

SONGBIRD POPULATION DYNAMICS ARE RELATED TO THE FREQUENCY OF MASSIVE TREE SEED PRODUCTION IN EUROPEAN DECIDUOUS FORESTS

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Study Description

In European deciduous forests, the massive and intermittent production of tree seeds (i.e., masting) is a resource pulse causing cascading effects throughout the ecosystem. Due to increased predator abundance in years after masts, wood warblers (*Phylloscopus sibilatrix*) reproduce less well than in years after non-masts, which translates to lower population growth rates in regions with high mast frequency. Increasing frequency of mast years and average seed production are related to global warming, potentially affecting population trends of other species inhabiting ecosystems characterized by resource pulses. These current circumstances call for more demographic investigations of species affected by masting.

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Photo 1. Mixed deciduous forests are prime examples of resource-pulse driven ecosystems. This study area in Hessen, Germany, shows the typical feature of wood warbler breeding habitat: open stem space below the relatively closed canopy, sparse vegetation cover on the ground, little understory. Photo credit: Gilberto Pasinelli.



Photo 2. Wood warbler males typically sing from lower branches, where they often start to and land from short song flights. Photo credit: Michael Gerber.



Photo 3. Wood warbler nests are built on the ground and well-camouflaged (left), but still regularly robbed by many mammal and bird species (right), here a European Honey-buzzard (*Pernis apivorus*) with a wood warbler nestling. Photo credit: Marcel Burkhardt (left), Swiss Ornithological Institute, Sempach (right).



Photo 4. Nests are monitored with trail cameras to reduce nest visits and to identify predators. Photo credit: Gilberto Pasinelli.

These photographs illustrate the article “Wood warbler population dynamics in response to mast seeding regimes in Europe” by Nino Maag, Fränzi Korner-Nievergelt, Jakub Szymkowiak, Natalia Hałas, Marta Maziarz, Grzegorz Neubauer, Shannon Buckley Luepold, Sandro Carlotti, Michael Schaub, Martin Flade, Daniel Scherrer, Alex Grendelmeier, Michael Riess, Pablo Stelbrink, and Gilberto Pasinelli published in *Ecology*. <https://doi.org/10.1002/ecy.4227>