Wildland fires part II: Regional focus

Professor **Dr Nikola Nikolov** introduces the Regional South East European/Caucasus Wildland Fire Network and its main activities in a region where fighting wildland fires is exacerbated by the potentially lethal legacies of past conflicts

REGIONAL NETWORKING IN THE area of wildland fires in South East Europe was initiated in Bulgaria 2002, and a UNECE/FAO conference in Turkey in 2004 spurred representatives from the region into strengthening their collaborative efforts. The year after, a regional forest fire exercise was arranged and supported by the Global Fire Monitoring Centre (GFMC) and hosted by Bulgaria. The exercise involved Fire Service participants from: Albania; Bosnia and Herzegovina; Bulgaria; Greece; Serbia and Montenegro; and Turkey.

Damage done

Further meetings led to the creation of the Regional South East European/Caucasus Wildland Fire Network (RSEE/CWFN), which has expanded its geographical scope over the years, with 2007 seeing the development of a strategy for international co-operation. This strategy identified thematic areas of co-operation including: terminology; statistical database; information exchange; wildfire prevention and use of fire; early warning; detection and monitoring; wildland fire suppression; capacity building/training courses; policies; legislation and strategies; and research.

The data for forest fires in many of the countries within this regional network can sometimes be patchy, available only for some of the countries, and data is often interrupted. This is a serious problem which is being worked on and the RSEE/CWFN is planning to update the database at the end of the year.

According to the data that is available, the number of forest fires per year in the region from 1988-2004 varies, with the lowest number recorded in 1991 (2,765 fires – without data from Croatia). The highest number of forest fires recorded is in 2000 (16,922 fires). The total amount of forest fires over the given period is 115,666. Turkey has the highest number of recorded fires and Slovenia the lowest.

Over the given period the total burned area is 1,250,892ha. The average annual amount of burned forest is 156,361ha. The largest burned forest area is recorded in Greece – 775,685ha.

According to this data, the most at risk countries in the region are: Greece; Croatia; Turkey; Republic of Macedonia; and Bulgaria. However, this does not mean that the other countries in the network do not have problems.

This year will be remembered as one of the hardest in the recent history of the region. Before the beginning of 2007 there were forecasts that these countries should expect a tough fire season but no one could have predicted events such as were actually experienced.

A satellite image of Greece taken in August, 2007, shows the extent of fire breakouts
photo: NASA Earth Observatory

The most affected country was certainly Greece (see p20). According to the European Forest Fire Information System, Greece has lost about 270,000ha of vegetation to fires this year alone. The vast majority – 184,000ha – was burned in just four days, more than has been lost in any year since records began. Sixty-eight people died in total; most were caught in the open trying to flee or were surrounded by fire while trying to save their property.

More than 110 villages have been destroyed leaving thousands of people homeless, surrounded by blackened land.

An independent estimate by the international assessment firm Standard & Poors puts the damage in the range of €3 billion to €5 billion, corresponding to 1.4 to 2.4 per cent of the country's gross domestic product.

Other countries in the region were also affected. In Croatia approximately 6,000 wildland fires occurred (ten per cent of those in forests) and about 60,000ha were burned. There was a tragic situation when 13 firefighters were surrounded by flames on the island of Kornati and were all killed. The damage has been estimated at €123 million. In Bulgaria the number of forest fires totalled 1,478 and about 43,000ha were burned. The Republic of Macedonia was also affected, with around 635 fires, an area of about 35,000ha ravaged, and estimated damage of €21 million. Serbia saw 258 fires with about 33,000ha of forest burned, and in Albania 1,123 fires burned an estimated area of 12,000ha.

For fire suppression, different kinds of tools, special vehicles or aircraft were used, depending on the country. This was the first time that aircraft were used in such large numbers in the region, many of them being rented or deployed as aid from other countries. The international solidarity expressed in terms of human resources and equipment was, in many cases, a determining factor in being able to suppress the fires.

Many countries sent aid, despite experiencing large wildland fires in their own territories, as was the case with Turkey and Croatia, showing that international collaboration and resource sharing is the future of wildland fire protection in the region.

Some of the contributory causes to these fires and the scope of their severities and damages include:

- Consequences of the rural exodus and abandonment of intensive land cultivation resulting in unprecedented loads of combustible materials, which caused the high intensity and severity of impacts, and often made fires almost uncontrollable;
- Improper behaviour of the people in the forests and other land regarding fire prevention;
- Hilly, mountainous terrain;
- Highly flammable vegetation;
- Improper organisation and co-ordination of the institutions responsible for fire protection;
- Improper tactics or equipment for fire suppression;
- Improperly trained command staff; and
- Lack of trained firefighters and equipment, especially off-road vehicles and fire trucks. A large number of fires were put down to arson, although this is unofficial as it is very difficult to prove. Also, there are some peculiarities in this region that should be emphasised.

A burned area In Macedonia demonstrates high soil erosion potential
photo: GFMC

The Republic of Macedonia has fire hazards from unexploded WWI ordnance
photo: GFMC

In some countries in the region, civil wars have occurred, with long term consequences on these countries' economies. Historically, these events have also had a negative influence on relations between countries, which is especially true for countries from the former Yugoslavia, as well as the Caucasus region.

Many forest sites and non-forested lands in the Balkan region are contaminated by land mines and unexploded ordnance (UXO) from recent conflicts (particularly in Bosnia and Herzegovina and some parts of Croatia). In the Republic of Macedonia there is the threat of UXOs left over from World War I being triggered and detonated. Most contaminated is the former line of contact of 1917 (between the Austro-Hungarian, German, Bulgarian and Turkish forces in the north and the Antanta Union in the south), where large numbers of grenades and mines are still threatening firefighters and civilians. The problem with land mines is very significant in the Caucasus region as well.

In addition, as a result of the long term transition processes in those countries some of the institutions responsible for fire protection have lost or decreased their efficiency. This has led to the lack, or very weak functioning, of a coherent system for wildland fire prevention and suppression.

Furthermore this means that equipment – especially vehicles (off-road vehicles and fire trucks) – in many countries are older than 20 years and not suited to the terrain and conditions.

After effects

So what are the consequences of these wildland fires? The most important are:

- Huge economic losses;
- Large areas of deforestation;
- Soil erosion;
- Creation of ideal conditions for insects and disease;
- Loss of amenities associated with the burned vegetation; and
- Significant land-use changes.

And lastly, but most importantly, how can the loss of human life be evaluated and expressed?

Apart from the above effects, two large and severe wildland fires in the region have prompted the establishment of missions for environmental assessment of the affected areas.

Many activities are planned for the future. One of them (as a mid-term activity) certainly is development of a strategy on ▶

international co-operation in wildland fire management in the RSEE/CWFN.

The severity of the fire season in the Balkan region this year was an expression of the accumulated societal, economical and environmental changes in the region – and this must be evaluated. Decisive action must be taken to address the underlying causes of extreme fires and to reduce the increasing vulnerability of forests and society to fire.

The Balkan countries have recognised the inter-connectedness and interdependence of the natural space and efforts to protect it. As this article was being written, the autumn rains had begun – but this is no time for the region to go into hibernation.

Summit needed

Rather, it is suggested that there is an urgent need for a regional Balkan wildland fire crisis conference or summit, in which governmental commitment at the highest level should be sought.

This summit should address the underlying causes of the increased threats of wildfires to the environment and society, notably the consequences of land use change and climate variability. It should outline the need for the development of national policies and strategies addressing land use, forestry and forest protection, nature conservation and fire management. Furthermore, the summit should work towards an agreement for strengthening fire management capabilities in the region through standardised and joint regional training, as well as the introduction of improved technologies for wildfire suppression. The development of border-crossing mechanisms and agreements on mutual assistance in fire emergency situations should be another topic on this agenda.

The GFMC, through the UNISDR Global Wildland Fire Network and its regional network – the RSEE/CWFN – are available to facilitate this process.

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Author

Professor Dr **Nikola Nikolov** *is with the Faculty of Forestry in the Republic of Macedonia and serves as co-ordinator of the UNISDR Regional South East Europe/Caucasus Wildland Fire Network (www.fire.uni-freiburg.de/GlobalNetworks/Balkan/Balkan.html)*

Assessment missions

A 'keep out' sign warns of uncleared land mines in Nagorno Karabakh

photo: GFMC

In October 2006, the OSCE led an environmental assessment mission to determine the short and long term environmental impact upon fire-affected territories in and around the Nagorno-Karabakh region.

Everyone involved in the mission agreed unanimously that the long, hot and dry fire season of 2006 provided the perfect conditions for large scale severe fires on both sides of the line of contact in this politically unsettled region.

The burned areas were extensive, with significant impact upon people, the economy and the environment. On both sides of the line of contact, fires are a great concern, especially with regards to the threat of fire-triggered UXO detonations, and the mission was informed on how all available means were, often unsuccessfully, used to try to stop the flames.

The mission made recommendations on how to rehabilitate the fire affected areas and outlined actions and projects to prevent the recurrence of such fires. These actions are based on the view that environmental problems, including fires, ignore borders, conflicts and lines of contact and require the co-operation of all actors concerned.

In particular, joint capacity building and training in fire management, fire prevention and preparedness and fire suppression are recommended, as well as regional enhanced co-operation on both fire and water management issues, in relevant regional and international frameworks. Other recommendations relate to modernising equipment and fire research. Recommendations are also made for short-term initiatives to be implemented immediately.

More fundamentally, the mission hopes its report will contribute towards building peace in a region where the 2006 fires added to the already considerable human, economic and environmental cost of the conflict.

The second mission was organised at the end of August and the beginning of September this year in the Republic of Macedonia. The mission was entitled: 'Ecological Damage Assessment of the Wildfires in the Former Yugoslav Republic of Macedonia in 2007' (Joint Mission by the UNEP-OCHA Joint Environment Unit, UNEP, UNDP and GFMC). The GFMC fire assessment mission team was confronted with the dramatic social, economic and political changes in the rural space of the Republic of Macedonia. Most visible during the mission were the consequences of the rural exodus. These included:

- *A reduction in agricultural and pastoral activities;*
- *A reduction in the overall use of biomass;*
- *An increasing size of fallow lands with bush and forest encroachment, the reduced utilisation of biomass constituting an increasing availability and continuity of fuels available to wildfires;*
- *Villages becoming over-aged and even completely vacated owing to the exodus of the young generation to cities; and*
- *A decrease in the availability of a young, active rural population ready to prevent and suppress fires.*

By evaluating the multiple and cumulative effects of human-driven and natural developments on the vulnerability of the Republic of Macedonia to fire, and the whole Balkan region respectively, it is concluded that highest political priority should be given to strengthen the protection of forests against the increasingly detrimental impacts of fire on ecosystem stability and society in the country and its neighbours. Decisive action is needed urgently.