



Report of the Symposium on Fire Management in Cultural and Natural Landscapes, Nature Conservation and Forestry in Temperate-Boreal Eurasia

Global Fire Monitoring Center (GFMC), Freiburg, Germany, 25-27 January 2008

Background and Rationale of the Symposium

In large parts of Eurasia the use of fire and other disturbances have contributed to shape landscape patterns of high ecological and cultural diversity and value, e.g. heathlands, open grasslands, meadows, and swidden (shifting) agriculture sites, as well as open and stress-resilient forest ecosystems. The rapid socio-economic changes in the past four decades and the recently increasing trend of rural exodus all over Eurasia, however, have resulted in abandonment of traditional land-use methods. With the elimination of these disturbances by cultivation, including traditional burning practices, large areas of Europe are converting to fallow lands, a process that is associated with ecological succession towards brush cover and forest, and an overall loss of open habitats. Besides the loss of valuable biodiversity the abandoned lands constitute an increase of wildfire hazard – a trend that is revealed by a growing number of extremely severe fire disasters. Similarly, the exclusion of fire in natural ecosystems such as northern boreal and sub-boreal coniferous forests in Eurasia has resulted in changing vegetation composition and an increase of wildfire hazard, notably in Central-Eastern Eurasia. Changing paradigms in ecology and nature conservation currently have led to reconsideration of fire-exclusion policies in certain sectors of land / landscape management, nature conservation and forestry.

Auspices and Partners

The symposium was an activity of the Eurasian Fire in Nature Conservation Network (EFNCN)¹, which has been founded in 2000. EFNCN is facilitated by the Fire Ecology Research Group / Global Fire Monitoring Center (GFMC), Max Planck Institute for Chemistry, c/o Freiburg University / United Nations University, Freiburg, Germany.² The Symposium was organized in close association with the EU FIRE PARADOX project, the EU LIFE Project “Rohrhardsberg, Obere Elz und Wilde Gutach”³, the EU Leonardo da Vinci EuroFire project, the UNECE Team of Specialists on Forest Fire, the UNISDR Regional Baltic Wildland Fire Network and the United Nations University (UNU). The symposium was also linked to the PhD course „Hot Topics and Burning Issues: Fire as a Driver of System Processes – Past, Present, and Future (30 March – 5 April 2008, C.T. de Wit Graduate School for Production Ecology and Resource Conservation, Wageningen University, Global Fire Monitoring Centre / Max Planck Institute for Chemistry, and the United Nations University).⁴

Objectives of the Symposium

The symposium provided a platform for the exchange of data, expertise, and views of institutions and individuals who are actively applying or conducting research in prescribed burning for the purpose of nature conservation (biodiversity management, habitat management), land and landscape

¹ <http://www.fire.uni-freiburg.de/programmes/natcon/natcon.htm>

² <http://www.fire.uni-freiburg.de/>

³ <http://www.fire.uni-freiburg.de/feuroekologie/EU-Life-project.html>

⁴ <http://www.fire.uni-freiburg.de/course/uni/postgraduate-course-wageningen.htm>

management, and forestry, notably in forest fire management. As the EFNCN is operating at the science-management and science-policy interface, representatives of institutions representing land managers and owners, public services, e.g. fire services, had been invited to attend to discuss and share views on professional capacity building in the use of prescribed fire.

Overall, the symposium supported the advancement of the use of prescribed fire in Eurasia; particularly by considering the involvement of local communities in land and fire management.

The region of interest covered by the symposium is temperate-boreal Eurasia with a focus on Europe North of the Alps and the adjoining countries of East / Southeast Europe, Caucasus, Central and Northeast Asia.

Outputs of the Symposium

The symposium included plenary sessions with presentations of project reports and analyses of policies and management strategies, as well as dedicated side events for major projects and other groups.

All attendees of the symposium had been invited personally or through institutional links. All participants are actively working in the use of prescribed fire, either in research or in management application. The participants received a template for reporting basic information on prescribed burning sites, aimed at updating the EFNCN database. This database will be shared with the Fire Paradox database.

Participation and Symposium Contributions

The symposium was held at the premises of the Global Fire Monitoring Center (GFMC), Airport Campus of Freiburg University, under the joint auspices of GFMC and United Nations University (UNU) and the co-sponsorship / cooperative arrangement with the EU LIFE Rohrhardsberg Project, the EU Leonardo da Vinci Project EuroFire⁵ and EU Fire Paradox⁶. The meeting was attended by 54 participants from Belarus, France, Germany, Hungary, Italy, Macedonia, Mongolia, Netherlands, Norway, Poland, Russia, Spain, Sweden, and Ukraine, including GFMC staff and representatives of local authorities and projects.

Note: The Symposium programme with abstracts and a complete list of participants is available online at the website of the symposium at:

<http://www.fire.uni-freiburg.de/programmes/natcon/EFNCN-meetings-1-2008.html>

Opening of the Symposium

The symposium was introduced with Germany as an example of changing paradigms for the application of prescribed burning. Johann G. Goldammer, convener of the symposium and coordinator of the Eurasian Fire in Nature Conservation Network (EFNCN) reviewed the history of burning practices and the rationale of the German Federal Law of Nature Conservation in its version of the early 1970s. The law provided a framework legislation to ban the application of these practices by the *Länder*, which enacted respective laws in the subsequent years. However, in the beginning of the 1990s a shift of paradigms took place derived from certain sectors of land management, nature conservation and forestry. Two examples of the progress achieved in the application of prescribed burning were presented. In the welcome address by the Commissioner of Emmendingen County, Mr. Hanno Hurth, encouraging comments were given concerning the introduction of the use of prescribed fire on the basis of advanced science. The representative of the regional council of Südbaden, Nature and Landscape Protection Division, Mr. Bernd Seitz, described the integration of this technique in the LIFE Rohrhardsberg Project (2006-2011).

⁵ <http://www.euro-fire.eu/>

⁶ <http://www.fireparadox.org/>

Plenary Presentations I

Opening and Introduction to the Symposium

Johann Georg Goldammer

The presentation provided a review of the prescribed burning research and development projects conducted by EFNCN members. This included examples of the reconstruction and revival of the cultural history of fire in northern and central Europe, the use of fire in northern Europe, military training sites, restoration of *Calluna* heathlands, habitat management of endangered bird species, maintenance of cultural landscapes and wildfire hazard reduction. He concluded and elaborated on visions and prospects for the future: Consolidation of the EFNCN, the involvement of the EU FIRE PARADOX project, promotion of competency-based fire management training in Europe through the EU Leonardo da Vinci Project EuroFire, and the initiation of a policy dialogue in Europe considering legislation and policies related with prescribed burning.

Fire Paradox: An Innovative and Integrated Approach to Wildland Fire Management

Eric Rigolot

The philosophy of the EU FIRE PARADOX project (2006-2010) was presented as an integrated project with the overall aim to create the scientific and technical foundation for practices and policies consistent with the concept of integrated wildland fire management in Europe. The speaker pointed out the consideration of the four complementary sides of fire (prescribed burning, ignition, propagation and suppression fire) within this approach and how these are integrated into the project structure. Finally the speaker remarked the potential for increasing cooperation between researchers and professionals as a joint European initiative including 36 partners from 17 different countries.

Prescribed Burning for Fuel Reduction Purposes in a Conservation Context

Eric Rigolot

Following the presentation of the FIRE PARADOX project, which is mainly oriented to wildfire hazard reduction, this presentation focused in the use of Prescribed Burning in the context of landscape management and conservation purposes in France. In France the use of fire for fuel reduction (wildfire prevention) purposes is covered by law, whereas law does not cover fire use for biodiversity management. However, there is an increasing demand for the application of fire in the conservation context, including the increasing consideration in official documents, e.g., Natura 2000 and LIFE Programmes. The speaker exemplified various purposes such as the use of Prescribed Burning in mosaic for the conservation of bird habitats (e.g. Bonelli eagle, passerines), the protection of wildlife (e.g. Natural Park of Luberon) and the maintenance of habitats (e.g. wetlands). Finally he pointed out several research needs such as the need to define a suitable fire regime and the need to assess through fire ecology the impacts of this technique over specific environments.

Developments in Prescribed Fire and Wildfire Management in the United Kingdom

Michael Bruce

The presentation first focused in the different objectives for the use of Prescribed Burning in the UK, mainly for heathland regeneration and hunting. Prescribed Burning is used as a traditional management of heather moorland, mostly done to improve the habitat of Red Grouse, a species of interest for hunting. The speaker pointed out how these types of burnings are conducted by private landowners, since hunting is an important economic income factor. Another example is Prescribed Burning inside forests for the improvement of the habitat of the Capercaillie. Other issues highlighted in the presentation included the current debates and conflicts related to the use of this technique and its impact on the carbon budget and water quality. The role of multi-stakeholder partnerships in fire management, including the involvement of Wildfire Groups, was discussed.

The use of Fire in Boreal Sweden

Tomas Rydkvist

Two main applications of Prescribed Burning in Sweden were differentiated: its use by forest certified companies and the use of Prescribed Burning in natural reserves. It was pointed out the need to boost the use of fire as a management tool in natural areas increasing the area burned annually. The speaker presented several limitations and recommendations for the future. The presentation also gave emphasis to the complexity of Prescribed Burning techniques to be considered in different situations. The speaker proposed to establish a European qualification system for operational Prescribed Burning personnel.

Organisation and Education for Prescribed Burning by the Swedish Forest Agency

Jukka Kuivaniemi

The speaker explained the structure of the Prescribed Burning crews operating in Sweden and the training they receive. These crews are led by a Burn Boss and an Ignition Boss. Currently there are three crews in the Region Mitt. The objective for 2010-12 is the establishment of well-functioning burning crews in each of the three regions.

Plenary Presentations II

Prescribed Range Burning in the French Pyrenees

Johanna Faerber

The presentation covered the development of Prescribed Burning in the French Pyrenees, which was initiated in the 1980s. A new fire policy to the different strategies adopted at the regional level. Burning by the rural population is practiced in the western Pyrenees, and burning by specialized groups in the eastern Pyrenees. It was reported that Prescribed Burning is accepted as an appropriate management technique. The results have shown that both strategies work if correctly implemented. However the speaker pointed out the risk that excessive regulations involving bureaucracy etc. might lead to a return of illegal burning.

Relight the Fire: Burning as Restoration Tool in the Netherlands

Joost Vogels

In the Netherlands managers and researchers are giving renewed attention to the potential to include prescribed burning as a restoration measure in the Netherlands. Within this frame the speaker presented progress in this direction with the development of a literature study on the effects of fire management and the realization of experiments that were conducted to compare the effect of controlled fires and wildfires (in Ameland in 2003, and in Terschelling in 2004). First data obtained in dune grasslands on the use of burning as an incidental restoration tool do not seem to be very promising. However, it was remarked how the lack of practical knowledge could be a factor of importance on the success of PB in the Netherlands.

History and Present Experiences with Heathland Burning in Western Norway

Peter Emil Kaland and Mons Kvamme)

The presentation highlighted the use of traditional burning in the coastal heathlands of Norway, a practice that had stopped in the past but is currently receiving increase interest due to the need for open heathlands for grazing. The role of the Heathland Centre (Bergen) is currently developing PB demonstrations open to the public with the aim to train the farmers to use fire as land management tool. In western Norway, The Heathland Centre is working in cooperation with local farmers to maintain traditional management in order to preserve the open heathlands and the culture connected. The centre is currently developing prescribed burning demonstrations open to the public with the aim to train the farmers with fire as a tool to manage their lands. Prescribed Burning was identified as the best way to preserve the heathlands and moreover the best way to prevent wildfires. Also other benefits were pointed out (e.g. Capercaillie habitat management and bee farming).

Increasing Wildfire and Land Management Problems in Middle East and South East Europe: Needs and Opportunities to Introduce the Concept of Prescribed Burning

Daniel Nagy and Nikola Nikolov

The situation of Prescribed Burning in Middle East and South East Europe was presented. There is a poor history of fire use from the scientific point of view, being limited to the use of fire by foresters after sanitary felling to reduce outbreak of pests. However new problems arising from increasing fuel accumulation and change of wildfire risk factors are providing the opportunity to introduce Prescribed Burning in the greater South East European region. Within the frame of the EU sponsored SEE-ERANET Pilot project, in which Germany, Hungary and Macedonia are cooperating, targeted research and demonstration activities in the use of PB are conducted. Some examples from Hungary were presented, where Prescribed Burning is used small scale in private agriculture areas, for fuel reduction and open land management in nature conservation areas. Plans of Prescribed Burning activities for regeneration of broadleaf stands were introduced.

Fire as a Tool to Manage Temperate Grazing Systems: Lessons to be Learnt from Africa

Claudius van de Vijver

An increasing interest has been noted in Europe to use fire as a tool manage abandoned agricultural lands, much of which is transformed to (semi)natural systems. These low-managed systems, often inhabited by (semi)domestic mammalian herbivores, are prone to bush encroachment and fuel loads in general which raises concerns with respect to system stability and threat of wildfires. To counter this situation and to manage these "grazing" systems in a sustainable manner the use of fire as a management tool is discussed. Learning from Africa it is clear that fire can indeed be a viable tool in the sustainable management of (semi)natural grazing systems. However, lessons from Africa also tell us that various issues must be considered. For instance, clear insight in direct and indirect interacting effects of fire and herbivory on system structure and functioning is needed. The given abiotic setting and its interaction with fire may generate positive feedbacks, which can result in a sudden system change. To get more insight in these matters it is proposed to enhance research on the role of fire in European grazing systems at a European level addressing ecological, environmental, economic and societal aspects.

Plenary Presentations III

Prescribed Burning for Successful Regeneration of Calabrian Pine Stands in Turkey

Ertugrul Bilgili

The presentation focussed on the use of prescribed burning as a management tool in the successful regeneration of Calabrian pine (*Pinus brutia*) stands in Turkey. Site preparation, burning techniques and burning conditions were discussed. Recommendations for future developments were given and underscored the need for enhanced targeted research and development.

Prescribed Fire Experiments in Krasnoyarsk Region

Yegor K. Kisilyakhov

In Russia understory burning and prescribed burning on logged areas are prohibited. All forest fires starting on forested areas and logged sites obligatory should be suppressed immediately. However, many scientists had been noted the positive effects of surface fires and suggested their integrated use in silviculture. Starting from 1996 experimental prescribed fires in slash fuels in Siberia have been conducted under the auspices of the Russian-American Central Siberian Sustainable Forest Management Project. Removal of natural forest and slash fuels using broadcast burning on logged areas was implemented between 1996 and 2001 on a total of more than 900 ha in Krasnoyarsk Region (Central Siberia). The burning experiments addressed three main issues. First, the fire hazard on logged areas is eliminated for the first 2 to 3 years and is very low during 5-10 years after prescribed burning. Second, prescribed burning creates conditions for natural and artificial regeneration (planting of seedlings, sowing). Third, prescribed fire reduced soil erosion, which is often observed as a consequence of mechanical treatment; prescribed fire is also strengthen fireweed growth, which is favouring the development of coniferous seedlings. Along with fires starting from logged sites wildfires in forests damaged by pests represent big problems for foresters and forest fire fighters. Mechanical treatment and prescribed fire were used to restore a mixed conifer stand (*Picea-Abies-Pinus*) following mortality from an outbreak of Siberian moth (*Dendrolimus superans sibiricus*). Moth-killed stands often become dominated by *Calamagrostis*, a sod-forming grass. Experimental prescribed understory burns were carried out to decrease surface fuel loads and to remove regeneration thickets having high potential for crown fires.

The Russian FIRE BEAR Project: An Experimental Fire Study to Enhance Forest Sustainability in Central Siberia

Douglas J. McRae

The Russian FIRE BEAR (Fire Effects in the Boreal Eurasia Region) Project is a research study designed to provide answers to basic questions in central Siberia on the management of fuels, fire, and fire regimes to enhance carbon storage and forest sustainability in ways that minimize the negative impacts of fire on the global environment, wood production, and ecosystem health. The project uses 4-ha experimental fires, a form of prescribed fire, to mimic the fire behaviour and the fire impact of what would normally occur on actual wildfires. Plots are ignited through a range of burning conditions to create low- to very high-intensity fires to provide data to model fire behaviour (e.g., rate of spread, fireline intensity, fuel consumption) and the effects of fire severity on combustion, emissions, and ecosystem impacts for estimating the effects of fire regimes on carbon balance, greenhouse gas releases, and forest health and productivity. A total of 20 experimental fires have been conducted. While both the Russian and Canadian Forest Fire Weather Index (FWI) Systems can predict fuel consumption well, the absence of fire behaviour indices in the Russian System makes the FWI System superior in understanding the expected fire behaviour necessary for making fire management decisions on fire prevention and in suppression efforts. In addition, the processed data and models developed through the experimental fires will be combined with remote-sensing data to produce regional estimates of fire areas, fire severity, and the impact of fire on carbon balance, emissions, and forest health. Ground validation sampling of wildfires is being conducted in this analysis to better understand the ability of remote sensing to accomplish this.

Prescribed Burning in the Russian Far East: Present and Future

Leonid Kondrashov

In the Far East of the Russian Federation agricultural burnings for many centuries were and still continue to be a means to clean lands, a practice which frequently involved wildfires escaping to surrounding boreal forests. In spite of strict punishments and legal liability introduced by the Rules on Fire Safety and in other instructions and directions agricultural burnings are still a major cause of forest fires. The Far East has a little experience of prescribed burning under the canopy of the forest stands. In the frames of the Eurasian Fire in Nature Conservation Network (EFNCN) and the Fire Paradox project network of sites will be set up, which will serve to demonstrate prescribed burning as an effective tool to reduce wildfire hazard and to conserve the most valuable stands in the Russian Far East, in Central Siberia and in the Transbaikal Region as well as in montane-boreal Mongolia. Prescribed burning demonstration experiments will be conducted with a training course for the local

fire specialists, a cooperative effort between the Global Fire Monitoring Center (GFMC) and the Pacific Forest Forum (PFF).

Forest Fire Dating in Northern Mongolian Forests

Byambasuren Oyunsanaa

The report presented the results of tree ring studies, which were conducted to provide information on long-term growth and on historical fire regimes in the eastern shore of Lake Hovsgol forest, Bogd Mountain and Bugant region of Selenge province, Mongolia. The long-term fire history and seasonality over the past 440 years (AD 1559-2005) is inferred from the mixed-aged Siberian larch (*Larix sibirica*) and Scotch pine forest (*Pinus sylvestris*). The largest reductions in tree growth occurred over most of the investigated forests during the 1720s to 1770s, 1860s to 1890s and 1940s to 1970s. Tree-ring analysis revealed that fire frequency varied in larch stands and pine stands. The earliest fire recorded in the scars was in 1596, while the most recent scars were dated 1997 in the eastern shore of Lake Hovsgol forests. In Bugant many fires were recorded in the tree rings in 1996, 1997, 2000, 2002, 2004 and 2007. Since there is no other long-term historical fire study in the country we cannot compare this study site with other regions. However, this study produced valuable tree growth and fire chronologies for the period 1534-2007 in northern Mongolia.

Plenary Presentations IV

Fire Management of open Landscapes in Poland: Conservation Needs and Legal Status

Jaroslaw Krogulec

The report addressed the maintenance and restoration of open landscapes in Poland, which have high biodiversity value (e.g. grasslands and fen-mires) and constitute an important habitat for protected species. Rural communities burnt fen mires for a long time and the use of fire was used as a management tool in pastoral activities. However, uncontrolled fires were also a source of big destruction. Therefore a total ban for using fire in open landscapes in Poland is in force since several decades. However the abandonment of traditional practices has caused significant land-use changes in these ecosystems affecting species adapted or dependent on these systems. In this context, the presentation introduced the recent fire policy adopted in Poland and presented the case-study of the Aquatic Warbler on Chelm Marshes, where the feasibility of controlled burning and the possibility of legal employment are being investigated as part of the EU LIFE project "Conservation of the Aquatic Warbler in Poland and Germany". Since this practice is currently forbidden in Poland, experiments are being underway on the German site in Penne Valley. The speaker pointed out the challenge to overcome the last three decades of fire-use ban as imposed by different legal acts (Nature Conservation Act, Forest Act and Farmers Subsidies and Direct Payment Act).

Use of Prescribed Fire in the Maintenance and Restoration of Wetland Bird Habitats in Belarus

Alexander Kozulin

The speaker presented the use of Prescribed Burning as a feasible method to preserve the habitat of the Aquatic Warbler in sedge fens ecosystems, threatened by the abandonment of traditional practices such as hand mowing. The adequate conditions for developing this technique under these conditions were pointed out: the need for ice or snow covering the surface of the fen and the remaining of dry vegetation over the frozen peat. It was also remarked the need for combining Prescribed Burning with other management options. Currently the Decree of the President of Belarus (8 December 2005) is setting the rules on running hunting permits, guided burning for improving habitat conditions of rare species and also for the conservation of unique ecosystems.

Forest fires in Ukraine: Management and Policy (including a brief on the "Experimental Study of Radio-ecological Impacts of Wildland Fires in the Chernobyl Zone by Vasyl Yoschenko)

Sergiy Zibtsev

The speaker described the situation of forest fires and fire policy in Ukraine, where the forest cover is rather low (15.6%). More than half of pine forests in Ukraine, which are created artificially and are currently dominated by young and middle-aged monocultures, are characterized by high fire danger.

Moreover, in a context of high-density population and lack of forest resources, prescribed burning is prohibited in legislation except for the use of fire in harvesting during winter. The presenter pointed out that in the near future a national fire policy should be developed, taking into consideration a proposed regional strategy; in crisis regions, like Chernobyl area or the South-East region of the country, where forest cover is extremely low (3-5%). He recommended the development of bilateral/multilateral cooperation in framework of UNISDR Regional South East Europe / Caucasus Wildland Fire Network is desirable. In the Chernobyl crisis region - with Russia and Byelorussia, as well as in South-East region (Crimea, Kherson) - with Turkey and Balkan countries, a governmental programme for long-term fire management measures needs to be developed to reduce wildfire risks. Training in fire suppressions and prescribed burning for professionals in crisis regions was recommended. Finally the speaker included a brief overview about the "Experimental Study of Radio-ecological Impacts of Wildland Fires in the Chernobyl Zone" (in absence of the invited speaker Vasyl Yoschenko). He had carried out measurements of ¹³⁷Cesium, ⁹⁰Strontium and Plutonium isotopes airborne concentrations and fallout intensities at various distances from the source of release by experimental fires along the radioactive plume trace, as well as an assessment of the radioactive aerosol dispersal.

Live Field Demonstration of Prescribed Burning in Kaiserstuhl

In the afternoon of Saturday 26 January 2008 a live field demonstration of prescribed burning was given in the Kaiserstuhl viticulture area. The Core Group of symposium participants observed the local team conducting several typical winter burns on slopes between the vineyards. Photographic impressions are given in Annex I of this report.

Core Group Presentations I

Welcome remarks: Mr. Gabriel Schweitzer, Mayor of Vogtsburg

Guest of honour: Mrs. Gerdi Staiblin, Minister for Rural Space of Baden Württemberg State (1996-2001)

The Mayor of the Vogtsburg, Mr. Gabriel Schweitzer, welcomed the symposium participants and particularly the guests from abroad. He underscored the importance of the role of prescribed burning for the preservation of the natural and cultural heritage and its importance for the economy of the Kaiserstuhl region. Also, the former Minister for Rural Space of Baden Württemberg State, Ms. Gerdi Staiblin, expressed her satisfaction about the successful development of the programme, which her Ministry had supported, and the positive results obtained as well as prospects for the future.

The following presentations were given in the meeting hall of the Oberbergen Viticulturist's Association (Winzergenossenschaft Oberbergen) and covered projects in the Kaiserstuhl region, LIFE Rohrhardsberg and other German regions.

Prescribed Burning Integrated in Ecological Landscape Management in the Kaiserstuhl Viticulture Area, Baden-Württemberg, Germany

Hans Page and Stefan Wiessner

The presentation was given on-site during the field visit to the Kaiserstuhl Viticulture Area with the participation of viticulturists from the region. The existing needs and problems for the management of slopes were presented as well as the participative process, which took place to decide the management options and which included farmers as well as conservancy agencies "Round Table on Slope Management in the Kaiserstuhl Area". As a result a management program was defined where prescribed management was included as one of the management options and the conditions for their execution were clearly defined. Currently the management of private sloped is managed by the private owners while those belonging to the municipalities are developed with the assistance of professionals.

Ecological Monitoring of the Management of Slope Vegetation by Controlled Burning in the Kaiserstuhl-Region, Germany

Jörg Rietze

The speaker presented that in general, for the majority of the considered fauna target species, a threat of populations caused by burning in the analysed extent could not be observed. However, for a small number of extremely sensitive species a decline of the population size has to be expected, although they will not disappear completely from the slope-complexes. An example is the butterfly species *Minois dryas*. For this species a negative correlation between the annual burned area and the population size of the following year could be found – a monitoring is required to recognize inevitable and permanent negative effects and to eliminate the risks by an optimised management. Prescribed burning as practiced under the current legal rules is not considered to be harmful for the majority of the threatened species and habitats. However, it contributes only marginally to their sustainable protection. Therefore, burning itself cannot be considered to be an effective form of slope management, only if combined with other measures. The overall efficiency of burning to prevent the succession of shrubs and groves has to be considered as low. Suppressing the dominance stocks of *Solidago gigantea* cannot be achieved exclusively by burning. Burning can only be effective if combined with other treatments like mowing, grazing, clearance of shrubs, or removal of topsoil.

Traditional Slash-and-Burn Agriculture in the Black Forest: Reconstruction of Burning and Agricultural Techniques

Peter Lutz

With an additional presentation on Koli National Park (Finland) where slash and burn is practiced (presentation prepared by Lasse Lovén, Metsähallitus, Finland; due to absence presented by J.G. Goldammer)

The speaker presented the initiative developed by the Black Forest Association (Schwarzwaldverein) for the reconstruction of slash and burn agriculture practiced in the past in the Black Forest to avoid their loss. These practices are characterized by a cycle, which includes agricultural use, fallow succession, clear felling and fire. Related to this activity, the reconstruction of slash-and-burn practices in the Koli National Park (Finland) was briefly presented. During the reconstruction they use traditional clothes and tools for the job. It was underscored how this type of activities also provides space for endangered species.

The LIFE Rohrhardsberg project: The Use of Prescribed Fire in Maintaining Endangered Habitats and Landscape Features in the Foothills of the Black Forest

Johann Georg Goldammer and Hans Page

This presentation covered the LIFE Nature Project „Rohrhardsberg, Obere Elz und Wilde Gutach, a co-host of the Symposium, is covering an area of around 6,350 hectares (ha). The landscape around Rohrhardsberg is a highly diverse mosaic of different forest types, moors, and grasslands that provide habitats of rare and endangered flora and fauna. About 75 percent of the total area is covered by forest. The remainder is dominated by grasslands. The woodlands are of (national) importance as an important home range of grouse species (Tetraonidae), the capercaillie (*Tetrao urogallus*) and hazel grouse (*Bonasa bonasia*). Most of all the hazel grouse *Bonasa bonasia* suffered a massive decline in the last ten years, making immediate measures very urgent. As a consequence of land-use change due to rural exodus and the forest management practices in the past decades the extent of habitats of these grouse species have been decreasing, resulting in a decrease of grouse populations, most of all the hazel grouse. The project objectives include, among other, the development, improvement and connecting of habitats in order to ensure sustainable survival of populations. The use of prescribed fire for maintaining open grasslands and / or restoring habitat prerequisites for these species within forest complexes is one of the key activities in the project.

Ecological Monitoring in the Rohrhardsberg Region, Germany

Jörg Rietze

The presented investigation started last year and will be terminated in 2011. The main questions of the study are: (1) Can fire-management with prescribed burning - in combination with other management

types - help to conserve undergrazed pasture ("*Nardus* grassland" code: *6230 FFH-directive, Annex I)? (2) Are there relevant positive or negative effects of burning on the prior target species for nature conservation of the region? In four study areas the speaker and his group will investigate the fauna of the target habitat-type (*Nardus* grassland), succession and undergrazed burned / unburned patches.

Re-establishment of Traditional Heathland Management Tools in the Federal Forest Service District Lausitz, Brandenburg State, Germany

Egbert Brunn

The presentation introduced the research that has been developed for the re-establishment of traditional heathland management in Lausitz Region. The site is characterized by a forest area which includes a nature reserve, where a conservation program in the *Calluna vulgaris* heathlands for the Black Grouse (*Tetrao tetrix*) is being developed, protected by the EU Birds Directive. The Federal Forest Service in collaboration with the Fire Ecology Research Group / Global Monitoring Center (GFMC) conducted several experimental burns between 2002 and 2005. The project obtained positive results in terms that it is possible the application of Prescribed Burning in both ecological and operational terms to modify the *Calluna* structure, to suppress succession and to improve the habitat of the Black Grouse as well as defined the conditions for its execution.

First Experiences in the Use of Prescribed Fire for Maintaining open Calluna Heathlands in North Rhine-Westphalia, Germany

René Mause and Alexander C. Held

The project area is located on a former military training area, which has seen military activity for some 200 years as well as heavy fighting during the Second World War. Since the retreat of the allied armies after German unification, the area of 680 ha is a declared Nature Conservation Area including 150 ha of open *Calluna* heathland. The maintenance, especially of the open areas, is done by mechanical means and grazing. The latest tool for landscape management is the use of controlled fire. In a first trial 6 ha of mature *Calluna*, covered with a relatively high number of succession of birch were burned with medium to high intensities. The results are encouraging. *Calluna* regeneration is exceptionally well, and close to 100% of the birch trees died due to the fire and due to secondary effects like heavy browsing pressure on re-sprouting trees. The use of fire in combination with grazing by goats and cattle is showing excellent results. This winter season a 10-12 ha area is planned for burning.

Sunday 27 January 2008

Core Group Presentations II

Methodology of Prescribed Burning Demonstration Plot Description and Inventory for the Eurasian Fire in Nature Conservation Network and the Fire Paradox Russia and Mongolia Programme
Michaela Spielmann and Daniel Kraus

The presentation outlined a methodology for the description of prescribed burning demonstration sites that was developed in the frame of the Fire Paradox Programme and the Eurasian Fire in Nature Conservation Network (EFNCN). Emphasis was given to the inventory and documentation of newly established prescribed burning demonstration sites. A set of fuel assessment methods was proposed to introduce a uniform description of objectives, treatments, site conditions, and applied documentation history. The speakers proposed to apply this methodology for the establishment of demonstration plots in the frame of the Fire Paradox Russia and Mongolia Programme.

Pianacci Prescribed Burning Project: Fire Risk Reduction and Fuel Load Management for Private Land Owners, Florence, Tuscany, Italy

Eva Valesse and Alexander C. Held

The presentation introduced the Pianacci Prescribed Burning Project, which was initiated following a request for wildfire hazard reduction on a private property. The project is in the application stage. Initial steps were described with special attention on regulation issues. Also the foreseen application of

Prescribed Burning was described in the different ecosystems existent in the property. Finally the speaker remarked the opportunity that the initiative of the landowner might entail for the success of the project.

Collection and Mapping of Prescribed Burning Practices in Europe: A First Approach

Andrea Lázaro

The presentation focused in the introduction to some preliminary results for the assessment of fire use practices in Europe developed within the EU FIRE PARADOX project. The speaker presented the methodology for collecting the information related to the traditional use of fire and prescribed fire practices in European countries, a comparative assessment of the current stage of development of these uses at the national level as well as a set of cartographic outputs developed from the collected information. The EFNCN was pointed out as an important additional source to complete and contrast the outcomes of research to be completed during the present year.

Core Group Presentations III Fire management training

EuroFire: Developing a Basic Level Competency-Based Training System for Vegetation Fire Management in Europe

Michael Bruce

The EUROFIRE project was presented as a project with the purpose to develop, evaluate, produce and distribute a new EU wide, multi-lingual on-line training resource for basic vegetation fire management. For this purpose the proposed areas, target end-users and standards were proposed by the speaker for discussion. The voluntary character of the standards as well as the close collaboration with the EU Fire Paradox project in the elaboration of the training material was pointed out. Finally it was proposed to hold a meeting to discuss these issues for a reduced group of participants interested in this matter.

Training for Fire Managers in the Use of Prescribed Fire for Wildfire Hazard Reduction and Nature Conservation in Europe

Marc Castellnou

The presentation covered the role of Prescribed Burning in the training of the Fire Fighters in Catalanian Region (NE Spain). In this sense the development of the rural burnings by fire fighters play an essential role in their training. Also the need to train the media was pointed out as well. On the other hand, the speaker remarked that one of the most important findings obtained after 9 years of implementation of PB is that that burning in winter (vs. summer) is changing nature fire regimes and therefore there are important chances for PB during fires season in fire suppression. Finally, the idea to change from fire fighters to fire managers was introduced, as a strategy to stop fighting fires aggressively but to change the intensity of fire behaviour.

Core Group Discussions

Presentation of a Draft Concept for a “White Paper on the Use of Prescribed Fire in Nature Conservation, Forestry and Land Management in Temperate-Boreal Eurasia”

The last day participants were asked to contribute with ideas to create a White Paper on the Use of PF. Some of these ideas pointed out were for instance the publication of the symposium in a format that could be readable for policy makers, the participation of new partners in the EU Fire Paradox project (although no additional budget is available), the need to include the Mediterranean Area in the next meetings which were found very positive for the exchange of experience and expertise between countries, the potential to collaborate with other networks (e.g. European Heathland Network, European Grassland Group, Aquatic Warbler Conservation Team and the Heather Trust and Moorland Forum), the need to avoid excessive regimentation upon traditional use practices and prescribed burning and the consideration of conflicts with the C emissions. The collection of suggestions for the White Paper will be evaluated after the Symposium and circulated for final review and agreement by the Symposium participants.

Annex I

Photographic impressions of the Symposium

Please enjoy some photos from the meeting place at GFMC in Freiburg and during the excursion: On Saturday 26 January 2008 prescribed winter burning was observed in the Kaiserstuhl vineyard region. After the field demonstration several presentations of Kaiserstuhl prescribed burning programme, the LIFE Rohrhardsberg Project and other local projects were given and discussed in the premises of the Oberbergen Wine Growers Association (Winzergenossenschaft Oberbergen).

More photographs are found on the web page on Symposium Outputs:

<http://www.fire.uni-freiburg.de/programmes/natcon/EFNCN-meetings-1-2008-outputs.html>



Some impressions of the meeting at GFMC / Freiburg University Campus, the field day with demonstration burning in the Kaiserstuhl near Freiburg and the continuation of the Symposium in the premises of the Oberbergen Wine Growers Association (Winzergenossenschaft Oberbergen).



Field day with demonstration burning in the Kaiserstuhl near Freiburg.