Conservation standards in managed forests for habitat management for generalists (**integration**):

- Creation of diverse forest structures with a high proportion of broadleved species
- Minimal impact forestry with a reduced impact on changes of the meso-climate through selection cutting and other single-tree or small-group methods
- Increasing the amount of large diameter deadwood
- Permanent preservation of evenly distributed habitat trees and old tree groups
- Strict protection of old trees
- Maintenance of traditional silvicultural methods and other special sites
- Reduced reforestation of clear-cuts
- No large-scale fertilizing

Further information:

Heribert Bradtka
Office for Agriculture and Forests
Weiden
Germany
heribert.bradtka@aelf-we.bayern.de

Conservation through utilization

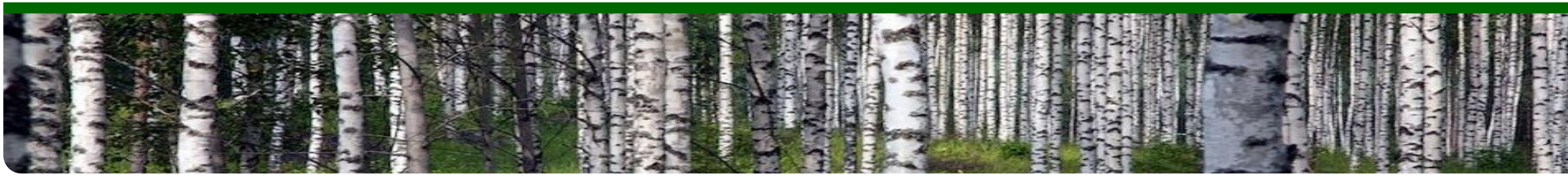
by Patrick Pyttel and Jürgen Bauhus

Germany - Coppicing is a traditional silvicultural management system applied all over the world. In rural environments of Central Europe, coppice stands often represent important elements of the cultural landscapes until today. In the past these forests were traditionally used for the production of firewood and various non-timber forest products. Across Central Europe this practice was abandoned in the first half of the last century due to socio-economic changes. Until today the abandonment of periodic coppicing led to passive transformation of the remaining stands. In this process the stands lose their typical coppice characteristics and increasingly resemble high forests. Subsequently the specific ecological value of coppice forests decreases and an important element of the cultural landscape gradually disappears.

Today managed coppiced forests (i.e. younger than 40 years) cover only 75,000 ha of Germany which represents 0.7% of the total forest area (BMELV 2004). One way of preserving the ecological, cultural and historical value of coppice forests would be to resume coppicing in aged coppiced forests which would additionally benefit light and warmth demanding species and can increase biodiversity.

Ongoing initiatives by the European Union (EU) call for a substantial increase in the use of renewable energy sources. It is aimed that by 2020 one fifth of the European energy consumption is from renewable sources. Of all renewable energy currently consumed in the EU, 47% is generated from forest biomass (i.e. wood and wood waste). The resulting demand for biomass as energy source has stimulated interest to resume coppicing of forests that had undergone this management in the past.

Although coppice forests are nowadays regarded as cultural heritage, potential source of fuel wood and known to be a valuable habitat for many plants and animal species re-activation of coppicing, particularly of aged coppice forests has proceeded slowly for various reasons. There are broad public concerns over the ecological sustainability fostered by the media's focus on perceived environmental damage through clearfelling. Additionally, the fact that remnant coppice forests are often found on sites of low growth potential (steep slopes) makes coppicing economically difficult to justify. The often chosen (and less laborious) possibility of converting aged coppice stands into high forest reinforces the recent situation. One major obstacle for the resumption of coppicing is the wide-spread belief amongst forest managers and practitioners that oaks in aged coppice forests are not able to re-sprout vigorously enough from the stump to ensure successful regeneration and the assumption that coppicing causes a reduction in soil fertility.



Although most of these assumptions lack scientific underpinning some doubts are certainly not unjustified. However, the fact that coppicing is the oldest type of a regulated forest management can be considered as a clear indicator of its environmental compatibility. We found out that aged coppice forest can generally managed in accordance to the pan-European criteria for a sustainable forest management and that a carful utilization of aged coppice forest can preserve valuable and rare tree species like *Sorbus torminalis* and *Sorbus domestica*. For all concerned forest managers it is necessary to identify basic situations from stand to landscape level at which coppicing is economically justified and needed in order to meet conservation goals.

Further information:

Patrick Pyttel
Institute of Silviculture
Freiburg
Germany
patrick.pyttel@waldbau.uni-freiburg.de

Along the big rivers Rhine and Moselle aged coppice forests are dominating the landscape until today

The Spöl Project: Application of Ecological Optimal Discharge

by Christopher T. Robinson

Switzerland - The Spöl is a canyon-confined river flowing through the Swiss National Park in southeastern Switzerland. The river originates from Livigno reservoir (Lago di Livigno) at Punt dal Gall dam (1805 m a.s.l., 130 m high, 540 m wide) on the Swiss-Italian border. The Spöl's discharge was reduced from 6–12 m^3/s (peak flows up to 120 m^3/s) before regulation to a constant residual flow of 1.45 m^3/s in summer and 0.55 m^3/s in winter.

Since 2000 this constant residual flow is interrupted by 1-3 experimental floods each year to test the potential for water reuse with respect to optimal ecological discharge. Optimal ecological discharge describes discharge pattern in terms of minimal base flow requirements and the timing, duration, magnitude and frequency of high flow and flood events most suitable for creating sustainable habitat conditions for resident biota under different management strategies and climate change.

The primary goal of the Spöl study was to test whether implementing a novel disturbance regime through experimental floods would cause a regime shift in ecosystem properties of a flow-regulated river, where the flow regime has been relatively constant for over 30 years. We predicted that ecosystem properties would change in response to the new habitat template of the river that resulted from a more variable flow regime. We evaluated this prediction by testing different population-, community-, and ecosystem-level hypotheses.