International Forest Fire News (IFFN) No. 31 (July – December 2004, 48 - 70)

Pan American Conference on Wildland Fire
San José, Costa Rica
23 October 2004

Need for a Coordinated Pan-American and International Approach in Wildland Fire Management[1]

Introduction

Over the past decade, many countries have witnessed a growing trend of excessive fire application in land-use systems and an increasing occurrence of wildfires of extreme severities. Sometimes these wildland fires have transnational impacts, for example smoke pollution and its impacts on human health and safety; loss of biodiversity; or site degradation at landscape level leading to desertification, flooding, and reduced food security. The depletion of terrestrial carbon by fires burning under extreme conditions in some vegetation types is an important factor in causing disturbance in the global carbon cycle.

Increasing vulnerability of human populations living in or around forest environments – in the wildland-residential / urban interface – has been noted throughout the Americas. Projected trends of climate change impacts on vegetation cover and fire regimes, as well as observed demographic and socio-economic trends suggest that wildland fire may continue to play a major role in the destruction of vegetation cover resulting, among other, in increasing occurrence of weather-related secondary ecological and humanitarian disasters such as mass movement of soil cover and extreme flooding.

In other words, increasingly severe wildland fires are contributing to climate change; and climate change is contributing to increasingly severe wildland fires.

[1] Report prepared by the Global Fire Monitoring Center (GFMC) and the Food and Agriculture Organization of the United Nations (FAO)

International Forest Fire News (IFFN) is an activity of the FAO/UNECE Team of Specialists on Forest Fire and the Global Fire Monitoring Center (GFMC). IFFN is published on behalf of UNECE Timber Committee and the FAO European Forestry Commission and is serving the UN-ISDR Global Wildland Fire Network (GWFN). For the complete IFFN archive see: http://www.fire.uni-freiburg.de/iffn/iffn.htm

The Challenge

Fire is an important natural process in many ecosystems, and people have traditionally used fire for millennia as a land-management tool. The challenge is to develop informed policy and management capabilities that recognize both the beneficial and traditional roles of fire, while reducing the incidence and extent of uncontrolled burning and its adverse impacts.

This trend is stirring the international community to address the problem collaboratively. The development of informal partnerships, joint projects and formal agreements among governments and between government and non-governmental institutions is essential to enable nations to develop sustainable fire management capabilities.

In order to share human and technical resources in wildland fire management, a number of collaborative activities have been initiated throughout the Americas and the Caribbean during recent years. Representatives from throughout the region have initiated and – where already existing – expanded networking structures. Regional Wildland Fire Networks in South America, Mesoamerica and the Caribbean tied to the Global Wildland Fire Network are currently receiving support by FAO to develop a regional cooperation strategy in wildland fire management.

In order to further develop cooperation throughout the Western Hemisphere and globally, the Pan-American Conference on Wildland Fire is calling for strengthening international cooperation. The conference is sponsored by two statutory bodies of FAO, the Latin America and Caribbean Forestry Commission (LACFC) and the North American Forest Commission (NAFC), with co-sponsorship by the Global Fire Monitoring Center (GFMC). It is hosted by the Government of Costa Rica.

The Global Context

The primary responsibility for preventing unplanned wildland fire and for managing planned fire lies with governments. The efforts of countries can be supported by international organizations and non-governmental organizations. Several agencies and programmes of the United Nations system work on problems related to wildland fire management:

- FAO: sustainable forest management, fire management and community involvement, promotion of international cooperation in wildland fire management; jointly with GFMC conducting Global Forest Fire Assessments (FRA 2000 and 2005), publication of Fire Management Guidelines for Temperate and Boreal Forests, Wildland Fire Management Terminology,
- Office for the Coordination of Humanitarian Affairs (OCHA) with United Nations Environment Programme (UNEP): coordination of international response to wildland fire emergencies;
- World Health Organization (WHO): protection of human health against adverse effects of vegetation fire, smoke pollution;
- World Meteorological Organization (WMO): early warning of precursors leading to critical fire situations.

In addition, several international conventions are mandated to advise and assist countries to protect global vegetation cover and ecosystem functioning, i.e. the Convention on Biological Diversity (CBD), the Convention to Combat Desertification (UNCCD), the Framework Convention on Climate Change (UNFCCC), and the Ramsar Convention on Wetlands.

UN agencies and convention secretariats have limited resources and are generally unable to fulfil all of the requests from countries for assistance and technology transfer to promote sustainable fire management. Collaboration among governments and civil society, including bilateral and multilateral cooperative efforts, is crucial.

Given the diversity of responsibilities within and outside the UN system, an international platform was created to facilitate a global policy dialogue. A *Working Group on Wildland Fire* was established in 2001 within the Inter-Agency Task Force for Disaster Reduction under the United Nations International Strategy for Disaster Reduction (ISDR).

Following the World Summit for Sustainable Development (WSSD) (Johannesburg, South Africa, 2002) which provided the groundwork for the development of an action programme to reduce the negative effects of wildland fires on environment and humanity, an International Wildland Fire Summit

was held in Sydney, Australia in October 2003. The theme of the summit was “Fire Management and Sustainable Development: Strengthening International Cooperation to Reduce the Negative Impacts of Fire on Humanity and the Global Environment”.

The Summit called for enhancing international cooperation in wildland fire management through agreements on common principles, procedures and a common global strategy. Several modalities exist for international cooperation, such as voluntary agreements, UN General Assembly resolutions, and international conventions.

Based on the recommendations of the Summit and the outputs of the UN-ISDR Working Group of Wildland Fire, the Global Wildland Fire Network became instrumental to facilitate the regional and global dialogue. The UN-ISDR Wildland Fire Advisory Group (the successor arrangement of the Working Group of Wildland Fire) and the Global Fire Monitoring Center (serving as convener and secretariat) are acting as facilitators for this process.

FAO, ISDR and GFMC agreed on a strategic “Framework for the Development of the International Wildland Fire Accord” (May 2004). To support this process a number of regional consultations and conferences were held in 2004 (Northeast Asia, Eastern Mediterranean / Balkans / Near East / Central Asia, Baltic, Sub-Sahara Africa, South America). The Pan-American Conference on Wildland Fire (23 October 2004), together with the meetings of the Regional Wildland Fire Networks of South America, Mesoamerica and the Caribbean (21-22 October 2004), is the last round of regional consultations before the FAO Ministerial Meeting on Forests at which wildland fire will be a major agenda item (Rome, 14 March 2005): Ministers responsible for forests will consider a proposal directed from the regions to the international community requesting support for a coordinated effort in international cooperation in wildland fire management. The outcome of the Pan-American Conference on Wildland Fire will be reported to the FAO Ministerial Meeting on Forests.

Expected Outputs of the Pan-American Conference on Wildland Fire

Based on regional wildland fire reports (South, Central and North America, and the Caribbean) and the outcomes of the discussions of the Regional Wildland Fire Networks during the days preceding the conference, heads of national forestry and wildland fire organizations in the Western Hemisphere and representatives of organizations that are interested in the improved management of wildland fire will discuss and may consider the endorsement of a draft declaration developed by national representatives on the day before the conference

- supporting a commitment to a regional strategy for improved management, prevention and suppression of wildland fire
- calling for strengthened international cooperation on wildland fire at bilateral, multilateral and global levels

Additional background materials available prior to the Conference

- Agenda for the Conference
- Schedule for Regional Wildland Fire Network Meetings 21 – 22 October
- Regional syntheses reports from South, Central and North America, and the Caribbean
- Status Paper of the Global Wildland Fire Network
- Framework for the Development of the International Wildland Fire Accord
- Communiqué of the International Wildland Fire Summit (including strategic agreements)

IFFN Editorial Note: See all conferences materials published here:

http://www.fire.uni-freiburg.de/GlobalNetworks/Panamerica/Panamerican-Conference.htm

联合国粮食及农业组织
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ORGANISATION DES NATIONS UNIES POUR L'ALIMENTATION ET L'AGRICULTURE
ORGANIZACION DE LAS NACIONES UNIDAS PARA LA AGRICULTURA Y LA ALIMENTACION
منظمة الأغذية والزراعة للأمم المتحدة

Pan American Conference on Wildland Fire
San José, Costa Rica
23 October 2004

Sponsors	Latin America and Caribbean Forestry Commission (LACFC); North American Forest Commission (NAFC)
Co-sponsor	Global Fire Monitoring Center (GFMC)
Host	Government of Costa Rica
Objective	To strengthen international cooperation for the management, prevention, and control of wildland fire
Expected results	A declaration supporting a commitment to develop a regional strategy for improved management, prevention and suppression of wildland fire A call to strengthen international cooperation on wildland fire at bilateral, multilateral and global levels
Target audience	Heads of national forestry and wildland fire organizations in the Western Hemisphere; representatives of organizations that are interested in the improved management of wildland fire

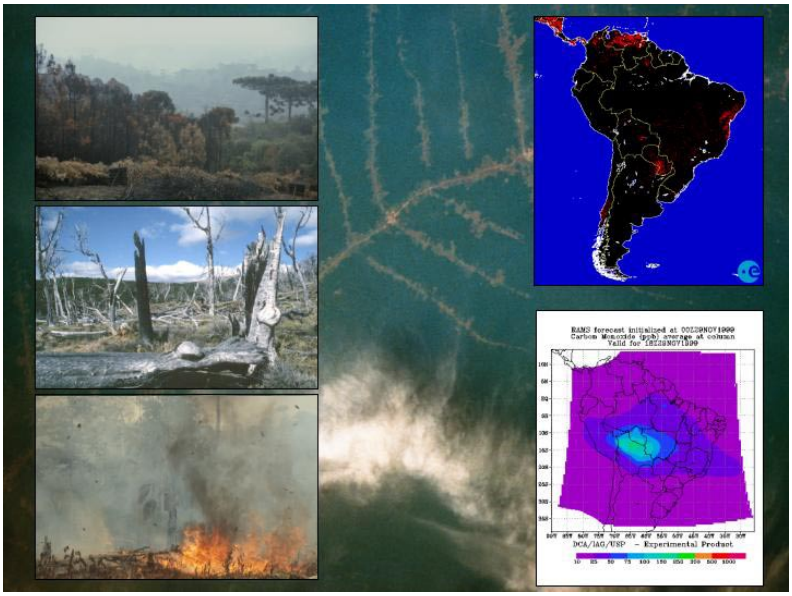
AGENDA

0900 – 0930	**Opening Ceremonies:** Remarks by the Minister of Environment and Energy, Government of Costa Rica Remarks by M. Hosny El-Lakany, Assistant Director-General, FAO
0930 – 1000	**Keynote Address:** Johann G. Goldammer, Global Fire Monitoring Center
1000 – 1045	**Wildland Fire: Issues in Latin America and the Caribbean:** Jorge Menéndez, Director de Bosques, Argentina, and former Chairman, COFLAC **Wildland Fire: Issues in North America:** Dale Bosworth, Chief, US Forest Service and former Chairman, NAFC
1115 – 1135	**Presentation on Wildland Fire in South America** Patricio Sanhueza, CONAF, Chile
1135 – 1155	**Presentation on Wildland Fire in the Caribbean** Marcos Pedro Ramos, Universidad de Pinar del Río, Cuba
1155 – 1215	**Presentation on Wildland Fire in Meso-America** Fernando Arenas, Comisión Nacional Forestal, Mexico
1215 – 1235	**Presentation on Wildland Fire in North America** Kelvin Hirsch, Research Management Advisor, Northern Forestry Centre, Canadian Forest Service, Natural Resources Canada
1430 – 1500	**Report on the preparatory meeting on Friday, 22 October and presentation of the draft Conference Declaration**
1500 – 1600	**Discussion on the draft Conference Declaration** ** **Approval of the Conference Declaration**

Chairman	A senior representative of the Government of Costa Rica
Moderator	M. Hosny El-Lakany, FAO
Facilitator	Johann G. Goldammer, GFMC, assisted by Claudia Scholz
Secretaries	Douglas Kneeland (English), Carlos Marx Carneiro (Spanish)

South America Regional Brief on
International Cooperation in Wildland Fire Management[2]

Wildland fires in the South America region occur in different forms from one country to the next, depending on different climatic conditions, vegetation, land uses, cultures, and social behavior. It follows that the occurrences of wildfire vary among countries. By analyzing each country separately, significant differences are observed in the magnitude and characteristics of the problem, as well as differences from one season to another. In recent years, the majority of area damaged by fire (88%) has been concentrated in Argentina, Bolivia and Brazil, which together with Chile comprise most of the annual or seasonal fire events. Fires occur at different times throughout the region in different countries in accordance with their climatic characteristics and geographic location.[3]



Different economic situations in each country result in different capabilities to implement fire management programs, to understand the problem, and to carry out effective planning and use of technology. This is also influenced by the priority given to fire management within national laws and policies, including the value accorded to the management and protection of forest resources. At the same time, traditional land uses generate situations in relatively poor countries that restrict the implementation of actions that might be considered normal in other countries.

Only a few countries in the region have systematic statistics based on complete and reliable information. In half of the countries in the region, reliable information about wildland fires is not available or is not published.

More than 95% of the fires in South America are caused by humans.[4] Common sense and the experience of professionals in the field lead to the conclusion that, without doubt, the use of fire to clear land for agriculture, livestock, and human settlements, are the major causes of wildland fires and the destruction from fires in South America. In Brazil and Chile there has been a notable increase in intentionally set fires and arson around large urban areas arising from a mental illness (pyromania) or from intentions to harm the society or individuals.

In Chile, large plantations and wooden industrial complexes located in poor rural areas invite the use of fire to destroy forests and infrastructure as an expression of discontent because benefits are not generated for the neighbouring populations. For indigenous people this can be a way of claiming what they consider that they have the rights to land ownership in the area.

---

[2] Study prepared by Patricio I. Sanhueza, CONAF, Chile, psanhuez@conaf.cl
[3] Cooperacion bilateral y multilateral sobre prevención, control y combate de incendios forestales: Suregión sudamérica,. Sanhueza Patricio I., Agosto 2004
[4] Latin America wildfire situation: An Outlook. International Wildland Fire Summit, Sydney. Martínez, R., Sanhueza, P., October 2003

The trend during the last decade has been an increase in fires in the region. Wildland fire has become the major threat to forests. Fires occur in areas of urban expansion into forest areas. Fires result from conflicting claims over land ownership or occupancy, an expression of mental insanity, increasing deforestation and persistent agricultural burning without taking necessary precautions. Forests are more vulnerable to fire due to the phenomenon of climate variability – evidenced by an increase in the frequency of *el niño* in the decade of the 90s, causing, prolonged droughts and an increase in local temperatures. Already some fires are producing a large amount of damage. Finally, the increase in monoculture plantations without applying sound silvicultural practices (such as pruning and fuel reduction), as well as rural poverty, complete the context within which to consider the problem of wildland fire.

The priorities for improving the management of fires in the region must center on mechanisms for strengthening the institutional capability of organizations that are responsible for fire. This is especially true in those countries with weak capabilities or that are having management problems, so that they can comply with international commitments. Countries in the region need to develop and implement effective national forest programs that include provision for managing and preventing wildland fires.

Regulation of the use of fire is an important part of the control and management of agro-silvicultural practices. Increasing the capability of forestry personnel to enforce laws in local communities is another major administrative challenge.

However, when looking at present rise in fire occurrence, one may draw the conclusion that enforcement or tightening of law alone will not solve the fire problem in the long run. Complementary strategies are needed to tie up the local population in various fire management activities. Unfortunately very few projects, except the PROARCO/IBAMA/MMA project in Brazil, have been concentrating on how to involve local communities in fire management. Implementation of Community Based Fire Management (CBFiM) requires the development of an enabling fire legislation and fire policy; when 95 % of all fires stem from various human activities, then naturally as substantial part of fire management activities should be geared towards rising of awareness and training of local communities.

For poor people fire is the only option for land clearing, but unfortunately very few people possess the skills in applying prescribed burning; therefore prescribed burning should form a priority area in agricultural education and training. Foresters alone and fire fighters, cannot change local habits without the assistance from agriculture.

Another priority issue is for countries to take action following catastrophic events. Countries need to develop the capability to take effective action to formulate plans and programs with sufficient human and material resources to prevent and combat forest fires.

There is considerable informal cooperation among countries in the region without formal conventions or protocols. These approaches have resulted in capacity building through shared techniques for combating fires, use of equipment, education and training, remote sensing, information, management techniques, and transfer of technology. Examples of bilateral cooperative assistance and sharing of resources between countries in forest emergencies include Argentina – Brazil; Chile – Argentina; Brazil – Venezuela; y Chile – Bolivia.

In addition, a number of formal bilateral cooperative agreements have been established:

- Cross-border fire-fighting agreements (Chile – Argentina, Uruguay – Brazil, Argentina – Brazil, Perú – Brazil).
- Memoranda of understanding between the New South Wales Rural Fire Service in Australia, and Chile and Brazil; and between IBMA – Brazil and the USDA Forest Service in the United States.
- Collaboration between Spain and Chile, Venezuela and Colombia.
- Training agreement for firefighters between USAID Office of Federal Disaster Assistance and Ecuador, Paraguay and Venezuela.
- Cooperative agreements between institutions of the state (ministries, secretariats, provincial governments, armed forces) and civil society (firefighting corps, civil defence) for the prevention and combat of fires, in all of the countries in the region.
- Strategic alliances with private forest enterprises to prevent and combat fires (Chile, Brazil, Argentina, Venezuela).

In general, there are few reported initiatives and participation of the countries of the region in global forest fire projects. This is a concern, but it is also a challenge. At the moment, the project that stands out is the FAO regional TCP project to support a regional strategy for cooperation in the prevention, control and suppression of forest fires, TCP/RLA/3010. Argentina, Costa Rica, Cuba, Ecuador, the Dominican Republic, and Trinidad and Tobago and other countries in the region have requested FAO to implement this project.

At the same time, there is interest in the proposed project, “Prevention before cure” to be implemented by three countries under the International Tropical Timber Organization ITTO: Bolivia, Perú and Ecuador, under the initiative Global Fire Fight, executed by IUCN and WWF.

Several countries (Colombia, Chile, Venezuela) are participating in the international agreement derived from the UN Framework Convention for Climate Change (UNFCCC) and the UN Convention to Combat Desertification (CCD).

On 17 June 2004, the South America Regional Forest Fire Network was established by the Curitiba Declaration. Countries in the region initiated a regional dialogue and agreed to implement an Action Plan whose goals and activities are described in the Declaration. The regional network is supported by the United Nations, specifically the FAO regional office in Santiago, and the Global Fire Monitoring Center (GFMC).

To strengthen the Curitiba Declaration, civil society organizations will be invited to participate in the regional network (environmental and anti-disaster associations and foundations, consulting firms, and professional specialists), along with private companies and forest protection associations. An agenda of events and meetings will be established, including symposia, congresses, and special seminars in which the network can promote agreements among its members who will need to subscribe to the goals of the network.

The primary member of the network in each country is the entity that is responsible for the management of and protection against fires. Within each country, it is necessary to promote the development of improved policies, especially in those countries that have not defined the problem or that have insufficient or precarious laws that are disconnected from effective implementation.

It is necessary to record fire occurrences, damage and causes in order to develop the capacity to analyse and implement a corrective plan to prevent and combat fires, and to develop effective strategies that correspond to the problems in the country.

Protection, detection and organization of fire suppression methods must be integrated with the plans and programs that are used to manage the country’s resources. Empirical evidence shows that, when these activities are assigned to different organizations, they have a tendency to develop distinct criteria and stages of preparation, and frequently are competing with each other instead of developing cooperation and synergies.

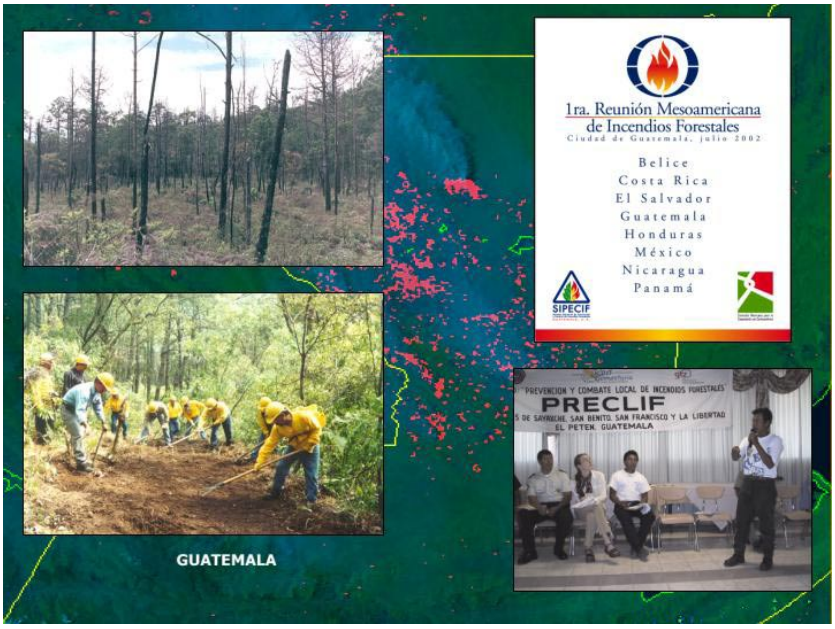
International commitments in defence of renewable natural resources, care for the environment and sustainable development facilitate the design and establishment of new agreements that, built on this base, will contribute to the protection against forest fires.

Central America and Mexico Regional Brief
International Cooperation in Wildland Fire Management[5]

Introduction

The Central America and Mexico regional forest fire and pests network was officially established during the meeting of the Central American Council of Forests and Protected Areas (CCAB/AP), whose members are the directors of the national forest service of each country in the region, held in El Salvador 18–19 August 2004.

In the case of forest fires, there have been various efforts since 1996 when the Central American Regional Technical Committee for Forest Fires (COTCAMAF) was established during the 19th meeting of CCAD on 11 March 1996. On 23–24 June 1998 the Workshop on Forest Fires in Honduras generated increased interest of governments. As a result, each country in the region developed action plans for the dry season of 1999 and reactivated the agreements from March 1996.



Following these efforts, the first Mesoamerican Cooperation Meeting on the Protection Against Forest Fires was held in Guatemala 8–9 July, 2002, followed by a workshop to develop a regional strategic plan for forest fires and pests, held in Honduras 26–30 August 2002.

In order to implement the strategic plan, two further workshops were held, in Guatemala 24–26 April 2004, and in El Salvador 8–9 July 2004, both to develop an action plan for Central America and Mexico to prevent and control forest fires and pests; with financial assistance from USAID.

On the other hand, several documents were generated that documented the achievements in the region: “Reduction in the Greenhouse Effect through the limitation and absorption of CO_2 in Central America – Proposal: Plan for preventing and combating forest fires in Central America (May, 1996)”, “Forest Fires and Agriculture in Central America – Balance in 1998 (June, 1998), “Central American strategy for fire management (1998–2003)”, “Forest fires and agriculture in Central America: Project profile – Central American action plan for fire management (February, 1999)”.

Objective

- Understand the actual situation in the region of Central America and Mexico with respect to forest fires

[5] Brief prepared by Miguel Antonio López, INAB, Guatemala, malq1971@yahoo.com

- Serve as the basis for the work of the Regional Network for Central America and Mexico (21–22 October 2004) and the Pan American Conference on Wildland Fire (23 October 2004).

Statistics

The year 1998 introduced a critical period for forest fires in Central America and Mexico; this was due to the effects of El Niño in which Mexico (849,000 ha), Guatemala (679,000 ha) and Honduras (97,000 ha) were the most affected (refer to the following table 1).

Table 1. Area in hectares burned by wildland fire in each country in the region

Country / year	1998	1999	2000	2001	2002	2003
Honduras	96,623	54,986	63,593	82,356	63,442	56,655
Panama			2,204	3,344	1,580	
El Salvador	2,041	359	1,700	1,613	1,261	3,661
Nicaragua						
Mexico	849,000	230,000	263,000	137,000	198,500	322,500
Costa Rica	64,893	11,192	36,896	57,511	50,337	32,372
Belize						
Guatemala	679,000	10,600	53,400	22,150	22,387	425,000

2003 was another critical year, when Guatemala, Mexico and El Salvador were seriously burned, in spite of the fact that the capacity to respond had been increased in comparison with 1998.

Trends in fire preparedness

Governments in the Central America and Mexico region have become increasingly interested in the prevention and control of forest fires; however when the issue is translated into political discussion, much of the effort and initiatives have not achieved concrete results.

At present, in the region there is a shortage of human resource capacity, timely detection systems, equipment and minimum tools for control, among others.

In general in Central America and Mexico, during the recent years there has been an emphasis on fire control, and there is now a need to strengthen local fire prevention strategies.

Trends in projects

The analysis of the causes of the incidence of forest fires corresponds to social inequality, under valuation of natural resources, a lack of forest culture, inadequate policies, a lack of forest resources available for the use of communities that works against sustainable management, among others; that more than 98% of all fires are started by man, the dynamic variable of forest fires and climate change, globalization; we can conclude that unless the management of forest resources is decentralized to rural communities, to social organizations, and to those who benefit from forests, then fires will continue to be a problem.

As part of the protection of the region, there should be a major emphasis on actions to prevent forest fires based on the specific social and cultural aspects of each area.

From the technical point of view, to increase and adapt training processes to the level of each country, to improve the planning processes, organization and detection systems would be timely to reduce response times, in order to implement formal systems for predicting forest fires at the regional level.

As part of the process, decentralization of fire prevention and control to the level of communities, municipalities and civil organizations are also key steps; but accompanied by strengthening technical capacities, resources and equipment.

Fire management priorities

Regional priorities included fire prevention; decentralization to the community and municipal level with training, equipment, tools, etc.; increasing the technical level for predicting, detecting and monitoring forest fires; increasing the assistance of aerial control, and defining a strategy for strengthening the technical capacity of the involved countries.

Cooperation agreements for forest fire management and their state of development

The Central America and Mexico region have a number of agreements and conventions for cooperation on forest fires:

a) The Central American Commission for Environment and Development (CCAD) has established a Central American Council of Forests and Protected Areas (CCAB/AP) who nominate members of the Commission on Forest Pests and Fires in Central America and who have invited Mexico to participate; shaping the Central America and Mexico Regional Network on Forest Fires and Pests.

b) Satellite detection for forest fires Mexico (CONABIO) and Guatemala, Salvador, Costa Rica and Honduras (bilateral agreements between Mexico and each country).

c) Satellite detection for forest fires between Nicaragua and Honduras.

d) Under the bilateral agreement between Mexico and Guatemala and the Commission on Forest Pests and Fires in Central America and Mexico, two international Mesoamerican courses for forest fire management have been developed (the first was held in November 2002 and the second in November – December 2003).

e) At present there is in the process of being developed an action plan for fire management in Central and South America, framed within a regional strategy for initiating its execution, with the assistance of USAID.

f) The “Trifinio” pilot area has been established in the border area of Guatemala, Salvador and Honduras to develop activities for forest fire prevention and control.

g) In frontier areas there are activities to prevent and control forest fires in countries that belong to the Central America and Mexico Regional Network on Forest Fires and Pests.

h) In Central America there are training processes: one supported by OFDA/USAID and the other supported by Mexico, “Mesoamerican course on forest fires.”

i) In the border area between Guatemala and Mexico, there is an agreement to coordinate emergency response.

j) There is an emergency response agreement between Costa Rica, Nicaragua and Panama.

Suggestions for strengthening regional and bilateral cooperation

a) Strengthen satellite systems for detecting and monitoring fires in the region and improve processes for predicting forest fires.

b) Revise the forest fire strategy for Central America and Mexico; and define a regional forest fire management policy, taking into account the Central American Regional Forest Strategy (EFCA), considering the strategy for the forest sector for the next 25 years.

c) That the member countries of the Central America and Mexico Regional Network on Forest Fires and Pests give priority to resources for forest fire management.

d) Develop cooperation mechanisms for bilateral and regional projects that develop forest fire management, in order to present proposals for international assistance.

e) Now that the Central America and Mexico Regional Network on Forest Fires and Pests exists, it should develop objectives, procedures, mechanisms for cooperation and work, and protocols.

f) Create channels and procedures for communications among the networks in Central America and Mexico with those in the Caribbean; North America; and South America, and with the Global Fire Monitoring Center (GFMC).

g) Develop a work plan in a short time period at the level of regional networks, with roles and responsibilities, identifying dates for achieving results.

Caribbean Regional Study on International Cooperation in Wildland Fire Management[6]

Recent trends in wildland fires in the Caribbean region

Forest fires occur in the countries of the Caribbean region, just like in the majority of countries in the world; however, it is difficult to obtain reliable information. It was only possible to obtain information about the number of fires in 5 out of 25 territories[7] in the region (20% of the total) for the period 2000 – 2003; and information about the surface area burned was only available for three countries. In the report on the global Forest Resources Assessment 2000[8], FAO reported information about forest fires in 52 countries around the world, but only two of these countries were in the Caribbean: Cuba, and Trinidad & Tobago.

Table 1. Distribution of fire occurrences and area burned in Caribbean countries

Países	**Number of fires**	**Area burned (ha)**	**Severity Index (ha/fire)**
Barbados *	3 932		
Cuba **	1 119	38 891.95	34.75
Dominica *	607		
República Dominicana *	564	18 644.40	33.06
Trinidad y Tobago *	964 ***	11 232.00 ***	11.65 ***

* *Presented at the 12th meeting Heads of Forestry in the Caribbean Forestry, Puerto Rico, June 2004*

** *Reported by the Cuerpo de Guardabosques.*

*** *Data only for Trinidad.*

Based on the information in Table 1 above, the trend in fire occurrences is shown in figure 1 below. During the period 2000–2003, there is a tendency for an increase in the annual number of fire occurrences.

---

[6] Brief prepared by Marcos Pedro Ramos Rodríguez, Universidad de Pinar del Río, Cuba, cramos@af.upr.edu.cu

[7] Anguila, Antigua & Barbuda, Dutch Antilles, Aruba, Bahamas, Barbados, Bermuda, Cuba, Dominica, Dominican Republic, Granada, Guadalupe, Haiti, Cayman Islands, Turks & Caicos, Virgin Islands, Jamaica, Martinique, Montserrat, St. Kitts a& Nevis, St. Vicente & Grenadines, St. Lucia, Trinidad & Tobago)

[8] FAO, Working Paper 55, Gobal Fire Assessment 1990 – 2000, CD-ROM, 2001

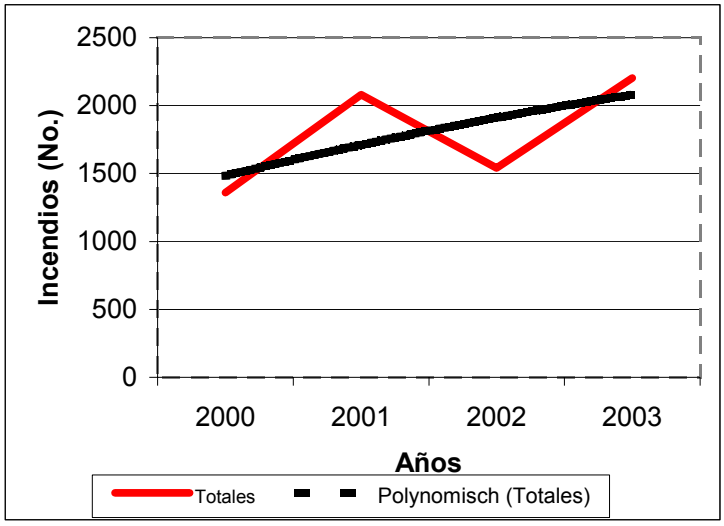


Figure 1. Distribution and trend of fires in five countries in the Caribbean 2000–2003

Projected trends in wildland fire occurrences in the Caribbean region

For years tropical forest fires were not considered an alarming problem. However, in the 1990s the number and size of fires in tropical countries in Latin America and the Caribbean began to increase, just as in the rest of the world. At the global level the uncontrolled use of fire to convert forest land to agriculture and to pasture land increased and continues to this day. This is a major cause of deforestation. In addition, in recent years forest fires have had a serious impact on natural resources, on human health, on transportation, navigation and on air quality in large areas. In the 1990s, humid tropical forests were also affected. In this context, the Caribbean is no exception. It can also be mentioned that the rural poor are the most vulnerable people affected by fires. Due to the situation just described, it is very probable that in less than a short time, the trend of forest fires will be to increase.

Priority issues for fire management

The most important priorities are: a) Strengthen prevention technicians, b) Support collaboration between national agencies and states on the matter of fire management, c) Develop a research program that takes into account the priorities of each country, d) implement a system of monitoring fires, e) Promote the development of a regional database, f) Develop training strategies.

Cooperative agreements for forest fire management

According to consultations that have been carried out, it was not possible to determine exactly what bilateral, multilateral or international agreements for forest fire management are in existence in the Caribbean.

Other international projects

At the present time, according to the sources that have been consulted, there are no international projects being developed regarding fire management in the Caribbean.

Status of the development of activities and agreements based on regional networks

It was proposed to establish a Caribbean regional fire network during the meeting of the South American regional fire network in Curitiba on 17 June 2004. This idea needs to be implemented during the meeting of region networks in Costa Rica 21 – 22 October 2004.

Suggestions for future cooperation

The situation described above indicates the need to establish mechanisms for exchanging information among Caribbean countries. It is likely that this is a propitious time for planning cooperation in forest

fire management. From this framework it is possible to establish strategic alliances and mechanisms for training, statistics and organization and creating working groups at the regional level under the structure of COFLAC.

Other

In the Caribbean region, perhaps the CARICOM (Caribbean Economic Community) organization can be used to support regional mechanisms. However, there are members like Belize, Guyana and Suriname, and observers include Colombia, Mexico, and Venezuela. These countries participate on the continent. It must be decided if these countries would participate in the Caribbean regional network, or are they part of other regional networks.

Bibliography

Cochrane, M.A. 2002: Spreading like Wildfire. Tropical forest fires in Latin America and the Caribbean. Prevention, assessment and early warning. Produced by UNEP.

Elías, J. y J. Sierra. 2004: Forestry Activities in The Dominican Republic Emphasizing Forest Fires. Report presented at the 12th meeting of heads of forestry in the Caribbean, 8 – 11 June 2004, Puerto Rico. 6 pages

FAO. 2001: Global Forest Fire Assessment 1990 – 2000. FAO-Forest Resources Assessment Programme. Working Paper 55.

James, A. y J. Dupuis. 2004: The Impacts of Brush Fires on The Vegetation of Dominica. Report presented at the 12th meeting of heads of forestry in the Caribbean, 8 – 11 June 2004, Puerto Rico. 16 pages

Jones, N. 2004: Wildland Fires, Management and Restoration. Report presented at the 12th meeting of heads of forestry in the Caribbean, 8 – 11 June 2004, Puerto Rico. 5 pages

Singh, K. y A. Adam. 2004: Country Report for Trinidad Wildland Fire, Management and Restoration. Report presented at the 12th meeting of heads of forestry in the Caribbean, 8 – 11 June 2004, Puerto Rico. 22 pages

Summary of the Wildland Fire Situation in North America[9]

1. Summary of recently observed trends of wildland fire occurrence in the region

Throughout the US and Canada, the trends in wildfire occurrence are similar. Fires are growing larger, causing more damage, threatening structures, property, and lives, and are more costly to suppress. The intensity and extent of damage in any given season varies with the weather, but the overall trend is an increase in burned area and a greater variability between annual area burned and fire intensities.

Canadians report about 8,500 fires per year with an average annual area burned of 2.5 million ha. The variability in area burned ranges from as few as 300,000 ha to as much as 7.5 million ha annually. The past 4 years in the US, five states have reported their largest single fire since records have been kept.

In both countries, more people are living, working, and recreating in or adjacent to extremely flammable forest fuels causing a significant increase in fire protection costs. There is a growing recognition that changing demographics, droughts, and climate change, are all contributing to the problem. In many areas of the western US, after decades of successful fire suppression, insects and disease have become more widespread and some forest ecosystems have unnatural fuel loadings and structures. As a result, there are millions of acres more susceptible to large and damaging wildland fires.

[9] Report prepared by the Fire Management Working Group (FMWG) of the North American Forestry Commission (NAFC)

Both Canada and the US are very successful at fire suppression. In Canada, 97% of all fires are extinguished before they reach 200 ha. In the US, using a slightly different definition, initial attack is successful on 98.5% of the fires. It is clear, however, that it is neither physically possible nor ecologically desirable to eliminate all fire from the landscape.

2. Projected trends

Most fire managers and researchers indicate the upward trends in fire occurrence, area burned, and suppression expenditures will continue. There is increasing concern in both countries that global warming will become a significant factor in increasing fire activity.

3. Priority Issues for fire management

US priorities are defined in the National Fire Plan (NFP) and the Healthy Forest Initiative. The NFP recognizes the need to continue to suppress unwanted fire and protect property and citizens, but also provides for increased efforts in prevention, education, and restoration of fire prone ecosystems. Millions of acres of fuel treatment projects and extensive efforts in community involvement are planned in order to treat large landscapes that will result in healthier forest and less damaging fires.

In September 2004, the Canadian Council of Forest Ministers agreed to the development of a new Canadian Wildland Fire Strategy based on the principles of risk management and hazard mitigation. This strategy will seek a balanced approach to public safety, forest protection and health, and fire management expenditures that maintains a strong and effective fire suppression organization, but also includes innovative hazard mitigation, preparedness, and recovery programs. The Strategy recognizes the need for responsibility to be shared among property owner, industries, and local, provincial, and federal governments.

4. Established international cooperative arrangements

The US and Canada are participants in a wide range of international programs. Both Canada and the US have mutual aid border agreement covering all international borders for mutual aid in fire management. The agreements between the US and Canada and the US and Mexico also provide for cooperation in all fire management activities anywhere in the countries, as well as technical exchanges and mechanisms for annual operating plans and organizational meeting.

In addition to the border agreements, the US and Canada are finalizing arrangements with the States of Australia and New Zealand to provide fire suppression resources during critical fire season. Over the past four years, Australian and New Zealand fire fighters have been deployed in Montana, Idaho, Oregon, and other Western States, and US fire fighters were sent to the State of Victoria in Australia.

Over the past four decades there has also been extensive cooperation between Canada and the US in forest fire science and technology. Both formal and informal working relationships have evolved resulting in significant synergies in certain fields such as fire danger rating, fire behavior, and climate change.

5. Status of Regional Networking arrangements

The Fire Management Working Group (FMWG) of the North American Forestry Commission (NAFC) serves as the Regional Network for North America (including Mexico). Established in 1962, the FMWG meets annually. The membership includes key groups and agencies in all three countries. For the US, all Federal and State wildland fire agencies are represented as well as the National Fire Protection Association.

Canada's members are the Canadian Interagency Forest Fire Centre, the Canadian Forest Service (including fire research), and the Provincial Fire agencies. Mexico is represented by fire managers from the Forest Commission (CONAFOR), fire research, and a non-governmental forest ecology group active in fire management and fire research projects.

During the 2004 annual meeting, the FMWG agreed to update and revise their web site to provide better information and easier access to other North American links. The web site will be designed as the "first stop" for other regional network members to access information in the three countries. The FMWG also agreed to work with the Regional Wildland Fire Networks of South America, Central America, and the Caribbean, as well as with the Global Wildland Fire Network, and develop a program of cooperation based on mutual needs and interests.

Statement by M. Hosny El-Lakany, Assistant Director-General, FAO Forestry Department

Distinguished participants,
Guests and colleagues,
Good morning.

It is a pleasure and a privilege to join you on the occasion of the first Pan American Conference on Wildland Fire. On behalf of the Director-General of FAO, Mr Jacques Diouf, I welcome you all to this important meeting. I also wish to extend my thanks to the Government of Costa Rica for the excellent arrangements they have made for our meeting.

This is the first major event that is jointly organized by the FAO Latin American and Caribbean Forestry Commission, and the North American Forest Commission. I would be interested in hearing your views as to whether or not we should consider other joint activities along these lines in the future.

There is a growing body of evidence to indicate that unplanned forest fires are increasing in both frequency and severity. There are a number of reasons for this. In many countries in Latin America and the Caribbean, there is more pressure than ever to convert forests into other land uses, fuelled principally by poverty and the need to obtain food. In some countries, such as the United States, one of the major causes of catastrophic fires is the accumulation of fuels in unmanaged forests. Ironically, effective fire prevention programmes may have contributed to the problem. Fire strategies need to address the reasons and root causes for fires. The cost of mitigating the underlying causes of fire is usually more cost effective than investments in fire suppression technologies and resources.

Primary responsibility for managing forest fires lies with each country. FAO and other United Nations agencies can provide technical support, but we do not have the capacity or mandate to fight forest fires. But the reason we are here today is to consider how countries can help each other. Many of the

problems that each country faces are similar those faced by other countries. By sharing information, technology, and expertise, all countries are better off. FAO and other United Nations organizations can exercise their comparative advantage by helping to facilitate cooperation among countries.

FAO is ready and willing to support this process. We believe that international cooperation is fundamental when it comes to monitoring, preventing, controlling, and managing forest fires. FAO is taking several specific actions to support international cooperation in forest fires:

- For many years, FAO has been providing technical assistance to individual countries to increase their fire management capacities. We have learned that an effective fire management strategy must be both bottom-up and top-down. When I say bottom-up, I refer to the importance of community – based fire management approaches. The people who are most affected by fires must be part of the solution. When I say top-down, I refer to the importance of effective fire management leadership and policies at the national level. And effective law enforcement is necessary at all levels.
- In the past five years, FAO has hosted two international expert consultations on forest fires.
- In collaboration with a number of partners, FAO is supporting community-based approaches to fire management. For example, a regional training programme will be carried out next week in South Africa.
- In collaboration with the United Nations International Strategy for Disaster Reduction (ISDR) and a number of other partners, FAO has supported the formation of regional fire networks, including the meeting in Curitiba in June of this year.
- The Fire Management Working Group was formed by the FAO North American Forest Commission over 40 years ago. This working group has co-sponsored all three of the global Wildland Fire conferences, including the recent Summit in Sydney, Australia.
- Recently, the Director-General of FAO approved funding for a regional project to develop a strategy for fire management in Latin America and the Caribbean. This project is helping to support this Conference, and funds will be available following the Conference to support follow-up activities. If you need more information about this project, please speak with Dr. Carneiro, is the project coordinator.

Last but not least, I have the pleasure to inform you that international cooperation on forest fires will be a major agenda item at two meetings in Rome in March 2005. The Director-General of FAO has invited Ministers responsible for forests to FAO Headquarters in Rome on 14 March 2005 to discuss international cooperation on forest fires, and to consider ways to strengthen the international commitment to sustainable forest management. The declaration that is adopted by the Pan American Fire Conference this afternoon will be presented to the Ministerial Meeting for consideration.

The Ministerial Meeting will be immediately followed by the Committee on Forestry, better known to most of us as COFO. The 17th session of COFO will take place in Rome from 15–19 March 2005. We will have a special side event on forest fires on 16 March, and on 17 March COFO will discuss specific ways to implement the recommendations of the Ministerial Meeting.

Today's Conference is a very ambitious undertaking for FAO. This is the first time that we have tried to bring together so many national forestry leaders from so many countries in two major regions of the world to address the matter of forest fires. I look forward to listening to your concerns and to participating in the discussions about what steps might be taken to strengthen international cooperation on forest fires throughout the Pan American region.

Thank you.

Wildland Fire Management's Multiple Dimensions

Speech by Forest Service Chief Dale Bosworth

I'm glad to be here today. I'd like to thank the Government of Costa Rica for hosting this conference, and I'd also like to thank the sponsors, the Latin America and Caribbean Forestry Commission and the North American Forest Commission. As U.S. Forest Service Chief, I'm a member of the North American Forest Commission, and after this conference I'm going to our meeting hosted this year by Mexico. I'm really looking forward to that.

I welcome opportunities like this to meet with professionals like Dr. Goldammer and with colleagues like Mr. Jorge Menendez from Argentina, my counterpart here today. These meetings give us a chance to compare notes and figure out how we might work better together across borders and boundaries for our mutual benefit. I value the opportunity to learn from your experience, especially when it comes to wildland fire.

I'm here on behalf of fire managers in Canada and the United States. I'd like to start by putting our fire environment in North America in perspective. Then I'll go into some of the things we're learning about managing the kinds of fires we're getting.

Fire Environment

You're probably generally aware of our fire environment in North America, so I won't say much, except that it is enormously complex and costly. Just to give you some idea:

- Most sites in North America have a natural history of fire that we can trace back for hundreds or even thousands of years. Wherever that's the case, fire has played a key role in shaping the structure, composition, and function of the ecosystem.
- In Canada, the boreal forests burn in huge fires at long intervals. These fires are natural events that function to keep these ecosystems healthy. However, they also put people and property at permanent risk, particularly because so many people are moving from cities into the wildland/urban interface, or WUI, for short. Canada gets thousands of these fires each year, and they burn an average of 2.5 million hectares. Fire suppression costs average about $400 million per year, but it can vary from a fraction of that to two or three times that.
- In the United States, our biggest fire problem is in dry pine forests in the West. These forests are naturally adapted to frequent low-severity fires, not to the big fires that are typical of most boreal forests. But many of these dry pine forests have become so overgrown and unhealthy that they are now ecologically threatened by big fires. These forests are also getting some of our biggest WUI growth, so the threat is to people and property, as well. Since 2002, five western states have had record fires. In 2000, we had more acres burn than in any year since the 1950s, and in 2002, our fire suppression costs exceeded $1.6 billion.

I believe that wildland fire is one of the most serious concerns we face in North America and that it will drive much of what we do in natural resource management for quite some time.

Lessons Learned

I want to make three points about what we're learning in this regard.

More Fire Use. First, we are learning that protection strategies for many forests and grasslands require *using* fire, not excluding it. Fire's ecological role means that fire can be the best tool we have to sustain ecosystem health. That can even be true in our boreal forest types, and I'll give an example.

Near Seeley Lake in the State of Montana, there are some of the biggest western larches in the world. They got their start up to a thousand years ago, when low-severity fires were introduced. Unless we carefully burn from time to time, other species come into the understory. Eventually, they will carry huge fires into the overstory and destroy the grove. Seeley Lake also happens to have a lot of homes

in the vicinity. We can protect both the ecosystem and the community from huge fires by carefully thinning and burning in the right place at the right time.

More Social Science. That brings me to my second point: We need to better integrate the social sciences into our fire management policies and strategies. We are simply going to get big, dangerous fires in many of our forest types in North America. It's natural. What isn't natural is that so many of our forests are now filled with homes and communities, like at Seeley Lake.

Technically, we know what to do. Our science and technology have given us a lot of the means to protect people in the WUI. But that might not matter. If folks near Seeley Lake and elsewhere don't like the smoke, then we aren't going to get their agreement to use beneficial fire. And if they don't want government interference with what they see as natural processes, then we might not be able to remove vegetation to control fuels. Maybe most importantly, if people want to live in houses made of flammable materials and secluded by thick trees, then we aren't going to be able to protect them, no matter what. They've got to take more responsibility.

That's why we need more social science and better communication. We've got to reach folks in the WUI, understand where they're coming from, and get them to understand what they've gotten themselves into by moving into the WUI. We've got to get people in the WUI to take more responsibility for themselves so we can better integrate our risk management.

Less Focus on Suppression. If our fire problem has social and ecological dimensions, then it's more than just a suppression problem. That's my third point: Suppression isn't enough. In the early days of our fire organization in the United States, we tended to look at fire mainly as a technical problem of fire suppression. We thought that if only we had more firefighters and more equipment, then we could quickly control almost every fire.

And we did, but it didn't solve our problem. By the 1980s and 1990s, we had a fantastic fire organization in both Canada and the United States. Today, we quickly put out something like 97 or 98 percent of our wildfires all across North America. But the 2 or 3 percent that escape can just overwhelm us. Fewer than 1 percent of our fires account for about 85 percent of our suppression costs and close to 95 percent of our total burned acres.

Southern California is a perfect example. The combined operating budgets for wildfire preparedness in California, between federal, state, and local jurisdictions, is over $3 billion per year. That gives California the largest fire department in the United States, maybe the largest in the world. By any measure, our fire services in California have enormous capacity, but every few years they get overwhelmed.

Last fall, we got over 900 fires within just 10 days in southern California. Fourteen of them became large incidents. The fires burned close to 300,000 hectares, destroyed 3,600 homes, and killed 24 people, including one firefighter. Suppression costs alone exceeded $200 million, with billions of dollars more in damage to infrastructure, loss of property, and disruption of commerce. All this in a place with some of the best firefighting capacity in North America.

That's because our fire problem isn't just a suppression problem. It's also a social and ecological problem. Southern California has some of the most volatile fuel types in the world. It also has an enormous and growing population that wants the landscape managed for homesites, recreation, visual quality, and endangered species habitat—anything but reduced fire risk. We're emphasizing suppression while virtually ignoring the land's inherent fire risk. It's no wonder we get overwhelmed: We're not managing the land to address the dynamics of volatile fire regimes.

What To Do

What's the solution? Yes, we need sufficient suppression resources and good suppression strategies. But we also need to strike a better balance between our suppression response and our pre- and post-fire activities. For that, we need to involve local communities. The most effective way to address fire problems is by involving local communities in addressing their own needs in a way that is consistent with the ecological role of fire.

That needs to be done on several fronts:

- First, the fuels front. Consistent with the local fire regime, we need to involve communities in plans and projects for reducing fuels and restoring healthy ecological conditions, especially near homes, municipal watersheds, and social or ecological values at risk.
- Second, the home front. We need to get individuals and communities to take responsibility for protecting their properties from fire by using safe building materials and by clearing an area around their homes. We also need to get people to prepare themselves for what to do in case of an emergency.
- Third, the postfire recovery front. We need to involve communities in plans and projects to rehabilitate areas damaged by fire, especially municipal watersheds and ecologically sensitive areas.

I strongly believe that fire managers need to move beyond a focus primarily on suppression. We need to strike a better balance by bringing in more of the social and ecological dimensions of wildland fire management. We need a fire management strategy that incorporates local needs and builds local capacity in the context of the fire-adapted ecosystems we live in.

Three Points

In closing, I'd like to endorse several points made by the North American Forest Commission's Fire Management Working Group. It's a professional association of fire managers that has been building partnerships between Canada, Mexico, and the United States since 1962. The Group just met in Chihuahua, Mexico, and I'd like to repeat three points made at the meeting because I think they dovetail with my remarks:

- First, fire management today isn't simply a technical matter of fire suppression. Our commitment to sustainability has made fire management much more complex. It involves all kinds of social and human dynamics as well as complex questions about the ecological role of fire. If we're going to adequately address these issues, then we're going to need new and more effective kinds of international cooperation in fire management operations, policy, and research and development.
- Second, we know that fires are growing more damaging and worrisome in North America. Drought has something to do with it, as do changing demographics and the growth of the WUI. Climate change also contributes to the problem. For example, large parts of the western United States experienced several decades of above-normal precipitation and a lot of forest growth. Now that we're back to normal drier conditions, we're seeing explosive fire activity. But whatever the cause, the key is restoring forest health.
- Finally, we need a balanced approach to fire management. Yes, we need a strong and effective fire suppression organization. But we also need to engage the public in the principles of fire prevention and hazard mitigation. We need a strategy based on innovative approaches to risk sharing, and we need for property owners to take responsibility for getting involved.

Unprecedented Gathering

In closing, I'd like to salute everyone here. This meeting today is unprecedented in this hemisphere. I believe that it's long overdue, and I'd like to see more of this kind of thing, because this issue is critical for all of us.

We on the North American Forest Commission endorse the outcomes from last October's Fire Summit in Sydney, Australia. We also endorse the goals and work of the Global Wildland Fire Network. We believe that today's meeting constitutes one of the regional conferences called for by the Sydney Summit. I hope and trust that it will lead to further collaboration in an effort to reduce the fire risk and to restore fire-dependent ecosystems for generations to come.

Food and Agriculture Organization of the United Nations	**Pan-American Conference on Wildland Fire** San José, Costa Rica 23 October 2004	Global Fire Monitoring Center (GFMC) Global Wildland Fire Network

San José Declaration on Pan-American Cooperation in Wildland Fire Management

On 23 October 2004 the Government of Costa Rica hosted the Pan-American Conference on Wildland Fire in San José. The conference was sponsored by the FAO Latin America and Caribbean Forestry Commission (LACFC), the FAO North American Forest Commission (NAFC) and the Global Fire Monitoring Center (GFMC). The objective of the conference was to strengthen international cooperation in wildland fire management. The participants adopted the following declaration:

The Conference participants:

Recognizing the importance of forests as providers of environmental services and social, economic, and ecological benefits to humankind;

Expressing concern about the increasing frequency and destructive force of unwanted wildfires in the Americas -- including the excessive use of fire in the conversion of forests into other land uses in South America, Central America, Mexico and the Caribbean -- affecting human lives, health and well-being, economic assets, property, biodiversity, water resources, soil, atmosphere and climate;

Noting that fire is playing an important role in the natural dynamics and maintenance of many ecosystems in the Pan-American region;

Noting that the use of fire in agricultural expansion in some parts of the Americas is resulting in increased vulnerability of ecosystems; likewise urban encroachment in wildlands resulting in increased vulnerability of human populations to fire, notably at the rural-urban interface;

Recognizing the reasons for changing fire regimes is due to increase in population pressure in many countries and associated socio-economic and conflicts in some rural areas;

Noting an increase in vulnerability of humans and ecosystems to secondary disasters following fires, including floods, landslides and soil erosion;

Noting that the effects of climate variability and climate change caused by human activities are already producing periods of extreme drought resulting in an increase in the severity of fires in some boreal, temperate, sub-tropical and tropical ecosystems, in particular in wetlands;

Concluding from the analyses and reports of the Regional Wildland Fire Networks presented to this conference on the fire situation in participating countries, it is evident that the majority of countries in the regions are ready to establish and strengthen a regional dialogue on cooperation and exchange of information, research and wildland fire management, including through agreements;

Expressing the intention to overcome current gaps and shortages in:

- Consistent information and statistics about fires, their causes and their effects
- Applied research in social sciences and humanities, and innovations in appropriate technology
- Integration of social, economic, environmental considerations and institutions in developing tangible policies and practices related to fire
- Fire becoming an integral component of land, resource, and forest management
- Balanced approaches and solutions, including mitigation, prevention, preparedness, response, and recovery
- Community-based approaches to fire management
- Skills and knowledge of rural people in fire management
- Training in the appropriate use of fire (for example, prescribed burning or the use of fire at the interface of critical risk)
- Long-term visions or plans with tangible short-term and medium-term milestones
- Compatible approaches, e.g., global implementation of the Incident Command System (ICS) and the International Wildland Fire Agreements Template

Recalling the recommendations of the World Summit on Sustainable Development (WSSD 2002) and the International Wildland Fire Summit (Sydney 2003) with respect to the management of wildland fires and the strategy to strengthen international cooperation in wildland fire management;

Endorsing the efforts of the United Nations International Strategy for Disaster Reduction (UN-ISDR) and its Wildland Fire Advisory Group to assist and strengthen the efforts of United Nations bodies, other international organizations, and non-governmental organizations, to reduce the negative impacts of wildland fires;

Supporting the objectives of the ISDR Global Wildland Fire Network (GWFN) and the Global Fire Monitoring Center (GFMC) to systematically increase the intra- and inter- regional cooperation in wildland fire management for the world;

Supporting the preparations by FAO for the Ministerial Meeting on Forests where wildland fire management will be a major agenda item (Rome, 14 March 2005);

Appreciating the support and hospitality of the government of Costa Rica, host of the Pan-American Conference on Wildland Fire;

Recommend to governments, international organizations and non-government organizations the following action plan for cooperation on wildland fire management:

- Implement national and regional strategies that recognize the importance of forests in alleviating poverty and increasing food security

- Elevate the priority of sustainable forest management on national political agendas

- Elevate the priority of sustainable forest management on the agendas of development assistance agencies and international organizations

- Establish national centres for monitoring wildland fires

- Develop and standardize fire statistics that include common criteria for classification of vegetation types affected by fire

- Develop and implement national laws and policies that promote integrated approaches to agriculture, forest management, fire management, economic development, social and human resources development, and environmental protection

- Develop long-term strategic approaches to fire, rather than only reacting to emergencies and recognize the beneficial use of fire as an ecosystem and resource management tool

- Strengthen the capacities of organizations responsible for managing fire in each country

- Strengthen formal and informal education programs in forest fire management

- Develop and implement national and regional fire research programs, including research in global carbon strategies

- Implement and consolidate the Incident Command System in countries to strengthen the capabilities of their organizations and to facilitate efficient multilateral cooperation in fire emergencies

- implement community-based policies and approaches to fire management, involving civil society, indigenous communities, farmers and forest workers in fire preparedness, prevention and response, as a fundamental principle to gain local commitment for the protection of ecosystems and integrated fire management, and incorporate them as national policies

- Recognize the need for applying economic evaluation of environmental damages caused by fires, as well as damages avoided by preventing or suppressing fires, as a planning and management tool

- In addition to existing funding agencies such as the Global Environment Facility (GEF), create national and regional financing mechanisms for fire management, including private mechanisms

- Recommend official recognition of regional fire management networks under the auspices of the United Nations ISDR, FAO, and GFMC, among others

- Endorse the Global Wildland Fire Network

- Recommend FAO and ISDR to facilitate the development of a regional fire management strategy for Latin America and the Caribbean which provides a framework of action for countries to address the problems of wildland fire

- Support agreements between institutions within countries, as well as between countries in each region, and between regions

- Request the FAO Committee on Forestry (COFO) and the Ministerial Meeting on Forests in Rome (March 2005) to consider the recommendations emanating from the regional consultations that took place in 2004 and support the Framework for the Development of the International Wildland Fire Accord developed by ISDR / FAO

- Establish bilateral and multilateral agreements on cooperation in integrated fire management and promote the development of an international accord for cooperation in the prevention and management of wildland fire, for example as a resolution of the General Assembly of the United Nations.