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Successful maintenance of Lepidoptera by government-funded management of coppiced forests

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Abstract

Coppice and coppice with standards are important habitats for species of light forests, because regular cutting of re-growth applied in this type of forest-use produces forest structures that fulfil habitat requirements of these species. Coppicing had been a traditional forest-use system in Central Europe for centuries, but it has dramatically declined in the last 100 years. As a conservation strategy, a contract-based conservation program for forests (CBCP Forest) was introduced in 2005 in Bavaria, Germany, that supports among other activities coppiced forests. We studied the effects of CBCP Forest on the occurrence and abundance of two Lepidoptera species of European conservation concern (*Euphydryas maturna*, *Eriogaster catax*) as umbrella species in ten forest patches. With the introduction of the CBCP Forest no further loss of coppiced forests occurred in our study area, in contrast, a new coppiced forest was initiated. The occurrence and number of larval webs of our studied species were highest after 5-10 (*E. catax*) and 10-15 (*E. maturna*) years of cutting. This means that coppicing can maintain a dynamically changing forest where both study species can find patches of optimal age and thus coppicing ensures their long-term persistence. We also found larval webs in high forests adjoining coppiced forests, but in much lower number and larval webs occurred always around forest gaps (e.g. roads) or edges. Onset of specific management including coppicing in these high forests highly increased the occurrence of *E. maturna* and *E. catax*. The survival of the populations of *E. maturna* and *E. catax* in our study area is closely connected to the persistence of coppicing as supported by CBCP Forest. As they are considered as umbrella species for numerous inhabitants of light forests, we assume a positive effect on the whole community. CBCP Forest is a valuable conservation tool for coppices and should be actively advertised to promote greater uptake by forestry practitioners and stakeholders.

Key words: Conservation, Management, Coppice with Standards, Lepidoptera, *Euphydryas maturna*, *Eriogaster catax*, Forestry Scheme, Contract-based conservation program for forest (CBCP Forest), Natura 2000

Introduction

For a long time, conservation efforts in Central Europe concentrated on open habitats such as grasslands, fens, bogs, hedge-rows, while forests were rather neglected. Financial support for

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