Schedule: Managing risk in uncertain times

Thursday, 21-April

Plenary

09:00-9:45 *Marc Hanewinkel*
Forest Decision-maker's perceptions of climate change, impacts and adaptation strategies

Section I: Risk Perception

09:45-10:10 *William F. Hyde*
General Policy Uncertainty as an Overlooked Factor in Forest Management

10:10-10:35 *Christoph Hartebrodt; Yvonne Chtioui*
Objective-Related Risk Analysis with the Influence-Change-Exposure (ICE) Approach

10:35-11:00 *Torsten B. Möllmann, Philipp A. Sauter, Friederike Anastassiadis, Oliver Mußhoff, Bernhard Möhring*
Impacts of standard risk-costs and risk attitude on investment decisions in forestry

11:00-11:30 **Coffee-Break**

11:30-11:55 *Daniel Mutenthaler*
Risk management in production planning and harvest scheduling

11:55-12:20 *Marielle Brunette, Johanna Choumert, Stéphane Couture, Claire Montagné-Huck*
A meta-analysis on farmer's risk aversion coefficient

12:20-12:45 *Marielle Brunette, Stéphane Couture, François Pannequin*
The self-insurance clauses puzzle: risk versus ambiguity

12:45-13:45 **Lunch Break**

13:45-14:10 *Philipp A. Sauter, Torsten B. Möllmann, Friederike Anastassiadis, Oliver Mußhoff, Bernhard Möhring*
To insure forest assets or not - an analysis of foresters' behaviour

Section II: Modelling & Risk Prediction

14:10-14:35 *David R. Gray*
Quantifying the sources of uncertainty in model predictions of insect disturbances

14:35-15:00 *Lara Climaco de Melo, Rober Schneider, Mathieu Fortin*

Quantifying model- and sampling-related uncertainty in single-tree growth models

15:00-15:25 *Chris Kollas, Martin Gutsch, Petra Lasch, Felicitas Suckow, Christopher Reyer*
Biotic disturbances in the forest model 4C – from defoliators, root & stem rots, xylem cloggers to phloem feeders

15:25-15:50 *Matthias Albert, Robert Nuske, Hermann Spellmann, Johannes Sutmöller*
Forest Conversion in the Face of Drought Risk – Uncertainty in Forest Planning

15:50-16:20 **Coffee Break**

16:20-16:45 *Rubén Manso, Axel Albrecht, François Ningre, Mathieu Fortin*
The impacts of windstorm and drought events in regional projections of sessile oak and European beech in Northeastern France

16:45-17:10 *Rami Saad, Göran Ståhl, Tomas Lämås*
The potential for improvements in forest management planning by the application of data assimilation procedures

17:10-17:35 *George Z. Gertner*
Uncertainty Budget for a Lidar Driven Forest Growth Simulator

17:35-18:00 *Young-hwan Kim*
Estimation of Forest Carbon Stock Changes in Korea

18:30 **Conference Dinner at Schwarzwälderhof**

Friday, 22-April

Plenary

09:00-09:45 *Gerard Heuvelink*
Uncertainty propagation in spatial environmental modelling

Section III: Risk Assessment

09:45-10:10 *Kaja Mathilde Aamodt Heltorp*
Do Norwegian forest owners and decision makers adapt to climate change?

10:10-10:35 *Lidia Sukovata, Tomasz Jabłoński*
Risk analysis of the nun moth outbreaks, possible counteractions and outcomes

10:35-11:00 *Oliver Jakoby, Beat Wermelinger*
Predicting phenology and infestation risk of the European spruce bark beetle (Ips typographus)

11:00-11:30 **Coffee Break**

11:30-11:55 *Monika Vejpustková, Alina Samusevich, Aleš Zeidler, Tomáš Čihák, Radek Novotný*
Changes in wood anatomy features of mountain spruce (Picea abies (L.) KARST.) as a consequence of the combined effect of air-pollution load and climatic stress

11:55-12:20 *Samuli Junttila, Mikko Vastaranta, Markus Holopainen, Harri Kaartinen, Antero Kukko, Hannu Hyyppä, Juha Hyyppä*
Measuring leaf water content with dual-wavelength scanning LiDAR

12:20-12:45 *Radomir Balazy, Mariusz Ciesielski, Tomasz Hycza*
The use of satellite data and growth models in the analysis of wind damages in Forest District Miedzylesie

12:45-13:45 Lunch Break

13:45-14:10 *Serban O. Davidescu, Ioan Clinciu, Nicu C. Tudose, Cezar Ungurean, Corina Gancz, Andrei Adorjani, Adriana Agafia Davidescu*
Expressing the physical condition of torrent control hydrotechnical structures using an equation assessing the cumulative impact of all damages occurred during exploitation

Section IV: Risk Management

14:10-14:35 *Rasoul Yousefpour*
Dealing with the risks and uncertainties of climate change in forestry

14:35-15:00 *Klaus Keller*
How can we find robust climate risk management strategies under deep uncertainty and multiple objectives?

15:00-15:25 *Fabian Härtl, Thomas Knoke*
A forest management planning approach considering risk aspects

15:25-15:55 **Coffee Break**

15:55-16:20 *Krunoslav Teslak, Karlo Beljan, Robert Skenderović, Milan Vrbanus, Mislav Vedriš, Jura Čavlović*
Historical forest management approaches and their influence on forest resistance to current natural hazards – a case study in Croatian beech–fir stands

16:20-16:45 *Michal Petr, L.G.J. Boerboom, Duncan Ray*
Diverse forest planners' climate change risk perceptions

16:45-17:10 *Rafal P. Chudy, Hanne Kathrine Sjølie, Birger Solberg*
Risk and uncertainty in forest sector modeling- the state of the art and future research directions

17:10-17:35 *Alexandru Petroni, Nicu C. Tudose, Andrei Adorjani, Serban O. Davidescu, Cezar Ungurean, Adriana A. Davidescu*
Integrated GIS solution for monitoring torrent control structures

17:35-18:00 **Discussion**

Field Trip "Black Forest"

Saturday, 23-April

Time Schedule

08:00 Start from street „Tennenbacher Str. 4."

09:30 Arrival at the 1st Site "Lotharpfad"

12:00 Lunch Break at the 2nd Site mountain inn "Kernhof"

14:00 Eschentriebsterben

15:30 Travel back to Freiburg

16:15 Optional stop at the train station „Offenburg" (Closer to Airport „Frankfurt am Main" ~2.15 Hours and ~2.15 to Basel Airport)

17:15 Arrival at Freiburg

Tour Guides:

Dr. Christoph Hartebrodt,
Head of Department of Forest Economics at the Forest Research Institute, Baden-Württemberg, Coordinator of the Federal Project "Competence Network Crisis Management, Climate Change and Transformation of Forest Ecosystems (KoNeKKTiW)"

Yvonne Chtioui,
Project Coordinator KoNeKKTiW

Site 1: 15 Years Later – Management of Large-Scale Storm Disasters and Regeneration of destroyed Forest Stands

Hurricane Lothar caught the people of Baden-Württemberg around noon on 26 Dec., 1999. The strongest squalls (up to 210 km/h) lifted roofs off, cut power lines and broke or uprooted trees. Roads and railway tracks were also impassable. But Lothar hit not only the south-west of Germany; France and Switzerland were affected as well. The hurricane felled 185 million m3 wood altogether in Western Europe.

The consequences for the forests of Baden-Württemberg amounted to about 40,000 hectares windthrow and about 30 million m3 felled wood, which are more than 300% of the normal annual yield. The centres of the damage in Baden-Württemberg were located at the western slopes of the Black Forest along the Rhine Valley. The hurricane, making its way from central France, hit these areas with force. A second center was located in the North-eastern parts of Baden-Württemberg. Even so-called "stormproof" deciduous trees that had adapted to the soil were uprooted or broken. Nevertheless, more than 80% of the damages involved coniferous trees, especially spruce stands (64% of the damaged trees). The

livelihood of some forest farmers in the center of the Black Forest was threatened by these damages. For the region Lothar was the second severe hurricane within ten years after "Vivian and Wiebke" which hit in February/ March 1990.

	million m^3	**in normal annual yields (%)**
Baden-Württemberg	**30**	**350**
Community forests	14.1	N/A
State forest	10.7	N/A
Private forests	5.1	N/A
Switzerland	**12**	**250**
France	**138**	**400**
Europe (sum)	**185**	**N/A**

Hurricane Lothar's path

The *Hurricane Lothar's path* (in German Lotharpfad) is a forest experience and educational trail, which is named after the storm itself. As mountain pastures increasingly became fallow through indoor livestock housing and hay exploitation, the upper regions of the Northern Black Forest were afforested predominantly with spruce. As these regions were in the centre of the storm, big areas were greatly damaged.

After the storm, the nature conservation and forestry administration decided to designate the 10-hectare big area along the Hurricane Lothar's path as protected forest (in German Bannwald) in order to observe in the long term the natural regeneration of the area. The project is managed by the Ruhestein National Park Centre.

In June 2003, along the Black Forest High Road, **B** 500 (in German Schwarzwaldhochstraße) between Ruhestein and Kniebis-Alexanderschanze as part of the European Union funded project Grindenschwarzwald a 800 m long educational and forest trail was created,

which passes through stairways, bridges and trails made of salvaged windfallen wood as well as above and below fallen trees– the Lothar path in a narrow sense. An observation deck offers a view over Braunberg, Lierbach, Oppenau, Strasbourg and the Vosges; when visibility is good up to Feldberg, Kaiserstuhl and to the Alps.

Topics:

- Economic Consequences of Large-Scale Storm Events
- Climate Change and Extreme Events
- Challenges and Practical Management of Large Scale-Storm Events
- Regeneration of Stands – Planting versus Natural Regeneration

Site 2: Lunch Break

Typical Black Forest Meal in the mountain inn *Kernhof*, Anno 1638 with a brief lunch lecture on "Multi-pillar strategies as a key component of mixed farm forest enterprises in the Black Forest"

Site 3: Management of New Risks - Mountain Ash Dieback in the Southern Rhine Valley History, Present Challenges and Conclusions for Future Risk Management

Description of Mountain Ash Disease

After the discovery of this new fungal disease (Hymenoscyphus pseudoalbidus), damage to crops and natural regeneration were recorded. In southwestern Germany the disease increasingly affects now also thinned out pole stands and timber and dieback crowns. It leads to an increase in the dying of larger ash trees.

The common ash tree (Fraxinus excelsior) and the narrow–leafed ash tree (F. angustifolia) are also affected by the ash dieback. The H. pseudoalbidus and with it the mountain ash dieback could spread over the entire Northern and Central Europe through the spread of fungal spores and the trade of infected nursery materials.

In Germany, the disease could for the first time be described with a direct proof in 2007 and in early 2009, it was also detected in Baden-Wurttemberg. Studies on infected branches showed, however, that isolated instances of the pathogen must have already been here already two to three years prior. Meanwhile, we can already talk about an extensive occurrence. While initially it was predominantly crops and natural regeneration that

were affected, now it is increasingly pole stands and timber that are affected by the disease.

Forestry in the Lowland of the Rhine Valley

In the Rhine Valley there are quite a number of mostly communal forests, which are characterized by relevant shares of mountain ash. Due to the disease described above these forest enterprises face severe silvicultural and economic consequences, such as loss of standing volume, future imbalances in the age class distributions and related consequences like discontinuity of outlay and income.