Wildland fires part V: Regional focus Central Asia

Johann G Goldammer reports on the recent developments in Mongolia and neighbouring countries to reduce wildland fires and promote integrated fire management

FOR THE LAST TWO DECADES THE Central Asian region has experienced an increase in the occurrence of wildland fires and a corresponding expansion in the area burnt by wildland fires. In Mongolia the environmental damage caused by wildland fires, as well as their influence on human health and wellbeing, is increasing. The scale of wildland fire has sometimes trans-boundary effects (ie fires and fire-smoke pollution crossing the borders with Russia and China), requiring regional/international co-operative efforts to address the problem.

Steppe ecosystems

Reasons for the escalation of destructive wildfires are, among others, the rapidly changing socio-economic conditions, a limited public budget for forest and fire management, and side effects from illegal logging. Projected trends of climate change effects on vegetation cover and fire regimes, as well as observed demographic and socio-economic trends, suggest that wildland fires may continue to play a major role in the destruction of vegetation cover in Mongolia, resulting in accelerating expansion of steppe ecosystems at the cost of forests, permafrost thawing and desiccation of peatlands/wetlands. There is no international operational mechanism in place in the region to allow the rapid response to large-scale, catastrophic fires. There is a lack of comprehensive understanding among fire specialists, policymakers and the general public of the nature and role of fire in natural ecosystem processes, and in the concepts of fire management.

The Regional Central Asia Wildland Fire Network

The Regional Central Asia Wildland Fire Network (RSAWFN) was set up under the umbrella of Global Wildland Fire Network (GWFN) under the auspices and as an outreach programme of the UN International Strategy for Disaster Reduction (UNISDR). It is one of the younger members among all 13 regional networks and was initiated at the 'Conference on Forest Fire Management and International Co-operation in Fire Emergencies in the Eastern Mediterranean, Balkans and adjoining Regions of the Near East and Central Asia' (Antalya, Turkey, 2004). At the Regional Central Asian Forest Congress 'Forest Policy: Problems and Solutions' (Bishkek, Kyrgyzstan, 2004), the forest services of Kyrgyzstan, Uzbekistan, Tajikistan and Kazakhstan endorsed the participation in the Global Wildland Fire Network, which held regional consultations in Russia (2006), China (2007) and Mongolia (2008)

Mongolian forests are found along the Khangai, Khentii, Khuvsgul and Mongol Altai ranges, three areas that play an important role in protecting water and soil resources and maintaining the ecological balance of nature in the region. They also play an important role in carbon sequestration and, thus, in the protection of the regional and global climate. Mongolian forests are growing in a prevailing arid climate, which is typical to Central Asia. They have relatively moderate growth and slow natural regeneration. The forests are very sensitive to insect infestations, diseases and human activities, notably non-sustainable forestry operations.

The Mongolian Forest Fund covers an area of 19 million ha, of which 13.2 million ha, or 8.5 per cent of the total territory, is covered with forest trees. Forest fires and fires in grasslands (steppes, degraded former forest ecosystems) are a major cause of forest degradation and steppization. The amount of forests burned annually has increased since the 1990s. The highest forest fire hazard is found in the sub-montane larch and pine stands growing on seasonally frozen soils. These stands are distributed on the Khentee, East Khentee

and Khuvsgul foothills that are characterised by an extremely continental climate.

Forest fire statistics for the 1990s reveal that the majority of fires burned within the central and eastern parts of the forested area. This can be attributed to the predominance of highly fire susceptible (highly flammable) pine and larch stands. Moreover, economic activities are much higher here compared to other parts of the region. Extreme fire seasons are caused by long droughts; fires burn from April to July under such conditions. The average fire season has two peaks. One peak is during spring (from March to mid June) and accounts for 80 per cent of all fires. The other fire peak falls within a short period in autumn (September to October) and accounts for five to eight per cent of all fires. In summer, fires occur very rarely (only two to five per cent of the total) because of heavy rains.

Sustainability

Despite the inconsistency of data for forest and non-forest vegetation affected by wildfires, the Global Fire Monitoring Centre (GFMC) has recorded large-scale devastation of forests. The cumulative effects of illegal logging, the lack of sustainable forest management in large parts of the country, including the long-term effects of forest exploitation under the Soviet rule, and the consequences of increased ignition sources, have resulted in an overall degradation of forests in the country.

In Mongolia, as well as in the neighbouring countries of Central Asia, the fire management capabilities of authorities have declined as a consequence of economic and political transition. Many of the fires in forests and steppes burn without any response. Since the 1990s the GFMC and the German Agency for Technical Co-operation (GTZ), with support by the German Federal Ministry for Economic Co-operation and Development (BMZ), have supported the development of sustainable forest management in the country. In 2008 a three-level national fire management project funded by the BMZ and commissioned by the GTZ – Advisory Project 'Disaster Risk Management in Development Co-operation' on behalf of the BMZ, was launched to address the alarming fire-induced degradation.

The project will contribute to the improvement of wildland fire disaster risk reduction in Mongolia through measures of Integrated Fire Management by the:

- Facilitation of the establishment of a 'National Inter-Agency Fire Management Board', with participation by civil society and non-government organisations;
- Development of innovative methods of fire management to be included in a National Fire Management Strategy;
- Facilitation of the dialogue with neighbouring countries in trans-border/trans-boundary fire management;
- Development of a fire risk analysis at local level, developed by considering the roles and responsibilities of communal authorities, forest user groups, and local forest service units; and
- Development of principles on how improved fire management capability will contribute to the implementation of legally binding and voluntary agreements, such as the Bali Action Plan/Reduction of Emissions from Deforestation and Degradation (REDD) or the Forest Law Enforcement and Governance (FLEG) process.

Partners in this project, currently in its implementation phase and which will be finalised in late 2008, include institutions/representatives from national, provincial and communal levels, particularly local populations affected by wildland fires.

The results of this project are very important for economic entities and user groups that own or use forest lands under legal agreements. The project outcomes will be used to plan the use of non-timber forest resources, to protect forests from fire and harmful insects, to carry out restoration activities and to study the possibilities on the use of forest lands, forest composition and forest species.

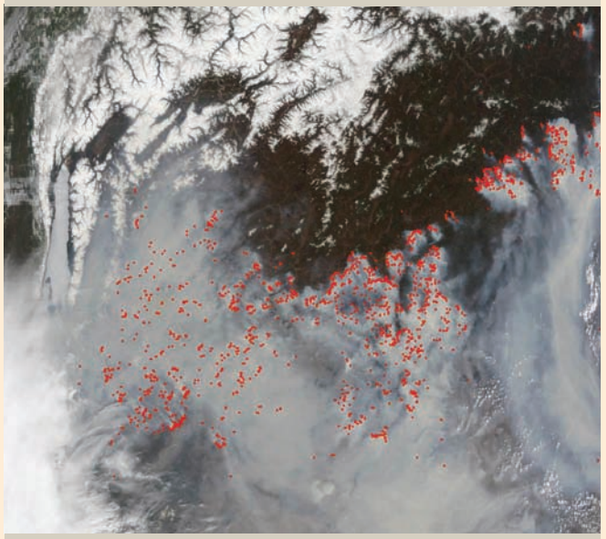
The next regional conference is planned for early 2009. The government of Russia will invite its neighbouring countries in the central Asian region to formalise agreements on co-operation in fire management, including mutual assistance in large fire crises. CRJ

Author

Professor **Dr Johann G Goldammer** *is head of the Global Fire Monitoring Center (GFMC) and professor for fire ecology at Freiburg University, Germany, and the United Nations University (UNU). He co-ordinates the UNISDR Wildland Fire Advisory Group. The GFMC, which facilitates the UNISDR Global Wildland Fire Network (see* CRJ *wildland fire coverage Part I, 2007), was awarded the UN Sasakawa Award for Disaster Reduction in 2001 and is currently assisting the Central Asian countries to build an efficient regional network.*

■ *www.fire.uni-freiburg.de/GlobalNetworks/CentralAsia/CentralAsia.html*

Advanced prescribed burning techniques were demonstrated during the First Central Asian Forest Fire Experiment, with joint participation of Mongolian, German and Russian fire specialists



This aerial thermal image displays the spread of wildland fires in the central Asia region

The project will contribute to the improvement of disaster risk reduction in wildland fires