Special issue of Folia Geobotanica

Coppicing systems as a way of understanding patterns in forest vegetation

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The aim of this special issue of Folia Geobotanica is to publish a selection of high-quality papers linking coppicing management systems and patterns in forest vegetation. All papers should be original contributions based on case studies, meta-analyses, or reviews. The focus should be on vegetation diversity, composition or populations of woody or herbaceous species; fungi, lichens and related organisms are not excluded. It is advisable that the results are supported with environmental data, which can be related to natural conditions or management. All papers should conform to requirements on standard research papers by Folia Geobotanica: *http://www.springer.com/life+sciences/plant+sciences/journal/12224*

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Coppicing is a short-rotation system based on harvesting of resprouts of deciduous trees. In Central and North-Western Europe, it was a major, in the lowlands even a prevalent forest use from prehistory to the mid-20th century, from which time on it was largely abandoned. In other regions, like the Mediterranean or in France, coppicing remains an important type of forestry management until recently. Coppice systems produced a variety of products from small poles used for fuel, larger timbers for buildings, litter for animal bedding, or grazing for animals.

The ecological consequences of coppicing on forest structure and organisms inhabiting the forests were profound. Coppicing created a dynamic mosaic of lighter and darker phases and, on a long run, it led to oligotrophic substrates. Coppices thus provided a variety of habitats for a range of organisms. They had potentially strong effects on biodiversity, particularly in combination with standards (individual long-growing trees). Many species-rich forests of high conservation value were apparently coppiced in the past. After abandonment of coppicing and deliberate transformation to high forest, forests became darker and nutrients accumulated. Several case studies indicated more or less pronounced biodiversity decline due to the succession processes. Restoration of coppicing systems is therefore being advocated to save endangered species and communities in some places; elsewhere forest management systems are being modified to try to create similar conditions to those of coppice woods, but in ways that fit better with modern economic conditions. However, the response of the woodland system to these attempts is not always as expected – for example there may be the spread of invasive species. Therefore, our knowledge of the ecology and conservation biology of coppice systems needs to be enhanced and requires further research.

Currently, fuelwood extraction is experiencing a revival in industrialised countries due to rising fossil fuel prices and renewable energy policies. The continuation, and in a few cases even the restoration of coppicing, has been subsidised under conservation targets. In parallel, modern coppice systems growing high-yield, usually hybridogenic tree varieties are being promoted as a component of greening in EU Common Agricultural Policy to reduce soil erosion, nitrate leaching and pesticide use on agricultural land. The critical assessment of ecological impacts of these developments requires a scientific basis.

As we are convinced that plant ecology and vegetation science can significantly contribute to this process, we plan to launch this special issue of Folia Geobotanica and invite original research papers, meta-analyses and reviews on the following topics:

1. Historical effects of coppicing on vegetation: How did coppicing alter the composition and structure of the original forests; what sorts of vegetation were most favoured when coppice systems were most active; what legacies of the coppice system persist in modern forest landscapes and how do they contribute to extant biodiversity?

2. Consequences of coppice abandonment: How did plant communities and populations of target species react to the cessation of coppicing and conversion to high forest? This can be studied by resurveys of old vegetation plots, using permanent plots as well as by comparing active coppices with high forest. Chronosequence studies complement temporal comparisons and allow to reconstruct succession through the management cycle of coppices.

3. Benefits and drawbacks of coppice restoration: What are the trajectories of species composition and diversity under the disturbance regime of coppicing? Can high diversity, oligotrophic communities and populations be restored by reintroducing coppicing under modern environmental and socio-economic conditions? How are successional pathways affected by input and release of nutrients as well as by invasive alien species?

In general, any scientifically sound contributions linking specific habitat conditions, plant community patterns or population responses produced by coppicing are welcome.