("greenhouse" gases) and atmospheric particulates and their impact on atmospheric composition, chemistry, climate, and on the biosphere itself. Conference presentations and discussions will consider the global extent of biomass burning by geographic area, ecosystem and season, and assess the total land area burned, total biomass burned, and the combustion efficiency for each ecosystem. Other sessions will focus on how biomass burn emissions (gases and particulates) vary in different ecosystems and the impact of biomass burning on the soil, water, and microbial community and the long-term impact of burning on the biogeochemical cycling of nitrogen, carbon, and sulfur compounds. Other papers will consider historical studies of biomass burning practices and future trends and predictions and the measurement of the global distribution of biomass burning from space. Conference papers will be published in a proceedings volume. Those interested in more detailed information about the programme and the conference publications should contact:

Biomass Burn Chapman Conference
American Geophysical Union,
2000 Florida Avenue NW
USA-Washington, D.C. 20009
E-Mail: PMDICKERSON/KOSMOS
Tel. : + 1-202-462-6000
Fax : + 1-202-328-0566

PORTUGAL

Conference on Forest Fire Research, Coimbra, 19-22 November 1990

In order to bring together scientists from Europe and other parts of the world working on various aspects of wildland fires, an international conference will be held at the University of Coimbra in November 1990. The multidisciplinary conference will cover various topics of wildland fire research, such as:

- Fire behaviour
- Fire weather
- Fire effects
- Human and institutional factors.

The Editor
(address on cover page)

For more information, contact the conference chairman:

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INTERNATIONAL CONFERENCE ON



19-22 NOVEMBER 1990, COIMBRA, PORTUGAL

SAFETY

USA

The effects of forest fire smoke on firefighters - a comprehensive study plan

Injuries and illnesses among wildland firefighters are a significant problem, since fire smoke contains a wide variety of toxic materials that may cause lung damage, neurologic impairment, heart disease and cancer. In a comprehensive plan elaborated by a group of scientists, a series of highly integrated, multi-disciplinary projects is proposed which include laboratory and field exposure studies and investigations on short- and long-term health effects. Jointly with the John Hopkins University, School of Hygiene and Public Health, the study plan was prepared by and may be requested from:

USDA Forest Service
Intermountain Research Station
Fire Chemistry Research Work Unit
P.O. Box 8089
USA-Missoula, Montana 59807

USA

Wildland home fire risk meter

Attention wildland residents!

Dennis G. Simmermann and William C. Fisher, both USDA Forest Service, have prepared a meter to be used to determine your home's risk from wildfire. If your home and other homes in the area of your responsibility are at the wildland/residential interface or in the middle of a high wildfire hazard environment, you should not hesitate to contact the authors and to request the wildland home fire risk meter from:

USDA Forest Service
Intermountain Research Station
P.O. Box 8089,
USA-Missoula, Montana 59807

RECENT PUBLICATIONS

Guardian of the forest: A History of the Smokey Bear Program

Who stands out as one of the most famous advertising symbols in the world? Whose name is protected by Federal law? Who has his own private zip code, his own legal counsel to ensure his safety, and his own private committee to make sure his name is used only on properly licensed products? Smokey Bear, of course.

Smokey Bear's image has been associated with forest fire prevention since August 9, 1944, when he was first described as a "fire fighting bear". On paper he was complete, with campaign hat, blue jeans, shovel, and fire fighting slogans - but there was more.



Smokey Bear is more than a "make-believe" paper bear. In 1950 an actual bear cub, terrorized by a New Mexico forest fire, became lost and wandered near a firefighting crew. Badly burned, he was picked up and taken to Dr. E.J. Smith for medical care. Then he was nursed back to health by Game Warden Ray Bell and his family at their Santa Fe home. This cub was sent to the National Zoo in Washington, D.C., to become the first living symbol for Smokey Bear.

The aged cub died on 10 November 1976, and another bear, "Little Smokey", was recognized as his successor.

The smokey bear program survived the death of the first living symbol. Smokey Bear even survived the change from the rigid fire control policy toward fire management. And, as Ellen Earnhardt Morrison writes in the second edition of her book, right after the Yellowstone fires of 1988, "if prescribed burning can make forests better, he's all for it".

Ellen Earnhardt Morrison (1989)

Guardian of the Forest A History of the Smokey Bear Program. Second Edition,

Morielle Press, Alexandria, Virginia, 132 p.

ISBN 0-9622537-3-1

Fire on the Rim - A Firefighter's Season at the Grand Canyon

In the American West there are five divisions of the year - winter, spring, summer, fall, and fire season. Fire season begins when the snow melts and ends when the snow falls; it has its own rhythm, its own pace. The months it spanned in 1988 were dramatic - the nation watched as the West burned.

Fire on the Rim is the story of a fire season in the Grand Canyon National Park. Stephen Pyne's portrait of the experiences of a seasonal forest fire crew is the first account of the complex relationships of a crew, the fires they battle, and the arena in which they perform. In realistic detail, Pyne reveals the intricacies of fire "management" - the excitement and the tedium, the philosophy as well as the utility - allowing us an understanding both practical and metaphysical. As the crew matures and the fire season unfolds, the two converge in a spectacular crucible: the North Rim of the Grand Canyon.

Based on fifteen seasons the author spent on a fire crew at the North Rim, Fire on the Rim offers an unusual perspective on the terrain and character of the Grand Canyon, and an extraordinary account of life in a wilderness environment. Through it we gain a new understanding of wildland fire, of humanity's relationship to nature, and of a summer ritual that has involved both the Canyon and its guardians.

Stephen J. Pyne 1989.

Fire on the Rim A Firefighter's Season at the Grand Canyon.

Weidenfeld & Nicolson, New York, 323 p.

ISBN 1-55584-251-8

Symposium on Fire and Watershed Management

A Symposium on Fire and Watershed Management, the second biennial conference of the Watershed Management Council, was held in Sacramento, California, 26-28 October 1988. The proceedings have been published by the Pacific Southwest Forest and Range Experiment Station (USA-Berkeley, California 94701, P.O. Box 245) and include contributions on land use decisions and fire risk, effects of fire on watersheds and papers on resource recovery. Fifteen poster papers offer perspectives from research, technology applications, and land and resource management. The technical coordinator of the publication is:

Neil H. Berg (tech. coord.) 1989.

Proceedings of the Symposium on fire and watershed management

For. Serv. Gen. Tech. Rep., PSW-109, 164 p.

New forest fire protection manuals in French, Italian and Portuguese now available

Recently the National Research Centre CEMAGREF has published (in French) a Technical Guide on Forest Fire Protection. The publication is the second volume of the "Technical Guide to the French Mediterranean Forester".

The volume covers 16 chapters:

- | | |
|--------------------------------------|-------------------------------|
| 1. Basics of wildland fires | 9. Roads and forest access |
| 2. Principles of forest fire control | 10. Fuel reduction |
| 3. Causes of fires | 11. Fuel breaks |
| 4. Forest fire risk | 12. Mechanical fuel treatment |
| 5. Flammability of fuels | 13. Chemical fuel treatment |
| 6. Fire detection | 14. Prescribed grazing |
| 7. Communication | 15. Prescribed burning |
| 8. Forest management planning | 16. Water supply |

The publication can be ordered from:

CEMAGREF
Le Tholonet, B.P. 31
F-13612 Aix-en-Provence Cedex 1
Phone: +33-42669310
Fax: +33-42668865

Colleagues from the Universities of Turin (Italy) and Coimbra (Portugal) have invested tremendous efforts in preparing two manuals on forest fire protection. A book written by Giovanni Bovio from the Institute of Silviculture of the University of Turin gives special emphasis to fire hazard of the Piemont Region (Northwest Italy). In 14 chapters, well illustrated with colour photographs, the author covers the basics of combustion processes, fire behaviour and fire effects, fire planning, prevention and control (ground and air), prescribed burning and fuel breaks.

Giovanni Bovio, 1988
Come proteggerci dagli incendi boschivi

Presidenza della Giunta Servizio Protezione Civile,
Collana "Protezione Civile e Ambiente", Torino, Piemonte, 142 p.

The Portuguese wildland fire manual gives special attention to the basic aspects of fuels and fire behaviour related to topographic and weather conditions. The well designed schematic drawings on fire behaviour and fire prevention and control make this book easy to read and understand. The aim of the manual is to provide common basic knowledge on forest fire protection for the various professional groups and individuals involved in this task in Portugal.

The publication reference is:

Domingos Xavier Viegas, 1989.
Manuel sobre, Incendios Florestais

Ministerio do Planeamento e da Administracao do Territorio, Lisboa, 89 p.
ISBN 972-601-040-3

EQUIPMENT

Water bombers for sale!

There is a fleet of 5 PBY water scooper air tankers for sale in the USA. The offer comes together with a large stock of spare parts, including 40 new engines.

For more information on the present owner, please contact the editor (address on front cover)

Universal Wildfire Tool System

Recently a new universal set of wildland fire fighting tools has been developed and is now coming on the market. The system consisting of a handle with three attachments is designed to replace 12 traditional tools (such as axe, Pulaski, adze hoe, brush hook, shovel, McLeod, Council, mud flapper and others). The attachments are secured in a backpack which has enough space to house other items needed on the fireline. The weight of the whole set including backpack is 6 kg.

The first series of tools is now available and ready for testing and introduction into the various fuel types in the world. For more information contact:

Dragon Slayer, Inc.
International Wildfire Consultants
P.O. Box 44, USA-Manzanita, Oregon 97130
Phone: + 1-503-368-7099

LETTER TO THE EDITOR

Dear Readers:

I am currently on career development/educational leave from Forestry Canada working on a Ph.D. degree in the Department of Forestry at the Australian National University. My topic of investigation deals with "fire behaviour in exotic pine plantations".

I am appealing to the international wildland fire community for notification of any existing quantitative data on fire behaviour, including supporting details (e.g. antecedent weather conditions), with respect to experimental and wild fires in natural or planted pine forests. I am particularly interested in the long-needed pine species (e.g. *radiata*, *slash*, *Caribbean*, *maritime*) in Europe, Central and South America, Asia, Africa, USSR and the Middle East. Reports of the "tree-crown street" pattern described by D.A. Haines (1982. *J. Appl. Meteor.* 21(6): 751-763.) are also sought. My correspondence address is given below. Any assistance would be greatly appreciated.

Martin E. Alexander
Visiting Fire Researcher
National Bushfire Research Unit
CSIRO Division of Forestry & Forest Products
2.0. Box 4008
AUS-CANBERRA, Australian Capital Territory 2600



**Tree-crown street pattern following high-intensity wildfire in
an exotic pine plantation**