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WMO's Contribution to Wildland Fire Issues



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World Meteorological Organization

- History goes back to the 1850's
- Specialized UN agency on Weather, Climate and Water
- 189 Members - WMO Congress and Executive Council
- Secretariat in Geneva (staff 250)

WMO Activities involved with Fire Issues

- Atmospheric Chemistry
- Agricultural Meteorology
- Emergency Response Activities
- Weather Research
- Disaster Risk Reduction
- Climate Outlooks (El Niño/La Niña)

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Role of WMO in Fire Issues

- Assist in enhancing regional capabilities to provide
 - Daily smoke trajectories and dispersion forecasts
 - Meteorological support in form of improved ENSO/Climate variability predictions
- Improve remote sensing capabilities for characterizing fire activity tracking the movement of smoke and haze

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Role of WMO in Fire Issues


- Assist in strengthening regional monitoring efforts
- Improve management of smoke and haze (transboundary) pollution events through efforts directed at enhanced information exchange and coordination.
- Fire Weather and Fire Danger Indices
- Emergency Response Modelling for fire and smoke events

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National Meteorological and Hydrological Services

- (1) Traditional activities related to meteorological monitoring and forecasting
- (2) Monitoring and surveillance functions, Hot spot identification using satellite imageries, Smoke trajectory and dispersion modelling, Monthly and seasonal climate prediction information, and activities related to air quality monitoring, Development of Fire Danger indices.
- (3) Dissemination of information to environmental and other agencies


Regional Specialized Meteorological Centres (RSMCs) provide analyses and forecasts, such as smoke trajectory forecasts, to assist in environmental emergency situations



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Global Atmospheric Watch (GAW)



WMO/ ESCAP Project

"Support to the Implementation of the Regional Haze Action Plan of ASEAN Member Countries", funding from Australia, objectives

- Improve monitoring of particles: Instruments installed in Malaysia and Indonesia atmospheric particles in real-time training data are available (web) for use by ASEAN countries
- Development and assessment of aerosol transport models in the ASEAN region (ASMC)
- Promote coordination between institutions Network of countries and international organizations formed

WMO/IUGG Science Assessment of Aerosol Effects on Precipitation

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World Weather Research Programme

WWRP Wildfire Weather Workshop, Melbourne Oct 2003

- Short range forecasting
- Smoke transport
- Fire behaviour
- Seasonal range forecasts/climate
- Decision support systems
- Economic analysis of fire weather services
- Scientific visitors programme

WWRP Science Steering Committee, Boulder Oct 2004

Potential exists for a WWRP Forecast Demonstration Project, possible themes:

- comparison and assessment of fire weather indices
- assessment of smoke dispersion/air quality forecast parameters on urban/regional scales

Ad Hoc WG on Fire Weather

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Agricultural Meteorology

- WMO's Commission for Agricultural Meteorology (CAgM) mandated an Expert Team on Agrometeorological Aspects of Sustainable Agricultural Development with TORs of:
- To review and evaluate the status of agrometeorological applications to conserve and manage natural and environmental resources for the benefit of agriculture, rangelands, forestry, fisheries and other relevant rural activities;
- To establish operational guidelines for fire weather agrometeorology;

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Agricultural Meteorology

Recent Publications:

- Fire in Forests, Rangelands and Agricultural Systems. January 2006. WMO/TD No. 1313 – CAgM report 99.
- The Impacts of Agrometeorological Application for Sustainable Management of Farming, Forestry and Livestock. October 2003. WMO/TD No. 1175. - CAgM report 92.

Future Events:

- International Fire Early Warning Workshop and CAgM Expert Team Meeting on Agrometeorological Aspects of Sustainable Agricultural Development – Early 2008

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WMO Emergency Response Activities

- Main goal is to assist National Meteorological Services, with other relevant agencies of Member countries, and in cooperation with relevant international organizations, to respond effectively to environmental emergencies.
- Priority is on expanding to include atmospheric transport and dispersion modeling to support response to chemical accidents and regarding smoke from large fires (wildland, oil and chemical fires).
- Expert Team Meeting On Modelling Of Atmospheric Transport For Non-nuclear Emergency Response Activities (Sep 2005)

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WMO Emergency Response Activities

- Meteorological data, forecasts and specialized atmospheric transport and dispersion products, as well as meteorological systems that support environmental emergency response represent an important component of the larger goal of disaster prevention and mitigation.

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